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OFFICE OF ENVIRONMENTAL QUALITY CONTROL

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September 8, 2016

Mr. Scott Glenn, Director
Office of Environmental Quality Control
Department of Health, State of Hawai'i
235 South Beretania Street, Suite 702
Honolulu, HI 96813

RE: Job No. HE-1 & HE-10, Reorganize Water System - Pipeline Connecting Hanapēpē and 'Ele'ele, Draft Environmental Assessment and Anticipated Finding of No Significant Impact
State and County Right-of-Way within TMK Plats: (4) 1-8-008, 1-9-004, 1-9-005, 1-9-006, 1-9-007 & 1-9-010; 2-1-002, 2-1-003; TMKs (4) 1-9-007:007, 2-1-003: 013, 014 & 023 Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i

Dear Mr. Glenn:

With this letter, the County of Kaua'i Department of Water hereby transmits the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI) for the subject project for publication in the next available edition of the Environmental Notice.

Enclosed is a completed OEQC Publication Form, one copy of the DEA-AFONSI, a CD with an Adobe Acrobat PDF file of the same and an electronic copy of the publication form in MS Word.

Should you have any questions, please contact Mr. Bryan Wienand of my staff at (808) 245-5449 or email at bwienand@kauaiwater.org.

Sincerely,

[Handwritten signature]

Kirk Saiki, P.E.
Manager and Chief Engineer

BW/cc

Enclosure

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**AGENCY
PUBLICATION FORM**

SEP 23 2016

Project Name:	Hanapēpē-'Ele'ele Water Systems Improvements
Project Short Name:	Hanapēpē-'Ele'ele Water Systems Improvements
HRS §343-5 Trigger(s):	Use of County Land and Funds, Use of State Land and Funds
Island(s):	Kaua'i
Judicial District(s):	Waimea and Kōloa
TMK(s):	Properties and County and State Rights-of-way in TMK Plats: (4) 1-8-008, 1-9-004, 1-9-005, 1-9-006, 1-9-007 & 1-9-010; 2-1-002, 2-1-003
Permit(s)/Approval(s):	<p>County of Kaua'i</p> <p>Department of Public Works (DPW): Construction Plan Approval, Road Permit and Application for Notice of Intent to Grade and Grub</p> <p>DPW: Grubbing Permit, Grading Permit, Stockpiling Permit (potential)</p> <p>Planning Department: Special Management Area Permit (potential)</p> <p>Department of Water: Application for Water Service and Construction Plan Approval</p> <p>State of Hawai'i</p> <p>Department of Land and Natural Resources, Land Division: Right-of-Entry (potential; staging areas)</p> <p>Department of Health (DOH), Clean Water Branch: National Pollutant Discharge Elimination System permit NOI C (for Construction) and NOI F (for Hydrotesting Water)</p> <p>DOH Noise and Radiation Branch: Community Noise Control Permit (potential)</p> <p>Department of Transportation, Highways Division: Lane Use Permit for Construction Work and Construction Plan Approval</p> <p>Disability and Communications Access Board: Construction Plan Approval</p> <p>Federal</p> <p>US Army Corps of Engineers: Section 408 Permit</p>
Proposing/Determining Agency:	<p>County of Kaua'i</p> <p>Department of Water</p>
<i>Contact Name, Email, Telephone, Address</i>	<p>Bryan Wienand, Civil Engineer V, bwienand@kauaiwater.org</p> <p>(808) 245-5449</p> <p>P.O. Box 1706</p> <p>Lihue, HI 96766</p>
Accepting Authority:	(for EIS submittals only)
<i>Contact Name, Email, Telephone, Address</i>	
Consultant:	Geometrician Associates
<i>Contact Name, Email, Telephone, Address</i>	<p>Joni C. Tanimoto, P.E./Ron Terry</p> <p>(808) 836-1900 x674</p> <p>rterry@hawaii.rr.com</p> <p>PO Box 396</p> <p>Hilo HI 96721</p>

Status (select one)

DEA-AFNSI

FEA-FONSI

FEA-EISPN

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.

<input type="checkbox"/> Act 172-12 EISPN (“Direct to EIS”)	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.
<input type="checkbox"/> DEIS	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.
<input type="checkbox"/> 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.
<input type="checkbox"/> 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.
<input type="checkbox"/> FEIS Statutory Acceptance	Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.
<input type="checkbox"/> 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.
<input type="checkbox"/> Withdrawal	Identify the specific document(s) to withdraw and explain in the project summary section.
<input type="checkbox"/> Other	Contact the OEQC if your action is not one of the above items.

Project Summary. The County of Kaua‘i, Department of Water (DOW), plans two related component projects in Hanapēpē and ‘Ele‘ele. One involves installation of about a half-mile of new water lines parallel to Kaumuali‘i Highway to interconnect the Hanapēpē and ‘Ele‘ele water systems, providing a critically important alternative source of water for ‘Ele‘ele. The other component replaces aging 6-inch and 4-inch iron water mains along a half-mile length of Hanapēpē Road with one 12-inch main. The replacement water line would cross Hanapēpē Stream on the historic Hanapēpē Bridge. The design would install the 12-inch water line inside of and along the bridge’s downstream parapet wall, topped by a 5-foot wide sidewalk consisting of grating material. Archaeological monitoring will be conducted at all times during work within Hanapēpē Town, and intermittently in the Kaumuali‘i Highway ROW. No permanent or physical effect to the historic structures in Hanapēpē Town would occur. The DOW has closely coordinated design with historic preservation agencies and has requested concurrence with a finding of no adverse effects to significant historic sites. Construction will elevate noise, cause minor air quality and visual impacts, and disrupt traffic during periods varying between several days and several weeks. These impacts will occur over about six months, as construction moves from one end of the work area to the other. A set of Best Management Practices will protect water quality. Timing of vegetation removal will avoid impacts to Hawaiian hoary bats.

Hanapēpē-‘Ele‘ele Water Systems Improvements
Job 15-07, WP 2020 Nos. HE-01 & HE-10

Draft Environmental Assessment

Submitted Pursuant to Chapter 343, Hawai‘i Revised Statutes (HRS)

County of Kaua‘i
Department of Water

September 2016

**Hanapēpē-‘Ele‘ele Water Systems Improvements
Job 15-07, WP 2020 Nos. HE-01 & HE-10**

Draft Environmental Assessment

**State and County Right-of-Way Within TMK Plats: (4) 1-8-008: 1-9-004,
1-9-005, 1-9-006 1-9-007 & 1-9-10; 2-1-00 and 2-1-003;
TMKs (4) 1-9-007:007, 2-1-03: 13, 14 & 23**

Waimea and Kōloa Districts, Island of Kaua‘i, State of Hawai‘i

**PROPOSING
AGENCY:**

County of Kaua‘i
Department of Water
P.O. Box 1706
Lihue, HI 96766

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Honolulu, HI 96819

CLASS OF ACTION:

Use of County and State Funds
Use of County and State Land

This document is prepared pursuant to:
the Hawai‘i Environmental Protection Act,
Chapter 343, Hawai‘i Revised Statutes (HRS), and
Title 11, Chapter 200, Hawai‘i Department of Health Administrative Rules (HAR).

SUMMARY

The County of Kaua‘i, Department of Water (DOW), plans to implement the Hanapēpē-‘Ele‘ele Water Systems Improvements project, which combines two related improvement component projects in the central areas of Hanapēpē and ‘Ele‘ele.

The “HE-01 Reorganize Water System: Pipeline Connecting Hanapēpē and ‘Ele‘ele” component project involves installation of about a half-mile of new water lines from the vicinity of the Waialo Road-Kaumuali‘i Highway intersection at a location where it is possible to interconnect the lower Hanapēpē and lower ‘Ele‘ele water systems. This will allow the DOW to boost water from the Hanapēpē 212’ system to the ‘Ele‘ele 340’ system to provide a critically important alternative source of water for ‘Ele‘ele. The “HE-10 Hanapēpē Road 6-inch Main Replacement” component project would replace the existing 6-inch and 4-inch cast-iron water mains along an approximately half-mile length of Hanapēpē Road between Kona Road and Moi Road, which were installed prior to World War II, with one 12-inch main. The replacement water line would cross Hanapēpē Stream on the historic Hanapēpē Bridge, where an existing 6-inch water line currently crosses.

Planning for the project has involved coordination with resource and permitting agencies and commissions to ensure a design that minimizes the impact to all resources, including Hanapēpē Bridge. The design would install the 12-inch water line on the bridge inside of and along the downstream parapet wall, topped by a 5-foot wide sidewalk consisting of grating material. Archaeological monitoring will be conducted at all times during work within Hanapēpē Town, and intermittent monitoring will occur in the ROW of Kaumuali‘i Highway. No permanent or physical effect to the historic structures in Hanapēpē Town would occur. The DOW has coordinated extensively with the State Historic Preservation Division (SHPD) and the Kaua‘i Historic Preservation Commission and has requested the SHPD to concur with a finding of no adverse effects to significant historic sites. Construction will elevate noise levels, cause minor air quality and visual impacts, and disrupt traffic during periods varying between several days and several weeks. These impacts will occur over the course of the project duration of about six months, as construction moves progressively from one end of the water line installation to the other. No threatened or endangered plants or sensitive vegetation are present. A set of Best Management Practices (BMPs) will be instituted to control and prevent sediment from entering waterways including the Hanapēpē River in order to protect water quality. To protect Hawaiian hoary bats, no shrubs or trees taller than 15 feet will be permitted to be removed or trimmed during the bat birthing and pup rearing season (June 1 through September 15 of each year).

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Hanapēpē-‘Ele‘ele Water Systems Improvements

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LIST OF ABBREVIATIONS

BFE	Base Flood Elevations
BMP	Best Management Practice
CWRM	Hawai‘i State DLNR Commission on Water Resource Management
DHHL	Hawai‘i State Department of Hawaiian Home Lands
DLNR	Hawai‘i State Department of Land and Natural Resources
DOFAW	Hawai‘i Division of Forestry and Wildlife
DOW	County of Kaua‘i Department of Water Supply
DPW	County of Kaua‘i Department of Public Works
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
gpm	Gallons per minute
HEER	Hawai‘i State DOH Hazard Evaluation and Emergency Response
HDOA	Hawai‘i Department of Agriculture
HDOH	Hawai‘i State Department of Health
HAR	Hawai‘i Administrative Rules
HEPA	Hawai‘i Environmental Policy Act
HRS	Hawai‘i Revised Statutes
KCGP	Kaua‘i County General Plan
KHPRC	Kaua‘i Historic Preservation Review Commission
KIUC	Kaua‘i Island Utility Cooperative
MCL	Maximum Contaminant Level
mgd	Million gallons per day
mg/L	Milligrams per liter
OEQC	Hawai‘i State Office of Environmental Quality Control
RLS	Reconnaissance Level (Architectural) Survey
SFHA	Special Flood Hazard Area
SHPD/O	State Historic Preservation Division/Officer
SMA	Special Management Area
SWAP	Source Water Assessment Program
SWPP	State Water Projects Plan
UH	University of Hawai‘i
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USNRCS	U.S. Natural Resources Conservation Service
WRPP	Water Resources Protection Plan
WQP	Water Quality Plan
WUDP	Water Use and Development Plan

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1 PROJECT LOCATION, DESCRIPTION, PURPOSE AND NEED

1.1 Project Location and General Description

The County of Kaua‘i, Department of Water (DOW), plans to implement the Hanapēpē-‘Ele‘ele Water Systems Improvements project, which combines two related improvement component projects in the central areas of Hanapēpē and ‘Ele‘ele (Figures 1-1 and 1-2), adjacent towns on the south shore of Kaua‘i.

The “HE-01 Reorganize Water System: Pipeline Connecting Hanapēpē and ‘Ele‘ele” component project involves installation of new water lines from the vicinity of the Waialo Road-Kaumuali‘i Highway intersection at a location where it is possible to interconnect the lower Hanapēpē and lower ‘Ele‘ele water systems. This will allow the DOW to boost water from the Hanapēpē 212’ system to the ‘Ele‘ele 340’ system to provide a critically important alternative source of water for ‘Ele‘ele.

The “HE-10 Hanapēpē Road 6-inch Main Replacement” component project would replace the existing 6-inch and 4-inch cast-iron water mains along Hanapēpē Road between Kona Road and Moi Road, which were installed prior to World War II, with one 12-inch main. The replacement water line would cross Hanapēpē Stream on the historic Hanapēpē Bridge, where a 6-inch water line currently crosses.

The project would involve primarily State and County Rights-of-Way Within TMK Plats: (4) 1-8-008: 1-9-004, 1-9-005, 1-9-006 1-9-007 & 1-9-10; 2-1-00 and 2-1-003. The edges of several private parcels adjacent to Kaumuali‘i Highway (TMKs (4) 1-9-007:007, 2-1-03: 13, 14 & 23) may be utilized for easements if the owners agree to this use.

1.2 Planning Background and Purpose and Need for Project

The overall purpose and need of all DOW projects relates to this agency’s mission to plan and operate water systems that provide safe, affordable, sufficient drinking water for the people of Kaua‘i. Through implementation of its planning documents, including the 2001 Water Plan 2020, DOW fulfills the County’s General Plan and the policies of the State of Hawai‘i’s Commission on Water Resource Management (CWRM), which guides use and protection of the State’s Water Use Resources. The Kaua‘i Water Use and Development Plan (KWUDP) is a component of the State of Hawai‘i Water Plan that serves as a dynamic, long-range planning guide for CWRM. Key goals of the KWUDP are to provide guidance for the island’s water resource managers, ensuring that future water needs of the county are met while preserving the integrity of the island’s water resources. It is also to provide guidance to ensure that sustainable water resources are integrated into the county’s formulation and development of land use policies.

In 2001, the DOW prepared the Water Plan 2020 (or “WP 2020”), a comprehensive planning document intended to further guide DOW operations for the subsequent 20 years.

Hanapēpē-‘Ele‘ele Water Systems Improvements

(http://www.kauaiwater.org/ce_waterplan2020.asp). WP 2020 included the following goals:

- Ensuring a reliable water supply,
- Caring for the deteriorated and aging water systems,
- Increasing customer service, and
- Operating in a sustainable and financially secure manner.

A Capital Improvements Program (or CIP) that addressed capacity deficiencies in the water system, repair or replacement of deteriorated and aging infrastructure, along with a Financial Plan intended in part to accomplish this, was included in WP 2020. The WP 2020 was the result of an intensive planning effort that evaluated the state of DOW infrastructure, along with projections of customer service increases and anticipated revenue and operating expenses. Appropriate CIP projects were identified and prioritized in WP 2020 with these criteria.

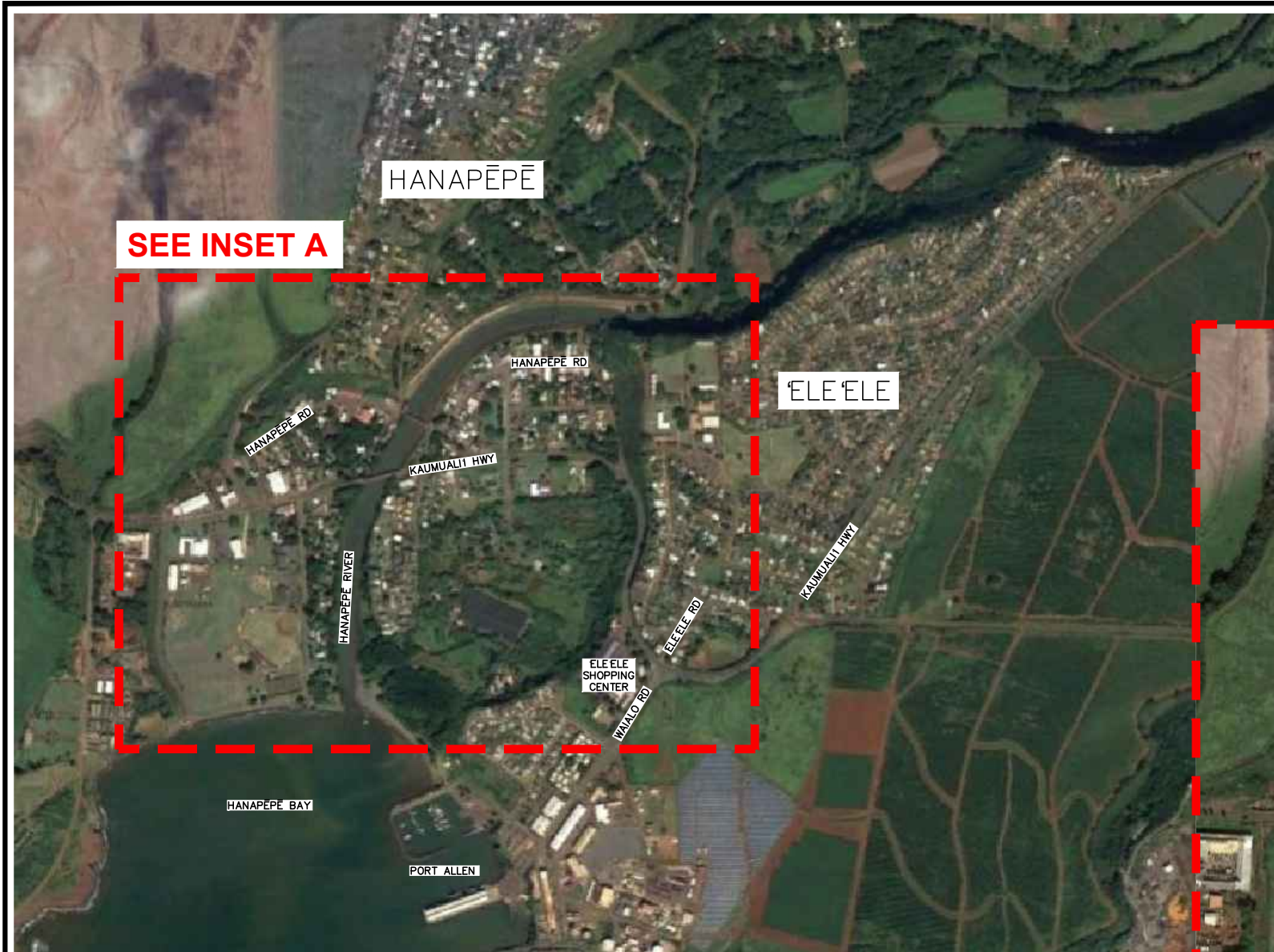
Islandwide, DOW operates 14 systems. The DOW Hanapēpē-‘Ele‘ele Water System serves the town of Hanapēpē and the residential communities of Hanapēpē Heights and ‘Ele‘ele Nani. Also included in the service area are the Port Allen Harbor facilities and nearby industrial support areas, as well as the Burns Field Airport and Salt Pond Beach Park. According to the current DOW database, the Hanapēpē-‘Ele‘ele system has a total of 1,001 service connections in Hanapēpē and 782 in ‘Ele‘ele, serving a combined population that was measured by the U.S. Census Bureau in 2010 at 5,047 residents. The WP 2020 forecast this population to rise to 5,678 by 2020 and 7,951 by 2050. The services are a mix of residential, commercial, industrial and facility uses.

Four wells provide water to Hanapēpē and ‘Ele‘ele: Hanapēpē Well #4; Hanapēpē Town Well (a.k.a. Hanapēpē Well #25); Hanapēpē Well A; and Hanapēpē Well B. Pump sizes vary from 500 to 900 gallons per minute (gpm). The system is divided into four pressure zones, each with one or more water storage tanks varying between 0.2 and 0.5 million gallons (MG). Wells and booster pumps provide the water to the storage tanks for each reservoir to optimize the system; i.e., to provide the required water at the required pressure to all services at a minimum of energy and cost, with redundant features where possible to minimize problems when components fail.

There are several deficiencies in the current system in terms of energy use, interconnectivity and critical system redundancy. In addition, many water lines are in critical need of replacement in order to stop current leaks and reduce the number of future leaks and breaks, which inconvenience users and increase the cost of the system for all ratepayers. The need for the project is based on the following factors:

- The ‘Ele‘ele community is currently serviced only by water stored in the ‘Ele‘ele tanks. All of the wells that supply the ‘Ele‘ele system are located on the Hanapēpē side of the service area and water must be lifted up to these ‘Ele‘ele tanks via booster pump stations. This process is energy-intensive and inefficient.

FILE: G:\CKDOW\1501-Hanapepe WL\300 DSGN\370 Exhibits\CKDOW1501 EA Location Map Exhibit.dwg



LOCATION MAP

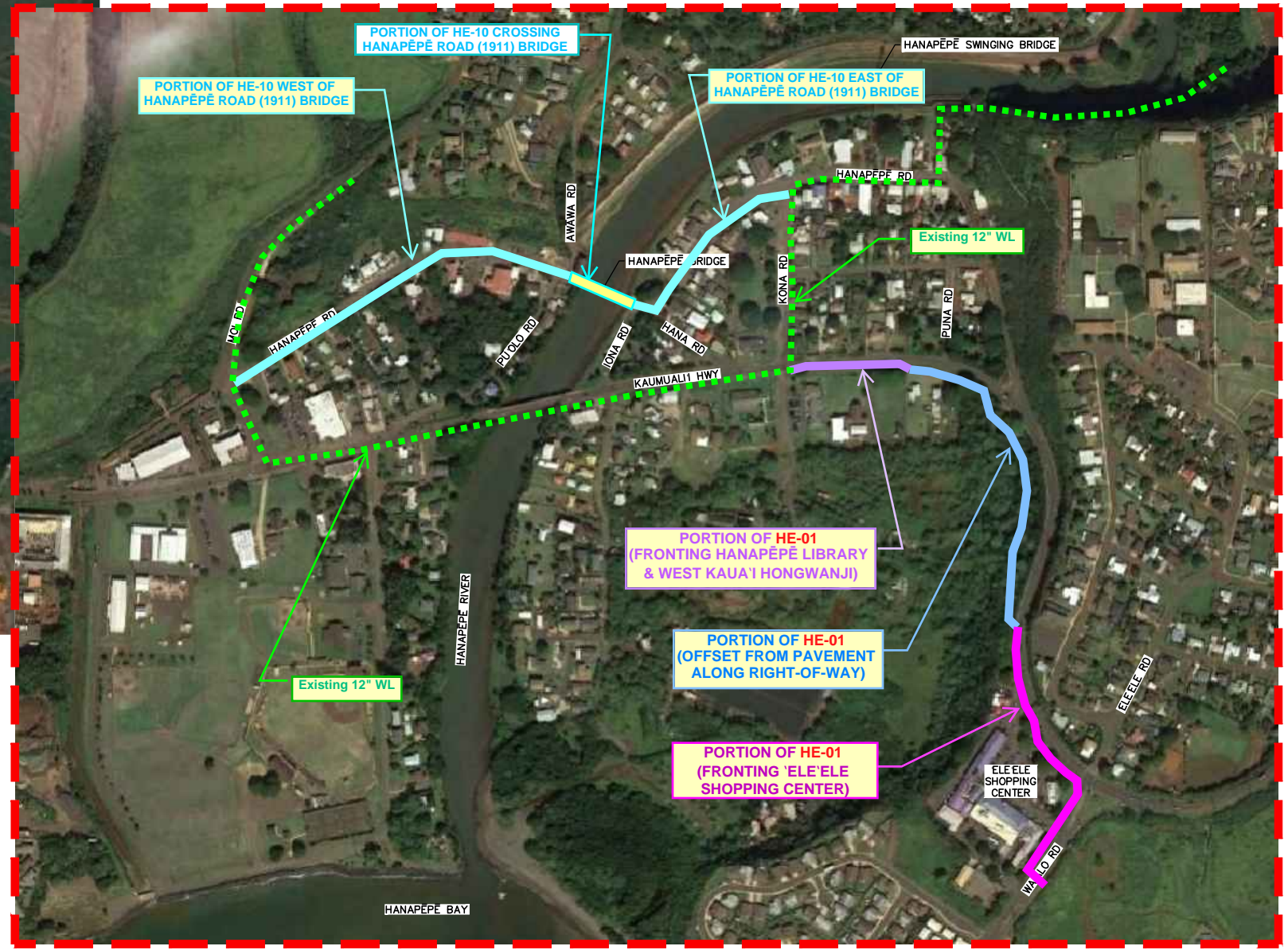
SCALE: 1" = 1200'



SCALE: 1" = 600'



SCALE: 1" = 1200'



INSET A

SCALE: 1" = 600'

**HE-01 & HE-10 PIPELINE CONNECTING HANAPEPE & 'ELE'ELE,
HANAPEPE ROAD 6-INCH MAIN REPLACEMENT**

LOCATION MAP

FIGURE

1-1



Hanapēpē-‘Ele‘ele Water Systems Improvements

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Figure 1-2 Project Site Photos

Kaumuali‘i Highway ROW: Top: Waialo Road; Middle: Overgrown slope; Bottom: Kona Road



Figure 1-2 Project Site Photos

Hanapēpē Bridge



Hanapēpē-‘Ele‘ele Water Systems Improvements

Figure 1-2 Project Site Photos

Top: Hanapēpē River, channelized. Middle and Bottom: Historic Hanapēpē Downtown



Hanapēpē-‘Ele‘ele Water Systems Improvements

- In addition, the lack of a connection between the two systems means that there is no means of supplying water to ‘Ele‘ele should these booster pump stations, connecting pipelines, or supporting facilities fail or become inoperative. As recently as September 2016, a booster pump required service and a water conservation notice had to be issued for the system.
- In many locations transmission water lines are aged and prone to breaking or leaking. DOW records indicate 11 main breaks or leaks in the area between 10/15/2000 and 2/1/2013. In addition, records show 23 laterals needed repair between 1/15/2001 and 5/15/2015. This situation may be expected to worsen if replacement is not undertaken.

Consequently, the inter-related HE-01 Reorganize Water System and HE-10 Hanapēpē Road 6-inch Main Replacement projects were included in the WP 2020 CIP to meet the goals of the WP 2020. They are not intended to support additional growth, or new development, but are being implemented to address the deterioration of aging pipelines and primarily to reduce energy consumption, and meet fire-flow (transmission) standards, which is a health and safety issue.

While the Need for the project describes the deficiencies, the project Purpose defines the problem to be solved. Defining the Purpose is necessary to determine the range of alternatives to be considered; each alternative must meet the Purpose and address the identified Need to be considered a viable solution. The Purpose for the inter-related HE-01 Reorganize Water System and HE-10 Hanapēpē Road 6-inch Main Replacement projects consists of several elements:

1. Provide an alternate route for supplying water to ‘Ele‘ele, establishing redundancy that ensures water can be delivered to ‘Ele‘ele whenever the facilities are out of service.
2. Better interconnect the Hanapēpē and ‘Ele‘ele (water) systems to ensure improved water system reliability.
3. Increase the water line size in Hanapēpē to provide enhanced flow capacity, improved service, and fire-fighting capability.
4. Allow DOW to redistribute the source and supply volumes currently allocated among the different service zones in Hanapēpē and ‘Ele‘ele. This redistribution would reduce the amount of water that must be currently pumped up to the ‘Ele‘ele tank. This would reduce energy consumption by the booster pumps by approximately 46,000 kW-hrs per year and lower costs to DOW (and thus its water users) by approximately \$12,000 year.
5. Replace aged transmission water lines through Hanapēpē with new lines less prone to leaks or breaks, particularly those that pre-date World War II, avoiding costs and inconvenience to DOW and its customers.

The first three elements are consistent with the WP 2020 goal, “ensuring a reliable water supply”. The fourth element is in keeping with the WP 2020 goal to “operate in a sustainable and financially secure manner” and the fifth element corresponds to the WP 2020 goal of, “caring for the deteriorated and aging water system.”

1.3 Project Budget and Schedule

The estimated budget for the inter-related projects, which are expected to be funded through Capital Improvement Project funds from the State Legislature, is \$3.7 to \$4.2 million, distributed between the component projects as follows:

- HE-10 Hanapēpē Road 6-Inch Main Replacement: \$1.5-1.8 million
- HE-01 Reorganize Water System: Pipeline Connecting Hanapēpē & ‘Ele‘ele: \$2.2- \$2.4 million.

The current schedule is that the HE-10 Hanapēpē Road 6-Inch Main Replacement component project would be initiated at the end of 2016. Design would be finished and construction would begin within three months of completion of the Final EA. Construction would take approximately eight months. DOW is expediting this project to finish it in early 2017 so as not to conflict with an upcoming project to resurface Hanapēpē Road, which is being implemented separately by the Department of Public Works.

Design of the HE-01 Reorganize Water System: Pipeline Connecting Hanapēpē & ‘Ele‘ele would be finished, and construction would begin, within six to nine months of completion of the Final EA (and Special Management Area permit, if determined to be necessary). Construction would begin in mid-2017 and would take approximately ten months.

1.4 Alternatives Considered

1.4.1 Proposed Project Alternative

As noted in Section 1.1., the proposed project consists of two component projects (Figure 1-3a):

The “HE-01 Reorganize Water System” component project involves installation of new water lines within the State Department of Transportation (DOT) right-of-way (ROW) of Waialo Road and Kaumuali‘i Highway for a length of about a half-mile between Waialo Road and Kona Road, in order to interconnect the lower Hanapēpē and lower ‘Ele‘ele water systems (see Overall Site Plan in Figure 1.3). The connecting water line will join the systems upstream of the pressure relief valve (PRV) on Waialo Road. A trailer-mounted booster pump will allow the County to boost water from the Hanapēpē 212’ system to the ‘Ele‘ele 340’ system during emergency situations to provide an alternative source of water for ‘Ele‘ele.

The route along Waialo Road would be mainly outside the paved portion of the ROW on the west side of the road except where the water line crosses to the east. DOW will investigate the potential for horizontal directional drilling (HDD) or micro-tunneling (MT) in order to avoid disturbing the pavement. The route along Kaumuali‘i Highway from Waialo Road towards Kona Road would be outside the paved section of the ROW, except for a 550-foot long section north of Waialo Road, fronting the ‘Ele‘ele Shopping Center, where there is no appropriate space within

Hanapēpē-‘Ele‘ele Water Systems Improvements

the ROW for the water line outside the paved section. The edges of several private parcels adjacent to Kaumuali‘i Highway (TMKs (4) 1-9-007:007, 2-1-03: 13, 14 & 23) may be utilized for easements if the owners agree to this use, in order to minimize disruption to the highway during construction. From this point northwards to the vicinity of Hanapēpē Road, the DOT ROW widens to 160 feet, which affords a corridor for the water line that is offset 40-65 feet away from the south of the pavement along the ROW within a sloped area vegetated by kiawe, monkeypod and koa haole. From Hanapēpē Road to Kona Road, fronting the West Kaua‘i Hongwanji and Hanapēpē Library, where it connects to an existing 12-inch water line, the new water line would be within the highway shoulder, but as far away as practicable outside the travel lane of the Kaumuali‘i Highway ROW.

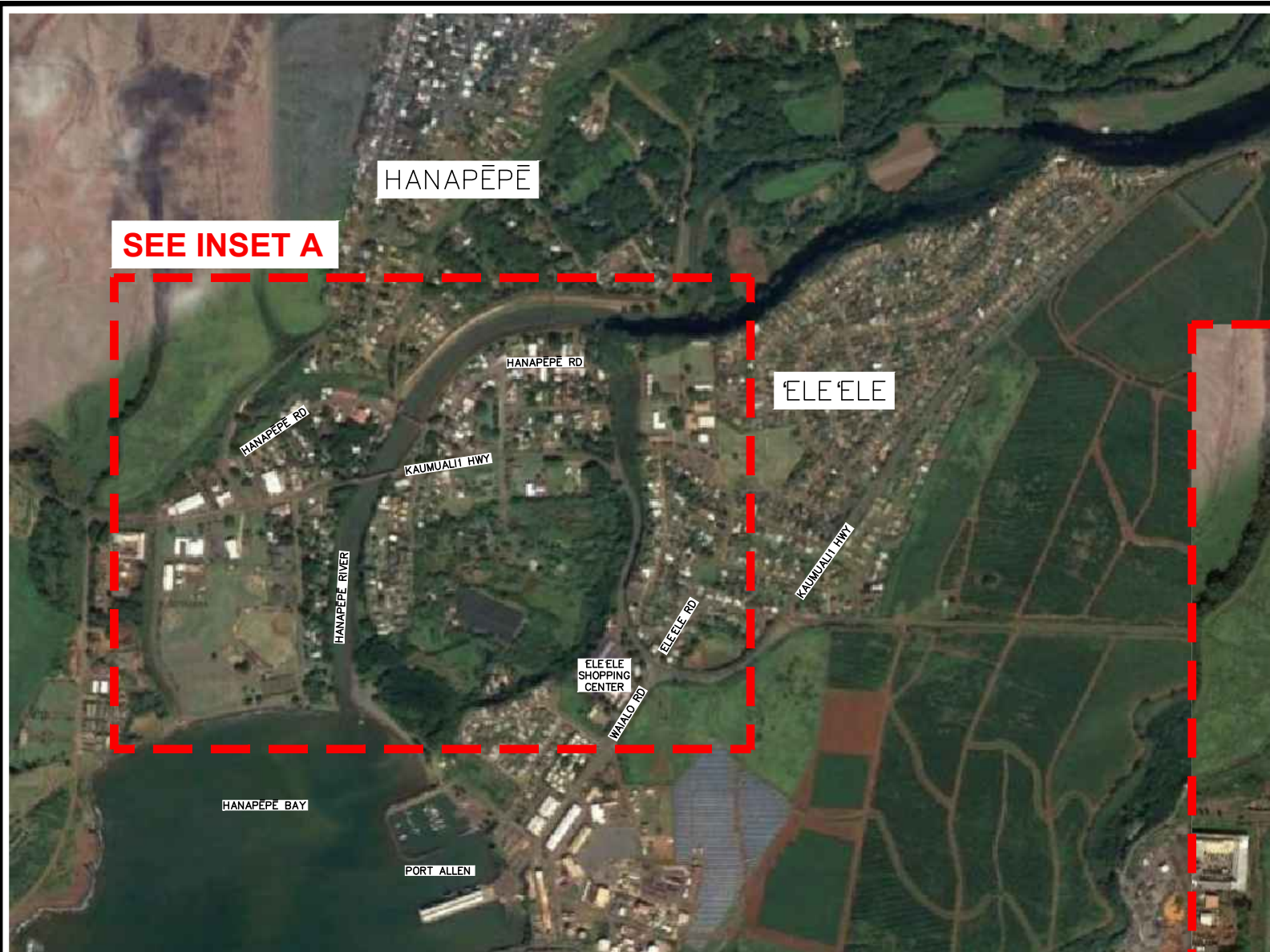
The route along Kaumuali‘i Highway from Waialo Road towards Kona Street Road would be outside the paved section of the ROW, except for a 550-foot long section north of Waialo Road, fronting the ‘Ele‘ele Shopping Center, where there is no appropriate space within the ROW for the water line outside the paved section. From this point northwards to the vicinity of Hanapēpē Road, the DOT ROW widens to 160 feet, which affords a corridor for the water line that stays offset 40-65 feet to away from the south of the pavement along the right-of-way within a sloped area vegetated by kiawe, monkeypod and koa haole. From Hanapēpē Road to Kona Road, fronting the West Kauai Hongwanji and Hanapēpē Library where it connects to an existing 12-inch water line, the new water line would once again approach be within the highway shoulder but remain outside of the paved section of the Kaumuali‘i Highway ROW.

The route along Kaumuali‘i Highway from Waialo Road towards Kona Road would be outside the paved section of the ROW, except for a 550-foot long section north of Waialo Road, where there is no appropriate space within the ROW for the water line outside the paved section. From this point northwards to the vicinity of Hanapēpē Road, the DOT ROW widens to 160 feet, which affords a corridor for the water line that stays s 40-65 feet to the south of the pavement within a sloped area vegetated by kiawe, monkeypod and koa haole. From Hanapēpē Road to Kona Road, where it connects to an existing 12-inch water line, the new water line would once again approach but remain outside of the paved section of the Kaumuali‘i Highway ROW.

The “HE-10 Hanapēpē Road 6-inch Main Replacement” component project would replace the existing 6-inch and 4-inch cast-iron water mains along Hanapēpē Road for about a half-mile between Kona Road and Moi Road with one 12-inch main (Figure 1.3). The new water line would be buried for its entire length except at Hanapēpē Bridge.

The replacement water line will cross Hanapēpē Stream on the historic, 190-foot long Hanapēpē Bridge, where a 6-inch water line currently crosses. DOW engaged in extensive consultation with DPW, the U.S. Army Corps of Engineers (USACE), the U.S. Coast Guard (USCG), State of Hawai‘i, Historic Preservation Division (SHPD), and the Kaua‘i Historic Preservation Review Commission (KHPRC) concerning a wide array of design options for the bridge crossing. The design needed to accomplish the purpose and need statement listed above, preserve the historic

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LOCATION MAP

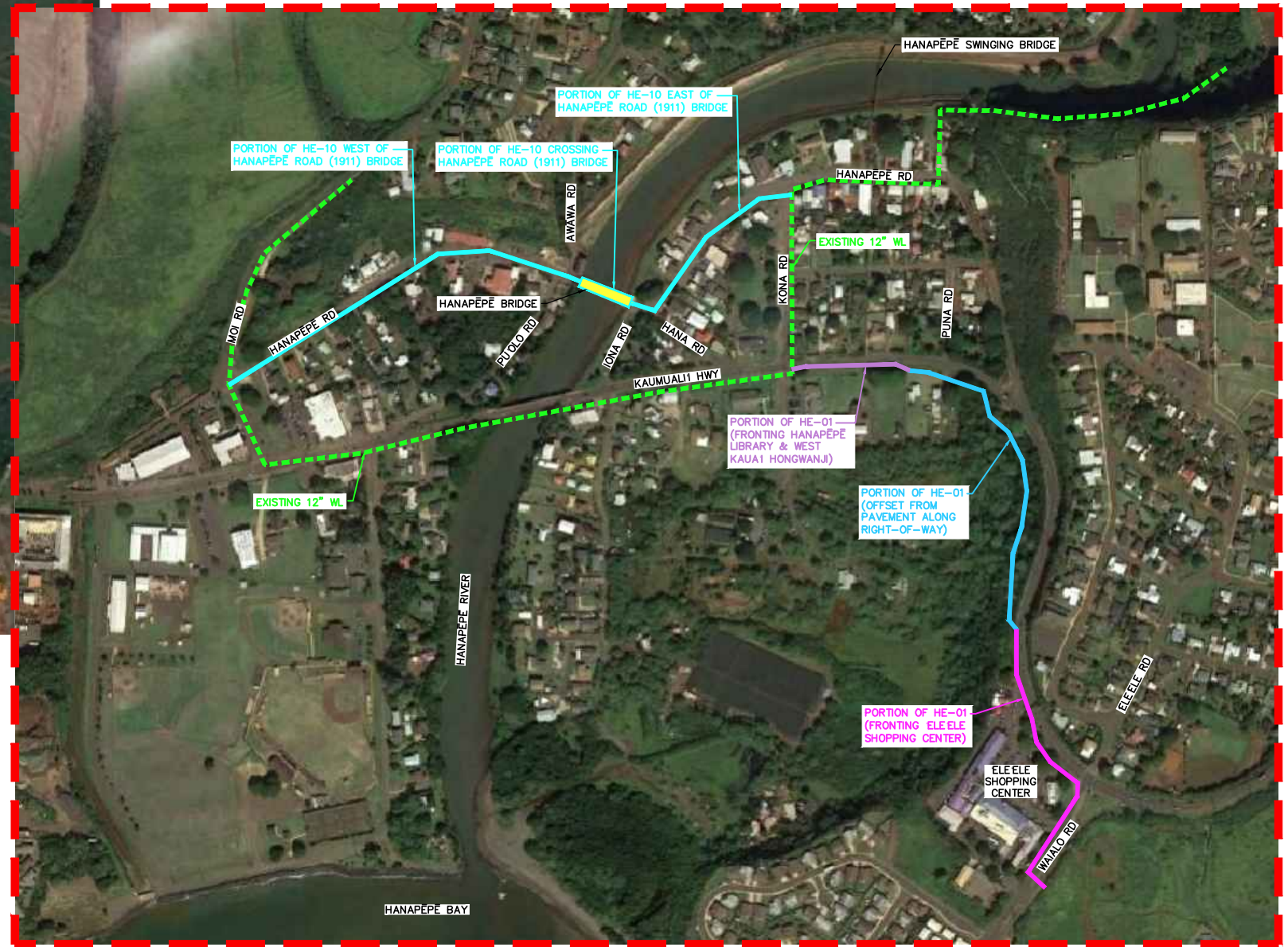
SCALE: 1" = 1200'



SCALE: 1" = 600'



SCALE: 1" = 1200'



INSET A

SCALE: 1" = 600'

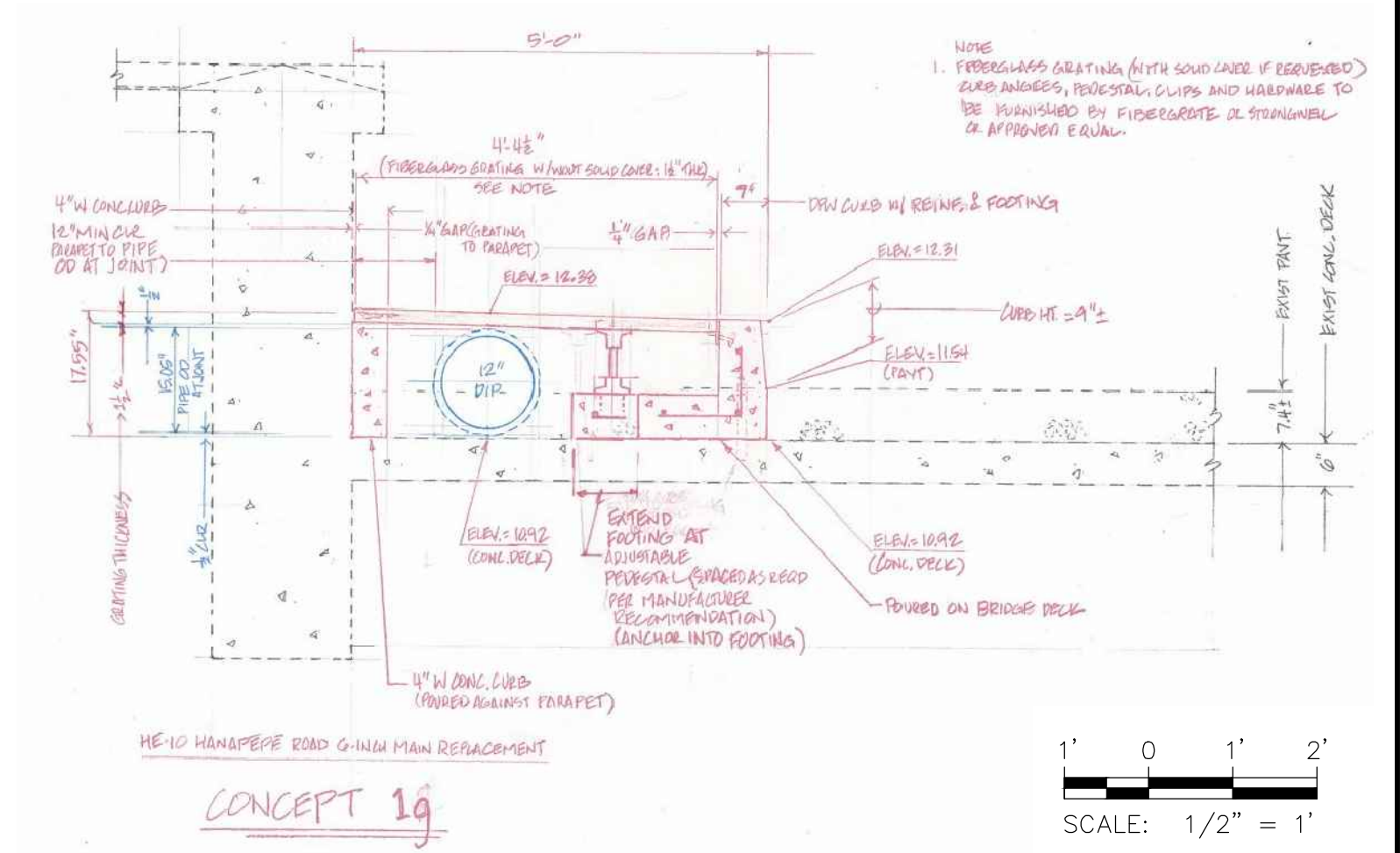


**HE-01 & HE-10 PIPELINE CONNECTING HANAPEPE & 'ELE'ELE,
HANAPEPE ROAD 6-INCH MAIN REPLACEMENT**

PROPOSED PROJECT ALTERNATIVE OVERVIEW

FIGURE

1-3a



DESIGN CONCEPT 1

**HE-01 & HE-10 PIPELINE CONNECTING HANAPĒPĒ & 'ELE'ELE,
HANAPĒPĒ ROAD 6-INCH MAIN REPLACEMENT**

PROPOSED PROJECT ALTERNATIVE: HANAPĒPĒ BRIDGE CROSSING DETAIL

FIGURE

1-3b

character of Hanapēpē Bridge, be constructible for a reasonable budget by 2017, and not interfere or conflict with other projects planned for the bridge or nearby areas.

After careful consideration of all these criteria, one optimum design has been advanced for analysis. The design would install the 12-inch water line on the bridge inside of and along the downstream parapet wall, with a 5-foot wide sidewalk above it (Figure 1-4b). DPW informed DOW that it intends to implement a major structural repair or rehabilitation project of the bridge at some point in the future. The extent and scope of this project is not known at this time. Positioning the water line on the deck will allow ready removal and relocation, if necessary, to accommodate the future bridge repair work. The sidewalk will consist of grating material, which will hide the water line below and mitigate visual impacts for its entire length. The grated sidewalk will transition to existing walkways at each end of the bridge with slopes and grades that comply with DCAB requirements. This relatively lightweight grating material will facilitate accessing the water line below for maintenance and repair. The sidewalk elements will not be anchored or tied into the bridge structure, which will allow for easier removal of the sidewalk later, if required for the future bridge repair work.

1.4.2 No Action Alternative

Under the No Action Alternative, DOW would not interconnect the Hanapēpē and ‘Ele‘ele systems and would not replace the 3-inch and 6-inch water mains with a 12-inch main. The benefits of better service, resilience and system efficiency would not be achieved, but there would also be no disturbance of the existing ground surface or vegetation, and no short-term impacts to traffic or businesses in the area. The No Action Alternative provides a basis for comparing the impacts of the proposed project, and it has been carried forward as one of the alternatives to be analyzed in this EA.

1.4.3 Alternatives Evaluated and Dismissed from Further Consideration

The following alternatives were investigated but after careful evaluation were dismissed from further consideration, and they will not be carried forward for further detailed analysis in this EA.

1.4.3.1 Alternative Routes

The project engineering team evaluated existing streets and various cross-country routes to determine if there were any water line paths that might be preferable from an environmental, land use or cost perspective. There are 41 customers currently connected to the existing 6-inch and 4-inch cast iron water lines on Hanapēpē Road, between Moi Road and Kona Road. They will still require water service after the existing 6-inch and 4-inch cast iron water lines are replaced. Consequently, the HE-10 Hanapēpē Road 6-Inch Main Replacement project has been aligned to parallel these existing 6-inch and 4-inch water lines, within Hanapēpē Road, to reconnect these customers as directly and as close to the replacement water line as possible to minimize disruption of their water service. The proposed route was determined to be the most direct route

to service the appropriate area while avoiding major environmental impacts during construction. Because no other water line routes had advantages in terms of cost, public inconvenience, constructability, etc., no alternative routes have been advanced for study in this EA.

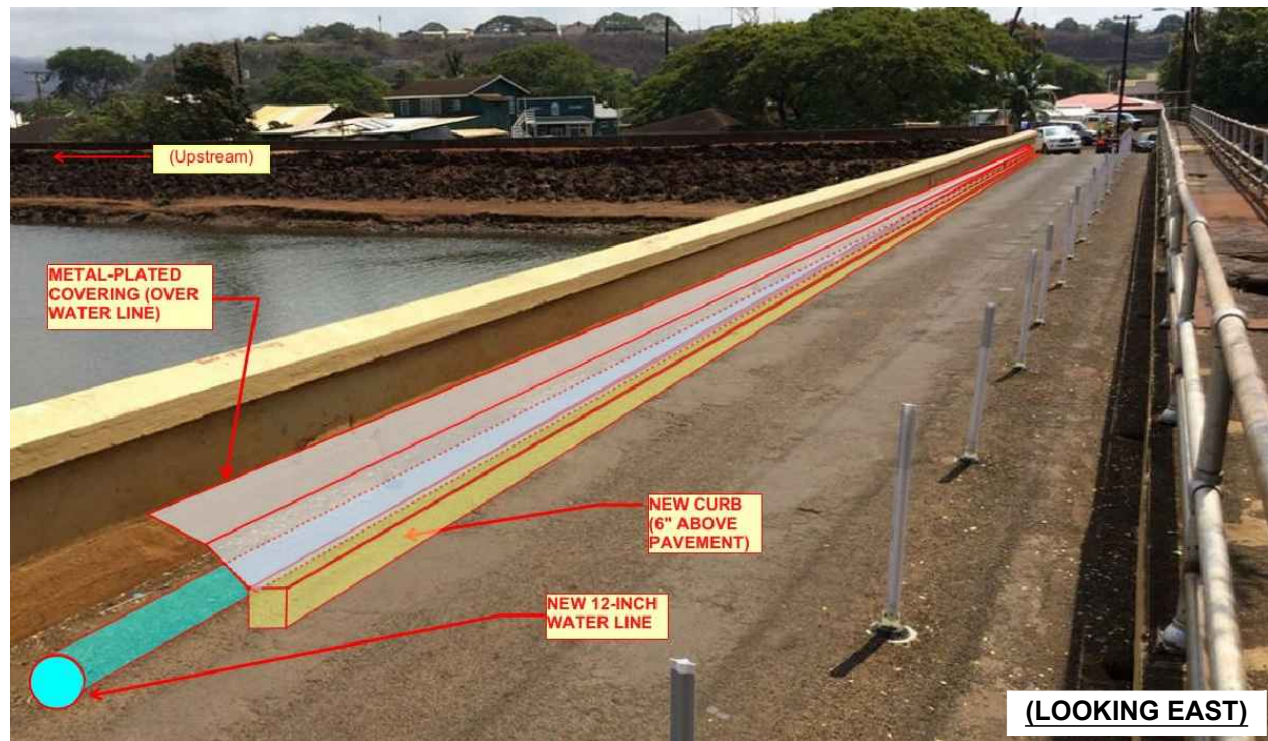
1.4.3.2 Additional Well in ‘Ele‘ele

An additional well in ‘Ele‘ele is a potential alternative to the HE-01 Reorganize Water System component project. As discussed in Section 1.1., the source of water for the combined Hanapēpē and ‘Ele‘ele Water Systems are four wells, three of which are in the valley below ‘Ele‘ele, with the fourth above Hanapēpē Heights. Consequently, all water for the ‘Ele‘ele System must now be supplied via a booster pump that transmits water from the valley floor up to the ‘Ele‘ele Nani Tanks Nos. 1 and 2. The development of new well in ‘Ele‘ele could provide an alternate source of water that would ensure that water can be delivered to ‘Ele‘ele in the event that the facilities that currently convey water to ‘Ele‘ele are out of service.

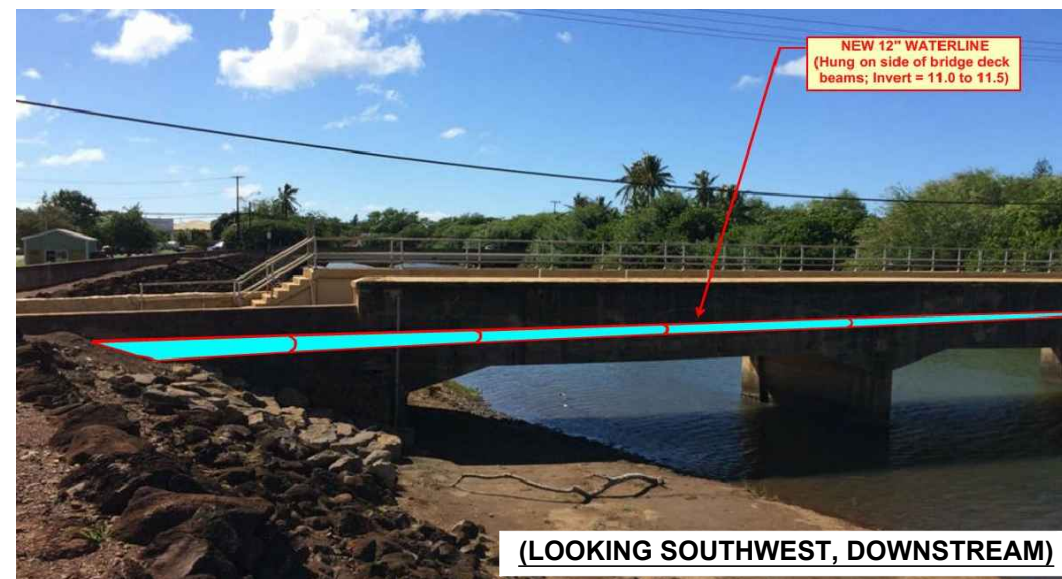
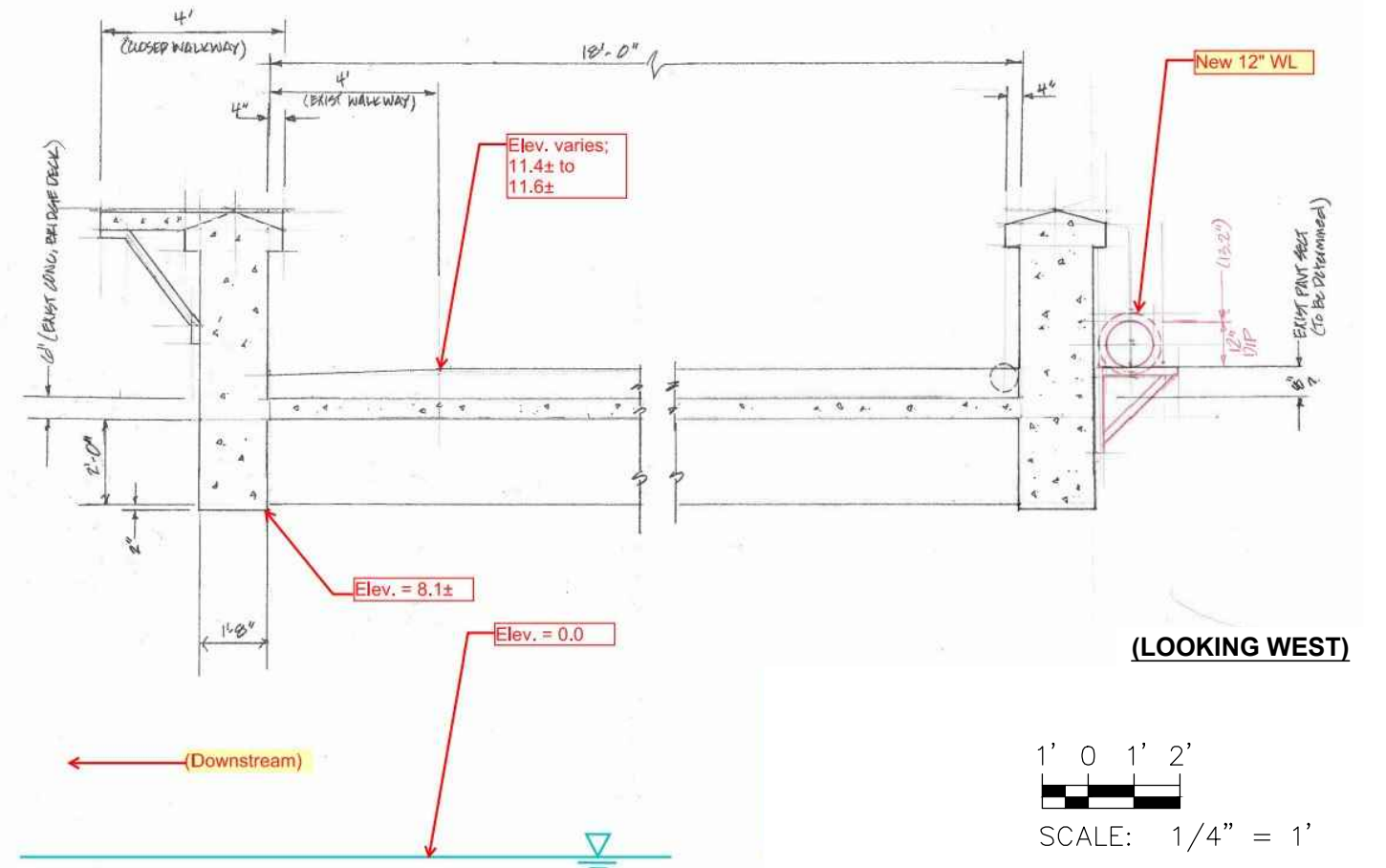
However, the cost of developing a new well is much higher than the cost of interconnecting the systems. Depending on the location of the well, its depth and resultant yield (which varies based on aquifer), the typical cost of well development, inclusive of drilling, testing and outfitting it for production, can range between \$4 and \$6 million, double to triple the cost of the proposed reorganization of the water system. Because the need to be solved at this time does not consist so much of additional water but rather redistributed water, the additional investment would not be prudent. The alternative strategy of providing a new well would not reasonably accomplish the purpose and need objectives of reducing energy use and costs, establishing system redundancy, or addressing aged water line infrastructure that are undersized and increasingly prone to leaks and breakage; therefore, it has not been advanced for further study in this EA.

1.4.3.3 Alternative Design Concepts for Hanapēpē Bridge Crossing

Several design concepts for Hanapēpē Bridge were studied initially and then rejected as not viable. In recognition of the historical significance of the Hanapēpē Bridge to the community, DOW engaged in pro-active consultation with the State Historic Preservation Division (SHPD) and the Kaua‘i Historic Preservation Review Commission (KHPRC). The team presented a number of these design concepts at KHPRC meetings of March 24 and April 28, 2016. These meetings were open to the public and were attended by several Hanapēpē residents. Agendas and minutes of those meetings, which contain information pertaining to those design concepts that were presented, are available for public inspection at the Kaua‘i Planning Department and online at <http://www.kauai.gov/Government/Boards-and-Commissions/Historic-Preservation-Commission>. In addition, as part of this consultation, DOW responded to questions raised by both SHPD and KHPRC, during the April 28, 2016 meeting, in letters dated June 13, 2016 as well as August 22, 2016 to SHPD. Copies of these letters, which provide the best record of the consultation concerning alternative design concepts, are included in Appendix 3. The design concepts were numbered in order of their conceptualization, with variations on basic options further denoted with a letter.



DESIGN CONCEPT 2



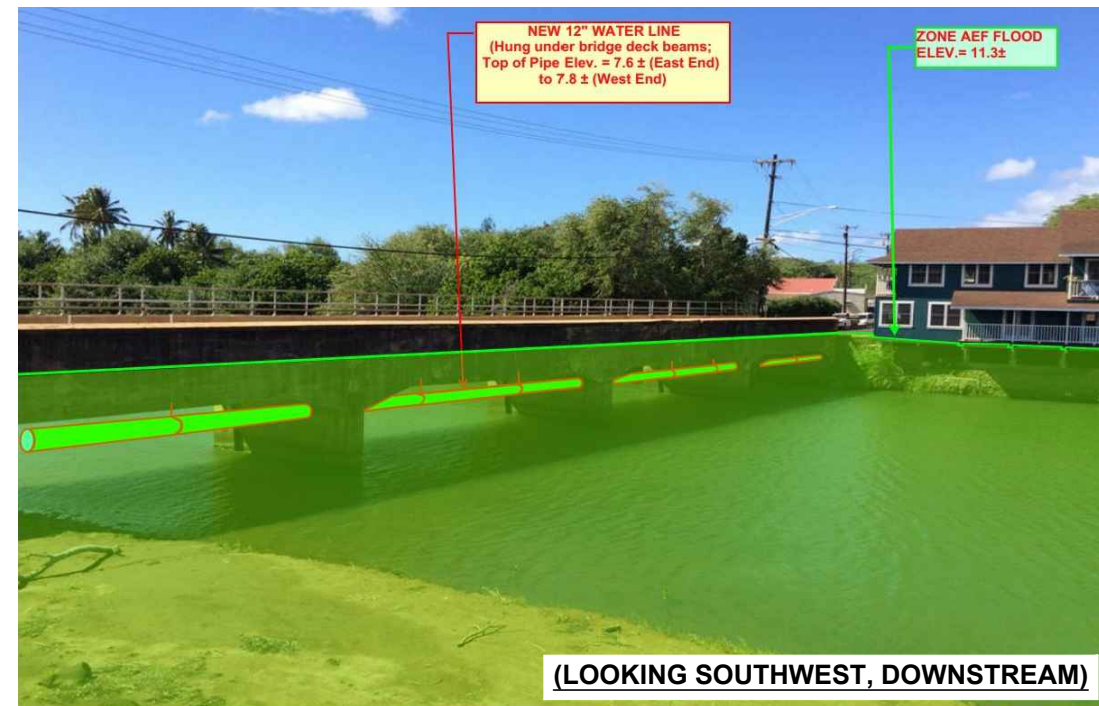
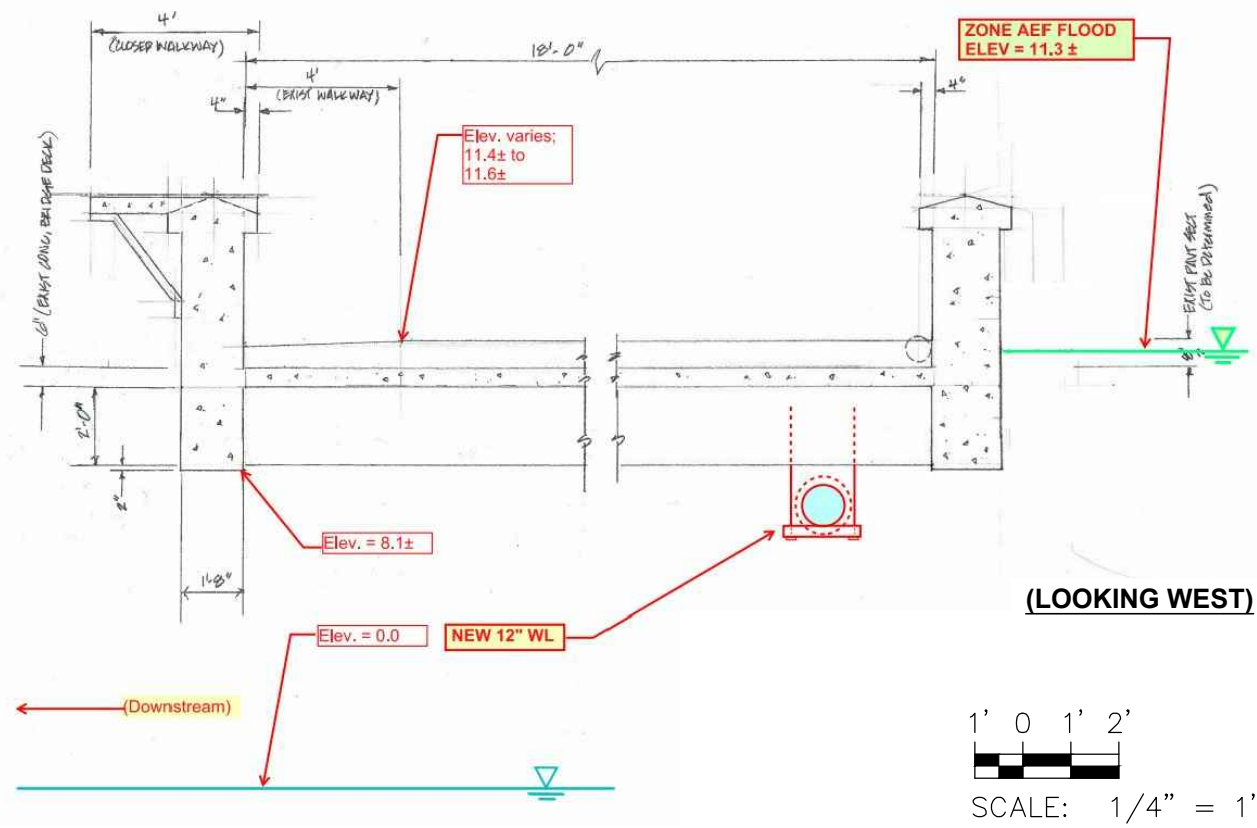
DESIGN CONCEPT 3

HE-01 & HE-10 PIPELINE CONNECTING HANAPĒPĒ & 'ELE'ELE,
HANAPĒPĒ ROAD 6-INCH MAIN REPLACEMENT

HANAPĒPĒ BRIDGE CROSSING DESIGN CONCEPTS CONSIDERED BUT ELIMINATED

FIGURE

1-4



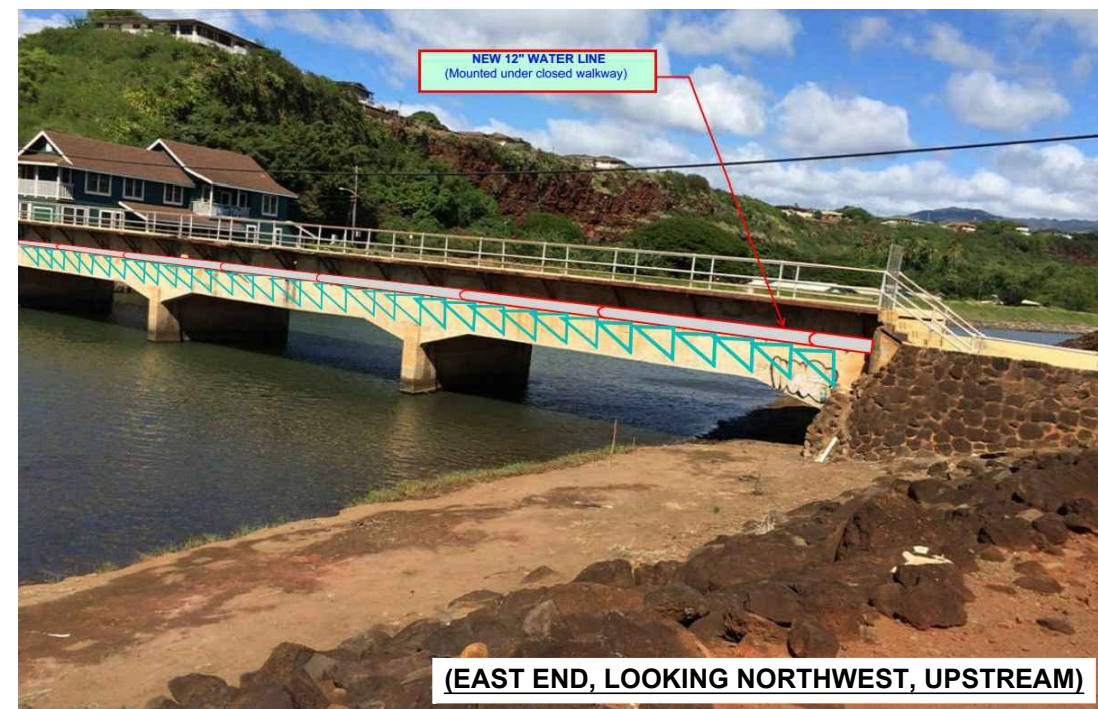
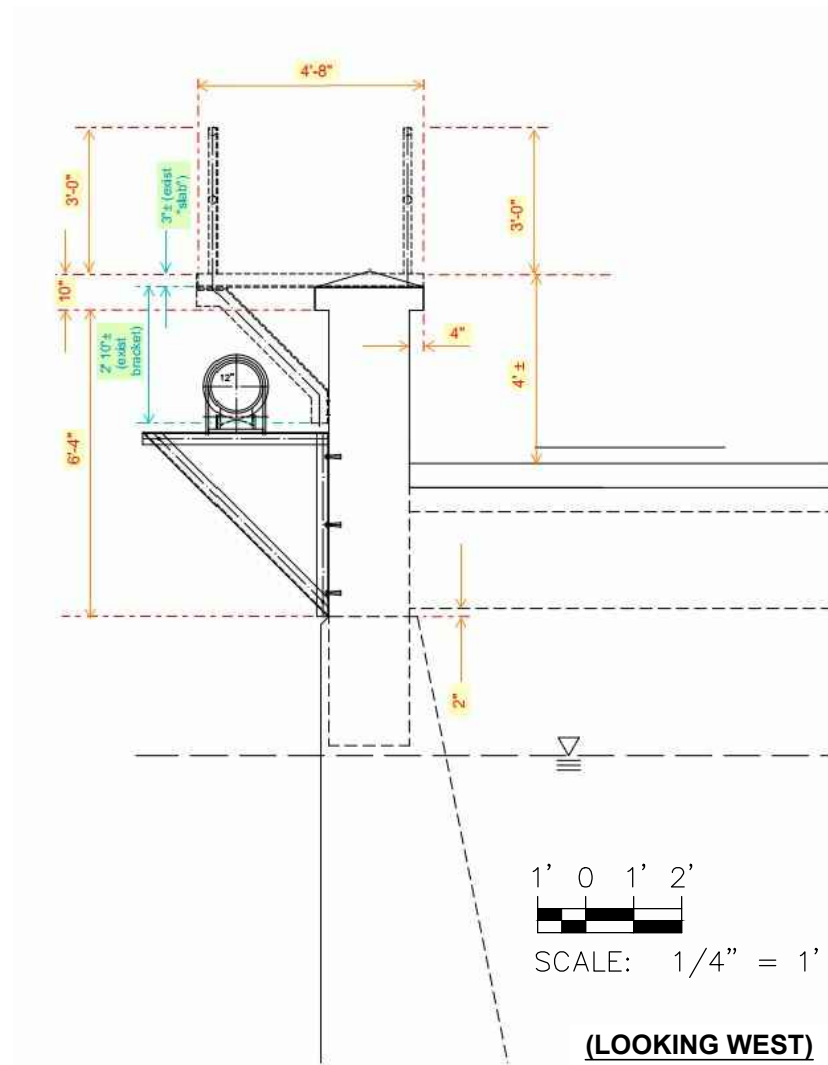
DESIGN CONCEPT 4

**HE-01 & HE-10 PIPELINE CONNECTING HANAPĒPĒ & 'ELE'ELE,
HANAPĒPĒ ROAD 6-INCH MAIN REPLACEMENT**

HANAPĒPĒ BRIDGE CROSSING DESIGN CONCEPTS CONSIDERED BUT ELIMINATED

FIGURE

1-4



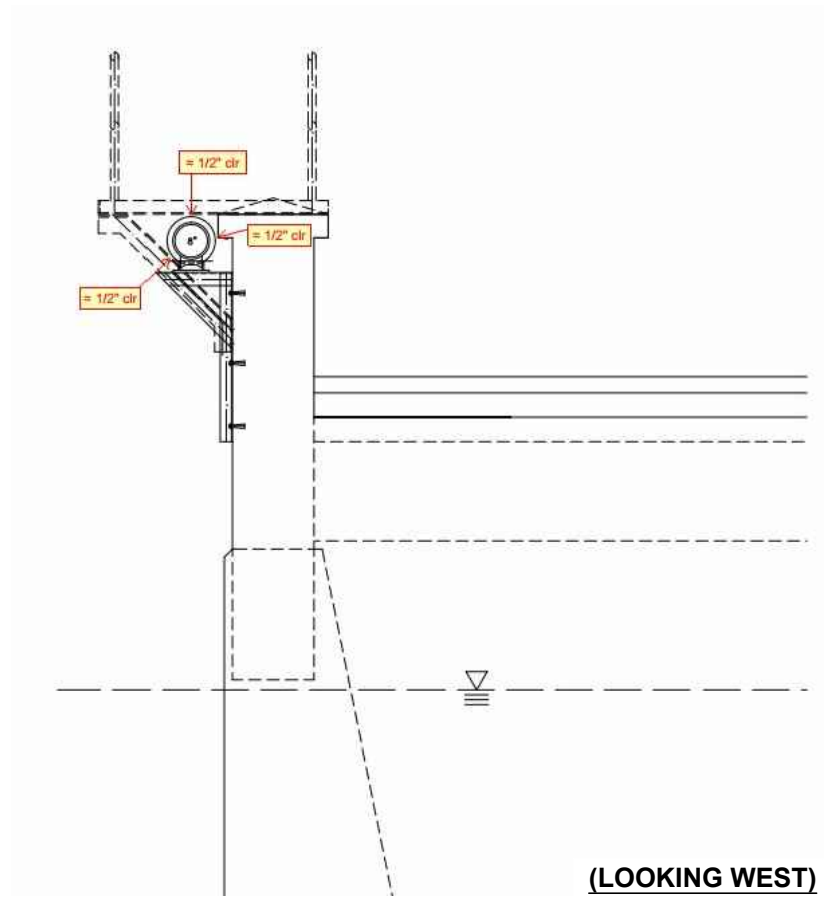
DESIGN CONCEPT 5a

**HE-01 & HE-10 PIPELINE CONNECTING HANAPĒPĒ & 'ELE'ELE,
HANAPĒPĒ ROAD 6-INCH MAIN REPLACEMENT**

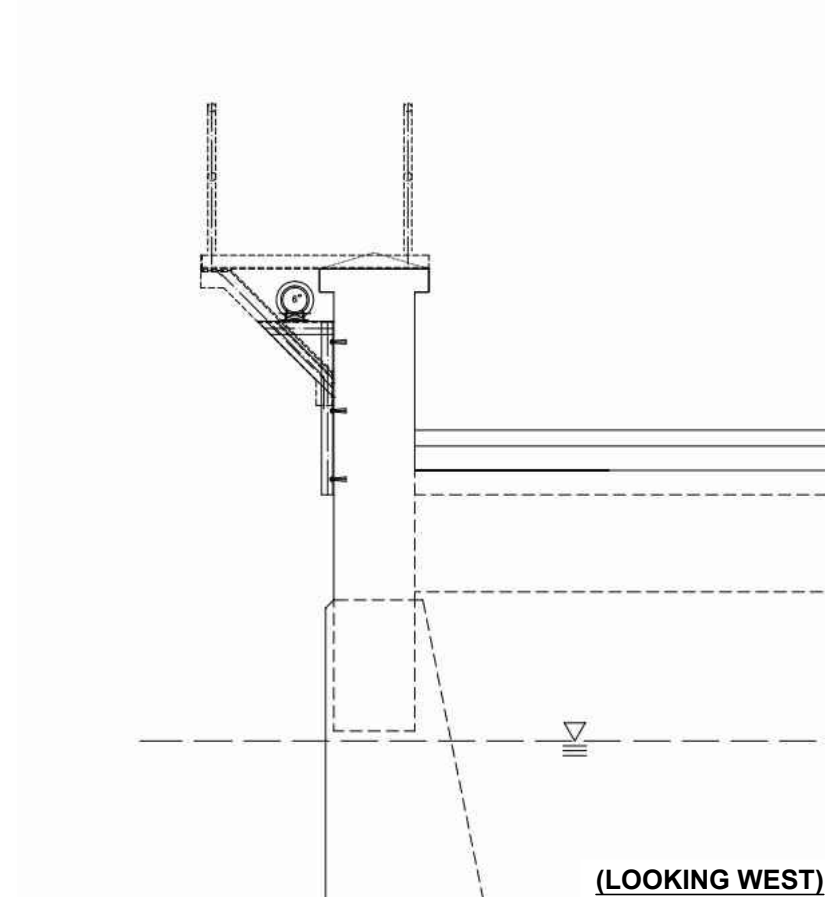
HANAPĒPĒ BRIDGE CROSSING DESIGN CONCEPTS CONSIDERED BUT ELIMINATED

FIGURE

1-4



DESIGN CONCEPT 5b-2



DESIGN CONCEPT 5b-3

HE-01 & HE-10 PIPELINE CONNECTING HANAPĒPĒ & 'ELE'ELE,
HANAPĒPĒ ROAD 6-INCH MAIN REPLACEMENT

HANAPĒPĒ BRIDGE CROSSING DESIGN CONCEPTS CONSIDERED BUT ELIMINATED

FIGURE

1-4

The design concepts that are not being carried forward on depicted in Figure 1-4. Brief descriptions of these concepts and the reasons they are no longer under consideration are presented below.

- Design Concept 2: Install the 12-inch pipeline along and inside of the upstream parapet. Under this concept, the distance from the top of the pipe to the top of the parapet would be less than 42 inches, which is less than the minimum required railing height and presents substantial safety and liability concerns that led to its rejection.
- Design Concept 3: Install the new 12-inch pipeline hung off the upstream side of the bridge, on new brackets that would be drilled and anchored into the bridge structure. DPW informed DOW that the bridge must be strengthened before hanging a water line off the side of it. The scope of the strengthening could not be determined until after the findings of the next biennial bridge inspection, which has not yet been scheduled available. As a result, the strengthening requirements, and when such information will become available, are unknown.
- Design Concept 4: Install the new 12-inch water line under the bridge, entirely penetrating through the abutment walls at each end of the bridge and through the three pier walls in the river. This concept requires a certification that the water line, which is located in a floodway, will not affect the Zone AEF flood elevation. However, the water line would reduce the open area under the bridge and be an obstruction to floodwaters attempting to pass under the bridge. It is clear that the flood elevation will be impacted in some way and therefore such a certification is unobtainable.
- Design Concept 5a: Install the new 12-inch water line, hung off the downstream side of the bridge. The water line would be placed under the existing brackets that currently support an unused walkway that is cantilevered from the bridge parapet over the river, on new brackets that would be drilled and anchored into the bridge structure. This concept was rejected for several reasons. First, it was determined that construction would be extremely challenging and might be infeasible or very expensive for contractors and the DOW. Second, accessing the pipeline under the walkway for repairs would be difficult, and leaks or breaks could remain unrepaired for extended periods of time. As with Concept 3, DOW cannot hang a water line on the side of the bridge until the bridge is strengthened. Finally, this concept would have potentially high visual impacts for viewers downstream of the bridge.
- Design Concept 5b-1: Install the new 12-inch water line, hung off the downstream side of the bridge, through the existing brackets that currently support an unused walkway that is cantilevered from the bridge parapet over the river. This concept was discarded since it was determined that a 12-inch pipe will not fit within the available space between the bracket legs.

Hanapēpē-‘Ele‘ele Water Systems Improvements

- Design Concept 5b-2: Install an 8-inch rather than 12-inch water line, hung off the downstream side of the bridge, through the existing brackets that currently support an unused walkway that is cantilevered from the bridge parapet over the river. This concept was discarded because it was determined that an 8-inch pipe would only barely fit within the available space between the bracket legs. Furthermore, hydraulic analysis of the water system pressures required for fire-fighting, in the Port Allen area indicated that an 8-inch water line would be less than the 20-psi minimum required by current DOW Water System Standards. This would have posed a health and safety risk. Finally, DOW cannot hang even an 8-inch water line on the side of the bridge until the bridge is strengthened, as discussed for Design Concept 3.
- Design Concept 5b-3: Install a 6-inch rather than 12-inch water line, hung off the downstream side of the bridge, through the existing brackets that currently support an unused walkway that is cantilevered from the bridge parapet over the river. Although a 6-inch water line could be accommodated in the space between the bracket legs, the design concept was inadequate for fire flow requirements.
- Design Concept 6: Leave the existing 6-inch cast-iron water line, on the bridge, in place. This would have resulted in costly maintenance and was also inadequate for fire flow requirements.
- Design Concept 7a: Install an 8-inch rather than 12-inch water line across the bridge. Hydraulic analysis indicated that this concept was also inadequate for fire flow requirements.
- Design Concept 7b: Leave the existing 6-inch CI water line in place, and add a new 6-inch water line on the bridge (i.e. have two 6-inch water lines on the bridge). In addition to the need for maintenance on the older water line and the potential for greater rather than lesser visual impact, the concept also failed for the hydraulic analysis test.
- Design Concept 7c: Leave the existing 6-inch CI water line in place, and add a new 8-inch water line on the bridge (i.e. have two water lines on the bridge; a 6-inch water line along with an 8-inch water line. This concept was rejected for the same reasons as Design Concept 7b.
- Design Concept 8: Routing the pipe underneath the Hanapēpē River via horizontal directional drilling (HDD) or micro-tunneling (MT). This concept would have the advantage of no physical contact with Hanapēpē Bridge. However, in order to avoid interference with potential future bridge pilings that could be associated with future DPW bridge repair or rehabilitation projects, it might be necessary to route the tunnel outside the bridge ROW. This would necessitate negotiations to acquire additional easements from adjacent landowners, Alexander and Baldwin Hawaii Inc. for the land under the

Hanapēpē-‘Ele‘ele Water Systems Improvements

river itself, and the State of Hawai‘i at each river bank. Moreover, there would be further significant delays because of the extensive additional permit needs. The HDD/MT options would require two separate USACE Section 10 River and Harbor Permits, one for conducting geotechnical exploration (drill borings) along the route in the river, before design, and another for the actual HDD or MT work under the river. Furthermore, a USACE Section 408 permit would be required for the HDD or MT work under the levee, which would have to be approved at the USACE Regional Headquarters in Washington D.C., which involves a lengthy review process.

- Design Concept 9. Another alternative to installing the new 12-inch water line across the Hanapēpē Bridge was to go completely around the bridge. A route was considered that would take the water line from Hanapēpē Road along Pū‘olo Road to Kaumuali‘i Highway, where it would cross the Hanapēpē River Bridge on Kaumuali‘i Highway, and then return to Hanapēpē Road along Iona Road. This route was considered at the suggestion of SHPD, which informed the project team a National Historic Preservation Act Section 106 Memorandum of Agreement (MOA) with the State Department of Transportation, Highways Division (DOT) along with the Federal Highways Administration (FHWA). The MOA is in relation to the Federal Aid Hanapēpē River Bridge ((HI STP SR50 (1)) project, which proposes to completely replace the existing bridge across the Hanapēpē River at Kaumuali‘i Highway (discussed in more details in Section 3.4 below). SHPD proposed that the MOA for the Federal Aid Project include the requirement for the DOT and/or FHWA to pay for the installation of a new water line on the Kaumuali‘i Highway Bridge. This new water line would substitute for, and allow elimination of, the water line crossing the Hanapēpē Bridge. However, the proposal would also require the water lines listed above on Pū‘olo Road and Iona Road, with significant added cost. Furthermore, the schedule for construction of the Federal Aid project significantly trails that of the DOW project to install the 12-inch waterline on Hanapēpē Bridge. The length of time necessary to coordinate acquisition of funding to design this alternative route, establish governmental roles and obligations, initiate and complete its design, and determine responsibility for the added cost, would increase and extend this lag time. The cumulative delays resulting from these factors would postpone the full and final connection of the project by several years .and during this duration the fire flows at Port Allen would not be in compliance with current DOW Water System Standards. For this reason, this alternative was removed from further consideration.

1.5 Relationship to Government Plans and Policies

The project is specifically called for in various plans and is highly consistent with government plans and policies, which in general call for water systems that meet the needs of residents, support planned growth, achieve efficiency, minimize the use of energy and avoid environmental degradation. The following sections discuss consistency with key plans.

1.5.1 Hawai‘i State Plan

The Hawai‘i State Plan was adopted in 1978. It was revised in 1986 and again in 1991 (Hawai‘i Revised Statutes, Chapter 226, as amended). The Plan establishes a set of goals, objectives and policies that are meant to guide the State’s long-term growth and development activities. The proposed project is consistent with State goals and objectives that call for increases in employment, income and job choices, and a growing, diversified economic base extending to the neighbor islands.

The sections of the Hawai‘i State Plan most relevant to the proposed project are centered on the theme of facility systems. The following objectives and policies are taken from the section dealing with water development.

- Objective a): Planning for the State’s facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational and other needs within resource capacities.
- Objective b): To achieve the facility systems water objective, it shall be the policy of this State to:
 - (1) Coordinate development of land use activities with existing and potential water supply.
 - (2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.
 - (3) Reclaim and encourage the productive use of runoff water and wastewater discharges.
 - (4) Assist in improving the quality, efficiency, service and storage capabilities of water systems for domestic and agricultural use.
 - (5) Support water supply services to areas experiencing critical water problems.
 - (6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.

The proposed project supports relevant objectives and policies of the Hawai‘i State Plan.

1.5.2 Hawai‘i State Water Plan

The State Water Code, Chapter 174C, HRS, recognizes the need for a program of comprehensive water resources planning to address the problems of supply and conservation of water and establishes the Hawaii Water Plan as the guide for implementing this policy. The Hawai‘i Water Plan consists of five constituent parts: 1) a Water Resource Protection Plan (2008) which is prepared by the Commission on Water Resource Management (CWRM); 2) a Water Quality Plan (1990), which is prepared by the Department of Health; 3) a State Water Projects Plan (2003),

Hanapēpē-‘Ele‘ele Water Systems Improvements

which is prepared by the Engineering Division of the Department of Land and Natural Resources; 4) an Agricultural Water Use and Development Plan, which is prepared by the Department of Agriculture (2004); and 5) Water Use and Development Plans prepared by each separate county, which, for Kaua‘i, was developed in 1990 and is in the process of being updated (see Section 1.6.3, below).

The Water Resource Protection Plan and the Water Quality Plan provide the overall legal and policy framework that guide the development, conservation, and use of water resources. The State Water Projects Plan and Agricultural Water Use and Development Plan provide information on State and agricultural water needs and development plans. All this information is then integrated into the County Water Use and Development Plans (WUDP), which set forth the broad allocation of land to water use within each county. As the proposed project does not involve agricultural water for which the Agricultural Water Use and Development Plan is relevant, and is not being conducted by the State to support its State Water Projects Plan, these two plans are not discussed further.

Water Resource Protection Plan (WRPP)

The objective of the Water Resource Protection Plan (WRPP) is to protect and sustain ground and surface water resources, watersheds, and natural stream environments statewide. Such protection requires a comprehensive study of occurrence, sustainability, conservation, augmentation and other resource management measures.

Specifically, the State Water Code provides that the WRPP shall include, but not be limited to:

- Nature and occurrence of water resources in the State;
- Hydrologic units and their characteristics, including the quantity and quality of available resource, requirements for beneficial instream uses and environmental protection, desirable uses worthy of preservation by permit, and undesirable uses for which permits may be denied;
- Existing and contemplated uses of water, as identified in the water use and development plans of the State and the counties, their impact on the resources, and their consistency with objectives and policies established in the water resource protection quality plan; and
- Programs to conserve, augment, and protect the water resource.

The 556-page plan presents an abundance of background information, data, policies and recommendations. Of most relevance for the proposed action are the following goals and objectives:

- Foster the collaborative development, implementation, and update of short- and long-range plans for conserving and augmenting water supplies.
- Promote coordination and cooperation among agencies and private entities.
- Provide guidance, assistance, and oversight in the establishment, development, and

Hanapēpē-‘Ele‘ele Water Systems Improvements

- implementation of statewide water conservation and augmentation programs.
- Promote the utilization of the best available information and technology in planning and implementing conservation and augmentation projects.
 - Provide the regulatory and planning framework for integrating resource conservation and augmentation into a comprehensive water management program.
 - Support county and community-based conservation efforts by providing information resources and advisory assistance.
 - Improve efficiency in use and reduce losses and waste of water.

In relation to the proposed project, these goals are being met through development of a more energy efficient and resilient transmission system.

Water Quality Plan (WQP)

The Department of Health (DOH) is responsible for the preparation of the Water Quality Plan (WQP). The WQP outlines the regulations, standards, and resource management policies that define the quality to be maintained in ground- and surface-water resources, such as:

- Federal/state/county goals, objectives, and policies related to water quality.
- Water quality criteria for designation of water management areas.
- Water quality standards, monitoring requirements and enforcement provisions.
- The identification of any substances which DOH reasonably believes may present a danger to the water quality of the State.

The DOH is currently undertaking numerous program efforts that will contribute to the update of the WQP. Such programs include the Source Water Assessment Program (SWAP), and various other water quality efforts, including the surface water studies regarding total maximum daily loads and identification of impaired water bodies. Results of these ongoing program efforts, such as SWAP, will be outlined in an updated WQP.

The proposed Hanapēpē-‘Ele‘ele Water Systems Improvements project is consistent with the WQP in that it maintains and protect the quality of water in an existing system.

1.5.3 Kaua‘i Water Use and Development Plan and Water Plan 2020

State law requires each county to prepare, periodically update, and adopt by ordinance a Water Use and Development Plan (WUDP) to serve as the long-range planning blueprint for all uses of water in each county. Each plan must be approved by the CWRM. Each county in Hawai‘i prepared and approved a WUDP for the year 1990. The 1990 County of Kaua‘i WUDP is the latest plan that has been completely adopted.

The WUDP is meant to aid CWRM in granting permits for water use and designating water management areas, as well as serving as a reference document of current and future water

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resource conditions. It includes an inventory of existing water uses and developments by hydrologic units, addresses future land uses and related water needs, and is consistent with State and County land and water policies. This plan also guides DOW in future operations and to identify the improvements and facilities required to continue to provide safe, affordable and reliable water service to the island of Kaua‘i in a sustainable and financially secure manner.

The 1990 WUDP indicated that the Hanapēpē-‘Ele‘ele area had very modest urban zoning compared to other parts of the island and thus much smaller demands for potable water, as well as low growth potential. The plan called for one well, two reservoirs and 13,000 lineal feet of transmission line in the Hanapēpē-‘Ele‘ele system to improve source, storage and transmission. The DOW is in the process of updating its WUDP. Initial findings are that development under existing County zoning or the Kaua‘i General Plan is highly unlikely to approach even a tenth of sustainable yield in this area (see Section 3.1.2, below, for discussion of aquifers). The proposed project is not being proposed to address issues of source or storage but rather to increase the efficiency of transmission.

In 2001, the DOW and members of the Kaua‘i Water Board completed a 20-year plan known as *Water Plan 2020*. This is a comprehensive, long range planning effort, to ensure that the agencies continue to provide safe, affordable and sufficient drinking water in the 21st century for the community. The plan reviews existing facilities, and service standards and provides an outline for new and replacement facilities, a capital improvement program for the next five to seven years, a financial plan, and a rate study. The *Water Plan 2020* is focused on potable water, used for drinking and fire protection. It addresses the sources, infrastructure, and funding needed to deliver potable water. The plan does not cover issues involving water for agriculture, stream standards, and watershed management, as these are addressed by other state and local planning and regulatory processes.

The proposed Hanapēpē-‘Ele‘ele Water Systems Improvements would decrease energy consumption and reduce energy costs to DOW customers, while also optimizing the function of the Hanapēpē and ‘Ele‘ele Water systems by providing critical redundancy. The County of Kaua‘i’s *Water Plan 2020* specifically identifies the project as needed.

1.5.4 Kaua‘i General Plan

The *Kaua‘i General Plan* was adopted in November 2000 and provides broad policy statements to guide land use regulations, new developments and facilities, and planning for County facilities and services (County of Kaua‘i 2000). The General Plan employs projections of employment and population to 2020 in forecasting land supply and infrastructure needs and, subsequently, in developing land use plans and long-range plans for public facilities and services.

Chapter 6 of the General Plan addresses (1) the special community assets of each planning district; (2) a preliminary vision for each planning district; (3) the particular issues and opportunities facing towns and communities; and (4) the location and character of

Hanapēpē-‘Ele‘ele Water Systems Improvements

recommended future residential and commercial growth.

“ ‘Ele‘ele and Hanapēpē are the gateway to the West Side. As Kaunualii Highway turns south and descends from the uplands of Kalāheo, views of the ocean open up together with views of the Hanapēpē River valley. Over the years, residential developments in ‘Ele‘ele and on Hanapēpē Heights have brought more families to the area. ‘Ele‘ele businesses serve local residents, while visitors are especially attracted to Old Hanapēpē Town. The historic character of the town is cultivated through careful renovation of historic buildings and appropriate design of new buildings. Hanapēpē is a center for artists and craftspeople, offering numerous shops, galleries, and restaurants.”

The General Plan identifies issues could be viewed as opportunities for the area, noting that residents place a high value on their historic small towns and local businesses, which are found in several common characteristics:

- Historic buildings.
- Direct access from the highway or an arterial road.
- Buildings built up to the property line, with entrances directly from the public sidewalk.
- Buildings enclosing a small-scale “public space” consisting of the roadway, on-street parking, sidewalks, and storefronts.
- A variety of small storefronts along the sidewalk creating an interesting pedestrian experience.

Chapter 3 of the General Plan outlines the tools and policies relating to land, waters and culture – resources which are the heritage of the people of Kaua‘i. Heritage resources are “...connected to physical features or structures, but they also entail less tangible qualities like cultural meaning, historic significance, and the visual experience of the environment.” It is the policy of the County of Kaua‘i that projects undertaken with State or County lands or funds shall be designed to conserve heritage resources. Within Hanapēpē-‘Ele‘ele, the Heritage Map for the West Side notes that the historic town of Hanapēpē, with historic structures and the Swinging (pedestrian) Bridge called out. In the West Side Land Use Map of the General Plan, the project corridor has a land use of roadways, while surrounding areas are primarily designated for uses associated with “town centers.” Other land use designations in the area include residential and agricultural.

The proposed project is completely consistent with all aspects of the General Plan, in that it would not affect heritage resources, would ultimately promote the vibrancy of the Hanapēpē historic town center (although there would be some temporary adverse effects during construction), and would promote more effective, reliable and energy efficient water service for all users.

2 ENVIRONMENTAL ASSESSMENT PROCESS

The project involves the use of County of Kaua‘i and State of Hawai‘i lands, as well as County of Kaua‘i funds with a reimbursement from a State General Obligation Bond Fund Appropriation. As such, the undertaking requires compliance with Chapter 343, Hawai‘i Revised Statutes (HRS), the Hawai‘i Environmental Policy Act (HEPA). The County of Kaua‘i, Department of Water (DOW) is the proposing and approving agency for this Environmental Assessment (EA).

HEPA was enacted by the Hawai‘i State Legislature to require State and County agencies to consider the environmental impacts of various actions as part of the decision-making process. Agencies are required to conduct an investigation and evaluation of alternatives as part of the environmental impact analysis process, prior to making decisions that may impact the environment. The implementing regulations for HEPA are contained in Title 11, Chapter 200, Hawai‘i Administrative Rules (HAR).

This Environmental Assessment (EA) process was conducted in accordance with HEPA. According to HEPA and its implementing regulations, a Draft EA is prepared to document environmental conditions and impacts, to develop mitigation measures that avoid, minimize or compensate for adverse environmental impacts, and determine whether or not an action has significant impacts upon the environment. Impacts are evaluated for significance according to thirteen specific criteria as presented in HAR 11-200-12. If no significant impacts are expected, then a Final EA with a Finding of No Significant Impact (FONSI) may be issued and the project may proceed towards necessary permits. When the Draft EA determines that significant impacts are present, then the Final EA facilitates preparation of an Environmental Impact Statement (EIS).

The EA process for this project includes early consultation with agencies and organizations. Letters from these agencies are contained in Appendix 1a.

3 ENVIRONMENTAL SETTING AND IMPACTS

This section describes the existing social, economic, cultural, and environmental conditions surrounding the proposed project along with the probable impacts of the proposed action and mitigation measures designed to reduce or eliminate adverse environmental impacts. For many categories, the No Action Alternative would result in no impacts. Therefore, unless explicitly mentioned, discussion of impacts and mitigation relates to the proposed project only.

3.1 Physical Environment

3.1.1 Geology, Soils and Hazards

Existing Environment, Impacts and Mitigation Measures

Kaua‘i, the oldest and fourth largest of the eight main Hawaiian Islands, with a land area equaling approximately 552 square miles, was formed from one great shield volcano (Macdonald et al. 1983:458-461). At one time, this vast volcano supported the largest caldera in the islands, horizontally extending 10 to 14 miles across. Mt. Wai‘ale‘ale, forming the central hub of the island, extends 5,066 feet above mean sea level. Topographically, Kaua‘i is a product of heavy erosion with broad, deep valleys and large alluvial plains, as exemplified by the setting present in the ‘Ele‘ele-Hanapēpē area. A portion of the water line route between Waialo Road and Hanapēpē Road is located on the side of a moderately sloped gulch, but the slope is reasonably stable. The remainder of the project site is on the alluvial plain of the Hanapēpē River.

The U.S. Department of Agriculture, Natural Resources Conservation Service classifies the soil along the water line corridors within three categories: Rough Broken Land for the southern portion of the water line from Waialo Road north to Hanapēpē Road, with a small area of Makaweli Silty Clay Loam, and primarily Pakala Clay Loam in the remainder of the route, with some areas of Hanalei Silty Clay Loam. Rough Broken Land is a miscellaneous soil type found on sloped terrain within gulches, often formed from the colluvium that collects as gulches slough off their sides due to erosion. It is generally well drained and with the use of the appropriate heavy equipment poses no major obstacles to excavation for water line construction. The other three soils are formed in the alluvium from streams and are found in flatter areas. They are good soils for agriculture, although the Hanalei soil is more subject to flooding and is poorly drained. With proper engineering, these soils are suitable for having water lines.

Seismic hazards are related to ground shaking. Engineers, seismologists, architects, and planners have evaluated seismic hazards related to building construction and devised a system of classifying seismic hazards on the basis of the expected strength of ground shaking and the probability of the shaking actually occurring within a specified time. The entire island of Kaua‘i has an extremely low seismic hazard rating, and seismic activity is not a major concern for water line construction here. (<http://earthquake.usgs.gov/earthquakes/states/hawaii/hazards.php>).

In general, soil and geologic conditions impose no constraints on the project. Mass wasting and unstable slopes are not a major concern here, and no mitigation measures are expected to be required. The design for the water lines will be appropriate to the seismic setting and in conformance with the latest Uniform Building Code.

3.1.2 Water Resources

Existing Environment

The major stream in the Hanapēpē-‘Ele‘ele area is the Hanapēpē River. Called Hanapēpē Stream farther up its channel, the stream is 20.69 miles in length, with several tributaries. It has a drainage area of almost 20 square miles that extends as high as the 4,000-foot elevation on the south slope of Mount Waialeale. Much of the flow was long ago diverted for sugar cane plantations (Hawai‘i State CWRM 1990). The portion of the river crossed by Hanapēpē Bridge is some 3,000 feet upstream from the sea but still estuarine, influenced by ocean waters and the tide. The channels are lined with rip-rap and there is an artificial levee to protect low-lying areas of Hanapēpē from flooding, as discussed below in Section 3.1.3. The Hanapēpē River is the only named stream feature in the project area, although there are various man-made agricultural ditches and drainage channels that crisscross the Hanapēpē-‘Ele‘ele area.

In the Hawaiian Islands, precipitation that is not lost through evapotranspiration or conducted through streams into the ocean percolates into the ground to collect in the aquifers under the island before slowly making its way to the sea. As streams in Hawai‘i are generally flashy or even ephemeral, underground water is the most reliable source of water supply, because there is less daily or seasonal change in water tables. Water may be trapped between vertical confining layers such as dikes or perched above horizontal confining layers such as volcanic ash soil, forming high level aquifers. This water may overflow, creating natural streams or springs.

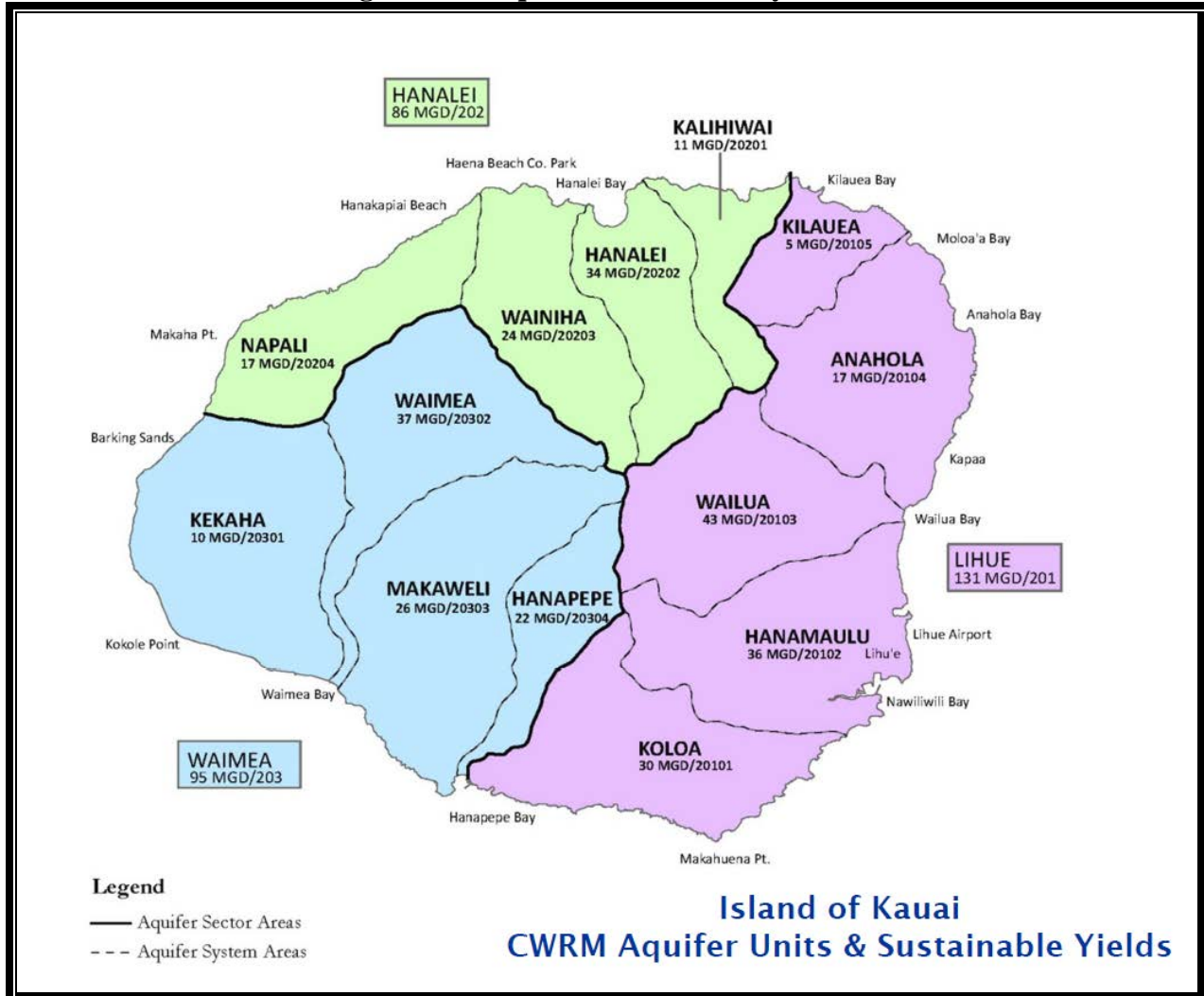
If water continues to diffuse through the layers of rock, sand, soil and gravel, it will reach sea level. Fresh water has a lower density than seawater and will float on the salt water. Most of the fresh water lies below sea level, shaped much like a lens. This fresh water is the source of much of the groundwater available in the State, and vast quantities of water are maintained in the basal freshwater lens, which “floats” on the salt-water permeated rock below. Due to the difference in densities, for every foot the lens extends above sea level it extends 40 feet below sea level, although the lower areas contain a zone of mixing. Basal water tables have inland gradients that can rise as much as four feet per mile in high rainfall areas.

Overlaid on the geographical subdivisions used by DWS in producing and distributing water are groundwater regulatory areas. The State Commission on Water Resources Management (CWRM) classification of aquifers locates this part of Kaua‘i within the Hanapēpē Aquifer System, Code 20304 (Fig. 3-1). This coding refers to Kaua‘i Island (2), Waimea Aquifer Sector (03), and Hanapēpē Aquifer System (03). The surface boundaries of the aquifer encompass the

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Hanapēpē District, which is essentially the drainage basin of the Hanapēpē River and its tributaries, extending to the south slope of Mt. Waialeale. Previous studies have estimated the sustainable yield of this hydrologic unit at approximately 22 million gallons per day (mgd), although it is recognized that CWRM sustainable yield estimates for this and other aquifers in the State of Hawai‘i are usually very rough estimates.

Figure 3-1. Aquifer Sectors and Systems



Source: Hawai‘i State Commission on Water Resources Management

Impacts and Mitigation Measure

Given the crossing of the water line on the deck of the Hanapēpē Bridge, the project does not appear to affect any body of water defined as a water of the U.S., including streams, tidal ponds, or associated wetlands. The U.S. Army Corps of Engineers has been consulted as part of the EA

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process to confirm the lack of effect to waters of the U.S. The project does not involve additional withdrawal of water from the aquifer or activity within or near a stream, aside from the water line crossing Hanapēpē Bridge.

Water quality in receiving waters and the groundwater will be protected by Best Management Practices that will be required during construction. In any project, uncontrolled excess sediment from soil erosion during and after excavation and construction has the potential to impact natural watercourses, water quality and flooding potential. Contaminants associated with heavy equipment and other sources during construction may also impact receiving streams, the ocean and groundwater. Provisions will be made during the construction grading and earthwork to minimize the potential for soil erosion and off-site sediment transport. A Pollution Control Plan and a Stormwater Pollution Prevention Plan will be implemented as part of a County of Kaua‘i Grading Permit and a National Pollutant Discharge Elimination System (NPDES) permit, to ensure that the proposed improvements do not cause drainage or water quality impacts. Best Management Practices (BMPs) such as standard soil erosion and sediment control shall be implemented. These will include the following measures:

- Limiting the amount of surface area graded at any given time to reduce the area subject to potential erosion;
- Utilizing soil erosion protective materials such as mulch or geotextiles on areas where soils have a high potential for erosion until permanent provisions such as lawns and grasses can be developed;
- Planting vegetation as soon as grading operations permit to minimize the amount of time soils are exposed to possible erosion;
- Encircling active work areas, in this case the trenches for water line installation, with a continuous lengths of compost filter sock;
- Placing compost filter sock downslope of work areas prior to existing approaches to existing drainage ways including the lined channel west of Moi Road and at the west end of the Hanapēpē Bridge;
- Installing sediment control devices at all existing drain inlets adjacent to, and directly downstream of, work areas. This includes but is not limited to the existing grated inlets on Hanapēpē Road and Kaumuali‘i Highway and the existing scuppers on Hanapēpē Bridge; and
- Constructing silt fencing along the downhill side of the critical segments of work including, but not limited to, the area on either side of the abandoned rail-road underpass at Kaumuali‘i Highway.

DOW will also require the contractor(s) to apply for and obtain NPDES permit(s) for dewatering, if needed, which must contain appropriate methods for treatment and/or disposal of dewatering effluent that must meet DOH approval.

3.1.3 Floodplains

Existing Environment

Floodplain status for the area has been determined by FEMA, the Federal Emergency Management Agency (Fig. 3-3). Most of the water line route is either within Zone X, outside the 500-year floodplain, or within Zone X – Protected by Levee, as Hanapēpē town is protected by levees from flooding. A portion of the route for the HE-10 Water Line Replacement component project is within Zone AEF, where it crosses the Hanapepe Bridge, and small segments of the route for HE-01 Reorganize Water System component project are within Zone AE. Zone AE is defined as area inundated by 1% annual chance flooding, for which Base Flood Elevations (BFE) have been determined. Zone AEF consists of floodway areas in Zone AE, which is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

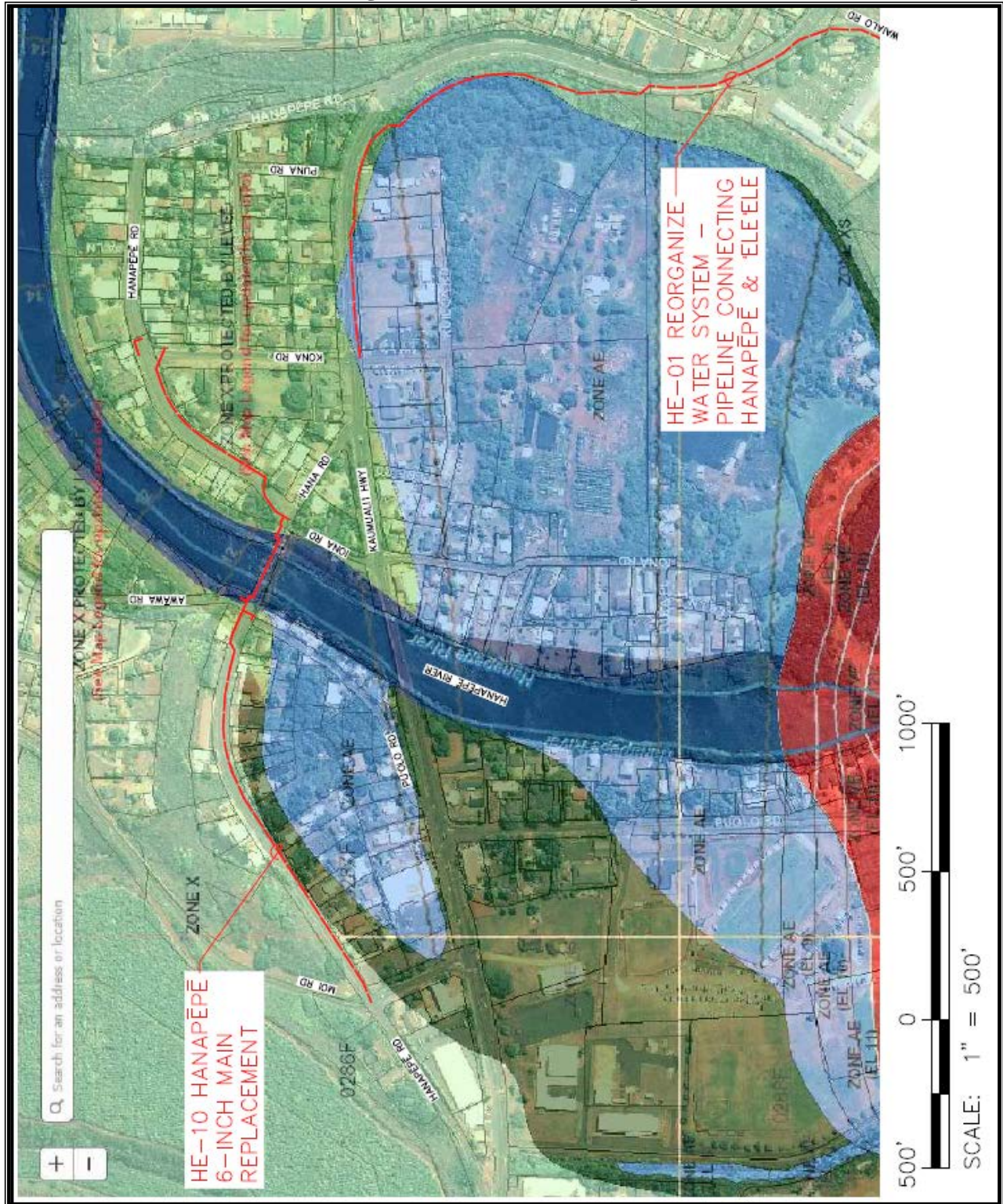
Impacts and Mitigation Measures

In accordance with the setting with designated floodplains, the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR). This regulation requires that “...substantial improvements . . . within Zones AE . . . (must) be designed . . . with the capacity of resisting hydrostatic and hydrodynamic loads.” The project crosses the Hanapēpē River on the deck of the Hanapēpē Bridge, above the level of the 100-year flood stage, and therefore these requirements do not apply.

In regard to HE-10 Water Line Replacement component project, in a letter dated April 4, 2016 to the consultant engineer Akinaka and Associates, the State DLNR, Engineering Division, indicated that compliance with the NFIP regulations and County Floodplain Management Ordinances must be certified by the designer. A subsequent letter dated April 18, 2016 from the Floodplain Manager of the County of Kaua‘i, Department of Public Works, informed Akinaka and Associates, Ltd. that “. . . as long as the water line over the river is being placed on the existing bridge and the rest of the water line will be underground, there are no special flood requirements for the design of the project”, confirming that these requirements do not apply.

Furthermore, 44 CFR requires that “...within flood-prone areas new and replacement water systems (must) be designed to minimize or eliminate infiltration of flood waters into the systems.” The HE-01 Reorganize Water System project component does not involve any customer service connections to the water line, and the water line will be installed with the joints sealed with gaskets and made watertight. The project should thus be compliant with this portion of the regulations.

Figure 3-3. Flood Zone Map



In any case, the project is being reviewed by the County of Kaua‘i Department of Public Works to ensure compliance with all County Floodplain Management Ordinances associated with the location of portion of the project within a floodzone. It is expected that the project will not affect the BFE and will be confirmed to be in compliance with the County of Kaua‘i’s Floodplain Management Ordinance.

No impact to flooding or flood zones would occur with development of the project. The project will add very minimally if at all to the area of impermeable surface and will not adversely affect drainage.

3.1.4 Climate and Air Quality

Existing Environment

The climate of the Hanapēpē-‘Ele‘ele area is warm and semi-arid due to its location in the lowlands on the leeward side of the island. Average annual rainfall in the area is about 26 inches (Giambelluca et al 2013), with a moderate winter maximum. Winds are generally trades from the east-northeast, which are occasionally replaced by light and variable southerly “kona” winds, most often in winter (UH-Manoa, Dept. of Geography 1998).

Air quality in the project area, despite being near a highway and in the center of two small towns, is generally good. There are occasional impacts from agricultural dust and sulfur particulates from volcanic emissions from Kilauea Volcano on the Island of Hawai‘i, called vog.

Impacts and Mitigation Measures

The proposed project will not produce any permanent air quality impacts, but temporary impacts will occur. A number of receptors sensitive to local air quality impacts, including churches, residences, parks, institutions and businesses, are present along the entire length of the improvement corridor.

Construction has the potential to produce localized and temporary construction equipment emissions and fugitive dust, which could affect nearby sensitive receptors. Construction will occur in front of individual properties during periods varying between several days and several weeks. This will occur over the course of the project duration of about six months, as construction moves progressively from one end of the water line installation to the other.

The contractor will be required to consult with the Department of Health, and, if appropriate, obtain a permit per Title 11, Chapter 46, HAR (Community Noise Control), and also to conduct all work in conformance with Chapter HAR 11-60.1 (Fugitive Dust). A dust control plan will be implemented for construction activities with potential to generate substantial dust. The elements of the plan may include some or all of the following:

- Watering of active work areas;
- Cleaning adjacent paved roads affected by construction;
- Covering of open-bodied trucks carrying soil or rock;
- Limiting area to be disturbed at any given time;
- Mulching or stabilizing disturbed inactive areas with geotextile; and
- Paving and landscaping of project areas as soon as practical in the construction schedule.

There is a scientific consensus that the earth is warming due to manmade increases in greenhouse gases in the atmosphere, according to the United Nations’ Intergovernmental Panel on Climate Change (UH Manoa Sea Grant 2014). Global mean air temperatures are projected to increase by at least 2.7°F by the end of the century. This will be accompanied by the warming of ocean waters, expected to be highest in tropical and subtropical seas of the Northern Hemisphere. Wet and dry season contrasts will increase, and wet tropical areas in particular are likely to experience more frequent and extreme precipitation. For Hawai‘i, where warming air temperatures are already quite apparent, not only is the equable climate at risk but also agriculture, ecosystems, the visitor industry and public health. Sea level rise will flood coasts, degrade coastal ecosystems, erode beaches, and ruin infrastructure in low-lying areas.

Guidance to federal agencies for addressing climate change issues in environmental reviews was released in August 2016 by the Council on Environmental Quality (US CEQ 2016). The guidance urged that when addressing climate change, agencies should consider: 1) the potential effects of a proposed action on climate change as indicated by assessing greenhouse gas emissions in a qualitative, or if reasonable, quantitative way; and, 2) the effects of climate change on a proposed action and its environmental impacts. It recommends that agencies consider the short- and long-term effects and benefits in the alternatives and mitigation analysis in terms of climate change effects and resiliency to the effects of a changing climate. The State of Hawai‘i encourages a similar analysis, as reflected in Hawai‘i Revised Statutes §226-109.

The HE-01 Reorganize Water System project component is meant to reduce the amount of water that must be currently pumped up to the ‘Ele‘ele tank. This will reduce energy consumption by This would reduce energy consumption by the booster pumps by approximately 46,000 kW-hrs per year, for the foreseeable future, avoiding substantial greenhouse gas emissions from burning fuel for pumping. This beneficial reduction needs to be balanced against the energy utilized in constructing the project from transport of materials, supply and laborers, along with trenching, installing and covering the water line. The HE-10 Hanapēpē Road 6-inch Main Replacement does not have a direct energy saving component, but replacing aging and leaking pipelines are essentially unavoidable tasks for a water utility, with no alternative actions that reduce energy use and thus greenhouse gas emissions.

Neither the water line corridor, which is generally 20 feet or more above sea level, nor the continuing water consumption uses in Hanapēpē and ‘Ele‘ele enabled by implementing the project, are particularly vulnerable to the effects of moderate climate change. Some uses at Port Allen Harbor and Salt Pond Beach Park that are in the water service area may be affected by sea level rise and require reconfiguration, relocation or even abandonment. This would not affect the integrity or utility of the water system. Larger floods on the Hanapēpē River could affect the integrity of the Hanapēpē Bridge, but the water line could be replaced if the bridge were redesigned to a higher level. The speculative nature of this risk and the long time scenario indicates that it is prudent to construct the project as planned and realize its benefits for a period of up to many decades rather than fail to implement it or design for currently unknowable, extreme contingencies.

3.1.5 Noise

Existing Environment

Noise may be defined as unwanted sound. Evaluation of noise requires a consideration of loudness at various pitches. Loudness is measured in units called decibels (dB). Since the human ear does not perceive all pitches or frequencies equally, noise levels in most analyses are adjusted (or weighted) to correspond to human hearing. Noise levels over 70 dB are considered unpleasant by most individuals; levels under 50 dB are generally perceived as acceptably quiet.

Current noise levels on the site are moderate and derived from adjacent roads and highways including Kaumuali‘i Highway and Hanapēpē Road, as well as homes, businesses, parks and other land uses.

Impacts and Mitigation Measures

The proposed project will not produce any permanent noise impacts, but temporary impacts associated with sawing pavement, trenching and heavy vehicles will occur. Just as with air quality, a number of receptors sensitive to noise such as churches, residences, parks, institutions and businesses are present.

Construction equipment, particularly that used to excavate the water line trenches, will elevate noise levels for individual properties during periods varying between several days and several weeks. These impacts can occur as a result of the short distances (less than 50 feet) between existing noise sensitive structures and the anticipated construction corridor. This will occur over the course of the project duration of about six months, as construction moves progressively from one end of the water line installation to the other. Noise levels of diesel powered construction equipment typically range from 80 to 90 dB at 50 feet distance. Construction noise is not expected to adversely affect public health and welfare due to the temporary nature of the work and the administrative controls available for noise regulation. Instead, noise impacts will be

limited to the temporary degradation of the quality of the acoustic environment in the immediate vicinity of the project work areas.

Rules of the Department of Health (DOH), at Title 11, Chapter 46, HAR (Community Noise Control), specify the maximum permissible sound levels based on zoning district. The rules apply to any excessive noise source emanating within the property to any point at or beyond the property line. The project site is primarily within lands County-zoned as commercial and residential, which are categorized as Class A and Class B noise zoning districts by DOH. The daytime (7 am to 10 pm) maximum permissible levels for Class A are 55 dB, and for Class B they are 60 dB. Nighttime (10 pm to 7 am) maximum permissible levels for Class A are 45 dB, and for Class B they are 55 dB. The State Department of Health (DOH) currently regulates noise from construction activities under a permit system. In cases where construction noise is expected to exceed the DOH maximum permissible property-line noise levels, contractors are required to obtain a Community Noise Control permit prior to construction.

Under current permit procedures, noisy construction activities are restricted to hours between 7 am and 6 pm, from Monday through Friday, and exclude certain holidays. Noisy construction activities are normally restricted to the hours of 9 am to 6 pm on Saturdays, with construction not permitted on Sundays. Noise levels are not allowed to exceed the maximum permissible sound levels for more than 10 percent of the time within any 20-minute period, except by permit or variance. The maximum permissible sound level for impulsive noise (i.e., sudden increases in sound levels) shall be 10 dB above the maximum permissible sound levels.

For the proposed project, noise levels will vary based on construction equipment used, and if louder equipment is used, noise attenuation techniques can be employed. DOW will specify the use of quieted portable engine generators and diesel equipment for use within 500 feet of noise sensitive properties. Heavy truck and equipment staging areas will also be located at areas which are at least 500 feet from noise sensitive properties whenever possible. DOH will be consulted, and if appropriate, the contractor will be required to obtain a permit per prior to construction. DOH would review the proposed activity, location, equipment, project purpose, and timetable in order to decide upon conditions and mitigation measures, such as restriction of equipment type, maintenance requirements, restricted hours, and portable noise barriers.

These restrictions will minimize construction noise impacts on noise sensitive receptors (such as residences) along the water line project corridor, and have generally been successfully applied. In this way, construction noise impacts on noise sensitive receptors will be minimized.

3.1.6 Scenic Character

Existing Environment

As noted in the Heritage Maps and other citations within the Kaua‘i County General Plan, the Hanapēpē-‘Ele‘ele area has high scenic value, derived from the historic character of the small-town landscape, including picturesque storefronts, the Hanapēpē River with its Hanapēpē Bridge and Swinging Bridge, and the natural and cultural features such as the Hanapēpē Valley and the Salt Pond Park. The water line corridor that defines the project site passes through or near much of this scenic landscape.

Impacts

No substantial permanent impacts to scenery will occur, as the water lines will be buried beneath the ground surface, which will be restored to its current condition. The placement of the 12-inch water line on the bridge inside of and along the downstream parapet wall, with a 5 feet wide sidewalk above it, will minimize the visibility of the waterline.

Construction that involves trenching, installing water lines and recovering the trenches, as well as construction activity on the Hanapēpē Bridge, will produce visual impacts that will temporarily degrade scenic character of ‘Ele‘ele and Hanapēpē. This will occur over the course of project duration of about six months, as construction moves progressively from one end of the water line installation to the other. No mitigation is proposed for this minor and temporary scenic impact.

3.1.7 Hazardous Materials

Existing Environment

A review of available State of Hawai‘i Department of Health (HDOH) records for the rights-of-way and adjoining properties with the potential to impact the project was undertaken, as detailed in Appendix 4. The records review included federal and state government databases and specific electronic HDOH electronic files. Based on the information reviewed, there are suspected historical recognized environmental conditions (HRECs) and controlled recognized environmental conditions (CRECs) in close proximity. The Port Allen Bulk Petroleum Storage Terminal was identified as having an undetermined hazard with inadequate documentation to know the risk present. This site is located on Waialo Road, approximately 300 feet south southeast and upgradient of the project site. Due to the known use of the site, and the distance and proximity of this site to the subject property, it is considered to be a suspected recognized environmental condition (REC) with the potential to impact the subject property.

Impacts and Mitigation Measures

Prior to construction, additional evaluations will be conducted to determine the extent of hazard control measures and BMPs to prevent exposure of site workers, the public, and the environment to potential petroleum chemical hazards in the subsurface. Reasonable precautions will be undertaken in the context of the project’s BMP plan for the appropriate response and remediation, should any hazardous, toxic, or radioactive material be encountered during the construction phase of the project, in accordance with Department of Health requirements.

During construction, hazardous materials are used in conformance with appropriate requirements. Typical materials associated with water line installation include chlorine; lubricants for pipe gaskets; paint (for hydrants, valve and meter box covers); traffic paint/thermoplastic; solvents related to these; and solder for the copper tubing (for the water laterals). In addition, concrete curing compounds (if used), and asphalt paving products (such as tack and prime coat), epoxy, hydraulic cement (grout) must all be properly stored and treated as hazardous materials. Contract conditions supervised by DOW will include the requirement to do so. Some of the existing water lines being connected to are made of asbestos-cement pipe (ACB). Connections will be made by removing the ACP at the nearest joints in whole sections. No cutting or drilling of the ACP will be conducted or permitting, and therefore there should be no potential for release of asbestos.

3.2 Biological Environment

Biological Consultation

In order to gain information concerning the potential presence of and impacts to important biota, early consultation included informing the U.S. Fish and Wildlife Service (UFWWS) and the DLNR Division of Forestry and Wildlife (DOFAW) about the action. These agencies did not express any concerns about biota in the urban project area, but recommended bird surveys.

Biological Environment: Vegetation and Flora

As shown in Figures 1-1 and 1-2, the project corridor is essentially an urban roadside, with one urban bridge crossing. In terms of plant cover, it varies from paved to bare to weedy to landscaped with various ornamental plants. No trace of the original vegetation of the area remains. The current vegetation in the Kaumuali‘i Highway corridor and lots along the water line corridor within Hanapēpē that are not managed through mowing consists of non-native, often invasive species such as kiawe trees (*Prosopis pallida*), koa haole shrubs (*Leucaena leucocephala*), buffel grass (*Cenchrus ciliaris*), and night-blooming cereus (*Hylocereus undatus*). Site visits by Dr. Ron Terry on November 15, 2015, and July 19, 2016 determined that no native plants were present along the corridor. No plants listed, or proposed for listing, as threatened or endangered by the U.S. Fish and Wildlife Service, were observed within or near the project site.

Biological Environment: Birds

The alien, primarily closely managed vegetation on the urban project site appears to provide habitat for a variety of non-native bird species. On the days of site visits, these included yellow-billed cardinals (*Paroaria capitata*), common mynas (*Acridotheres tristis*), spotted doves (*Streptopelia chinensis*), jungle fowl and domestic chickens (*Gallus gallus*), cattle egret (*Bubulcus ibis*), and white-rumped shama (*Copsychus malabaricus*). No endangered or otherwise rare forest bird species were observed or would be expected in this urban, lowland area.

Adjacent to Kaumuali‘i Highway is a cattle egret rookery with over a hundred nests, which the water line route currently avoids. According to the U.S. Fish and Wildlife Service, the population of this non-native bird has skyrocketed since its introduction. It predated on endangered waterbird populations, including the young of Hawaiian stilts, coots, moorhens and Hawaiian ducks, discussed below, as well as native owl chicks. Cattle egrets even rob food and kill endangered seabird chicks. In some cases, they compete with seabirds for nesting habitat, which can encourage disease transmission (<http://usfwspacific.tumblr.com/post/70400439380/under-attack-protecting-hawaiis-birds-from-an>). The State of Hawai‘i has classified the bird as an Injurious Species under Hawai‘i Administrative Rules Chapter 13-124, *Indigenous Wildlife, Endangered and Threatened Wildlife, and Introduced Wild Birds*. At the same time, however, cattle egrets are a protected species under the federal Migratory Bird Treaty Act (16 U.S.C. 703-712).

A number of waterbirds are present on Kaua‘i, including various common non-natives, several common natives, and several endangered species: Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian gallinule (*Gallinula chloropus sandvicensis*), and Hawaiian coot (*Fulica alai*). These birds may occasionally be seen in the Hanapēpē River area, as they are found at such locations as the Kawaele Waterbird Sanctuary in the far southwest of the island as well as the nearby Hanapēpē Salt Ponds. The endangered nēnē or Hawaiian goose (*Branta sandvicensis*) is found in a variety of habitats including natural shrubland and grasslands along with pastures and golf courses, from sea level to sub-alpine areas. There are now at least 2,000 nēnē on the island of Kaua‘i, which is unique among the Hawaiian Islands in lacking the mongoose, which preys on chicks and eggs. This herbivore often nests in deep grass near water bodies. The portion of the river crossed by Hanapēpē Bridge is estuarine but channelized, lying at about sea level, some 3,000 feet upstream from the sea. This urban section of the river has rip rap-lined channels and generally poor riparian habitat, although some native milo trees (*Thespesia populnea*) are growing on certain parts of the banks. About 2,000 feet upstream the banks become natural and a riparian floodplain and wetlands are present, offering habitat for a variety of aquatic birds. Given standard mitigation to protect water quality, discussed below, the project would not affect native waterbirds.

Several listed or proposed threatened or endangered seabirds range widely around the island of Kaua‘i. The endangered Hawaiian petrel (*Pterodroma sandwichensis*) is restricted to breeding on high elevations of the main five Hawaiian Islands, with largest populations on Kaua‘i. Habitat

loss and human disturbance have dramatically reduced the population and range of these birds. The threatened Newell’s shearwater (*Puffinus auricularis newelli*) nests in burrows beneath ferns and tree roots in dense forest and on steep slopes and cliffs, flying to and from their burrows at night. About 90 percent of the remaining population of this bird is found on Kaua‘i. Adult band-rumped storm-petrels (*Oceanodroma castro*) spend their time foraging on the open ocean when not at nesting sites. Adults visit the nest site after dark, where they can be detected by their distinctive calls. Nests are in crevices or holes in cliff faces and remote lava flows that are extremely difficult to access, and the breeding biology for the bird is still large unknown. The primary cause of mortality is thought to be predation by alien mammalian species at the nesting colonies. Collision with man-made structures is probably the second most significant cause. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets of opportunity for feral mammals.

Biological Environment: Mammals

No Hawaiian hoary bats were observed in the surveys. Although visually detectable at dusk and dawn, conclusive statements about the presence of this endangered species require specialized detection methods. It is generally assumed that Hawaiian hoary bats can be present in any area of Kaua‘i, as they have been widely detected. They utilize tall shrubs and trees for roosting and are vulnerable during the period between June 1 and September 15 each year, when females may have pups in the roosts and are not highly mobile. The DOT ROW along Kaumuali‘i Highway contains non-native trees and shrubs 15 to 30 feet in height that could conceivably have bat roosts in the pupping season.

In terms of non-native mammals, domestic dogs (*Canis familiaris*) and domestic and possibly feral cats (*Felis catus*) were observed. Rats (*Rattus* spp.) and mice (*Mus musculus domesticus*) may also inhabit or use the area. No effect to non-native mammals would occur as a result of the project.

Biological Environment: Riparian and Aquatic Habitat

As discussed in Section 3.1.2, the existing and proposed water line route is on the deck of the Hanapēpē Bridge, which crosses the Hanapēpē River at the inland end of the estuary where it outlets to the sea. This nearly 21-mile long stream has several tributaries that extend as high as the 4,000-foot elevation on the south slope of Mount Waialeale. According to the *Hawaii Stream Assessment* (Hawai‘i State CWRM 1990), the majority of the flow was long ago diverted for sugar cane plantations. The natural flow is about 79 million gallons per day (mgd), but 24 mgd is diverted in the Hanapēpē Ditch, and another 36 mgd is diverted lower down, very much reducing the flow at the estuary.

Hanapēpē-‘Ele‘ele Water Systems Improvements

The *Hawaii Stream Assessment* ascribes Hanapēpē Stream with certain special values as an estuary with tidal wetlands and historic sites, as well as waterfalls in the upper area. It was ranked as having moderate habitat value for aquatic wildlife, with several types of native goby fishes. It also contains, unfortunately, a number of invasive fish and/or crustaceans. Biologists from the Hawai‘i DLNR have recently been conducting investigations of the Hanapēpē estuary, in recognition of the important role estuaries (or *muliwai* in Hawaiian) play in Hawai‘i’s fisheries. The research is collecting basic information on the biology and physical characteristics of estuaries of Hawaii to improve the management, health and sustainability of these ecosystems in Hawai‘i.

In the regions above the estuary, much of the stream’s channel and banks contain plants and animals detrimental to riparian habitat. In the upper reaches of this more than 20-mile long stream it penetrates into habitat for endangered forest birds and wetland plants, for which it is ranked as having outstanding riparian resources.

Impacts and Mitigation Measures

No plants listed, or proposed for listing, as threatened or endangered by the U.S. Fish and Wildlife Service, were observed within or near the project site. The project would not affect natural vegetation, native plant communities, or rare, threatened or endangered plants.

The water line as originally designed could have affected a cattle egret rookery, at least temporarily, by constructing a water line underneath the trees in which this non-native bird nests. Although, as discussed above, cattle egrets are generally detrimental to endangered native birds, they cannot be harmed without a permit under the Migratory Bird Treaty Act (MBTA). Accordingly, the water line was re-routed to an area outside the current extent of the rookery. Prior to construction, DOW will have an ornithologist survey the area to ensure that the waterline remains outside the area where activities such as nesting tree removal would cause direct harm to a cattle egret, or cause a nesting egret to abandon its nest, which would lead to an indirect harm. If there is no way to avoid affecting the nest area, DOW will coordinate with the U.S. Department of Agriculture Wildlife Services and the DLNR Division of Forestry and Wildlife to apply for an MBTA permit to allow take of the bird prior to constructing that section of water line.

In order to avoid or minimize to negligible levels impacts to aquatic habitat and the wide-ranging listed threatened or endangered bird species and the Hawaiian hoary bat listed above, the following actions will be required to be implemented as part of the project. These measures will be adopted as part of the official construction contract documents and will thus be required of the contractor.

- Best Management Practices (BMPs) will be instituted to control and prevent sediment from entering waterways including the Hanapēpē River. As discussed in Section 3.1.2,

they will consist of sediment control devices installed at all existing drain inlets in the vicinity which eventually drain into the Hanapēpē River. Sediment control devices will also be installed at the scuppers on the Hanapēpē Bridge deck. These devices will remain in place until all work in the vicinity has been completed. Furthermore, active work areas will be encircled with filter sock while construction activities are occurring to provide supplemental sediment containment.

- In accordance with County of Kaua‘i requirements, non-emergency night time work will be restricted to between the hours of 9:00 pm to 4:30 am during the autumn seabird fall season from September 15 through December 15.
- If conditions require non-emergency night time work during this period, the County requires all lights to be shielded with minimum light spill towards the sky, and directed downwards to the maximum extent practicable. In addition, the County requires that the contractor train all employees who will be working at night on how to handle retrieved downed seabirds. They also must have appropriate equipment, pre-approved by the Save Our Shearwaters (SOS) group, on site to hold and transport retrieved birds to a SOS facility.
- No shrubs or trees taller than 15 feet will be permitted to be removed or trimmed during the Hawaiian hoary bat birthing and pup rearing season (June 1 through September 15 of each year).

3.3 Socioeconomic

3.3.1 Social Factors and Community Identity

Existing Environment

As noted in the Kaua‘i General Plan, the character of ‘Ele‘ele and Hanapēpē derives from their historical associations with the sugar industry and the natural beauty of lying on the Hanapēpē River and the gateway to the West Side of Kaua‘i. As discussed in more detail in Section 3.3.3, ‘Ele‘ele was an important locus of the development of sugar cane plantations. Hanapēpē, by contrast, is one of the few towns on the island of Kaua‘i that was not developed by a sugar or pineapple plantation. It was originally a rather substantial Hawaiian settlement thanks to the fertile and well-irrigated, flat, valley floor, which supported extensive taro lo‘i. Disease decimated the native Hawaiian people in the early nineteenth century, and by the mid-century the area’s population had dwindled to a few hundred. Chinese rice farmers were attracted to the already established wetland agricultural fields and to land parcels not under the control of large landowners. They intermingled with the Hawaiian population during the 1880s. The town expanded in the 1890s, with much of its prosperity due most likely to the growth in sugar production at neighboring Makaweli and ‘Ele‘ele. It was also during this period that Japanese merchants, leaving the plantations, started enterprises in the town.

Hanapēpē-‘Ele‘ele Water Systems Improvements

The area has slowly but steadily grown from its plantation roots to have residential developments in ‘Ele‘ele and on Hanapēpē Heights. The businesses of ‘Ele‘ele have brought more families to the area. ‘Ele‘ele businesses serve local residents. Visitors are especially attracted to historic character of Old Hanapēpē Town, which has been cultivated through careful renovation of historic buildings and appropriate design of new buildings. Hanapēpē is a center for artists and craftspeople, offering numerous shops, galleries, and restaurants.

Like most of the State of Hawai‘i, Hanapēpē-‘Ele‘ele is diverse in its social makeup, strongly reflecting the plantation heritage, as shown in Table 3-1. The demographic characteristics of the towns are quite similar, with ‘Ele‘ele reflecting somewhat more the plantation makeup, with a higher Asian population (including 40.9% Filipino heritage versus 24.7% for Hanapēpē), more foreign-born individuals, larger household sizes, and higher poverty rates, with lower educational attainment and veteran status. As discussed in Section 1.6.3, local water plans indicate that the Hanapēpē-‘Ele‘ele area has very modest inventory of urban zoning compared to other parts of the island and a fairly low growth potential.

A number of retail businesses including restaurants, art galleries, general stores, local food outlets, and specialty goods and services businesses are present in the area to be affected by project construction. Each Friday Hanapēpē hosts the popular Friday Night Festival and Art Walk, which draws residents and visitors from around the island to enjoy art galleries and dining in restaurants and food trucks.

Impacts and Mitigation Measures

No relocation of residences, businesses, community facilities, parks, farms or other land uses or facilities occur because of the project. In the long-term, all direct impacts to the social environment may be regarded as beneficial, because it improves the reliability of the water system for residents, businesses, schools and other public institutions as a whole.

However, there will be short-term impacts to traffic, noise, air quality, and the visual environment, as detailed in other parts of this EA. Taken together, they will contribute to a brief but non-negligible impact on the social environment and community character. Residences will suffer a temporary degradation of their quality of life, and stores and restaurants may suffer at least some temporary decline in business.

DOW has considered various ways in which to minimize these impacts and will incorporate them in the project:

- No night-work will be allowed unless absolutely necessary, in order to minimize impacts to residents;

Hanapēpē-‘Ele‘ele Water Systems Improvements

Table 3-1: Selected Socioeconomic Characteristics

CHARACTERISTIC/AREA	‘Ele‘ele CDP	Hanapēpē CDP	State of Hawai‘i
POPULATION			
Population, 2010	2,390	2,637	1,360,301
Population 2014 (ACS estimate)	2,723	2,488	1,419,561
Persons under 5 years, percent, 2010	7.3%	7.5%	6.4%
Persons under 18 years, percent, 2010	74.2%	75.9%	22.3%
Persons 65 years and over, percent, 2010	15.0%	13.5%	14.3%
Median age in years, 2010	39.1	39.4%	38.6
Female persons, percent, 2010	49.0%	48.3%	49.9%
RACE			
White alone, percent, 2010 (a)	12.1%	16.8%	24.7%
Black or African American alone, percent, 2010 (a)	0.3%	0.1%	1.6%
American Indian and Alaska Native alone, percent, 2010 (a)	0.2%	0.3%	0.3%
Asian alone, percent, 2010 (a)	58.2%	43.4%	38.6%
Native Hawaiian and Other Pacific Islander alone, percent, 2010 (a)	4.7%	10.0%	10.0%
Two or More Races, percent, 2010	24.1%	29.0%	23.6%
Hispanic or Latino, percent, 2010 (b)	8.9%	8.9%	8.9%
White alone, not Hispanic or Latino, percent, 2010	10.4%	15.2%	22.7%
SOCIAL CHARACTERISTICS (2014 ACS)			
Foreign born persons, percent	29.3%	15.6%	17.8%
High school graduate or higher, percent of persons age 25+	83.5%	83.5%	90.1%
Veterans	5.8%	7.6%	114,109
HOUSING CHARACTERISTICS (2014 ACS)			
Housing units, 2010	780		519,508
Percent of housing units occupied by owner	72.3%	67.1%	57.7%
Vacancy rate	5.1%	7.1%	58.7%
Average persons per household	3.23	3.04	2.93
INCOME (2010)			
Median household income	\$46,705	\$44,112	\$49,820
Persons below poverty level, percent	11.2%	5.3%	10.7%

Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey (ACS), Census of Population and Housing, County Business Patterns, Economic Census, Survey of Business Owners, Building Permits, Census of Governments

Notes: (a) Includes persons reporting only one race. (b) Hispanics may be of any race, so also are included in applicable race categories. Data from ACS are estimates based on small sample sizes with potentially large margins or error, depending on the variable and population size.

- Construction will end early on Friday nights in order to avoid impacts to businesses and festival-goers at the weekly Friday Night Festival and Art Walk, which occurs from 5 to 9 pm;
- Weekend work will be minimized in order to minimize impacts to residents; and

- Notwithstanding the weekly work schedule, the construction phase of the project will proceed expeditiously in order to minimize the duration of the project, through scheduling multiple activities simultaneously as feasible.

Through the vehicle of the Environmental Assessment, the DOW is soliciting the community and its residents and businesses to determine the best strategy to minimize socioeconomic impacts.

3.3.2 Public Facilities, Utilities and Services

Highways and Roads

As shown in Figure 1-1, the “HE-01 Reorganize Water System” component project involves installation of new water lines along the right-of-way of Waialo Road and Kaumuali‘i Highway between Waialo Road and Kona Road. The “HE-10 Hanapēpē Road 6-inch Main Replacement” component project utilizes the right-of-way adjacent to Hanapēpē Road between Kona Road and Moi Road, including the Hanapēpē Bridge.

The project would take place on the right-of-way of these roads and highways, varying within the travel lanes, paved shoulders and adjacent unpaved areas. Traffic flow will be disrupted during construction hours, which are expected to be restricted primarily to weekdays in daylight hours. This will occur over the course of the project duration of about six months, as construction moves progressively from one end of the water line installation to the other.

Several highway and road projects related to Hanapēpē Road, the Hanapēpē Bridge, and Kaumuali‘i Highway may be under construction during part of the time the DOW water system improvements are under construction, depending on how project permitting and contracting schedules interact. These are discussed in more detail in Section 3.4, below, concerning cumulative impacts. The Hanapēpē Road Resurfacing project has been specifically taken into account by the DOW project, which is aiming to conduct all water line work prior to the resurfacing to minimize cost and public inconvenience.

As mitigation, professional traffic control will be utilized to optimize traffic flow. Access to all properties will be maintained at all times, except in infrequent cases where access must be closed for brief periods. Such situations will be negotiated with the access holder(s).

Utilities

A number of other utilities besides County water utilize the roadside area, including electric/telephone/CATV lines; drainage channels; and sanitary sewer lines and pump stations. These locations are indicated on design plans and construction contractors will be aware of and will take action to prevent damage and reduce any interruption in service to the minimum time necessary.

Hanapēpē-‘Ele‘ele Water Systems Improvements

The project will cross existing sewer lines at various locations, an existing buried HTCo ductline, and an existing Sandwich Isles Communications ductline at Moi Road. The new water lines will be installed above these utilities, allowing them will remain in service, with no impacts. Segments of the existing sewer will be encased in concrete when minimum clearances cannot be obtained. Existing DOT drains as well as sewers and force mains the n Kaumuali‘i Highway ROW on its alignment up to ‘Ele‘ele and into Waialo Road will not be impacted. The existing electrical distribution system is overhead and the project will not affect it.

The new 12-inch water line will be installed while the existing lines are live and in use. A temporary outage to the water system will occur when the existing water system is momentarily shut down to connect to the new water line. Minor interruptions will occur to individual services, as they are transferred one-by-one from the existing water lines over to the new 12-inch water line. An existing 2-inch water line serves several lots on the west (makai) side of Kaumuali‘i Highway. Temporary outages for these lots will occur when this 2-inch line is transferred from the existing 12-inch water line over to the new 16-inch water line.

The trenching for this component project will disturb and disrupt the signal loop for a warning signal light on the inbound approach to the Kaumuali‘i Highway/Waialo Road intersection. The project will coordinate with DOT Highways as to how best to address this, whether it be by providing a special duty police officer during working hours, or by reconnecting the signal loop at the end of each working day, until it can be permanently repaired.

Drainage Systems

The project will cross an existing drain that connects to the Hanapēpē River Flood Control Project. The drainage line will remain in service and will not be impacted. The 12-inch water line will also pass under an existing closure structure in the U.S. Army Corps of Engineers’ Hanapēpē River Flood Control Project. A recessed metal channel that houses the closure structure panels (a floodgate) will be temporarily inaccessible while construction is occurring near it and will be compromised (or breached) when the ground beneath it is temporarily removed to install the water line. Work in this area will be phased in order to minimize the duration of inaccessibility and breach. The water line segment to be installed directly beneath the floodgate will be limited to a single pipe length, which must be pre-encased in reinforced concrete and backfilled with controlled low strength material (CLSM) within three working days. The contractor will also be required to prepare a flood contingency plan and coordinate with the County DPW (which operates the floodgate) on specific procedures to implement if a flood were to coincide with the periods that the floodgate is inaccessible or compromised. These requirements will be incorporated into, and made a part of, the construction contract documents.

Police, Fire, Emergency Medical, and other Public Facilities and Services

Emergency medical and fire services are available at the Hanapēpē Fire Station, located on Kaumuali‘i Highway near downtown Hanapēpē. The Kaua‘i Police Department services Hanapēpē and ‘Ele‘ele from its Waimea station. The nearest hospital is the Kaua‘i Veterans Memorial Hospital in Waimea. All facilities that might be required for incidents related to construction are thus located in or near the project area.

Various recreational, educational and social service facilities are located nearby, including ‘Ele‘ele Elementary School, and various parks and recreational facilities that are primarily makai of Kaumuali‘i Highway, mostly away from of the area affected by the project. The operation of and access to all public facilities or services would not be adversely affected in any substantial way by the project.

3.3.3 Cultural Resources

Chapter 343, HRS, requires consideration of cultural impacts for projects subject to an Environmental Assessment. The purpose of this is to ensure that significant cultural features and uses are identified, and to provide information to address the constitutional duty of agencies of the State of Hawai‘i to protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians, to the extent feasible, in connection with activities requiring State or County permits.

Background on Hawaiian Settlement and Relations to Land

Archaeological settlement data indicates that initial colonization and occupation of the Hawaiian Islands first occurred on the windward sides of the main islands. Kirch (2011), in a review of 150 years of literature regarding settlement of the Hawaiian Islands, suggests earliest occupation of the islands occurred between A.D. 900 and 1000. The earliest populations purportedly used local resources and seldom ventured into upland valleys. It is estimated that 25 generations ago – approximately 600 years –at the time of Mo‘ilikukahi on O‘ahu, the native population had expanded throughout the Hawaiian Islands. Populations eventually settled into drier leeward areas (Kirch 1985). Greater population expansion to inland areas, including upland kula zones, appears to have begun in the 12th century A.D., continuing through the 16th century AD.

Land was considered the property of the king or ali‘i ‘ai moku (the ali‘i, or chief, who eats the island/district), which he held in trust for the gods. The title of ali‘i ‘ai moku ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The maka‘āinana (commoners) worked the individual plots of land.

Around the 14th century, the various mō‘i (kings/monarchs) of the Hawaiian Islands decided to formalize land tenure, mainly in order to better manage disputes between neighboring ali‘i (chiefs). Land was surveyed and land boundaries were marked. In general, several terms, such as moku, ahupua‘a, ‘ili or ‘ili ‘āina were used to delineate various land sections. A district, or moku, appeared approximately B.P. 600 years, as the native population had expanded to a point where large political districts could be formed (Lyons 1875:29, Kamakau 1961:54, 55; Moffat and Fitzpatrick 1995:28).

Kaua‘i consisted of six moku; Kona, Puna, Ko‘olau, Halele‘a, Napali, and Waimea (ibid: 23). These districts contained smaller land divisions (ahupua‘a) which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the ahupua‘a were, therefore, able to harvest from both the land and the sea. Ideally, this situation allowed each ahupua‘a to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The ‘ili ‘āina, or ‘ili, were smaller land divisions and were next to importance to the ahupua‘a. They were administered by the chief who controlled the ahupua‘a in which it was located (ibid: 33; Lucas 1995:40). The mo‘o‘āina were narrow strips of land within an ‘ili. The land holding of a tenant or hoa‘āina residing in an ahupua‘a was called a kuleana (Lucas 1995:61). Rather than denoting ownership of the lands by ali‘i, the ahupu‘a boundaries signified a trusteeship between the caretakers of the land (konohiki), designated by the ali‘i, and the nature gods worshipped by Hawaiians (Handy and Handy 1972). The proposed project area is located in the ahupua‘a of Hanapēpē, meaning “crushed bay” (due to landslides) (Pukui et al. 1974:40).

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various ahupua‘a. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland kalo (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as kō (sugar cane) and mai‘a (banana), were also grown and, where appropriate, such crops as ‘uala (sweet potato) and ulu (breadfruit) were cultivated. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Many Hawaiian river valleys featured cultivation in lower valley sections and on bends in the stream where alluvial terraces could be modified to take advantage of the stream flow (Kirch and Sahlins Vol. 2 1992:59; Earle 1978:31, 155).

Traditional Land Uses in Kaua‘i and the Project Area

The alluvial plains of Kaua‘i were extensively cultivated and contained two irrigation systems, which are still functioning into the present time (Earle 1978:34). Although no longer in use, agricultural terraces were reported in the valley interiors around Hanalei. Fishponds of the loko-i‘a-kalo type were situated inland of Hanalei and Wai‘oli Rivers and in other locations (Kikuchi

1987). This type of fishpond not only supported the growing of kalo on small mounds (pu‘epu‘e) but, supported fish, crustacean, shellfish and some aquatic plants. Coastal zones were utilized for acquiring marine resources and where habitation sites, burials, and ceremonial structures, often associated with fishing, were identified (Bennett 1931).

During the pre-Western Contact Period, the ahupua‘a of Hanapēpē belonged to the district of Kona, the largest of Kaua‘i’s five traditional political districts. Hanapēpē Ahupua‘a contains within its borders the third longest river on Kaua‘i, Hanapēpē River, which originates on the slopes of Kawaikini and flows through a valley bordered on both sides by steep canyon walls. The prehistory of Hanapēpē remains relatively enigmatic. From the few archaeological investigations of the Hanapēpē area, it appears that the settlement pattern was typical of most Kaua‘i locations. The pattern consisted of a well-utilized coastal region and by extension, use of the entire ahupua‘a.

Nōmilu Fishpond is a wahi pana or sacred place located east of Hanapēpē and Kalaheo that is associated with numerous legends. This area is “...said to have been made by Pele and guarded by Puhi-‘ula (red eel) and Puhi-pakapaka (scaly eel), both supernatural eels” (Pukui et. al. 1974:166). Salt gathered from its saltpans was the finest and most desired salt in Kaua‘i. “People came in the summer to gather salt when the winds blew the salt across the surface of the pond to the edge of the pond” (Wichman 1998:35). According to Pukui (et. al. 1974:166), when there is volcanic activity on the Big Island, the smell of sulfur is carried by the wind to this area. So, after gathering salt, people placed the salt on leaves as offerings for Pele.

Just east of ‘Ele‘ele is the ahupua‘a of Wahiawa. According to kama‘aina Keahi Luahine, in 1935 taro terraces extended all the way down the valley to the muliwai (inlet) (Handy and Handy 1972:428). Handy and Handy (ibid) describe Wahiawa, which was renowned for a particular variety of taro, as having an adequate water resource and wet land taro was planted more extensively in this region. Handy and Handy (ibid) also mention several springs, which watered terraces and wauke (paper mulberry) plantations. Houses and sweet potato plantations were situated above the terraces.

Handy and Handy (1972:428) observed terraces and houses above and below the present highway and abandoned terraces below the bridge on what is now ranchland. Bennett (1931:115) described upper Wahiawa as well, remarking on the extensive number of terraces for such a small area of land.

As for Hanapēpē, Bingham (1848) described the valley as appearing, “...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.”

Handy and Handy (1972: 429) painted a similar picture of the valley some one hundred and twenty years later when they explored the length of the valley. They observed mostly abandoned

house sites and lo‘i watered by abandoned auwai, and stated that “taro terraces are everywhere that the land is irrigable.”

Historic Period

In the early historic period in Hawai‘i, significant natural and cultural changes took place throughout the islands. This occurred not only due to contact with Westerners, but also because of internal social and environmental restructuring and external social and environmental factors (e.g., foreign species being introduced as well as foreign ideologies). These combined to have a severe impact on Hawaiian environments, land-tenure, and social structures.

During the early nineteenth century, Kaua‘i and Ni‘ihau were the last islands that remained outside the control of King Kamehameha. In 1810 King Kaumuali‘i ceded his kingdom to Kamehameha the Great. This was done after Kamehameha had twice failed in his attempts to invade Kaua‘i from Oahu. In 1821 Kaumuali‘i was taken prisoner by Kamehameha’s son, Liholiho, Kamehameha II, and placed in exile on O‘ahu. The following year ali‘i from O‘ahu and other islands arrived to rule Kaua‘i. Kaumuali‘i died in Honolulu in 1824 and Kauai’s lands were given to these newcomer ali‘i.

In May of 1824 on the plains of ‘Ele‘ele, George Humehume, son of King Kaumuali‘i, led supporters of King Kaumuali‘i, in a revolt to regain control of Kaua‘i from Kamehameha II. The attempt failed after a prolonged and lopsided battle on these plains. Liholiho (Kamehameha II) destroyed the Kaua‘i army and for the next two weeks attempted to kill all Kaua‘i ali‘i and their family members. This event marked the end of Kaua‘i as an independent kingdom uniting all the islands under Kamehameha II and suppressing the idea of Kaua‘i as a “separate kingdom”.

The Māhele, the division of Hawaiian lands, introduced the concept of private property into Hawaiian society. The Māhele was initiated by the Organic Acts of 1845 and 1846. In 1848, commissioners of the Māhele instigated an extreme modification to traditional land tenure on all islands that resulted in a division of lands and a system of private ownership. The Māhele was based upon the principles of Western law. While a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kauikeaouli (Kamehameha III) was forced to establish laws changing the traditional Hawaiian society into that of a market economy (Kuykendall Vol. I 1938:145, footnote 47, et passim; Daws 1968:111; Kame‘eleihiwa 1992:169–170, 176). The dramatic shift from a redistributive economy to a market economy resulted in drastic changes to land tenure, among other things. As a result, foreigners demanded private ownership of land to ensure their investments (Kuykendall Vol. I, 1938:145, et passim; Kame‘eleihiwa 1992:178; Kelly 1983:45).

Once lands were made available and private ownership was instituted, native Hawaiians, including the maka‘ainana (people of the land), were able to claim land plots upon which they had been cultivating and living. Oftentimes, foreigners were simply just given lands by the ali‘i.

However, commoners would often only make claims if they had first been made aware of the foreign procedures (kuleana lands, or land commission awards). These claims could not include any previously cultivated or currently fallow land, okipu, stream fisheries, or many other natural resources necessary for traditional survival (Kame‘eleihiwa 1992:295; Kirch and Sahlins 1992). Awarded parcels were labeled Land Commission Awards (LCAs). If occupation could be established through the testimony of witnesses, the petitioners were issued a Royal Patent number and could then take possession of the property. Commoners claiming house lots in Honolulu, Hilo, and Lāhainā were required to pay commutation to the government before obtaining a Royal Patent for their awards (Chinen 1961:16). A number of kuleana were claimed in the Hanapēpē area.

Later Historic Period

The change in land tenure coupled with a growing world market for Hawai‘i crops and political entanglement with the United States eventually set up a dramatic change in agriculture. Throughout the island of Kaua‘i, sugar cane cultivation became the dominant land use, economic force, and social driver.

In the mid-1800s Duncan McBryde arrived from Dunoon, Argyleshire, Scotland and acquired land in Wahiawa and began to develop an extensive ranch. McBryde leased the Wahiawa lands from Kōloa to ‘Ele‘ele from Kauikeaouli (Kamahameha III) in 1857. In 1874 he purchased the land from the estate of Kamahameha V. He built his home at Brydeswood with his wife Elizabeth Amelia Moxley in the upper end of Wahiawa District. They had six children. Duncan McBryde died at the age of 52 in 1878, leaving Elizabeth a widow with six young children and the ranch. In 1886 Elizabeth acquired the ahupua‘a of Lāwa‘i from the estate of Queen Emma. Elizabeth McBryde managed and operated the ranch that stretched from ‘Ele‘ele to Kōloa until the founding of the McBryde Sugar Co. (Sandison 1956).

Walter McBryde, the second son of Duncan and Elizabeth McBryde, held various positions within the Hawai‘i and local Kaua‘i business communities, including being a representative to the legislature of the provisional government (Sandison 1956). He was involved in the initial organization of the McBryde Sugar and became the manager of Kaua‘i Pineapple Co. in 1906, a subsidiary company of McBryde Sugar. McBryde Sugar formed in 1889 was promoted by a group headed by B.F. Dillingham, who also created plantations at ‘Ōla‘a and Kīhei. The company was created by the merger of three families, the Smith family of Kōloa Agricultural Company, the Dreiers of ‘Ele‘ele Plantation, begun in 1884, and the McBrydes vast Wahiawa Ranch.

Kōloa Agricultural originated in 1870 in the western portion of the ahupua‘a of Kōloa on land leased from the Knudsens. The Smiths grew cane on this land. The land was later conveyed by Mrs. Knudsen to the heirs of J.W. Smith. In 1896 the heirs conveyed their interests in the land to Kōloa Agricultural Company. The Smiths also owned 750 acres of the land of ‘Ōma‘o. In 1884

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Bernice Pauahi Bishop sold the ‘ili of ‘Ele‘ele to Elizabeth McBryde and August Dreier. The plantation at ‘Ele‘ele had profited, and a mill was constructed at the village. The area now known as Port Allen was the original landing for the plantation. Dreier bought out Elizabeth McBryde’s interest in the land in 1895. In 1899, Dillingham then bought out August Dreier for 500,000 dollars in cash for the ‘Ele‘ele Plantation.

Dillingham then issued 55,000 shares of stock to the McBryde family in consideration of the conveyance of nearly all of their Wahiawa land holdings and all the stock of the Kōloa Agricultural, which they had come to acquire. Stocks were offered to the public and were quickly taken up. Once the establishment of the McBryde Sugar was completed, plans quickly moved ahead to develop the lands into a large plantation with the required infrastructure to create a successful and profitable plantation.

Immediate plans to clear the land and create an irrigation system ensued. Development costs were high, as the land needed extensive clearing and water had to be brought from great distances. McBryde Sugar was acquired by Alexander and Baldwin Corp in 1909. During the initial phase of development that followed and later in 1929 to 1933 the landscape was substantially transformed. Changes were made to the natural stream flow due to the creation of a reservoir system and a series of pipelines with associated ditches and dikes to distribute water across the landscape for large-scale commercial agriculture. Tunnels and wells were excavated within the floor of Hanapēpē Valley and stream pumping plants were installed. These plants immediately proved inefficient, putting the plantation in debt because of high costs associated with pumping water from underground sources.

In 1903, a 50-year license for hydroelectric power from Wainiha stream was acquired by W.E. Rowell, an associate of McBryde Sugar. At this time Kaua’i Electric Co. was formed as a subsidiary of McBryde Sugar. The Wainiha Plant was built and established with a power line to the plantation in ‘Ele‘ele. Pumps were converted to electricity and fuel related costs dropped immediately. A vast system of reservoirs was created at this time with a combined holding capacity of 800 million gallons. However, expenditure related to creating this infrastructure caused such financial burdens into the late 1920s that the plantation would not be able to operate and be profitable until a complete renovation occurred.

These financial challenges led to the creation of the development program carried out from 1929 to 1933. These improvements consisted of the construction of Alexander Reservoir with a storage capability of 810,000,000 gallons, the concrete lining of miles of the principle irrigation ditches on the plantation, replacement of inefficient machinery, and the construction of a hydroelectric plant. Due to the efficiency created by these improvements, the plantation was released of its debt obligations in 1932.

McBryde Sugar obtained additional subsidiary companies such as the Kaua’i Railway Company and Kaua`i Pineapple. The development of these companies brought additional land use changes

to the area including the creation of a rail system connecting various points on the plantation to Port Allen and the development of truck farming on portions of the land. Infrastructure and remnants related to these modifications exist throughout the landscape. McBryde Sugar was also instrumental in development of Port Allen as a harbor with shipping facilities (Star Bulletin November 2, 1935). McBryde Sugar acquired a large portion of the Grove Farms sugar fields in 1974. During this last twenty years, sugar was supplemented with coffee. McBryde Sugar continued to operate until 1995 when it fell to economic pressures involved in growing sugar in Hawai‘i. McBryde stopped producing sugar officially on July 1996 when the Kōloa Mill was shut down for good. McBryde Sugar was terminated and replaced by Kaua‘i Coffee Company, which continues to grow coffee to the present day.

As discussed in Section 3.3.1, the town of ‘Ele‘ele grew due the sugar plantation, while Hanapēpē is one of the few towns on the islands not developed by a sugar or pineapple plantation. The Hawaiian settlement focused on a fertile and well-irrigated valley floor supported extensive taro lo‘i. Disease and other factors decimated the native Hawaiian people in the mid-1800s, and soon Chinese rice farmers were established in the wetlands agricultural areas. They intermingled with the Hawaiian population during the 1880s. Hanapēpē and ‘Ele‘ele expanded during this time, and they experienced boom and bust periods ever since associated with agriculture, shipping and now tourism.

Historical maps and interviews with long-time residents indicate that the commercial center of Hanapēpē straddled the Hanapēpē River from the turn of the century, which to a certain degree it still does. Residents on one side of the river could walk to businesses on the other and vice versa. Furthermore, prior to WWII, school children residing west of the river would use the Hanapēpē Bridge (or the nearby Swinging Bridge) to cross the river to get to ‘Ele‘ele School. Consequently, the Hanapēpē Bridge has served as the connection between the east and west sides of the town for generations of residents. The area west of Hanapēpē Bridge in the mid-20th century was a lively business area, with establishments such as Seto Store, Watase Hotel & Watase Taxi, Song Kwan Sing Store, Nishihara Market, and other dry good and food stores, restaurants, florists and service stations. The level of commerce combined with denser settlement and fewer cars led to a large volume of pedestrian traffic over the bridge. The elevated walkway on the bridge was also used for many years by crabbers and fishermen as a platform to dangle their lines from, protected and away from vehicle traffic. Crabbing and fishing still occur on and adjacent to the bridge.

Traditional Cultural Properties and Uses in the Project Corridor, Impacts and Mitigation Measures

DOW sought input through the early consultation process aimed at individuals, agencies, businesses and social or cultural organizations; archaeological and architectural research; and meetings with the Kaua‘i Historic Preservation Commission about cultural sites or practices that could be affected by the proposed project. No information relative to such practices or resources was received.

In the case of the proposed water line improvements, it is important to reiterate that all ground disturbance will be temporary and will occur along existing roadways in an existing primarily commercial urban landscape. Aside from Hanapēpē Bridge, which is used for crabbing and fishing (activities that could be affected only very briefly during replacement of the water line), no natural resources such as springs, hills, forests, caves, biological species with cultural uses or other features with potential traditional Hawaiian cultural importance are present or would be expected to be impacted by project activities. The landscape reflects the more modern, multi-ethnic plantation-based cultural history of the towns, the region, and indeed many areas throughout rural Hawai‘i. This topic is covered more fully in the next section which deals with historic properties and architectural resources. Protection of potential cultural resources that lie under the streets and roadsides will occur through archaeological monitoring. Preservation of the streetscapes, architectural features, and general character of these towns serves, among other goals, perpetuation of cultural values.

It is reasonable to conclude, based upon both the specific nature of the resources and the temporary impacts that will occur from water line construction, that the exercise of native Hawaiian rights related to gathering, access or other customary activities will not be affected, and there will be no adverse effect upon other cultural sites, practices or beliefs. The Draft EA was distributed to agencies and groups who might have knowledge in order to confirm this finding, including the Office of Hawaiian Affairs and the State Historic Preservation Division.

3.3.4 Historic Properties

Archaeology Background

Multiple archaeological research projects have been undertaken in the general project area, including those by Spear (1992), Hammatt (1992), Creed et al. (1994), Kikiloi et al. (2000), Powell and Dega (2002), Monahan (2005), Virgue (2008), and Powell and Dega (2014). Results from these projects include the identification of both Traditional-period and Historic deposits, as well as several human burials. These recent results are consistent with the intense habitation and use patterns that have persisted through the Traditional Period up to the present. The findings of this and earlier research by Thrum (1907) and Bennett (1931) are consistent with the pattern in the Hawaiian Islands in which burials are commonly found at low elevations in sandy substrate and coastal locales often produce remnant deposits of intermittently utilized camps (fishing, etc.) or near-shore habitation locales.

W.C. Bennett conducted one of the earliest archaeological investigations in Hanapēpē (1931). This work documented extensive cultural utilization of Kaua‘i’s south coast, including several sites in Hanapēpē Ahupua‘a. Among the most important sites in Hanapēpē are the Hanapēpē Salt Ponds and house sites centered on Pu‘olu Point, as well as Akowai and Ku-wiliwili Heiau. The Bishop Museum conducted two archaeological investigations that augmented Bennett’s picture

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of Hanapēpē (Kikuchi 1963, 1982) by identifying a fishing shelter, fishhooks and extensive midden deposits at Salt Pan Beach Park. Also on the coast, on the northwest side of Hanapēpē Bay, sand burials were found (Bennett 1931:112).

In 1993, an archaeological subsurface survey was conducted by Cultural Surveys Hawai‘i on a one-acre State-owned property in Hanapēpē Town, on the west bank of the Hanapēpē Stream (Creed et al 1994). This work yielded Historic-era cultural deposits as well as two human burials of unknown age. Sparse cultural material consisting of minimal charcoal flecking and several marine shell fragments was recovered. These finds may be correlated with human activity which would have occurred on the adjoining lot, LCA 9283. Neither burial was investigated in detail, but neither a coffin nor grave goods were found in association with either burial.

In 2000, Kikiloi et al. (2000) reported negative results from an archaeological assessment in the upper Hanapēpē Valley. In 2002, J. Powell, at the request of landowner, documented and recovered human skeletal remains identified during subsurface construction activities on a commercial-residential property located along Hanapēpē Road (Powell and Dega 2002). In 2005, C.M. Monahan had negative findings in the Hanapēpē area during the Kaua‘i rural fiber optic duct lines project other than historic bridges and a buried historic road base (Monahan 2005).

In 2008, during Archaeological Monitoring at Port Allen Small Boat Harbor within Hanapēpē Ahupua‘a, mechanical excavations uncovered a junction of plantation-era railroad tracks, State Site 50-20-09-585. Site -585 is significant under Criterion D of the Hawai‘i State Historic Registry.

In 2014, J. Powell conducted an archaeological survey on approximately 78 acres of land in Hanapēpē Ahupua‘a (Powell and Dega 2014). One newly identified historic property was identified and documented on the parcel. The newly identified site, a single historic feature (irrigation ditch), was designated as State Site No. 50-30-09-2219.

The primarily urban project water line corridor has been fully disturbed by previous grading, and in most areas, paving and/or fill. An initial archaeological reconnaissance concluded that no surface sites were present but that monitoring would need to occur during ground disturbance and excavation to ensure that any subsurface sites would be appropriately treated.

The DLNR State Historic Preservation Division on the Island of Kaua‘i (SHPD-Kaua‘i) was consulted regarding archaeological investigations for the new and replacement water lines. SHPD-Kaua‘i discussed the area with archaeologists and indicated that due to the history of intense surface disturbance, archaeological monitoring was suitable. A monitor would be required to be present at all times during work within Hanapēpē, and intermittent monitoring will be conducted in the ROW of Kaumuali‘i Highway. These specifications will be incorporated in the construction contract.

SHPD review of the historic properties present, the significance of these properties, and impacts and mitigation are discussed holistically below after discussion of architectural historic properties.

Architectural Resources

Fung Associates conducted in December 2015 a Reconnaissance Level Survey (RLS) of all architectural resources of the area surrounding the project site corridor whose effective date built exceeds 50 years. The study was undertaken by Dr. Don Hibbard and Alison Chiu, who meet the Secretary of Interior’s Professional Qualifications Standards as either an architectural historian and/or historic architect. The study is attached as Appendix 2 and summarized below, with relevant information summarized below.

The survey followed a methodology that included performing background research, a site visit to photograph and gather information on any buildings located on the various parcels, and writing up the results of the survey so any identified properties may be placed in the SHPD’s Statewide Inventory of Historic Places (SIHP). The survey examined all the properties adjoining Kaunali‘i Highway between Kona Road and Waialo Road, along Hanapēpē Road between Moi Road and Kona Road, where the proposed new water lines are proposed to be installed. This is a distance of approximately one mile, and the area encompasses approximately 24 acres. It should be noted that the area includes architectural resources that are in some cases fairly distant from the area of construction.

The unique history of Hanapēpē described in the sections above has left behind a celebrated architectural landscape. Straddling the Hanapēpē River, the east and west sides of the town are connected by a single-lane bridge dating from 1911, which has an elevated pedestrian sidewalk that is currently dilapidated. The expansion of the town in the 1890s brought prosperity and a number of new businesses and buildings, increasingly operated by Asian immigrants. As the Chinese were well established on the west bank of the Hanapēpē River, the Japanese merchants ended up primarily on the east bank, on lands made available by the Territorial government. During the 1930s, Hanapēpē’s prosperity began to decline. Not only did merchants have to contend with the worldwide economic depression, but Nawiliwili Harbor in Lihue supplanted Port Allen as Kaua‘i’s primary port and the belt highway traversing the west side of the island was re-routed to bypass the town in 1939. As a result, Hanapēpē has maintained much of its early twentieth-century appearance. Land planners in the late 1940s attempted to refocus community activity to the makai side of the belt highway, with a minimum of success. The Hanapēpē Honpa Hongwanji was one of several religious buildings constructed in the makai area in an attempt to promote the re-orientation of the town.

The RLS documented 24 historic architectural resources on individual reconnaissance level inventory forms. Of the historic architectural resources surveyed, sixteen buildings and two

bridges were identified as eligible for listing on the Hawai‘i State Register and National Register of Historic Places (NRHP). Because the documentation is voluminous, it is not included in this EA but can be consulted at the Kapolei and Kaua‘i SHPD offices.

Since all activities associated with the project are below grade, except at Hanapēpē Bridge, and all ground disturbance would occur within previously disturbed areas, the consulting architects determined that the work proposed would not affect the significance of the adjacent historic buildings or any other historic properties, other than, potentially, Hanapēpē Bridge. DOW and its engineering and architectural consultants then initiated coordination with the Kaua‘i Historic Preservation Commission (KHPRC) and DLNR-SHPD concerning various alternatives for the water line to cross Hanapēpē Bridge. The entire range of alternatives that were conceptualized for purposes of consideration is presented in Section 1.4 of this EA and will not be repeated here. Two presentations before KHPRC were made, which include renderings of the various alternatives and questions and answers concerning the project. Correspondence from KHPRC and DLNR-SHPD is contained in Appendix 2.

In the end, after closely considering the comments and concerns of KHPRC and DLNR-SHPD, along with project constraints related to the project’s purpose and need, relation to other projects, and permitting considerations, an alternative was selected for advancement that would install the 12-inch water line on the bridge inside of and along the downstream parapet wall, with a 5-foot wide sidewalk above it. The installation may be considered temporary, as DPW has indicated that it is planning to rehabilitate the bridge in the near future. This alternative minimizes the visibility of the pipeline and effects to the historic character of the bridge. The DOW wrote to DLNR-SHPD on August 22, 2016, to summarize the results of surveys, analysis and previous coordination with DLNR-SHPD as well as the Kaua‘i Historic Preservation Review Commission (see Appendix 3 for letter). DOW requested that DLNR-SHPD concur that the project would have no adverse effect on significant historic sites, given the minimally visible proposed Hanapēpē Bridge crossing design; the lack of any physical effect to any of the historic buildings; the plan for archaeological monitoring along the water line route; and the temporary-only nature of disturbance to the character of Hanapēpē Town and its historic properties that would unavoidably result from adjacent construction. The Final EA will discuss results of the coordination with DLNR-SHPD, as well as any comments from the Kauai Historic Preservation Review Commission, the Historic Hawai‘i Foundation, and any other interested parties.

3.4 Growth-Inducing, Cumulative and Secondary Impacts

Growth-Inducing Impacts

Analysis of growth-inducing impacts examines the potential for a project to induce unplanned development, substantially accelerate planned development, encourage shifts in growth from other areas in the region, or intensify growth beyond the levels anticipated and planned for without the project. Provision of needed infrastructure such as roads, water supply, sewer

facilities, etc., is often seen as growth-inducing. Of key importance is whether infrastructure fulfills existing demands/needs of planned growth, or whether it instead enables unplanned growth and/or diverts growth away from planned areas.

The proposed project does not increase the total volume of water available in the system, but instead replace aged transmission water lines through Hanapēpē with new lines less prone to leaks or breaks; establishes system redundancy that ensures water can be delivered to ‘Ele‘ele whenever the facilities are out of service; and allows DOW to redistribute the source and supply volumes currently allocated among the different service zones in Hanapēpē and ‘Ele‘ele. This redistribution would service projected approved growth, but more importantly it would reduce the amount of water that must be currently pumped up to the ‘Ele‘ele tank. This would reduce energy consumption and lower costs to the DOW, and thus its water users. While the project accounts for normal anticipated growth, as part of the planning undertaken in *Water Plan 2020*, it is not being implemented to support additional growth or new development.

Cumulative Impacts

Cumulative impacts result when implementation of several projects that individually have minor impacts combine to produce more severe impacts or conflicts among mitigation measures.

Impacts to water quality, native species/habitat, wetlands, soils, and geologic hazards are either non-existent or negligible and capable of mitigation through proper enforcement of permit conditions. All adverse impacts of the proposed project are related to temporary impacts to noise, air quality, traffic, scenery, public utilities and facilities, and community character. Therefore, it is important to review projects occurring in the area with which similar impacts could accumulate or interact in an adverse way.

Five other projects will be occurring within the next three years in this area. Although the project schedules may not overlap, all merit review.

- *Kaumuali‘i Highway Resurfacing, Lele Road to Hanapēpē Bridge* (Project No. 50C-02-15M): This State Department of Transportation, Highways Division project involves reconstructing weakened pavement areas, resurfacing, replacing pavement markings and loop detectors. A contractor has been retained and the construction cost is estimated at \$0.77M. It is currently targeted for construction in late 2016 with anticipated completion around the end of the year.
- *Hanapēpē Bridge Project*: This federal-aid maintenance project of the County of Kaua‘i’s Department of Public Works is planned to be undertaken to repair spalls, cracks and holes in underside, parapet and piers of the bridge. Design is complete, and bid solicitation is currently targeted for early 2017.

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- *Hanapēpē Road Resurfacing*: Another County DPW federal-aid County maintenance project, it would resurface the entire length of Hanapēpē Road. Construction is currently targeted for 2018.
- *Hanapēpē River Bridge (HI STP SR50 (1))*: This County and State federal-aid project is currently finalizing an Environmental Assessment with several alternatives that would improve the safety and reliability of the Hanapēpē River Bridge on Kaumuali‘i Highway, through rehabilitation or replacement, addressing bridge width, load capacity, bridge railing and transitions, bridge approaches and to mitigate the effects of scour. The alternatives are still under formulation. The estimated cost is \$10M to \$25M.
- *‘Ele‘ele Subdivision Sewer Collection System Rehabilitation*: This is a County DPW Division of Wastewater Management project to rehabilitate the existing sewers in ‘Ele‘ele. It also proposes to replace the sewer line that flows out of ‘Ele‘ele (via ‘Ele‘ele Road) and crosses Kaumuali‘i Highway into Waialo Road. An estimated cost was not available at this time, but construction is targeted for 2018.

Each of these projects would impact traffic, air quality, noise, scenery and community activities/character temporarily during construction. Coordinated mitigation is required in the form of project scheduling to conduct the activities in a logical sequence that does not compound the impacts. Because the projects involve only three agencies, this coordination is possible to achieve. The DOW is working with these agencies, and in particular the Department of Public Works, as part of advance coordination. Specifically, DOW is expediting the HE-10 Hanapēpē Road 6-inch Main Replacement project to complete it in early 2017, in advance of the anticipated start of, and so as not to conflict with the Hanapēpē Road resurfacing. Furthermore, the contract documents for the HE-10 Hanapēpē Road 6-inch Main Replacement project will notify the contractor of the Hanapēpē Bridge Repair Project and mandate coordination with, and give precedence to, the contractor for the separate bridge repair project. The DOW will also avoid activities that close Hanapēpē Bridge (which is part of Hanapēpē Road) during times when the Hanapēpē River Bridge (which is part of Kaumuali‘i Highway) may also be closed. With successful coordination, the cumulative construction-phase impacts of these six projects can be reduced to acceptable levels.

Secondary Impacts

Construction projects sometimes have the potential to induce secondary physical and social impacts that are only indirectly related to project. For example, construction of a new recreation facility can lead to changes in traffic patterns that produce impacts to noise and air quality for a previously unimpacted neighborhood. In this case, the project’s impacts are limited to direct impacts at the site itself, and there does not appear to be any potential for secondary impacts.

3.5 Required Permits and Approvals

Several permits and approvals will or may be required to implement the proposed project.

County of Kaua‘i

- Department of Public Works (DPW): Construction Plan Approval, Road Permit and Application for Notice of Intent to Grade and Grub
- DPW: Grubbing Permit, Grading Permit, Stockpiling Permit (potential, depending upon contractor construction methods)
- Planning Department: Special Management Area Permit (potential, depending upon Planning Department review)
- Department of Water: Application for Water Service (for construction water) and Construction Plan Approval

State of Hawai‘i

- Department of Land and Natural Resources, Land Division: Right-of-Entry (if any State parcels used for staging areas)
- Department of Health (DOH), Clean Water Branch: National Pollutant Discharge Elimination System permit NOI C (for Construction) and NOI F (for Hydrotesting Water)
- DOH Noise and Radiation Branch: Community Noise Control Permit (potential)
- Department of Transportation, Highways Division: Lane Use Permit for Construction Work and Construction Plan Approval
- Disability and Communications Access Board: Construction Plan Approval

Federal

- US Army Corps of Engineers: Section 408 Permit

4 COMMENTS AND COORDINATION

4.1 Agencies and Organizations Contacted

The following agencies and organizations received a letter inviting their participation in the preparation of the Environmental Assessment.

County of Kaua‘i

- Planning Department
- Civil Defense Agency
- Kaua‘i Historic Preservation Review Commission (KHPRC)
- Police Department
- Department of Public Works
- Transportation Agency

State of Hawai‘i

- Department of Land and Natural Resources, Chair
- Department of Health, Environmental Planning Office
- Department of Health, Safe Drinking Water Branch
- Department of Health, Clean Water Branch
- Office of Hawaiian Affairs
- Department of Transportation, Highways Division

Federal

- U.S. Army Corps of Engineers, Regulatory Branch
- U.S. Fish and Wildlife Service

Organizations

- Kauai Island Utility Cooperative
- Hawaiian Telcom
- Historic Hawaii Foundation
- Hanapēpē Artists’ Guild
- Hanapēpē-‘Ele‘ele Community Association

Copies of correspondence are included in Appendix 1a and are cited in appropriate sections of the text of this EA.

5 LIST OF DOCUMENT PREPARERS

This Environmental Assessment was prepared for the County of Kaua‘i, Department of Water Ron Terry, Ph.D., of Geometrician Associates, with assistance from Akinaka & Associates, the engineering contractor for the project, and subconsultants Fung Associates Inc. (historic architecture) and Scientific Consultant Services (archaeology).

6 ENVIRONMENTAL ASSESSMENT FINDINGS

Section 11-200-12 of the State Administrative Rules sets forth the criteria by which the significance of environmental impacts shall be evaluated. The following discussion paraphrases these criteria individually and evaluates the project’s relation to each.

1. *The project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No natural resources will be irrevocably committed or lost. The biota on the site consists of landscaped or weedy species, and no sensitive water bodies or other natural resources will be affected. Standard mitigation to protect water quality will ensure that the project will not affect native waterbirds. The DLNR-State Historic Preservation Division is expected to concur with the finding that the project as currently designed would have no adverse effect to significant historic sites, including Hanapēpē Bridge.
2. *The project will not curtail the range of beneficial uses of the environment.* No future beneficial use of the environment will be affected in any way by the proposed project. The existing uses of the urban project site will not be affected.
3. *The project will not conflict with the State’s long-term environmental policies.* The State’s long term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. A number of specific guidelines support these goals. No aspect of the proposed project conflicts with these guidelines. The project’s goals of improving water system reliability and reducing energy costs for the small towns of Hanapēpē and ‘Ele‘ele while conserving natural resources satisfies the State’s environmental policies.
4. *The project will not substantially affect the economic or social welfare of the community or State.* The improvements will benefit the social and economic welfare of Hawai‘i by improving water service for the small towns of Hanapēpē and ‘Ele‘ele.
5. *The project does not substantially affect public health in any detrimental way.* No adverse effects to public health are anticipated. Public health will be benefitted by improving water service and reducing the potential for water system outages.
6. *The project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* No adverse secondary effects are expected. The project will not enable development, but will instead assure adequate supply to existing customers while accounting for modest growth anticipated as part of the *Water Plan 2020*.

7. *The project will not involve a substantial degradation of environmental quality.* The implementation of Best Management Practices for all construction will ensure that the project will not degrade environmental quality in any substantial way.

8. *The project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* No endangered species of flora or fauna are known to exist on the project site or would be affected in any way by the project. Standard mitigation to protect water quality will ensure that the project would not affect endangered native waterbirds that utilize the general area. Hawaiian hoary bats will be protected through timing of the removal of tall vegetation.

9. *The project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* Cumulative impacts result when implementation of several projects that individually have minor impacts combine to produce more severe impacts or conflicts among mitigation measures. Most adverse impacts will either not occur or will be reduced to negligible levels through mitigation measures, and will therefore not tend to accumulate in relation to this or other projects. However, several projects scheduled in the same area by the County Department of Public Works and the State Department of Transportation have the potential to involve construction-phase impacts to traffic, noise and air quality that could interact, depending on phasing. Coordinated mitigation is required in the form of project scheduling to conduct the activities in a logical sequence that does not compound the impacts. The DOW is working closely with these agencies to minimize impacts.

10. *The project will not detrimentally affect air or water quality or ambient noise levels.* The project will have no permanent effects in terms of water quality, air quality and noise. Temporary effects are unavoidable but can be mitigated by Best Management Practices to acceptable levels.

11. *The project will not affect or will likely be damaged as a result of being located within an environmentally sensitive area such as flood plains, tsunami zones, erosion-prone areas, geologically hazardous lands, estuaries, fresh waters or coastal waters.* The project avoids geologically hazardous areas. Much of the project corridor is within a floodplain, but given the setting, proposed use and design features, there should no effect on the Hanapēpē River, base flood elevation, hazard exposure, or beneficial floodplain values.

12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* No protected viewplanes will be impacted by the project, which will have no permanent adverse scenic effects. Temporary effects are unavoidable but minor.

13. *The project will not require substantial energy consumption.* Some, but not substantial, input of energy is required for replacement of the water lines. The project would require a modest amount of energy for construction, but would compensate for this by reducing energy consumption by the booster pumps by approximately 46,000 kW-hrs per year on an ongoing basis.

Based on the above, the County of Kaua‘i, Department of Water expects at this time to determine that the proposed project will not have any significant effect in the context of Chapter 343, Hawai‘i Revised Statutes and section 11-200-12 of the State Administrative Rules, and thus expects to issue a Finding of No Significant Impact. This finding will be carefully evaluated and made final upon consideration of comments on the Draft EA.

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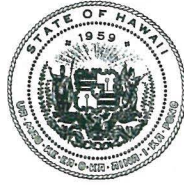
Hanapēpē-‘Ele‘ele Water Systems Improvements
Job 15-07, WP 2020 Nos. HE-01 & HE-10

Environmental Assessment

Appendix 1a
Comments Received in Response to Early Consultation

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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:
File:

EPO 15-327

December 23, 2015

Mr. Ron Terry
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawaii 96721
Email: rterry@hawaii.rr.com

Dear Mr. Terry:

SUBJECT: Early Consultation for Environmental Assessment (EC EA) for HE-01 Reorganize Water System – Pipeline Connecting Hanapepe and Eleele Waimea and Koloa Districts, Island of Kauai

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your EC EA to our office on December 22, 2015. Thank you for allowing us to review and comment on the proposed project. The EC EA was routed to the District Health Office on Kauai, Wastewater and Safe Drinking Water Branches. 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/landuse>. Projects are required to adhere to all applicable standard comments.

EPO also encourages 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>

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 Leialoha Phillips McIntyre".

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

LM:nn

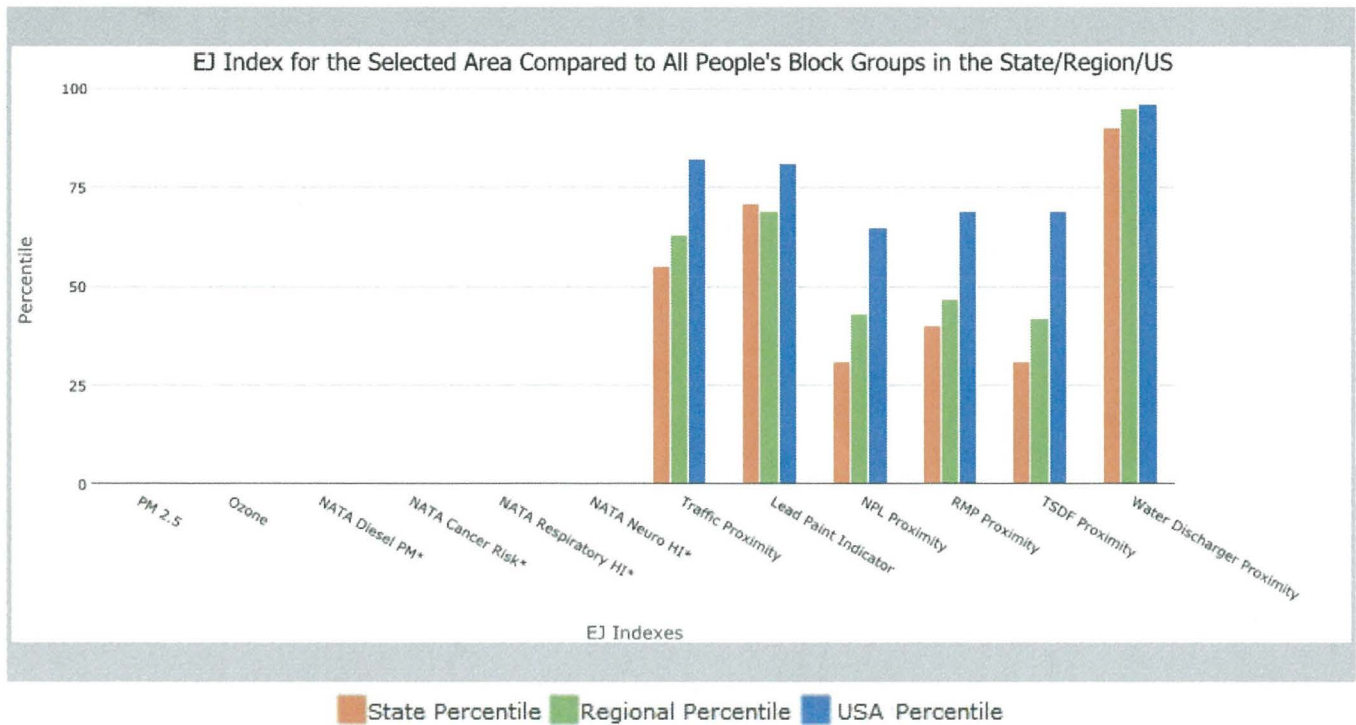
Attachment: U.S. EPA EJSCREEN Map 3 page report - <http://www2.epa.gov/ejscreen>

c: DHO Kauai, WWB, SDWB {via email only}

for 1 mile Ring around the Corridor, HAWAII, EPA Region 9

Approximate Population: 4839

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	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	55	63	82
EJ Index for Lead Paint Indicator	71	69	81
EJ Index for Proximity to NPL sites	31	43	65
EJ Index for Proximity to RMP sites	40	47	69
EJ Index for Proximity to TSDFs	31	42	69
EJ Index for Proximity to Major Direct Dischargers	90	95	96



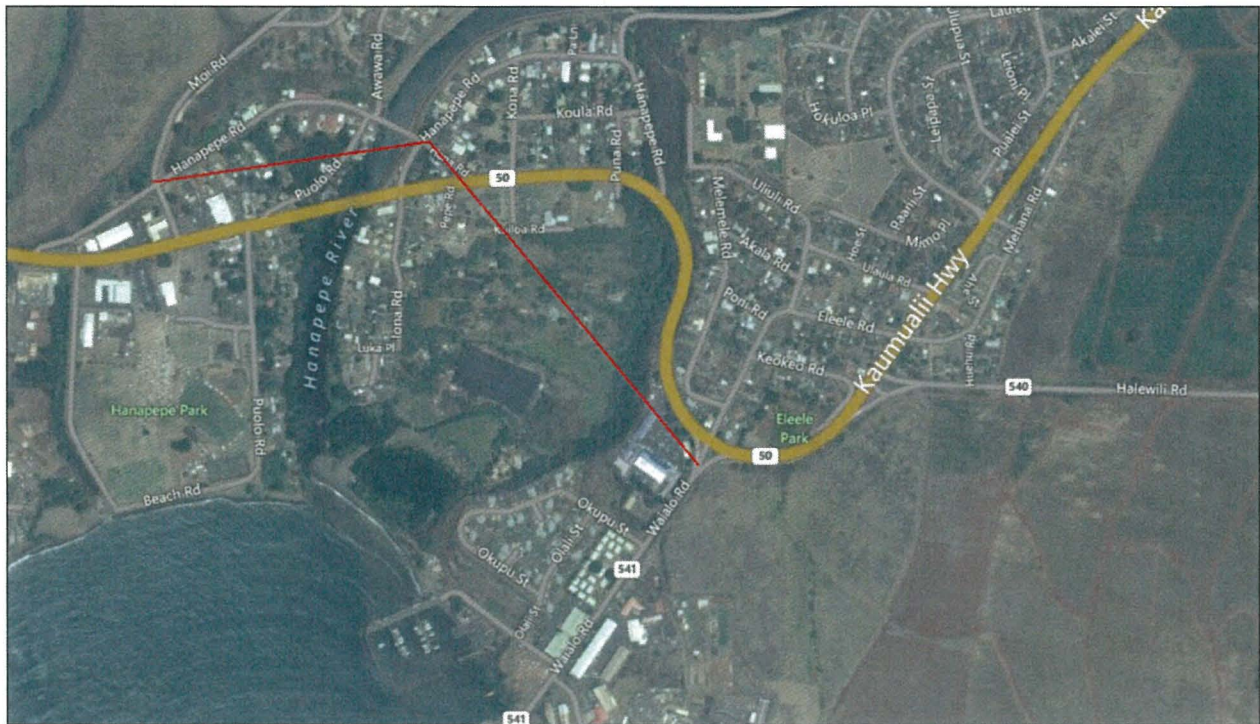
This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block 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.

EJSCREEN Report

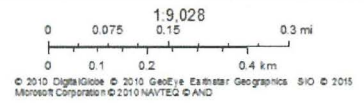


for 1 mile Ring around the Corridor, HAWAII, EPA Region 9

Approximate Population: 4839



December 28, 2015
— Digitized Line



EJSCREEN Report

for 1 mile Ring around the Corridor, HAWAII, EPA Region 9

Approximate Population: 4839



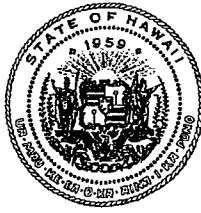
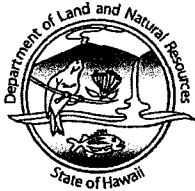
Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	46.1	N/A
NATA Diesel PM ($\mu\text{g}/\text{m}^3$) [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Cancer Risk (lifetime risk per million) [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	58	280	44	190	41	110	61
Lead Paint Indicator (% Pre-1960 Housing)	0.22	0.17	66	0.25	57	0.3	51
NPL Proximity (site count/km distance)	0.0056	0.092	21	0.11	5	0.096	1
RMP Proximity (facility count/km distance)	0.045	0.18	11	0.41	6	0.31	11
TSD Proximity (facility count/km distance)	0.0056	0.092	17	0.12	1	0.054	12
Water Discharger Proximity (facility count/km distance)	0.64	0.33	87	0.19	95	0.25	91
Demographic Indicators							
Demographic Index	57%	51%	70	46%	67	35%	80
Minority Population	89%	77%	67	57%	81	36%	90
Low Income Population	25%	25%	57	35%	40	34%	41
Linguistically Isolated Population	3%	6%	45	9%	33	5%	61
Population With Less Than High School Education	12%	10%	67	18%	45	14%	51
Population Under 5 years of age	7%	6%	62	7%	55	7%	60
Population over 64 years of age	13%	14%	47	12%	65	13%	56

* The 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: <http://www.epa.gov/ttn/atw/natamain/index.html>.

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

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. 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. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

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

January 11, 2016

Geometrician Associates, LLC
Attention: Mr. Ron Terry
P.O. Box 396
Hilo, Hawaii 96721

via email: rterry@hawaii.rr.com

Dear Mr. Perry:

SUBJECT: Early Consultation for Environmental Assessment for HE-01 Reorganize Water System – Pipeline Connecting Hanapepe and Eleele (Kaunualii Highway 16-inch Main and Emergency Pump Connection), and HE-10 Hanapepe Road 6-inch Main Replacement, Hanapepe-Eleele Water Systems

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.

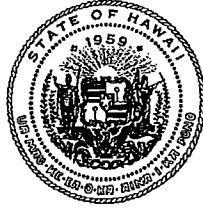
Sincerely,

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

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

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

December 16, 2015

MEMORANDUM

TO: PR:

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: PD:
SUBJECT:

[Signature]
Russell Y. Tsuji, Land Administrator
Early Consultation for Environmental Assessment for HE-01 Reorganize Water System – Pipeline Connecting Hanapepe and Eleele (Kaumualii Highway 16-inch Main and Emergency Pump Connection), and HE-10 Hanapepe Road 6-inch Main Replacement, Hanapepe-Eleele Water Systems
LOCATION: Waimea and Koloa Districts, Island of Kauai; TMK: (4) various
APPLICANT: County of Kaua'i, Department of Water

Transmitted for your review and comment is information on the above referenced project. Please submit any comments by **January 8, 2016**

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: *[Signature]*

Print Name: Carty S. Chang, Chief Engineer

Date: 12/16/15

cc: Central Files

V. LUNA
X, REF

15 DEC 16 PM 10:33 ENGINEERING

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/ Russell Y. Tsuji

Ref: Early Consult Environmental Assessment (EA), HE-01 Reorganize Water System – Pipeline Connecting Hanapepe and Eleele, and HE-10 Hanapepe Road 6-inch Main Replacement, Hanapepe-Eleele Water Systems
Kauai.001

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- (X) Please take note that the project site according to the Flood Insurance Rate Map (FIRM), is located in Zones AEF, and X. The National Flood Insurance Program regulates developments within Zones AEF, as indicated in bold letters below, but not Zones X.
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- (X) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

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

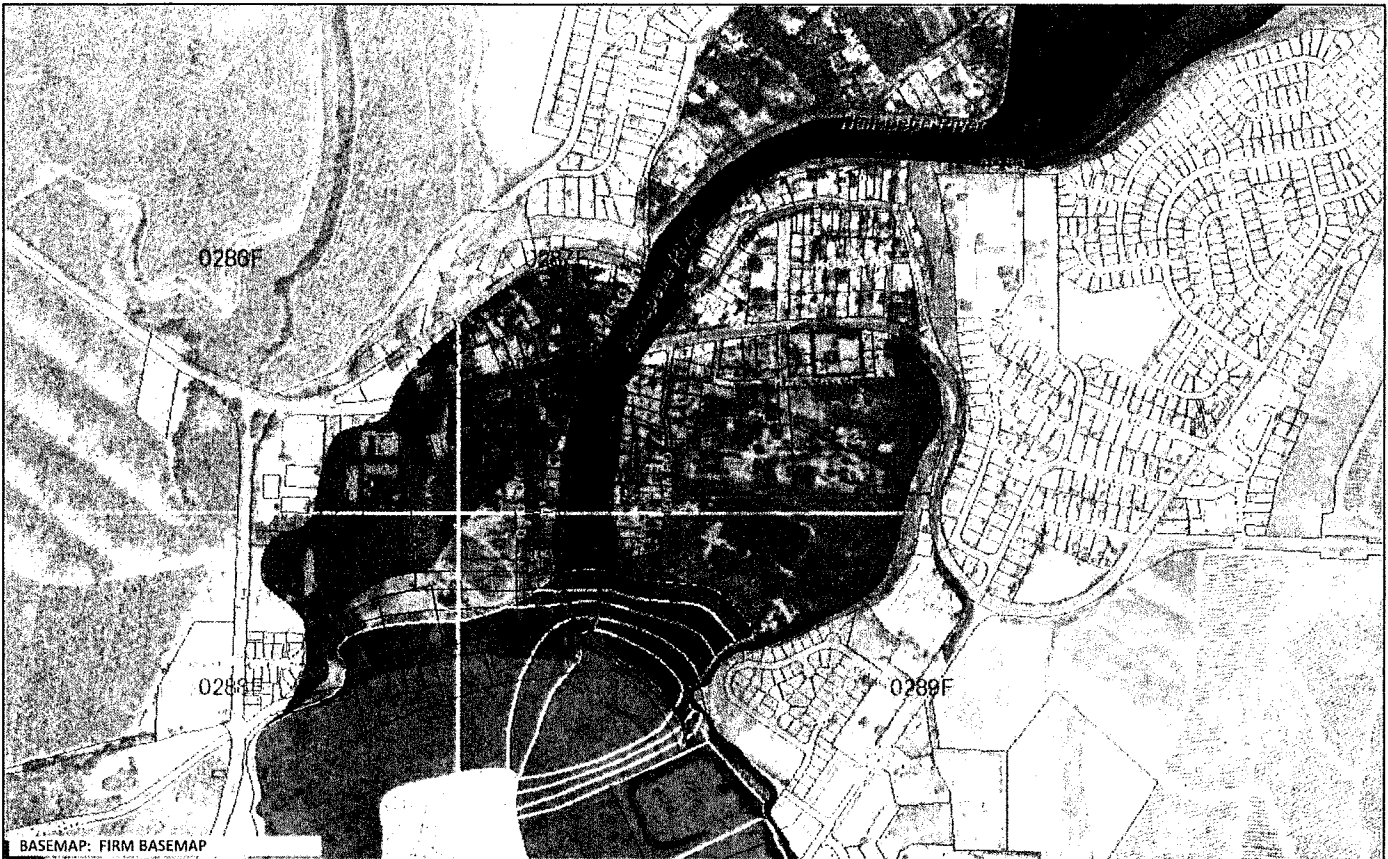
- () Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Carter Romero (Acting) at (808) 961-8943 of the County of Hawaii, Department of Public Works.
- () Mr. Carolyn Cortez at (808) 270-7253 of the County of Maui, Department of Planning.
- (x) Mr. Stanford Iwamoto at (808) 241-4846 of the County of Kauai, Department of Public Works.
- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.
- () Additional Comments: _____

- () Other: _____

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

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: _____



BASEMAP: FIRM BASEMAP



Flood Hazard Assessment Report

www.hawaiiinfip.org

Pipeline Hanapepe

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

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

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

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

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

OTHER FLOOD AREAS

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

Property Information

COUNTY: KAUAI
 TMK NO: (4) 1-9-006:016
 WATERSHED: HANAPEPE
 PARCEL ADDRESS: 1-3860 KAUMUALII HWY
 HANAPEPE, HI 96716

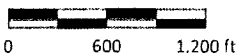
Notes:

Flood Hazard Information

FIRM INDEX DATE: NOVEMBER 26, 2010
 LETTER OF MAP CHANGE(S): NONE
 FEMA FIRM PANEL: 1500020287F
 PANEL EFFECTIVE DATE: NOVEMBER 26, 2010

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

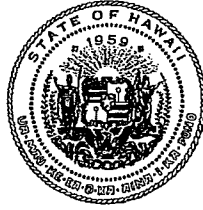
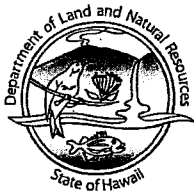
THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://dinreng.hawaii.gov/dam/>



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

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

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

December 16, 2015

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

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

Early Consultation for Environmental Assessment for HE-01 Reorganize Water System – Pipeline Connecting Hanapepe and Eleele (Kaunualii Highway 16-inch Main and Emergency Pump Connection), and HE-10 Hanapepe Road 6-inch Main Replacement, Hanapepe-Eleele Water Systems

LOCATION:

Waimea and Koloa Districts, Island of Kauai; TMK: (4) various

APPLICANT:

County of Kaua'i, Department of Water

Transmitted for your review and comment is information on the above referenced project. Please submit any comments by **January 8, 2016**

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:

Marvin Mikasa

Date:

Dec. 21, 2015

cc: Central Files

CLAYTON ROAD



RECEIVED

JAN 29 2016

AKINAKA & ASSOCIATES, LTD.

January 21, 2016

Mr. William Makanui
Akinaka & Associates, LTD
3375 Koapaka Street Suite B-206
Honolulu, Hawaii 96819

Dear Mr. Makanui:

Subject: Hawaii Gas Facilities Information Request
HE-01 Reorganize Water System --
Pipeline Connecting Hanapepe and Eleele; and
HE-10 Hanapepe Road 6-inch Main Replacement
A&A JOB NO: CKDOW15-01

In response to your letter dated December 10, 2015, it has been determined that the area is currently clear of utility gas facilities.

Thank you for the opportunity to review the map. Should there be any questions, or if additional information is desired, please feel free to call Colin Chikamoto at 596-1430.

Sincerely,

Hawaii Gas

Keith K. Yamamoto
Manager, Engineering

KKY:krs

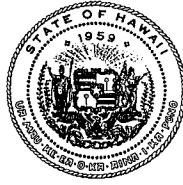
From: Jeremy Lee
Sent: Monday, December 21, 2015 8:41 AM
To: rterry@hawaii.rr.com
Cc: Celia Mahikoa; Kirk Saiki
Subject: County of Kauai, Transportation Agency - CTA

Ron,
Mahalo for the opportunity to comment on the:
“Early Consultation for Environmental Assessment for H-01 reorganize water system- Pipeline connection Hanapēpē and Eleele (Kaumualii highway 16 inch main and emergency pump connection), and HE-10 Hanapēpē road 6 inch main replacement, Hanapēpē-‘Ele‘ele water systems, Waimea and Kōloa Districts, Island of Kaua‘i”.

We at the CTA do not have any comments on the subject project listed above and do not request to receive a copy of the EA when completed.

Mahalo,
Jeremy Kalawaia Lee
Program Specialist III
County Transportation Agency
3220 Hoolako Street
Lihue, Hawaii 96766
808-246-8112
jlee@kauai.gov

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:
EMD/CWB

12048PCTM.15

December 21, 2015

Mr. Ron Terry
Principal
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawaii 96721

Dear Mr. Terry:

SUBJECT: Comments on the Early Consultation for Environmental Assessment (EA) for HE-01 Reorganize Water System – Pipeline Connecting Hanapepe and Eleele (Kaunualii Highway 16-inch Main and Emergency Pump Connection), and HE-10 Hanapepe Road 6-inch Main Replacement, Hanapepe-Eleele Water Systems Waimea and Koloa Districts, Island of Kauai, Hawaii

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated December 9, 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 a 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 Hawaii Administrative Rules (HAR), Chapter 11-54.

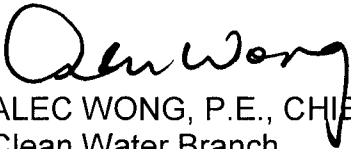
4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, 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.

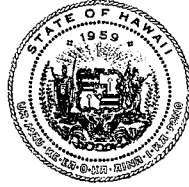
Sincerely,


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

CTM:bk

c: EPO [via e-mail only]

DAVID Y. IGE
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
KAUAI DISTRICT HEALTH OFFICE
3040 UMI STREET
LIHUE, HAWAII 96766

DILEEP G. BAL, M.D., M.S., M.P.H.
DISTRICT HEALTH OFFICER

December 22, 2015

Mr. Ron Terry, Principal
Geometrician Associates, LLC
P.O. Box 396
Hilo, HI 96721

Dear Mr. Terry,

SUBJECT: Early Consultation for Environmental Assessment
Project: HE-01 and HE-10
Applicant: County of Kauai, Department of Water

Based on our review, we offer the following environmental health concerns for your consideration, which should be addressed to prevent the project from causing an environmental impact:

1. Noise will be generated during the construction phase of this project. The applicable maximum permissible sound levels as stated in Title 11, Hawaii administrative Rules (HAR), Chapter 11-46, "Community Noise Control", shall not be exceeded unless a noise permit is obtained from the State Department of Health (DOH).
2. Temporary fugitive dust emissions could be emitted when the project site is prepared for construction and when construction activities occur. In accordance with Title 11, HAR, Chapter 11-60.1, "Air Pollution Control", effective air pollution control measures shall be provided to prevent or minimize any fugitive dust emissions caused by construction work from affecting the surrounding areas. This includes the off-site roadways used to enter/exit the project. The control measures include but are not limited to the use of water wagons, sprinkler systems, dust fences, etc.
3. The construction waste that is generated by the project shall be disposed of at a solid waste disposal facility that complies with the applicable provisions of Title 11, HAR, Chapter 11-58.1, "Solid Waste Management Control", the open burning of any of these wastes on or off site prohibited.
4. The Department of Health, Clean Water Branch (CWB) has reviewed the subject document and offers these comments on your project. Please note that our

review is based solely on the information provided in the subject document and its compliance with Chapters 11-54 and 11-55 Hawaii Administrative Rules (HAR). 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://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf>.

- I. 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).
- II. Please call the Army Corps of Engineers at (808) 438-9258 to see if this project requires a Department of the Army (DA) permit. Permits may be required for work performed in, over, and under navigable waters of the United States. Projects requiring a DA permit also require a Section 401 Water Quality Certification (WQC) from our office.
- III. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:
 - a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).
 - b. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the start of the construction activities.**
 - c. Treated effluent from leaking underground storage tank remedial activities.
 - d. Once through cooling water less than one (1) million gallons per day.
 - e. Hydrotesting water.
 - f. Construction dewatering effluent.
 - g. Treated effluent from petroleum bulk stations and terminals.
 - h. Treated effluent from well drilling activities.
 - i. Treated effluent from recycled water distribution systems.
 - j. Storm water from a small municipal separate storm sewer system.

k. Circulation water from decorative ponds or tanks.

5. You must submit a separate NOI form for each type of discharge at least 30 days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at:
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.
6. For types of wastewater not listed in Item 3 above or wastewater discharging into Class 1 or Class AA waters, you must obtain an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.
7. You must also submit a copy of the NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.
8. 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.

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

Should you have any questions, please call me at 241-3323.

Sincerely,

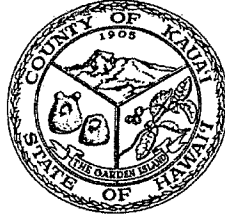


Gerald N. Takamura, Chief
District Environmental Health Program Kaua'i

C: Laura McIntyre, Environmental Planning Office

GNT: DTT

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, Lihu'e, Hawai'i 96766
TEL (808) 241-4992 FAX (808) 241-6604

December 18, 2015

Ron Terry, Principal
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawai'i 96721

SUBJECT: Early Consultation for Environmental Assessment for HE-01 Reorganize Water System – Pipeline Connecting Hanapēpē and 'Ele'ele (Kaumualii Highway 16-inch Main and Emergency Pump Connection) and HE-10 Hanapēpē Road 6-inch Main Replacement, Hanapēpē-'Ele'ele Water Systems, Waimea and Kōloa Districts, Island of Kaua'i **PW 12.15.074**

Dear Mr. Terry:

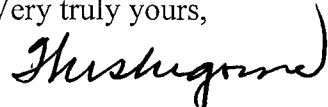
The Engineering Division of the Department of Public Works (DPW) received the subject Early Consultation letter dated December 9, 2015. The letter requested comments on any special environmental conditions or impacts related to the development.

DPW requests that discussion and evaluation be included in the Draft Environmental Assessment (DEA) for:

1. Short term construction activities including but not limited to water main installation or replacement along Hanapēpē Road and across Hanapēpē Bridge.
2. Structural and historical impacts to the Hanapēpē Bridge.
3. Flooding concerns since portions of the project are located in areas identified on the National Flood Insurance Rate Maps (FIRM) as Special Flood Hazard Areas.

Thank you for providing this opportunity for consultation on this pending project. We look forward to receipt of the DEA. If you have any questions or need additional information, please contact Stanford Iwamoto, Engineering Division at (808) 241-4896.

Very truly yours,


MICHAEL MOULE, P.E.
Chief, Engineering Division

SI/MM

Copies to: DPW-Design & Permitting



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

February 9, 2016

SUBJECT: Early Consultation for Environmental Assessment for HE-01 Reorganize Water System – Pipeline Connecting Hanapepe and Eleele (Kaunualii Highway 16-inch Main and Emergency Pump Connection) and HE-10 Hanapepe Road 6-inch Main Replacement, Hanapepe-Eleele Water Systems, Waimea and Koloa Districts, Island of Kaua'i; Department of the Army File Number POH-2015-00272

Ron Terry
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawaii 96721

Dear Mr. Terry:

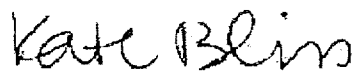
The Honolulu District, U.S. Army Corps of Engineers (Corps), has received your letter dated December 9, 2015 for the proposed HE-01 Reorganize Water System – Pipeline Connecting Hanapepe and Eleele (Kaunualii Highway 16-inch Main and Emergency Pump Connection) and HE-10 Hanapepe Road 6-inch Main Replacement, Hanapepe-Eleele Water Systems located in Waimea and Koloa Districts, Island of Kaua'i. Your project has been assigned Department of the Army (DA) file number POH-2015-00272. Please reference this number in all future correspondence.

Please be advised, if the proposed project involves work in waters of the U.S., a DA authorization may be required. Under Section 10 of the Rivers and Harbors Act, structures and/or work in or affecting the course, location, condition, or capacity of navigable waters of the U.S. require DA authorization. Navigable waters of the U.S. are waters subject to the ebb and flow of the tide.

Under Section 404 of the Clean Water Act, DA authorization is required for discharges of dredged or fill material into waters of the U.S., including wetlands. Generally, discharges of fill material include materials that change the bottom elevation of a water of the U.S. and includes rock, sand, soil, debris, overburden, etc. Waters of the U.S. include navigable waters of the U.S. and other waters including wetlands, rivers, streams, lakes, and ponds.

Thank you for your cooperation with the Honolulu District Regulatory Program. Please contact this office if you have any questions. You may contact me at 808-835-4306 or kate.m.bliss@usace.army.mil.

Sincerely,

A handwritten signature in black ink that reads "Kate Bliss". The signature is written in a cursive, slightly slanted style.

Kate Bliss
Senior Project Manager
Regulatory Office

Hanapēpē-‘Ele‘ele Water Systems Improvements
Job 15-07, WP 2020 Nos. HE-01 & HE-10

Environmental Assessment

Appendix 2
Historic Architecture Reconnaissance

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Architectural Reconnaissance Survey

of the Proposed Pipeline to Connect Eleele and Hanapepe and the Hanapepe Road 6" Main Replacement

i. Research Design

This architectural reconnaissance survey was undertaken as a result of communications between the Hawaii State Historic Preservation Division (SHPD) and the Kauai Department of Water. The objective of the survey is to ascertain whether any possible historic buildings or structures are located within the Area of Potential Effect (APE) for the proposed Pipeline to Connect Hanapepe and Eleele and the Hanapepe Road 6" Main Replacement. No historic contexts were prepared as a part of this survey.

The survey followed a methodology which included performing background research, completing a site visit to photograph and gather information on any buildings located on the various parcels, and writing up the results of the survey so any identified properties may be placed in the SHPD's Statewide Inventory of Historic Places.

ii. Coverage and Methodology

The survey examined all the properties adjoining Kaunualii Highway, Kona Road, and Hanapepe Road where the proposed new water lines are proposed to be installed. This is a distance of approximately one mile, and the area encompasses approximately 24 acres (see Figure 1).

Because of the survey team's previous knowledge of Hanapepe, no background research was undertaken prior to the start of fieldwork. Don Hibbard and Alison Chiu, who meet the Secretary of Interior's Professional Qualifications Standards as either an architectural historian and/or historic architect, undertook a walk through survey of the APE on December 7, 2015. Approximately five hours were spent in the field photographing and documenting the physical character of all the historic buildings and structures within the study area. One hundred percent of the survey area, which covered approximately 24 acres, was investigated.

Upon the completion of the fieldwork, the survey team went to view the SHPD inventory files, only to be informed that the office's architectural inventory files for the neighbor islands were in storage at an off-site location and not readily accessible. SHPD staff will contact the survey team once the files are available.

Following the site survey, additional research was undertaken using such secondary resources as the State of Hawaii Department of Transportation's *Hawaii State Historic Bridge Inventory and Evaluation*, *Buildings of Hawaii*, the *Kauai Album*, and *Hanapepe Town Historic Buildings Assessment*. Following the gathering of information, this report was prepared, reviewed, and finalized. Reconnaissance level inventory forms were completed for 24

properties, which represent all the properties upon which historic buildings or structures stand. Historic buildings and structures were defined as those whose “effective date built” exceeded fifty years.

iii. Brief History of Survey Area

Hanapepe is one of the few towns on the island of Kauai that was not developed by a sugar or pineapple plantation. Straddling the Hanapepe River, the east and west sides of the town are connected by a single-lane bridge with an elevated pedestrian sidewalk (1911). Originally, a rather substantial Hawaiian settlement resided in this area thanks to the fertile and well-irrigated, flat, valley floor, which supported extensive taro *loi*. Disease, however, decimated the native Hawaiian people, and by the mid-nineteenth century the area’s population had dwindled to a few hundred. Chinese rice farmers were attracted to the already established wetland agriculture fields and to land parcels not under the control of large landowners. They intermingled with the Hawaiian population during the 1880s. The town expanded in the 1890s, with much of its prosperity due most likely to the growth in sugar production at neighboring Makaweli and Eleele. It was also during this period that Japanese merchants, leaving the plantations, started enterprises in the town. As the Chinese were well-established on the west bank of the Hanalei River, the Japanese located primarily on the east bank, on lands made available by the Territorial government. During the 1930s, Hanapepe's prosperity began to decline. Not only did merchants have to contend with the worldwide economic depression, but Nawiliwili Harbor in Lihue supplanted Port Allen as Kauai's primary port and the belt highway traversing the west side of the island was re-routed to bypass the town in 1939. As a result, Hanapepe has maintained much of its early twentieth century appearance. Land planners in the late 1940s attempted to refocus community activity to the *makai* side of the belt highway, with a minimum of success. The Hanapepe Honpa Hongwanji was one of several religious buildings constructed in the *makai* area in an attempt to promote the re-orientation of the town.

iv. Survey Results

Of the 24 properties identified in the course of the reconnaissance survey and included in this report, none are presently listed in either the Hawaii or National Registers of Historic Places. Sixteen buildings and two bridges appear to meet the criteria for listing in the Hawaii and National Registers for their associations with the architectural or transportation traditions of the island of Kauai. Of these, six buildings appear to be contributing properties in a possible Hanapepe Historic District. The other six properties do not appear to meet the criteria for listing in either historic register because their historic integrity has been compromised.

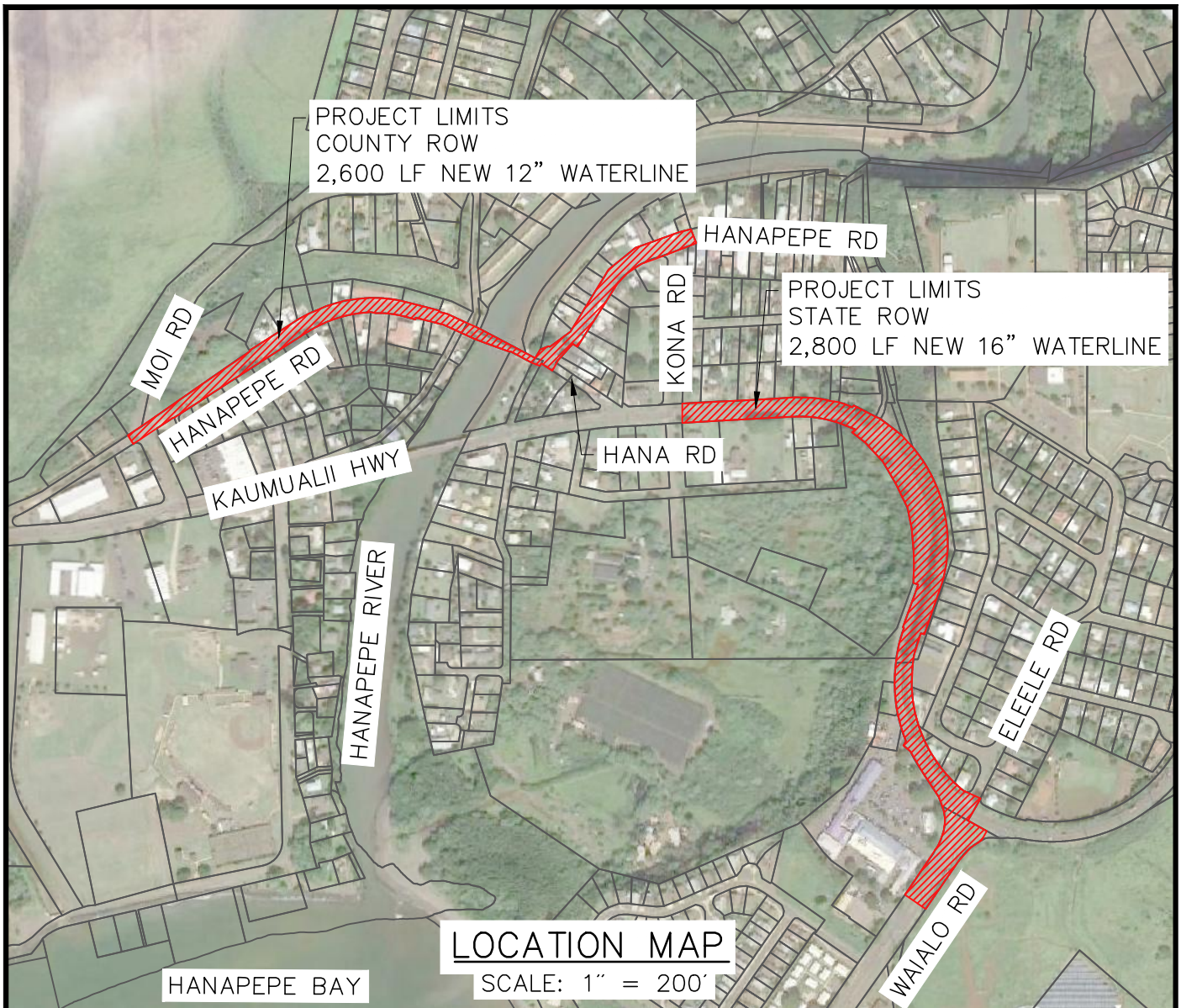
Bibliography

Designare Architects. *Hanapepe Town Historic Building Assessments*. (Honolulu: Designare Architects), November 30, 1991.

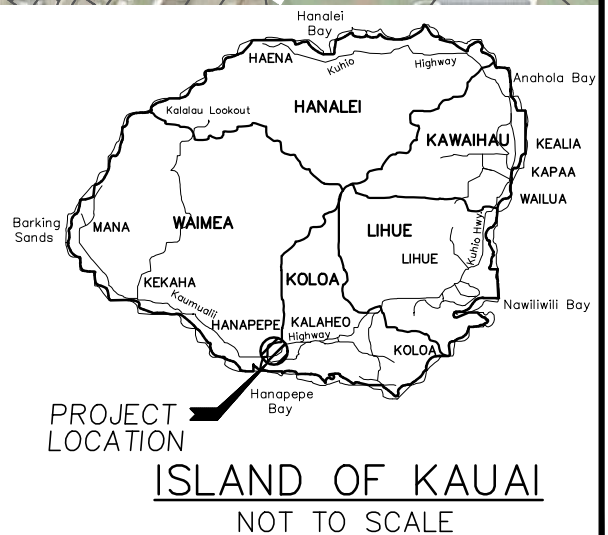
Hibbard, Don. *Buildings of Hawaii*. (Charlottesville, Virginia: University of Virginia Press), 2011.

MKE Associates, LLC and Fung Associates, INC. "Hawaii State Historic Bridge Inventory and Evaluation." Prepared for the State of Hawaii Department of Transportation Highways Division. Honolulu: 2013.

Wilcox, Carol. *The Kauai Album*. (Lihue: Kauai Historical Society), 1981.



Red shading indicates Area of Potential Effect (APE) of proposed 6" pipeline



**PIPELINE CONNECTING HANAPEPE AND ELEELE,
HANAPEPE ROAD 6" MAIN REPLACEMENT**

LOCATION MAP

EXHIBIT

1

Hanapēpē-‘Ele‘ele Water Systems Improvements
Job 15-07, WP 2020 Nos. HE-01 & HE-10

Environmental Assessment

Appendix 3
Hanapēpē Bridge Correspondence

Note: Fiberglass Pultruded Products Brochure not included with 8/22/16 letter
Available at <http://www.fibergrate.com/media/166907/pultruded-frp-products-brochure.pdf>

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Water has no substitute.....Conserve it

June 13, 2016

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist
State Historic Preservation Division, DLNR
P.O. Box 1729
Līhu'e Kaua'i 96766

Dear Ms. Naone:

SUBJECT: LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i

Thank you for your letter dated April 1, 2016, replying to the December 8, 2015 request, from Geometrician Associates, LLC, for early consultation on the Environmental Assessment (EA) for the subject project(s). Copies are enclosed and our responses to your letter are as follows:

1. Please provide the total acreage of the project areas as well as the landowners(s):

The enclosed ***Table 1 – Project Areas*** lists the acreages and landowners for the *HE-10 Hanapēpē Road 6-Inch Main Replacement*; and the *HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele*, projects. Two acreages are provided for each project.

One area pertains to excavation for the new pipelines, for depths greater than 12 inches from the surface. The other area reflects the area to be repaved above the new pipelines; including ground disturbance to a maximum of 12 inches from the surface, which overlaps the first area.

Existing water services will be reconnected under *HE-10 Hanapēpē Road 6-Inch Water Main Replacement* and this work will encroach into private parcels. Excavation will be adjacent to existing buried plumbing and is not anticipated to extend beyond the County right-of-way by more than three feet, or to be deeper than 18" below the surface. The enclosed ***Table 2- HE-10 Hanapēpē Road 6-Inch Main Replacement: Reconnecting Existing Services*** lists the parcels and landowners to be affected by this work.

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist
State Historic Preservation Division, DLNR

SUBJECT: **LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i**

June 13, 2016
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2. If federal funding is being used, please notify us so that we may assist with the National Historic Preservation Act (NHPA) Section 106 process.

Section 106 does not apply as no federal funding will be used for this project. The project is being funded by County funds which will be reimbursed from a State of Hawaii General Obligation Bond Fund appropriation (i.e. State funds).

3. Please provide the detailed scope of work (SOW) for the project, including depth and extent of ground disturbance for the installation of the pipeline and water main.

The *HE-10 Hanapēpē Road 6-inch Water Main Replacement* project proposes the construction of approximately 2,500 feet of new 12-inch water main, as well as replacement service laterals and hydrants, along Hanapēpē Road. The alignment along Hanapēpē Road extends from Moi Road, across the Hanapēpē Bridge, to Kona Road. Work will extend slightly into Pū'olo Road, Awāwa Road, and Iona Road, as shown on the enclosed construction drawings.

- Construction drawings showing the detailed scope of work have been reviewed by various County departments. A partial set is enclosed for your reference.
- The enclosed ***Table 3- HE-10 Hanapēpē Road 6-Inch Main Replacement: Work Summary*** lists the new water line improvements as well as the average depth and extent of associated ground disturbance.

The *HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele 'ele* project proposes the construction of approximately 2,900 feet of new 16-inch water line along Kaumuali'i Highway. The alignment along Kaumuali'i Highway extends from Kona Road to Waialo Road, terminating approximately 400 feet south of the Kaumuali'i Highway intersection. This project also includes construction of a pad, with a stabilized and/or all-weather surface, to accommodate a trailer-mounted pump that would be mobilized to boost water up to the existing 'Ele'ele tanks in the event of an emergency. The proposed location of the pad will be in lands owned by Alexander and Baldwin.

Conceptual drawings for two possible alignments, labeled Water Line A and Water Line B, are enclosed for *HE-01 Pipeline Connecting Hanapēpē and 'Ele 'ele*:

- ***Schematic Layout***
- ***Schematic Water Line Profiles***
- ***Schematic Maintenance Road Profiles***
- ***Schematic Maintenance Road for WL "A" Cross Sections***

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist

State Historic Preservation Division, DLNR

SUBJECT: **LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i**

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The "Water Line A" alignment is being considered due to the Department of Transportation, Highways Division's (DOT-HWY) concerns of traffic impacts from construction activities. Under this alternative, the new 16-inch water line will be situated outside of the highway pavement for about 1,340 feet of its length. However, under the alternative "Water Line B" alignment, the new 16-inch water line would be located within the highway pavement for all but 485 feet of its length.

- The average depth of ground disturbance; which is measured from the surface to six (6) inches below the bottom of the water line, will generally be consistent for both alignments at about 5 feet.

Final selection of an alignment is pending ongoing discussions with the DOT-HWY.

3. *(Continued) Please indicate if the ground disturbance is completely within the right-of-way of Kaumuali'i Highway.*

As shown in *Table 1 – Project Areas*; most of the work for the *HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele 'ele* project will be within the Kaumuali 'i Highway and Waialo Road right-of-way. A small amount of grading is proposed; along a strip about 100 feet by 8 feet at its widest point, for an access route into TMK: (4) 1-9-07: Por. 007; which is owned by the State of Hawaii. Furthermore, an enclosure with standpipes, to measure approximately 0.07 acre in area, is proposed to be constructed on lands owned by Alexander and Baldwin on TMK: (4) 2-1-01: 003.

4. *Please include staging and access areas.*

A number of parcels have been identified as potential staging areas. Please refer to the enclosed *Table 4 - HE-10 and HE-01 Potential Staging Areas* and enclosed map *HE-10 and HE-01 Potential Staging Areas*.

Final selection of a staging area would be made prior to construction after a contractor is selected. Selection would be subject to negotiations between the contractor and the parcel owner, as well as the processing of permits to allow such use, including but not limited to a County Use Permit.

5. *The pre-consultation letter mentions impacts to Hanapēpē Bridge. Please provide the SOW for work within the vicinity of Hanapēpē Bridge to our architecture branch.*

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist
State Historic Preservation Division, DLNR

SUBJECT: **LOG NO: 2015.04338; DOC NO: 1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i**

June 13, 2016
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An existing 6-inch water line currently crosses the Hanapēpē Bridge (or the "Bridge") on the deck inside of, and along, the north parapet wall with sections of it partially exposed. The 6-inch water line is buried, beyond the limits of the Bridge; prior to and past the abutment walls. Please see the attached exhibit labeled ***Exhibit 0 – Existing Conditions***.

The *HE-10 Hanapēpē Road 6-inch Main Replacement* project proposes a new 12-inch water main to replace this existing 6-inch main, on the Bridge. The enclosed construction drawings, as well as enclosed exhibit labeled ***Exhibit A – Concept #1***, show the new 12-inch water line on the south side of the bridge.

However, in a letter dated April 8, 2016, a copy of which is enclosed, the County Department of Public Works (who own the Bridge) informed us that the water line must be positioned on the north side of the Bridge. Consequently, DOW preference is to install the 12-inch water line in the same location as the existing 6-inch water line, on the bridge deck and along the north parapet wall. An attached exhibit labeled ***Exhibit B – Concept #2 (Preferred Alternative)*** depicts this pictorially. The 12-inch water line would revert to a buried-water main beyond the limits of the Bridge, prior to and past the abutment walls.

The Kauai Historic Preservation Review Commission (KHPRC) was consulted at its March 24, 2016 and April 28, 2016 meetings where Concepts 1 and 2 were presented for input and comment. At these meetings, other alternatives to cross the bridge were presented for information. Copies are attached as ***Exhibit C – Concept 3, 4 & 5***.

As of this writing, consultation with KHPRC to obtain their concurrence on a design option, for the 12-inch water line to cross Hanapēpē Bridge, remains ongoing.

6. Archaeological Mitigation; March 2016 discussion

We were informed that you discussed archaeological mitigation strategy for the project with our archaeological consultant, Scientific Consultant Services, Inc. in March 2016.

Our understanding is that Archaeological Monitoring had been discussed as a mitigation strategy due to the location of the routes being overwhelmingly within existing right-of-ways and within former coffee and sugar cane fields. The former locations could possibly be monitored on an intermittent basis; when excavation is being conducted, while full-time monitoring would occur along the Hanapēpē segment, while excavation is in progress, due to the presence of sand and formerly identified burials in the area.

- Consequently, please confirm that there will be No Adverse Effect to historic sites, under *HE-10 Hanapēpē Road 6-Inch Main Replacement*; as well as *HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele*; pursuant to Chapter 6-E, with the aforementioned monitoring as the mitigation strategy

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist
State Historic Preservation Division, DLNR

SUBJECT: **LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i**

June 13, 2016
Page 5

Subject to your concurrence, an Archaeological Monitoring Plan will be developed and submitted for approval, prior to the start of any ground-altering work in the project area.

Thank you again for your continued consultation on this project. We hope this response has provided satisfactory answers to your questions. If you have any further questions, please feel free to contact Bryan Wienand of my staff at (808) 245-5449, or email bwienand@kauaiwater.org. You may also contact William Makanui of Akinaka and Associates, Ltd.; our consultant for the project, at (808) 836-1900 ext. 684 or email at whm@akinaka.com.

Sincerely,



Kirk Saiki, P.E.
Manager and Chief Engineer

BW:bdm
Job No. HE-01 and HE-10 Historic Preservation Review

c: Jessica Puff, Architectural Historian, SHPD, DLNR (w/enclosures)
Akinaka and Associates, Ltd. (w/o enclosures)

Enclosures:

SHPD letter dated April 1, 2016, to Dept. of Water (2 pages)
Letter dated December 8, 2015 from Geometrician Associates, LLC (3 pages)
Table 1, Project Areas
Table 2, HE-10 Hanapēpē Road 6-Inch Main Replacement: Reconnecting Existing Services
Construction Plans; *Hanapēpē Road 6-Inch Main Replacement* (Sheets 1, 3, 5 thru 15 & 24)
Schematic Layout (for HE-01)
Schematic Water Line Profile (for HE-01)
Schematic Maintenance Road Profiles (for HE-01)
Schematic Maintenance Road for WL "A" Cross Sections (for HE-01)
Table 3, HE-10 Hanapēpē Road 6-Inch Main Replacement: Work Summary
Table 4, HE-10 and HE-01 Potential Staging Areas
(Map) HE-10 and HE-01 Potential Staging Areas
Exhibit 0 – Existing Conditions
Exhibit A – Concept #1 (1 page)
Exhibit B – Concept #2 (Preferred Alternative) (1 page)
Exhibit C – Concept(s) 3, 4 & 5 (8 pages)

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

April 1, 2016

Bryan Wienand
Department of Water
bwienand@kauaiwater.org

LOG NO: 2015.04338
DOC NO: 1601MN17
Archaeology
Architecture

Dear Mr. Wienand:

**SUBJECT: Chapter 6E-8 Historic Preservation Review
Reorganize Water System – Pipeline and Water Main Replacement –Hanapepe and Ele‘ele
Waimea Ahupua‘a, Kona Districts, Island of Kaua‘i
TMK: (4) 1-9-005-007, (4) 2-1-001-005, (4) 1-8-007, 008, (4) 1-9-004, 005, 006, 007, 010**

Thank you for your pre-consultation regarding the proposed undertaking of two projects in Hanapepe and Ele‘ele: 1) the HE-01 Reorganization of the water system/pipeline connecting Hanapepe and Ele‘ele, and 2) the HE-10 Hanapepe Road 6-inch Main Replacement Project. We received the pre-consultation notice in our Kapolei office on December 18, 2015.

Geometrician Associates, LLC has been contracted to conduct an Environmental Assessment (EA) for the project. Geometrician Associates provided a graphic showing the general area of the project. In order to assist the County of Kaua‘i in the identification of historic properties within the project area, and to assess potential impacts to historic properties, we request the following information.

- 1) Please provide the total acreage of the project area(s), as well as the landowner(s).
- 2) If federal funding is being used, please notify us that we may assist with the National Historic Preservation Act (NHPA) Section 106 process.
- 3) Please provide a detailed scope of work (SOW) for the project, including depth and extent of ground disturbance for the installation of the pipeline and water main. Please indicate if the ground disturbance is completely within the right-of-way (ROW) of Kaumuali‘i highway.
- 4) Please include staging and access areas.
- 5) The pre-consultation letter mentions impacts to Hanapepe Bridge. Please provide the SOW for work within the vicinity of Hanapepe Bridge to our architecture branch.

A preliminary search of our records indicates we do not have archaeological inventory surveys (AIS) for many of the TMKs. However, in addition to Hanapepe Bridge, there are historic properties that have been identified within the vicinity of the project area. A subsurface cultural deposit, State Inventory of Historic Places (SIHP) Site 50-30-09-00497, is located in Hanapepe on the lot of the First United Church of Christ. In addition, burials have been identified along the river near Hanapepe Bridge (Sites 00704 and 705). The burials are adjacent to a subsurface historic site (Site 706).

We look forward to continued consultation with you to determine the effects of the project on historic properties. The requested project details will inform our recommendations regarding any needed archaeological work. Please contact Kaua‘i Lead Archaeologist Mary Jane Naone at 808-271-4940 or Maryjane.naone@hawaii.gov for questions regarding related to archaeology. For questions related to architecture, please contact Jessica Puff, Architectural Historian, at Jessica.L.Puff@hawaii.gov or 808-692-8023.

Mr. Wienand
Page 2

Aloha,

A handwritten signature in cursive script that reads "Mary Jane Naone".

Mary Jane Naone
Kaua'i Lead Archaeologist

cc. William Makanui
Akinaka & Associates, LTD
whm@akinaka.com

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 fax: (866) 316-6988 PO Box 396 Hilo Hawaii 96721
rterry@hawaii.rr.com

December 8, 2015

Dear Agency or Organization Official:

Subject: Early Consultation for Environmental Assessment for HE-01 Reorganize Water System – Pipeline Connecting Hanapepe and Eleele (Kaumualii Highway 16-inch Main and Emergency Pump Connection), and HE-10 Hanapepe Road 6-inch Main Replacement, Hanapepe-Eleele Water Systems, Waimea and Koloa Districts, Island of Kaua‘i

I am in the process of preparing a Draft Environmental Assessment (EA) for a proposed County of Kaua‘i activity, in compliance with Chapter 343, HRS, and Title 11, Chapter 200, HAR.

The County of Kaua‘i, Department of Water (DOW), plans to implement the subject improvement projects. Both have been specifically identified in the County of Kaua‘i Water Master Plan 2020 (see attached map for depiction of current expected route, which may be adjusted).

- The “HE-01 Reorganize Water System” project is proposed in order to optimize the function of the Hanapepe and Eleele Water systems by providing critical redundancy, but it is primarily intended to decrease energy consumption and reduce energy costs to DOW customers.
- The Water Plan 2020 specifically identifies the project as involving installation of new waterlines along Kaumualii Highway to interconnect the lower Hanapepe and lower Eleele water systems. The connecting pipeline will join the systems below the pressure relieve valve (PRV) on Waiola Road. A trailer-mounted booster pump will allow the County to boost water from the Hanapepe 212’ system to the Eleele 340’ system to provide an alternative source of water for Eleele.
- DOW has determined that the project is not exempt from the preparation of an EA, and is acting as the proposing and approving agency for the EA in the context of Chapter 343, HRS.
- As part of the separately needed “HE-10 Hanapepe Road 6-inch Main Replacement” project, DOW is planning to replace the existing 6-inch and 4-inch mains along Hanapepe Road with a 12-inch main. This element will also be included in the EA.
- The replacement waterline will cross Hanapepe Stream at the Hanapepe Bridge, which has been determined to have high preservation value as a historic property.
- No work within waters of the U.S. is expected to be necessary.

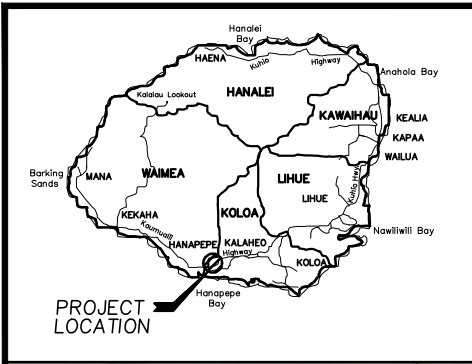
The areas of investigation in the Environmental Assessment will include but not be limited to the following: water quality assurance, wastewater treatment, flora, fauna, ecosystems, traffic, geology, soils, hazards, flooding, drainage, social/community conditions, cultural resources, historic sites, and economic impacts.

I would appreciate your comments on any special environmental conditions or impacts related to the development. Please contact me at 808-969-7090 (Hilo) if you have any questions or require clarification. Kindly indicate whether you wish to receive a copy of the EA when completed.

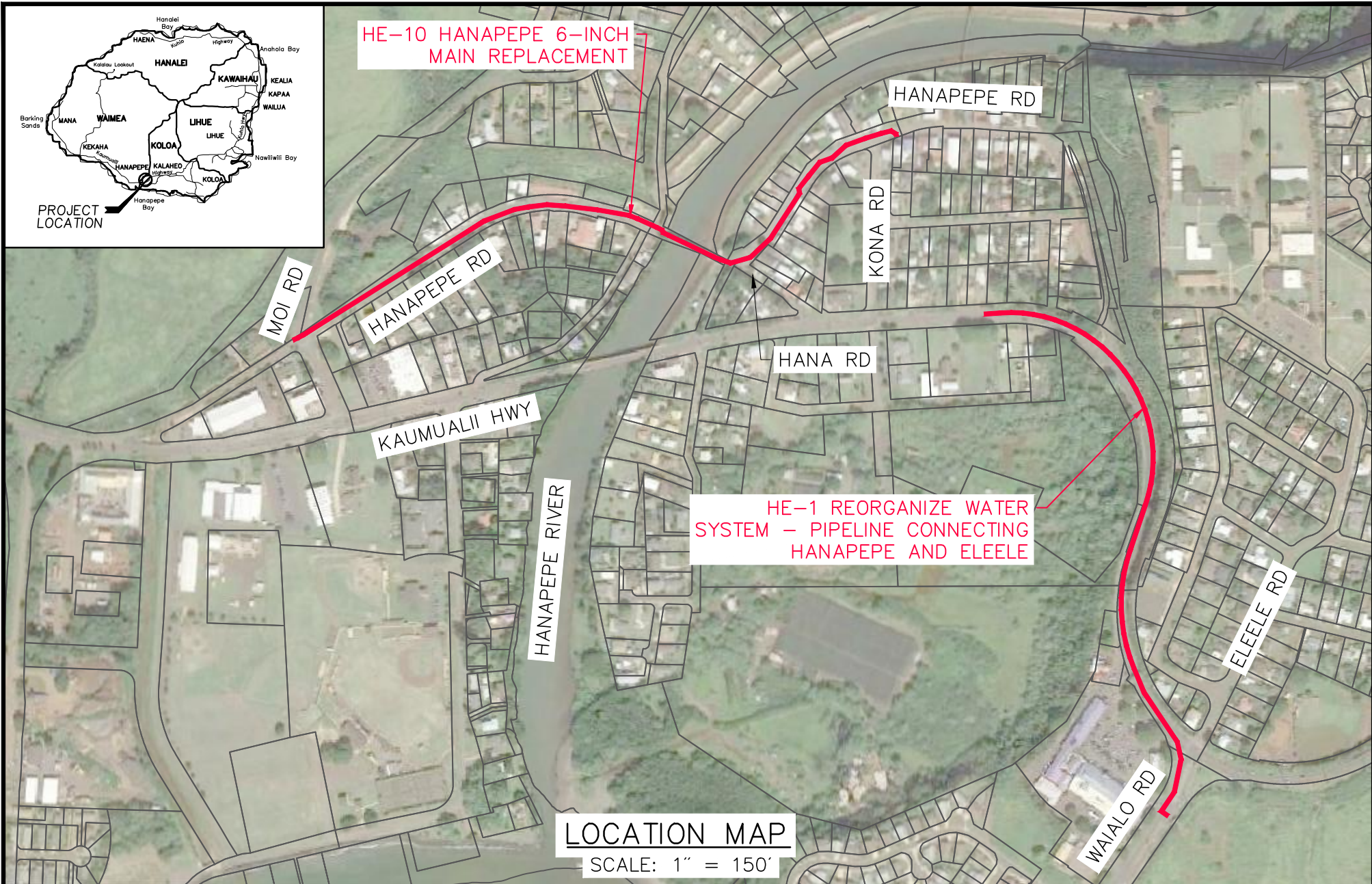
Sincerely,

A handwritten signature in black ink that reads "Ron Terry". The signature is written in a cursive style with a large, sweeping flourish at the end.

Ron Terry, Principal
Geometrician Associates



HE-10 HANAPEPE 6-INCH MAIN REPLACEMENT



LOCATION MAP
SCALE: 1" = 150'



PIPELINE CONNECTING HANAPEPE AND ELEELE, HANAPEPE ROAD 6" MAIN REPLACEMENT

LOCATION MAP

EXHIBIT

1

TABLE 1 – PROJECT AREAS (Page 1 of 2)

HE-10 Hanapēpē Road 6-Inch Main Replacement; and
 HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele – **WATER LINE A**

Project	Work Description	Location	Landowner	Pipeline Excavation (Ac)	Road repaving (Ac)
HE-10 Hanapēpē Road 6-Inch Main Replacement	New 12-inch, 8-inch and 6-inch water lines, valves, hydrants and laterals	Hanapēpē Road (Moi Road to Kona Road), Portions of Pū‘olo Road, Awāwa Road and Iona Road	County of Kauai	0.18 AC (860 SY)	0.29 AC (1425 SY)
HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele	New 16-inch water lines and appurtenances	Kaumuali‘i Highway (Kona Road to Waialo Road) Waialo Road (400 feet from Kaumuali‘i Highway)	State of Hawaii, Department of Transportation	0.18 AC (850 SY)	0.16 (770 SY)
HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele	Grading for access road (100 ft long x 8 feet wide)	Adjacent to the Kaumuali‘i Highway right-of-way in TMK: (4) 1-9-007: Por. 007	State of Hawaii	0.02 AC (90 SY)	N/A
HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele	Concrete pad & enclosure for trailer-mounted pump (approximately 45 feet by 70 feet)	Adjacent to Waialo Road in TMK: (4) 2-1-001: 003, on lands formerly used for sugar cane cultivation	Alexander and Baldwin	0.07 AC (350 SY)	N/A
TOTAL HE-01 (WATER LINE A) Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele				0.27 AC (1,290 SY)	0.16 (770 SY)

TABLE 1 – PROJECT AREAS (Page 2 of 2)

HE-10 Hanapēpē Road 6-Inch Main Replacement; and
 HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele – **WATER LINE B**

Project	Work Description	Location	Landowner	Pipeline Excavation (Ac)	Road repaving (Ac)
HE-10 Hanapēpē Road 6-Inch Main Replacement	New 12-inch, 8-inch and 6-inch water lines, valves, hydrants and laterals	Hanapēpē Road (Moi Road to Kona Road), Portions of Pū‘olo Road, Awāwa Road and Iona Road	County of Kauai	0.18 AC (860 SY)	0.29 AC (1425 SY)
HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele	New 16-inch water lines and appurtenances	Kaumuali‘i Highway (Kona Road to Waialo Road) Waialo Road (400 feet from Kaumuali‘i Highway)	State of Hawaii, Department of Transportation	0.18 AC (880 SY)	0.26 (1250 SY)
HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele	Grading for access road (100 ft long x 8 feet wide)	Adjacent to the Kaumuali‘i Highway right-of-way in TMK: (4) 1-9-007: Por. 007	State of Hawaii	0.02 AC (90 SY)	N/A
HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele	Concrete pad & enclosure for trailer-mounted pump (approximately 45 feet by 70 feet)	Adjacent to Waialo Road in TMK: (4) 2-1-001: 003, on lands formerly used for sugar cane cultivation	Alexander and Baldwin	0.07 AC (350 SY)	N/A
TOTAL HE-01 (WATER LINE B) Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele				0.27 AC (1,320 SY)	0.26 (1250 SY)

TABLE 2 - HE-10 Hanapēpē Road 6-Inch Main Replacement: Reconnecting Existing Services

List of Existing Water Services on Hanapēpē Road

Plan Sht No.	TMK	Water Meter No.	Lot #	Address	Owner Name
C-06	(4) 1-8-08: 071	8102479	17	4598 Moi Rd	Kauai Petroleum Co. Ltd.
C-06	(4) 1-8-08: 060	8108014	13-A	3520 Hanapepe Rd	Elvin K. Kaiakapu
C-06	(4) 1-8-08: 059	8109840	12	3524 Hanapepe Rd	Elvin Kaiakapu
C-06	(4) 1-8-08: 058	8102601	11	3528 Hanapepe Rd	Joanne O. Imamura
C-07	(4) 1-8-08: 057	8102484	10	3534 Hanapepe Rd	Yoshimura, Family By-Pass Tr
C-07	(4) 1-8-08: 057	8105260	10	3534 Hanapepe Rd	Yoshimura, Family By-Pass Tr
C-07	(4) 1-8-08: 056	8109792	9	3542 Hanapepe Rd	Joan F. Marcuse
C-07	(4) 1-8-08: 056	8109791	9	3542 Hanapepe Rd	Joan F. Marcuse
C-07	(4) 1-8-08: 055	8104759	8	3548 B Hanapepe Rd	Stanley Sakahashi Trust Dec'd
C-07	(4) 1-8-08: 054	8102599	7	3556 Hanapepe Rd	Trent Conlon
C-07	(4) 1-9-11: 001	8102203	85-A	3559 Hanapepe Rd	Wray Enterprises LLC
C-07	(4) 1-9-11: 002	8300068	84-A	3567 Hanapepe Rd	Granmac Enterprises LLC
C-08	(4) 1-9-11: 003	8111303	Parcel 3	3581 Hanapepe Rd	Shimonishi Orchids/Feeds Inc
C-08	(4) 1-8-08: 051	8102227	4	3586 Hanapepe Rd	Paul Y. Nozaki Trust
C-08	(4) 1-9-11: 005	8102600	Parcel 5	3599 Hanapepe Rd	Helmut H. Knapp Tr
C-08	(4) 1-8-08: 048	8105573	1	3600 Hanapepe Rd	Hanapepe Shokudo LLC
C-08	(4) 1-9-11: 006	8102204	51	3611 Hanapepe Rd	Richard K Nakatsuka
C-08	(4) 1-9-11: 006	8102206	51	3611B Hanapepe Rd	Richard K Nakatsuka
C-08	(4) 1-9-10: 037	8102205	A	3630 Hanapepe Rd	State of Hawaii
C-10	(4) 1-9-05: 004	8300048	29-B	3716 Hanapepe Rd	Lindbergh M. Akita Tr
C-10	(4) 1-9-05: 004	8105442	29-B	3716 Hanapepe Rd	Lindbergh M. Akita Tr
C-10	(4) 1-9-05: 005	8102604	27	3720 Hanapepe Rd	Teruko F. Fujita
C-10	(4) 1-9-05: 005	8106778	27	3720 Hanapepe Rd	Teruko F. Fujita
C-10	(4) 1-9-05: 005	8104761	27	3720 Hanapepe Rd	Teruko F. Fujita
C-10	(4) 1-9-04: 015	8108919	C	3731 Hanapepe Rd	George A. Edgar Tr
C-10	(4) 1-9-05: 006	8102208	25	3734 Hanapepe Rd	Richard Kazuo Ueoka
C-10	(4) 1-9-05: 006	8102207	25	3734 Hanapepe Rd	Richard Kazuo Ueoka
C-10	(4) 1-9-05: 006	9100964	25	3734 Hanapepe Rd	Richard Kazuo Ueoka
C-10	(4) 1-9-04: 018	9100747	B	3735 Hanapepe Rd	Steven T. Okikawa
C-10	(4) 1-9-04: 018	8109794	B	3735 Hanapepe Rd	Steven T. Okikawa
C-10	(4) 1-9-04: 026	8108823	D	3721 Hanapepe Rd	Susan T. Kinoshita
C-11	(4) 1-9-04: 019	8108920	A	3741 Hanapepe Rd	William J. Farlander Tr
C-11	(4) 1-9-04: 025	8104757	Parcel 25	3751 Hanapepe Rd	Paul M. Yamauchi Tr Est
C-11	(4) 1-9-05: 007	8111467	23	3746 Hanapepe Rd	State of Hawaii
C-11	(4) 1-9-05: Por. 049	8104749	88-A	3764 Hanapepe Rd	State of Hawaii
C-11	(4) 1-9-04: 027	8104747	Parcel 27	3761 Hanapepe Rd	Masahiro S. Satta
C-11	(4) 1-9-04: 016	5000492	Parcel 16	3785 Hanapepe Rd	Donna E. Richards
C-11	(4) 1-9-04: 016	8108839	Parcel 16	3785 Hanapepe Rd	Donna E. Richards
C-11	(4) 1-9-04: 016	8108842	Parcel 16	3785 Hanapepe Rd	Donna E. Richards
C-12	(4) 1-9-04: 013	8500017	Parcel 13	3795 Hanapepe Rd	Wolf Van Falkenburg Tr
C-12	(4) 1-9-04: 012	8108887	26	3805 Hanapepe Rd	Dennis H. Kurokawa Tr

TABLE 3 - HE-10 HANAPĒPĒ ROAD 6-INCH MAIN REPLACEMENT WORK SUMMARY

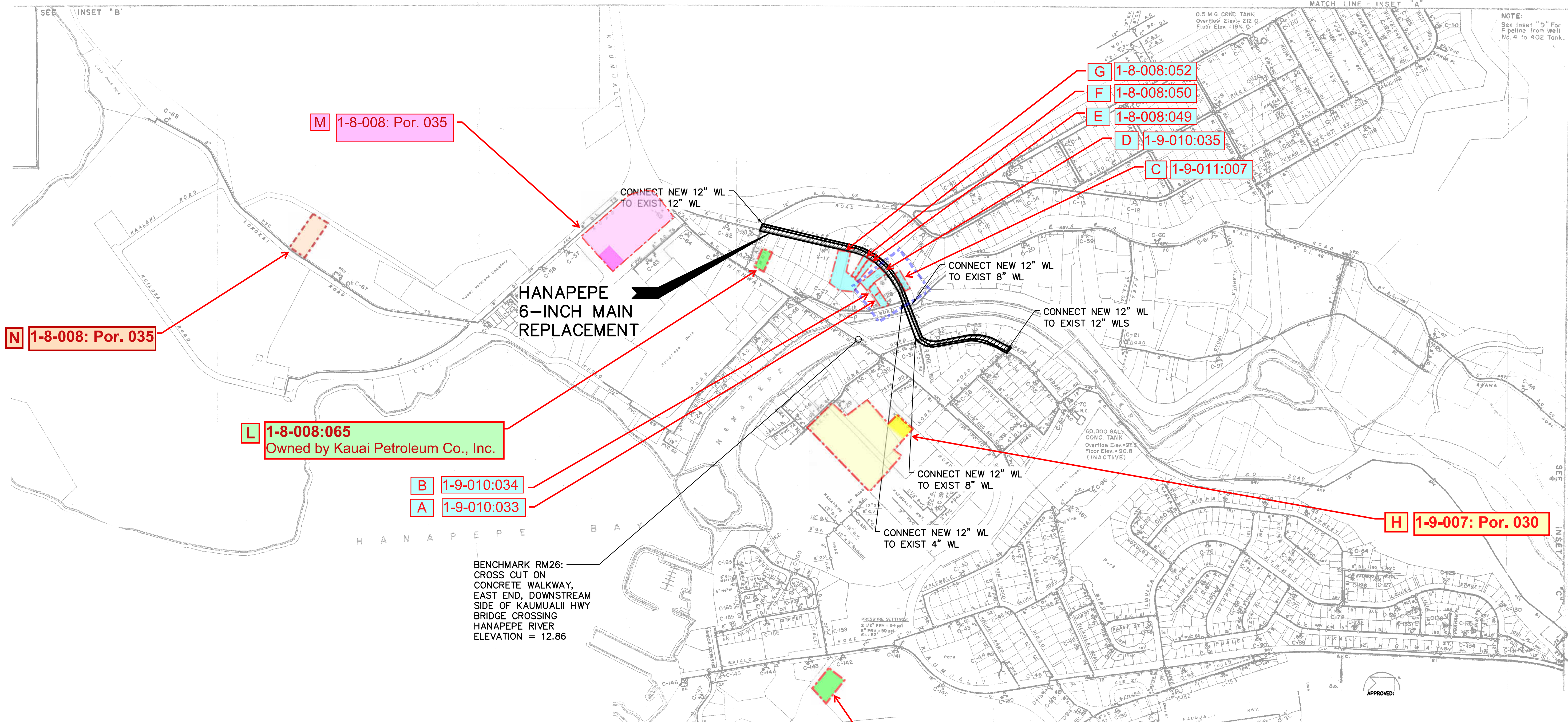
Plan Sheet Nos.	Water Line Location	General Work Location	General Work Description	Approximate Work Distance (± 5 ft)			Average Excavation Depth
				12" WL	8" WL	6" WL	
C-06, C-07, C-08 & C-09	Station 0+00 to 13+70	Hanapēpē Road; from Moi Road to approximately 175 feet west of the Hanapēpē Bridge	Connection to existing 12-inch water line at Moi Road, as well as installation of new 12-inch water lines and valves, along with new hydrants and valves. Installing new laterals and meter boxes and connecting them to existing services. Removal of existing valves and hydrants rendered obsolete by new water system, repaving of trenches	1380	(N/A)	80	5.1 feet (N/A) 5 feet
C-09	Station 13+70 to 15+29	Hanapēpē Road; from approximately 175 feet west of the Hanapēpē Bridge to the about 20 feet west of the Bridge abutment, including the intersections with Pū'olo Road and Awāwa Road	Installation of, new 12-inch water lines and valves, as well as new hydrant and valve, installation of 8-inch water lines and valves (into Pū'olo Road and Awāwa Road), and connections to existing 8-inch water line at Awāwa Road and existing 4-inch water line at Pū'olo Road. Removal of existing valves and hydrants rendered obsolete by new water system, repaving of trenches	160	80	30	5.5 feet 4.5 feet 5.3 feet
C-09 & C-10	Station 15+29 to 17+47 (includes Hanapēpē Bridge)	Hanapēpē Road; from about 20 feet west of the west abutment of the Hanapēpē Bridge, across the Bridge, to about 10 feet east of the east abutment of the Bridge.	Remove partial width of existing pavement on bridge for, and installation of, new 12-inch water lines on bridge deck. Excavation for, and installation of, new 12-inch water lines, encased in reinforced concrete jackets, before and after the bridge crossing. Partial repaving of bridge pavement.	220	(N/A)	(N/A)	0.6 feet (N/A) (N/A)
C-10	Station 17+47 to 18+80	Hanapēpē Road; from Hanapēpē Bridge abutment to approximately 175 feet east of the Hanapēpē Bridge, including intersection with Iona Road	Excavation for, and installation of, new 12-inch water lines and valves, as well as new hydrant and valve, along with 8-inch water line and valves (into Iona Road), and connection to existing 8-inch water line at Iona Road. Installing new laterals and meter boxes and connecting them to existing services. Removal of existing valves and hydrants rendered obsolete by new water system; repaving of trenches.	135	30	(N/A)	6.7 feet 5.6 feet (N/A)
C-10, C-11, & C-12	Station 18+80 to 26+76 (End)	Hanapēpē Road; in Hanapepe Town from approximately 175 feet east of the Hanapēpē Bridge to Kona Road	Installation of new 12-inch water lines and valves, as well as new hydrants and valves, and connecting to existing 12-inch water line at Kona Road. Installing new laterals and meter boxes and connecting them to existing services. Removal of existing valves and hydrants rendered obsolete by new water system, repaving of trenches	840	(N/A)	60	5.3 feet (N/A) 6.1 feet

HE-10 Hanapepe Road 6-Inch Main Replacement
POTENTIAL STAGING AREAS
May 31, 2016

I.D.	TMK	Address	Owner	Area	County Zoning Ordinance	Notes
A	1-9-010: 033	4541 Puolo Road	State of Hawaii	0.1812	General Commercial (C-G)	In Hanapepe Town; west of bridge. Per consultation with DLNR Land Division (Kauai) on 5-7-2016, parcel not desirable for use as staging area/base-yard. However retain for consideration should contractor wish to approach DLNR to request reconsideration in allowing its use.
B	1-9-010: 034	(Off Puolo Road)	State of Hawaii	0.1528	General Commercial (C-G)	In Hanapepe Town; west of bridge. Per consultation with DLNR Land Division (Kauai) on 5-7-2016, parcel not desirable for use as staging area/base-yard. However retain for consideration should contractor wish to approach DLNR to request reconsideration in allowing its use.
C	1-9-011: 007	3633 Hanapepe Road	State of Hawaii	0.2065	General Commercial (C-G)	In Hanapepe Town; west of bridge. Per consultation with DLNR Land Division (Kauai) on 5-7-2016, parcel not desirable for use as staging area/base-yard. However retain for consideration should contractor wish to approach DLNR to request reconsideration in allowing its use.
D	1-9-010: 035	3610 Hanapepe Road	State of Hawaii	0.3703	General Commercial (C-G)	In Hanapepe Town; west of bridge. Per consultation with DLNR Land Division (Kauai) on 5-7-2016, parcel not desirable for use as staging area/base-yard. However retain for consideration should contractor wish to approach DLNR to request reconsideration in allowing its use.
E	1-8-008: 049	Hanapepe Road	State of Hawaii	0.1871	General Commercial (C-G)	In Hanapepe Town; west of bridge. Per consultation with DLNR Land Division (Kauai) on 5-7-2016, parcel not desirable for use as staging area/base-yard. However retain for consideration should contractor wish to approach DLNR to request reconsideration in allowing its use.
F	1-8-008: 050	3592 Hanapepe Road	State of Hawaii	0.2051	General Commercial (C-G)	In Hanapepe Town; west of bridge. P Per consultation with DLNR Land Division (Kauai) on 5-7-2016, parcel not desirable for use as staging area/base-yard. However retain for consideration should contractor wish to approach DLNR to request reconsideration in allowing its use.
G	1-8-008: 052	Hanapepe Road	State of Hawaii	1.17	General Commercial (C-G)	In Hanapepe Town; west of bridge. Per consultation with DLNR Land Division (Kauai) on 5-7-2016, parcel not desirable for use as staging area/base-yard. However retain for consideration should contractor wish to approach DLNR to request reconsideration in allowing its use.
H	1-9-007: 030	Corner Kona Road & Kuiloa Road	State of Hawaii	7.0	Open (O)	In Hanapepe Town; east of bridge. <ul style="list-style-type: none"> Per consultation with DLNR Land Division (Kauai) on 5-7-2016, parcel currently being used by landscaping company however a portion could be used per their concurrence. Retain for consideration is contractor wishes to discuss use with DLNR and landscaping company.
J	2-1-001: Por. 003	Off Waialo Road	Alexander and Baldwin (A&B)	233	Agriculture (A)	In Eleele. Parcel previously disturbed; former sugar cane field. Also recently leased as construction baseyard for a County sewer project. <ul style="list-style-type: none"> Per consultation with A&B on 4-6-2016, County willing to allow use of portion of property for construction baseyard. Contractor will need to coordinate directly with A&B
K	2-1-003: 031	Off Aka Ula Street	Alexander and Baldwin	0.841	General Industrial (I-G)	In Port Allen industrial area. Parcel previously disturbed; existing industrial lot Per consultation with A&B on 4-6-2016, parcel not available for use. However, retain for consideration should contractor wish to approach A&B to request reconsideration in allowing its use.
L	1-8-008: 065	Corner Moi Road & Kaumualii Highway	Kauai Petroleum, Company, Ltd.	0.276	General Industrial (I-G)	In Hanapepe Town, west of river. Parcel previously disturbed; former gas station. <ul style="list-style-type: none"> Per consultation with Kauai Petroleum Company on 5-23-2016, owner willing to allow use of property for construction baseyard. Contractor will need to coordinate directly with Kauai Petroleum Company
M	1-8-008: Por. 035	1-3410 Kaumualii Highway	Dept. of Hawaiian Home Lands	4.8	Open (O)	At west end of Hanapepe. Parcel previously disturbed; former industrial lot (sawmill). Currently being leased to trucking companies Per consultation with DHHL on 4-5-2016, an EA may be required as prerequisite for use as construction baseyard. However, retain for consideration should contractor wish to approach DHHL to request and coordinate its use.
N	1-8-008: 035	3285 Lolokai Road	County of Kauai, Dept. of Parks & Recreation (DPR)	1.182	Open (O)	Parcel previously disturbed; former Kauai Humane Society site <ul style="list-style-type: none"> Per consultation with County DPR on 5-12-2016, County willing to allow use of property for construction baseyard. Contractor will need to coordinate directly with DPR

PM: JCT
 CURRENT OPER: KNL 9/1/2015 7:27 AM
 LAST SAVED BY: KNL REVISED: 2/11/2016 8:06 AM

PATH: G:\CADD\501-HANAPEPE\ML\300_DSGN\310 PLANS
 C:\CADD\501-PHI GENERAL SITE PLANNING
 BEGIN: 1-Sep-15



NOTE:
 See Inset "D" For
 Pipeline from Well
 No. 4 to 402 Tank.

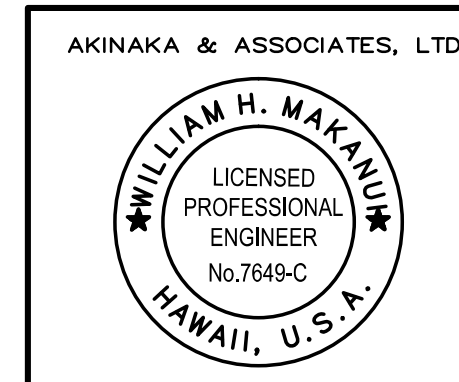
- LEGEND:**
- OWNER: STATE OF HAWAII (C-G Zoning)
 - OWNER: STATE OF HAWAII (Open Zoning)
 - OWNER: PRIVATE
 - OWNER: DHHL
 - OWNER: County of Kauai (Dept. of Parks & Recreation)

HE-10 Hanapēpē Road 6-Inch Main Replacement
 HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele
POTENTIAL STAGING AREAS
 May 23, 2016

GENERAL SITE PLAN
 SCALE: NOT TO SCALE

F.H. SYMBOLS
 3" O.D. STANDPIPE 1-1 1/2"
 2" O.D. STANDPIPE 1-2 1/2"
 F.H. 2-2 1/2"

- J** 2-1-001: Por. 003
Owned by A&B
- K** 2-1-003: 031
Owned by A&B



EXPIRATION DATE OF THE LICENSE 4/30/2016
 THIS WORK WAS PREPARED BY
 ME OR UNDER MY SUPERVISION

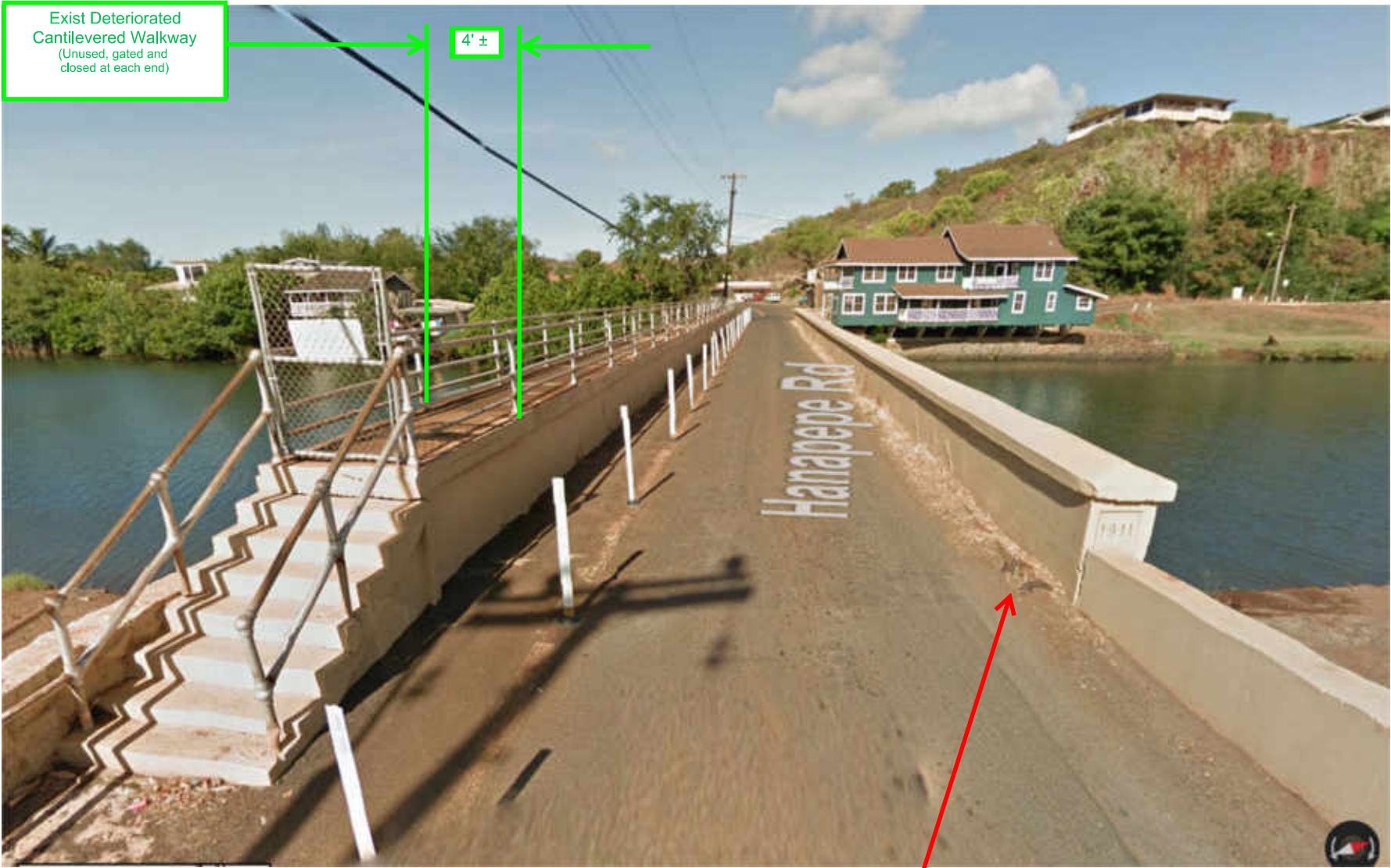
DWG. NO. C-04
 SHEET 5 OF 39

COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RIGHT-OF-WAY)				DATE
REVISION	DATE	BRIEF	MADE BY	APPROVED
AKINAKA & ASSOCIATES, LTD. CONSULTING ENGINEERS DEPT. OF WATER, COUNTY OF KAUAI HANAPEPE, KAUAI, HAWAII HANAPEPE 6 INCH MAIN REPLACEMENT HANAPEPE-ELEELE WATER SYSTEM JOB NO. 15-07, HE-01 & HE-10 TAX MAP KEY: 1-9-04, 05, 06, 07, 10 1-8-07, 08 (4TH DIVISION) GENERAL SITE PLAN				
DESIGNED BY WHM		DRAWN BY LRD		CHECKED BY BMG
APPROVED: _____				
MANAGER & CHIEF ENGINEER, DEPARTMENT OF WATER, COUNTY OF KAUAI				DATE
FILE	POCKET	FOLDER	NO.	



HE-10 Hanapēpē Road 6-Inch Main Replacement
HANAPĒPĒ BRIDGE (Looking West)
EXISTING CONDITIONS

5-11-2016
Photo 1 of 4



Exist Deteriorated
Cantilevered Walkway
(Unused, gated and
closed at each end)

4' ±

Existing 6" WL
(partially exposed)

HE-10 Hanapēpē Road 6-Inch Main Replacement
HANAPĒPĒ BRIDGE (Looking West)
EXISTING CONDITIONS
5-11-2016
Photo 2 of 4



Exist Deteriorated
Cantilevered Walkway
(Unused, gated and
closed at each end)

Existing 6" WL
(partially exposed)

HE-10 Hanapēpē Road 6-Inch Main Replacement
HANAPĒPĒ BRIDGE (Looking East)
EXISTING CONDITIONS
5-11-2016
Photo 3 of 4

HE-10 Hanapēpē Road
6-Inch Main Replacement
HANAPĒPĒ BRIDGE
(Looking East)
EXISTING CONDITIONS
5-11-2016
Photo 4 of 4

Exist Deteriorated
Cantilevered Walkway
(Unused, gated and
closed at each end)



HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #1 (Looking East)

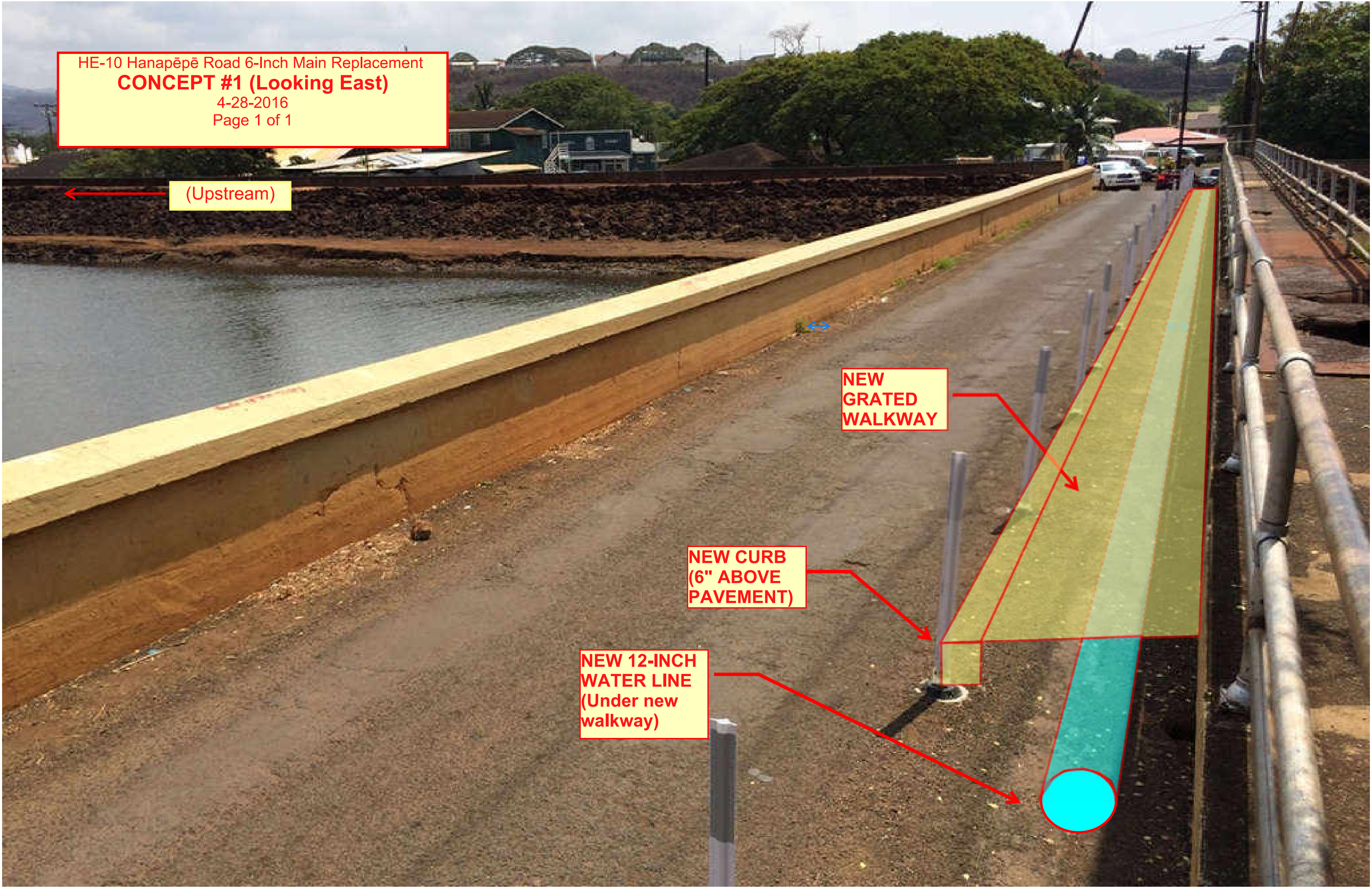
4-28-2016
Page 1 of 1

(Upstream)

NEW
GRATED
WALKWAY

NEW CURB
(6" ABOVE
PAVEMENT)

NEW 12-INCH
WATER LINE
(Under new
walkway)



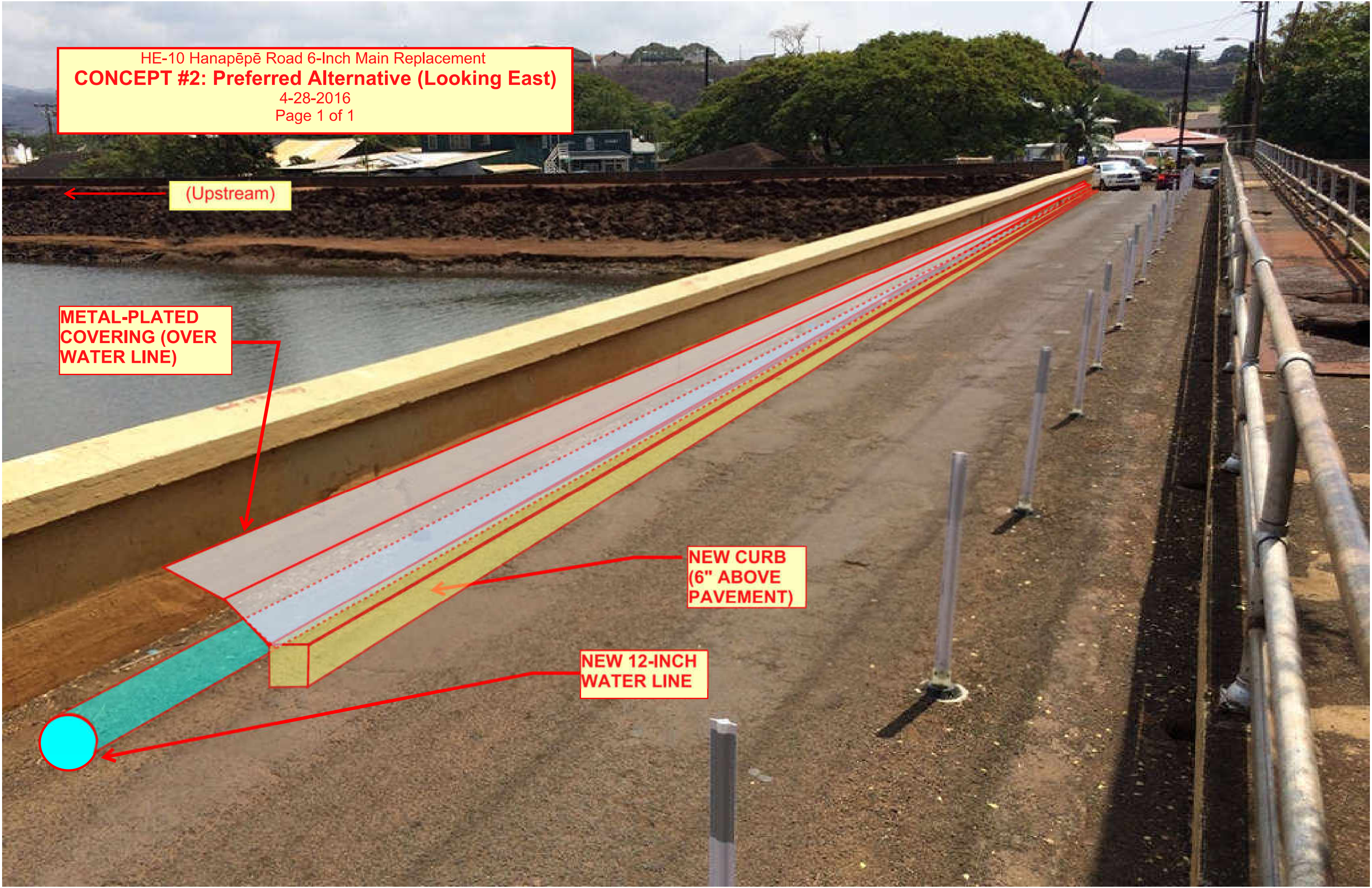
HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #2: Preferred Alternative (Looking East)
4-28-2016
Page 1 of 1

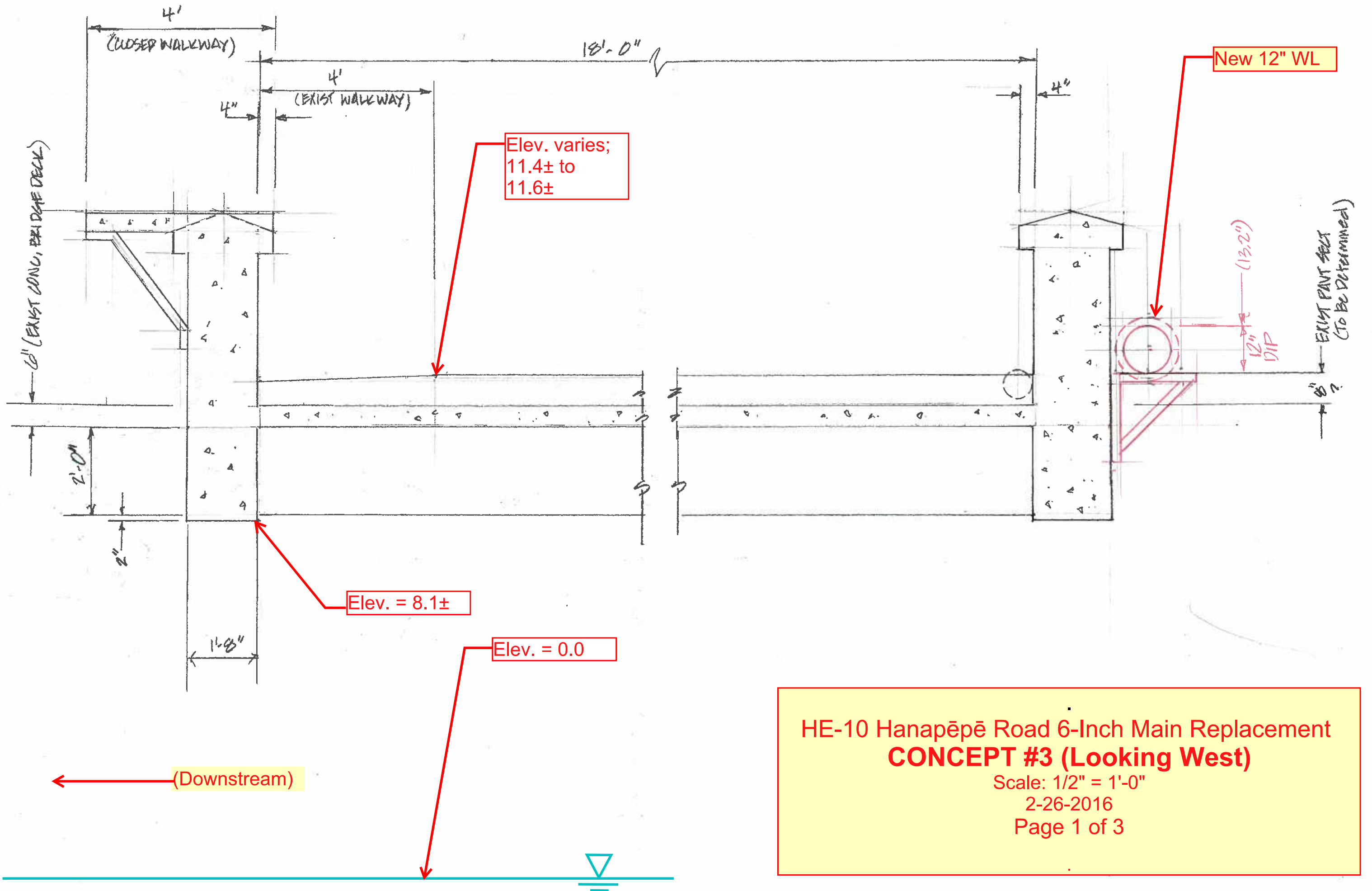
(Upstream)

METAL-PLATED
COVERING (OVER
WATER LINE)

NEW CURB
(6" ABOVE
PAVEMENT)

NEW 12-INCH
WATER LINE

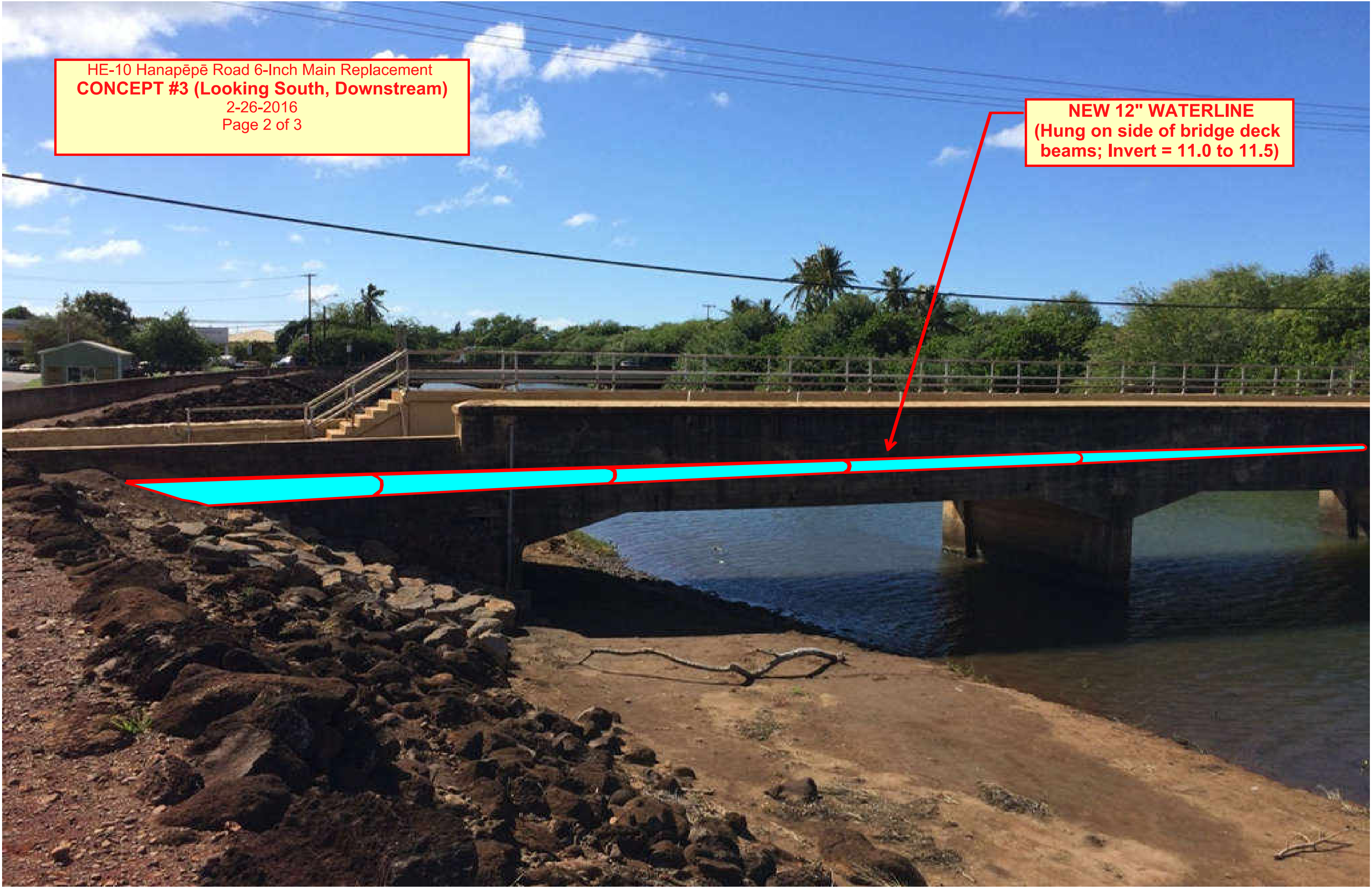




HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #3 (Looking West)
 Scale: 1/2" = 1'-0"
 2-26-2016
 Page 1 of 3

HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #3 (Looking South, Downstream)
2-26-2016
Page 2 of 3

NEW 12" WATERLINE
(Hung on side of bridge deck beams; Invert = 11.0 to 11.5)

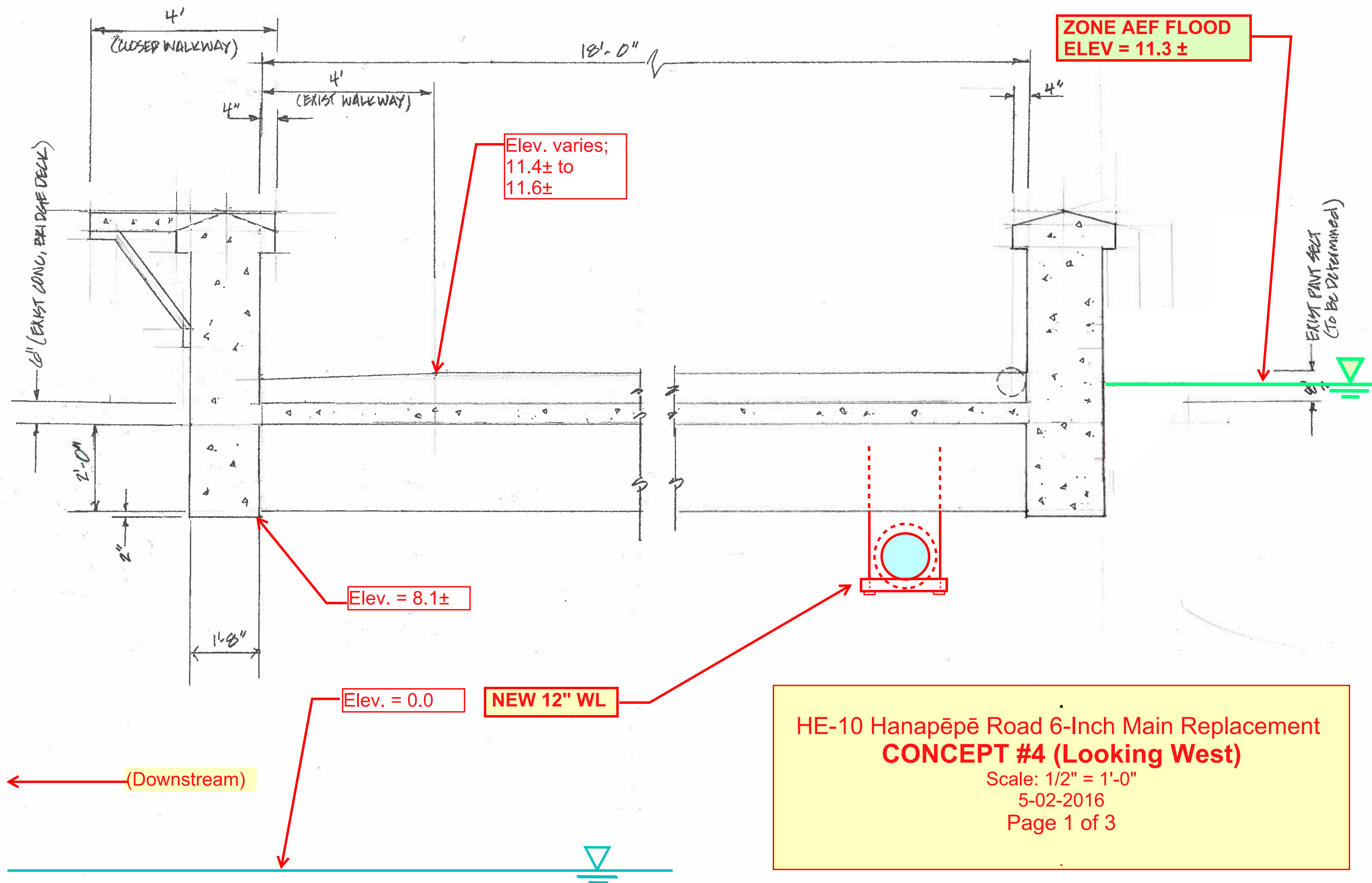


HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #3 (Looking South, Downstream)

2-26-2016
Page 3 of 3

NEW 12" WATERLINE
(Hung on side of bridge deck beams; Invert = 11.0 to 11.5)





**ZONE AEF FLOOD
ELEV = 11.3 ±**

**Elev. varies;
11.4± to
11.6±**

Elev. = 8.1±

Elev. = 0.0

NEW 12" WL

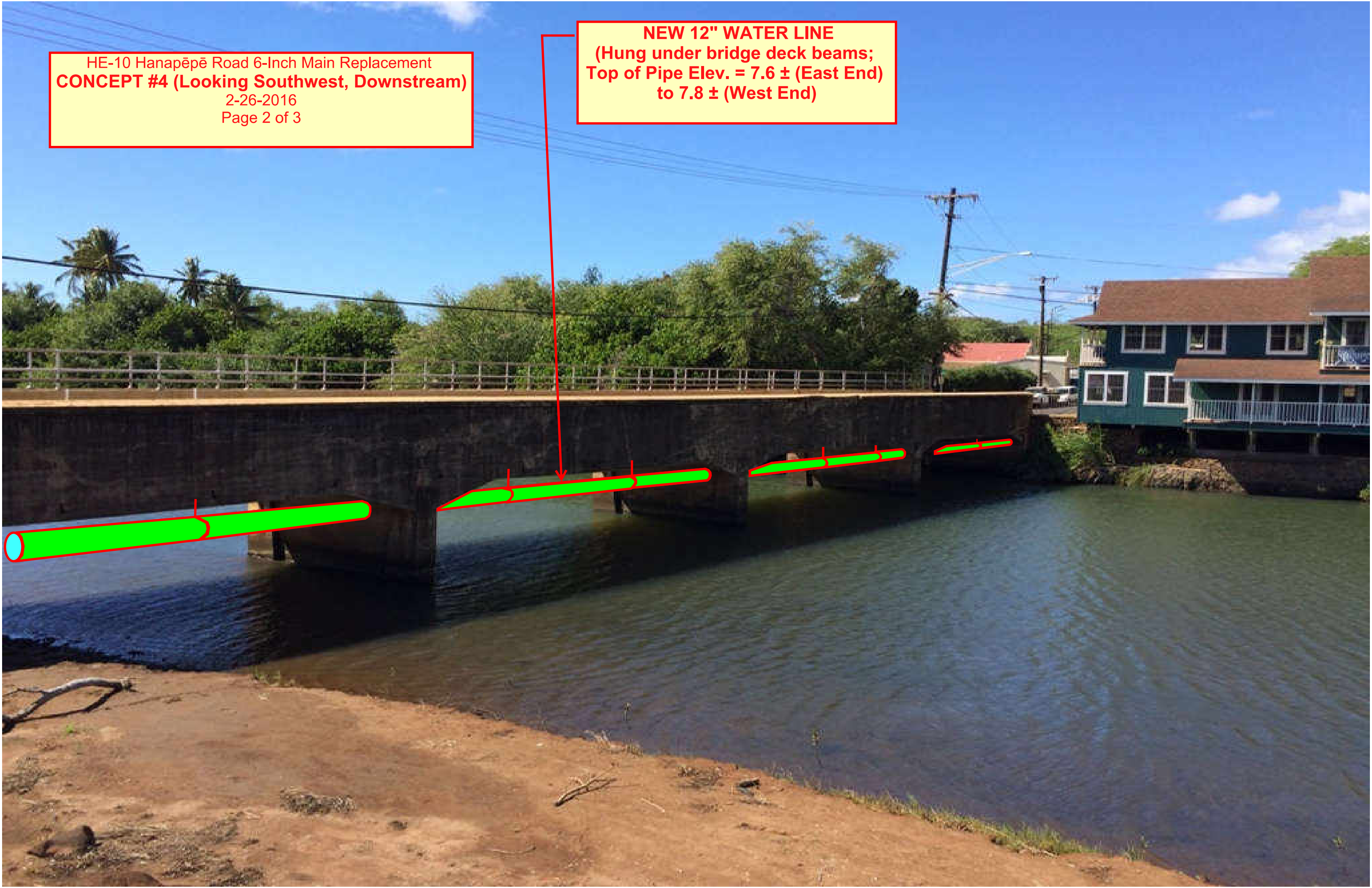
**EXIST PAVT SECT
(To Be Determined)**

(Downstream)

**HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #4 (Looking West)**
Scale: 1/2" = 1'-0"
5-02-2016
Page 1 of 3

HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #4 (Looking Southwest, Downstream)
2-26-2016
Page 2 of 3

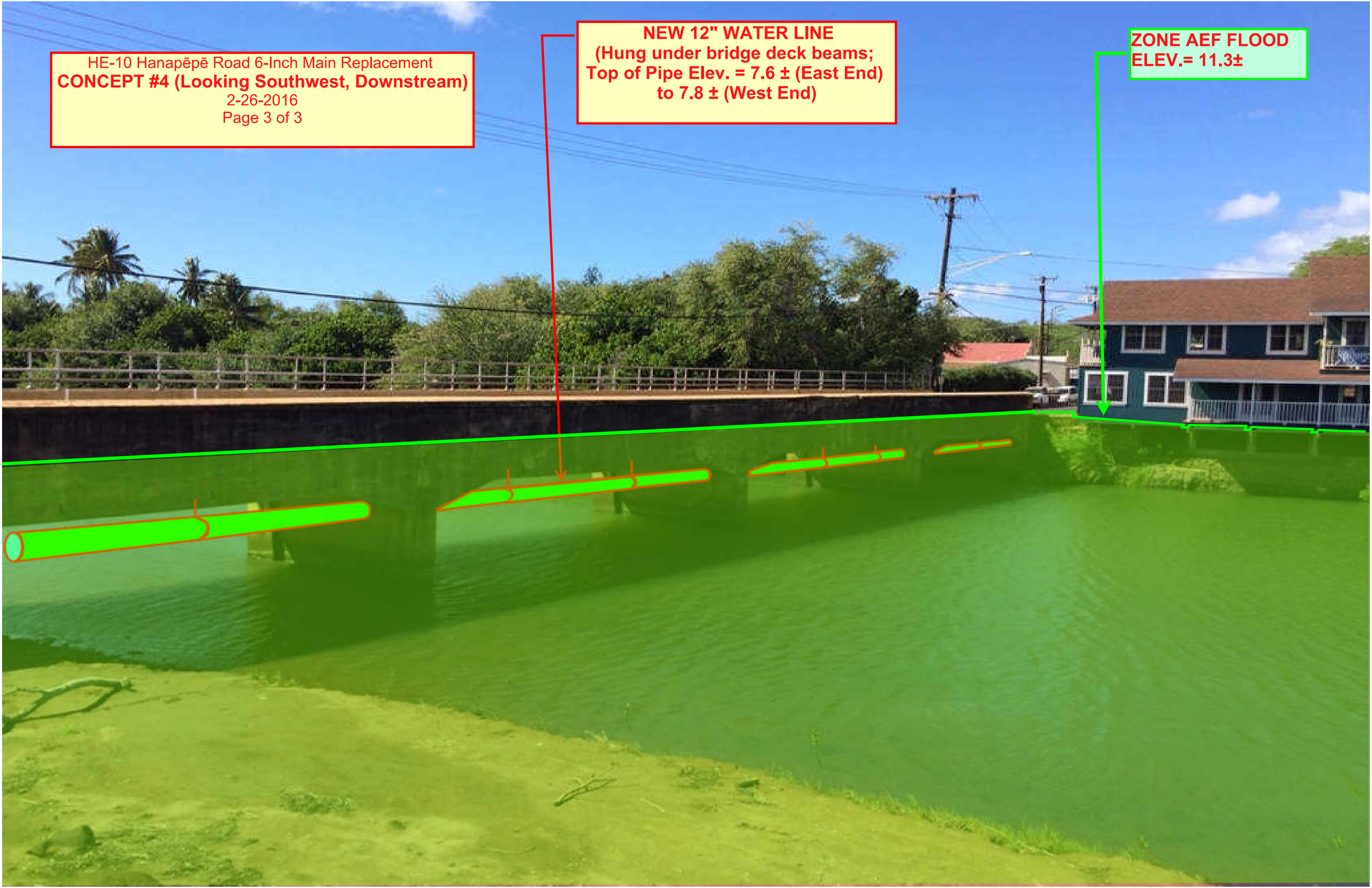
NEW 12" WATER LINE
(Hung under bridge deck beams;
Top of Pipe Elev. = 7.6 ± (East End)
to 7.8 ± (West End)

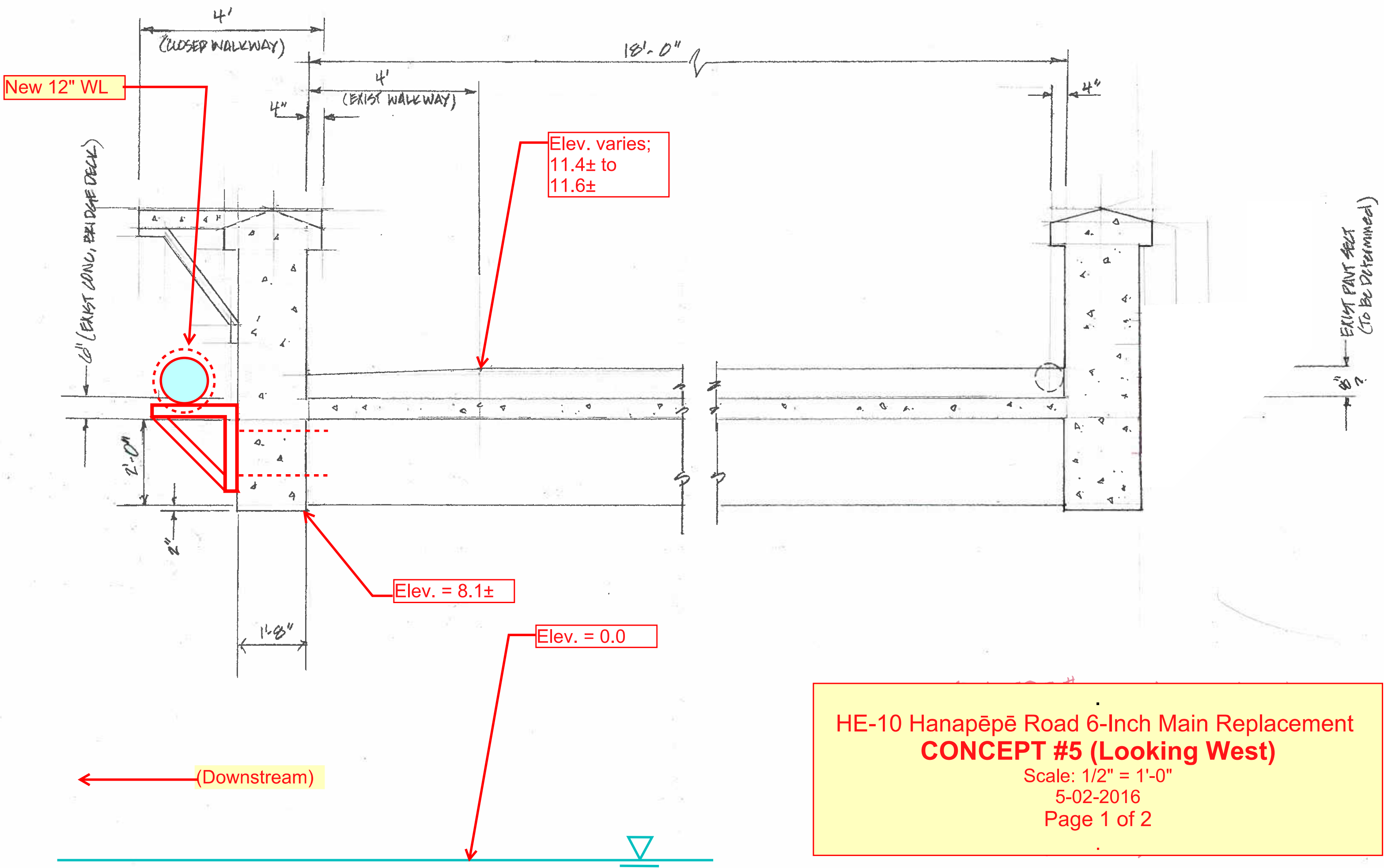


HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #4 (Looking Southwest, Downstream)
2-26-2016
Page 3 of 3

NEW 12" WATER LINE
(Hung under bridge deck beams;
Top of Pipe Elev. = 7.6 ± (East End)
to 7.8 ± (West End)

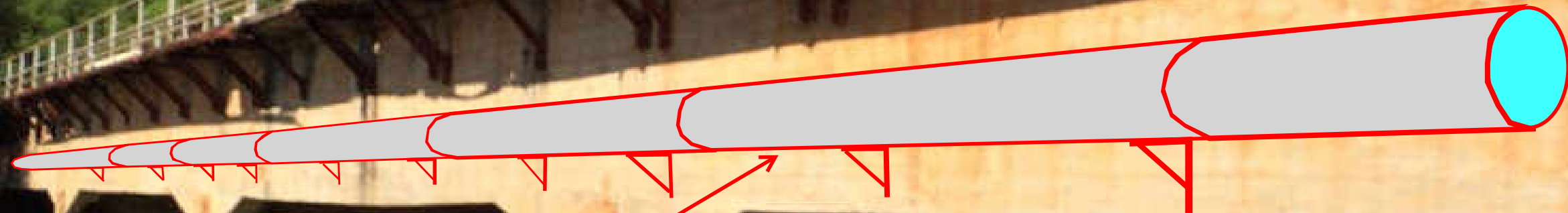
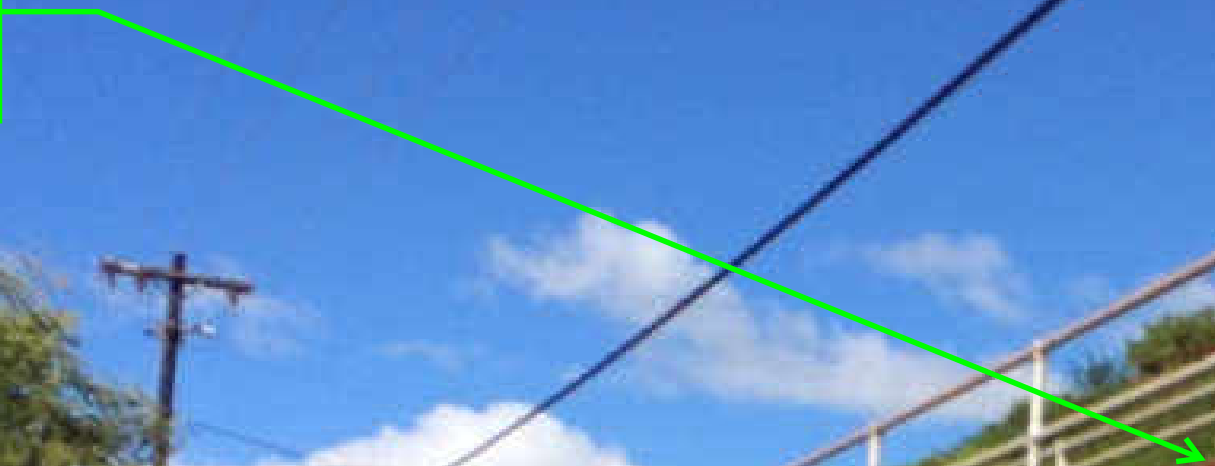
ZONE AEF FLOOD
ELEV.= 11.3±





HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #5 (Looking West)
 Scale: 1/2" = 1'-0"
 5-02-2016
 Page 1 of 2

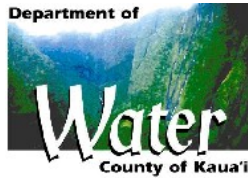
Exist Deteriorated
Cantilevered Walkway
(Unused, gated and
closed at each end)



(Downstream)
←

NEW 12" WATER LINE
(Mounted under closed walkway)
Top of Pipe Elev. = 10.8 ± (East End)
to 11.0 ± (West End)

HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #5 (Looking West)
5-02-2016
Page 2 of 2



Water has no substitute.....Conserve it

August 22, 2016

Ms. Mary Jane Naone, Kaua'i Lead Archaeologist
State Historic Preservation Division
Department of Land and Natural Resources
P.O. Box 1729
Līhu'e, HI 96766

Dr. Alan Downer, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
Kakuhihewa Building
601 Kamokila Boulevard, Suite 555
Kapolei, HI 96707

Attention: Ms. Mary Jane Naone and Ms. Anna Broverman

RE: LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E8 Historic Preservation Review

Job No. HE-10, Hanapēpē Road 6-Inch Water Main Replacement; TMK: (4)1-9-004, 1-9-005, 1-9-006, 1-9-007, 1-9-010, 1-9-011 and 1-8-008, and

Job No. HE-01, Re-organize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMK: (4) 1-9-005, 006 & 007, 2-1-001: 003, 2-1-002:001 and 2-1-003: 013, 014 & 023

Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i

Dear Dr. Downer:

The purpose of this letter is to follow up on previous correspondence for the subject project, including: our letter dated June 13, 2016, the last meeting with the Kaua'i Historic Preservation Review Commission (KHPRC) on April 28, 2016, and a memorandum from the KHPRC dated May 9, 2016 to our consultant for the subject projects; Akinaka and Associates, Ltd., a copy of which is enclosed. The April 28, 2016 KHPRC meeting and KHPRC memorandum focused on a particular aspect of the projects, primarily the proposal by the County of Kaua'i, Department of Water (or "DOW") to install a new 12-inch water line across the Hanapēpē Bridge (or "the Bridge"), under the *HE-10 Hanapēpē Road 6-Inch Main Replacement* project.

Since our last meeting with KHPRC on April 28, 2016, the DOW has met with the Department of Public Works (DPW) regarding two upcoming DPW projects; one to repair the Bridge and another future rehabilitation project in the vicinity of the Bridge. The result is that the subject

Ms. Mary Jane Naone, Kauai Lead Archaeologist
Dr. Alan Downer, Administrator

RE: LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E8 Historic Preservation Review
Job No. HE-10, Hanapēpē Road 6-Inch Water Main Replacement; TMK: (4)1-9-004, 1-9-005, 1-9-006, 1-9-007, 1-9-010, 1-9-011 and 1-8-008, and
Job No. HE-01, Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele; TMK: (4) 1-9-005, 006 & 007, 2-1-001: 003, 2-1-002:001 and 2-1-003: 013, 014 & 023
Waimea and Kōloa Districts, Island of Kaua‘i, Hawai‘i

August 22, 2016
Page 2

12-inch water line will be installed in a temporary fashion since DPW has indicated that it is planning to rehabilitate the Bridge in the future.

The KHPRC memorandum recapped a motion passed at the April 28, 2016 KHPRC meeting which posed questions to the DOW and its consultants. In addition to the questions, KHPRC had asked the DOW to consider other alternatives to the installation of the new 12-inch water line across Hanapēpē Bridge as documented in the minutes of the April 28, 2016 meeting.

Consequently, responses to these KHPRC questions, as well as requested information, are as follows:

I. From the KHPRC Memorandum and Page 18 of the April 28, 2016 KHPRC Meeting Minutes: “. . . the KHPRC requested . . . answers to the questions that were made by the State Historic Preservation Division in its letter of April 1st . . .”

In a letter dated June 13, 2016, a copy of which is enclosed (exclusive of attachments), DOW responded to the questions in the April 1, 2016 State Historic Preservation Division (SHPD) letter, a copy of which is also enclosed. Please inform us if you would like a complete copy of the June 13th letter, including all of the attachments.

II. From the KHPRC Memorandum and Page 18 of the April 28, 2016 KHPRC Meeting Minutes: “. . . KHPRC requested . . . the Applicant consider a fifth (5th) option of *stealth*ing the water line under the existing walkway . . .”

From Page 17 of the April 28, 2016 KHPRC Meeting Minutes: “. . . can you . . . reduce this (water line) . . . to . . . 6 inches? . . . maybe it’s 8 inches but is it really 12 inches?”

DOW evaluated these alternatives along with several others that KHPRC did not mention. The findings are summarized as follows:

A. DOW conducted hydraulic analysis on each of the following four alternatives and found that the resulting water system pressures for fire-fighting (a.k.a. “fire flows”) in the Port Allen area will not comply with DOW Water System Standards’ minimum requirements. Therefore, the DOW cannot proceed with any of the following four alternatives due to health and safety concerns per Water System Standards:

1. Concept 6 - Retain the existing 6-inch water line (a single 6-inch pipeline) for use and not install a new 12-inch water line across Hanapēpē Bridge. The analysis is enclosed and labeled as Concept 6.

Ms. Mary Jane Naone, Kauai Lead Archaeologist

Dr. Alan Downer, Administrator

RE: LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E8 Historic Preservation Review

Job No. HE-10, Hanapēpē Road 6-Inch Water Main Replacement; TMK: (4)1-9-004, 1-9-005, 1-9-006, 1-9-007, 1-9-010, 1-9-011 and 1-8-008, and

Job No. HE-01, Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele; TMK: (4) 1-9-005, 006 & 007, 2-1-001: 003, 2-1-002:001 and 2-1-003: 013, 014 & 023

Waimea and Kōloa Districts, Island of Kaua‘i, Hawai‘i

August 22, 2016

Page 3

2. Concept 7a - Replace the existing 6-inch pipeline with an 8-inch water line (instead of 12-inch) across Hanapēpē Bridge. The analysis is enclosed and labeled as Concept 7a.
3. Concept 7b - Add a second (new) 6-inch water line, so that there would be two 6-inch water lines on the bridge. The analysis is enclosed and labeled as Concept 7b.
4. Concept 7c - Add a new 8-inch water line in addition to the existing 6-inch water line across Hanapēpē Bridge, so that there would be two water lines on the bridge. The analysis is enclosed and labeled as Concept 7c.

DOW conducted a hydraulic analysis for a single 12-inch water line across Hanapepe Bridge and determined that with this pipe fire flow in the Port Allen area will meet DOW Water System Standards. A copy of this analysis is enclosed as the exhibit labeled “Baseline”.

B. Concept 5a - Install a new 12-inch water line on new brackets, below and under the existing walkway and corresponding walkway brackets (please refer to the attached sketch labeled Concept 5a). Concept 5a is considered infeasible for the following reasons:

1. DOW attempted to verify constructability of this concept, as well as obtain order of magnitude of costs, by consulting with several construction contractors who stated that installing the water line under the walkway would be extremely challenging. Nearly all of the contractors declined to provide construction details, citing the difficulty of trying to get underneath the historic walkway. Therefore, it is anticipated that construction bids for this alternative could be exorbitant or that there might be no response to a request for bids.
2. DOW maintains that locating the water line under the walkway would be extremely difficult to access for repairs, breaks, or leaks, and could remain unrepaired for extended periods of time.
3. The Department of Public Works (DPW) informed DOW on July 11, 2016 that DOW must strengthen the bridge before hanging a water line off the side of it. Per DPW, the scope of the strengthening would not be determined until after the findings of the next biennial bridge inspection

RE: LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E8 Historic Preservation Review
Job No. HE-10, Hanapēpē Road 6-Inch Water Main Replacement; TMK: (4)1-9-004, 1-9-005, 1-9-006, 1-9-007, 1-9-010, 1-9-011 and 1-8-008, and
Job No. HE-01, Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele; TMK: (4) 1-9-005, 006 & 007, 2-1-001: 003, 2-1-002:001 and 2-1-003: 013, 014 & 023
Waimea and Kōloa Districts, Island of Kaua‘i, Hawai‘i

August 22, 2016

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become available, which has not yet been scheduled. As a result, the strengthening requirements, and when such information will become available, are unknown. Until then, DPW will not permit DOW to install the water line on brackets on the side of the bridge and is therefore preventing DOW from pursuing this alternative.

- C. Concept 5b-1 – locate the new 12-inch water line under the existing walkway by threading it through the existing walkway brackets. Concept 5b-1 is considered infeasible for the following reasons:
1. A 12-inch ductile iron pipe will not fit through the existing brackets (see next Concept 5b-2). Therefore, DOW cannot implement this concept at this time.
 2. As in Concept 5a (Item II.B.3.), DPW will not allow a water line to be hung on the side of the bridge until the bridge is strengthened.
- D. Concept 5b-2 - Install a new 8-inch water line through the walkway brackets. Concept 5b-2 is considered infeasible for the following reasons:
1. As in Concept 7a (Item II.A.2), a single 8-inch water line will not provide the minimum required fire flows in the Port Allen area. Therefore, DOW cannot proceed with Concept 5b-2 due to health and safety concerns per current codes.
 2. An 8-inch ductile iron pipe will barely clear the existing brackets by 1/2” (half-an-inch) on three sides as depicted in the enclosed sketch labeled Concept 5b-2. It will be extremely difficult to install heavy pipe with such small tolerances.
 3. As in Concept 5a (Item II.B.3.), DOW cannot hang a water line on the side of the bridge until the bridge is strengthened. Not knowing the strengthening requirements, and when they might be identified, also prevents DOW from implementing this concept.
- E. Concept 5b-3 - Install a 6-inch water line through the existing walkway brackets, referred to as Concept 5b-3 (see the attached exhibit labeled “Concept 5b-3”)

As with Concept 6 (Item II.A.1), a single 6-inch water line will not provide the minimum required fire flows in the Port Allen area; therefore, DOW cannot pursue this alternative due to health and safety concerns.

F. Concept 4 - Hang the new 12-inch water line under the bridge.

DPW requires a certification that a pipe, located in a floodway, will not affect the Zone AEF flood elevation. Under this concept, the pipe will reduce the open area under the bridge and be an obstruction to flood waters attempting to pass under the bridge. Because the flood elevation will be impacted, such a certification is not possible and DOW cannot proceed with this concept.

G. Concept 3 - Hang the new 12-inch water line off the upstream side of the bridge.

As previously described in Concept 5a (Item II.B.3.) above, DOW cannot hang a water line on the side of the bridge until the bridge is strengthened. Not knowing the strengthening requirements, and when they might be identified, also prevents DOW from implementing this concept.

H. Concept 2 - Install new 12-inch water line on the bridge deck inside of and along the upstream (mauka) parapet wall.

Under this concept, the distance from the top of the pipe (and the associated metal grating covering the pipe) to the top of the parapet will be less than 42 inches, which is less than the minimum required railing height. Because of safety and liability concerns, DOW cannot proceed with this concept.

I. Concept 1- Install new 12-inch water line on the bridge deck inside of and along the downstream (makai) parapet wall.

DOW found that it could not proceed with any of the preceding Concepts 2, 3, 4, 5a, 5b-1 through 5b-3, 6, 7a and 7b for various reasons, including: physical constraints, constructability issues, unknown bridge strengthening requirements, and/or because the Port Allen area would have inadequate fire flow pressures as a result of a pipeline less than 12-inches in diameter crossing Hanapēpē Bridge.

Consequently, Concept 1, as presented at the KHPRC Meetings on March 24, 2016 and April 28, 2016 was submitted to DPW for further consideration. Concept 1 went through a number of iterations as a result of consultation with DPW and the most recent version is attached as a sketch labeled "Concept 1g".

Ms. Mary Jane Naone, Kauai Lead Archaeologist

Dr. Alan Downer, Administrator

RE: LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E8 Historic Preservation Review
Job No. HE-10, Hanapēpē Road 6-Inch Water Main Replacement; TMK: (4)1-9-004, 1-9-005, 1-9-006, 1-9-007, 1-9-010, 1-9-011 and 1-8-008, and
Job No. HE-01, Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele; TMK: (4) 1-9-005, 006 & 007, 2-1-001: 003, 2-1-002:001 and 2-1-003: 013, 014 & 023
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Concept 1g proposes to install the new 12-inch water line, on the bridge, along and inside of the downstream parapet wall. The water line will be covered with a 5-foot wide grating that will serve as a sidewalk. Per discussions with DPW the sidewalk elements will not be anchored to or tied into the bridge structure.

III. Architectural Reconnaissance Level Survey.

Fung Associates, Inc. submitted an Architectural Reconnaissance Level Survey for the subject projects whose receipt at SHPD was confirmed on January 21, 2016. A copy is not enclosed with this letter.

IV. Request

Having therefore evaluated the alternatives requested by KHPRC in its memorandum of May 9, 2016 and at its April 28, 2016 meeting, and based on the results of the evaluations discussed above, the County of Kaua‘i, Department of Water respectfully requests confirmation from SHPD as to the following the following:

- Confirmation that the Architectural Reconnaissance Level Survey has been approved by SHPD, and,
- SHPD concurs with the project under Chapter 6-E8; the construction of a new 12-inch water line, across the Hanapēpē Bridge as part of the *HE-10 Hanapēpē Road 6” Main Replacement* project, on the deck of the bridge as depicted in the enclosed sketch labeled as “Concept 1g”. Since the water line will be hidden as much as practicable, as depicted under Concept #1 which was presented at the April 28, 2016 KHPRC meeting, and as a temporary installation as shown in the enclosed sketch labeled “Concept 1g”, we believe there will be no historic properties affected, and,
- As requested in our letter of June 13, 2016, and pursuant to a discussion with Scientific Consultant Services, Inc. in March 2016, regarding Archaeological Monitoring as a mitigation strategy (due to the location of the routes being overwhelmingly within existing right-of-ways and within former coffee and sugar cane fields), we respectfully request your concurrence that there will be No Adverse Effect to historic sites, under *HE-10 Hanapēpē Road 6-Inch Main Replacement*; as well as *HE-01 Re-organize Water System; Pipeline Connecting Hanapēpē and ‘Ele‘ele*; pursuant to Chapter 6-E, with the implementation of the

Ms. Mary Jane Naone, Kauai Lead Archaeologist

Dr. Alan Downer, Administrator

RE: LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E8 Historic Preservation Review
Job No. HE-10, Hanapēpē Road 6-Inch Water Main Replacement; TMK: (4)1-9-004, 1-9-005, 1-9-006, 1-9-007, 1-9-010, 1-9-011 and 1-8-008, and
Job No. HE-01, Re-organize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMK: (4) 1-9-005, 006 & 007, 2-1-001: 003, 2-1-002:001 and 2-1-003: 013, 014 & 023
Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i

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aforementioned monitoring (in lieu of the preparation and approval of an Archaeological Inventory Survey) as the mitigation strategy.

Subject to your concurrence, an Archaeological Monitoring Plan will be developed and submitted for approval, prior to the start of any ground-altering work in the project area.

Thank you again for your continued consultation and cooperation. If you have questions, please feel free to contact Bryan Wienand of my staff at (808) 245-5449, or email at bwienand@kauaiwater.org. You may also contact William Makanui of Akinaka and Associates, Ltd., our consultant for the project, at (808) 836-1900 ext. 684 or email at whm@akinaka.com.

Very truly yours,



Kirk Saiki, P.E.

Manager and Chief Engineer

BW/ce

cc: Anna Broverman, Architectural Historian, SHPD, DLNR (w/encl), by email
Jessica Puff, Architectural Historian, SHPD, DLNR (w/encl), by email
Kauai Historic Preservation Review Commission (w/encl)
Akinaka and Associates, Ltd. (w/o encl)

Enclosures: KHPRC Memorandum to Akinaka & Associates, Ltd. dated May 9, 2016
DOW letter to SHPD dated June 13, 2016; excluding attachments (5 pages)
SHPD letter dated April 1, 2016, to Dept. of Water (2 pages)
(Exhibits) Concept 6, Concept 7a, Concept 7b, Concept 7c, and Baseline
Sketch: Concept 5a (3 pages)
Sketch: Concept 5b-2
Sketch: Concept 5b-3
Sketch: Concept 1g

Bernard P. Carvalho, Jr.
Mayor



Michael A. Dahilig
Director of Planning



Nadine K. Nakamura
Managing Director

Ka'aina S. Hull
Deputy Director of Planning

PLANNING DEPARTMENT


County of Kaua'i, State of Hawai'i

4444 Rice Street, Suite A-473, Lihu'e, Hawai'i 96766
TEL (808) 241-4050 FAX (808) 241-6699

MEMORANDUM

DATE: May 9, 2016

TO: William Makanui, Project Manager
Akinaka & Associates, LTD.
3375 Koapaka Street, Suite B206,
Honolulu, HI 96819

FROM: Kauai Historic Preservation Review Commission 

SUBJECT: **County of Kauai, Department of Water**
TMK: 1-9-011, Hanapepe Bridge
Hanapepe, Waimea, Island of Kauai
Proposed improvement projects for Hanapepe-Eleele Water Systems.

This is to inform you that at its meeting held on April 28, 2016, the Kauai Historic Preservation Review Commission (KHPRC) reviewed your letter dated April 20, 2016 and supporting information with proposed alternatives for the proposed improvement projects for the Hanapepe-Eleele Water Systems.

After hearing testimony and discussion on the matter, the KHPRC expressed its appreciation of the thorough presentation and information presented by the Applicant for the proposed project. Based on the motion made, the KHPRC voted that based upon the obligation/purpose of the KHPRC which is for historic preservation, the KHPRC requested of the County of Kaua'i (Water Department and/or Department of Public Works) and its consultants the answers to the questions that were made by the State Historic Preservation Division in its letter of April 1st (attached) and that the Applicant consider a fifth (5th) option of stealthing the water pipe under the existing walkway by whatever means. The other alternatives for the placement of the proposed waterline on the other side of the bridge are to be temporary and to be undertaken in whatever the means necessary to minimize the impact on this very historic bridge.

Please feel free to contact us if you have any questions regarding this matter.

Mahalo.

Cc: State Historic Preservation Division
Department of Water



Water has no substitute.....Conserve it

June 13, 2016

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist
State Historic Preservation Division, DLNR
P.O. Box 1729
Līhu'e Kaua'i 96766

Dear Ms. Naone:

SUBJECT: LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i

Thank you for your letter dated April 1, 2016, replying to the December 8, 2015 request, from Geometrician Associates, LLC, for early consultation on the Environmental Assessment (EA) for the subject project(s). Copies are enclosed and our responses to your letter are as follows:

1. Please provide the total acreage of the project areas as well as the landowners(s):

The enclosed ***Table 1 – Project Areas*** lists the acreages and landowners for the *HE-10 Hanapēpē Road 6-Inch Main Replacement*; and the *HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele*, projects. Two acreages are provided for each project.

One area pertains to excavation for the new pipelines, for depths greater than 12 inches from the surface. The other area reflects the area to be repaved above the new pipelines; including ground disturbance to a maximum of 12 inches from the surface, which overlaps the first area.

Existing water services will be reconnected under *HE-10 Hanapēpē Road 6-Inch Water Main Replacement* and this work will encroach into private parcels. Excavation will be adjacent to existing buried plumbing and is not anticipated to extend beyond the County right-of-way by more than three feet, or to be deeper than 18" below the surface. The enclosed ***Table 2- HE-10 Hanapēpē Road 6-Inch Main Replacement: Reconnecting Existing Services*** lists the parcels and landowners to be affected by this work.

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist
State Historic Preservation Division, DLNR

SUBJECT: **LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i**

June 13, 2016
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2. If federal funding is being used, please notify us so that we may assist with the National Historic Preservation Act (NHPA) Section 106 process.

Section 106 does not apply as no federal funding will be used for this project. The project is being funded by County funds which will be reimbursed from a State of Hawaii General Obligation Bond Fund appropriation (i.e. State funds).

3. Please provide the detailed scope of work (SOW) for the project, including depth and extent of ground disturbance for the installation of the pipeline and water main.

The *HE-10 Hanapēpē Road 6-inch Water Main Replacement* project proposes the construction of approximately 2,500 feet of new 12-inch water main, as well as replacement service laterals and hydrants, along Hanapēpē Road. The alignment along Hanapēpē Road extends from Moi Road, across the Hanapēpē Bridge, to Kona Road. Work will extend slightly into Pū'olo Road, Awāwa Road, and Iona Road, as shown on the enclosed construction drawings.

- Construction drawings showing the detailed scope of work have been reviewed by various County departments. A partial set is enclosed for your reference.
- The enclosed ***Table 3- HE-10 Hanapēpē Road 6-Inch Main Replacement: Work Summary*** lists the new water line improvements as well as the average depth and extent of associated ground disturbance.

The *HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele* project proposes the construction of approximately 2,900 feet of new 16-inch water line along Kaumuali'i Highway. The alignment along Kaumuali'i Highway extends from Kona Road to Waialo Road, terminating approximately 400 feet south of the Kaumuali'i Highway intersection. This project also includes construction of a pad, with a stabilized and/or all-weather surface, to accommodate a trailer-mounted pump that would be mobilized to boost water up to the existing 'Ele'ele tanks in the event of an emergency. The proposed location of the pad will be in lands owned by Alexander and Baldwin.

Conceptual drawings for two possible alignments, labeled Water Line A and Water Line B, are enclosed for *HE-01 Pipeline Connecting Hanapēpē and 'Ele'ele*:

- ***Schematic Layout***
- ***Schematic Water Line Profiles***
- ***Schematic Maintenance Road Profiles***
- ***Schematic Maintenance Road for WL "A" Cross Sections***

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist

State Historic Preservation Division, DLNR

SUBJECT: **LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i**

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The "Water Line A" alignment is being considered due to the Department of Transportation, Highways Division's (DOT-HWY) concerns of traffic impacts from construction activities. Under this alternative, the new 16-inch water line will be situated outside of the highway pavement for about 1,340 feet of its length. However, under the alternative "Water Line B" alignment, the new 16-inch water line would be located within the highway pavement for all but 485 feet of its length.

- The average depth of ground disturbance; which is measured from the surface to six (6) inches below the bottom of the water line, will generally be consistent for both alignments at about 5 feet.

Final selection of an alignment is pending ongoing discussions with the DOT-HWY.

3. *(Continued) Please indicate if the ground disturbance is completely within the right-of-way of Kaumuali'i Highway.*

As shown in *Table 1 – Project Areas*; most of the work for the *HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele 'ele* project will be within the Kaumuali 'i Highway and Waialo Road right-of-way. A small amount of grading is proposed; along a strip about 100 feet by 8 feet at its widest point, for an access route into TMK: (4) 1-9-07: Por. 007; which is owned by the State of Hawaii. Furthermore, an enclosure with standpipes, to measure approximately 0.07 acre in area, is proposed to be constructed on lands owned by Alexander and Baldwin on TMK: (4) 2-1-01: 003.

4. *Please include staging and access areas.*

A number of parcels have been identified as potential staging areas. Please refer to the enclosed *Table 4 - HE-10 and HE-01 Potential Staging Areas* and enclosed map *HE-10 and HE-01 Potential Staging Areas*.

Final selection of a staging area would be made prior to construction after a contractor is selected. Selection would be subject to negotiations between the contractor and the parcel owner, as well as the processing of permits to allow such use, including but not limited to a County Use Permit.

5. *The pre-consultation letter mentions impacts to Hanapēpē Bridge. Please provide the SOW for work within the vicinity of Hanapēpē Bridge to our architecture branch.*

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist
State Historic Preservation Division, DLNR

SUBJECT: **LOG NO: 2015.04338; DOC NO: 1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i**

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An existing 6-inch water line currently crosses the Hanapēpē Bridge (or the "Bridge") on the deck inside of, and along, the north parapet wall with sections of it partially exposed. The 6-inch water line is buried, beyond the limits of the Bridge; prior to and past the abutment walls. Please see the attached exhibit labeled *Exhibit 0 – Existing Conditions*.

The *HE-10 Hanapēpē Road 6-inch Main Replacement* project proposes a new 12-inch water main to replace this existing 6-inch main, on the Bridge. The enclosed construction drawings, as well as enclosed exhibit labeled *Exhibit A – Concept #1*, show the new 12-inch water line on the south side of the bridge.

However, in a letter dated April 8, 2016, a copy of which is enclosed, the County Department of Public Works (who own the Bridge) informed us that the water line must be positioned on the north side of the Bridge. Consequently, DOW preference is to install the 12-inch water line in the same location as the existing 6-inch water line, on the bridge deck and along the north parapet wall. An attached exhibit labeled *Exhibit B – Concept #2 (Preferred Alternative)* depicts this pictorially. The 12-inch water line would revert to a buried-water main beyond the limits of the Bridge, prior to and past the abutment walls.

The Kauai Historic Preservation Review Commission (KHPRC) was consulted at its March 24, 2016 and April 28, 2016 meetings where Concepts 1 and 2 were presented for input and comment. At these meetings, other alternatives to cross the bridge were presented for information. Copies are attached as *Exhibit C – Concept 3, 4 & 5*.

As of this writing, consultation with KHPRC to obtain their concurrence on a design option, for the 12-inch water line to cross Hanapēpē Bridge, remains ongoing.

6. *Archaeological Mitigation; March 2016 discussion*

We were informed that you discussed archaeological mitigation strategy for the project with our archaeological consultant, Scientific Consultant Services, Inc. in March 2016.

Our understanding is that Archaeological Monitoring had been discussed as a mitigation strategy due to the location of the routes being overwhelmingly within existing right-of-ways and within former coffee and sugar cane fields. The former locations could possibly be monitored on an intermittent basis; when excavation is being conducted, while full-time monitoring would occur along the Hanapēpē segment, while excavation is in progress, due to the presence of sand and formerly identified burials in the area.

- Consequently, please confirm that there will be No Adverse Effect to historic sites, under *HE-10 Hanapēpē Road 6-Inch Main Replacement*; as well as *HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele*; pursuant to Chapter 6-E, with the aforementioned monitoring as the mitigation strategy

Ms. Mary Jane Naone
Kaua'i Lead Archaeologist
State Historic Preservation Division, DLNR

SUBJECT: **LOG NO: 2015.04338; DOC NO:1601MN17, Chapter 6-E Historic Preservation Review HE-10 Hanapēpē Road 6-Inch Water Main Replacement; TMKs (4) 1-9-04, (4) 1-9-05, (4) 1-9-06, (4) 1-9-07, (4) 1-9-10, (4) 1-9-11 and (4) 1-8-08, and HE-01 Reorganize Water System; Pipeline Connecting Hanapēpē and 'Ele'ele; TMKs: (4) 1-9-05, (4) 1-9-06 & (4) 1-9-07, (4) 2-1-01:003, (4) 2-1-02:001 and (4) 2-1-03:013, (4) 2-1-03:014 & (4) 2-1-03:023; Waimea and Kōloa Districts, Island of Kaua'i, Hawai'i**

June 13, 2016
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Subject to your concurrence, an Archaeological Monitoring Plan will be developed and submitted for approval, prior to the start of any ground-altering work in the project area.

Thank you again for your continued consultation on this project. We hope this response has provided satisfactory answers to your questions. If you have any further questions, please feel free to contact Bryan Wienand of my staff at (808) 245-5449, or email bwienand@kauaiwater.org. You may also contact William Makanui of Akinaka and Associates, Ltd.; our consultant for the project, at (808) 836-1900 ext. 684 or email at whm@akinaka.com.

Sincerely,



Kirk Saiki, P.E.
Manager and Chief Engineer

BW:bdm
Job No. HE-01 and HE-10 Historic Preservation Review

c: Jessica Puff, Architectural Historian, SHPD, DLNR (w/enclosures)
Akinaka and Associates, Ltd. (w/o enclosures)

Enclosures:

SHPD letter dated April 1, 2016, to Dept. of Water (2 pages)
Letter dated December 8, 2015 from Geometrician Associates, LLC (3 pages)
Table 1, Project Areas
Table 2, HE-10 Hanapēpē Road 6-Inch Main Replacement: Reconnecting Existing Services
Construction Plans; *Hanapēpē Road 6-Inch Main Replacement* (Sheets 1, 3, 5 thru 15 & 24)
Schematic Layout (for HE-01)
Schematic Water Line Profile (for HE-01)
Schematic Maintenance Road Profiles (for HE-01)
Schematic Maintenance Road for WL "A" Cross Sections (for HE-01)
Table 3, HE-10 Hanapēpē Road 6-Inch Main Replacement: Work Summary
Table 4, HE-10 and HE-01 Potential Staging Areas
(Map) HE-10 and HE-01 Potential Staging Areas
Exhibit 0 – Existing Conditions
Exhibit A – Concept #1 (1 page)
Exhibit B – Concept #2 (Preferred Alternative) (1 page)
Exhibit C – Concept(s) 3, 4 & 5 (8 pages)

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

April 1, 2016

Bryan Wienand
Department of Water
bwienand@kauaiwater.org

LOG NO: 2015.04338
DOC NO: 1601MN17
Archaeology
Architecture

Dear Mr. Wienand:

**SUBJECT: Chapter 6E-8 Historic Preservation Review
Reorganize Water System – Pipeline and Water Main Replacement –Hanapepe and Ele‘ele
Waimea Ahupua‘a, Kona Districts, Island of Kaua‘i
TMK: (4) 1-9-005-007, (4) 2-1-001-005, (4) 1-8-007, 008, (4) 1-9-004, 005, 006, 007, 010**

Thank you for your pre-consultation regarding the proposed undertaking of two projects in Hanapepe and Ele‘ele: 1) the HE-01 Reorganization of the water system/pipeline connecting Hanapepe and Ele‘ele, and 2) the HE-10 Hanapepe Road 6-inch Main Replacement Project. We received the pre-consultation notice in our Kapolei office on December 18, 2015.

Geometrician Associates, LLC has been contracted to conduct an Environmental Assessment (EA) for the project. Geometrician Associates provided a graphic showing the general area of the project. In order to assist the County of Kaua‘i in the identification of historic properties within the project area, and to assess potential impacts to historic properties, we request the following information.

- 1) Please provide the total acreage of the project area(s), as well as the landowner(s).
- 2) If federal funding is being used, please notify us that we may assist with the National Historic Preservation Act (NHPA) Section 106 process.
- 3) Please provide a detailed scope of work (SOW) for the project, including depth and extent of ground disturbance for the installation of the pipeline and water main. Please indicate if the ground disturbance is completely within the right-of-way (ROW) of Kaumuali‘i highway.
- 4) Please include staging and access areas.
- 5) The pre-consultation letter mentions impacts to Hanapepe Bridge. Please provide the SOW for work within the vicinity of Hanapepe Bridge to our architecture branch.

A preliminary search of our records indicates we do not have archaeological inventory surveys (AIS) for many of the TMKs. However, in addition to Hanapepe Bridge, there are historic properties that have been identified within the vicinity of the project area. A subsurface cultural deposit, State Inventory of Historic Places (SIHP) Site 50-30-09-00497, is located in Hanapepe on the lot of the First United Church of Christ. In addition, burials have been identified along the river near Hanapepe Bridge (Sites 00704 and 705). The burials are adjacent to a subsurface historic site (Site 706).

We look forward to continued consultation with you to determine the effects of the project on historic properties. The requested project details will inform our recommendations regarding any needed archaeological work. Please contact Kaua‘i Lead Archaeologist Mary Jane Naone at 808-271-4940 or Maryjane.naone@hawaii.gov for questions regarding related to archaeology. For questions related to architecture, please contact Jessica Puff, Architectural Historian, at Jessica.L.Puff@hawaii.gov or 808-692-8023.

Mr. Wienand
Page 2

Aloha,

A handwritten signature in cursive script that reads "Mary Jane Naone".

Mary Jane Naone
Kaua'i Lead Archaeologist

cc. William Makanui
Akinaka & Associates, LTD
whm@akinaka.com

THIS IS HYDRANT C-149
 THE LAST HYDRANT IN
 PORT ALLEN

Junction Detailed Report: C-149

Results (Fire Flow)			
Flow (Total Needed)	(N/A) gpm	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	(N/A)
Flow (Total Available)	(N/A) gpm		

Results (Pressure Dependent Demands)			
Demand Shortage	0 gpm	Shortfall (Cumulative)	0.00 MG
Demand (Cumulative)	0.00 MG	Supply Rate (Cumulative)	(N/A) %
Supply (Cumulative)	0.00 MG	Demand (Target)	3,001 gpm

Results (Statistics)			
Demand (Minimum)	3,001 gpm	Age (Minimum)	(N/A) hours
Demand (Maximum)	3,001 gpm	Age (Maximum)	(N/A) hours
Hydraulic Grade (Maximum)	80.82 ft	Trace (Minimum)	(N/A) %
Hydraulic Grade (Minimum)	80.82 ft	Trace (Maximum)	(N/A) %
Pressure (Minimum)	18 psi	Concentration (Minimum)	(N/A) mg/L
Pressure (Maximum)	18 psi	Concentration (Maximum)	(N/A) mg/L

Results (Transient)			
Head (Maximum, Transient)	(N/A) ft	Pressure (Minimum, Transient)	(N/A) psi
Head (Minimum, Transient)	(N/A) ft	Air Volume (Maximum, Transient)	(N/A) gal
Pressure (Maximum, Transient)	(N/A) psi	Vapor Volume (Maximum, Transient)	(N/A) gal

Results (Water Quality)			
Age (Calculated)	(N/A) hours	Concentration (Calculated)	(N/A) mg/L
Trace (Calculated)	(N/A) %		

User Defined			
Sampling Point	False	Observed Concentration	0.0 ppm
Observed Pressure	0.0 psi	SCADA ID	
Existing	False	History	
Hydrant Location	False	Location Description	

Results			
Hydraulic Grade	80.82 ft	Pressure Head	40.82 ft
Demand	3,001 gpm	Demand Adjusted Population	(N/A) Capita
Pressure	18 psi	Has Calculation Messages Now?	False

Calculation Messages

Time (hours)	Message
--------------	---------

THIS IS WITH THE EXISTING 6" LINE ACROSS HISTORIC HANAPEPE BRIDGE. WATER SYSTEM STANDARDS REQUIRES 20 PSI RESIDUAL PRESSURE AT THE HYDRANT. THIS DOES NOT MEET STANDARDS. ASSUMPTIONS: 750 GPM MAX DAY DEMAND FOR HANAPEPE TOWN, AND NO FEED FROM ELE'ELE PER PROPOSED WATER SYSTEM RE-ORG, AND 3000 GPM FIRE FLOW AT HYDRANT PER INDUSTRIAL ZONING IN PORT ALLEN.

Junction Detailed Report: C-149

Results (Fire Flow)			
Flow (Total Needed)	(N/A) gpm	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	(N/A)
Flow (Total Available)	(N/A) gpm		

Results (Pressure Dependent Demands)			
Demand Shortage	0 gpm	Shortfall (Cumulative)	0.00 MG
Demand (Cumulative)	0.00 MG	Supply Rate (Cumulative)	(N/A) %
Supply (Cumulative)	0.00 MG	Demand (Target)	3,001 gpm

Results (Statistics)			
Demand (Minimum)	3,001 gpm	Age (Minimum)	(N/A) hours
Demand (Maximum)	3,001 gpm	Age (Maximum)	(N/A) hours
Hydraulic Grade (Maximum)	83.73 ft	Trace (Minimum)	(N/A) %
Hydraulic Grade (Minimum)	83.73 ft	Trace (Maximum)	(N/A) %
Pressure (Minimum)	19 psi	Concentration (Minimum)	(N/A) mg/L
Pressure (Maximum)	19 psi	Concentration (Maximum)	(N/A) mg/L

Results (Transient)			
Head (Maximum, Transient)	(N/A) ft	Pressure (Minimum, Transient)	(N/A) psi
Head (Minimum, Transient)	(N/A) ft	Air Volume (Maximum, Transient)	(N/A) gal
Pressure (Maximum, Transient)	(N/A) psi	Vapor Volume (Maximum, Transient)	(N/A) gal

Results (Water Quality)			
Age (Calculated)	(N/A) hours	Concentration (Calculated)	(N/A) mg/L
Trace (Calculated)	(N/A) %		

User Defined			
Sampling Point	False	Observed Concentration	0.0 ppm
Observed Pressure	0.0 psi	SCADA ID	
Existing	False	History	
Hydrant Location	False	Location Description	

Results			
Hydraulic Grade	83.73 ft	Pressure Head	43.73 ft
Demand	3,001 gpm	Demand Adjusted Population	(N/A) Capita
Pressure	19 psi	Has Calculation Messages Now?	False

Calculation Messages

Time (hours) Message

**WATER SYSTEM STANDARDS
 REQUIRES 20 PSI RESIDUAL
 PRESSURE AT THE HYDRANT.
 THIS DOES MEET STANDARDS.**

Junction Detailed Report: C-149

Results (Fire Flow)			
Flow (Total Needed)	(N/A) gpm	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	(N/A)
Flow (Total Available)	(N/A) gpm		
Results (Pressure Dependent Demands)			
Demand Shortage	0 gpm	Shortfall (Cumulative)	0.00 MG
Demand (Cumulative)	0.00 MG	Supply Rate (Cumulative)	(N/A) %
Supply (Cumulative)	0.00 MG	Demand (Target)	3,001 gpm
Results (Statistics)			
Demand (Minimum)	3,001 gpm	Age (Minimum)	(N/A) hours
Demand (Maximum)	3,001 gpm	Age (Maximum)	(N/A) hours
Hydraulic Grade (Maximum)	83.59 ft	Trace (Minimum)	(N/A) %
Hydraulic Grade (Minimum)	83.59 ft	Trace (Maximum)	(N/A) %
Pressure (Minimum)	19 psi	Concentration (Minimum)	(N/A) mg/L
Pressure (Maximum)	19 psi	Concentration (Maximum)	(N/A) mg/L
Results (Transient)			
Head (Maximum, Transient)	(N/A) ft	Pressure (Minimum, Transient)	(N/A) psi
Head (Minimum, Transient)	(N/A) ft	Air Volume (Maximum, Transient)	(N/A) gal
Pressure (Maximum, Transient)	(N/A) psi	Vapor Volume (Maximum, Transient)	(N/A) gal
Results (Water Quality)			
Age (Calculated)	(N/A) hours	Concentration (Calculated)	(N/A) mg/L
Trace (Calculated)	(N/A) %		
User Defined			
Sampling Point	False	Observed Concentration	0.0 ppm
Observed Pressure	0.0 psi	SCADA ID	
Existing	False	History	
Hydrant Location	False	Location Description	
Results			
Hydraulic Grade	83.59 ft	Pressure Head	43.59 ft
Demand	3,001 gpm	Demand Adjusted Population	(N/A) Capita
Pressure	19 psi	Has Calculation Messages Now?	False

Calculation Messages

Time (hours)	Message

**WATER SYSTEM STANDARDS
 REQUIRES 20 PSI RESIDUAL
 PRESSURE AT THE HYDRANT.
 THIS DOES MEET STANDARDS.**

Junction Detailed Report: C-149

Results (Fire Flow)			
Flow (Total Needed)	(N/A) gpm	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	(N/A)
Flow (Total Available)	(N/A) gpm		

Results (Pressure Dependent Demands)			
Demand Shortage	0 gpm	Shortfall (Cumulative)	0.00 MG
Demand (Cumulative)	0.00 MG	Supply Rate (Cumulative)	(N/A) %
Supply (Cumulative)	0.00 MG	Demand (Target)	3,001 gpm

Results (Statistics)			
Demand (Minimum)	3,001 gpm	Age (Minimum)	(N/A) hours
Demand (Maximum)	3,001 gpm	Age (Maximum)	(N/A) hours
Hydraulic Grade (Maximum)	83.59 ft	Trace (Minimum)	(N/A) %
Hydraulic Grade (Minimum)	83.59 ft	Trace (Maximum)	(N/A) %
Pressure (Minimum)	19 psi	Concentration (Minimum)	(N/A) mg/L
Pressure (Maximum)	19 psi	Concentration (Maximum)	(N/A) mg/L

Results (Transient)			
Head (Maximum, Transient)	(N/A) ft	Pressure (Minimum, Transient)	(N/A) psi
Head (Minimum, Transient)	(N/A) ft	Air Volume (Maximum, Transient)	(N/A) gal
Pressure (Maximum, Transient)	(N/A) psi	Vapor Volume (Maximum, Transient)	(N/A) gal

Results (Water Quality)			
Age (Calculated)	(N/A) hours	Concentration (Calculated)	(N/A) mg/L
Trace (Calculated)	(N/A) %		

User Defined			
Sampling Point	False	Observed Concentration	0.0 ppm
Observed Pressure	0.0 psi	SCADA ID	
Existing	False	History	
Hydrant Location	False	Location Description	

Results			
Hydraulic Grade	83.59 ft	Pressure Head	43.59 ft
Demand	3,001 gpm	Demand Adjusted Population	(N/A) Capita
Pressure	19 psi	Has Calculation Messages Now?	False

Calculation Messages

Time (hours)	Message
--------------	---------

**WATER SYSTEM STANDARDS
 REQUIRES 20 PSI RESIDUAL
 PRESSURE AT THE HYDRANT.
 THIS DOES MEET STANDARDS.**

THIS IS HYDRANT C-149
THE LAST HYDRANT IN
PORT ALLEN

Junction Detailed Report: C-149

Results (Fire Flow)			
Flow (Total Needed)	(N/A) gpm	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	(N/A)
Flow (Total Available)	(N/A) gpm		

Results (Pressure Dependent Demands)			
Demand Shortage	0 gpm	Shortfall (Cumulative)	0.00 MG
Demand (Cumulative)	0.00 MG	Supply Rate (Cumulative)	(N/A) %
Supply (Cumulative)	0.00 MG	Demand (Target)	3,001 gpm

Results (Statistics)			
Demand (Minimum)	3,001 gpm	Age (Minimum)	(N/A) hours
Demand (Maximum)	3,001 gpm	Age (Maximum)	(N/A) hours
Hydraulic Grade (Maximum)	86.59 ft	Trace (Minimum)	(N/A) %
Hydraulic Grade (Minimum)	86.59 ft	Trace (Maximum)	(N/A) %
Pressure (Minimum)	20 psi	Concentration (Minimum)	(N/A) mg/L
Pressure (Maximum)	20 psi	Concentration (Maximum)	(N/A) mg/L

Results (Transient)			
Head (Maximum, Transient)	(N/A) ft	Pressure (Minimum, Transient)	(N/A) psi
Head (Minimum, Transient)	(N/A) ft	Air Volume (Maximum, Transient)	(N/A) gal
Pressure (Maximum, Transient)	(N/A) psi	Vapor Volume (Maximum, Transient)	(N/A) gal

Results (Water Quality)			
Age (Calculated)	(N/A) hours	Concentration (Calculated)	(N/A) mg/L
Trace (Calculated)	(N/A) %		

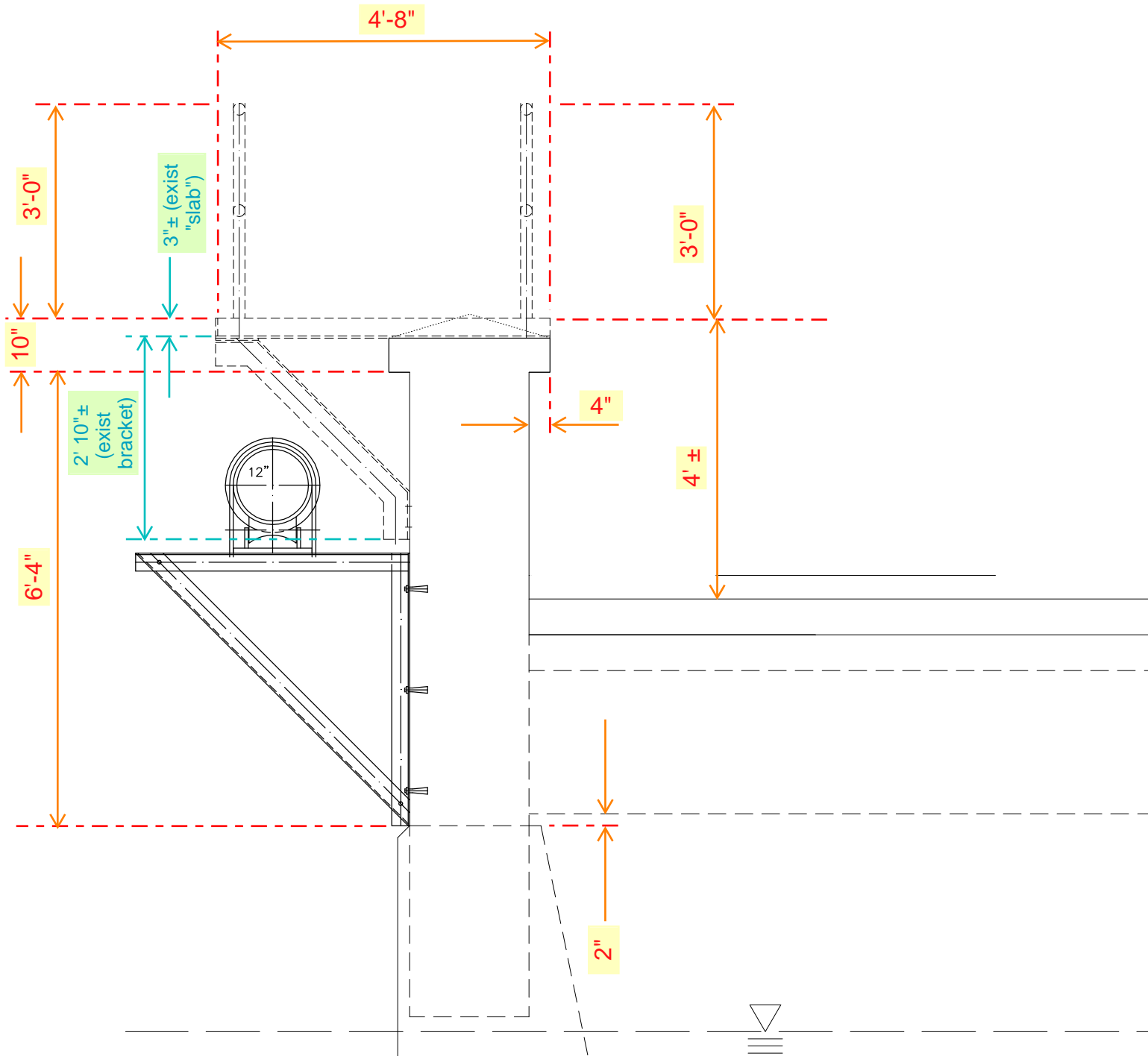
User Defined			
Sampling Point	False	Observed Concentration	0.0 ppm
Observed Pressure	0.0 psi	SCADA ID	
Existing	False	History	
Hydrant Location	False	Location Description	

Results			
Hydraulic Grade	86.59 ft	Pressure Head	46.59 ft
Demand	3,001 gpm	Demand Adjusted Population	(N/A) Capita
Pressure	20 psi	Has Calculation Messages Now?	False

Calculation Messages

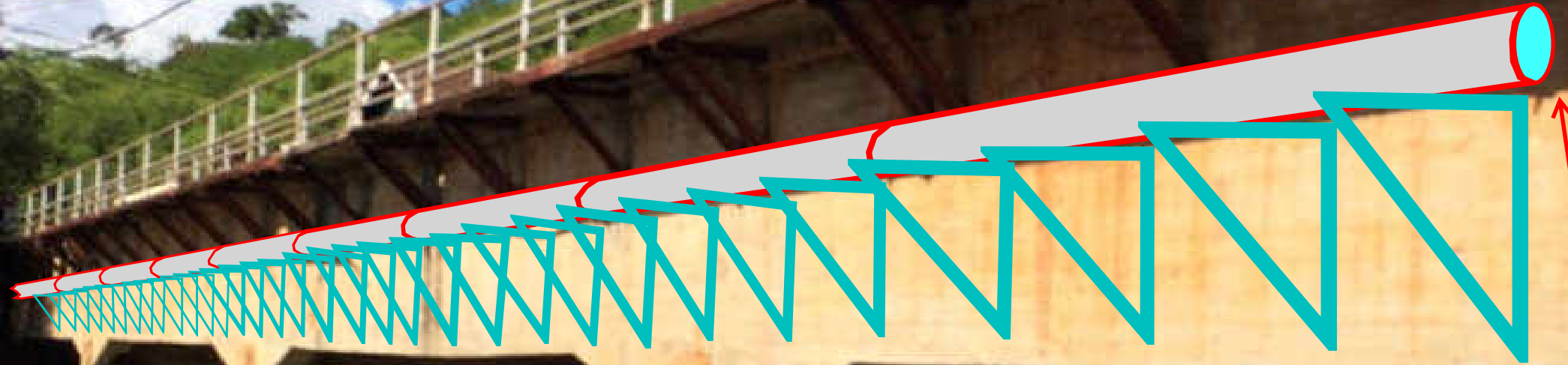
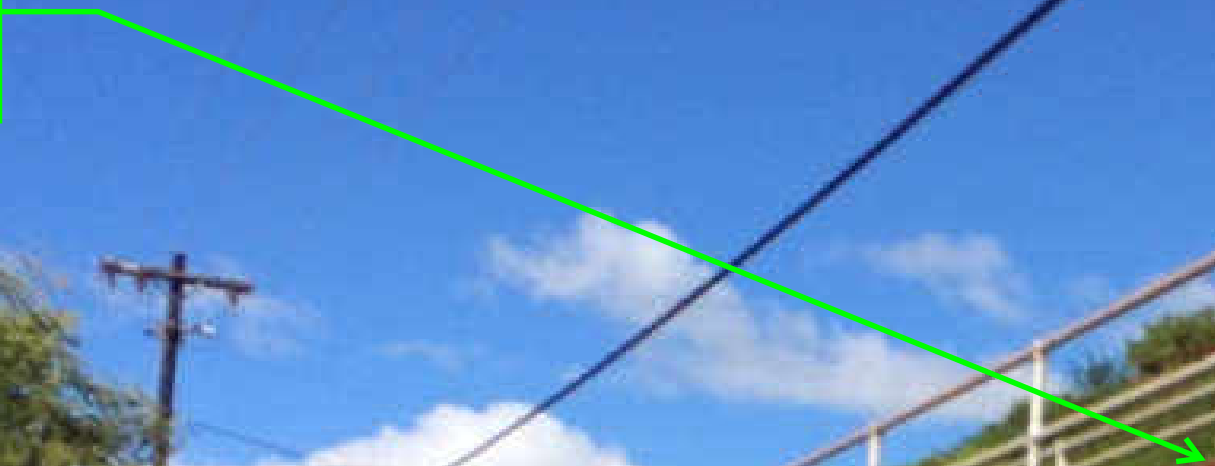
Time (hours)	Message
--------------	---------

THIS IS WITH THE PROPOSED 12" LINE ACROSS HISTORIC HANAPEPE BRIDGE. WATER SYSTEM STANDARDS REQUIRES 20 PSI RESIDUAL PRESSURE AT THE HYDRANT. THIS DOES MEET STANDARDS. ASSUMPTIONS: 750 GPM MAX DAY DEMAND FOR HANAPEPE TOWN, AND NO FEED FROM ELE'ELE PER PROPOSED WATER SYSTEM RE-ORG, AND 3000 GPM FIRE FLOW AT HYDRANT PER INDUSTRIAL ZONING IN PORT ALLEN.

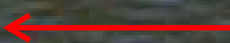


HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #5a (Looking West)
 7-14-2016
 Page 1 of 2

Exist Deteriorated
Cantilevered Walkway
(Unused, gated and
closed at each end)



(Downstream)



HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #5a (Looking West)
7-14-2016
Page 2 of 3

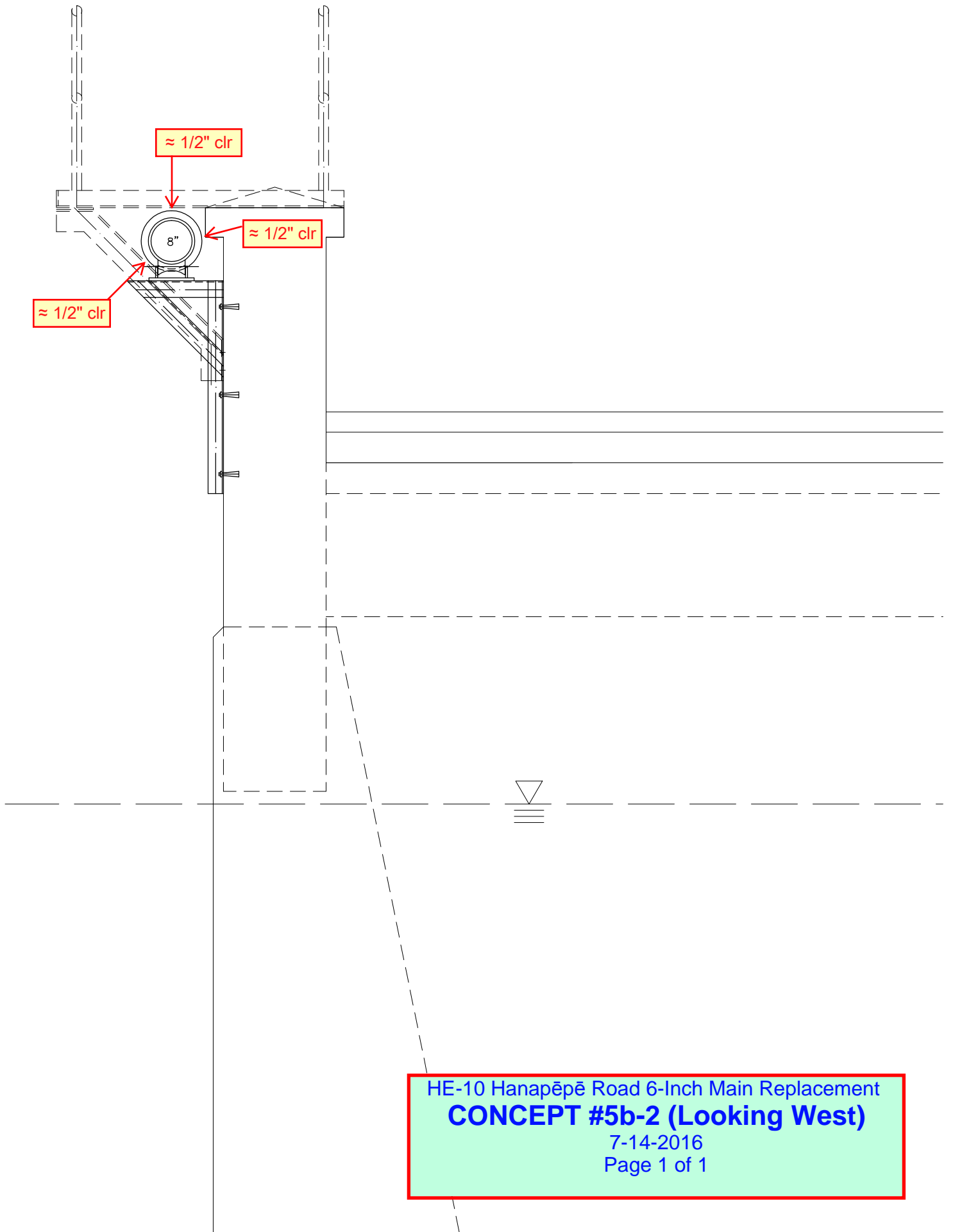
NEW 12" WATER LINE
(Mounted under closed walkway)

NEW 12" WATER LINE
(Mounted under closed walkway)

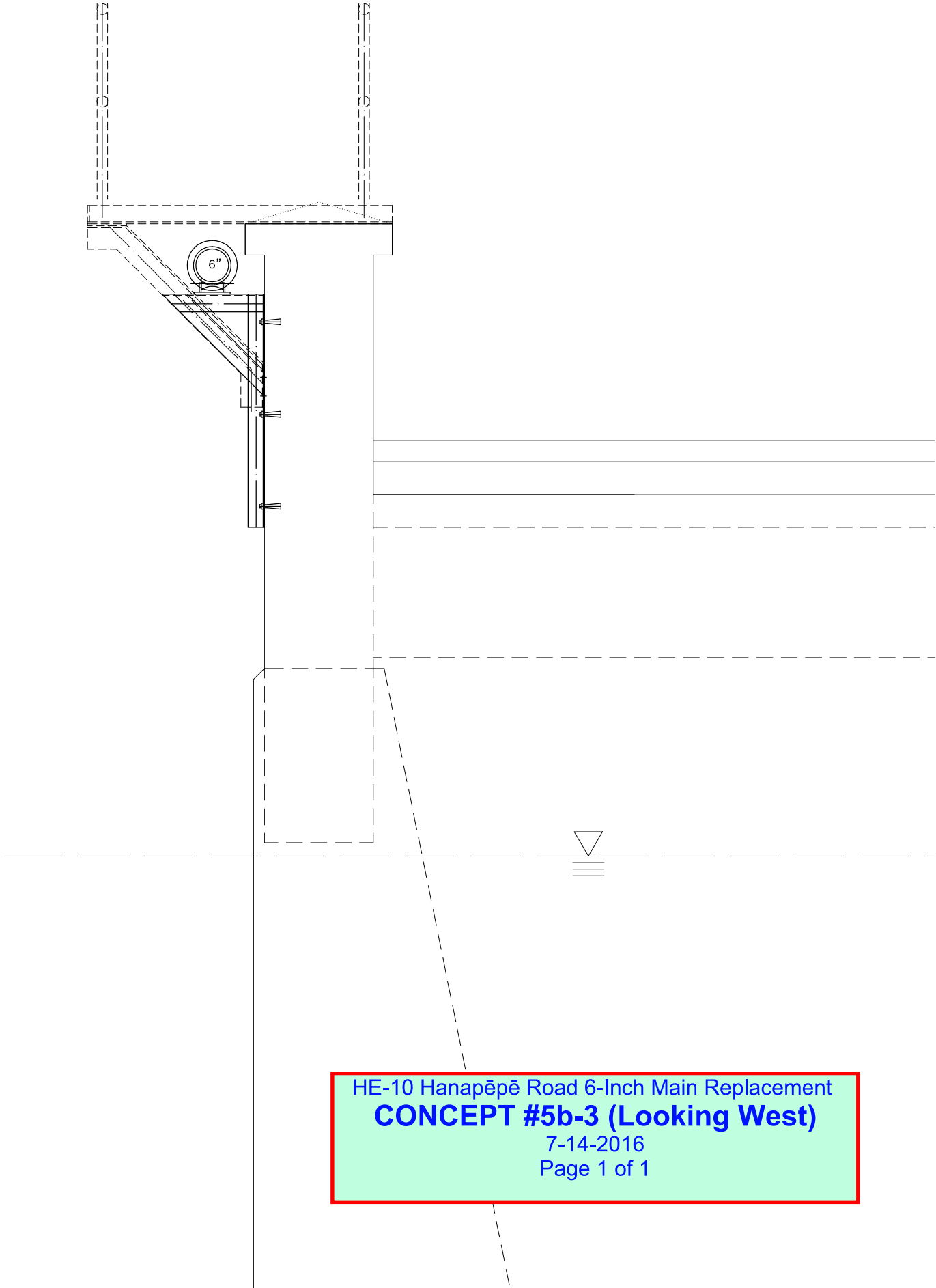


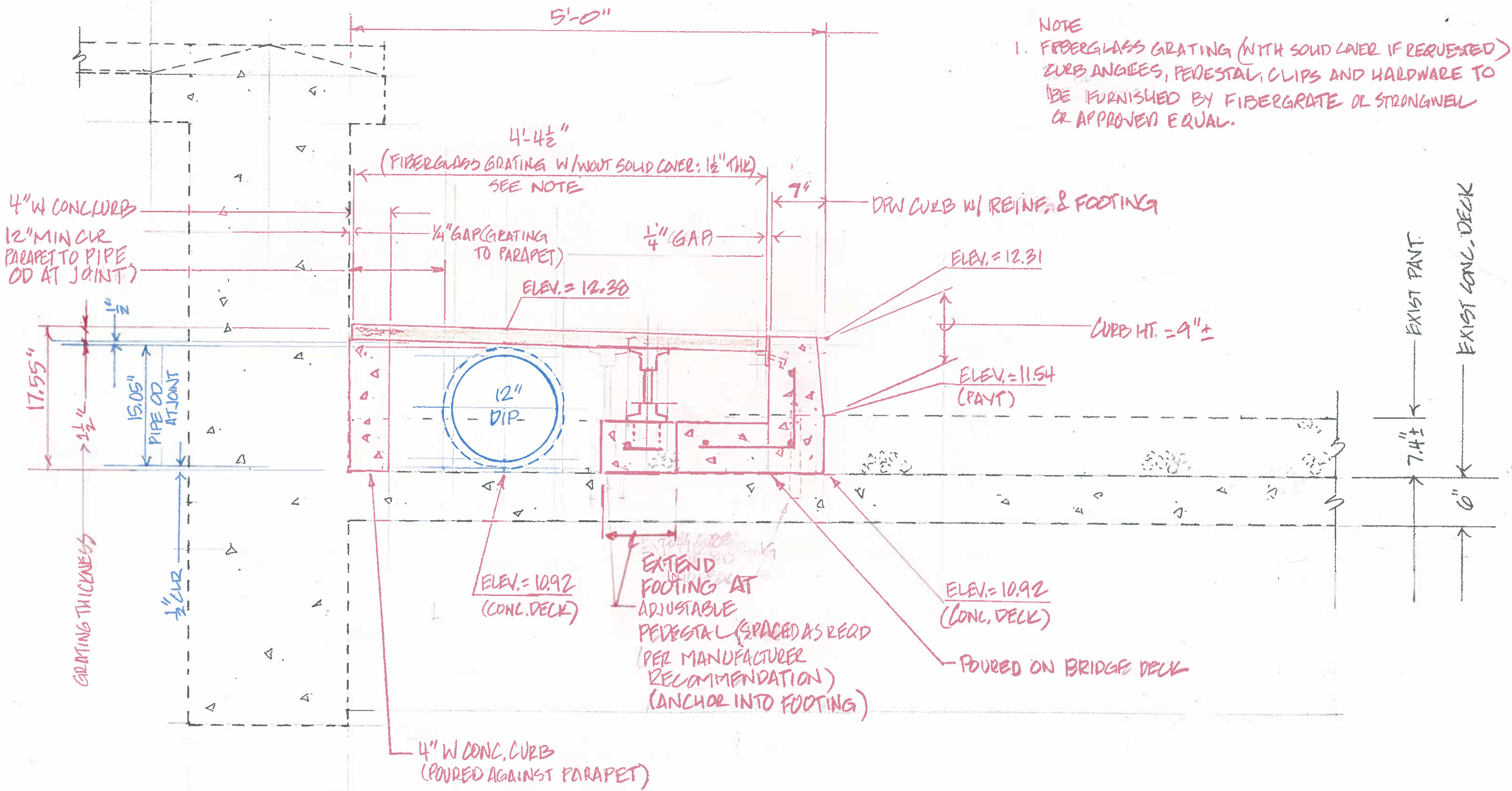
HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #5a - East End
(Looking Northwest, Upstream)

7-14-2016
Page 3 of 3



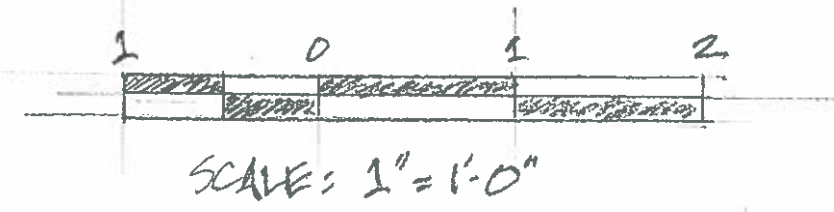
HE-10 Hanapēpē Road 6-Inch Main Replacement
CONCEPT #5b-2 (Looking West)
7-14-2016
Page 1 of 1





HE-10 HANAPEPE ROAD 6-INCH MAIN REPLACEMENT

CONCEPT 19



Hanapēpē-‘Ele‘ele Water Systems Improvements
Job 15-07, WP 2020 Nos. HE-01 & HE-10

Environmental Assessment

Appendix 4
Environmental Records Review

APPENDIX A of Appendix 4, Environmental Data Resources Report and Maps, not included in EA.
Available as a pdf by request: rterry@hawaii.rr.com

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VIA EMAIL [rterry@hawaii.rr.com]

September 6, 2016

Ron Terry, Ph.D.
Geometrician Associates, LLC
P.O. Box 398
Hilo, Hawaii 96720

Dear Dr. Terry:

**Subject: Kauai Department of Water Supply Hanapepe Waterline Replacement Project
Environmental Records Review**

Myounghee Noh & Associates, L.L.C. (MNA), was retained by Geometrician Associates, LLC, in August 2016 to conduct records review for two linear project areas along Hanapepe Road and State Route 50, Hanapepe, Island of Kauai. MNA's scope of work was to review available State of Hawaii Department of Health (HDOH) records for the subject and adjoining properties with the potential to impact the subject property parcels.

Introduction

The County of Kauai Department of Water Supply is planning a waterline replacement project along two alignments adjacent to Hanapepe Road and State Route 50 in Hanapepe. As part of the Environmental Assessment being conducted in support of that replacement project, MNA endeavored to review available HDOH records for the parcels along the alignment. The subject property was identified on tax maps from the County of Kauai Real Property Tax website; 86 parcels were identified along the alignments. MNA reviewed the HDOH Hazard Evaluation and Emergency Response (HEER) Office online resources, including the HEER Sites of Interest Lookup Spreadsheet and the HEER Emergency Response Lookup Spreadsheet, and the HDOH Environmental Health Warehouse. A search using the 86 parcel numbers indicated various sites of interest along the alignments. In addition, MNA utilized Environmental Data Resources, Inc. (EDR), to supplement the information provided by the online resources and expedite reaching findings and conclusions by avoiding the lengthy process of submitting records requests to government agencies. MNA conducted this EDR database research to identify potential concerns in the project area.

Summary of Findings

The records review included all standard federal and state government databases and specific electronic HDOH electronic files. Based on the information reviewed, there are suspected historical recognized environmental conditions (HRECs) and controlled recognized environmental conditions (CRECs) in close proximity to the project area. The Port Allen Bulk Petroleum Storage Terminal was identified as having an undetermined hazard with inadequate documentation to know the risk present. This site is located at 4350 Waialo Road, approximately 300 feet south southeast and upgradient of the project area. Due to the known use of the site, and the distance and proximity of this site to the subject property, it is considered to be a suspected recognized environmental condition (REC) with the potential to impact the subject property. A summary of the findings related to this records review is presented in the table below.

Site Name	Location	Distance (feet)	Direction	Relative Elevation	Notes
SUSPECTED HREC					
Kauai Electric Port Allen Generating Facility	261 Akala Road	640	ESE	Higher	No Further Action (NFA) No date listed
UST Release at Port Allen	4353 Waialo Road	1,200	SSE	Higher	NFA No date listed
Former Hanapepe Repair Shop	4540 Hana Road	18	NW	Higher	Site Cleanup Completed (SCC)/NFA 09/26/2001
Denny's Repair and Service	4545 Kona Road	72	NNE	Higher	SCC/NFA 07/12/1991
Longie's Crackseed	3508 Hanapepe Road	93	W	Higher	SCC/NFA 09/11/1991
Western Motors Service, Inc.	1-3680 Kaumualii Highway	234	WSW	Higher	SCC/NFA 09/01/1994
Cilia's Service Station	1-3509 Kaumualii Highway	295	WSW	Higher	SCC/NFA 09/04/1997
Eleele Treatment Plant	4440 Waialo Road	326	SSE	Higher	SCC/NFA 05/13/1995
Organizational Maintenance Shop 5	1-3460 Kaumualii Highway	581	WSW	Higher	SCC/NFA 11/16/1998
Citizens Utilities Company	4392 Waialo Road	1,301	SSE	Higher	SCC/NFA 01/23/1991
SUSPECTED CREC					
Sakoda Garage, Inc.	3954 Hanapepe Road	266	ENE	Lower	Hazard present, assessment ongoing. Controls required to manage contamination. 07/24/2002
SUSPECTED REC					
Port Allen Bulk Petroleum Storage Terminal	4350 Waialo Road	298	SSE	Higher	Hazard undetermined, documentation inadequate to evaluate risk. NFA letter issued 08/23/2004

If you have any questions, please reach us at 808-484-9214.

Sincerely,



Jessica Walsh
Environmental Planner

Attachment

Attachment A Records Review Summary Report

ATTACHMENT A
RECORDS REVIEW SUMMARY REPORT

**RECORDS REVIEW SUMMARY REPORT
KAUAI DEPARTMENT OF WATER SUPPLY
HANAPEPE WATERLINE REPLACEMENT PROJECT
HANAPEPE, ISLAND OF KAUAI**

MNA PROJECT 2275_3

SEPTEMBER 6, 2016



Myounghee Noh & Associates

Environmental Studies and Consulting Services

200 Kohola Street, Hilo, Hawaii, USA 96720 • 808.935.8727
99-1046 Iwaena Street, Suite 210A, Aiea, Hawaii, USA 96701 • 808.484.9214

This report is prepared for:

Geometrician Associates, LLC
P.O. Box 398
Hilo, Hawaii 96720

RECORDS REVIEW SUMMARY REPORT KAUAI DEPARTMENT OF WATER SUPPLY HANAPEPE WATERLINE REPLACEMENT PROJECT HANAPEPE, ISLAND OF KAUAI

MNA Job No. 2275_3

September 6, 2016



Jessica Walsh
Environmental Professional

Myounghee Noh & Associates, L.L.C.
Environmental Studies and Consulting Services
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www.noh-associates.com

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Appendix A Environmental Data Resources Report and Maps	
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EXECUTIVE SUMMARY

Myounghee Noh & Associates, L.L.C. (MNA), was retained by Geometrician Associates, LLC, in August 2016 to conduct records review for the project areas along Hanapepe Road and State Route (SR) 50, Hanapepe, Island of Kauai. MNA's scope of work was to review available State of Hawaii Department of Health (HDOH) records for the subject and adjoining properties with the potential to impact the project site.

Introduction

The County of Kauai Department of Water Supply is planning a waterline replacement project along two alignments adjacent to Hanapepe Road and SR 50 in Hanapepe. As part of the Environmental Assessment being conducted by Geometrician Associates in support of the replacement project, MNA endeavored to review available HDOH records for the parcels along the alignment. The project site was identified on tax maps from the County of Kauai Real Property Tax website; 86 parcels were identified along the alignments. MNA reviewed the HDOH Hazard Evaluation and Emergency Response (HEER) Office online resources, including the HEER Sites of Interest Lookup Spreadsheet and the HEER Emergency Response Lookup Spreadsheet, and the HDOH Environmental Health Warehouse. A search of the 86 parcel numbers indicated various sites of interest along the alignment. In addition, MNA utilized Environmental Data Resources, Inc. (EDR), to supplement the information provided in the online resources and to expedite reaching findings and conclusions by avoiding the lengthy process of submitting records requests to government agencies. MNA conducted this research to identify potential concerns in the area surrounding the project site.

Summary of Findings

MNA performed records review for the two linear subject properties and the surrounding area. The records review included all standard federal and state government databases and specific electronic HDOH electronic files. Based on the information reviewed, there are suspected historical recognized environmental conditions (HRECs) and controlled recognized environmental conditions (CRECs) in close proximity to the project site. One site, the Port Allen Bulk Petroleum Storage Terminal, was identified as having an undetermined hazard with inadequate documentation to evaluate the risk present. This site is located at 4350 Waialo Road, approximately 300 feet south southeast and upgradient of the project site. Due to the distance and proximity of this site to the project site, and its known use for bulk petroleum storage, it is considered to be a suspected recognized environmental condition with the potential to impact the project area.

Recommendation

MNA recommends hazard control measures and best management practice to prevent site workers, the public, and the environmental exposures to the potential petroleum chemical hazards in the subsurface.

1.0 INTRODUCTION

The County of Kauai Department of Water Supply is planning a waterline replacement project along two alignments in Hanapepe. The project site is located in Hanapepe, on the southern coast of Kauai, less than 1/2 mile from Hanapepe Bay, and bisected by the Hanapepe River. The northern segment of the project site was located along Hanapepe Road; the southern along State Route 50 (Figure 1).

Myounghee Noh & Associates, L.L.C. (MNA), was retained to conduct environmental records review for the project and surrounding areas. The purpose of this records review is to identify suspected *recognized environmental conditions* (REC), with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and petroleum products, that are identifiable through review of standard environmental database searches.

2.0 RECORDS REVIEW

MNA completed a records review for the two linear subject properties and the surrounding area. The records review included all standard federal and state government databases and review of specific electronic State of Hawaii Department of Health (HDOH) files. MNA utilized Environmental Data Resources, Inc. (EDR) to supplement the information provided in the online resources and expedite reaching findings and conclusions by avoiding the lengthy process of submitting records requests to government agencies. MNA conducted this research to identify potential concerns in the area surrounding the project site.

2.1 HDOH Records Sources

MNA identified the project site on online tax maps from the County of Kauai Real Property Tax website. A total of 86 parcels were identified along the alignment. MNA reviewed the HDOH Hazard Evaluation and Emergency Response (HEER) Office online resources, including the *HEER Sites of Interest Lookup Spreadsheet* and the *HEER Emergency Response Lookup Spreadsheet*, and the HDOH Environmental Health Warehouse. A search using the 86 parcel numbers indicated various sites of interest along the alignments.

2.2 Standard Environmental Records Sources

To supplement the information provided in the HDOH online resources and to streamline the identification of potential concerns in the area surrounding the project site, MNA utilized EDR to search standard federal and state government databases for hazardous substance or petroleum product releases that could impact the project site. A copy of the EDR report is provided in Appendix A.

The following sources are specified for incidents or sites within one mile of the project site:

- Federal NPL site list
- Federal RCRA CORRACTS TSD facilities list
- State Sites of Interest



Legend and Notes

 Project Location

Scale

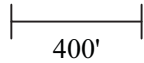


Figure 1. Project Location Map
 County of Kauai Department of Water Supply Hanapepe Waterline Replacement Project
 Environmental Records Review
 Hanapepe, Island of Kauai

The following sources are specified for incidents or sites within 1/2 mile of the project site:

- Federal Delisted NPL site list
- Federal CERCLIS list
- Federal CERCLIS NFRAP site list
- Federal RCRA non-CORRACTS TSD facilities list
- State Brownfield Sites
- State Hazardous Waste Sites
- State landfill and/or solid waste disposal site list
- State leaking UST list
- State voluntary cleanup program sites

The following sources are for incidents on the project site and adjoining properties:

- Federal RCRA generators list
- State registered UST list

Finally, the following are for incidents for the project site:

- Federal ERNS list
- Federal Institutional Controls (IC) and Engineering (EC) Registries
- State IC and EC Registries
- State releases list

The following subsections summarize the results of the EDR records review for the datasets listed above (Environmental Data Resources, Inc., 2016).

2.2.1 Federal National Priorities List

The NPL, maintained by the Environmental Protection Agency (EPA), is a list of highly contaminated sites that have been identified by Superfund Amendments and Reauthorization Act of 1986. There were no NPL sites identified within one mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.2 Federal RCRA CORRACTS TSD Facilities List

The RCRA CORRACTS TSD facilities list maintained by the EPA contains generators, transporters, treaters, storers, and disposers of hazardous waste that have reported violations and are subject to corrective actions. No RCRA CORRACTS TSD facilities were identified within one mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.3 Delisted NPL Site List

This list, maintained by the EPA, contains delisted NPL sites. No delisted NPL sites were identified within 1/2 mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.4 Federal CERCLIS List

The CERCLIS list, maintained by the EPA, contains sites that are either proposed to be or are on the NPL list, as well as sites that are in the screening and assessment phase for possible inclusion

on the NPL. No federal CERCLIS sites were identified within 1/2 mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.5 Federal CERCLIS NFRAP Site List

The CERCLIS NFRAP list, maintained by the EPA, contains designated CERCLA sites that, to the best of the EPA’s knowledge, assessment has been completed and has determined that no further steps will be taken to list the sites on the NPL. No CERCLIS NFRAP sites were identified within 1/2 mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.6 Federal RCRA non-CORRACTS TSD Facilities List

The RCRA non-CORRACTS TSD facilities list, maintained by the EPA, contains RCRA permitted facilities that treat, store, or dispose of hazardous waste. No RCRA TSD facilities listed were identified within 1/2 mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.7 State Brownfield Sites

The State Brownfield Sites database, maintained by the HDOH HEER Office, is an inventory of state designated brownfield sites. No state brownfield sites were identified within 1/2 mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.8 State Hazardous Waste Sites

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 are identified along with sites where cleanup will be paid for by responsible parties. Four state hazardous waste sites were identified within 1/4 mile, three of which were within 1/8 mile (Environmental Data Resources, Inc., 2016). Four state hazardous waste sites were identified within 1/4 mile of the project site, three of those within 1/8 mile (Table 1). Please refer to Section 3 for determination of impact of these sites on the project site.

Table 1. State Hazardous Waste Sites

Facility Name	Location	Distance (feet)	Direction	Relative Elevation	Notes
Sakoda Garage, Inc.	3954 Hanapepe Road	266	ENE	Lower	Hazard present, assessment ongoing. Controls required to manage contamination. NFA issued 07/24/2002 Refer to Section 3
Port Allen Bulk Petroleum Storage Terminal	4350 Waialo Road	298	SSE	Higher	Hazard undetermined, documentation inadequate to evaluate risk. NFA letter issued 08/23/2004 Refer to Section 3

Facility Name	Location	Distance (feet)	Direction	Relative Elevation	Notes
Kauai Electric, Port Allen Generating Facility	261 Akaula Road	638	ESE	Higher	Petroleum contamination identified in soil. NFA letter issued 08/05/2005 Refer to Section 3
UST Release at Port Allen	4353 Waialo Road	1,218	SSE	Higher	Petroleum contamination identified in soil. NFA letter issued 09/06/2006 Refer to Section 3

2.2.9 State Landfill/Solid Waste Disposal Sites

The HDOH records contain an inventory of permitted landfills in the State of Hawaii. No permitted solid waste landfills, incinerators, or transfer stations were identified within 1/2 mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.10 State Leaking UST List

The state Leaking UST list, maintained by the HDOH Solid and Hazardous Waste Branch (SHWB), maintains an inventory of sites with Leaking USTs. EDR identified 12 Leaking UST facilities within 1/2 mile of the project site, eight within 1/8 mile (Environmental Data Resources, Inc., 2016) (Table 2).

Table 2. Leaking UST

Site Name	Location	Distance (feet)	Direction	Relative Elevation	Notes
Former Hanapepe Repair Shop	4540 Hana Road	18	NW	Higher	SCC/NFA Refer to Section 3
Denny's Repair and Service	4545 Kona Road	72	NNE	Higher	SCC/NFA Refer to Section 3
Longie's Crackseed	3508 Hanapepe Road	93	W	Higher	SCC/NFA Refer to Section 3
Sakoda Garage, Inc.	P.O. BOX 143 / 3954 Hanapepe Road	167	ENE	Lower	SCC/NFA Refer to Section 3
Western Motors Service, Inc.	1-3680 Kaumualii Highway	234	WSW	Higher	SCC/NFA Refer to Section 3
Cilia's Service Station	1-3509 Kaumualii Highway	295	WSW	Higher	SCC/NFA Refer to Section 3
Eleele Treatment Plant	4440 Waialo Road	326	SSE	Higher	SCC/NFA Refer to Section 3
Organizational Maintenance Shop 5	1-3460 Kaumualii Highway	581	WSW	Higher	SCC/NFA Refer to Section 3
Citizens Utilities Company	4392 Waialoa Road	1,301	SSE	Higher	SCC/NFA Refer to Section 3

Site Name	Location	Distance (feet)	Direction	Relative Elevation	Notes
Kauai Automated Fuels 3	Port Allen Road	1,527	SSE	Higher	SCC/NFA Refer to Section 3
Hanapepe Base Yard	4380 Lele Road	1,870	WSW	Higher	SCC/NFA Refer to Section 3
Dekalb Pfizerk Genetics	P.O. BOX 609 / Ko Road	2,028	ENE	Higher	SCC/NFA Refer to Section 3

NFA – No Further Action

SCC – Site Cleanup Complete

2.2.11 State Voluntary Cleanup Sites

The state voluntary cleanup sites list, maintained by the HDOH HEER Office, contains sites participating in the state’s Voluntary Response Program (VRP). No facilities participating in the state VRP were identified within 1/2 mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.12 Federal RCRA Generators List

The RCRA Generators list, maintained by the EPA, contains small and large quantity generators of RCRA hazardous waste. The determination of generator size is used to establish the risk that the facility poses to public health and the environment and consequently, the amount of regulation and reporting required. Large Quantity Generators (LQG) are facilities that generate more than a 1,000 kg/month of hazardous waste and/or more than 1 kg/month of acute hazardous waste. Small Quantity Generators (SQG) are facilities that generate less than 1,000 kg/month but more than 100 kg/month of hazardous waste and/or less than 1 kg/month of acute hazardous waste. Conditionally Exempt Small Quantity Generators (CESQG) are facilities that generate less than 100 kg/month of hazardous waste and/or less than 1 kg/month of acute hazardous waste. The EPA also maintains the RCRA No Longer Regulated (NLR) list. This list contains facilities that were once on the RCRA generators list, but are no longer in business, no longer in business at the listed address, or are no longer generating hazardous waste substances in quantities that require reporting.

EDR identified one CESQG site within 1/8 mile of the project site (Environmental Data Resources, Inc., 2016). No SQGs or LQGs were identified within one mile of the project site. The CESQG was Longs Drug Store No 7669 located at 4469 Waialo Road, approximately 150 feet southeast and upgradient from the project site. No violations were on file for this site. Please refer to Section 3 for determination of impact of this property on the project site.

EDR identified one RCRA NLR site within 1/4 mile of the project site (Environmental Data Resources, Inc., 2016). The NLR site was Kauai Electric located at 4392 Waialo Road, approximately 1,300 feet south southeast and upgradient from the project site. Please refer to Section 3 for determination of impact of this property on the project site.

2.2.13 State Registered UST List

The HDOH SHWB maintains a database of known underground storage tanks (UST). EDR identified 13 UST facilities within 1/4 mile of the project site (Environmental Data Resources, Inc., 2016), 11 of which were within 1/8 mile. A summary of the UST identified is presented in Table 3.

Table 3. State Registered UST

Site Name	Location	Distance	Direction	Relative Elevation	Tank Info	
Kauai County Hanapepe Pump Station	1-3775 Kaumualii Highway	6	E	Lower	Facility Id	9-701072
					Tank Type	550-gallon diesel
					Date Closed	10/12/1998
					Tank Status	Permanently Out of Use
Former Hanapepe Repair Shop	4540 Hana Road	18	NW	Higher	Facility Id	9-703730
					Tank Type	400-gallon gasoline
					Date Closed	09/26/2001
					Tank Status	Permanently Out of Use
Akita Enterprises, Ltd.	3716 Hanapepe Road/Tank 2	66	NNW	Higher	Facility Id	9-701213
					Tank Type	3,000-gallon gasoline
					Date Closed	07/10/1984
					Tank Status	Permanently Out of Use
Denny's Repair & Service	4545 Kona Road	72	NNE	Higher	Facility Id	9-701967
					Tank Type	1,000-gallon gasoline
					Date Closed	07/12/1991
					Tank Status	Permanently Out of Use
Longie's Crackseed	3508 Hanapepe Road	93	W	Higher	Facility Id	9-701538
					Tank Type	500-gallon gasoline
					Date Closed	04/12/1991
					Tank Status	Permanently Out of Use
					Tank Type	500-gallon gasoline
					Date Closed	09/11/1991
Sakoda Garage, Inc.	P.O. BOX 143 / 3954 Hanapepe Road	167	ENE	Lower	Facility Id	9-700688
					Tank Type	2,000-gallon gasoline 4,000-gallon gasoline 4,000-gallon gasoline
					Date Closed	07/24/2002
					Tank Status	Permanently Out of Use
Western Motors Service, Inc.	1-3680 Kaumualii Highway	234	WSW	Higher	Facility Id	9-701551
					Tank Type	1,000-gallon gasoline 1,000-gallon gasoline 1,000-gallon gasoline 2,000-gallon gasoline
					Date Closed	09/01/1994
					Tank Status	Permanently Out of Use
					Tank Type	10,000-gallon gasoline 10,000-gallon gasoline
Tank Status	Currently In Use					
Cilia's Service Station	1-3509 Kaumualii Highway	295	WSW	Higher	Facility Id	9-703263
					Tank Type	2,000-gallon gasoline 3,000-gallon gasoline

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Site Name	Location	Distance	Direction	Relative Elevation	Tank Info	
					Date Closed	09/04/1997
					Tank Status	Permanently Out of Use
Eleele Treatment Plant	4440 Waialo Road	326	SSE	Higher	Facility Id	9-701068
					Tank Type	2,000-gallon diesel
					Date Closed	05/13/1995
					Tank Status	Permanently Out of Use
Hanapepe Central Office	3919 Hanapepe Road	458	NE	Lower	Facility Id	9-700601
					Tank Type	285-gallon diesel
					Date Closed	04/16/1988
					Tank Status	Permanently Out of Use
					Tank Type	550-gallon diesel
					Tank Status	Currently In Use
Organizational Maintenance Shop #5	1-3460 Kaumualii Highway	581	WSW	Higher	Facility Id	9-701839
					Tank Type	3,000-gallon diesel
					Date Closed	11/16/1998
					Tank Status	Permanently Out of Use
AMFAC Distribution Hawaii, Inc.	1-3410 Kaumualii Highway	1,073	WSW	Lower	Facility Id	9-701759
					Tank Type	1,000-gallon gasoline
					Date Closed	10/21/1996
					Tank Status	Permanently Out of Use
Citizens Utilities Company	4392 Waialo Road	1,301	SSE	Higher	Facility Id	9-700628
					Tank Type	8,000-gallon gasoline
					Date Closed	01/23/1991
					Tank Status	Permanently Out of Use
Kauai Automated Fuels 3	Port Allen Road	1,527	SSE	Higher	Facility Id	9-703039
					Tank Type	3,000-gallon gasoline (x2) 7,000-gallon gasoline (x2) 3,000-gallon diesel (x4) 4,000-gallon diesel (x4)
					Tank Status	Currently in Use
Hanapepe Base Yard	4380 Lele Road	1,870	WSW	Higher	Facility Id	9-701071
					Tank Type	2,500-gallon gasoline 1,500-gallon diesel
					Date Closed	10/07/1998
					Tank Status	Permanently Out of Use
Dekalb Pfizer Genetics	P.O. BOX 609 / Ko Road	2,028	ENE	Higher	Facility Id	9-702406
					Tank Type	500-gallon gasoline 560-gallon diesel
					Date Closed	Not reported
					Tank Status	Permanently Out of Use

2.2.14 Federal ICs and ECs Registries

Federal ICs and ECs sites are federally listed sites that are required to implement institutional controls or engineering controls. No Federal ICs or ECs were identified within one mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.15 State ICs and ECs Registries

These sites are state listed sites that have either state-required institutional controls or engineering controls in place. No State IC or EC were identified within one mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.16 Federal ERNS List

The ERNS list, maintained by the EPA, contains CERCLA hazardous substance releases or spills, as maintained at the National Response Center. No incidents were identified on the project site (Environmental Data Resources, Inc., 2016).

2.2.17 U.S. Brownfields

U.S. Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence of a hazardous substance, pollutant, or contaminant. No U.S. Brownfields sites were identified within one mile of the project site (Environmental Data Resources, Inc., 2016).

2.2.18 High Risk Historical Records

EDR's High Risk Historical Records (HRHR) effort presents unique and sometimes proprietary data about past operations that typically create environmental concerns, but may not show up in current government records searches.

Historical Auto

EDR reported on a search of selected national collections of business directories and listings of potential gas station/filling station/service station sites that were available to EDR. Three historical auto sites were identified in the search:

- Trademark Collision: 3710 Hanapepe Road, adjacent to and upgradient
- G&K Auto Repair Shop and Trademark Collision: 3746 Hanapepe Road, adjacent to and upgradient
- HITech Automotive Repair: 4350 Waialo Road, approximately 300 feet south southeast an upgradient

Please refer to Section 3 for determination of impact of these sites on the project site.

Historical Dry Cleaner

EDR reported on a search of selected national collections of business directories and listings of potential dry cleaner sites that were available to EDR. One site was identified in the search, Girards Quality Cleaners at 3716 Hanapepe Road, adjacent to and upgradient of the project site.

Please refer to Section 3 for determination of impact of these sites on the project site.

3.0 KEY FINDINGS AND OPINION

This section evaluates the key findings of this records review and makes a determination as to the presence of suspected RECs as indicated through the records review conducted, if any. If a complete Phase I Environmental Site Assessment was conducted, the additional research could confirm a site as suspected or indicate that there is no concern with a site. Figure 2 presents the locations of the potential sites of interest.

No records of NPL sites, Federal RCRA CORRACTS TSD Facilities, State Sites of Interest, Delisted NPL sites, federal CERCLIS sites, Federal CERCLIS NFRAP sites, Federal RCRA non-CORRACTS TSD facilities, landfill or solid waste disposal sites, State Voluntary Cleanup sites, IC/EC registries, Federal ERNS list sites, Federal or State Brownfields sites, were identified at the project site or the surrounding area.

3.1 Suspected REC

The Port Allen Bulk Petroleum Storage Terminal is located at 4350 Waialo Road, 298 feet south southeast and upgradient from the project site. HDOH HEER Office issued a NFA letter on 23 August 2004, noting that the hazard was undetermined and documentation inadequate to evaluate risks. Due to the known use of the site, and the distance and proximity to the project site, it is considered to be a suspected recognized environmental condition (REC) with the potential to impact the project site.

3.2 Suspected Historical REC

Historical RECs (HREC) is defined by ASTM International as “an environmental condition which in the past would have been considered a REC, but which may or may not be considered a REC currently.”

Two State Hazardous Waste Sites are anticipated to be HRECs:

- The Kauai Electric Port Allen Generating Facility, located at 261 Akala Road, approximately 640 feet east southeast and upgradient from the project site was identified as having petroleum contamination in the soil. HDOH HEER Office issued a NFA letter on 05 August 2005.
- There was a UST release at Port Allen, located at 4353 Waialo Road, approximately 1,200 feet south southeast an upgradient from the project site. Total petroleum hydrocarbons as diesel was identified in the soil. Site remediation resulted in a NFA letter issued on 06 September 2006.

Twelve Leaking UST were identified within 1/2 mile of the project site. Due to distance (within 1/4 mile) and proximity (upgradient), eight of these Leaking UST are suspected HREC:

- Former Hanapepe Repair Shop 4540 Hana Road
- Denny’s Repair and Service 4545 Kona Road
- Longie’s Crackseed 3508 Hanapepe Road
- Western Motors Service, Inc. 1-3680 Kaumualii Highway

- Cilia’s Service Station 1-3509 Kaumualii Highway
- Eleele Treatment Plant 4440 Waialo Road
- Organizational Maintenance Shop 5 1-3460 Kaumualii Highway
- Citizens Utilities Company 4392 Waialoa Road

These sites are not anticipated to have a negative impact on the project site.

3.3 Suspected Controlled REC

A Controlled REC (CREC) applies to risk-based closures of contaminated sites, and sites that employ institutional or engineering controls to manage contamination.

Sakoda Garage, Inc., located at 3954 Hanapepe Road, 266 feet east northeast and downgradient from the project site was identified as requiring controls to manage contamination. Due to the close proximity of this site to the project site and the controls in place managing the contamination, this site is anticipated to be a CREC.

This site is not anticipated to have a negative impact on the project site.

3.4 Suspected Non-REC

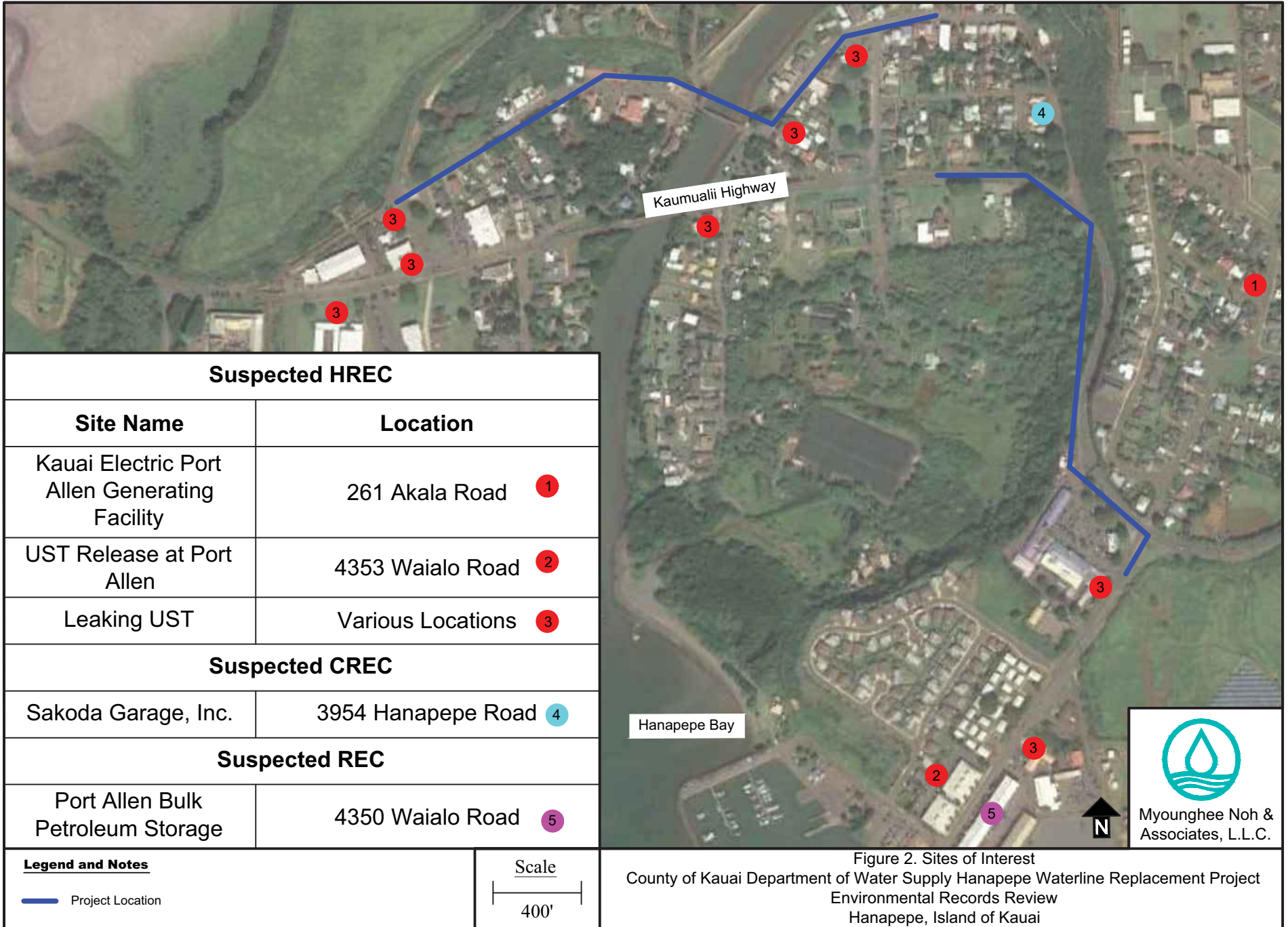
Four of the 12 Leaking UST identified within 1/2 mile of the project site are anticipated to be Non-RECs:

- Non-REC due to proximity (downgradient)
 - Sakoda Garage, Inc. P.O. BOX 143 / 3954 Hanapepe Road
- Non-REC due to distance (greater than 1/4 mile)
 - Kauai Automated Fuels 3 Port Allen Road
 - Hanapepe Base Yard 4380 Lele Road
 - Dekalb Pfizerk Genetics P.O. BOX 609 / Ko Road

Longs Drug Store No. 7669, located at 4469 Waialo Road, approximately 1,300 feet south southeast and upgradient from the project site was identified as a CESQG. No violations were on record at this site, and therefore it is considered a Non-REC.

Kauai Electric located at 4392 Waialo Road, approximately 1,300 feet south southeast and upgradient from the project site was identified as a RCRA Non-Generator. No violations were recorded for this site. Due to it being a nongenerator and that no violations were documented, this is considered a Non-REC.

The four HRHR records including three auto shops and a dry cleaner were not listed in standard databases as having any violations. While these types of facilities commonly are the source of RECs, these specific facilities have no reason for special concern at this point, and are therefore not considered RECs.



4.0 CONCLUSION AND RECOMMENDATION

MNA performed records review for the two linear subject properties and the surrounding area. The records review included all standard federal and state government databases and specific electronic HDOH electronic files. Based on the information reviewed, there are one REC, HRECs, and CRECs in close proximity to the project site.

One site, the Port Allen Bulk Petroleum Storage Terminal, was identified as having an undetermined hazard with inadequate documentation to evaluate the risks. This site is located at 4350 Waialo Road, approximately 300 feet south southeast and upgradient of the project site. Due to the known use of the site, and the distance and its proximity to the project site, it is considered to be a suspected recognized environmental condition with the potential to impact the project site.

MNA recommends hazard control measures and best management practice to prevent site workers, the public, and the environmental exposures to the potential petroleum chemical hazards in the subsurface.