



Water has no substitute.....Conserve it

January 9, 2014

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FEB 08 2014

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

14 JAN 17 P2:54

PROCESSED

Director
Office of Environmental Quality Control
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Director,

SUBJECT: PIPELINE REPLACEMENT ALONG WEKE, ‘ANAE, MAHIMAHI, AND HE‘E ROADS FOR DEPARTMENT OF WATER, COUNTY OF KAUA‘I; TMK: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05 FINAL ENVIRONMENTAL ASSESSMENT

The County Department of Water hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the Pipeline Replacement along Weke, ‘Aanae, Mahimahi, and He‘e Roads situated at (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05, in the Hanalei District on the island of Kaua‘i, for publication in the next available edition of the Environmental Notice.

The County Department of Water has included copies of comments and responses that it received during the 30-day public comment period on the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI).

Enclosed are the following: 1) A completed OEQC Publication Form; 2) Two (2) copies of the FEA-FONSI; 3) An Adobe Acrobat PDF file of the same; and 4) An electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions, please contact Wayne Wada of Esaki Surveying and Mapping, Inc. at (808) 246-0625.

Sincerely,

Kirk Saiki, P.E.
Acting Manager and Chief Engineer

/ce

Enclosures (4)

**AGENCY ACTIONS
SECTION 343-5(B), HRS
PUBLICATION FORM (FEBRUARY 2013 REVISION)**

Project Name: Pipeline replacement along Weke, `Anae, Mahimahi, and He`e Roads
Island: Kauai
District: Hanalei
TMK: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05
Permits: Department of Health – NPDES (Hydrotesting water)
D.O.T. (Highways Division) – Road Construction for Right-of-Way
County Of Kauai (Public Works) – Road Construction for Right-of-Way
Proposing/Determination Agency: Department of Water, County of Kauai
(Address, Contact Person, Telephone) 4398 Pua Loke Street, Lihue, HI 96766
Keith Aoki – 808-245-5411

OFFICE OF ENVIRONMENTAL QUALITY CONTROL
RECEIVED
14 JAN 17 P2:54

Accepting Authority:
(for EIS submittals only)

Consultant: Esaki Surveying and Mapping, Inc.
(Address, Contact Person, Telephone) 1610 Haleukana Street, Lihue, HI 96766
Maren Arismendez-Herrera – 808-246-0625

Status (check one only):

DEA-AFNSI Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.

FEA-FONSI Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

FEA-EISPN Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov); a 30-day consultation period ensues upon publication in the periodic bulletin.

Act 172-12 EISPN Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

DEIS The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqchawaii@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.

FEIS The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

Section 11-200-23 Determination The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.

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

Withdrawal (explain)

The County of Kauai, Department of Water proposes to replace waterlines along Weke, `Anae, Mahimahi, and He`e Roads. The immediate impact is temporary traffic inconvenience and interruption in service during the transfer as well as equipment noise, emissions and fugitive dust from construction. Mufflers, water sprinkling and restricted time of work will be implemented. The direct impact will be reliable water service to the homes; indirect impact is better fire protection for the surrounding area. Long term effect is improvement quality of life.

FINAL
ENVIRONMENTAL ASSESSMENT
AND
FINDING OF NO SIGNIFICANT IMPACT (FONSI)

PIPELINE REPLACEMENT ALONG WEKE, `ANAЕ, MAHIMAHI,
AND HE`E ROADS

HANALEI, KAUA`I, HAWAII

Submitted in Accordance with
Requirements for Chapter 343, HRS and
Chapter 200 of Title II, Administrative Rules
Department of Health, State of Hawai`i

Prepared for the

Department of Water
County of Kaua`i

By

Esaki Surveying and Mapping, Inc.

January 2014

FINAL ENVIRONMENTAL ASSESSMENT

Proposed Action: PIPELINE REPLACEMENT ALONG WEKE, `ANAHE, MAHIMAHI, AND HE`E ROADS

Applicant: DEPARTMENT OF WATER
COUNTY OF KAUA`I

Location: HANAHEI, KAUA`I, HAWAII
TMK: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05

Determination: EIS REQUIRED _____ EIS NOT REQUIRED X

.....
Possible Permits Required

Federal N/A

State Department of Health – NPDES (Discharges of Storm water associated with construction activities and Discharges of Hydrotesting waters)
D.O.T. (Highways Division) – Road Construction for Right-of-Way

County Public Works – Road Permit for work within County Right of Ways

.....
Agencies and Organizations Consulted or Contacted
in Preparing this Assessment

Copies of the draft environmental assessment and a letter requesting comments on the proposed project were sent to the parties listed on the next page. Comments and response letters have been reproduced and included in Appendix B.

State : Department of Health – Solid and Hazardous Waste Branch
Department of Health – Safe Drinking Water Branch
Department of Health – Clean Water Branch
Department of Health – Clean Air Branch
Department of Transportation
Department of Land and Natural Resources – State Historic
Preservation Division

County : Department of Public Works
Department of Water
Fire Department
Planning Department
Transportation Agency

Others : Scientific Consultant Services, Inc.*
(received written report, see Appendix A)
Kauai Island Utility Cooperative
Oceanic Time Warner Cable
Hawaii Telcom

* Copy of the draft environmental assessment and letter requesting comments were not sent to Scientific Consultant Services, Inc.

Table of Contents

			Page
SECTION	I	DESCRIPTION OF THE PROPOSED PROJECT	1-7
		Figure 1 – Island Map	2
		Figure 2 – DOW Service Areas Map	3
		Figure 3 – DOW Service Areas Table	4
		Figure 4 – Location Map	5
		Figure 5 – Water Facility Map	7
SECTION	II	DESCRIPTION OF THE AFFECTED ENVIRONMENT AND POTENTIAL ENVIRONMENT IMPACTS	8-45
	A.	Use	8-19
		Figure 6 – Site Plan	9
		Figure 7 – Plan and Profile Weke Road	10
		Figure 8 – Plan and Profile Weke Road	11
		Figure 9 – Plan and Profile Weke Road	12
		Figure 10 – Plan and Profile Weke Road	13
		Figure 11 – Plan and Profile Weke Road	14
		Figure 12 – Plan and Profile Anae Road	15
		Figure 13 – Plan and Profile He`e Road	16
		Figure 14 – Plan and Profile Mahimahi Road	
		Figure 15 – Traffic Control Plan	18
		Figure 16 – Traffic Control Plan	19
	B.	Climate	20
	C.	Geology, Topography and Soils	20-23
		Figure 17 – USGS Map	21
		Figure 18 – Soils Map	23
	D.	Hydrology	22, 24-27
		Figure 19 – Ground Water Hydrologic Units	24
		Figure 20 – Wetlands Map	26
	E.	Flood Hazard and Drainage	27-30
		Figure 21 – Flood Zones Map	28
		Figure 22 – Tsunami Evacuation Zone Map	30
	F.	Flora and Fauna	29, 31
	G.	Historic Sites	31-33
		Figure 23 – Heritage Resource Map	33
	H.	Land Use Controls	32, 34-37
		Figure 24 – Zoning Map	34
		Figure 25 – SMA Map	36
		Figure 26 – Land Use Map	37
	I.	Air Quality	35, 38

	J.	Noise	39
	K.	Housing	39
	L.	Socio Economic Characteristics	40-41
		Figure 27 – Demographic Characteristics	41
	M.	Public Utilities and Services	40, 42-45
		1. Access	40
		2. Water	42
		3. Wastewater	42
		4. Solid Waste	42-43
		5. Fire Protection	43
		6. Police Protection	43-44
		7. Public Schools	44
		8. Utilities	44
		9. Visual Effects	44
		Figure 28 – Public Utilities and Services Map	45
SECTION	III	ALTERNATIVES TO THE PROPOSED ACTION	46
SECTION	IV	ASSESSMENT PROCESS AND DETERMINATION OF SIGNIFICANCE	47-50
SECTION	V	NAMES OF GROUPS AND INDIVIDUALS AFFECTED BY THE PROPOSED PROJECT AND/OR CONSULTED	51-59
SECTION	VI	REFERENCES	60-62
APPENDIX	A	ARCHEOLOGICAL INVENTORY SURVEY	A1-A31
APPENDIX	B	WRITTEN COMMENTS AND RESPONSES	B1-B11

SECTION I

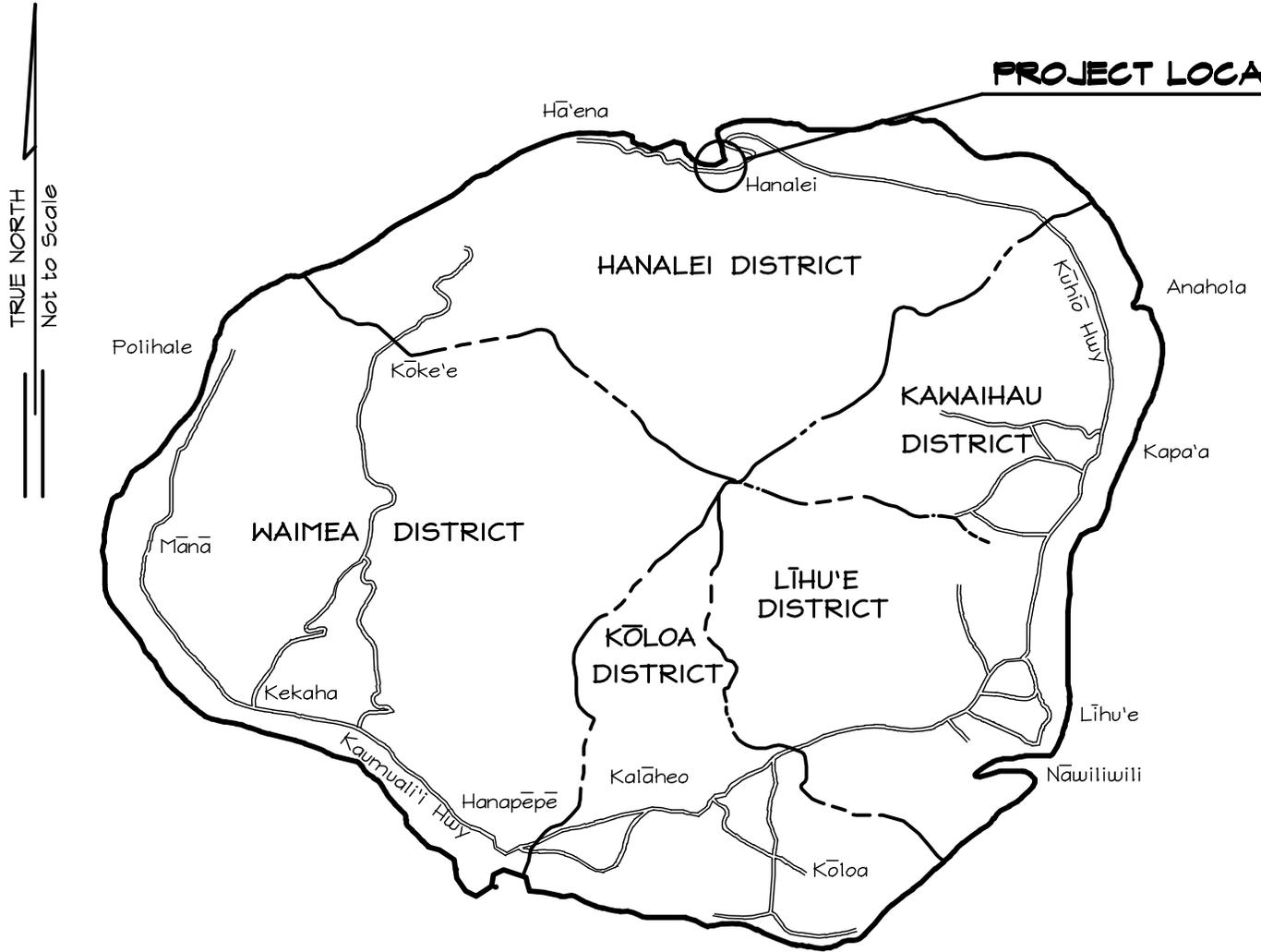
DESCRIPTION OF THE PROPOSED PROJECT

The County of Kaua`i, Department of Water proposes to develop waterline replacements in Hanalei, Kaua`i in the State of Hawai`i (see Figure 1), located along Weke, `Anae, Mahimahi, and He`e Roads.

The project's purpose is to improve water distribution and fire protection within a portion of the Hanalei service area (see Figures 2 and 3), more specifically for the properties identified by tax map key as (zone 4) 5-5-03, (zone 4) 5-5-04 and (zone 4) 5-5-05 (see Figure 4). The project is bordered by State and private properties in the Waioli area, including the Waipa & Waioli Beach Lots and Sanborn Subdivision. Existing land uses within the immediate area of the project area include a mix of uses comprised of residences, vacation rentals and public facilities including the Waioli Stream and Waioli Beach Park.

The primary access to the project is Kūhi`ō Highway. The Weke Road section of the project starts off of the intersection with Malolo Road and extends approximately 500 feet past the intersection with `Anae Road. `Anae Road and Mahimahi Road are located off of Kūhi`ō Highway, and He`e Road is located off of Weke Road. The `Anae, Mahimahi, and He`e Road sections of the project cover approximately the entire length of the roadway.

PROJECT LOCATION



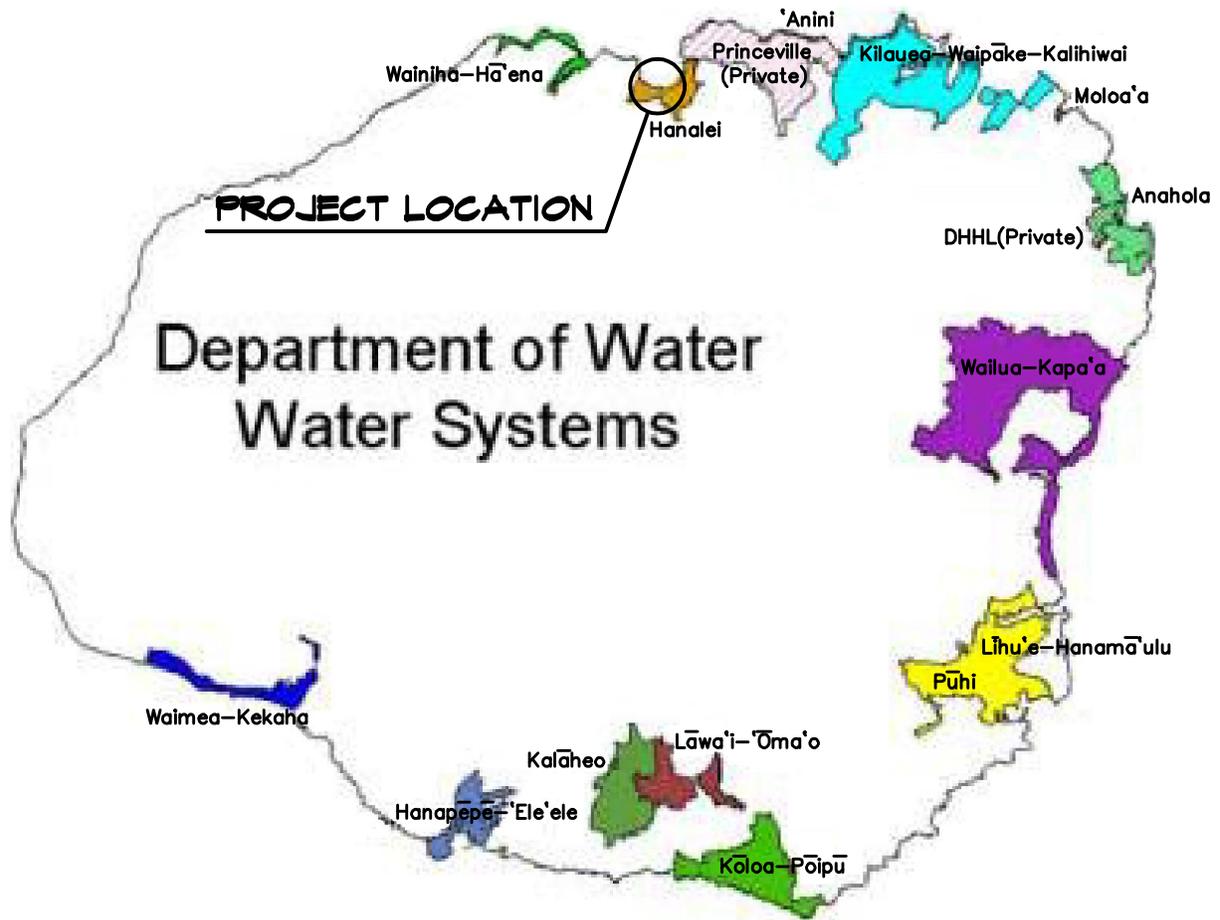
ESAKI SURVEYING AND MAPPING, INC.

Engineers, Land Surveyors & Planners
1610 Haleukana Street
Līhu'e, Kaua'i, Hawai'i

**FIGURE I
ISLAND OF KAUA'I**

PIPELINE REPLACEMENT ALONG
WEKE, 'ANAE, MAHIMAHU,
AND HE'E ROADS

JOB NO. 12-01, WATER PLAN JOB NO. H-05
Hanalei, Kaua'i, Hawai'i



Source: Water Plan 2020

ESAKI SURVEYING AND MAPPING, INC.

Engineers, Land Surveyors & Planners
1610 Haleukana Street
Līhu'e, Kauai, Hawaii

FIGURE 2
DOW SERVICE AREAS MAP
PIPELINE REPLACEMENT ALONG
WEKE, 'ANAE, MAHIMAHI,
AND HE'E ROADS

JOB NO. 12-01, WATER PLAN JOB NO. H-05
Hanalei, Kauai, Hawaii

Service Area	Description
Waimea-Kekaha	The service area is comprised of two relatively compact small towns. Waimea is the civic center of the West Side, home to the high school, hospital, and other community facilities as well as a variety of restaurants and retail stores. Kekaha includes a residential community that supports diversified agricultural and a small industrial area that was occupied by the former Kekaha Sugar Plantation. The area also supports the nearby Pacific Missile Range Facility and west side State parks.
Hanapepe-Eleele	The service area includes Kauai's second commercial harbor, Port Allen, the island's major electrical power generating station, and other industrial uses. Across the highway are Hanapepe Town and the residential community of Hanapepe Heights. Eleele has a small business area and residential communities.
Kalaheo	Kalaheo has small-town commercial uses concentrated along the highway and along Papalina Road.
Lawai-Omao	The west side has three small-town/rural service areas: Lawai-Omao, Kalaheo, and Waimea-Kekaha. The Kalaheo and Lawai-Omao service areas consist primarily of agricultural homestead lands that have been subdivided and developed at various densities of residential use.
Koloa-Poipu	The service area consists of a concentration of resorts along the coast, with residential communities clustered near the coast and around Koloa Town. Poipu is Kauai's fastest-growing resort destination, and the service area includes several projects yet to be constructed.
Puhi-Lihue-Hanamaulu	The most diverse customer base. The area includes Kauai's major airport and commercial harbor, the largest concentration of industrial uses, Wilcox Hospital, hotels, a broad range of government and business uses, and residential neighborhoods.
Wailua-Kapaa	The service area has hotel and business uses clustered along the coastal highway. Schools, hospitals, and urban residential neighborhoods are located along the highway, as well as along two major roads that extend inland towards the mountains at the north and south ends of the Wailua-Kapaa basin – Kuamoo Road and Kawaihau Road. The central part of the basin is comprised of old agricultural homesteads that are gradually transitioning to residential use.
Anahola	In Anahola, the major landowner is the Department of Hawaiian Homelands (DHHL), which develops residential lots and agricultural homesteads for lease to native Hawaiians. The Anahola service area also includes privately owned residential and agricultural lots in and around Anahola Valley. Portions of the water system are owned by either the DOW or DHHL. DOW operates the system in partnership with DHHL.
Molooa	These east side rural communities include Molooa and Anahola. Molooa is the DOW's smallest service area consisting of two small clusters of residences. Water is purchased from a state well that is currently operated by a private landowner in the area. Water from this source also supplies the agricultural activities in the area.
Kilauea-Waipake-Kalihiwai	The service area is comprised of Kilauea Town and a number of non-contiguous agricultural subdivisions that extend towards the mountains or the coast on either side of the highway. While Kilauea Town is a compact node of urban-density residential use and neighborhood businesses, the largest part of the service area consists primarily of low-density residential use, mixed with small farms.
Anini	The service area consists of a narrow strip of beach residences. The water is purchased from Princeville Utilities.
Hanalei	The service area consists of residences and small-town business uses. Narrow roadways and one-lane bridges limit development in these areas.
Wainiha-Haena	The system serves residences along the coast and in Wainiha Valley.

Source: Water Plan 2020

ESAKI SURVEYING AND MAPPING, INC.

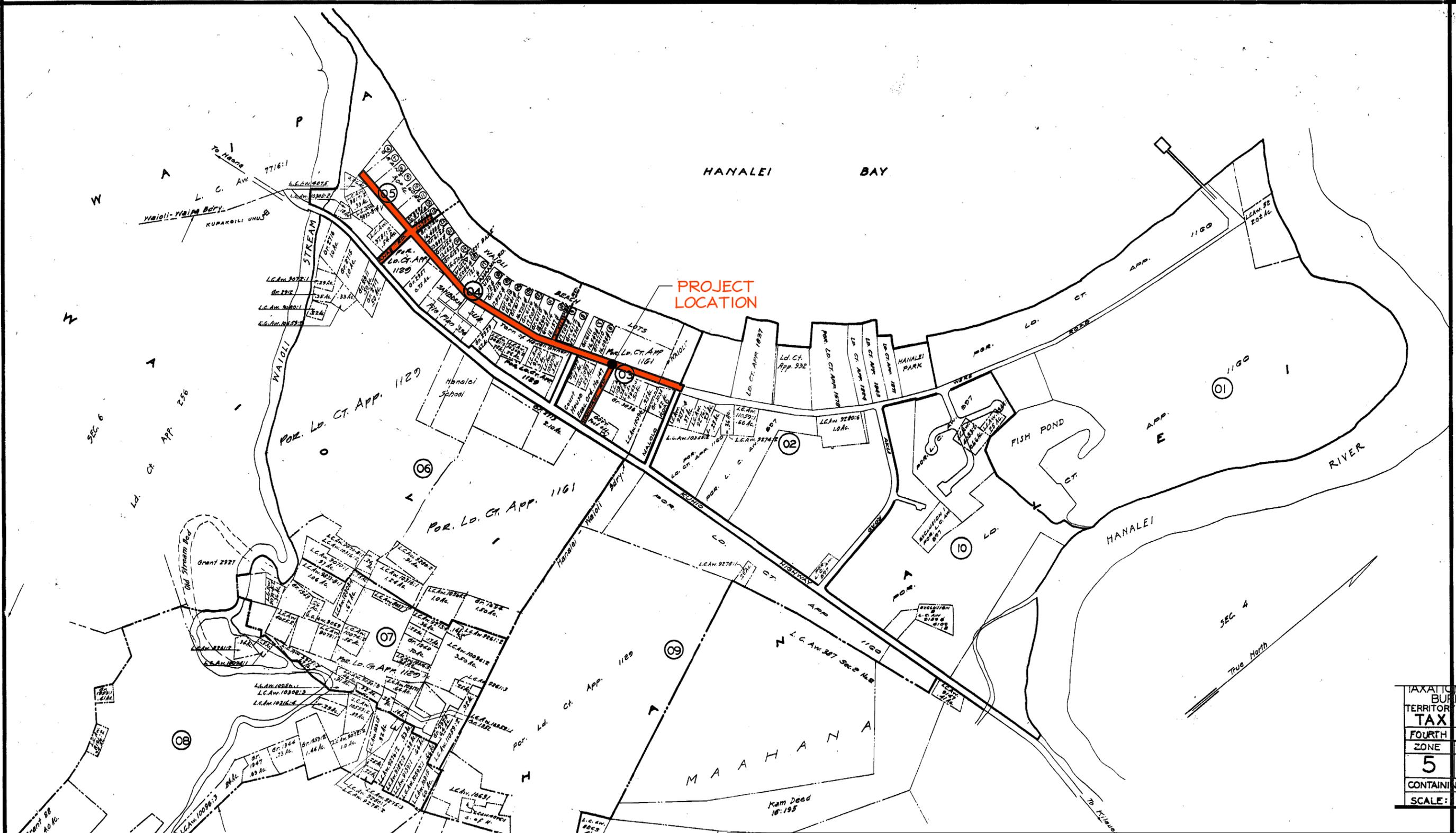
Engineers, Land Surveyors & Planners
1610 Haleukana Street
Līhu'e, Kaua'i, Hawai'i

**FIGURE 3
DOW SERVICE AREAS TABLE**

PIPELINE REPLACEMENT ALONG
WEKE, 'ANAE, MAHIMAHĪ,
AND HE'E ROADS

JOB NO. 12-01, WATER PLAN JOB NO. H-05
Hanalei, Kaua'i, Hawai'i

1973
JUN 2 3 1977



TAXATION MAPS	
BUREAU OF TERRITORY OF HAWAII	
TAX MAP	
FOURTH ZONE	DIVISION SEC.
5	5
CONTAINING PLATS	
SCALE: 1 in. = 300 ft	

Div. No. 1063
By: G.B. 11/82
Source: Tax. Maps Bureau

ESAKI SURVEYING AND MAPPING, INC.
Engineers, Land Surveyors & Planners
1610 Haleukana Street
Lihue, Kauai, Hawaii

**FIGURE 4
LOCATION MAP**
PIPELINE REPLACEMENT ALONG
WEKE, 'ANAE, MAHIMAHU,
AND HE'E ROADS
JOB NO. 12-01, WATER PLAN JOB NO. H-05
Hanalei, Kauai, Hawaii

As shown in Figure 5 there are existing water lines along Weke, `Anae, Mahimahi, and He`e Roads. As part of this waterline replacement project, all existing water lines will be removed and new waterlines will be installed.

Weke, `Anae, Mahimahi, and He`e Roads are all paved public roadways. There are no existing provisions for fire protection along `Anae, Mahimahi, and He`e Roads.

The proposed project calls for the installation of 1,748 linear feet of 8" ductile iron waterline along Weke Road from the intersection with Malolo Road to the intersection with `Anae Road, 526 linear feet of 6" ductile iron waterline along Weke Road from the intersection with `Anae Road to the end of the line near Waioli Stream, 298 linear feet of 8" ductile iron waterline along `Anae Road from the intersection with Kūhi`ō Highway to the intersection with Weke Road, 116 linear feet of 2 1/2" PVC waterline along `Anae Road from the intersection with Weke Road to the end of the line near Waioli Beach Park, 184 linear feet of 2 1/2" PVC waterline along He`e Road from the intersection with Weke Road to the end of the line near Waioli Beach Park, and 465 linear feet of 12" ductile iron waterline along Mahimahi Road from the intersection with Kuhio Highway to the intersection with Weke Road. In conjunction with the proposed waterlines, the existing stand pipes along Weke Road will be removed and replaced with fire hydrants, additional fire hydrants will also be placed along Weke Road.

The total budget for the development is \$1.3 M. Funding will be by the Department of Water. Construction is projected to start in August of 2014 and should be completed in April of 2015.

SECTION II

DESCRIPTION OF THE AFFECTED ENVIRONMENT

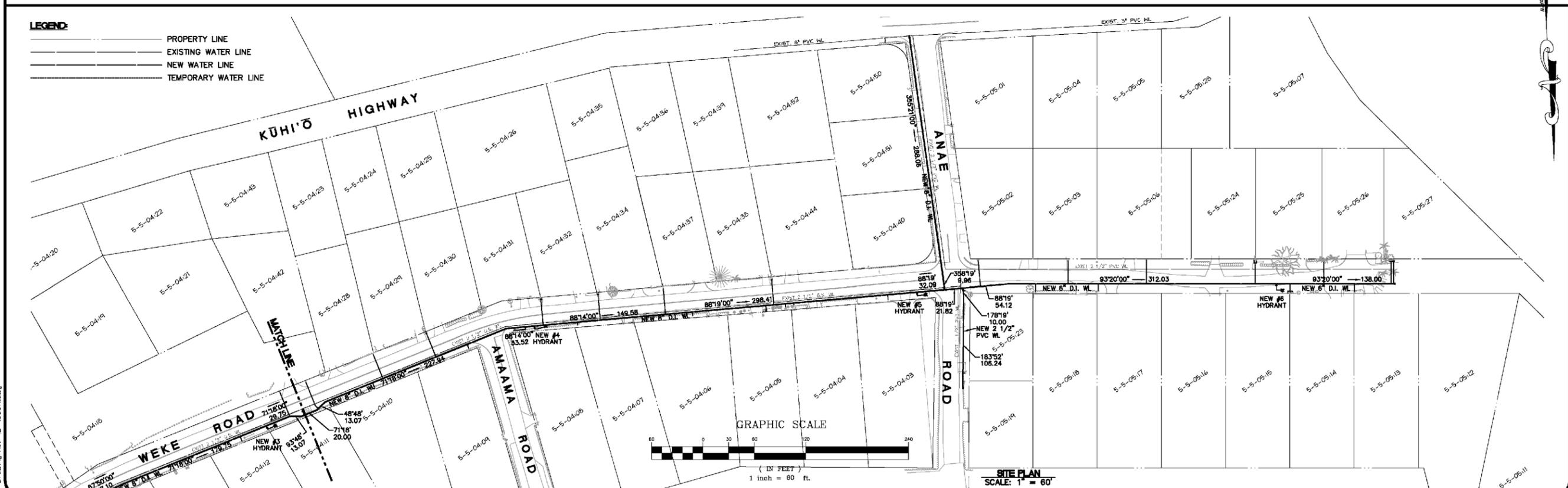
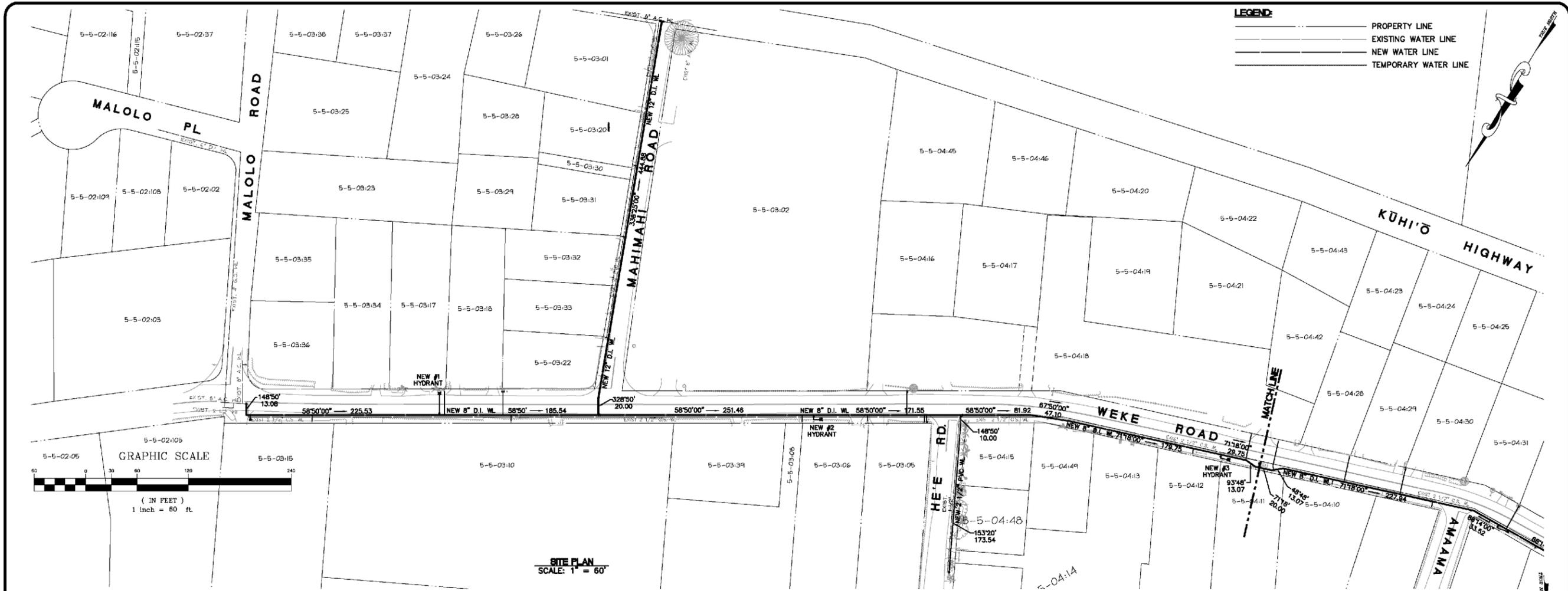
AND POTENTIAL ENVIRONMENT IMPACTS

A. USES

Existing Conditions: Weke Road is a paved, two-lane County roadway that forms intersections with Pilikoa Street, Aku Road, Malolo Road, Mahimahi Road, He`e Road, Amaama Road, and `Anae Road. `Anae Road is a paved, two-lane, County roadway that forms a T-intersection with Kūhi`ō Highway and a 4-way intersection with Weke Road and ends at Waioli Beach Park. He`e Road is a paved, two-lane, dead end County roadway that forms a T-intersection with Weke Road. Mahimahi Road is a paved, two-lane, County roadway that forms a T-intersection with Kūhi`ō Highway and with Weke Road. Within the project area, there are 50 parcels and 49 existing water meters along Weke Road, 8 parcels and 4 existing water meters along `Anae Road, 5 parcels and 3 existing water meters along He`e Road, 8 parcels and 3 existing water meters along Mahimahi Road. The connections to the water meters are through Department of Water mains, see Figures 6 to 14 for existing water line and water meter locations.

Proposed Actions: See Section I, Description of the proposed project.

Potential Impacts and Mitigative Measures: Replacement of waterline requires excavating along the roadways causing temporary traffic impacts during construction, also, the damaged trenched asphalt pavement and county road shoulders will be restored. See Figures 15 and 16 for Traffic Control Plan.



LEGEND:
 - - - - - PROPERTY LINE
 - - - - - EXISTING WATER LINE
 - - - - - NEW WATER LINE
 - - - - - TEMPORARY WATER LINE

SAKI SURVEYING AND MAPPING, INC.
 1810 Halekuna Street
 Lihue, Kauai, Hawaii 96766
 Ph. (808) 246-0625 Fax (808) 246-0229

CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED
REVISIONS				



EXPIRES: APRIL 30, 2014
 THIS WORK WAS PREPARED
 BY ME OR UNDER MY SUPERVISION

PROJECT:
CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, 'ANA'AE, MAHIMAHI AND HE'E ROADS
 Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05
 Hanalei, Kauai, Hawaii

CLIENT:
DEPARTMENT OF WATER COUNTY OF KAUAI

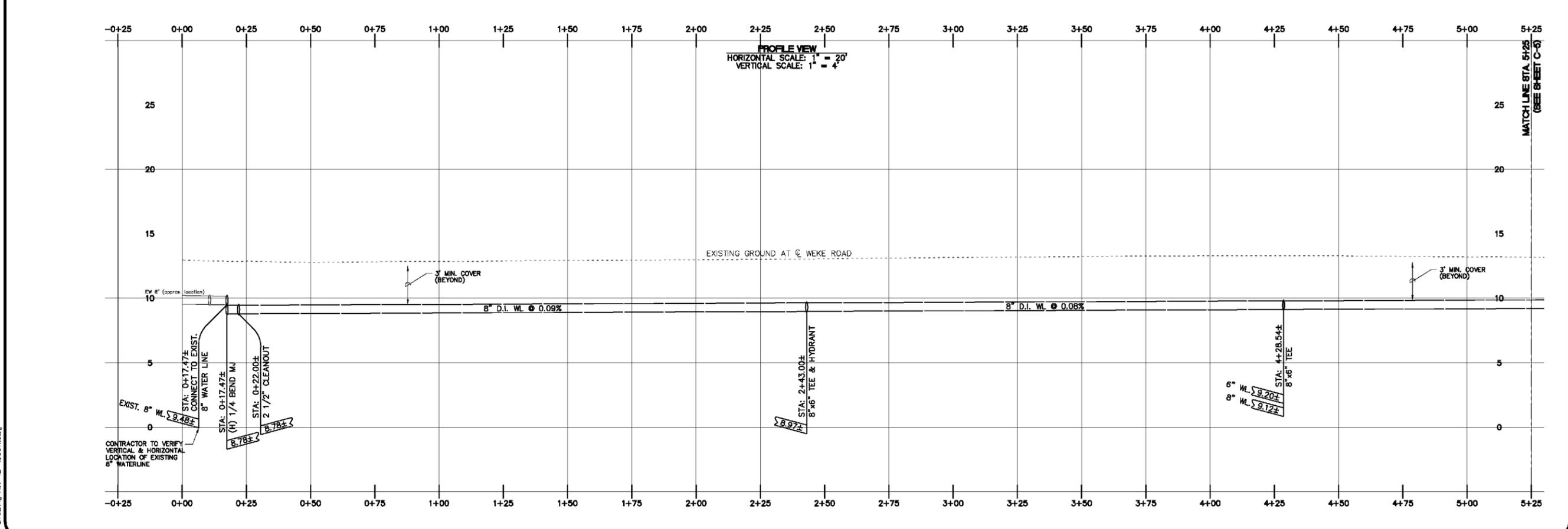
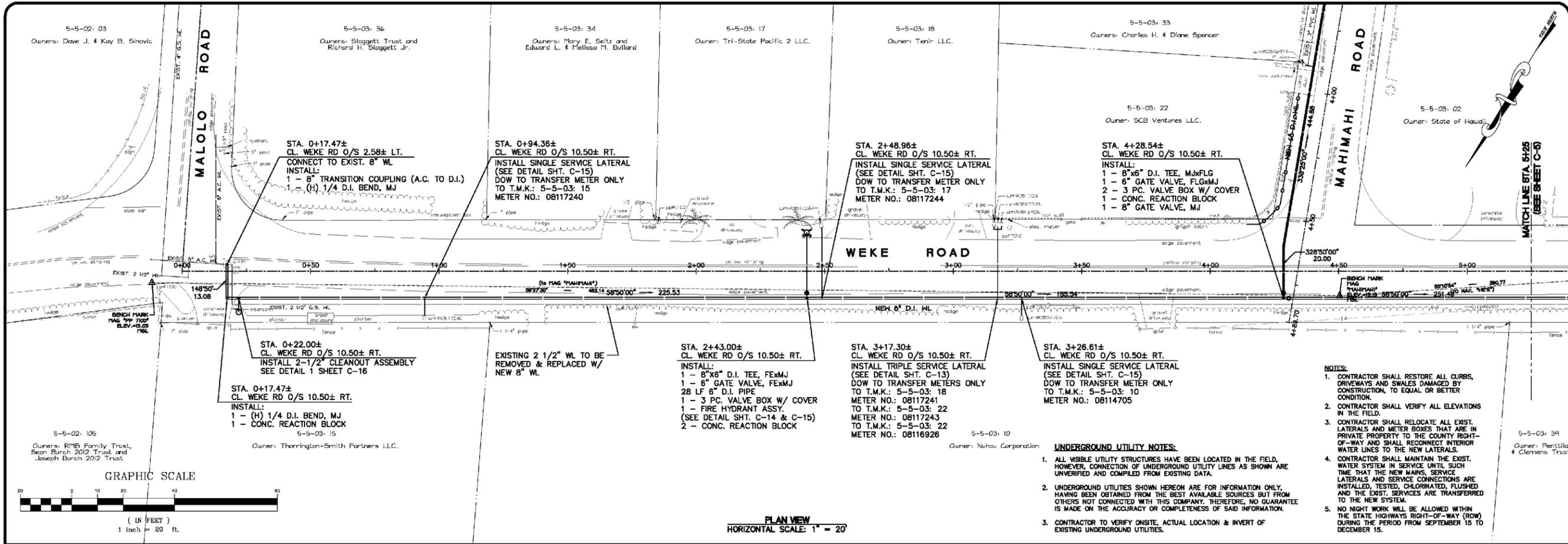
SITE PLAN

APPROVED

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET
 DRAWN BY: MA, CG C-4
 DATE: 10/18/13 4 OF 19 SHEETS



SAKI SURVEYING AND MAPPING, INC.
 1810 Halekuna Street
 Lihue, Kauai, Hawaii 96766
 Ph. (808) 246-0625 Fax (808) 246-0229

• CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS



EXPIRES: APRIL 30, 2014
 THIS WORK WAS PREPARED
 BY ME OR UNDER MY SUPERVISION

PROJECT:
CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, ANAE, MAHIMAH-I AND HE'E ROADS
 Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05
 Hanalei, Kauai, Hawaii

CLIENT:
DEPARTMENT OF WATER COUNTY OF KAUAI

PLAN AND PROFILE WEKE ROAD STA. 0+00 TO 5+25

APPROVED

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET
 DRAWN BY: MA, CG C-5
 DATE: 10/18/13 5 OF 19 SHEETS

UNDERGROUND UTILITY NOTES:

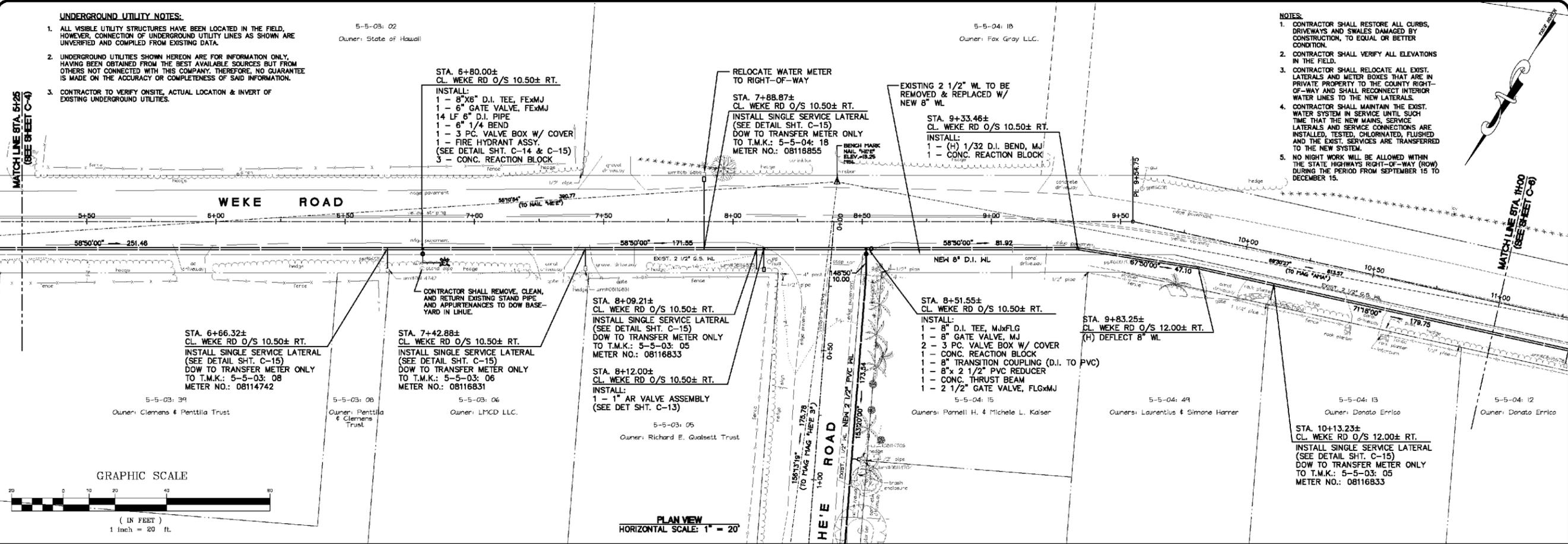
- ALL VISIBLE UTILITY STRUCTURES HAVE BEEN LOCATED IN THE FIELD. HOWEVER, CONNECTION OF UNDERGROUND UTILITY LINES AS SHOWN ARE UNVERIFIED AND COMPILED FROM EXISTING DATA.
- UNDERGROUND UTILITIES SHOWN HEREON ARE FOR INFORMATION ONLY, HAVING BEEN OBTAINED FROM THE BEST AVAILABLE SOURCES BUT FROM OTHERS NOT CONNECTED WITH THIS COMPANY. THEREFORE, NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INFORMATION.
- CONTRACTOR TO VERIFY ONSITE, ACTUAL LOCATION & INVERT OF EXISTING UNDERGROUND UTILITIES.

5-5-03: 02
Owner: State of Hawaii

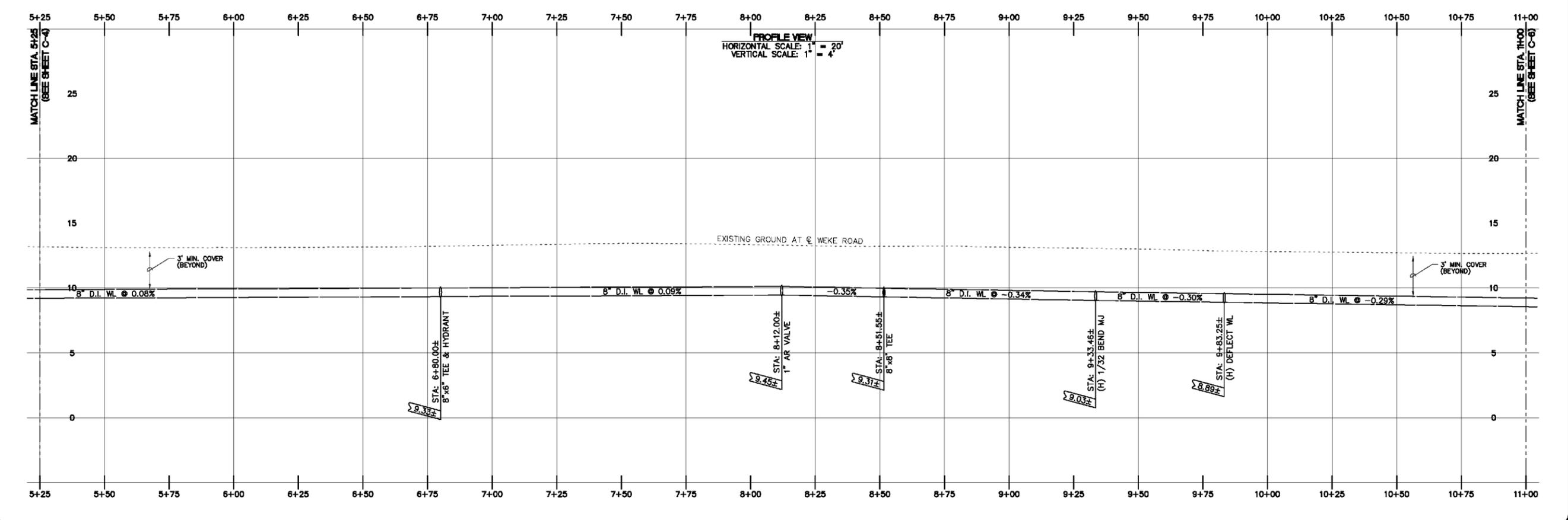
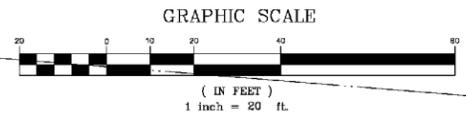
5-5-04: 18
Owner: Fox Gray LLC.

NOTES:

- CONTRACTOR SHALL RESTORE ALL CURBS, DRIVEWAYS AND SWALES DAMAGED BY CONSTRUCTION TO EQUAL OR BETTER CONDITION.
- CONTRACTOR SHALL VERIFY ALL ELEVATIONS IN THE FIELD.
- CONTRACTOR SHALL RELOCATE ALL EXIST. LATERALS AND METER BOXES THAT ARE IN PRIVATE PROPERTY TO THE COUNTY RIGHT-OF-WAY AND SHALL RECONNECT INTERIOR WATER LINES TO THE NEW LATERALS.
- CONTRACTOR SHALL MAINTAIN THE EXIST. WATER SYSTEM IN SERVICE UNTIL SUCH TIME THAT THE NEW MAINS, SERVICE LATERALS AND SERVICE CONNECTIONS ARE INSTALLED, TESTED, CHLORINATED, FLUSHED AND THE EXIST. SERVICES ARE TRANSFERRED TO THE NEW SYSTEM.
- NO NIGHT WORK WILL BE ALLOWED WITHIN THE STATE HIGHWAYS RIGHT-OF-WAY (ROW) DURING THE PERIOD FROM SEPTEMBER 15 TO DECEMBER 15.



PLAN VIEW
HORIZONTAL SCALE: 1" = 20'



PROFILE VIEW
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'

SAKI SURVEYING AND MAPPING, INC.

1810 Halekuna Street
Lihue, Kauai, Hawaii 96768
Ph. (808) 246-0625 Fax (808) 246-0229

CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS



EXPIRES: APRIL 30, 2014
THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

PROJECT:
CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, ANAE, MAHIMAHU AND HE'E ROADS
Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05
Hanalei, Kauai, Hawaii

CLIENT:
DEPARTMENT OF WATER
COUNTY OF KAUAI

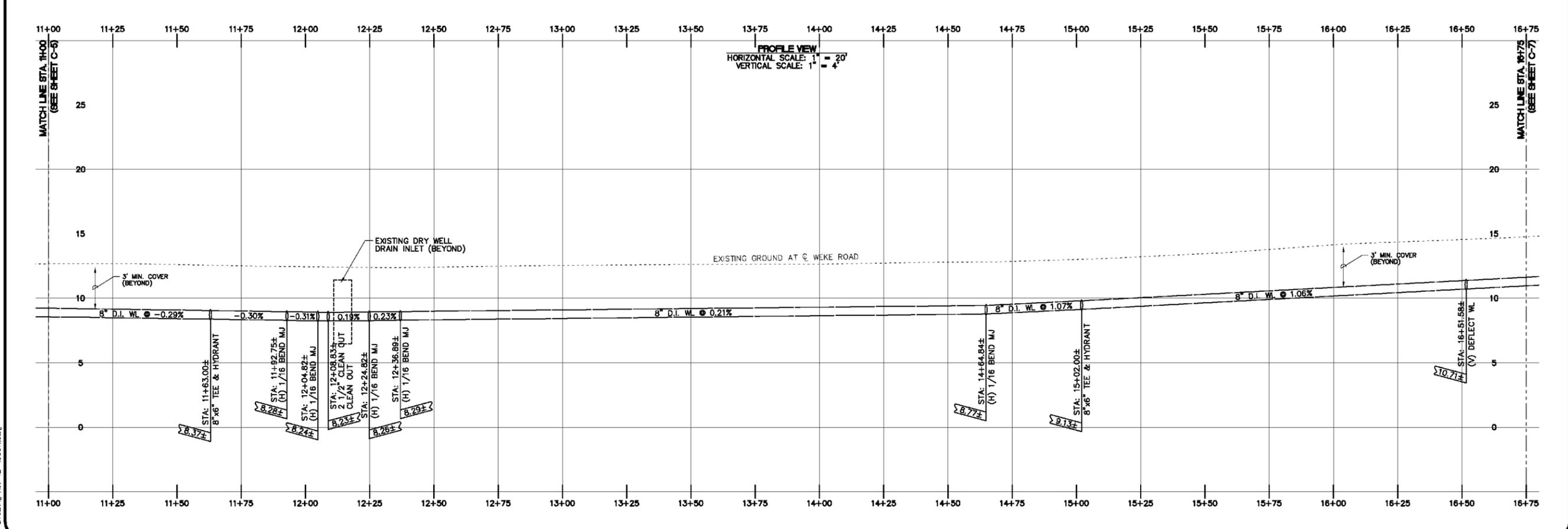
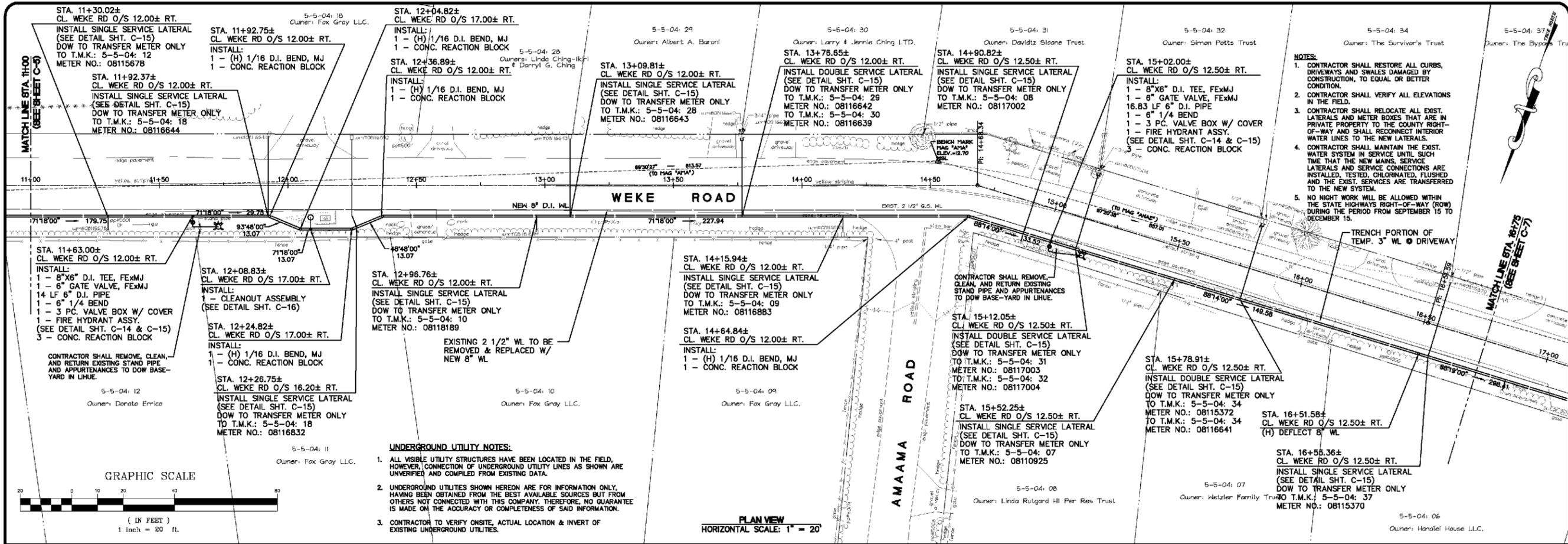
PLAN AND PROFILE WEKE ROAD STA. 5+25 TO 11+00

APPROVED

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW	SHEET
DRAWN BY: MA, CG	C-6
DATE: 10/18/13	6 OF 19 SHEETS



SAKI SURVEYING AND MAPPING, INC.
 1810 Halekuna Street
 Lihue, Kauai, Hawaii 96768
 Ph. (808) 246-0625 Fax (808) 246-0229

• CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS

WAYNE T. WADA
 LICENSED PROFESSIONAL ENGINEER
 No. 5281-C
 HAWAII, U.S.A.

EXPIRES: APRIL 30, 2014
 THIS WORK WAS PREPARED
 BY ME OR UNDER MY SUPERVISION

PROJECT:
CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, ANAE, MAHIMAHU AND HE'E ROADS
 Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05
 Hanalei, Kauai, Hawaii

CLIENT:
DEPARTMENT OF WATER COUNTY OF KAUAI

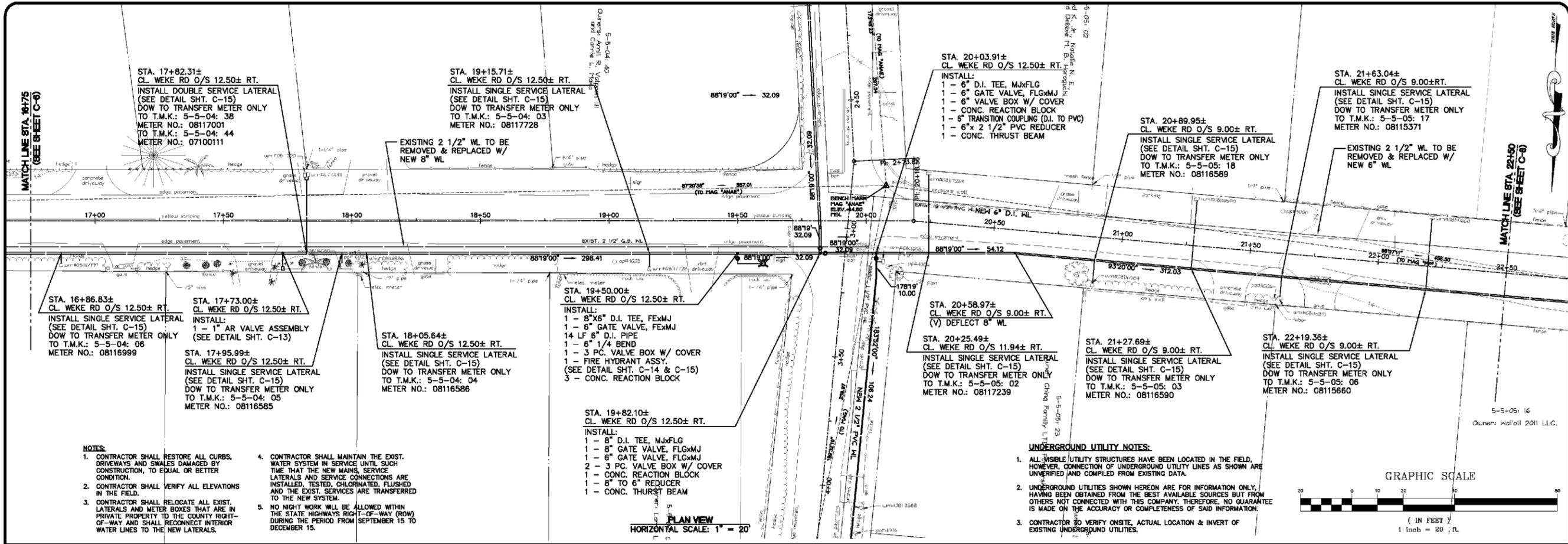
PLAN AND PROFILE WEKE ROAD STA. 11+00 TO 16+75

APPROVED

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

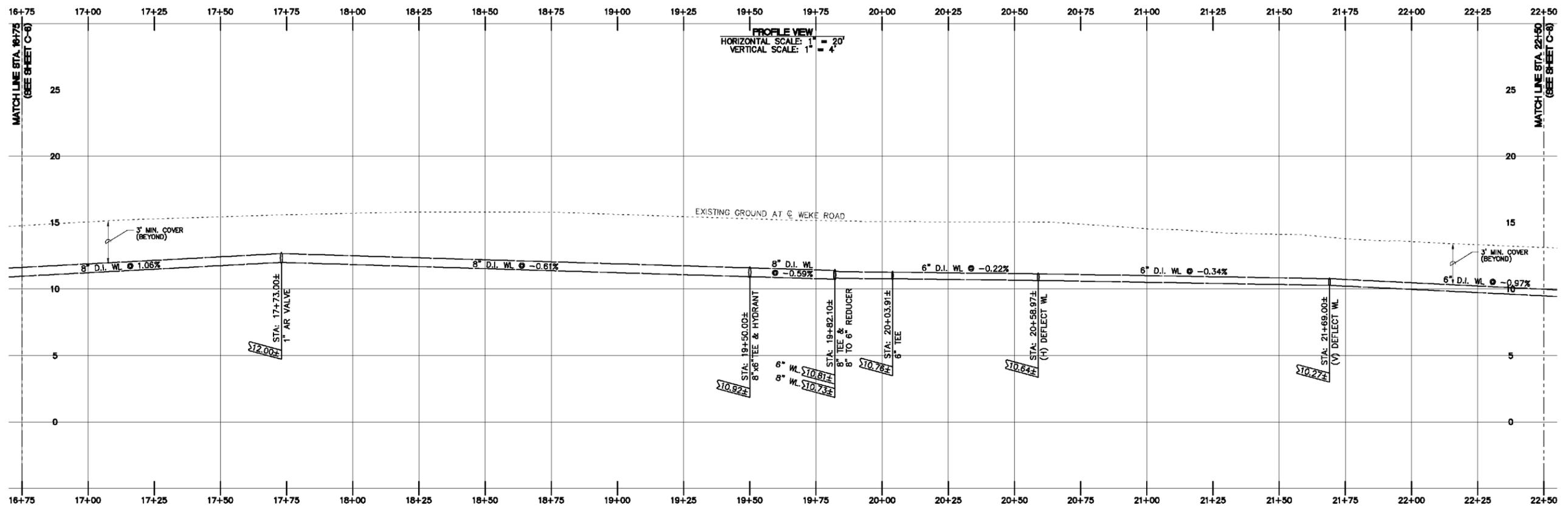
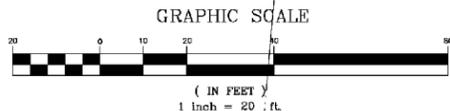
MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET
 DRAWN BY: MA, CG C-7
 DATE: 10/18/13 7 OF 19 SHEETS



- NOTES:**
- CONTRACTOR SHALL RESTORE ALL CURBS, DRIVEWAYS AND SWALES DAMAGED BY CONSTRUCTION, TO EQUAL OR BETTER CONDITION.
 - CONTRACTOR SHALL VERIFY ALL ELEVATIONS IN THE FIELD.
 - CONTRACTOR SHALL RELOCATE ALL EXIST. LATERALS AND METER BOXES THAT ARE IN PRIVATE PROPERTY TO THE COUNTY RIGHT-OF-WAY AND SHALL RECONNECT INTERIOR WATER LINES TO THE NEW LATERALS.
 - CONTRACTOR SHALL MAINTAIN THE EXIST. WATER SYSTEM IN SERVICE UNTIL SUCH TIME THAT THE NEW MAINS, SERVICE LATERALS AND SERVICE CONNECTIONS ARE INSTALLED, TESTED, CHLORINATED, FLUSHED AND THE EXIST. SERVICES ARE TRANSFERRED TO THE NEW SYSTEM.
 - NO NIGHT WORK WILL BE ALLOWED WITHIN THE STATE HIGHWAYS RIGHT-OF-WAY (ROW) DURING THE PERIOD FROM SEPTEMBER 15 TO DECEMBER 15.

- UNDERGROUND UTILITY NOTES:**
- ALL VISIBLE UTILITY STRUCTURES HAVE BEEN LOCATED IN THE FIELD, HOWEVER, CONNECTION OF UNDERGROUND UTILITY LINES AS SHOWN ARE UNVERIFIED AND COMPILED FROM EXISTING DATA.
 - UNDERGROUND UTILITIES SHOWN HEREON ARE FOR INFORMATION ONLY, HAVING BEEN OBTAINED FROM THE BEST AVAILABLE SOURCES BUT FROM OTHERS NOT CONNECTED WITH THIS COMPANY, THEREFORE, NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INFORMATION.
 - CONTRACTOR TO VERIFY ONSITE, ACTUAL LOCATION & INVERT OF EXISTING UNDERGROUND UTILITIES.



SAKI SURVEYING AND MAPPING, INC.

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• CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS



EXPIRES: APRIL 30, 2014
THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

PROJECT:
CONSTRUCTION PLANS FOR PIPELINE
REPLACEMENT ALONG WEKE, ANAE,
MAHIMAHU AND HE'E ROADS
Tax Map Key: (4) 5-5-03,
(4) 5-5-04, and (4) 5-5-05
Hanalei, Kauai, Hawaii

CLIENT:
DEPARTMENT OF WATER
COUNTY OF KAUAI

**PLAN AND PROFILE
WEKE ROAD
STA. 16+75 TO 22+50**

APPROVED:

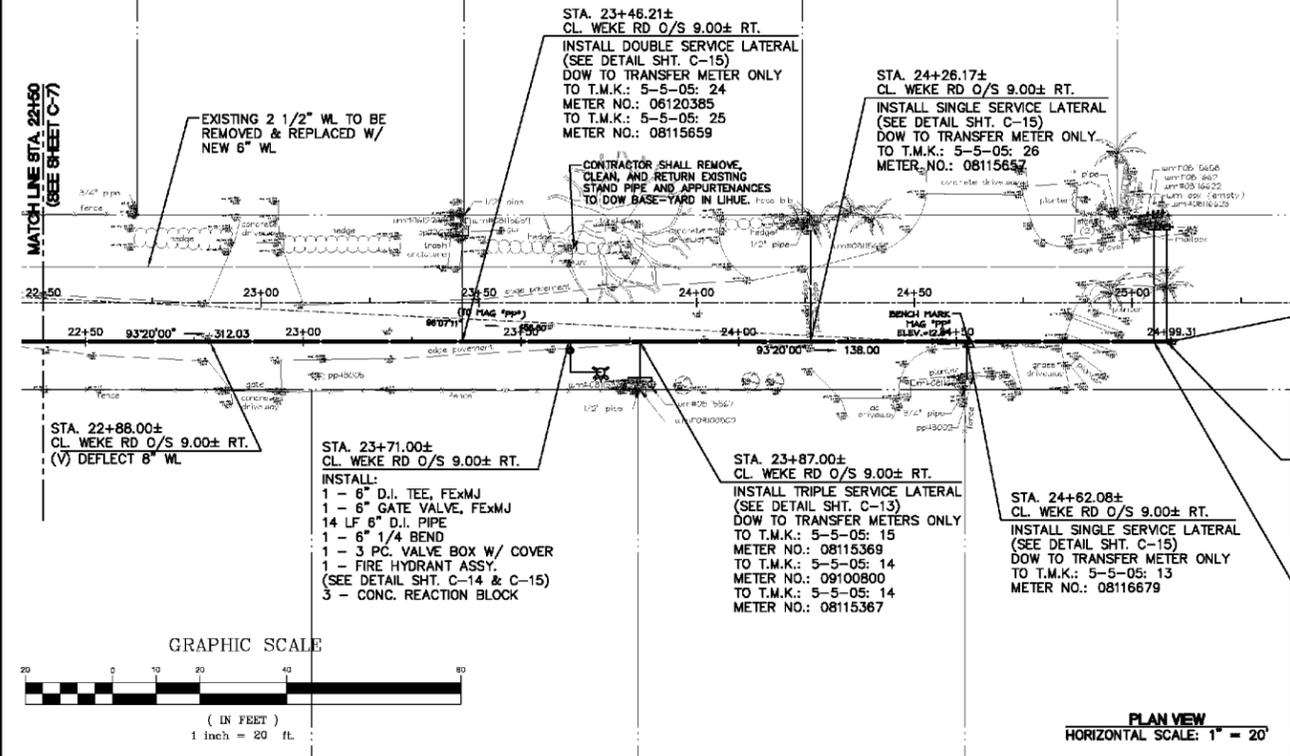
COUNTY ENGINEER, DEPT. OF PUBLIC WORKS,
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER,
COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET
DRAWN BY: MA, CG C-8
DATE: 10/18/13 B OF 19 SHEETS

5-5-06: 06
 Owners: Ronald H. Silva Sr. Trust and Jean P. Silva Trust

MATCH LINE STA. 22+50
 (SEE SHEET C-7)



PLAN VIEW
 HORIZONTAL SCALE: 1" = 20'

STA. 25+09.00±
 CL. WEKE RD O/S 9.00± RT.
 INSTALL:
 1 - 6" NIPPLE CAP & PLUG
 1 - 2-1/2" COPPER MALE ADAPTER
 1 - CONCRETE REACTION BLOCK
 1 - 2-1/2" CLEANOUT
 1 - TYPE X BOX AND COVER
 (SEE DETAIL SHT. C-16)

STA. 25+08.02±
 CL. WEKE RD O/S 9.00± RT.
 INSTALL DOUBLE SERVICE LATERAL
 (SEE DETAIL SHT. C-15)
 DOW TO TRANSFER METER ONLY
 TO T.M.K.: 5-5-05: 27
 METER NO.: N/A
 TO T.M.K.: 5-5-05: 27
 METER NO.: 08116623

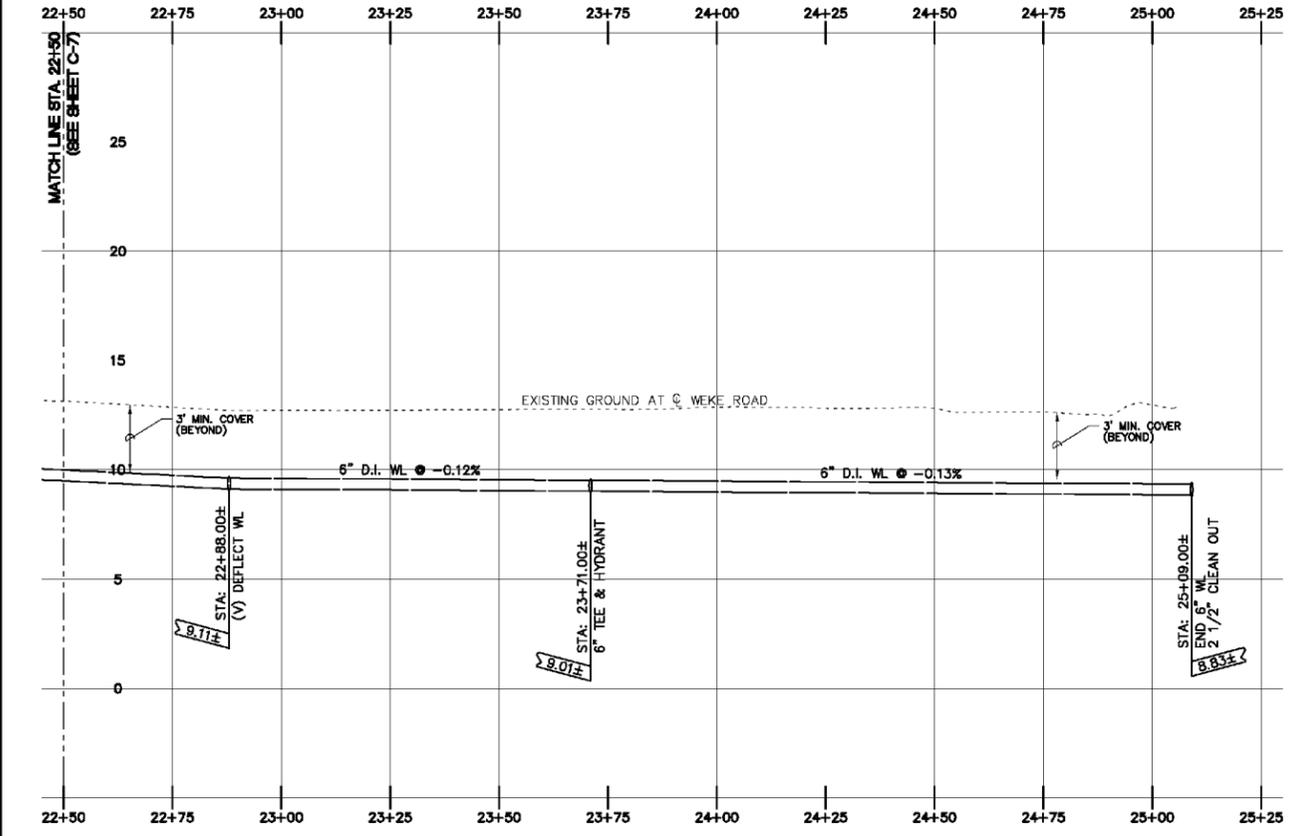
STA. 25+05.02±
 CL. WEKE RD O/S 9.00± RT.
 INSTALL TRIPLE SERVICE LATERAL
 (SEE DETAIL SHT. C-13)
 DOW TO TRANSFER METER ONLY
 TO T.M.K.: 5-5-05: 27
 METER NO.: 08116658
 TO T.M.K.: 5-5-05: 27
 METER NO.: 08116621
 TO T.M.K.: 5-5-05: 27
 METER NO.: 08116622

UNDERGROUND UTILITY NOTES:

1. ALL VISIBLE UTILITY STRUCTURES HAVE BEEN LOCATED IN THE FIELD, HOWEVER, CONNECTION OF UNDERGROUND UTILITY LINES AS SHOWN ARE UNVERIFIED AND COMPILED FROM EXISTING DATA.
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3. CONTRACTOR TO VERIFY ONSITE, ACTUAL LOCATION & INVERT OF EXISTING UNDERGROUND UTILITIES.

NOTES:

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2. CONTRACTOR SHALL VERIFY ALL ELEVATIONS IN THE FIELD.
3. CONTRACTOR SHALL RELOCATE ALL EXIST. LATERALS AND METER BOXES THAT ARE IN PRIVATE PROPERTY TO THE COUNTY RIGHT-OF-WAY AND SHALL RECONNECT INTERIOR WATER LINES TO THE NEW LATERALS.
4. CONTRACTOR SHALL MAINTAIN THE EXIST. WATER SYSTEM IN SERVICE UNTIL SUCH TIME THAT THE NEW MAINS, SERVICE LATERALS AND SERVICE CONNECTIONS ARE INSTALLED, TESTED, CHLORINATED, FLUSHED AND THE EXIST. SERVICES ARE TRANSFERRED TO THE NEW SYSTEM.
5. NO NIGHT WORK WILL BE ALLOWED WITHIN THE STATE HIGHWAYS RIGHT-OF-WAY (ROW) DURING THE PERIOD FROM SEPTEMBER 15 TO DECEMBER 15.



PROFILE VIEW
 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 4'

SAKI SURVEYING AND MAPPING, INC.

1810 Halekuna Street
 Lihue, Kauai, Hawaii 96766
 Ph. (808) 246-0625 Fax (808) 246-0229

CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS



EXPIRES: APRIL 30, 2014
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PROJECT:
CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, ANAE, MAHIMAHU AND HE'E ROADS
 Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05
 Hanalei, Kauai, Hawaii

CLIENT:
DEPARTMENT OF WATER COUNTY OF KAUAI

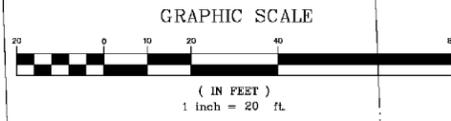
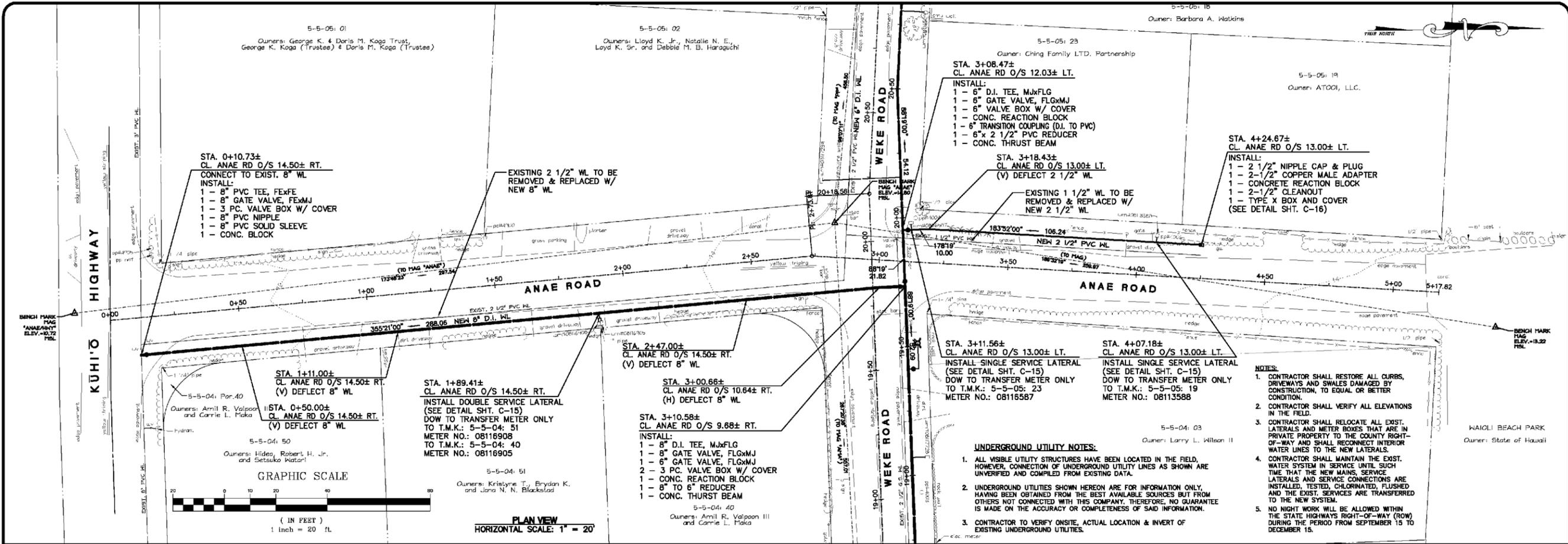
PLAN AND PROFILE WEKE ROAD STA. 22+50 TO 25+00

APPROVED

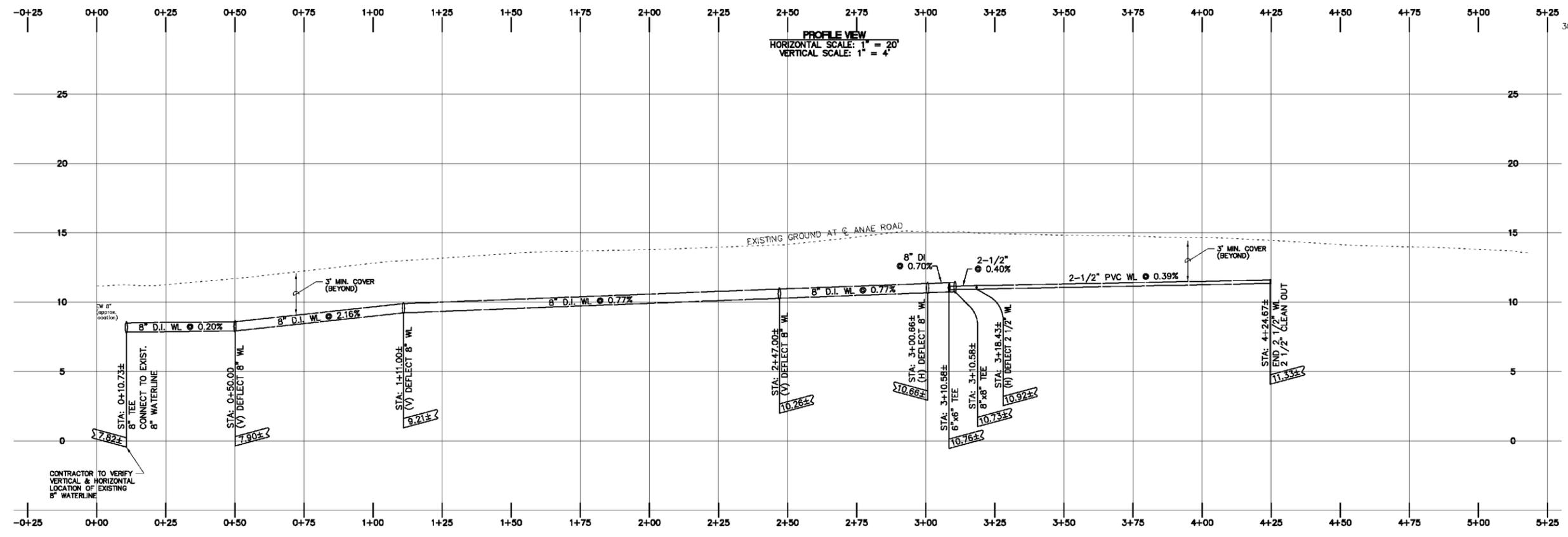
COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET
 DRAWN BY: MA
 DATE: 10/18/13 9 OF 18 SHEETS



PLAN VIEW
HORIZONTAL SCALE: 1" = 20'



PROFILE VIEW
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'

SAKI SURVEYING AND MAPPING, INC.
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Lihue, Kauai, Hawaii 96765
Ph. (808) 246-0625 Fax (808) 246-0229

CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS



EXPIRES: APRIL 30, 2014
THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

PROJECT:
CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, 'ANAE, MAHIMAHU AND HE'E ROADS
Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05
Hanalei, Kauai, Hawaii

CLIENT:
DEPARTMENT OF WATER COUNTY OF KAUAI

PLAN AND PROFILE ANAE ROAD

APPROVED

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET
DRAWN BY: MA, CG **C-10**
DATE: 10/18/13 10 OF 19 SHEETS

CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS



EXPIRES: APRIL 30, 2014
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

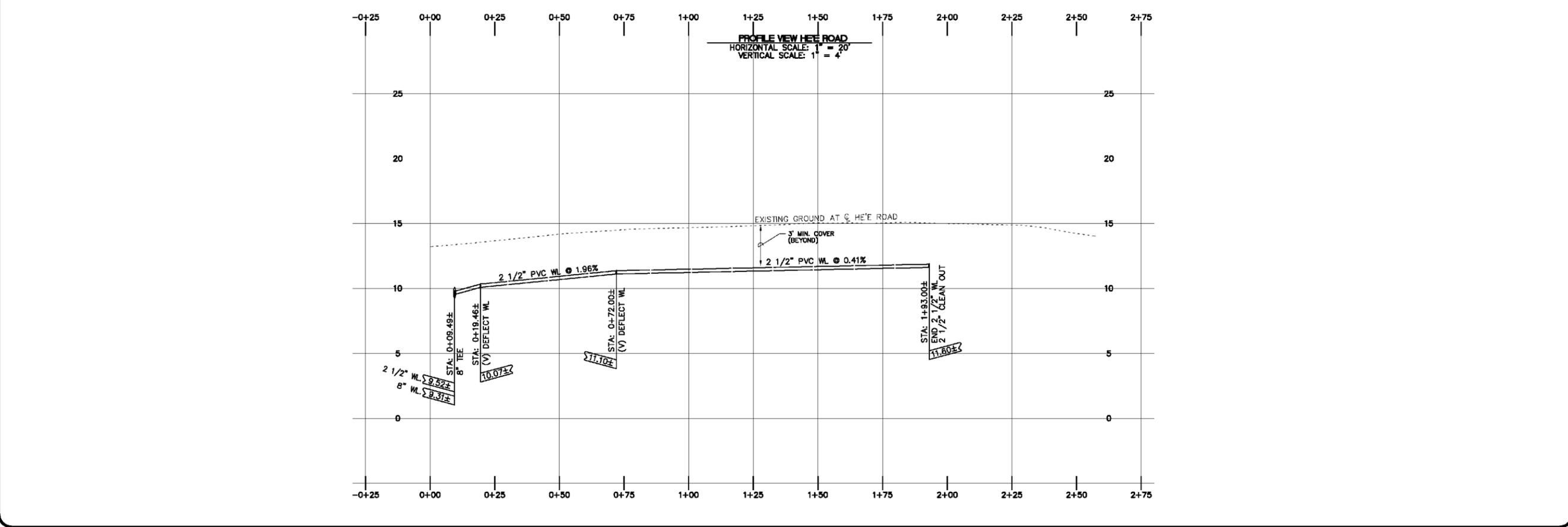
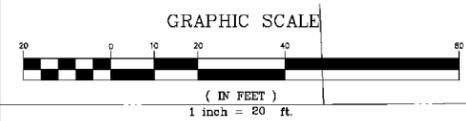
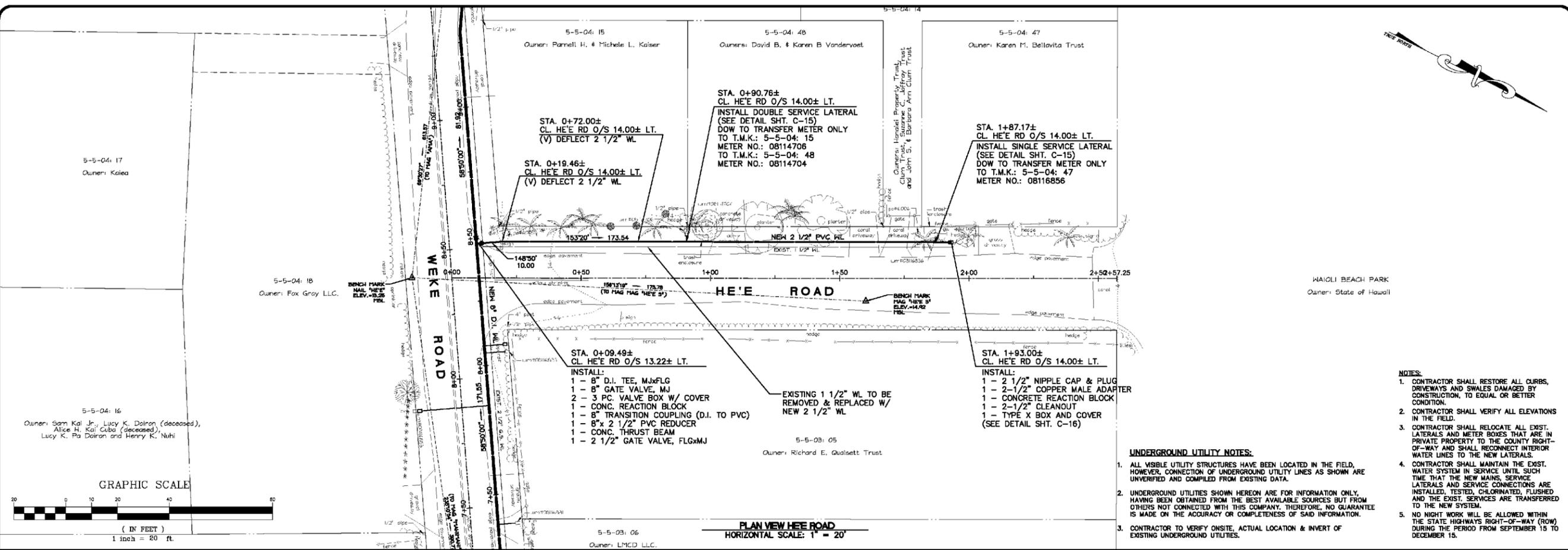
PROJECT: CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, ANAE, MAHIMAH AND HE'E ROADS
 Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05 Hanalei, Kauai, Hawaii

CLIENT: DEPARTMENT OF WATER COUNTY OF KAUAI

PLAN AND PROFILE HE'E ROAD

APPROVED
 COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE
 MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET
 DRAWN BY: MA, CG C-11
 DATE: 10/18/13 11 OF 19 SHEETS



UNDERGROUND UTILITY NOTES:

1. ALL VISIBLE UTILITY STRUCTURES HAVE BEEN LOCATED IN THE FIELD. HOWEVER, CONNECTION OF UNDERGROUND UTILITY LINES AS SHOWN ARE UNVERIFIED AND COMPILED FROM EXISTING DATA.
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3. CONTRACTOR TO VERIFY ONSITE, ACTUAL LOCATION & INVERT OF EXISTING UNDERGROUND UTILITIES.

NOTES:

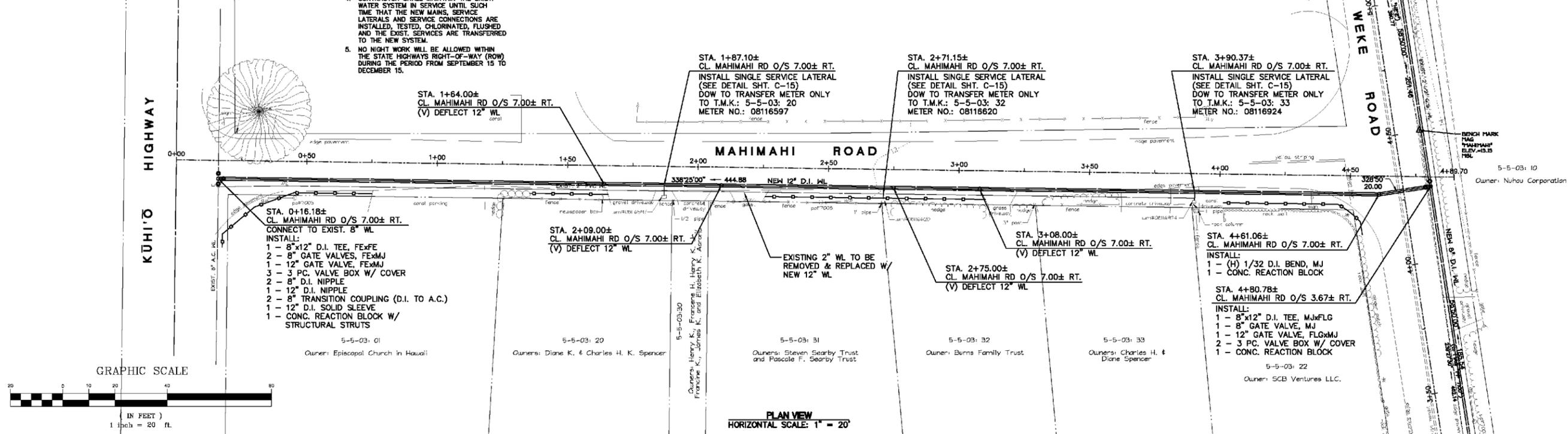
1. CONTRACTOR SHALL RESTORE ALL CURBS, DRIVEWAYS AND SWALES DAMAGED BY CONSTRUCTION, TO EQUAL OR BETTER CONDITION.
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5-5-03: 02
Owner: State of Hawaii

5-5-03: 39
Owner: Clemens & Penttila Trust

SAKI SURVEYING AND MAPPING, INC.
1610 Haleukana Street
Lihue, Kauai, Hawaii 96786
Ph. (808) 246-0625 Fax (808) 246-0229

CIVIL ENGINEERS • SURVEYORS • PLANNERS



REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS

WAYNE T. WADA
LICENSED PROFESSIONAL ENGINEER
No. 5281-C
HAWAII, USA

EXPIRES: APRIL 30, 2014
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PROJECT: CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, ANAE, MAHIMAHI AND HE'E ROADS
Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05 Hanalei, Kauai, Hawaii

CLIENT: DEPARTMENT OF WATER COUNTY OF KAUAI

PLAN AND PROFILE MAHIMAHI ROAD

APPROVED

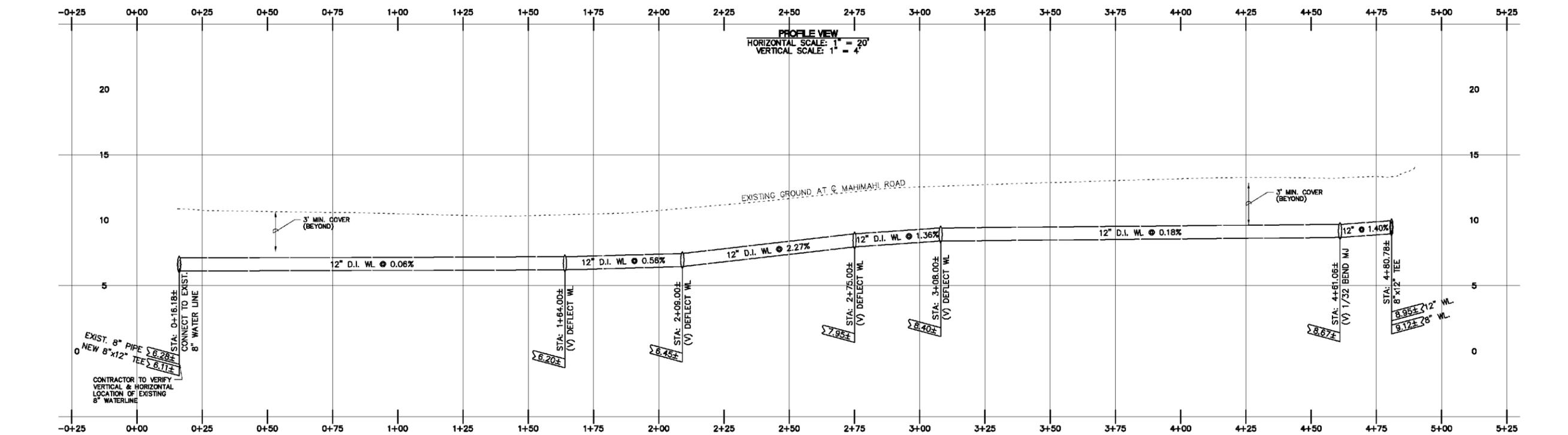
COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET

DRAWN BY: MA, CG C-12

DATE: 10/18/13 12 OF 19 SHEETS



Project No. 12-01
Drawing No. 12-01-C-12

POSTED SPEED (M.P.H.)*	SIGN SPACING (FEET)	TAPER LENGTH (T) (FEET)		LONGITUDINAL BUFFER SPACE (B) FEET	SPACING OF CONES OR DELINEATORS (FEET)**		
		W = 12' OR LESS	W = GREATER THAN 12'		TAPER	TANGENT	WORK AREA
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

NOTES:
W = WIDTH OF LANE, SHOULDER, OR OFFSET
*USE ADVISORY SPEEDS WHEN POSTED
**NOT APPLICABLE FOR TWO-LANE HIGHWAYS

CONSTRUCTION NOTES FOR TRAFFIC CONTROL PLAN
(revised May 26, 2013)

- The permittee shall make adjustments at intersections, driveways, bridges, structures, etc., to fit field conditions.
- Cones or delineators shall be extended to a point where they are visible to approaching traffic.
- Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
- Regulatory and warning signs within the construction zone that are in conflict with the Traffic Control Plans shall be removed or covered. All signs shall be restored upon completion of the work.
- Flaggers and/or police officers shall be in sight of each other or in direct communication at all times.
- When required by the issuing office, the permittee shall install a flashing arrow signal as shown on the Traffic Control Plans.
- Sign spacing (D), taper lengths (T), and spacing of cones or delineators shall be as shown in Table 1, unless otherwise noted on the Traffic Control Plans.
- All traffic lanes shall be a minimum of 10 feet wide.
- All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
- The backs of all signs shall be promptly removed or covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces), whenever the messages are not applicable or not in use.
- At the end of each day's work or as soon as the work is completed, the permittee shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation.
- Replace permanent pavement markings and traffic signs upon completion of each phase of work.
- Police Officers/Flaggers shall be present at all times.
- Contractor to provide access and/or directional signs to reroute pedestrian traffic.
- When required by the County of Kauai, an advertisement shall be placed in the newspaper by the Contractor for any lane closure. The advertisement shall be made one (1) week before any lane closure and shall contain the following information:
A) Map of the Traffic Change Limits;
B) Notice of starting and ending dates, times and duration;
C) Map to show Lane Closure;
D) Explanation of the Lane Closure, "NOTICE TO MOTORISTS & PEDESTRIANS".
The Contractor shall be required to have any lane closure announced daily over the radio two (2) days before starting date until the work is completed. Both advertisements in the newspaper and over the radio shall be paid for by the Contractor. The Contractor shall also notify the Hospitals, police, fire and ambulatory services of the lane closure.
- All workers within the County Right of Way who are exposed to either vehicles using the roadway or to construction equipment shall wear high visibility safety apparel that meets the performance class 2 or 3 requirements of ANSI/ISEA 107-2004. "Workers" are defined as people on foot whose duties place them within the County R/W, such as but not limited to construction and maintenance forces, equipment operators, survey crew, utility crews, responders to incidents (eg. EMT and firemen), and law enforcement personnel directing traffic, investigating accidents, handling lane closures and installing water service connections (roadway construction).
- The Contractor shall make every effort to minimize the use and duration of steel plates. All steel plates shall have a non-skid surfacing. The County may require the backfilling and patching of the trench due to the excessive use of steel plates.
- The Contractor shall provide an adequate non-slip bridging material, including shoring over trenches in pavement areas. The bridging shall be able to support all types of vehicular and pedestrian traffic.
- Where pedestrian walkways exist they shall be maintained in a safe and passable condition or other facilities for pedestrians shall be provided. Passages between walkways at intersections shall likewise be provided.

REVISION	DATE	DESCRIPTION	BY	APPROVED
REVISIONS				



EXPIRES: APRIL 30, 2014
THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

PROJECT:
CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, ANAE, MAHIMAHU AND HE'E ROADS
Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05
Hanalei, Kauai, Hawaii

CLIENT:
DEPARTMENT OF WATER COUNTY OF KAUAI

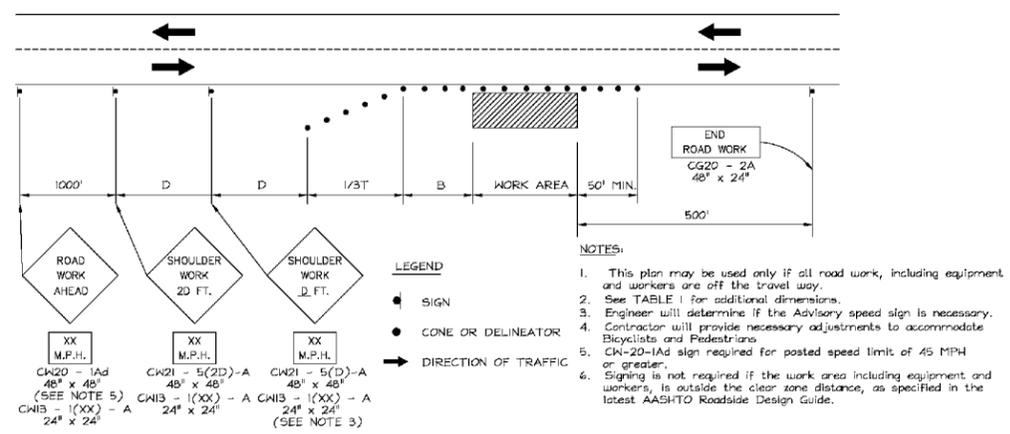
TRAFFIC CONTROL PLAN

APPROVED

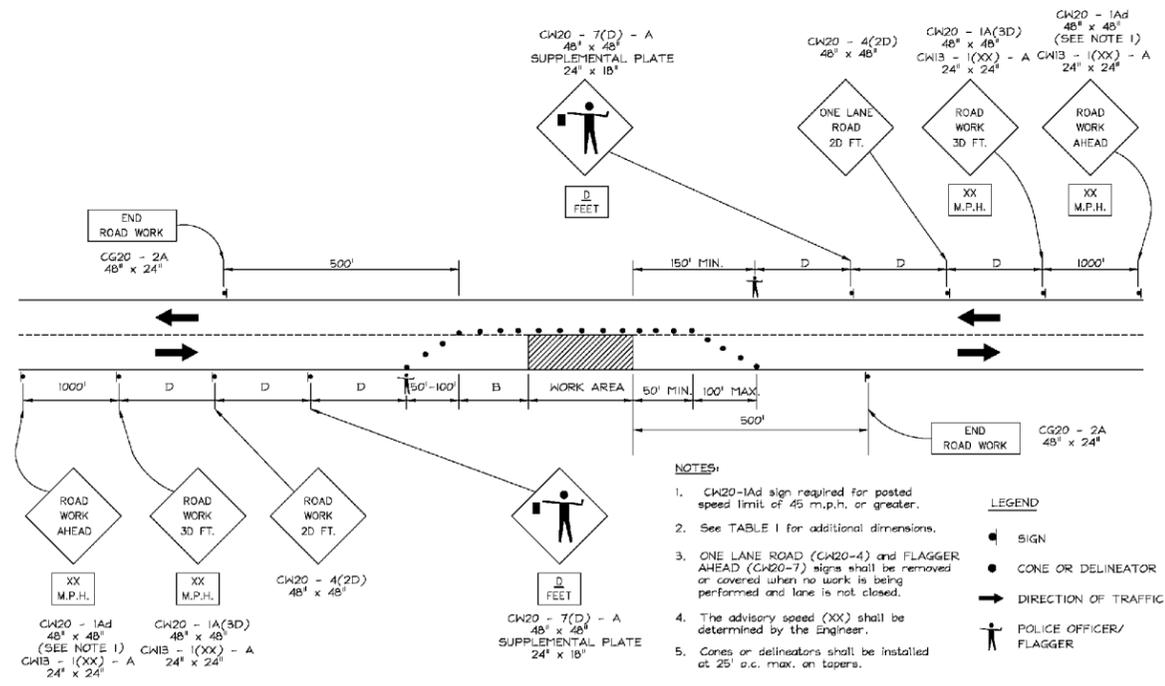
COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET
DRAWN BY: MA, CG C-18
DATE: 10/18/13 18 OF 19 SHEETS



WORKING ON SHOULDER OR ROADSIDE
FIGURE 1 - TRAFFIC CONTROL PLAN



ONE-LANE, TWO-WAY TRAFFIC TAPER
FIGURE 2 - TRAFFIC CONTROL PLAN

Project No.: 12-43
Drawing No.: 12-43CON1.dwg

REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS



EXPIRES: APRIL 30, 2014
THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

PROJECT:
CONSTRUCTION PLANS FOR PIPELINE REPLACEMENT ALONG WEKE, ANAE, MAHIMAHU AND HE'E ROADS
Tax Map Key: (4) 5-5-03, (4) 5-5-04, and (4) 5-5-05 Hanalei, Kauai, Hawaii

CLIENT:
DEPARTMENT OF WATER COUNTY OF KAUAI

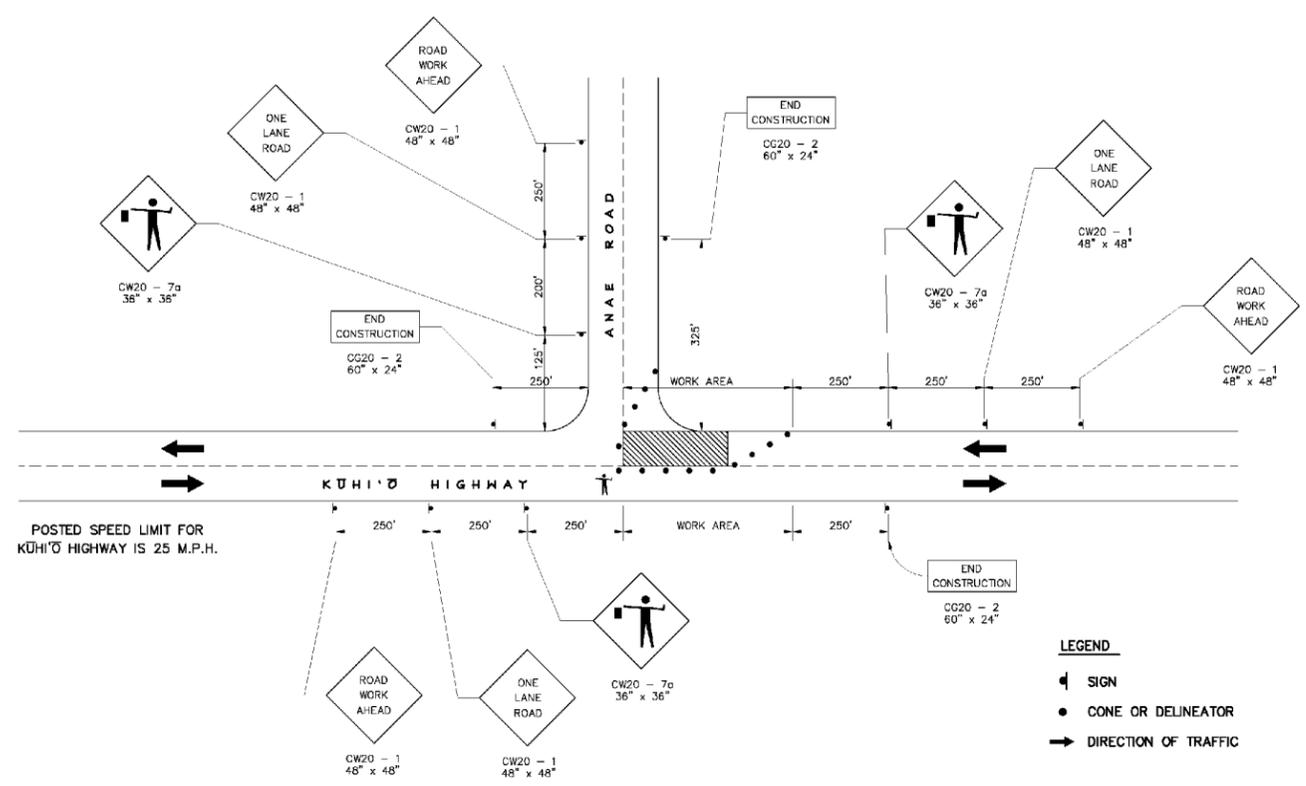
TRAFFIC CONTROL PLAN

APPROVED

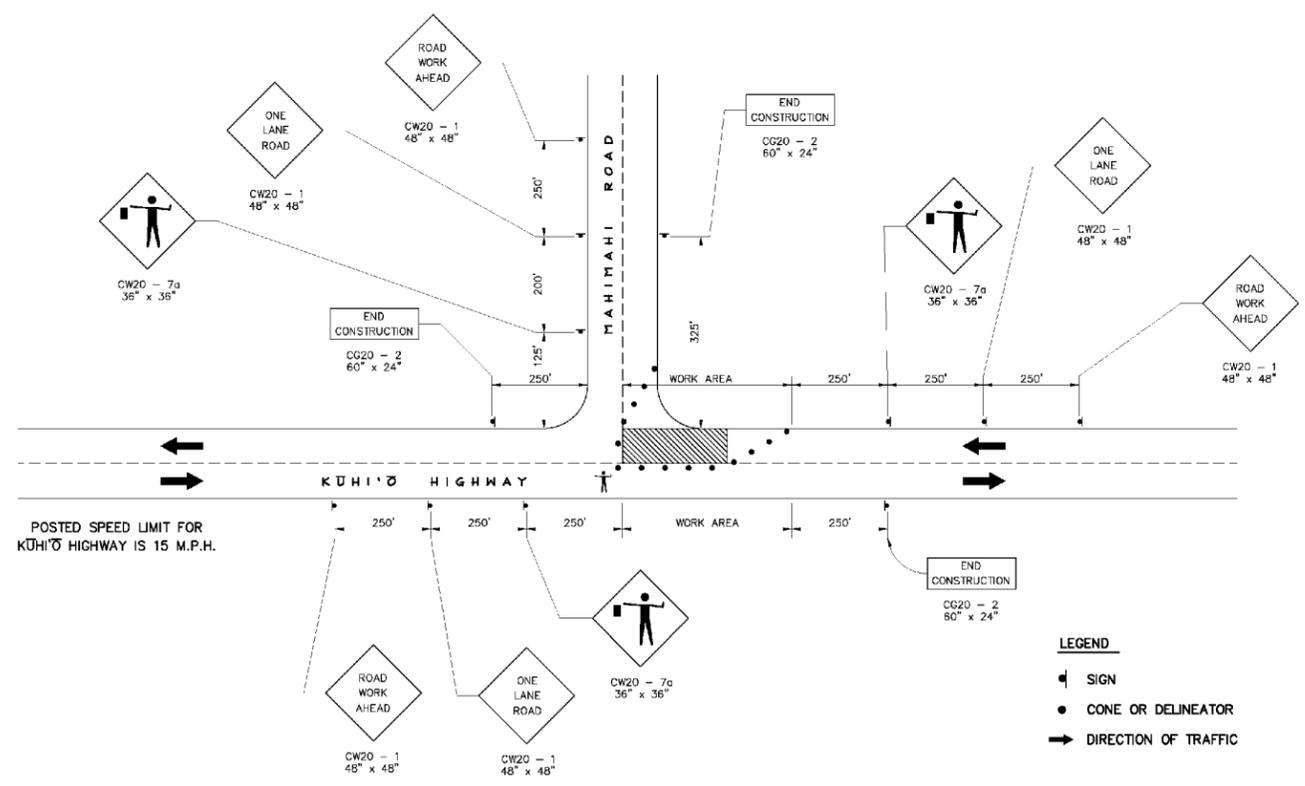
COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W) DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW	SHEET
DRAWN BY: MA, CG	C-19
DATE: 10/18/13	19 OF 19 SHEETS



ONE-LANE CLOSED, INTERSECTION OF KŪHIʻŌ HIGHWAY AND ANAE ROAD
FIGURE 3 - TRAFFIC CONTROL PLAN



ONE-LANE CLOSED, INTERSECTION OF KŪHIʻŌ HIGHWAY AND MAHIMAHU ROAD
FIGURE 4 - TRAFFIC CONTROL PLAN

Project No.: 12-43
Drawing No.: 12-43CCN1.dwg

B. CLIMATE

Existing Conditions: Kauai has a mild, semitropical climate. Owing to the marine influence and the prevailing northeast tradewinds, there is very little diurnal or seasonal variation in temperature.

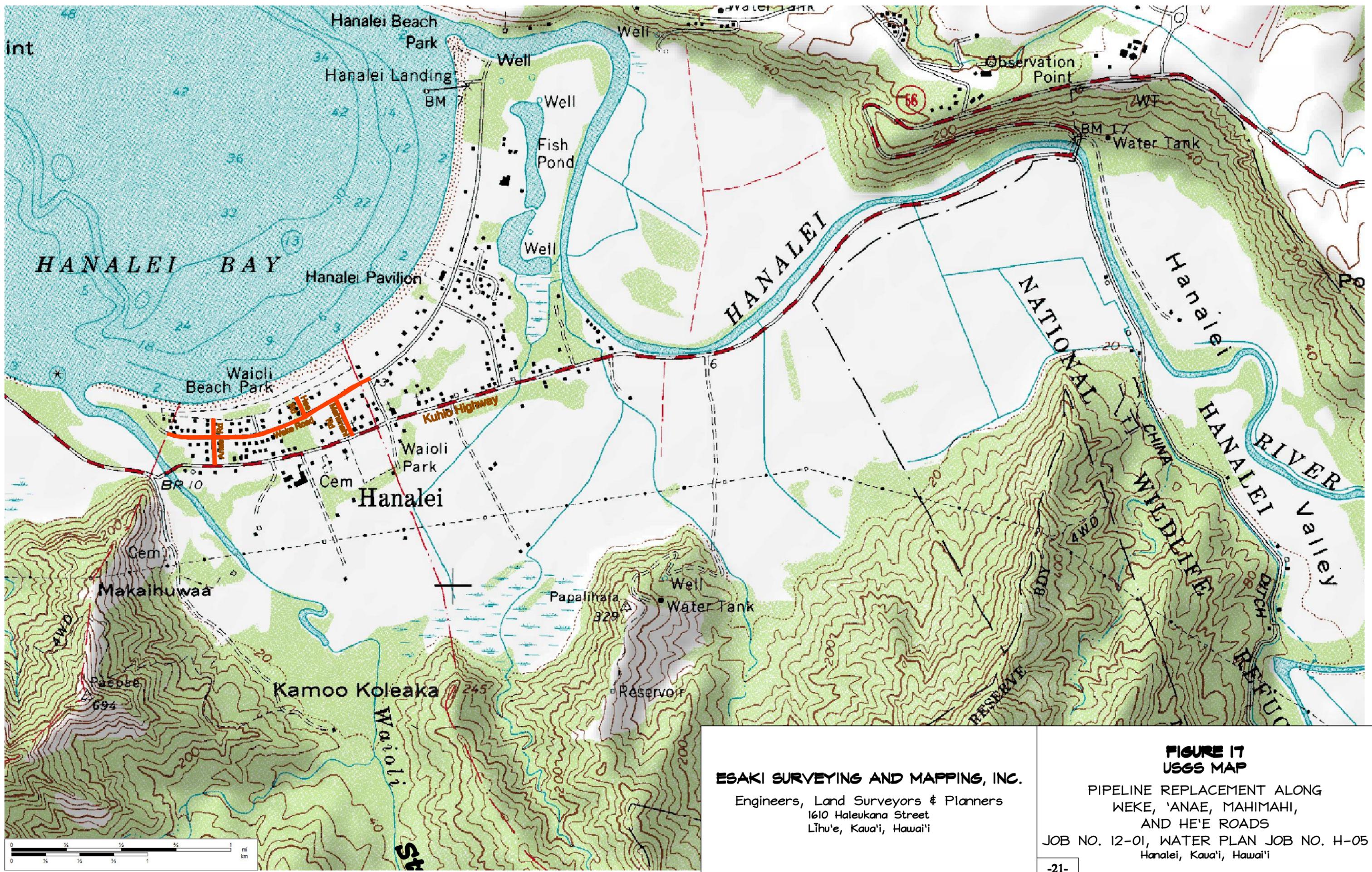
For Hanalei, the annual rainfall amounts to 37 inches, with the maximum average precipitation occurring in December. The average high temperature is about 81 degrees Fahrenheit and the average low temperature is 70 degrees Fahrenheit. On average, the warmest month is August and the average coolest month is January.

Potential Impacts and Mitigative Measures: The project will not affect macro or micro weather conditions.

C. GEOLOGY, TOPOGRAPHY AND SOILS

Existing Conditions: Kauai is the fourth largest island in the Hawaiian group and considered to be one of the oldest geologically. The island is volcanic in origin, and in general geological terms, is described as a dissected basaltic dome of a single large shield volcano. Kauai was formed by the passage of the Pacific plate over the Hawai'i hotspot, generating two major lava flows: the Waimea volcanic series and the Kōloa volcanic series. The rocks on Kaua'i are all volcanic, except for minor amounts of sediments derived from volcanic rocks by erosion, and a narrow, discontinuous fringe of calcareous reef and beach deposits.

Ground elevation ranges from a high of 14 feet to a low of 10 feet above mean sea level for the Weke, `Anae, He`e, and Mahimahi Road project sections. Cross slope is minimal. See Figure 17 for USGS Map.



ESAKI SURVEYING AND MAPPING, INC.
 Engineers, Land Surveyors & Planners
 1610 Haleukana Street
 Līhu'e, Kaua'i, Hawai'i

FIGURE 17
USGS MAP
 PIPELINE REPLACEMENT ALONG
 WEKE, 'ANAE, MAHIMAHI,
 AND HE'E ROADS
 JOB NO. 12-01, WATER PLAN JOB NO. H-05
 Hanalei, Kaua'i, Hawai'i

The soils of Kauai have developed primarily from volcanic materials and have concentrated iron and aluminum in the profiles. The quantities of silica and bases are low, particularly in the high rainfall areas, due to the leaching of these materials. According to the U.S. Dept. of Agriculture (USDA), Natural Resources Conservation Service, the soils in the project area are made up of beach sand, Mokuleia fine sandy loam and Mokuleia clay loam (see Figure 18). The Mokuleia series consist of well drained soils that formed in recent alluvium deposited over coral sand. Mokuleia soils are on coastal plains and have slopes of 0 to 2 percent; they are well drained soils with very slow runoff and moderate permeability.

Potential Impacts and Mitigative Measures: Since the site is relatively flat and minimum grading will be required, impacts occurring on the physical terrain from development of the project site are expected to be minimal. To minimize soil erosion during the construction process, erosion control measures will be designed and implemented in accordance with applicable governmental regulations.

D. HYDROLOGY

Existing Conditions: The State Department of Land and Natural Resources (DLNR), Commission on Water Resource Management (CWRM) has established ground-water hydrologic units to provide a consistent basis for managing ground water resources. The units are primarily determined by subsurface conditions. In general, each island is divided into regions; each region is comprised of smaller sub-regions (see Figure 19). The proposed project site is located within the Hanalei region, in the Hanalei sub-region. The CWRM lists the Hanalei sub-region as having a sustainable yield of 34 million gallons per day.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: UTM Zone 4N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Island of Kauai, Hawaii
 Survey Area Data: Version 6, Dec 31, 2006

Date(s) aerial images were photographed: Data not available.

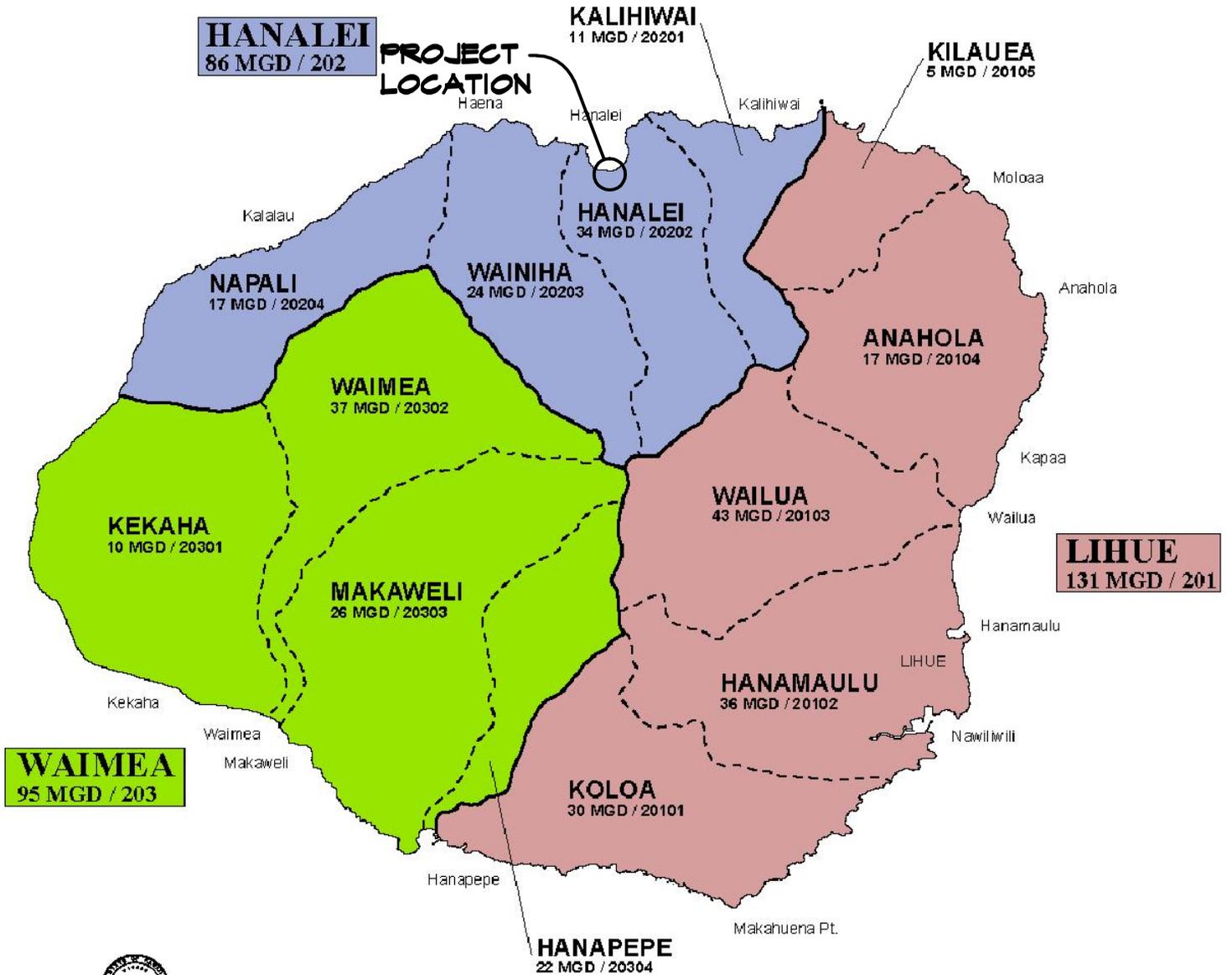
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



SYMBOL	DESCRIPTION
BS	Beaches
Mr	Mokuleia fine sandy loam
Mta	Mokuleia clay loam (poorly drained variant)

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FIGURE 18
SOILS MAP
 PIPELINE REPLACEMENT ALONG
 WEKE, 'ANAE, MAHIMAHI,
 AND HE'E ROADS
 JOB NO. 12-01, WATER PLAN JOB NO. H-05
 Hanalei, Kaua'i, Hawai'i



COMMISSION ON
WATER RESOURCE MANAGEMENT

ISLAND OF KAUAI

TOTAL = 312 MGD

HYDROLOGIC UNITS
Sustainable Yield / Aquifer Code

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FIGURE 19 GROUND WATER HYDROLOGIC UNITS

PIPELINE REPLACEMENT ALONG
WEKE, 'ANAE, MAHIMAHU,
AND HE'E ROADS
JOB NO. 12-01, WATER PLAN JOB NO. H-05
Hanalei, Kaua'i, Hawai'i

There are no wetlands within the project area (see Figure 20), but there are wetlands in the vicinity of project area which can be identified as:

- Estuarine E1UBL: estuarine system which encompasses 2.86 acres, it is a subtidal subsystem (these habitats are continuously submerged substrate) with an unconsolidated bottom and is permanently flooded with tidal water. The estuarine system describes deepwater tidal habitats and adjacent tidal wetlands that are influenced by water runoff from and often semi-enclosed by land; they are located along low-energy coastlines and they have variable salinity.
- Marine M2USP: marine system that encompasses 24.35 acres, it's an intertidal subsystem (defined as the area from extreme low water to extreme high water and associated splash zone) with an unconsolidated shore and tidal water floods the land surface less often than daily. The marine system describes open ocean and high energy coast lines with salinities exceeding 30 parts per thousand and little or no dilution except outside the mouths of estuaries.

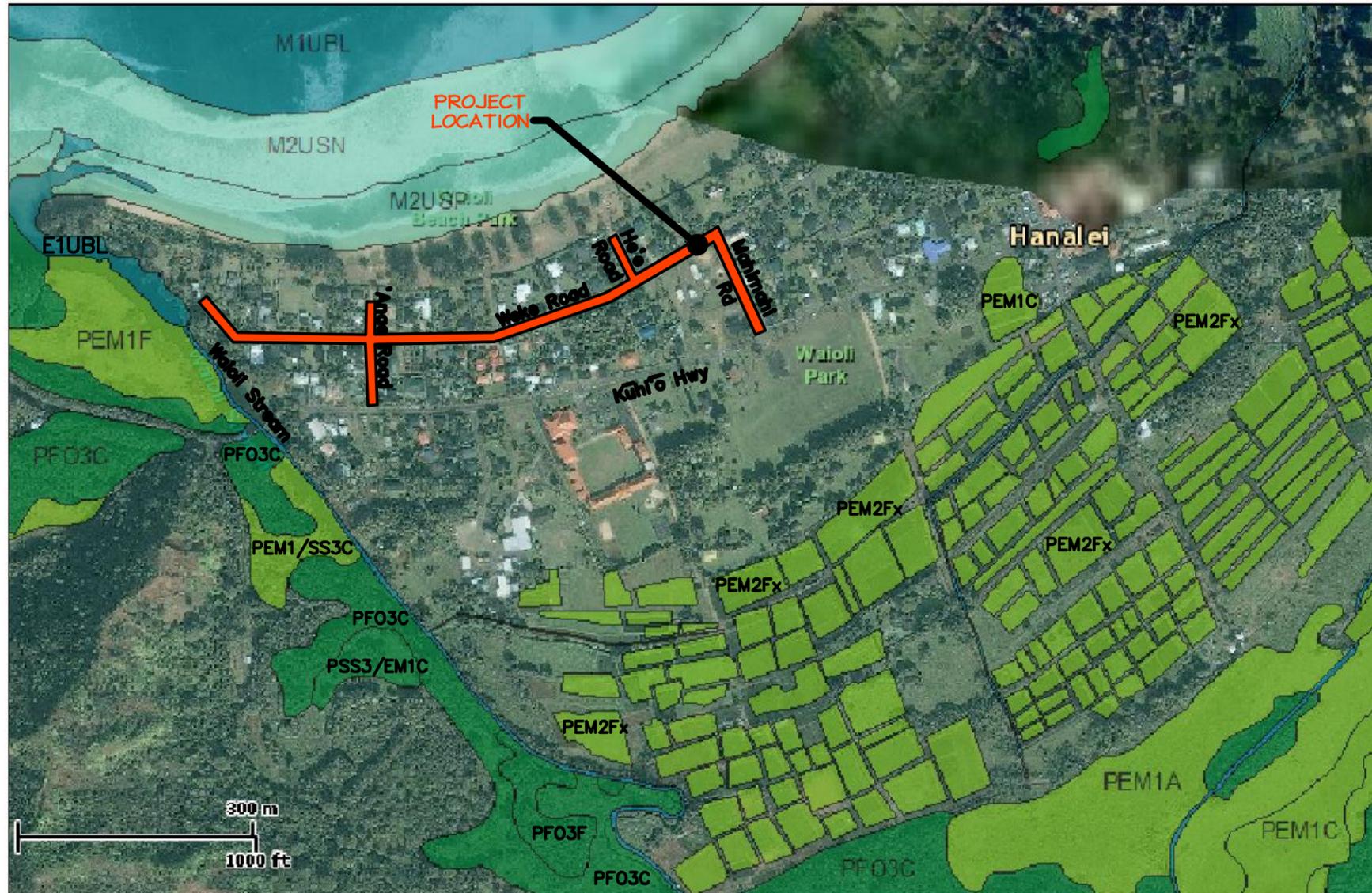
The closest marine water to the project site is Hanalei Bay, and the closest inland water is Waioli Stream. According to the State Dept. of Health, Office of Environmental Planning, these inland and marine waters are classified as:

- Hanalei Bay: is classified as Marine Water Class AA. According to the Classification of Water uses in Hawaii (HAR 11-54-3), it is the objective of Class AA waters that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions. To the extent practicable, the wilderness character of these areas shall be protected.



U.S. Fish and Wildlife Service National Wetlands Inventory

Jun 8, 2012



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

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FIGURE 20 WETLANDS MAP

PIPELINE REPLACEMENT ALONG
WEKE, 'ANA'E, MAHIMAHU,
AND HE'E ROADS

JOB NO. 12-01, WATER PLAN JOB NO. H-05
Hanalei, Kauai, Hawaii

- Waioli Stream: is classified as Inland Water Class 2. According to the Classification of Water uses in Hawaii (HAR 11-54-3), the objective of Class 2 waters is to protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation. The uses to be protected in this class of waters are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters.

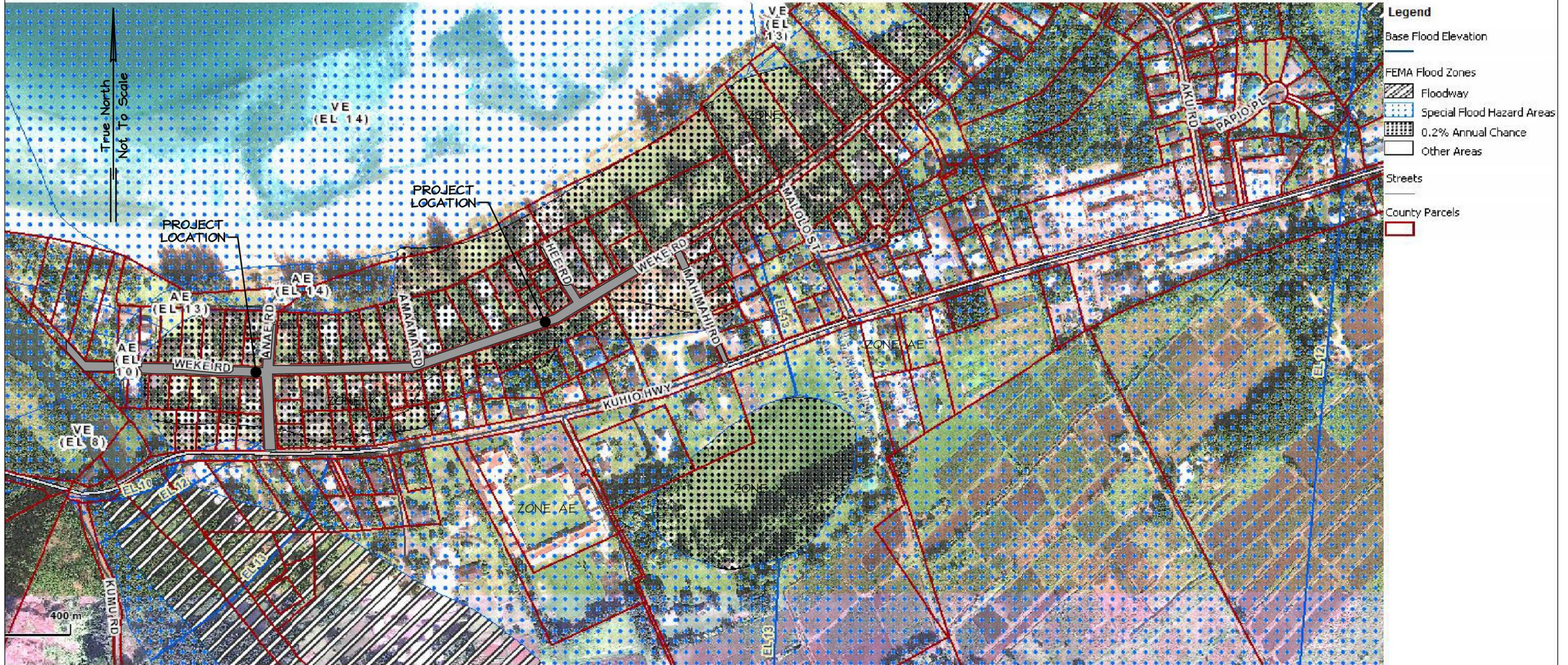
Proposed Actions: Trenching and backfilling along an existing roadway to install a pipeline. Removal of existing waterlines.

Potential Impacts and Mitigative Measures: Most of the improvements will occur within already paved areas. Best Management Practices (BMP's) shall be provided at all times to the maximum extent practicable to prevent discharge of pollutants, including sediment and contaminants from the construction site to streams, watercourses, natural areas and the property of others. As a result, no direct impacts on ground, surface and coastal waters should occur.

All discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, will comply with the State's Water Quality Standards (HAR, Chapter 11-54).

E. FLOOD HAZARD AND DRAINAGE

Existing Conditions: Weke, `Anae, Mahimahi, and He`e Roads are within the flood zones designated as "Zone AE" and "Zone X" on Kaua`i County's Flood Insurance Rate Map dated September 16, 2005 (see Figure 21).



- Zone AE Base Flood Elevations determined.
- Zone X Other Flood Areas.
- Zone VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

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**FIGURE 21
 FLOOD ZONES MAP**

PIPELINE REPLACEMENT ALONG
 WEKE, 'ANAE, MAHIMAHI,
 AND HE'E ROADS
 JOB NO. 12-01, WATER PLAN JOB NO. H-05
 Hanalei, Kauai, Hawaii

Zone AE is a special flood hazard area subject to flooding by the 1% annual chance flood. Zone X is defined as “Other flood areas” which include 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.

The subject property is located within the tsunami evacuation zone, see Figure 22 for the Tsunami Evacuation Zone map. The evacuation zone is a guideline and should be considered the minimum safe evacuation distance, if possible, it is recommended to remain at least 100 feet away from inland waterways and marinas connected to the ocean due to wave surges and possible flooding.

Proposed Actions: Trenching and backfilling along an existing roadway to install a pipeline. Removal of existing waterlines.

Potential Impacts and Mitigative Measures: There will be no affect the base flood elevation and no direct impacts on drainage should occur.

F. FLORA AND FAUNA

Existing Conditions: The project site is an existing roadway devoid of any flora. There is vegetation along the roadway which includes the following: grassy lawns, ironwood hedges, hibiscus hedges, palm trees, coconut trees, mock orange hedges, panax hedges, ginger, ti plants, lilies, naupaka hedges, octopus trees, plumeria trees, Norfolk pines, croton, song of India, bougainvillea hedges, Poinciana trees, bottlebrush trees, sea mango trees and shower trees. There are no rare, threatened or endangered vertebrate animal species known to exist on the project site.

Proposed Actions: Trenching and backfilling along an existing roadway to install a pipeline. Removal of existing waterlines.

Potential Impacts: Adverse impacts are not anticipated. The proposed project is not expected to have a significant impact on flora or fauna as the site consists of an existing roadway located within a residential area.

G. HISTORIC SITES

Existing Conditions: The subject site was previously excavated and a roadway constructed. An Archeological Inventory Survey of the project site was conducted, to determine the presence/absence of archaeological features or deposits within surface and subsurface contexts and if present, to evaluate their significance.

Pedestrian survey and subsurface investigations of the project area failed to yield evidence for Traditional Hawaiian cultural material, subsurface features, artifacts, or burials in the 13 trenches that were excavated. The primary reason for the absence of significant cultural materials may be related to extensive development in the area, which may have removed or severely displaced any former cultural materials in the area. Due to the results of no significant finding during the field investigation the Inventory Survey was reclassified as an Archeological Assessment document. The Archeological Assessment was prepared by Scientific Consultant Services Inc., dated November 2012 (see Section VII, Appendix A).

The Archeological Assessment did not lead to the documentation of any significant cultural materials or burials. Based on the findings of previous archaeological projects within the Hanalei area, there is strong evidence for pre-

Contact and Historic-period settlement in the area and may still contain significant sites with cultural materials and/or burials.

The Kauai General Plan contains a set of Heritage Resources Maps, these maps document important natural, scenic and historic features that are important to the County of Kaua'i and that are intended to be conserved. See Figure 23 for the Heritage Resource map for the North Shore Planning District.

Proposed Action: Re-excavation of portion of roadway to install a pipeline.

Potential Impacts and Mitigative Measures: Based on the findings, archeological monitoring will be provided during all ground altering activities associated with this project as recommended in the Archeological Assessment.

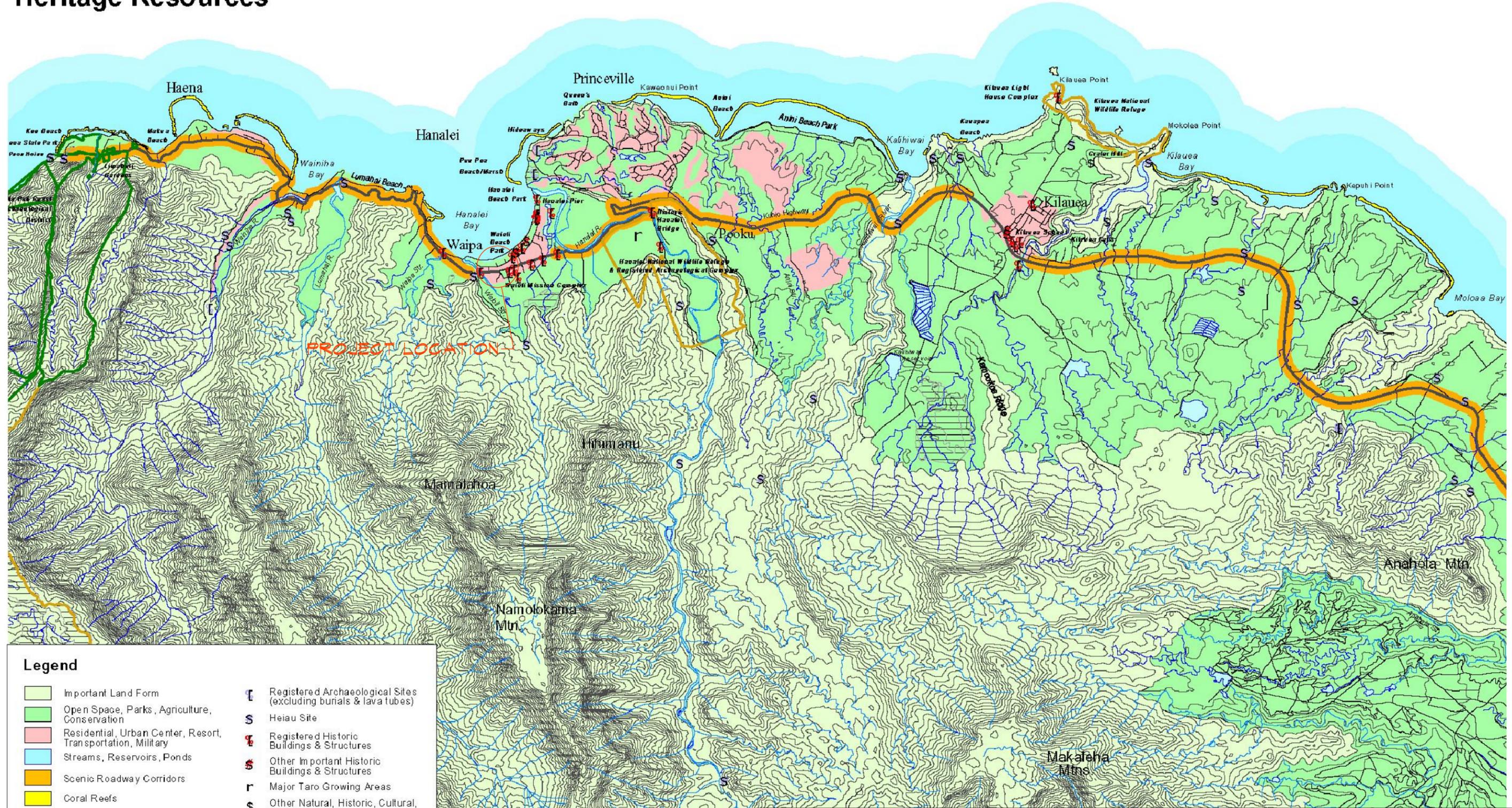
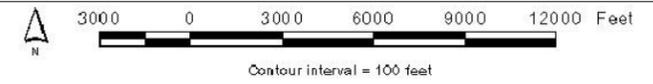
Should subsurface features or qualified burials be unearthed, work in the immediate area shall cease and the archeological monitor summoned to investigate the find. Applicant also will notify the County of Kaua'i Planning Department and the State Historic Preservation Officer. Disinterment of qualified gravesites shall comply with Chapter 6E H.R.S.

H. LAND USE CONTROLS

Existing Conditions: The property is classified as Urban by the State Land Use Commission, and is in the County Zoning Districts of Open and R-4 (see Fig. 24).

According to the State Land Use Commission, the Urban District generally includes lands characterized by "city-like" concentrations of people, structures and services. This District also includes vacant areas for future development. Jurisdiction of this district lies primarily with the respective counties. Generally, lot sizes and uses permitted in the district area are established by the respective county through ordinances or rules.

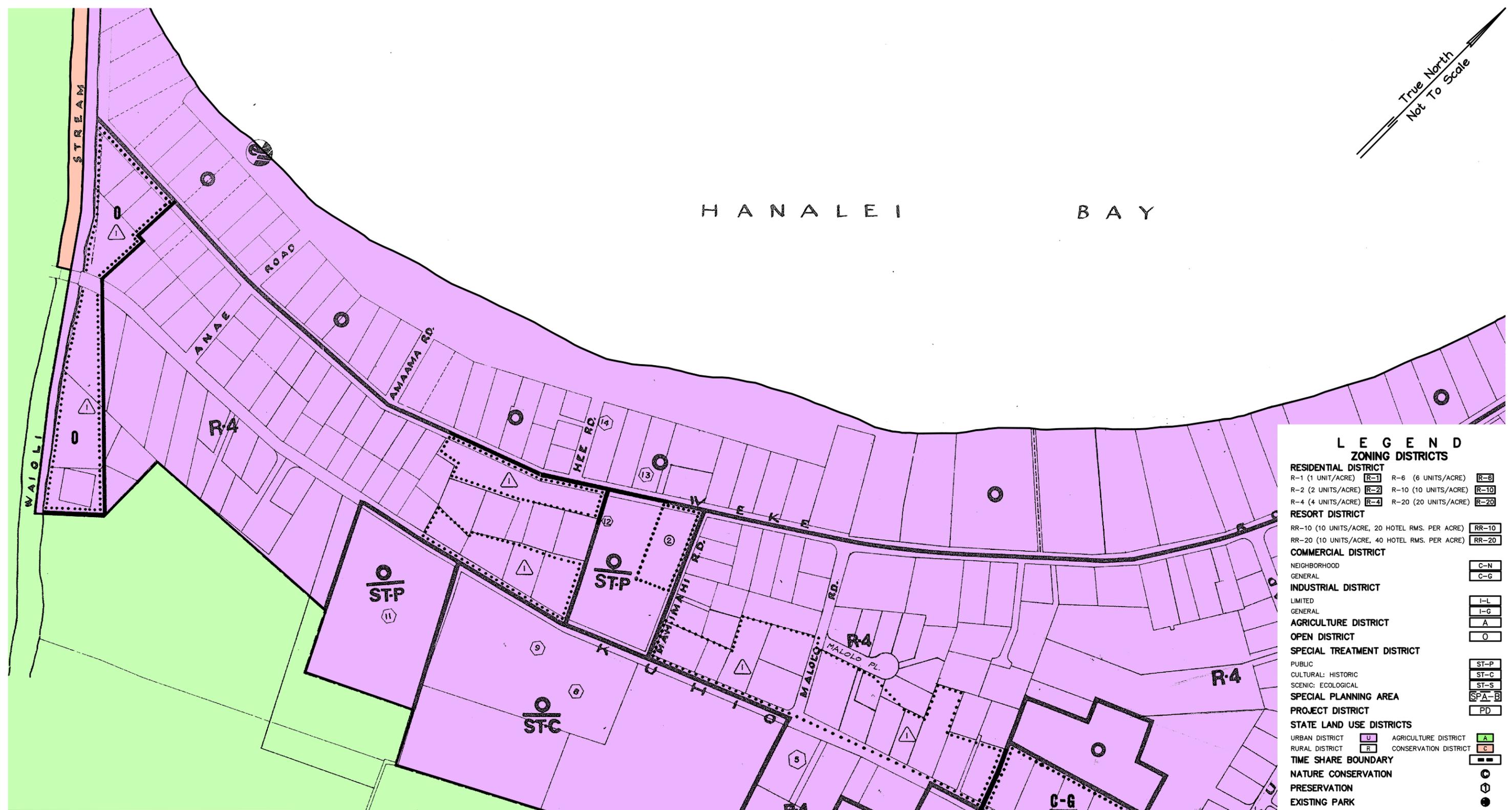
North Shore Planning District Heritage Resources



Legend			
	Important Land Form		Registered Archaeological Sites (excluding burials & lava tubes)
	Open Space, Parks, Agriculture, Conservation		Heiau Site
	Residential, Urban Center, Resort, Transportation, Military		Registered Historic Buildings & Structures
	Streams, Reservoirs, Ponds		Other Important Historic Buildings & Structures
	Scenic Roadway Corridors		Major Taro Growing Areas
	Coral Reefs		Other Natural, Historic, Cultural, Scenic Features
	Marshes		Special Streams
	Resource Parks & Sites		Streams
	Federal & State Natural Preserves		Small Boat Harbors/Ramps

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FIGURE 23
HERITAGE RESOURCE MAP
 PIPELINE REPLACEMENT ALONG
 WEKE, 'ANAE, MAHIMAHI,
 AND HE'E ROADS
 JOB NO. 12-01, WATER PLAN JOB NO. H-05
 Hanalei, Kauai, Hawaii



① Amended from Neighborhood Commercial (C-N) District to General Commercial (C-G) District by COUNCIL 1-10-77 Ordinance No. 297

② Amended from Tourist Commercial (T-C) District to Open/Special Treatment-Public (O/ST-P) District by COUNCIL 2-20-79 Ord. No. PM-27-79

⚠ Amendments resulting from the Adoption of the NORTH SHORE SPECIAL PLANNING AREA DEVELOPMENT PLAN by COUNCIL 6-10-85 Ord. No. 476

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FIGURE 24
ZONING MAP
 PIPELINE REPLACEMENT ALONG
 WEKE, ANAE, MAHIMAHU,
 AND HE'E ROADS
 JOB NO. 12-01, WATER PLAN JOB NO. H-05
 Hanalei, Kauai, Hawaii

The project area is located within the Special Management Area (SMA) and is subject to the County's SMA rules and regulations. For the purpose of the County's SMA rules and regulations, the installation of an underground utility line and appurtenant aboveground fixtures (less than 4 ft.) is not considered a development and is excluded from SMA permitting. See Figure 25 for the SMA map.

The Kauai General Plan contains a set of Land Use maps that depict the policy for long-range land uses and future growth. See Figure 26 for the Land Use map for the North Shore Planning District.

Proposed Action: The proposed use of the property will be consistent with the conditions of the surrounding area.

Potential Impacts: The proposed use should not conflict with the zoning of nearby properties.

I. AIR QUALITY

Existing Conditions: Occasional dust is generated by local traffic.

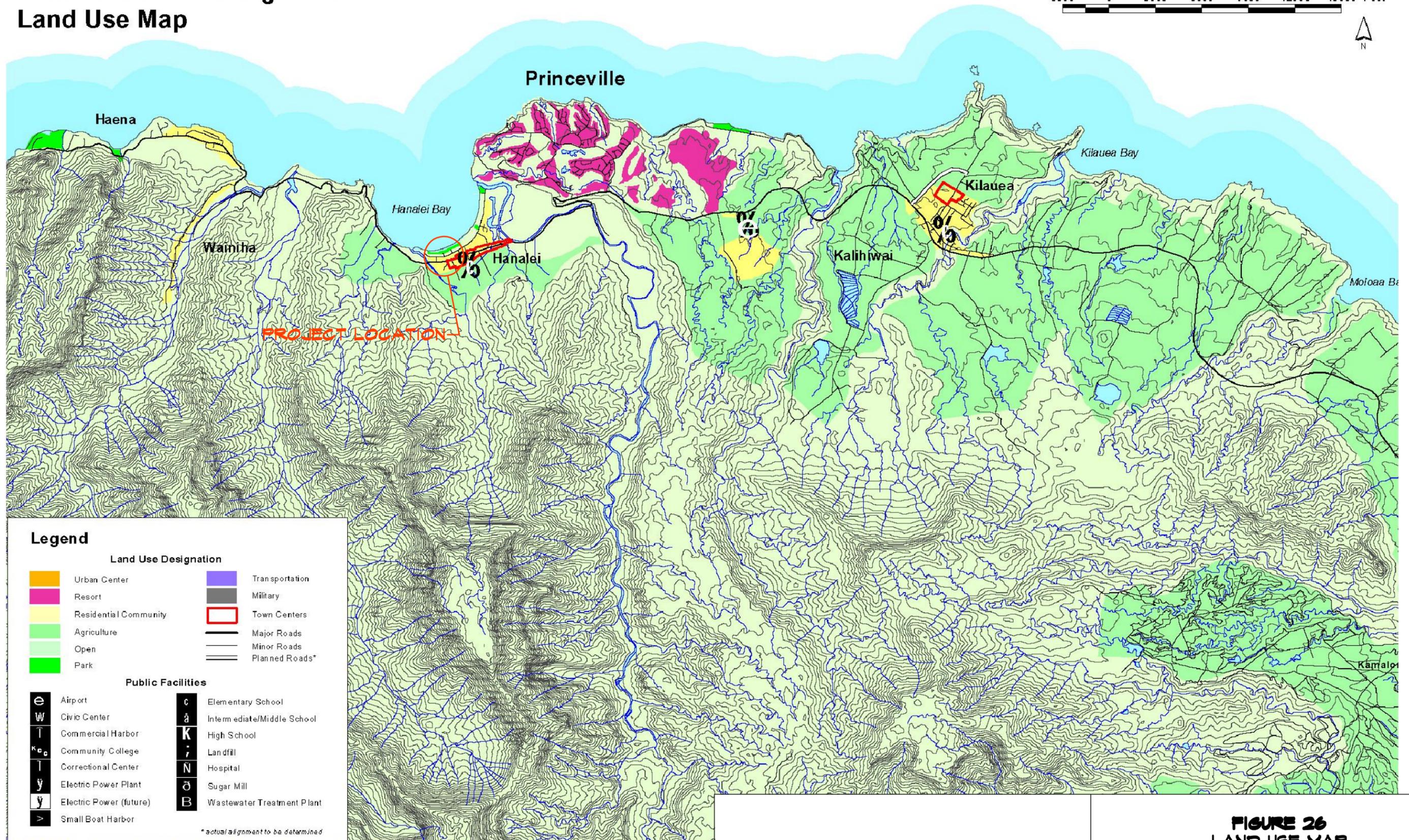
Potential Impacts and Mitigative Measures: Construction activities may result in short-term air quality impacts, including the generation of dust from soil excavation and emissions from construction vehicles and equipment.

To mitigate these impacts, all phases of excavation and construction will be required to comply with the Hawai'i Administrative Rules, §11-60.1-33 on Fugitive Dust and all applicable County ordinances.

To comply with the fugitive dust regulations, the Department of Water will require that the Contractor implement adequate dust control measures, such methods include, but are not limited to, the following:

North Shore Planning District Land Use Map

3000 0 3000 6000 9000 12000 15000 Feet



Legend

Land Use Designation

- | | | | |
|---|-----------------------|---|----------------|
|  | Urban Center |  | Transportation |
|  | Resort |  | Military |
|  | Residential Community |  | Town Centers |
|  | Agriculture |  | Major Roads |
|  | Open |  | Minor Roads |
|  | Park |  | Planned Roads* |

Public Facilities

- | | | | |
|---|-------------------------|---|----------------------------|
|  | Airport |  | Elementary School |
|  | Civic Center |  | Intermediate/Middle School |
|  | Commercial Harbor |  | High School |
|  | Community College |  | Landfill |
|  | Correctional Center |  | Hospital |
|  | Electric Power Plant |  | Sugar Mill |
|  | Electric Power (future) |  | Wastewater Treatment Plant |
|  | Small Boat Harbor | | |

*actual alignment to be determined

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FIGURE 26 LAND USE MAP

PIPELINE REPLACEMENT ALONG
WEKE, 'ANAE, MAHIMAHI,
AND HE'E ROADS
JOB NO. 12-01, WATER PLAN JOB NO. H-05
Hanalei, Kauai, Hawaii

- Planning different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment to areas of the least impact;
- Providing an adequate water source at the site prior to start-up of construction activities;
- Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Minimizing dust from shoulders and access roads;
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- Controlling dust from debris being hauled away from the project site. Also, controlling dust from daily operations of material being processed, stockpiled, and hauled to and from the facility.

Exhaust emissions from construction equipment and vehicles are not anticipated to significantly alter ambient air quality and can be minimized by proper operation and maintenance of all petroleum-fueled equipment. In addition, the prevailing winds can be expected to dilute and disperse exhaust emissions away from existing homes. At completion of the project, air quality for the existing residential community will revert to pre-construction levels.

J. NOISE

Existing Conditions: The property is currently being impacted by noise mainly from local traffic.

Proposed Actions: Noise levels are expected to increase once construction starts on the property. Maximum sound level would fall in the 85-96 dB(A) range with the latter generated by earth moving and pneumatic impact equipment. Noise should be most pronounced during site work followed by reductions in frequency and duration during actual construction and post construction phases.

Potential Impacts and Mitigative Measures: The project abuts an existing residential area and it is possible that residents may be disturbed by construction noises. Although noise cannot be eliminated entirely and may be thought of as a short-term deleterious consequence, the Contractor will be required to have his equipment equipped with mufflers. The hours of operation will also be regulated. If required, a Dept. of Health Community Noise Permit will be obtained. In the long run, it is anticipated that noises emanating from the completed project would be similar to that of the adjoining residential subdivision.

K. HOUSING

Potential Impacts and Mitigative Measures: According to the U.S. Census Bureau, Hanalei has a total of 336 housing units of which 55.4% are occupied. The median number of rooms is 4.5 and the median home value is \$1,000,000+. When completed, the proposed project will upgrade the water system in the Hanalei service area and will allow the area's landowners to have adequate storage capacity.

L. SOCIO-ECONOMIC CHARACTERISTICS

Existing Conditions: The project site is located within the Hanalei Census-Designated Place (CDP). A CDP can be described as a geographic entity within an unincorporated place identified by the United States Census Bureau for statistical purposes.

Demographic and other information was reviewed from the 2010 U.S Census; see Figure 23 for demographic characteristics. Based on the data shown in Figure 27, the Hanalei CDP has a slightly older population than the County. The median age for the Hanalei CDP was 44.9 years versus 41.3 years for the County.

The Hanalei CDP has a slightly different racial mix to the County, the White, and Asian communities do differ significantly in concentration when compared to the County. The percentages of family and nonfamily households are comparable to the County.

Potential Impacts: There will be no action that will affect the demographic characteristics of the Hanalei CDP.

M. PUBLIC UTILITIES AND SERVICES

1. Access:

Existing Conditions: Main access to the project site will be from Kūhi`ō Highway. Kūhi`ō Highway is a State Right of Way with a paved surface. There will be temporary inconvenience due to roadway excavation while installing the pipelines. This project will not have a permanent effect on the travelway access.

DEMOGRAPHIC CHARACTERISTICS				
SUBJECT	HANALEI CDP		KAUA'I COUNTY	
	Number	Percent	Number	Percent
Total population	450	100.0	67,091	100.0
AGE				
Under 5 years	25	5.6	4,281	6.4
5 to 9 years	26	5.8	4,179	6.2
10 to 14 years	20	4.4	4,055	6.0
15 to 19 years	15	3.3	4,146	6.2
20 to 24 years	22	4.9	3,472	5.2
25 to 29 years	29	6.4	4,161	6.2
30 to 34 years	25	5.6	3,980	5.9
35 to 39 years	39	8.7	4,018	6.0
40 to 44 years	25	5.6	4,354	6.5
45 to 49 years	32	7.1	4,849	7.2
50 to 54 years	35	7.8	5,390	8.0
55 to 59 years	44	9.8	5,483	8.2
60 to 64 years	43	9.6	4,738	7.1
65 to 69 years	21	4.7	3,234	4.8
70 to 74 years	8	1.8	2,113	3.1
75 to 79 years	10	2.2	1,632	2.4
80 to 84 years	12	2.7	1,390	2.1
85 years and over	19	4.2	1,616	2.4
Median age (years)	44.9	(X)	41.3	(X)
RACE				
White	272	60.4	22,159	33.0
Black or African American	0	0.0	278	0.4
American Indian and Alaska Native	3	0.7	254	0.4
Asian	61	13.6	21,016	31.3
Native Hawaiian and Other Pacific Islander	34	7.6	6,060	9.0
Some Other Race	3	0.7	608	0.9
Two or More Races	77	17.1	16,716	24.9
HOUSEHOLDS BY TYPE				
Total households	186	100.0	23,240	100.0
Family households (families)*	115	61.8	16,147	69.5
Nonfamily households*	71	38.2	7,093	30.5
Average household size	2.42	(X)	2.84	(X)
Average family size*	2.87	(X)	3.31	(X)
HOUSING OCCUPANCY AND TENURE				
Total housing units	336	100.0	29,793	100.0
Owner-occupied housing units	92	27.4	13,968	46.9
Renter-occupied housing units	94	28.0	9,272	31.1
Vacant housing units	150	44.6	6,553	22.0
<p>"Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households.</p> <p>"Nonfamily households" consist of people living alone and households which do not have any members related to the householder.</p>				
Source: U.S. Census Bureau, 2010 Census.				

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FIGURE 27
DEMOGRAPHIC CHARACTERISTICS

PIPELINE REPLACEMENT ALONG
WEKE, 'ANAE, MAHIMAHĪ,
AND HE'E ROADS

JOB NO. 12-01, WATER PLAN JOB NO. H-05
Hanalei, Kaua'i, Hawai'i

2. Water:

Existing Conditions: The County of Kaua`i, Department of Water operates 13 water systems island wide. The project area is within the Hanalei water system which consists of residences and small-town business uses. Some of the water mains in this service area are quite old and/or undersized and pipeline replacements are necessary in order to provide adequate delivery.

Potential Impacts and Mitigative Measures: To minimize outages, existing waterlines will not be removed until the new waterlines are installed. The proposed waterline replacements will improve the water distribution and allow the Department of Water to keep up with consumer demand.

3. Wastewater:

Existing Conditions: There is no public wastewater collection and disposal system in the project area; private individual wastewater systems (cesspools or septic tanks) are currently in use.

Proposed Actions: No service improvements are planned at this time.

4. Solid Waste:

Existing Conditions: There is only one County sanitary landfill located in Kekaha, and four refuse transfer stations, the closest transfer station is the Hanalei Transfer Station. Residential refuse collection services are available at the residential homes along Weke, `Anae, He`e and Mahimahi Roads.

A typical refuse crew consists of one truck driver and two refuse collectors. Collection crews deliver refuse to the Refuse Transfer Station where refuse is loaded into high cube trailers and delivered to the Kekaha landfill.

Potential Impacts and Mitigative Measures: No changes in existing service are planned for the proposed project.

5. Fire Protection:

Existing Conditions: Fire protection service for the Hanalei area is provided by the Hanalei Fire Station which is one of eight County fire stations. Four (4) men are assigned to the station with three (3) on duty at all times with major firefighting equipment.

The Fire Department's Fire/Rescue/HazMat/Medical Response Operations program provides fire protection and suppression, rescue (ocean and land), hazmat and emergency medical services (basic life support).

Proposed Actions: New provisions for fire protection will be provided.

6. Police Protection:

Existing Conditions: There are three Patrol Service Bureaus: Hanalei District (in the north), Līhu'e District (in the southeast) and Waimea District (in the southwest). The Hanalei District provides police services from Olohena Road in Kapa`a to Ke`e Beach. The Hanlei District provides police services to the following communities: Haena, Wainiha, Hanalei, Princeville, Kilauea, Anahola, Kealia, and Kapa`a. The Hanalei Sub-Station building is located at the corner of Hanalei Plantation Road,

just north of the Princeville Shopping Center. When fully staffed, there are 26 employees assigned to the Hanalei District.

Proposed Actions: None.

7. Public Schools:

Existing Conditions: The Department of Education (DOE) has designated the entire Island of Kaua`i as a single complex area, this complex area is composed of three complexes: Waimea, Kaua`i and Kapa`a. Hanalei is within the DOE's Kapa`a complex. Member schools of the Kapa`a complex are Hanalei Elementary School, Kilauea Elementary School, Kapa`a Elementary School, Kapa`a Middle School and Kapa`a High School. The area also has a Public Charter School: Kanuikapono Public Charter School.

Proposed Action: None.

8. Utilities:

Existing Conditions: Electrical power and telephone services are available from overhead distribution lines along each road.

Proposed Actions: None.

9. VISUAL EFFECTS:

Existing Conditions: This project involves underground waterline extension. Therefore, there will be no permanent visual effect except for fire hydrants that will be visible only from the immediate vicinity due to lush vegetation on both sides of the roadway.



- Ⓐ Hanalei Refuse Transfer Station
- Ⓔ Hanalei Fire Station
- Ⓒ Hanalei Police Department
- Ⓓ Hanalei Elementary School
- Ⓕ Kilauea Elementary School
- Ⓗ Kapa'a Elementary
- Ⓒ Kapa'a Middle School
- Ⓖ Kapa'a High School
- Ⓘ Kanuikapono Public Charter School

True North
Not To Scale

FIGURE 28
PUBLIC UTILITIES AND SERVICES MAP
 PIPELINE REPLACEMENT ALONG
 WEKE, 'ANAE, MAHIMAHI,
 AND HE'E ROADS
 JOB NO. 12-01, WATER PLAN JOB NO. H-05
 Hanalei, Kauai, Hawaii

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SECTION III

ALTERNATIVES TO THE PROPOSED ACTION

Alternative: No Action

A no action alternative would prevent the adjacent landowners from receiving any Fire Protection; the substandard size of existing waterline restricts adequate supply of water to consumers. Age of waterline makes it susceptible to breakage leading to contamination, damage to roadway and loss of water. Additionally, any new water service connection would require excavation along the public roadway or through neighboring private property to install private consumer piping.

SECTION IV

ASSESSMENT PROCESS AND DETERMINATION OF SIGNIFICANCE

Assessment Process

The scope of the project was discussed with the Applicant and representatives of the Department of Water. Information was collected from Scientific Consultant Services Inc. Time was spent in the field evaluating the site and observing conditions in the surrounding area.

Based on information obtained from the above references, the Environmental Assessment was prepared.

Determination of Significance and Recommendation

Chapter 200 of Title 11, Administrative Rules of the Department of Health entitled “Environmental Impact Statement Rules” established criteria for evaluating whether an action may have a significant effect on the environment. The relationship of the proposed project to these criteria are discussed below.

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

None is anticipated. Roadway will be restored to original condition.

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

The temporary inconvenience during construction should be offset by the improved water service.

Owing to the paucity of significant environment features and the existing zoning of the land the proposed development is considered an appropriate use.

3. *Conflicts with the State's long-term environmental policies of goals and guidelines are expressed in Chapter 344, Hawai'i Revised Statutes, and any revisions thereof and amendments thereto, court decisions, or executive orders.*

The project enriches the well being of the area residents with no damage to the environment.

4. *Substantially affects the economic or social welfare of the community or State.*

The budget for the project (\$1,300,00) will not substantially affect the economy adversely while providing a public utility. The jobs created will temporarily boost the economy.

5. *Substantially affects public health.*

The proposed project will not substantially affect economic or sociological activities. It is an implementing action that provides a public utility for a number of residents along Kuamo`o and Wailua Roads, `Ohana and Anolani Streets and Leho Lane. It is believed that a comfortable home instills psychological and sociological values, which collectively contributes to neighborhood stability and the community at large.

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

The number of lots, population and demand for public services and facilities will not be increased due to this project.

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

Environmental quality will remain the same.

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

The proposed project does not involve a commitment for larger actions in the immediate area.

9. *Substantially affects a rare, threatened, or endangered species (plant and animal) or its habitat.*

The site is devoid of rare, threatened, or endangered species (plant and animal) or its habitat as it is along existing roadways.

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

Although fugitive dust and noises created during construction cannot be completely eliminated, such conditions can be mitigated by measures identified in this Assessment.

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

The project is an underground utility that will not affect any such area nor will it suffer damage.

12. *Substantially affects scenic vistas and view planes identified in County or State plans or studies.*

The project is along existing roadways and will not affect scenic vistas or view planes.

13. *Requires substantial energy consumption.*

The only energy consumption will be for construction equipment. After construction, water flow through the pipelines will be by gravity and larger waterlines will increase efficiency.

Based on the above criteria, the proposed project should not result in significant adverse environmental impacts. Potential environmental impacts are sufficiently disclosed in this Environmental Assessment and therefore it is recommended that an Environmental Impact Statement is not required.

SECTION V

NAMES OF GROUPS AND INDIVIDUALS AFFECTED

BY THE PROPOSED PROJECT

<u>Tax Map Key</u>	<u>Name and Mailing Address</u>
(4) 5-5-03: 01	Episcopal Church in Hawai`i Queen Emma Sq. Honolulu, HI 96813
(4) 5-5-03: 02	State of Hawai`i
(4) 5-5-03: 05	Richard E. Qualsett Revocable Trust P.O. Box 1568 Hanalei, HI 96714
(4) 5-5-03: 06	LMCD LLC. 623 7th St. Santa Monica, CA 90402
(4) 5-5-03: 08	Penttila & Clemens Trust P.O. Box 2235 Newport, WA 99156
(4) 5-5-03: 10	Nuhou Corporation P.O. Box 1631 Lihue, HI 96766
(4) 5-5-03: 15	Thorrington-Smith Partners LLC. 1544 Paseo del Mar Palos Verdes Estate, CA 90274
(4) 5-5-03: 17	Tri-State Pacific 2 LLC. 10960 Wilshire Blvd. Floor 5th Los Angeles, CA 90024

Tax Map Key

Names and Addresses

(4) 5-5-03: 18	Tenir LLC. 500 Ygnacio Valley Rd., Ste. 110 Walnut Creek, CA 94596
(4) 5-5-03: 20	Diane K. Spencer Charles H. K. Spencer P.O. Box 98 Hanalei, HI 96714
(4) 5-5-03: 22	Alpina Investments LLC. 1214 Lincoln St. Hood River, OR 97031 Michael White Trust 1990 S. Bundy Dr., Ste. 200 Los Angeles, CA 90025
(4) 5-5-03: 30	Francene H. Aarona Henry K. Aarona Jr. Francine K. Aarona James K. Aarona Elizabeth K. Aarona Henry K. Aarona 2001 Beckley St. Honolulu, HI 96819
(4) 5-5-03: 31	Pascale F. Searby Trust Steven Searby Trust P.O. Box 516 Hanalei, HI 96714

Tax Map Key

Names and Addresses

(4) 5-5-03: 32	Burns Family Trust 108 Ramona Rd. Menlo Park, CA 94028
(4) 5-5-03: 33	Diane Spencer Charles H. Spencer P.O. Box 98 Hanalei, HI 96714
(4) 5-5-03: 34	Edward L. Bullard Melissa M. Bullard 510 North St. Chapel Hill, NC 27514 Mary E. Seitz 320 Massol Ave. Los Gatos, CA 95030
(4) 5-5-03: 36	Richard H. Sloggett Jr. Sloggett Trust P.O. Box 844 Hanalei, HI 96714
(4) 5-5-03: 39	Penttila & Clemens Trust P.O. Box 2235 Newport, WA 99156
(4) 5-5-04: 03	Larry L. Wilson II 6474 Avendia Cresta La Jolla, CA 92037
(4) 5-5-04: 04	J Beach LLC. Tri-State Pacific LLC. C/O Nigro, Karlin, Segal & Feldstein, LLP. 10960 Wilshire Blvd., 5 th floor Los Angeles, CA 90024

Tax Map Key

Names and Addresses

(4) 5-5-04: 05	Ayeroff Family Trust P.O. Box 5623 Beverly Hills, CA 90209
(4) 5-5-04: 06	Hanalei House LLC. 198 Churchill Ave. Woodside, CA 94062
(4) 5-5-04: 07	Wetzler Family Trust 660 Summit Ave. Mill Valley, CA 94941
(4) 5-5-04: 08	Linda Rutgard HI Per. Res. Tr. 6489 Caminito Baltusral La Jolla, CA 92037
(4) 5-5-04: 09	Fox Gray LLC. P.O. Box 1288 Hanalei, HI 96714
(4) 5-5-04: 10	Fox Gray LLC. P.O. Box 1288 Hanalei, HI 96714
(4) 5-5-04: 11	Fox Gray LLC. P.O. Box 1288 Hanalei, HI 96714
(4) 5-5-04: 12	Donato Errico P.O. Box 1288 Hanalei, HI 96714
(4) 5-5-04: 13	Donato Errico P.O. Box 1288 Hanalei, HI 96714
(4) 5-5-04: 14	Hanalei Property Trust 1060 Vista Hillsborough, CA 94010

Tax Map Key

Names and Addresses

(4) 5-5-04: 15	Michele L. Kaiser Parnell H. Kaiser P.O. Box 1373 Hanalei, HI 96714
(4) 5-5-04: 18	Fox Gray LLC. P.O. Box 1288 Hanalei, HI 96714
(4) 5-5-04: 28	Darryl G. Ching Linda Ching-Ikiri 8031 Georgetown Ave. Los Angeles, CA 90045
(4) 5-5-04: 29	Alberta A. Baroni P.O. Box 1442 Hanalei, HI 96714
(4) 5-5-04: 30	Larry & Jennie Ching LTD. P.O. Box 426 Hanalei, HI 96714
(4) 5-5-04: 31	Davidtz Sloane Trust 9100 Wilshire Blvd, Ste. 1000W Beverly Hills, CA 90212
(4) 5-5-04: 32	Simon Potts Trust P.O. Box 1094 Kialuea, HI 96754
(4) 5-5-04: 34	The Survivor's Trust 120 Kalkar Dr. Santa Cruz, CA 95060
(4) 5-5-04: 37	The Bypass Trust 120 Kalkar Dr. Santa Cruz, CA 95060

Tax Map Key

Names and Addresses

(4) 5-5-04: 38	The Bypass Trust The Survivor's Trust C/O Betsy H. Kamehiro Trustee 120 Kalkar Dr. Santa Cruz, CA 95060
(4) 5-5-04: 40	Amil R. Valpoon III Carrie L. Maka P.O. Box 1642 Hanalei, HI 96714
(4) 5-5-04: 44	Michele B. McCune 542 S.Granados Ave. Solana Beach, CA 92075
(4) 5-5-04: 47	Karen M. Bellavita Trust P.O. Box 1156 Hanalei, HI 96714
(4) 5-5-04: 48	Karen B. Vandervoet David B. Vandervoet 3172 Shakespeare Dr. Los Alamitos, CA 90720
(4) 5-5-04: 49	Simone Harrer Laurentius Harrer 6238 Bonsai Dr. Malibu, CA 90265
(4) 5-5-04: 50	Robert H. Watari Setsuko Watari Hideo Watari P.O. Box 132 Hanalei, HI 96714

Tax Map Key

Names and Addresses

(4) 5-5-04: 51	Jana N. Blackstad Brydan K. Blackstad P.O. Box 1521 Hanalei, HI 96714
(4) 5-5-05: 01	Doris M. Koga Trustee George K. Koga Trustee George K. & Doris M. Koga Trust P.O. Box 67 Hanalei, HI 96714
(4) 5-5-05: 02	Debbie M. B. Haraguchi Natalie N. E. Haraguchi Lloyd K. Haraguchi Jr. P.O. Box 893 Lihue, HI 96766 Lloyd K. Haraguchi Sr. P.O. Box 89 Hanalei, HI 96714
(4) 5-5-05: 03	Caridyn K. K. Colburn P.O. Box 45 Hanalei, HI 96714
(4) 5-5-05: 06	Jean P. Silva Trust Ronald H. Silva Sr. Trust 3221 Uluhui St. Lihue, HI 96766

Tax Map Key

Names and Addresses

(4) 5-5-05: 13	Barbara R. Banke Jess S. Jackson 1045 Alexander Mountain Rd. Geyserville, CA 95441
(4) 5-5-05: 14	Fusao Haraguchi Est. Happy S. Haraguchi Trust Tomio Haraguchi Trust P.O. Box 83 Hanalei, HI 96714
(4) 5-5-05: 15	Joseph N. Kobayashi P.O. Box 589 Kapa`a, HI 96746
(4) 5-5-05: 16	Wai`oli 2011 LLC. P.O. Box 135 Hanalei, HI 96714
(4) 5-5-05: 17	Christine Kobayashi P.O. Box 135 Hanalei, HI 96714
(4) 5-5-05: 18	Barbara A. Watkins 2877 Paradise Rd. #804 Las Vegas, NV 89109
(4) 5-5-05: 19	ATOOI LLC. 2877 Paradise Rd. #804 Las Vegas, NV 89109
(4) 5-5-05: 23	Ching Family LTD. Partnership P.O. Box 426 Hanalei, HI 96714

Tax Map Key

Names and Addresses

(4) 5-5-05: 24	Carol A. Fullerton Thomas W. Fullerton 972 Pico St. Colorado Springs, CO 80906
(4) 5-5-05: 25	Rogan Family Trust 20406 Seaboard Rd. Malibu, CA 90265
(4) 5-5-05: 26	Rhonda Basset-Spiers 1345 Valparaiso Ave. Menlo Park, CA 94025
(4) 5-5-05: 27	Fankhauser Holding Company LLC. 1819 Clinton St. Toledo, OH 43607

Names and addresses of affected groups and individuals were obtained from the County of Kaua'i Real Property Assessment and Treasury Divisions website (www.kauaipropertytax.com)

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County of Kaua`i, Police Department

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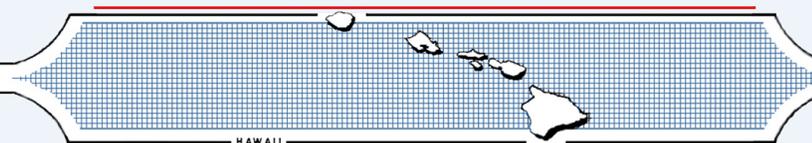
October, 1987.

**AN ARCHAEOLOGICAL ASSESSMENT
FOR 6.2-ACRES IN HANAIEI,
WAI'OLI-HANAIEI AHUPUA'A, HANAIEI (HAIEIE'A) DISTRICT,
KAUA'I ISLAND, HAWAII
[TMK (4) 5-5-03: various, 04: various, 05: various]**

Prepared By:
Stephanie Medrano B.A.
and
Michael F. Dega, Ph.D.
November 2012

Prepared for:
Esaki Surveying
1610 Haleukana Street
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SCIENTIFIC CONSULTANT SERVICES Inc.



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ABSTRACT

Scientific Consultant Services (SCS) Inc. conducted Archaeological Inventory Survey on parcels of land measuring 6.2-acres (620 m²) in Hanalei, Wai`oli-Hanalei Ahupua`a, Hanalei (Halele`a) District, Kaua`i Island, Hawai`i [TMK (4) 5-5-03:05, 08, 10, 15, 22; (4) 5-5-04:03, 06, 09, 10, 12, 15; (4) 5-5-05:02, 06, 23]. The current landowner is the County of Kaua`i. The Archaeological Inventory Survey was conducted on the parcels to determine the presence or absence of archaeological deposits within surface and/or subsurface contexts. Methods for the current study involved complete pedestrian survey and representative subsurface testing through mini excavator and backhoe test trenching.

A total of 13 backhoe test trenches were placed throughout the project area. There were no archaeological or cultural findings identified on the surface or in sub-surface contexts during the project. Due to the results of no significant findings during the field investigation the Inventory Survey has been classified as an Archaeological Assessment for reporting purposes.

While the current project did not lead to the documentation of any significant cultural materials or burials, based on the findings of previous archaeological projects within the Hanalei area, full-time monitoring is recommended for all future subsurface excavation work that will occur in the subject project area [TMK (4) 5-5-03:05, 08, 10, 15, 22; (4) 5-5-04:03, 06, 09, 10, 12, 15; (4) 5-5-05:02, 06, 23].

TABLE OF CONTENTS

ABSTRACT.....	i
TABLE OF CONTENTS.....	ii
LIST OF FIGURES	iii
INTRODUCTION	1
ENVIRONMENTAL SETTING	1
CLIMATE.....	7
PROJECT AREA SOILS.....	7
PROJECT AREA VEGETATION	7
HISTORICAL ACCOUNTS	7
PAST POLITICAL BOUNDARIES	8
TRADITIONAL SETTLEMENT PATTERNS	9
THE GREAT MĀHELE.....	10
PREVIOUS ARCHAEOLOGY.....	12
SETTLEMENT PATTERNS AND PREDICTIVE MODEL	15
METHODOLOGY	16
FIELD METHODS.....	16
LABORATORY METHODS.....	17
FIELDWORK RESULTS.....	17
STRATIGRAPHY	17
DISCUSSION.....	23
RECOMMENDATIONS.....	23
REFERENCES	24
Table 1: Excavation Trench Data and Results.....	19

LIST OF FIGURES

Figure 1: USGS Hanalei Quadrangle Map of Project Area.....	2
Figure 2: Tax Map Key [TMK (4) 5-5-03:05, 08, 10, 15, and 22] Showing the Project Area.....	3
Figure 3: Tax Map Key [TMK (4) 5-5-04:03, 06, 09, 10, 12, and 15] Showing the Project Area.	4
Figure 4: Tax Map Key [TMK (4) 5-5-05:02, 06, and 23] Showing the Project Area.....	5
Figure 5: Google Earth Image of Project Area.....	6
Figure 6: Project Area with TMK's, Test Unit Locations, and Previously known Burial Sites..	18
Figure 7: Photograph of Stratigraphic Profile TU #2. (Typical Profile with Two Strata).....	20
Figure 8: Drawing of Stratigraphic Profile TU #2. (Typical Profile with Two Strata).	21
Figure 9: Drawing of Stratigraphic profile TU#5. North Face (Typical Profile with Three Strata).	22

INTRODUCTION

At the request of Wayne Wada of Esaki Surveying, Scientific Consultant Services (SCS) Inc., conducted Archaeological Inventory Survey on a parcel of land measuring 6.2-acres of land in preparation for the pipeline replacement project located in Hanalei, Wai`oli-Hanalei Ahupua`a, Halelea District, Kaua`i Island, Hawai`i [TMK (4) 5-5-03:05, 08, 10, 15, 22; (4) 5-5-04:03, 06, 09, 10, 12, 15; (4) 5-5-05:02, 06, 23] (Figures 1 through 5).

The objective of the current project was to determine the presence/absence of archaeological features or deposits within surface and subsurface contexts and if present, to evaluate the significance of the sites. As the project only yielded negative results, this report has been re-classified as an Archaeological Assessment document. All methods used in the survey were consistent with those performed in a full Inventory Survey program. The Archaeological Assessment has been written following with State of Hawai`i Historic Preservation Division (SHPD) Guidelines for Archaeological Assessment Reports.

Specific archaeological methods utilized during this project included the following: historical background investigations; archival research; systematic pedestrian survey; representative subsurface testing in the form of mini excavator trenching and backhoe; locating, profile mapping, and drafting of trenches; soil analysis, interpretation; reporting of all relevant data; and consultation with SHPD Kaua`i archaeologist Susan A. Lebo, PhD. Fieldwork was conducted on September 17 through 19, 2012 by Jim Powell, B.A., under the direct supervision of Principal Investigator Michael F. Dega, Ph.D.

ENVIRONMENTAL SETTING

PROJECT AREA LOCATION

The project area consists of 6.2 –acres (620 m²) located on the west end of Hanalei Town between Kuhio Highway and Hanalei Bay in Hanalei, Wai`oli-Hanalei Ahupua`a, Hanalei (Halelea) District, Kaua`i Island, Hawai`i [TMK (4) 5-5-03:05, 08, 10, 15, 22; (4) 5-5-04:03, 06, 09, 10, 12, 15; (4) 5-5-05:02, 06, 23]. All trenching took place on county property on the shoulders of the above mentioned roads. The area is primarily residential in nature with small to large houses on most of the available properties. There are vacation rentals on the north side of Weke Road that back up to the beach of Hanalei Bay (Figures 1 through 5)

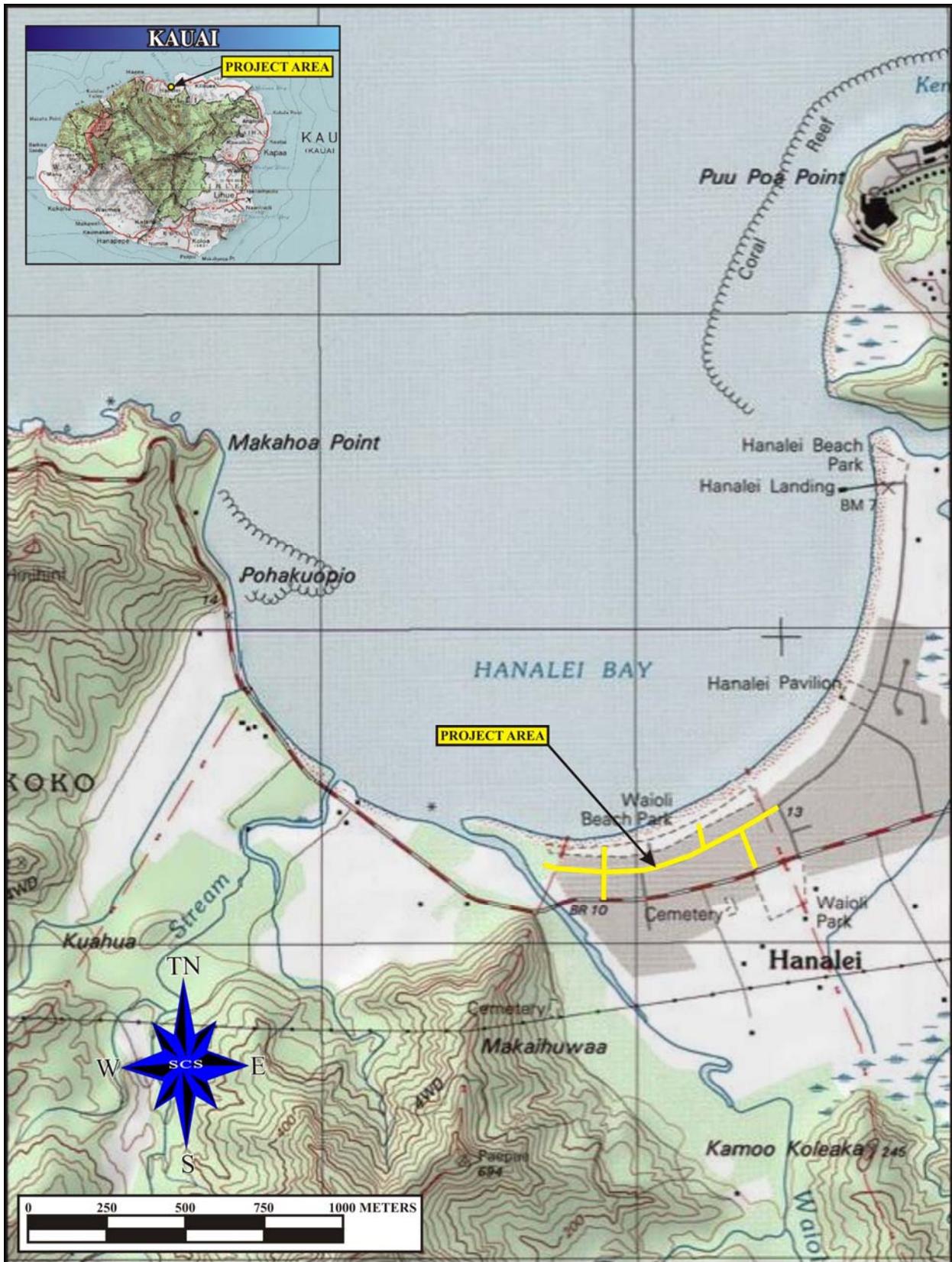


Figure 1: USGS Hanalei Quadrangle Map of Project Area.

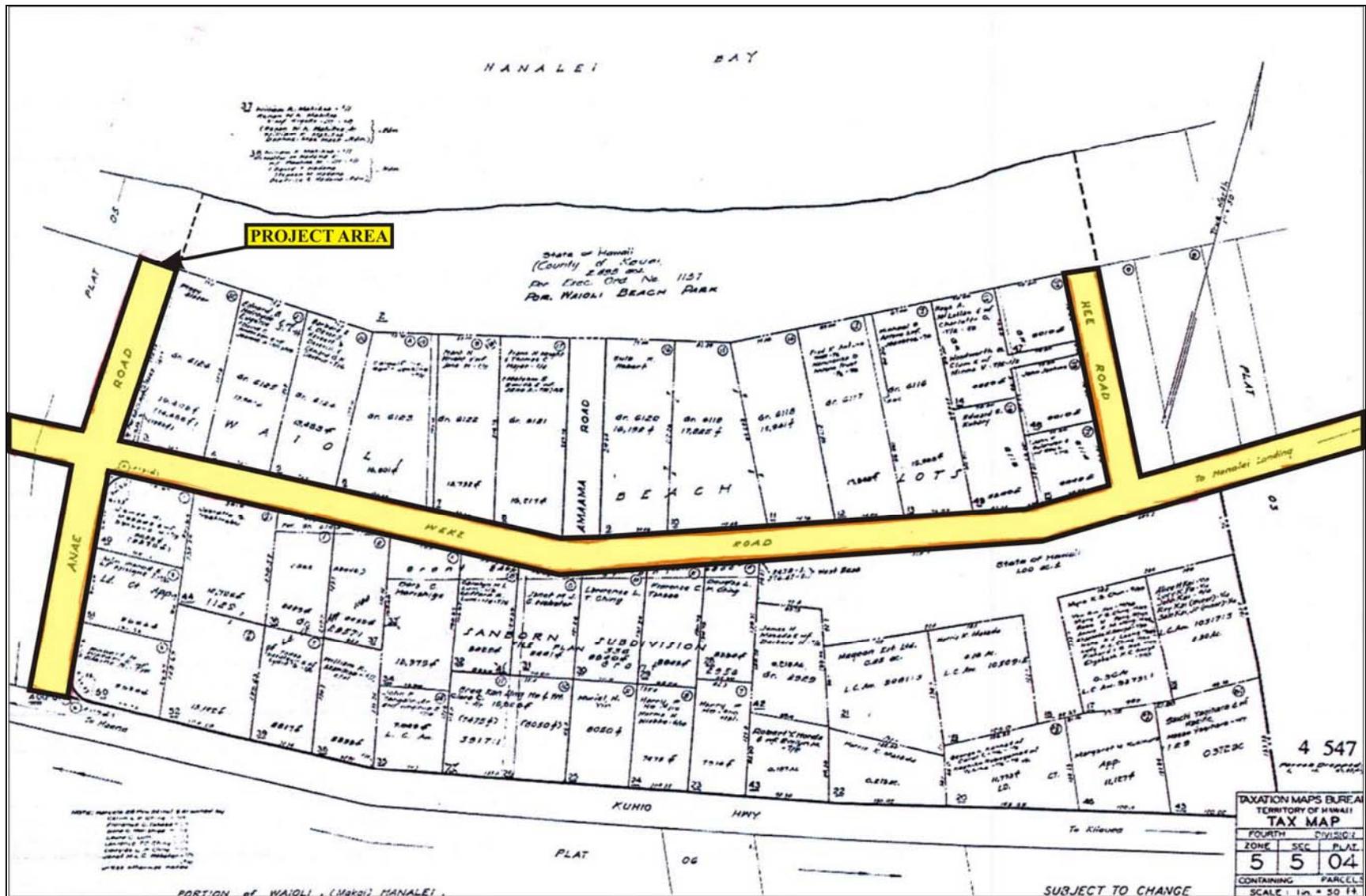


Figure 3: Tax Map Key [TMK (4) 5-5-04:03, 06, 09, 10, 12, and 15] Showing the Project Area.

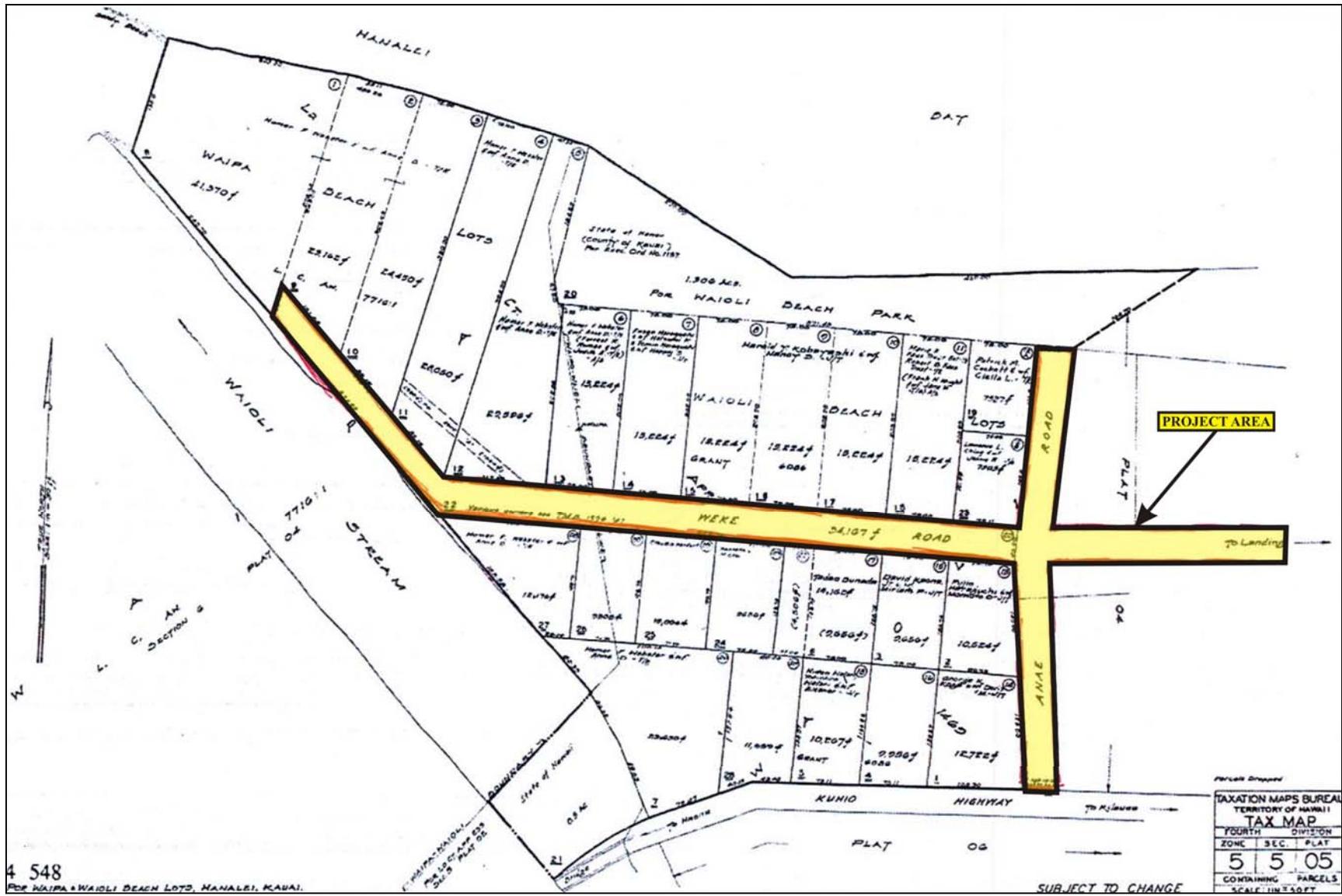


Figure 4: Tax Map Key [TMK (4) 5-5-05:02, 06, and 23] Showing the Project Area.



Figure 5: Google Earth Image of Project Area.

CLIMATE

The project area lies in the semi-wet, northern region of Kauai. Rainfall indicators, according to Price (1983:62), show that the project area could receive up to 10 inches during the winter months of December through January. Higher elevations within Hanalei Ahupua`a are prone to receive more precipitation due to increased rainfall, fog drip, and lower temperature climates

PROJECT AREA SOILS

Foote *et al.* (1972: 88, 89; Map 16) has classified soils within the project area as part of the Makapili Series, which can be found in upland areas of Kaua`i Island. Typically these well-drained soils derive from eroded igneous rock at elevations ranging between 100 to 350 feet above mean sea level (amsl). The mean annual soil temperature in these areas is 72 degrees. Foote *et al.* (1972:95) has further defined the soils of the subject property as Makapili silty clay (MeE). This type of soil, which occurs on 25 to 40 percent slopes, has a similar profile to Makapili silty clay (MeB), which occurs along 0 to 8 percent slopes and has a thinner surface layer. The MeE soils exhibit rapid runoff and a severe erosion hazard. These soils are primarily as pastureland and woodlands (ibid: 89).

PROJECT AREA VEGETATION

The project area is located in a residential area and presently contains grassy lawns, iron wood hedges, plumeria shrubs and trees, fruit trees, ti plants, mock orange shrubs, various palm trees, croton shrubs and trees, and various ornamentals.

HISTORICAL ACCOUNTS

Kaua`i, the oldest and fourth largest of the eight main Hawaiian Islands (with land area equaling approximately 1,432 square kilometers), 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 15 to 20 kilometers across. Mt. Wai`ale`ale, forming the central hub of the island, extends 1,598 meters (above mean sea level) amsl. Topographically, Kaua`i is a product of heavy erosion with broad, deep valleys and large alluvial plains.

Kaua`i is justifiably famous as the first landing place of Captain James Cook in January of 1778. Cook estimated a total population of the island of approximately 30,000, but this figure has been questioned by some (*e.g.*, Bennett 1931) as probably too high. Later estimates, based on U.S. Census data, put the early 19th century population of Kaua`i at approximately 10,000. In

any case, compared with the other large islands, Kaua`i has witnessed relatively modest growth and development, with a modern population (c. 50,000) not much larger than these original figures.

Until very recently, the island has survived, more or less, on an agricultural economy, with commercial sugarcane, rice, and other crops supplanting the traditional taro in historic times. A concomitant influx of many diverse ethnic groups (including Japanese, Filipino, Chinese, and Euro-American) has also added to the modern character of the island. Much of the knowledge of traditional land use patterns is based on what was recorded at the time of, and shortly after, western Contact. Early records (such as journals kept by travelers and missionaries), Hawaiian traditions that survived long enough to be written down, as well as, archaeological investigations have assisted in understanding the past.

PAST POLITICAL BOUNDARIES

Approximately 600 years ago (from the time of Mo`ilikukahi on O`ahu and based on a 25 year per-generation count), the native population had expanded throughout the Hawaiian Islands. Land was considered the property of the king or ali`i `ai moku (the ali`i who eats the island/district), which he held in trust for the gods. The title of ali`i `ai moku ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The maka`āinana (commoners) worked the individual plots of land.

In general, several terms, such as *moku*, *ahupua`a*, *ili* or *ili`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). The project area is located in the *ahupua`a* of Hanalei, meaning “crescent shaped bay” (Pukui *et al.* 1974:40).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinarum*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *`uala* (sweet potato, *Ipomoea batatas*) 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 were defined by cultivation occurring 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). Although no longer in use, agricultural terraces were reported in the valley interiors around Hanalei. However, the alluvial plain was extensively cultivated and contained two irrigation systems, still functioning into the present time (Earle 1978:34.) Fishponds of the *loko-i`a-kalo* type were situated inland of Hanalei and Wai`oli Rivers (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 (see Kikuchi 1987). Along with the three deep valleys of the Halele`a District (Wainiha, Wai`oli, and Lumaha`i), Hanalei, formed one of the most agriculturally productive regions on Kaua`i (Handy and Handy 1972:419).

Coastal zones were utilized for acquiring marine resources and where habitation sites, burials, and ceremonial structures, often associated with fishing, were identified (Bennett 1931). Slightly inland of Hanalei Bay, was “...the preferred area for house sites,” because of the coral sandy soils (Earle 1978:29). Hanalei Bay had no reliable ship anchorage for trading due to the susceptibility of the north coast’s variable weather conditions and, therefore, never became a major port (Riznik 1987:2).

THE GREAT MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kame`eleihiwa 1992:169-70, 176; Kelly 1983:45; Daws 1968:111; Kuykendall 1938 Vol. I: 145). The Great Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were made available and private ownership was instituted, the *maka`āinana*, if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, `okipū (on O`ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1971:16). A rebellion on the island of Kaua`i in 1824 complicated the land issue there and, instead of being awarded to the chiefs of Kaua`i, many Kaua`i *ahupua`a* were awarded to the heirs of the ruling Kamehameha dynasty (Kamakau 1961).

With the shift to private land ownership brought about by the Mahele, alternative agricultural ventures and plantations quickly appeared throughout the islands (Joesting 1987). Sugar had first been produced in small amounts on the island of Lana`i in 1802 and, by 1820, Samuel Whitney was making sugar and molasses at Waimea, Kaua`i (*Ibid.*:130). Sugar was soon to be a lucrative enterprise on all of the main Hawaiian Islands. Cotton was attempted on Kaua`i, and in Wai`oli, a Charles Titcomb, started a silk plantation (1839) by planting some 100,000 mulberry trees. Titcomb transferred his energy to coffee when the plantation failed (*ibid.*:148). In addition to these endeavors, ranching activities took place in Wai`oli Valley and environs in the 1830s.

Throughout the 19th century, the Hawaiian population had been in steady decline due to a number of factors including the introduction of foreign diseases for which the native people had no immunity. With the expansion of the sugar industry, more and more field workers were needed for the large plantations. The Royal Hawaiian Agricultural Society began importing Chinese laborers in 1852 (Knudsen 1991:125).

In the 1850s, several irrigation ditches were recorded originating from Pu`ukumu and Kalihiwai Streams, as well as, terraced sites along the narrow valley (Earle 1978:35). Extensive *lo`i* (pondfields for growing *kalo*) were located near the sea, and on the main and side streams (Handy and Handy 1972:421).

Kalihiwai has an extensive terraced area on the flat lands through which Kalihiwai River meanders to the bay. According to Handy and Handy (1972: 421), taro was cultivated extensively along the coast, as well as along the valley floor. Where the valley becomes narrower, a mile inland, there were small terraces. Two miles inland, and again at 2.75 miles inland, are sharp bends in the river, where there were small flatlands and wet taro was formerly grown. Just east of Kalihiwai Bay, Pu`ukumu Stream flows in a shallow valley. A total of 28 land claims were awarded in the ahupua`a of Kalihiwai. Most of these were located in the lower section of the valley. They are all identified as pondfields for *kalo* growing (Hammatt and Chiogioji 1992:15).

By the 1860s, traditionally cultivated agricultural lands became available and lands that had previously been cultivated in *kalo* by the diminishing Hawaiian people were converted into rice. Traditional *lo`i* ponds and agricultural terraces along river valleys such as Wai`oli and Hanalei were ideal for this purpose and were still producing rice in 1935 (Handy and Handy 1972).

A journey was taken around Kaua`i in 1849 by William DeWitt Alexander, the son of William P. Alexander, missionary at Wai`oli. He recorded his impressions of Hanalei and Wai`oli after having been away at school for a number of years.

...brought us to the top of the hill that overlooks Hanalei Valley. The prospect from this hill is very fine. The lofty, and picturesque mountains behind Wai`oli, the majestic Hanalei river winding its way through coffee plantations and the graceful curve of the bay, bordered with houses, & groves, greatly increase the beauty of the valley...The feelings with which I gazed on the home of my early days, I can not describe...The little village that we used to call Bethlehem, was now a waste of indigo. The natives who were still living had, for the most part, moved their dwelling down to the seashore...The meeting house is very pleasantly situated among some hau trees...The beach is very broad, sloping gradually to the waters edge...The whole soil is part composed of sand. By digging in any place we arrive at sand at the depth of a few feet. Coral, & sea shells also are found at a considerable distance from the sea (Knudsen 1991)

PREVIOUS ARCHAEOLOGY

Seven decades of archaeological work on the north coast of Kaua`i have provided strong evidence for pre-Contact- and Historic-period settlement of the project area and environs. Although no formal archaeological work has taken place directly within the current project area, surveys and excavations in surrounding environs have led to the identification of many significant sites, inclusive of subsurface habitation deposits, *heiau*, burials, agricultural complexes, and a suite of artifact types and quantities. The general location is one of the earliest, most intensively settled areas on Kaua`i. Projects investigating these settlement patterns initiate from Bennett's (1931) study to more recent CRM work in the area.

W.C. Bennett conducted one of the first archaeological studies in the area (1931) focusing mostly on coastal ceremonial structures. Bennett's survey documented several *heiau* in Kalihiwai Ahupua`a and the Hanalei area. The *heiau* documented in Kalihiwai include Bennett's Sites 134, 135, 136, 137, and 138. The closest *heiau* on the western, Hanalei side, was Bennett's Site 139: Po`oku Heiau (Bennett 1931:134).

Earle's (1978:35, 100) study of irrigation systems led to the documentation of Site Ka-D10-10, which was located to the east of Anini Stream in Kalihikai. In the Hanalei River Valley to the west, Earle continued his study of indigenous taro irrigation methods while Schilt (1980) conducted excavations in the alluvial basins of the Hanalei River valley in an attempt to determine the timing of the irrigation systems (a synthesis of their contradictory results can be found in Kirch 1985:101–106).

In the general area of Hanalei Town, Kennedy (1991) excavated trenches within a *lo`i* on the *mauka* side of Kuhio Highway, but the radiocarbon dates from the excavations all fell within the modern period. These results agree with historic records that indicated that pond field agriculture in this area of the coastal plain had not begun until the introduction of rice in the early twentieth century (Denham *et al.* 1993:9). Also, Spear (1992) conducted subsurface excavations at St. Williams Church during which he identified seven historic features and dated a wood charcoal sample to A.D. 1319-1650, which he interpreted to represent short-term, pre-European habitation.

Importantly, several burial sites were identified during excavations in Hanalei Town. In 1993, the remains of at least 13 individuals, assumed to be Hawaiians buried during the

prehistoric era, were found during subsurface testing in a parcel just south of Hanalei Pavilion (TMK: (4) 5-5-02:46). The skeletal remains of an adult male, an adult female, and a child were found in 1990 in Hanalei Town south of Kanoa Fishpond (State Site Numbers: 50-30-03-1822, -1823, -1824). A human mandible from a young adult male was found in 1989 on the beach in front of the Sheraton Mirage, at the base of the cliffs at Princeville (State Site Number: 50-30-03-1807). Also in 1981, an archaeological survey at Kamo`omaika`i Marsh, located just below the cliffs at Princeville and just to the north of the Hanalei River mouth, identified an ancient fishpond and associated sediments containing human skeletal material. Radiocarbon dates for fishpond use ranged from A.D. 1330 to A.D. 1880 (for a general discussion of these burial sites, see Denham *et al.* 1993:9).

During the course of an Archaeological Inventory Survey carried out by Denham *et al.* in 1993, on an 8.5 acre parcel within Hanalei town, human skeletal remains were recovered from surface and subsurface sand deposits. The site was designated as State Site 549 and required a Burial Treatment Plan. Kennedy and Latinis carried out further work in 1996. The excavation of 30 trenches by Kennedy and Latinis (1996) brought the total number of burial features to 20, enough to identify State Site 549 as a traditional burial site. All *in situ* burials were found in the flexed position. There were no historic materials present. However, additional human remains are most likely present within the area, a pattern common for the environs of the present subject parcel and other near-coastal reaches.

Additionally, in 1993 Leina`ala Benson (Benson 1993) conducted Archaeological Monitoring on a 1 acre parcel (TMK: (4) 5-5-010:77) northeast of the subject project area. The program of Archaeological Monitoring included two test units (T1 and T2) and eleven trenches (1-11). During the course of the Archaeological Monitoring program, State Site 50-30-03-6012 and 50-30-03-6029 were identified. State Site 50-30-03-6012 was interpreted as a Traditional-type, pre-Contact burial. State Site 50-30-03-6012 consisted of two subsurface features. Feature 1 (Burial 1) consisted of human skeletal remains representing a single (MNI=1) in a flexed position. Feature 1 (Burial 1) was exposed at 46 cmbs in trench 7 (18' x 14'). Feature 2 (Burial 2) consisted of human skeletal remains representing a single (MNI=1) in a flexed position. Feature 2 (Burial 2) was exposed at 47 cmbs in trench 10 (18' x 3'). State Site 50-30-03-6029 consisted of scattered debris (*e.g.* metal fragments, glass shards, footing stones, and porcelain door knobs) most likely associated with a former historic house site.

In 2000 Archaeological Consultants of the Pacific, Inc. (ACP) conducted an Archaeological Inventory Survey (Elmore and Kennedy 2000) which noted pre- and post-

Contact features on parcels of land near the present project area. Among these, twelve human burials were identified, exhumed, and relocated in a concrete crypt located in the northwest corner of the property (State Site 50-30-03-671). In addition to this most recent work, several other projects in the vicinity of the project area suggest cultural and historical significance.

In 2002, ACP provided a report discussing the treatment of the twelve human burials on a neighboring parcel of land (Elmore *et al.* 2002). Based on artifact association and interment styles, the burials were dated to the late pre- and early post-Contact Period. The 12 burials were identified during their 2000 Archaeological Inventory Survey and 2002 Burial Treatment work.

In 2004 and 2006 SCS conducted Archaeological Monitoring on an adjacent parcel of land located on the eastern side of Kalihiwai Stream (Shefcheck *et al.* 2007). Monitoring activities resulted in the identification and supplemental documentation of State Site 50-30-03-671, which includes fifteen sets of human remains inadvertently identified at that time and includes the twelve human burials previously identified by Elmore (Elmore and Kennedy 2000). The remains were determined to be of both pre-Contact- and Historic-type proveniences and were incorporated into State Site 50-30-03-671.

In 2007, SCS conducted Archaeological Monitoring and recovery work during mechanical excavations for the installation of two septic tanks and a leach field on the nearby Miller property located in Kalihiwai Ahupua`a, Hanalei (Halele`a) District, Island of Kauai [TMK: (4) 5-3-003:006] (Hoerman *et al.* 2008). During the course of the Archaeological Monitoring program State Site 50-30-03-5010 was identified. State Site 50-30-03-5010 has been interpreted as a pre-Contact habitation site with a Historic component. Radiocarbon analysis of a single fish bone sample, obtained from Feature 7, yielded a radiocarbon date of A.D. 1150-1270.

State Site 50-30-03-5010 consists of eight subsurface features: Feature 1 (Burial 1) consisted of human skeletal remains representing a single (MNI=1) adult male of Polynesian ancestry in a traditional-style pre-Contact burial in an associated basalt cobble crypt; Feature 2 (Burial 2) consisted of human skeletal remains representing a single (MNI=1) adult female of Polynesian ancestry in a traditional-style pre-Contact burial; Feature 3 consisted of a partially articulated domestic horse (*Equus caballus*) burial; Feature 4 consisted of a buried wall; Feature 5 was a firepit; Feature 6 (Burial 3) was an historic coffin burial containing human skeletal remains representing a single (MNI=1) adult male of undetermined ancestry; Feature 7 and Feature 8 were possible postholes. Historic artifacts consisted of a blue on white porcelain bowl

base sherd and six buttons were identified in association with Feature 6 (Burial 3). Traditional-type artifacts, obtained from sandy backfilled contexts, included basalt flakes, adze blanks, adze fragments, volcanic glass.

In 2011, SCS conducted an Archaeological Inventory Survey (Potter and Dega 2011) on a 1 acre parcel (TMK: (4) 5-5-010:77) northeast of the subject project area, which resulted in the identification of State Sites 50-30-03-2104, 50-30-03-2105, 50-30-07-2170. All three sites are interpreted to represent pre-Contact activities on the parcel. State Site 50-30-03-2104 consists of an isolated find spot of disarticulated human remains (Feature 1) representing a single (MNI=1). State Site 50-30-03-2105 consists of three primary, *in situ* burials (Burial 1, Burial 2, Burial 3) from pre-Contact time, representing a minimum of three (MNI=3) individuals. State Site 50-30-07-2170 consists of pre-Contact period cultural layer (Feature 1), containing freshwater and marine shell and two basalt flakes. State Site 50-30-07-2170 has been interpreted as habitation site. Radiocarbon analysis of a matrix sample from Feature 1 yielded a radiocarbon date of A.D. 1270-1330. State Site 50-30-03-2105 was identified 15 feet southwest of State Site 50-30-07-2170. Coupled with the two burials identified in 1993, a total of five known burials occur on the parcel, with one area, State Site 50-30-03-2104, consisting of a disarticulated human remain find spot.

SETTLEMENT PATTERNS AND PREDICTIVE MODEL

Based on the results of previous archaeological work in the vicinity of the current project area, as well as archival research, there were heightened expectations that both prehistoric and historic-period activities could be documented on the parcel. These activities could date from the A.D. 1100-1200s and consist of remnant occupation layers and associated agricultural loci. Through time, occupation of the area would have been more permanent, with greater chance for archaeological evidence on the form of distinctive cultural strata, artifacts, midden (charcoal, shell), and burials, the latter often associated with house sites. The pattern is one of pre-Contact Hawaiian river valley settlement and would include taro cultivation along the tributaries and lower reaches of the streams, as well as the lower delta areas and the alluvial flats that lie between the uplands and the coastline. Additional agricultural terracing would have extended back into upper portions of the valleys. Tree crops such as paper mulberry or *wauke* (*Broussonetia papyrifera*) and Indian mulberry or *noni* (*Morinda citrifolia*) and dryland crops, such as sweet potato or *uala* (*Ipomoea batatas*), would have been grown in the drier portions of the lower valley gulch bottoms and along the valley slopes. Permanent habitation was located in the dryer sections of the lower valleys along small tributaries in the beach zone.

The archaeological record of the area also suggests the presence of historic period occupation, in the form of historic architecture (rock walls, enclosures) and associated artifacts fashioned from glass and metals

Archaeological work also suggested there was a high probability of encountering human burials in the project area. Specifically, a multitude of Traditional- and Historic-period human burials have been previously identified on subject parcels near the project area. This also suggests a significant settlement and use of the region over a long period of time. That additional burials would be identified on the current parcel was also supported by the former presence of three ancestral burials, all of which were removed several years ago, prior the current project.

METHODOLOGY

Archaeological Inventory Survey fieldwork was conducted on the subject property on September 17, through September 19, 2012, by SCS archaeologist Jim Powell, B.A. under the direct supervision of Michael Dega, Ph.D., Principal Investigator. The work described in this report consists of historical background and archival research; pedestrian survey of the parcel; mapping, subsurface testing (excavation by mini excavator and backhoe); analysis, interpretation, and reporting of all relevant data. No cultural material or burials were identified during subsurface testing.

FIELD METHODS

Fieldwork involved systematic pedestrian survey of the entire project area and representative subsurface testing (excavation by mini excavator and backhoe). All excavations were recorded and SCS personnel were present during all ground disturbing activities. All aspects of field work were photographed with a digital camera and copies of these photographs have been archived on the SCS computer network. As no surface features or deposits were identified, emphasis was placed on subsurface investigations. Trenches were placed across various portions of the project area to provide representative coverage and test areas most amenable to yield archaeological information. Trenches had to be positioned to avoid existing utilities, driveways and roads, and allow for traffic to pass relatively unrestricted. All trenches were described using standard archaeological recording forms with sufficient detail to exhibit character, size, location, and inter-relationships. Scaled profile drawings of soil stratigraphy; soil layer colors, and soil compositional data were acquired from each trench.

LABORATORY METHODS

As there were no significant finds on the surface or through subsurface testing. Laboratory work primarily consisted of digital drafting of stratigraphic trench profiles, trench locations, and project area maps. All field notes, maps, photographs, and communications pertaining to this project are being curated at the SCS laboratory in Honolulu.

FIELDWORK RESULTS

Complete pedestrian survey and subsurface testing of the subject parcel failed to reveal any cultural material and/or burials. SCS personnel chose 15 locations to excavate test trenches (Figure 6). A total of thirteen stratigraphic trenches were excavated across the parcel (Appendix A). Trenches TU #7 and #10 were abandoned after waterlines were encountered. Dimensions for TU #7 could not be taken as a result. All mechanical excavations were accomplished using a mini excavator with an 18 inch bucket and a backhoe with a 20 inch bucket. A total 30 m² were excavated (length by width) to an average depth of 1 meter below surface (mbs). The following table summarizes trench excavation results (Table 1).

STRATIGRAPHY

All stratigraphic profiles exhibited similar stratigraphy, although slight variations in matrix composition and color were encountered. Two to three strata were documented throughout the project area. Most of the units only revealed two strata with the exception of stratigraphic profiles TU #1, #5, #8, and #15, which revealed three strata. Stratigraphic Profiles TU-2 and TU-5 have been selected as representative samples of the typical stratigraphy encountered in the trenches excavated across the subject property (Figure 7 through Figure 9):

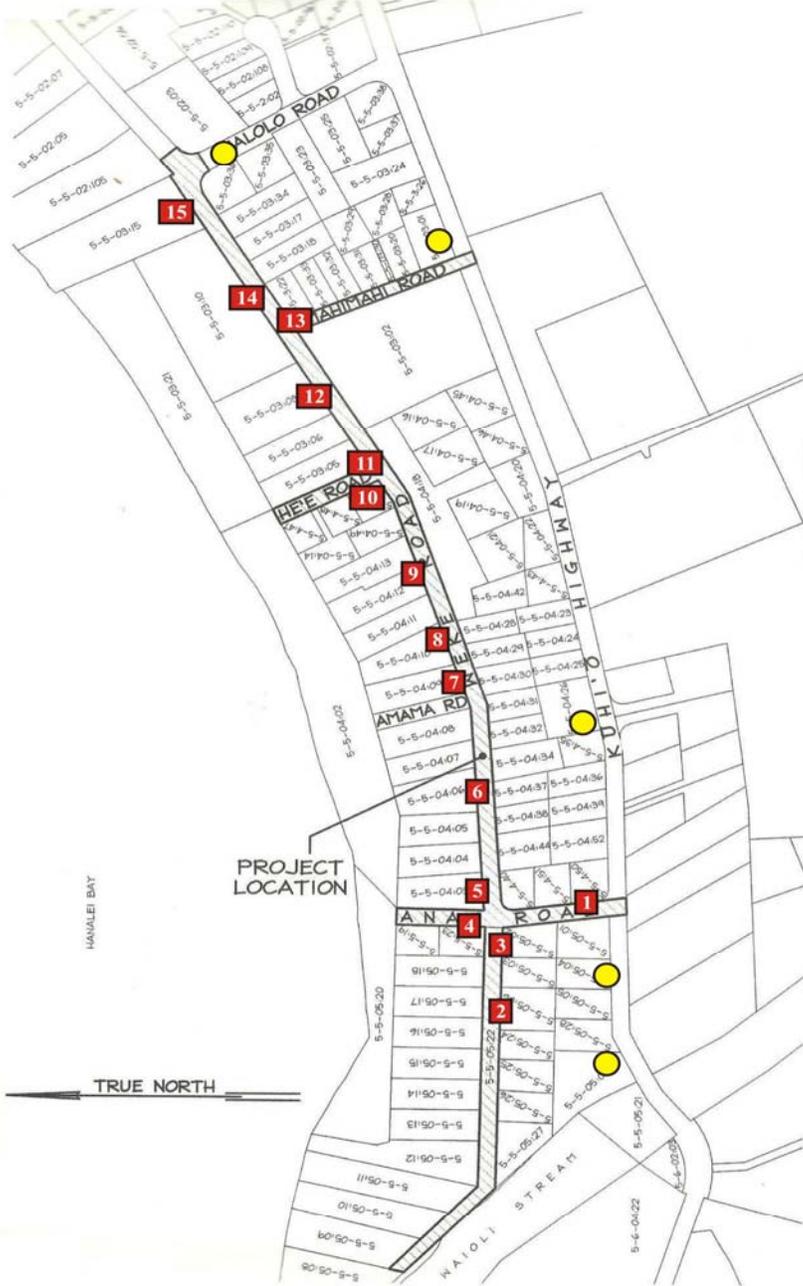
Stratigraphic Profile TU #2 (Typical Profile with Two Strata; see Figure 7 and 8)

- Layer I (0-20 cmbs) dark gray (10YR 4/1) sandy top soil.
- Layer II (20-124 cmbs) gray (10YR 6/1) mixed soil/sand.

Stratigraphic profile TU #5 (Typical Profile with Three Strata; see Figure 9).

- Layer I (0-20/24 cmbs) yellowish brown (10YR 5/4) sandy top soil.
- Layer II (20/24-92/96 cmbs) gray (10YR 6/1) sand.
- Layer III (92/96-108 cmbs) pale brown (10YR 6/3) hard pan / lithified sand.

Project Area with TMK's, Test Unit locations and previously known burial sites.



RED NUMBER ARE TEST UNIT LOCATION **YELLOW** DOTS ARE KNOWN SCS BURIALS LOCATION

Figure 6: Project Area with TMK's, Test Unit Locations, and Previously known Burial Sites.

Table 1: Excavation Trench Data and Results.

SCS PROJECT 1311 EXCAVATION TRENCH DATA AND RESULTS						
Location	Stratigraphic Trench (TU) #	Long Axis Orientation (Degrees and North-type)	Dimensions (meters; L x W x Max Depth)	Strata Exposed	Subsurface Features Present	Cultural Material Observed
Anae Rd	TU #1	350°/170° (Magnetic)	5 x .40 x .80	3	none	none
Weke Rd	TU #2	80°/270° (Magnetic)	5 x .40 x 1.06	2	none	none
Weke Rd	TU #3	80°/260° (Magnetic)	3.03 x .40 x 1.12	2	none	none
Anae Rd	TU #4	350°/170° (Magnetic)	4.9 x .40 x 1.30	2	none	none
Weke Rd	TU #5	80°/260° (Magnetic)	6.10 x .40 x 1	3	none	none
Weke Rd	TU #6	80°/250° (Magnetic)	6.46 x .40 x 1.14	2	none	none
Weke Rd	TU #7*	-	-	-	none	none
Weke Rd	TU #8	58°/242° (Magnetic)	5.20 x .40 x .72	3	none	none
Weke Rd	TU #9	68°/242° (Magnetic)	5.70 x .40 x 1	2	none	none
He'e Rd	TU #10**	-	2.76 x .46 x .15	-	none	none
Weke Rd	TU #11	42°/230° (Magnetic)	2.74 x .60 x 1	2	none	none
Weke Rd	TU #12	48°/228° (Magnetic)	6.30 x .40 x 1.06	2	none	none
Mahimahi Rd	TU #13	140°/320° (Magnetic)	4.50 x .40 x 1	2	none	none
Weke Rd	TU #14	60°/240° (Magnetic)	5.20 x .60 x .80	3	none	none
Weke Rd	TU #15	40°/220° (Magnetic)	4.50 x .60 x 1.07	2	none	none
<p>* Trench TU #7 was abandoned after waterlines were encountered. Dimensions could not be taken as a result. ** Trench TU #10 was abandoned after waterlines were encountered. Long Axis could not be taken as a result.</p>						



Figure 7: Photograph of Stratigraphic Profile TU #2. (Typical Profile with Two Strata).

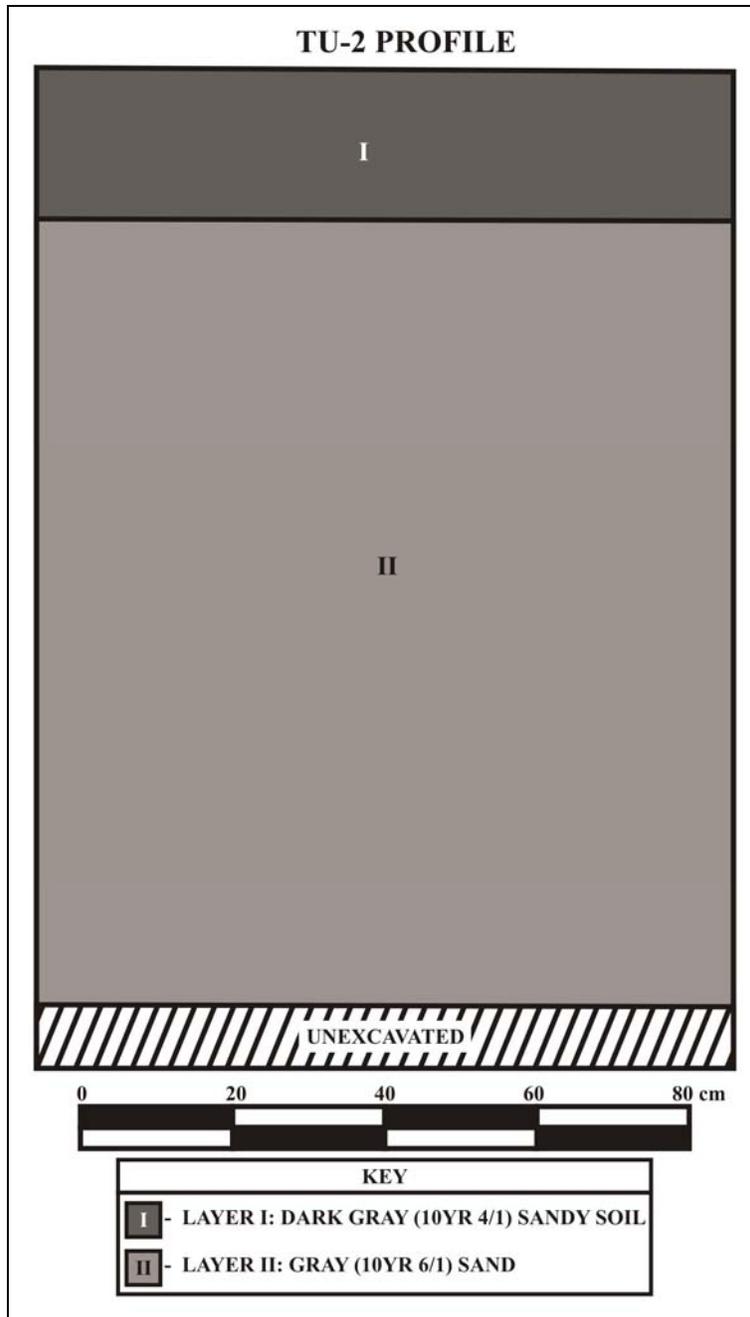


Figure 8: Drawing of Stratigraphic Profile TU #2. (Typical Profile with Two Strata).

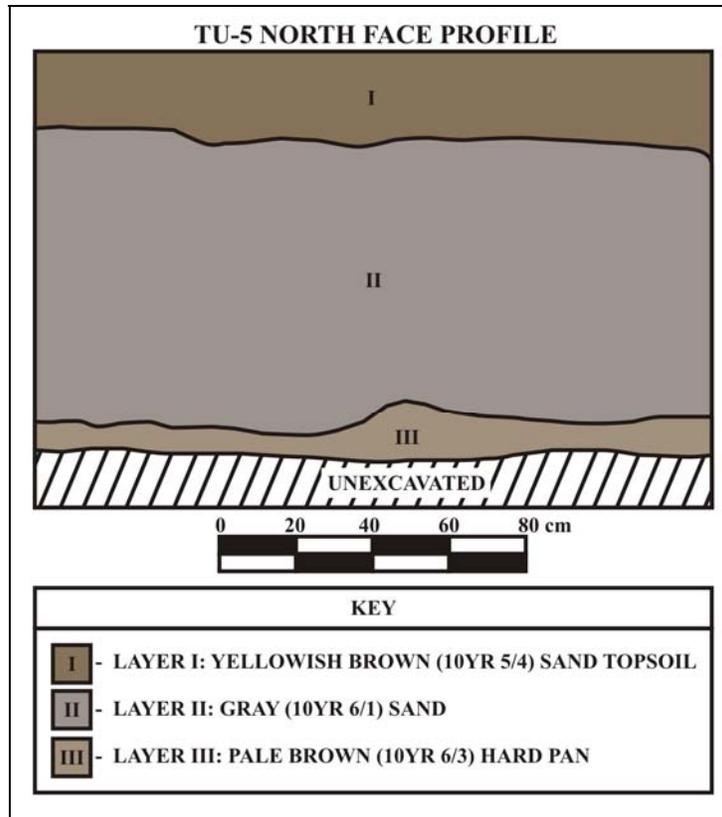


Figure 9: Drawing of Stratigraphic profile TU#5. North Face (Typical Profile with Three Strata).

DISCUSSION

Pedestrian survey and subsurface investigations of the project area failed to yield evidence for Traditional Hawaiian cultural material, subsurface features, artifacts, or burials in the 13 trenches that were excavated. Nor were any historic artifacts or features found. The primary reason for the absence of significant cultural materials may be related to extensive modern landscape modifications in the area, which may have removed or severely displaced any former cultural materials in the area.

RECOMMENDATIONS

An Archaeological Assessment has been completed for the preparation of the pipeline replacement project located in Hanalei. The current project did not lead to the documentation of any significant cultural materials or burials. Based on the findings of previous archaeological projects within the Hanalei area, there is strong evidence for pre-Contact and Historic-period settlement in the area and may still contain significant sites with cultural materials and/or burials. Full-time Monitoring is recommended for all future subsurface excavation work that will occur in the subject project area [TMK (4) 5-5-03:05, 08, 10, 15, 22; (4) 5-5-04:03, 06, 09, 10, 12, 15; (4) 5-5-05:02, 06, 23].

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NEIL ABERCROMBIE
GOVERNOR OF HAWAII



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

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

In reply, please refer to:
EMD/CWB

12008PCTM.13

December 3, 2013

Mr. Wayne T. Wada, P.E.
Project Engineer
Esaki Surveying & Mapping, Inc.
1610 Haleukana Street
Lihue, Hawaii 96766s

RECEIVED
12/6/13
ESAKI SURVEYING & MAPPING, INC.

Dear Mr. Wada:

SUBJECT: Comments on the Draft Environmental Assessment for the Pipeline Replacement along Weke, Anae, Mahimahi and Hee Roads Hanalei, Island of Kauai, Hawaii

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated November 21, 2013, 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/2013/10/CWB_Oct22.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 a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the CWB Individual NPDES Form through the e-Permitting Portal and the hard copy certification statement with \$1,000 filing fee. Please open the e-Permitting Portal

Mr. Wayne T. Wada, P.E.
December 3, 2013
Page 2

12008PCTM.13

website at: <https://eha-cloud.doh.hawaii.gov/epermit/View/home.aspx>. 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 "CWB Individual NPDES Form." Follow the instructions to complete and submit this form.

3. If your project involves work in, over, or under waters of the United States, it is highly recommend that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 438-9258) 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.

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:rh



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

In reply, please refer to:
File:

13-1010A CAB

December 5, 2013

Mr. Wayne T. Wada, P.E.
Project Engineer
Esaki Surveying & Mapping, Inc.
1610 Haleukana Street
Lihue, Kauai, Hawaii 96766

RECEIVED
12/11/13
ESAKI SURVEYING & MAPPING, INC.

Dear Mr. Wada:

SUBJECT: Draft Environmental Assessment
Pipeline Replacement along Weke, Anae, Mahimahi, and Hee Roads
Hanalei, Kauai Water System

If the proposed project excavates asbestos-cement pipes, the applicant should contact the Asbestos Abatement Office in the Indoor and Radiological Health Branch at 586-5800.

A significant potential for fugitive dust emissions exists during all phases of excavation and construction. The activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust. We encourage the contractor to implement a dust control plan, which does not require approval by the Department of Health, to comply with the fugitive dust regulations. Dust control measures include, but are not limited to, the following:

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

If you have any questions, please contact Mr. Barry Ching of the Clean Air Branch at (808) 586-4200.

Sincerely,

NOLAN S. HIRAI, P.E.
Manager, Clean Air Branch

BC:rg

c: Keith Aoki, P.E., Department of Water, County of Kauai

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 11, 2013



Esaki Surveying & Mapping, Inc.
1610 Haleukana Street
Lihu'e, HI 96766
Attention: Mr. Wayne Wada

**SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR
REPLACE PIPELINE ALONG WEKE, ANAE, MAHIMAHI, AND HEE
ROADS, HANALEI, KAUAI WATER SYSTEM PW 11.13.114**

Dear Mr. Wada

We reviewed the subject Draft Environmental Assessment for the Replace Pipeline Along Weke, Anae, Mahimahi, and Hee Roads project. We offer the following comments:

A. Section II.A. USES:

- A Road Permit is required for this project. The permit is for work within County Right of Ways. Construction plans **shall** be submitted for our review and approval prior to receiving a Road Permit. Additionally, a traffic control plan needs to be incorporated with the Construction Plans and a restoration plan for restoring the damaged trenched asphalt pavement and county road shoulders.

B. Section II.D. HYDROLOGY:

- Best Management Practices (BMP's) **shall** be provided at all times to the maximum extent practicable to prevent the discharge of pollutants, including sediment and contaminants from a construction site to streams, watercourses, natural areas and the property of others.

We wish to remain on your mailing list in receiving a copy of the Final Environmental Assessment. If you have any questions, or need additional information, please feel free to contact me at (808) 241-4896 or by email at siwamoto@kauai.gov.

An Equal Opportunity Employer

December 11, 2013
Page 2

Sincerely,

A handwritten signature in black ink, appearing to read 'Stanford Iwamoto', with a long horizontal flourish extending to the right.

STANFORD IWAMOTO, P.E.
Acting Chief, Engineering Division

SI
Copies to: DPW – Permitting
County Engineer
Planning Department

Bernard P. Carvalho, Jr.
Mayor



Michael A. Dahilig
Director of Planning

Nadine K. Nakamura
Managing Director

Dee M. Crowell
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

JAN 06 2014



Wayne T. Wada, P.E., Project Engineer
Esaki Mapping & Surveying, Inc.
1610 Haleukana Street
Lihu'e, Hawai'i 96766

Subject: DRAFT Environmental Assessment
Pipeline Replacement involving Several Roadways in Hanalei Town
COK DEPARTMENT OF WATER, Applicant
Hanalei, Kaua'i

Thank you for the opportunity to review the DRAFT Environment Assessment involving a pipeline replacement project in Hanalei Town. As proposed, the project will occur within the Special Management Area and the work involves the replacement of existing water pipelines within the Weke, 'Anae, Mahimahi and He'e road right-of-ways. Page 6 of the document states:

"The proposed project calls for the installation of 1,748 linear feet of 8" ductile iron waterline along Weke Road from the intersection with Malolo Road to the intersection with 'Anae Road, 526 linear feet of 6" ductile iron waterline along Weke Road from the intersection with 'Anae Road to the end of the line near Waioli Stream, 298 linear feet of 8" ductile iron waterline along 'Anae Road from the intersection with Kūhi'ō Highway to the intersection with Weke Road, 116 linear feet of 2 ½" PVC waterline along 'Anae Road from the intersection with Weke Road to the end of the line near Waioli Beach Park, 184 linear feet of 2 ½" PVC waterline along He'e Road from the intersection with Weke Road to the end of the line near Waioli Beach Park, and 465 linear feet of 12" ductile iron waterline along Mahimahi Road from the intersection with Kūhi'ō Highway to the intersection with Weke Road. In conjunction with the proposed waterlines, the existing stand pipes along Weke Road will be removed and replaced with fire hydrants, additional fire hydrants will also be placed along Weke Road."

The County Planning Department has reviewed the DRAFT Environmental Assessment for consistency with the Special Management Area (SMA) Rules and Regulations of the County of Kaua'i and General Plan Objectives and Policies. Please be advised that the project's goal to

An Equal Opportunity Employer

Wayne T. Wada, P.E., Project Engineer
Esaki Mapping & Surveying, Inc.
Page | 2

address the repair and maintenance of existing infrastructure is NOT considered “development”, pursuant to Section 1.4 H of the SMA Rules and Regulations, and therefore is exempted from an SMA Permit.

Should there be any questions relative to the above, please contact Staff Planner Dale A. Cua at 241-4050.



MICHAEL A. DAHILIG
Director of Planning

ESAKI SURVEYING & MAPPING, INC.

1610 HALEUKANA STREET - LIHUE, KAUAI, HAWAII 96766

(808) 246-0625 FAX: (808) 246-0229

esm@esakimap.Com

January 8, 2014

State of Hawaii, DOH
Clean Water Branch
919 Ala Moana Boulevard, Suite 309
Honolulu, HI 96814

SUBJECT: DRAFT Environmental Assessment
Pipeline Replacement along Weke, 'Anae, Mahimahi and He'e Roads
Hanalei, Kauai Water System

We have received your letter dated December 3, 2013. Your comments have been reviewed and are addressed in the Final Environmental Assessment (FEA) as follows:

- NPDES Permit for Discharges of storm water associated with construction activities has been added under the Possible Permits Required section.
- All discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, will comply with the State's Water Quality Standards (HAR, Chapter 11-54) as noted under Section II.D Hydrology, of the FEA.

We appreciate your cooperation. Your letter will be included in the FEA.

Thank you for participating in the Environmental Assessment review process.

Very truly yours,



Wayne T. Wada, P.E.
Project Engineer

cc: Keith Aoki, P.E., Department of Water, County of Kauai

ESAKI SURVEYING & MAPPING, INC.

1610 HALEUKANA STREET - LIHUE, KAUAI, HAWAII 96766
(808) 246-0625 FAX: (808) 246-0229
esm@esakimap.Com

January 8, 2014

State of Hawaii, DOH
Clean Air Branch
919 Ala Moana Boulevard, Suite 203
Honolulu, HI 96814

SUBJECT: DRAFT Environmental Assessment
Pipeline Replacement along Weke, 'Anae, Mahimahi and He'e Roads
Hanalei, Kauai Water System

We have received your letter dated December 5, 2013. Your comments have been reviewed and are addressed in the Final Environmental Assessment (FEA) as follows:

- The project will not excavate asbestos-cement pipes.
- Excavation and construction activities will comply with Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust as noted under Section II.I. Air Quality, of the FEA.
- The Department of Water will require the Contractor to implement dust control measures as specified under Section II.I. Air Quality, of the FEA.

We appreciate your cooperation. Your letter will be included in the FEA.

Thank you for participating in the Environmental Assessment review process.

Very truly yours,



Wayne T. Wada, P.E.
Project Engineer

cc: Keith Aoki, P.E., Department of Water, County of Kauai

ESAKI SURVEYING & MAPPING, INC.

1610 HALEUKANA STREET - LIHUE, KAUAI, HAWAII 96766
(808) 246-0625 FAX: (808) 246-0229
esm@esakimap.Com

January 8, 2014

Department of Public Works
County of Kauai
4444 Rice Street, Suite 275
Lihue, HI 96766

SUBJECT: DRAFT Environmental Assessment
Pipeline Replacement along Weke, 'Anae, Mahimahi and He'e Roads
Hanalei, Kauai Water System

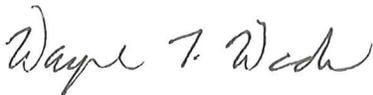
We have received your letter dated December 11, 2013. Your comments have been reviewed and are addressed in the Final Environmental Assessment (FEA) as follows:

- Road Permit for work within County Right of Ways is listed under the Possible Permits Required section.
- The Department of Water acknowledges that construction plans shall be submitted to the Department of Public Works for review and approval prior to receiving a Road Permit. Additionally, a traffic control plan will be incorporated with the construction plans and a restoration plan restoring the damaged trenched asphalt pavement and county road shoulders.
- Potential Impacts and Mitigative Measures under Section II.A. Uses, of the FEA, states that the damaged trenched asphalt pavement and county road shoulders will be restored.
- Best Management Practices (BMP's) shall be provided at all times to the maximum extent practicable to prevent discharge of pollutants, including sediment and contaminants from the construction site to streams, watercourses, natural areas and the property of others as specified under Section II.D. Hydrology, of the FEA.
- Attached is one (1) CD containing a PDF copy of the Final Environmental Assessment as requested in your letter.

We appreciate your cooperation. Your letter will be included in the FEA.

Thank you for participating in the Environmental Assessment review process.

Very truly yours,



Wayne T. Wada, P.E.
Project Engineer

Enclosure

cc: Keith Aoki, P.E., Department of Water, County of Kauai

ESAKI SURVEYING & MAPPING, INC.

1610 HALEUKANA STREET - LIHUE, KAUAI, HAWAII 96766
(808) 246-0625 FAX: (808) 246-0229
esm@esakimap.Com

January 8, 2014

Planning Department
County of Kauai
4444 Rice Street, Suite A-473
Lihue, HI 96766

SUBJECT: DRAFT Environmental Assessment
Pipeline Replacement along Weke, 'Anae, Mahimahi and He'e Roads
Hanalei, Kauai Water System

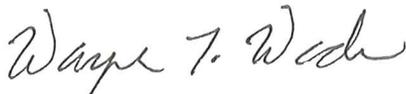
We have received your letter dated January 6, 2014. Your comments have been reviewed and are addressed in the Final Environmental Assessment (FEA) as follows:

- The project is located within the SMA area, given the nature of the project, underground utility line and appurtenant aboveground fixtures of less than 4 ft., it is not considered a development and is therefore exempt from an SMA Permit as noted in Section II.H. Land Use Controls, of the FEA. Please note that this information was also part of the Draft Environmental Assessment under Section II.H. Land Use Controls.

We appreciate your cooperation. Your letter will be included in the FEA.

Thank you for participating in the Environmental Assessment review process.

Very truly yours,



Wayne T. Wada, P.E.
Project Engineer

cc: Keith Aoki, P.E., Department of Water, County of Kauai