

Appendix D2

**Draft Archeological Inventory Survey (AIS) Report for the Proposed Keālia Mauka Homesites and
Associated Sewer Line Project
Cultural Surveys Hawai'i
June 2019**



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LAND USE COMMISSION
Department of Business, Economic Development & Tourism
State of Hawai'i

June 25, 2019

Dr. Alan S. Downer, SHPD Administrator
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Subject: Docket No. A17-803/Keālia Properties, LLC
Keālia Mauka Homesites and Associated Sewer Line Project, Keālia
Ahupua'a, Kawaihau District, Kaua'i Tax Map Key: (4) 4-7-004: por. 001
(Petition Area);
Kūhiō Highway and Mailihuna Road Rights-of-Way, 4-7-003:002 por. Keālia
Road and Kūhiō Highway Rights-of-Way, 4-7-004:001 por (Off-site Utility
Improvements)

*Revised Draft Archaeological Inventory Survey Report for the Proposed Keālia
Mauka Homesites and Associated Sewer Line Project, Keālia and Kapa'a Ahupua'a,
Kawaihau District, Kaua'i, TMKs: [4] 4-6-014 por. Kūhiō Highway and Mailihuna
Road Right-of-Ways; 4-7-003:002 por. Keālia Road and Kūhiō Highway Right-of-
Ways; 4-7-004:001 por. (June 2019)*

Dear Dr. Downer:

The State of Hawai'i Land Use Commission ("LUC") respectfully submits the above-referenced revised Draft AIS report dated June 2019 for State Historic Preservation Division ("SHPD") review and acceptance. At the LUC's request, Cultural Surveys Hawai'i provided the revised Draft AIS via SharePoint link, sent to the SHPD intake site on June 24, 2019 (LOG 2019.01421).

We have enclosed a letter from Cultural Surveys Hawai'i with a comment table, which summarizes SHPD's April 2019 comments, the revisions made, and the pages on which they were made. As requested, changes are highlighted in the text of the June 2019 revised Draft AIS report. Both the revised Draft AIS and the comment table summary can be downloaded using the following link:

Dr. Alan S. Downer, SHPD Administrator
June 25, 2019
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https://culturalsurveys.sharepoint.com/:f:/g/EuewDjJk5vNGqMK2xuh7jt4BL7XupOVngi_57K7dV8njOw

The revised Draft AIS (June 2019) is a resubmittal of an April 2019 Draft AIS of the same name, which we transmitted to you by letter dated April 17, 2019. In a June 10, 2019, review letter (Log No. 2019.00892, Doc. No. 1906DB01), SHPD requested a number of revisions to the April 2019 report prior to its approval to satisfy the requirements of HAR §13-276-5.

With the submittal of the revised Draft AIS, the LUC anticipates SHPD concurrence with the project's effect on historic properties with a determination of "effect, with agreed upon mitigation commitments," pursuant to Hawai'i Revised Statutes Chapter 6E-42 and Hawai'i Administrative Rules 13-284-7. Mitigation will include an archaeological monitoring plan to be developed in consultation with SHPD and submitted to SHPD for review/acceptance prior to any site work and construction.

The project's point of contact at LUC is:

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If you have any questions or comments, please feel free to call our office at 587-3822.

Sincerely,



Daniel E. Orodener
Executive Officer

Attachments

CULTURAL SURVEYS HAWAII

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL DOCUMENTATION SERVICES — SINCE 1982

25 June 2019

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CSH Job Code: KEALIA 4

Subject: revised Draft *Archaeological Inventory Survey Report for the Proposed Keālia Mauka Homesites and Associated Sewer Line Project, Keālia and Kapa‘a Ahupua‘a, Kawaihau District, Kaua‘i [TMKs: (4) 4-6-014 por. Kūhiō Highway and Mailihuna Road Right-of-Ways; 4-7-003:002 por. Keālia Road and Kūhiō Highway Right-of-Ways; 4-7-004:001:001 por.]* (Kamai et al. April 2019) submitted for review

Dear Dr. Alan Downer:

Thank you for the comments on our report. We are submitting a revised Draft *Archaeological Inventory Survey Report for the Proposed Keālia Mauka Homesites and Associated Sewer Line Project, Keālia and Kapa‘a Ahupua‘a, Kawaihau District, Kaua‘i [TMKs: (4) 4-6-014 por. Kūhiō Highway and Mailihuna Road Right-of-Ways; 4-7-003:002 por. Keālia Road and Kūhiō Highway Right-of-Ways; 4-7-004:001:001 por.]* (Kamai et al. June 2019) for your review.

This revised version of the report reflects the changes requested in your letter dated 10 July 2019 (LOG NO: 2019.00892, DOC NO: 1906DB01), as detailed in the attached table.

If you have any questions or comments, please feel free to call me at (808) 262-9972 or toll free at 1-800-599-9962. You may also reach me by e-mail at dshideler@culturalsurveys.com.

Thank you,



William Folk
Cultural Surveys Hawai‘i, Inc.



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Date: 21 June 2019

Comm #	Summary of Comments	Description of Changes	Page #/Section
6	Page iii. Historic Property Significance. Remove leading zeros in 0884, 07015, 07016, 07021; no leading zeros are included in other site #s or, if you use leading zeros in rest of report include them here for all sites; be consistent. Add period at end of last sentence.	Removed zero prefix with site numbers 884, 7015, 7016, 7021. Corrected missing period	p.iii
7	Page iii. Mitigation Commitments. Mitigation in the form of archaeological monitoring is for the entire project/project area, not for one or several specified sites. Please revise.	Revised. Removed text relating to specific sites.	p.iii
8	Page v. Fix formatting for Appendix A.	Corrected format issue.	p.v
9	Page 1, paragraph 1. Change TMKs: multiple to list the TMKs in full. Reader should not have to go to report cover to identify appropriate TMKs.	Corrected	p.1
10	Page 1, paragraph 2. This is a project, not a project undertaking. If this project is going to include HUD or other federal funding, indicate this.	Deleted the word undertaking	p.1

Date: 21 June 2019

Comm #	Summary of Comments	Description of Changes	Page #/Section
11	Page 1, paragraph 2. Provide more detail as to “scope of work” by including estimated depths of excavations for both The Keālia Mauka Homesites project area (consisting of the 235 single-family house lots and park) and the associated sewer line. Additionally, add sentence here to indicate project area includes the proposed sewer line corridor shown in Figure 1 and be sure that project area acreage includes this sewer line corridor.	Added text on project excavation depths Reworded sentence to emphasize the house sites and sewer comprise the project area. Added acreage breakdown	p.1; Sect. 1.1, paragraph 2 p.1; paragraph 2 p.1; paragraph 3
12	Page 1, paragraph 4. Fix text. What is project area of Drennan and Dega? Do you mean “...project area (Drennan and Dega 2007a)”? This paragraph does not make sense. 4 historic properties were identified by Drennan and Dega 2007a, of which 2 are in the current project area or in the sewer line corridor for the current project area?	Text fixed.	p.1; Sect. 1.1; p.52; Noted in Table 3 in Drennen et al. 2006 and Drennan and Dega 2007a
13	Page 1, paragraph 5. Please correct SCS to Scientific Consultant ..., not Consulting.	Corrected	p.1; paragraph 5

Date: 21 June 2019

Comm #	Summary of Comments	Description of Changes	Page #/Section
14	<p>Page 1, paragraph 6. Change Kumukumu Camp to be consistent throughout report. On page iii you identify it as “New Kumukumu Camp.” Also fix discussion of significance and integrity. These are not two separate assessments – HAR 13-284-6 requires you to assess which of the 7 aspects of integrity are present in order to define the “character-defining” features that make the historic property significant. Sentence should read “evaluation of integrity and significance, mitigation recommendations for the entirety of the project area, including the sewer line project corridor. Additionally, you cannot state “the original 2007 AIS” by Drennan and Dega as it really is Drennan and Dega 2007a and 2007b.</p>	<p>Made consistent</p> <p>Corrected assessment of integrity and significance using suggested wording</p> <p>Corrected reference to include Dega 2007a and 2007b.</p>	<p>Multiple pages</p> <p>p.7; paragraph 1</p>
15	<p>Page 2. Fix page numbering, as there are two pages labeled Page 1.</p>	<p>Corrected page numbering error</p>	<p>p.1</p>
16	<p>Page 2. Figure 2. This figure really doesn’t show all the TMK with labels. Where are the TMK boundaries? Additionally, the project TMK are identified as (4) 4-6-014 por., 4-7-003:002 por., and 4-7-004:001 por. Where is TMK (4) 4-7-04:001? Where are the labels for the roads included in the project area?</p>	<p>Added Parcel :001 and road names</p>	<p>p.3; fig. 2</p>

Date: 21 June 2019

Comm #	Summary of Comments	Description of Changes	Page #/Section
17	Page 12, paragraph 3. Insert SIHP # for newly identified site. Also provide information on GPS – what equipment used, accuracy, and where points were taken. You provide equipment for CSH 5 and Feature 5A documentation but provide no info on whether GPS points were taken for the previously identified sites and, if so, where and if not, why not.	Waiting on SIHP number assignment Related GPS equipment and that most other previously documented sites are underground.	p.13 and 14
18	Page 24, paragraph 1. Provide additional details/differentiation between the Māhele, Kuleana Act of 1850, and Alien Land Ownership Act is what allowed foreigners to acquire land.	Additional details added	p.26; Sect. 3.3.1
19	Page 26. Why different font for Figure 10 caption? See Figure 11. Actually inconsistency elsewhere also.	Font consistent throughout	p. 27
20	Page 33-35, Figures 15-18 Captions. Add directional information for described photos in caption.	Added directional information to photo captions	p.34-36; Fig. 15-18
21	Page 37, Figure 20 Caption. Add directional information in photo description.	Added directional information to photo caption	p.38; Fig. 20
22	Page 39, Figure 21 Caption. Add directional information in photo description.	Added directional information to photo caption	p.40; Fig .21
23	Page 40, Figure 22 Caption. Add directional information in photo description.	Added directional information to photo caption	p.41; Fig. 22

Date: 21 June 2019

Comm #	Summary of Comments	Description of Changes	Page #/Section
24	Page 44, paragraph 3 – Contemporary Land Use, line 9. Change “(Figure 25 and Figure 27)” to “(Figure 25 through Figure 27)”.	Corrected	p.45
25	Page 48. All site #s introduced for the first time in text should be full Site #s, e.g., SIHP # - B002. Fix other errors, e.g., Drennan and Dega 2007, Phase II should be 2007a; -7013 reference should be 2007b not 200.	Corrected Bishop Museum site number and explanation, Fixed other errors noted	p.49, Sect. 3.4.3; p.51; Table 3; p.57-58, Table 4
26	Page 51. Drennan and Dega 2007a. Should read “six plantation-era historic properties were newly identified...” Page 52. Drennan and Dega 2007b. Should read “...IV, 37 historic properties were newly identified, comprised of 66...; no such thing as a new historic property. Make same change on page 58, para 4, and all other locations in text.	Revised text Revised text Revised text	p.52 p.53 p.51; 59-60; 103
27	Page 57. Fix formatting in Reference column of Table 4. You also list - 7015 as a.k.a. -7038. Please provide explanation in text.	Margins in line Added comment that the rail system as various SIHP#'s Discussed at greater length in the description of SIHP# - 7015	p.57 p.63; last paragraph p.83-88; Section 4.10
28	Page 58. See Comment #6 above. You have SIHP # - 0884 in paragraph 1 but SIHP # -884 in paragraph 2. Be consistent.	Made site number consistent through the report text	Multiple pages

Date: 21 June 2019

Comm #	Summary of Comments	Description of Changes	Page #/Section
29	Page 60, paragraph 1. See Comment # 14 above. Text should be revised to match and more accurately reflect what was requested. Sentence should read “evaluation of integrity and significance, mitigation recommendations for the entirety of the project area, including the sewer line project corridor.	Revised text in two locations	p. 62; Sect. 3.4.12 p.103
30	Page 60, paragraph 3. Change to (SIHP #s 50-30-08-02165, 50-30-08-02163).	Changed all site numbers to be consistent number format	Throughout
31	Page 61. In the Results of Fieldwork section, please discuss why no excavations were conducted during the AIS, as the SHPD letter, dated May 29, 2018, requested an AIS with subsurface testing.	Related the agreement to conduct archaeological monitoring pursuant to approved plan rather than testing during the AIS	p.63; Sect. 4
32	Page 61. Discuss type of recordation and field methodology (GPS documentation, photos, profiles, other documentation and standards) for historic properties, included in the AIS.	Added short paragraph on GPS specifics and Secretary of Interior standards	p. 63; Section 4
33	Page 6, paragraph 7. Here, and all other appropriate locations, provide correct citation of Drennan and Dega as 2007a or 2007b. There is no 2007.	Check citations and corrected as needed	Multiple pages.
34	Page 62, paragraph 1. What is a tournahauler road?	Changed tournahauler to truck	p.64

Date: 21 June 2019

Comm #	Summary of Comments	Description of Changes	Page #/Section
35	Page 62, paragraph 3. Add space between 2 nd and 3 rd paragraphs.	Corrected paragraph formatting	p.64, last paragraph
36	Page 63, Table 5. Why are sites listed -0884 in Table 4, but 0884 in Table 5? Why not same format?	Correct to consistent format	p.57; Table 4
37	Page 65, para 3. Date should be 210 not 21O. all numbers, not capital O.	Corrected.	p.52; Table 3 and p.66; Sect. 4.2
38	Page 70, last paragraph. Drennan and Dega 2007 should be 2007a or 2007b.	Added information on recording of site 7013.	p.71
39	Page 75, Figure 37 Caption. Add directional information in photo description.	Added photo orientation to caption	p.76; Fig. 37
40	Pages 73-81. For Features 1-5 of SIHP # 50-30-08-07013 (within each site description section), reference that integrity and significance assessments can be found in Section 6.	Included integrity and significance for features of SIHP #-7013 and reference to Section 6	p.74-83
41	Page 90, Figure 55 Caption. Add reference notation in caption. Was it also from Drennan and Dega 2007a or 2007b?	Added CSH, W. Folk field drawings	p.91; Fig.55
42	Page 95 and 97. Please coordinate with SHPD to assign a proper SIHP Site # for “CSH 5”, and “CSH 5A”. Insert space between SIHP 7035 paragraph and SIHP XXX paragraph. SIHP -7035 should be -07035. Be consistent.	New site numbers added Paragraph format corrected Dropped zero from all SIHP numbers for consistency	Throughout p.96 Throughout
43	Page 97, paragraph 2, line 1. After “agrees”, add “with the recommendation that”.	Added suggested text	p.108

Date: 21 June 2019

Comm #	Summary of Comments	Description of Changes	Page #/Section
44	Page 97, paragraph 2. Reference integrity assessment of CSH 5 in Section 6.	Included integrity and significance for features of SIHP #-2390 and -2391 and reference to Section 6	p.96; Sect. 4.13 and 4.13.1
45	Pages 102-105. Discuss mitigation recommendations with SHPD Archaeology Branch Chief and Kauai Lead Archaeologist.	Removed mitigation recommendations. To be addressed in mitigation plan with SHPD consultation	p.108, Sect. 7.2
46	Page 106, paragraph 1. Add period to end of paragraph.	Added period	p.108
47	Page 106, paragraph 2, line 4. Before “Monitoring”, add “Full-time”, and after, “implemented”, add “and conducted by qualified personnel”	Added requested text	p.108; Sect. 7.2
48	Page 106, paragraph 2, line 8. Change “HAR §13-279” to “HAR §13-279-4.” Additionally, discuss monitoring commitment with SHPD Archaeology Branch Chief and Kauai Lead Archaeologist. Why is monitoring only being recommended for limited locations and not entirety of project area, particularly in light of no subsurface testing? Additionally, discussion needs to include whether all sites recommended for no further work have been sufficiently documented or not.	<p>Added HRS section paragraph number</p> <p>Monitoring commitment details to be addressed in mitigation plan in consultation with SHPD</p> <p>Monitoring location details have been deleted. The Monitoring plan will define the details of monitoring in consultation with and approval by SHPD</p> <p>Added text related to no further work</p>	<p>p.108;</p> <p>p.108; Sect. 7.2</p> <p>p.108</p> <p>throughout</p>

DRAFT
**Archaeological Inventory Survey Report for the
Proposed Keālia Mauka Homesites and
Associated Sewer Line Project,
Keālia and Kapa‘a Ahupua‘a, Kawaihau District, Kaua‘i,
TMKs: [4] 4-6-014 por.
Kūhiō Highway and Mailihuna Road Rights-of-Way;
4-7-003:002 por. Keālia Road and
Kūhiō Highway Rights-of-Way; 4-7-004:001 por.**

**Prepared for
HHF Planners**

**Prepared by
Nancine “Missy” Kamai, B.A.,
William H. Folk, B.A.,
and
Hallett H. Hammatt, Ph.D.**

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Management Summary

Reference	DRAFT Archaeological Inventory Survey Report for the Keālia Mauka Homesites and Associated Sewer Line Project, Keālia and Kapa‘a Ahupua‘a, Kawaihau District, Kaua‘i, TMKs: [4] 4-6-014 por. Kūhiō Highway and Mailihuna Road Rights-of-Way; 4-7-003:002 por. Keālia Road and Kūhiō Highway Rights-of-Way; 4-7-004:001 por. (Kamai et al. 2019)
Date	April 2019
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: KEALIA 4
Investigation Permit Number	CSH completed the archaeological inventory survey (AIS) fieldwork under archaeological fieldwork permit numbers 18-15 (2018) and 19-07 (2019), issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-282.
Agencies	SHPD; Land Use Commission (LUC); County of Kaua‘i
Land Jurisdiction	Private, County of Kaua‘i, and State of Hawai‘i
Project Proponent	Keālia Properties, LLC
Project Funding	Private
Project Location	The project area is comprised of the Keālia Mauka Homesites and an associated sewer line corridor. The homesites area is bounded by Kumukumu Ahupua‘a to the north, Kūhiō Highway to the east, former sugarcane fields to the west, and Keālia Town Tract subdivision to the south. The sewer line corridor extends from the southwest corner of the homesites, proceeds east down Keālia Road to Kūhiō Highway, then along Kūhiō Highway to the Kaiakea Fire Station at the south. Keālia Farms, Kapa‘a Homesteads, and St. Catherine’s Cemetery are to the west (or <i>mauka</i> ; inland) of the sewer line corridor as is the intersection of Mailihuna Road and Kūhiō Highway. The sewer line crosses Kapa‘a Stream on the Kapa‘a Bridge. The project area is depicted on a portion of the 1996 Kapa‘a U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
Project Description	The Keālia Mauka Homesites project on former sugarcane agricultural land includes grading and utility infrastructure installment for a residential community development that will include the construction of 235 single-family house lots and a park. A sewer line will be installed from the home sites down Keālia Road to Kūhiō Highway, then along the highway to the existing county sewer system in Kapa‘a.
Project Acreage	74.7 acres (30.2 hectares)
Project Area and Survey Area Acreage	The project area totals 74.7 acres (30.2 hectares) comprising a 53.4-acre area for development of the Keālia Mauka Homesites and a 21.3-acre corridor for installation of the sewer line from Keālia to Kapa‘a.

	Ahupua'a. The inventory survey covered the entire 74.7-acre project area.
Historic Preservation Regulatory Context and Document Purpose	The project is subject to compliance with and review under Hawai'i historic preservation review legislation, including Hawai'i Revised Statutes (HRS) §6E-42 and HAR §13-284, as well as provides support for the project's environmental review under HRS §343 and the LUC. In consultation with the SHPD, this AIS report was prepared to fulfill the requirements of HAR §13-276 and was conducted to identify, document, and assess significance of any historic properties in the project area and, if present, to assess the potential for the project to adversely affect significant historic properties and, if so, to provide agreed upon mitigation commitments to address the adverse impacts. It is intended for review and acceptance by the SHPD.
Fieldwork Effort	CSH archaeologists Scott A. Belluomini, B.A., and Samantha Sund, B.A., Laura Vollert, B.A., Jonathon Alperstein, B.A., Missy Kamai, B.A., and William Folk, B.A., conducted fieldwork for the current investigation on 15 October 2018, 11 January 2019, and 27 February 2019 under the general supervision of Principal Investigator Hallett H. Hammatt, Ph.D. This work required approximately 6 person-days to complete.
Consultation	Consultation was conducted with SHPD to facilitate the process by which this AIS was to be performed and written. A companion cultural impact assessment (Hammatt 2019; in progress) supports project-related historic preservation consultation with stakeholders such as state and county agencies and interested Native Hawaiian Organizations (NHOs), cultural practitioners and community groups, as well as supports the project's environmental review under HRS §343 and the LUC. Known burial site remains have been relocated under previous burial treatment plans.
Historic Properties Identified in the project area	There are 12 (one duplicate number SIHP # 50-30-08-884) previously identified historic properties including seven features and one newly identified historic property including one feature in the project area as follows: State Inventory of Historic Places (SIHP) # 50-30-08-884, a burial site (Bushnell et al. 2003); SIHP # 50-30-08-884, a cultural habitation layer (Dega and Powell 2003); SIHP # 50-30-08-2161, burial site of secondarily deposited bone fragments, collected and relocated (Dega and Powell 2003); SIHP # 50-30-08-2162, traditional Hawaiian habitation layer with deposits of cultural materials spanning an area of approximately 10 m, and secondarily deposited human remains (Dega and Powell 2003). The skeletal remains were recovered and reinterred in accordance with a burial treatment plan (Dye 2012).

	<p>SIHP # 50-30-08-2163, fire pit (Dega and Powell 2003); SIHP # 50-30-08-2165, habitation layer (Dega and Powell 2003); SIHP # 50-30-08-2278, Kapa'a stream bridge (Belluomini et al. 2018); SIHP # 50-30-08-2279, water control ditch and culvert (Belluomini et al. 2018); SIHP # 50-30-08-2390, Keālia Road (Kamai et al. 2019) ; SIHP # 50-30-08-2391, backslope retaining wall for Keālia Road (Kamai et al. 2019) SIHP # 50-30-08-7013, New Kumukumu Camp, Features 1 through 5 (Drennan and Dega 2007a); SIHP # 50-30-08-7015, railroad rails and foundation (Drennan and Dega 2007a); SIHP # 50-30-08-7021 Features 5 and 6, culvert and Pipe (Drennan and Dega 2007a); and SIHP # 50-30-08-7035, stair, (Drennan et al. 2007)</p>
Historic Property Significance Assessments	<p>CSH agrees with the prior archaeological studies' significance assessments of Criterion d (have yielded and have potential to yield information important for research on prehistory or history) for the previously identified subsurface historic properties in the project area including SIHP #s 50-30-08-884 (both occurrences); 50-30-08-2161; 50-30-08-2162; 50-30-08-2163; 50-30-08-2165; Criterion d (have yielded information important for research on prehistory or history) for the previously identified surface historic properties in the project area including 50-30-08-2278, 50-30-08-2279, 50-30-08-7013 (Features 1-2, 3 A&B, 4 A&B, and 5), 50-30-08-7015, 50-30-08-7016, 50-30-08-7021 (Features 5 and 6); and the newly identified historic properties SIHP # 50-30-08-2390 and SIHP # 50-30-08-2391 are also assessed as significant under Criterion d (have yielded information important for research on history). CSH also agrees with the prior archaeological studies' significance assessment of Criterion e for the three burial sites SIHP #s 50-30-08-884, 50-30-08-2161, and 50-30-08-2162.</p>
Effect Recommendation	<p>The AIS results support a project effect determination of "effect, with agreed upon mitigation commitments" pursuant to Hawai'i State historic preservation review legislation, HRS 6E-42 and HAR §13-284-7</p>
Mitigation Commitments	<p>The project proponent commits to developing an archaeological monitoring plan in consultation with SHPD to be submitted for review and acceptance by SHPD prior to any site work and construction.</p>

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Section 1 Introduction

1.1 Project Background

At the request of Mr. Scott Ezer of HHF Planners, Cultural Surveys Hawai'i, Inc. (CSH) has drafted this archaeological inventory survey (AIS) in response to the Department of Land and Natural Resources' State Historic Preservation Division's (SHPD) §6E-8 review letter dated 29 May 2018 (Log No. 2018.00602, Doc No. 1805GC09, see Appendix A), a consultation meeting with SHPD on 26 September 2018, and the project's inclusion of the proposed sewer line corridor, Kapa'a and Keālia Ahupua'a, Kawaihau District, Kaua'i, TMKs: [4] 4-6-014 por.; Kūhiō Highway and Mailihuna Road Rights-of-Way (ROW); 4-7-003:002 por.; Keālia Road and Kūhiō Highway ROW; 4-7-004:001 por.

The proposed Keālia Mauka Homesites project consists of two distinct construction areas: a residential community of 235 single-family house lots and a park, and an associated sewer line extending from the home sites along Keālia Road to the valley floor, and across the valley along the *mauka* (inland) shoulder of Kūhiō Highway to connect with the county system in Kapa'a. Ground disturbing activities include grubbing, grading, subsurface excavations for structural footings, utilities and sewer, subdivision roads and driveways and landscaping. Excavations for these activities are planned to not exceed approximately 4 feet (ft) in depth.

The proposed Keālia Mauka Homesites project area consists of a total of 74.7 acres (30.2 hectares) comprised of a 53.4-acre area for development of the Keālia Mauka Homesites and a 21.3-acre corridor for installation of the sewer line from Keālia to Kapa'a. The proposed project area is shown on a portion of the 1996 Kapaa U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), tax key map overlaid on an aerial photograph (Figure 2), a 2013 aerial photograph (Figure 3), a client-provided layout of the Keālia Mauka Homesite project area (Figure 4), and a client-provided layout of the proposed sewer line project corridor (Figure 5).

During 2006 and 2007 Scientific Consultant Services, Inc. (SCS) conducted an archaeological inventory survey (AIS) on a 2,008-acre property in Keālia Ahupua'a (Drennan 2007). The SCS survey was divided into four phases: Phase I (Drennan et al. 2006), Phase II (Drennan and Dega 2007a), Phase III (Drennan et al. 2007), and Phase IV (Drennan and Dega 2007b). Please refer to Figure 28 in Previous Archaeological Research, Section 3.4 of this report.

The Keālia Mauka Homesites project area for development of residential properties and park, and the northern *mauka* two-thirds of Keālia Road where the sewer line will be installed, are in the Phase I SCS survey area (Drennan et al 2006). However, the former Kumukumu Camp (SIHP# 50-30-08-7013) in the Keālia Mauka Homesites project area is not identified or documented in the Phase I report. These two sites are described and assigned SIHP numbers in the Phase II report (Drennan and Dega 2007a), the project area of which includes only the *makai* (seaward) one-third of Keālia Road. In the chapter titled The Plantation Era of the Phase II report (Drennan and Dega 2007a:11) the authors state, "Two additional camp locations were identified during Phase II of the project, the 'new' and prior location of Kumumumu Camp." In summary, the New Kumukumu Camp-SHIP # 50-30-08-7013 is geographically situated in the Phase I survey area (Drennan et al. 2006) but is documented in the Phase II report (Drennan and Dega 2007a).

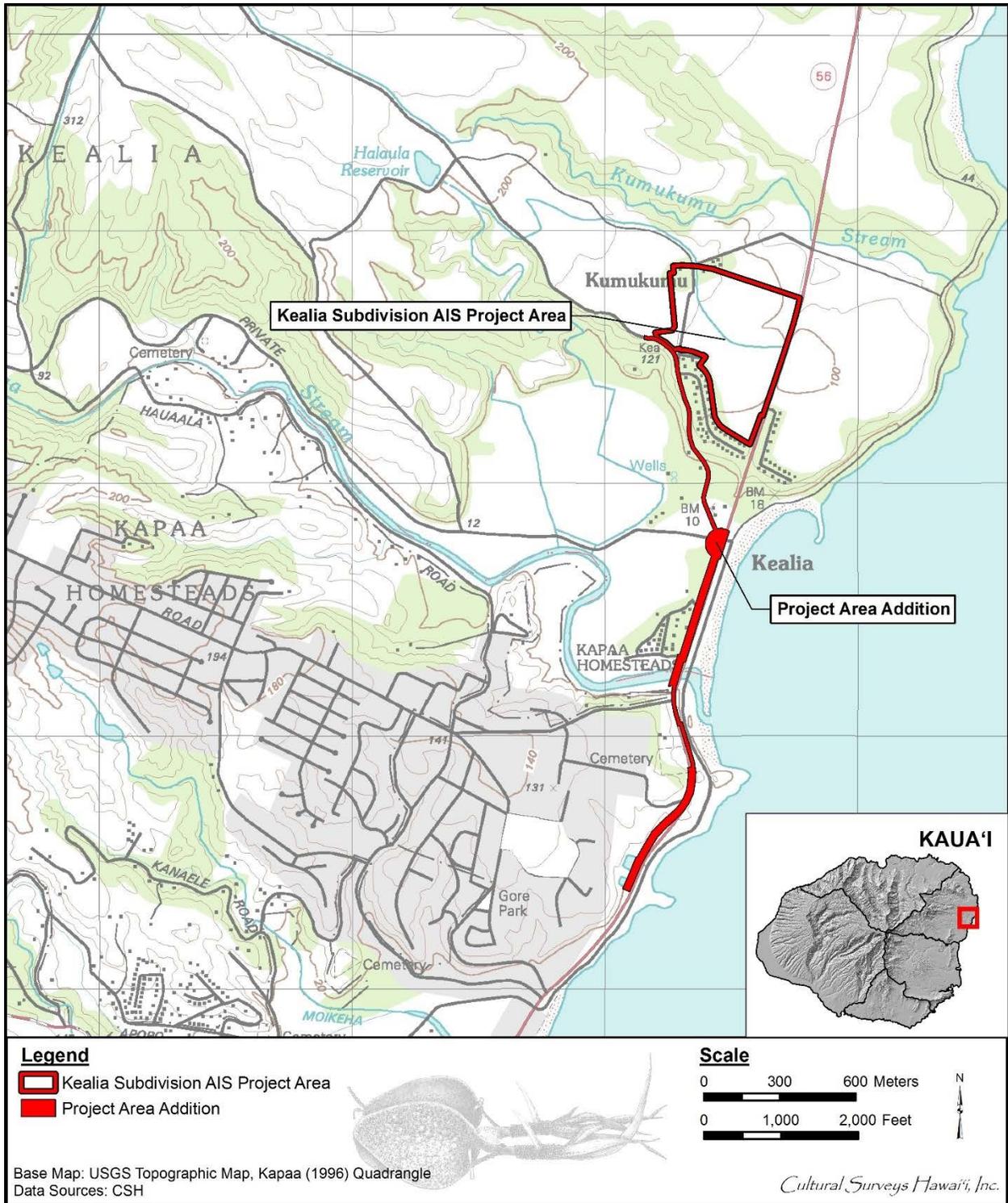


Figure 1. Portion of the 1996 Kapaa USGS 7.5-minute topographic quadrangle showing the location of the proposed Keālia subdivision AIS project area and the sewer line corridor (“Project Area Addition”)

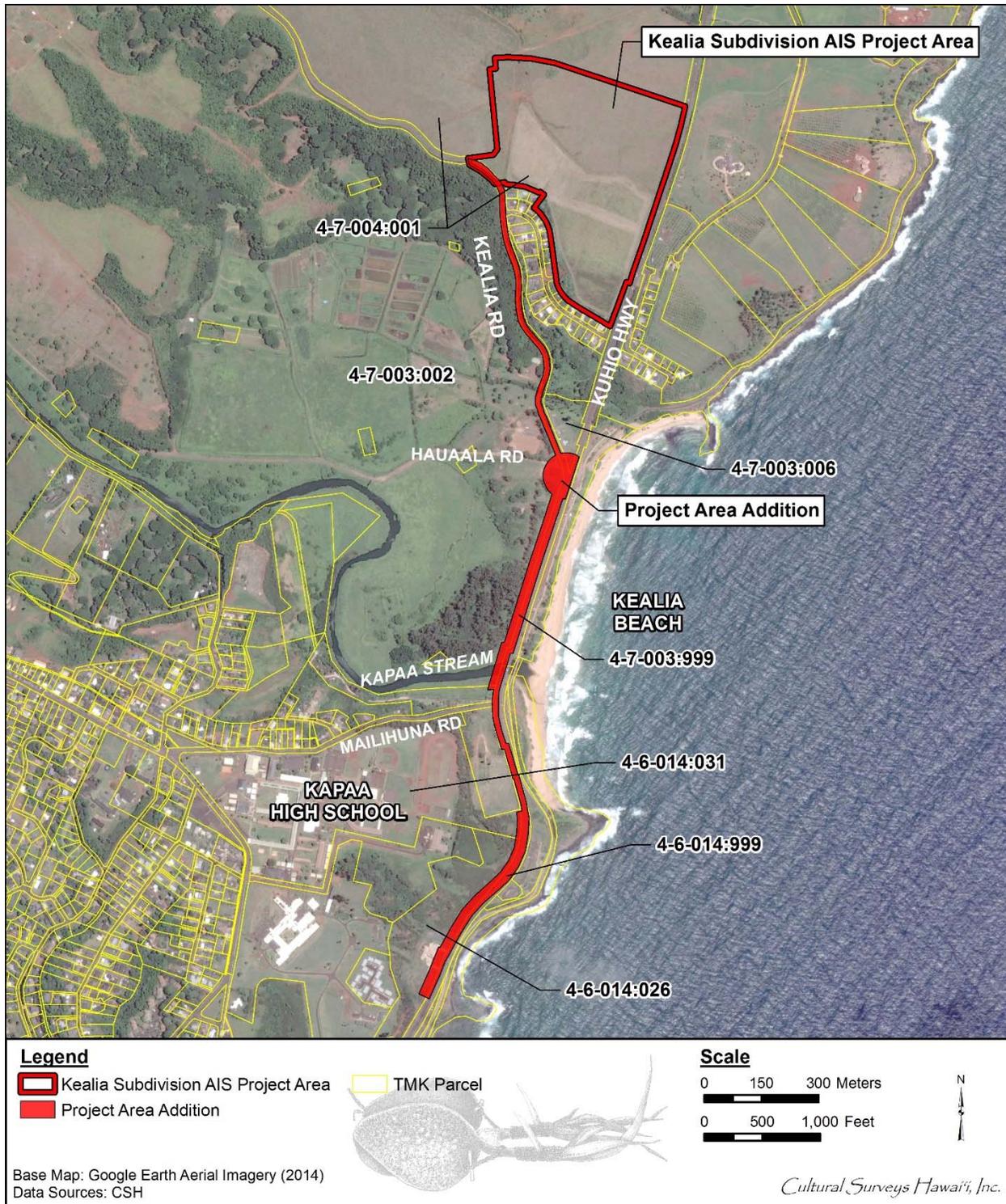


Figure 2. Aerial photograph (2016 ESRI) showing the proposed Keālia subdivision AIS project area and the sewer line corridor (“Project Area Addition”) overlaid with the tax map key (TMK)

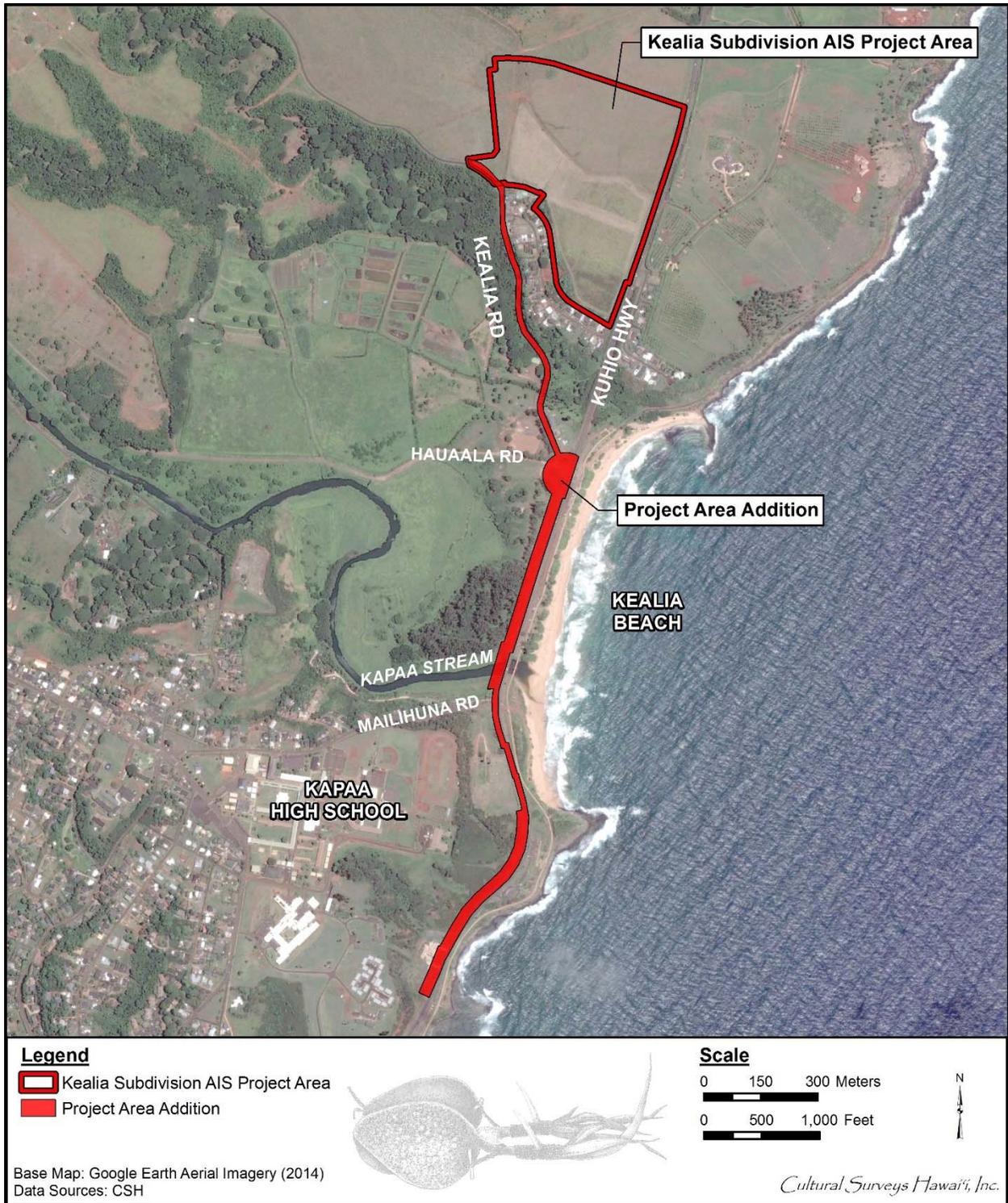


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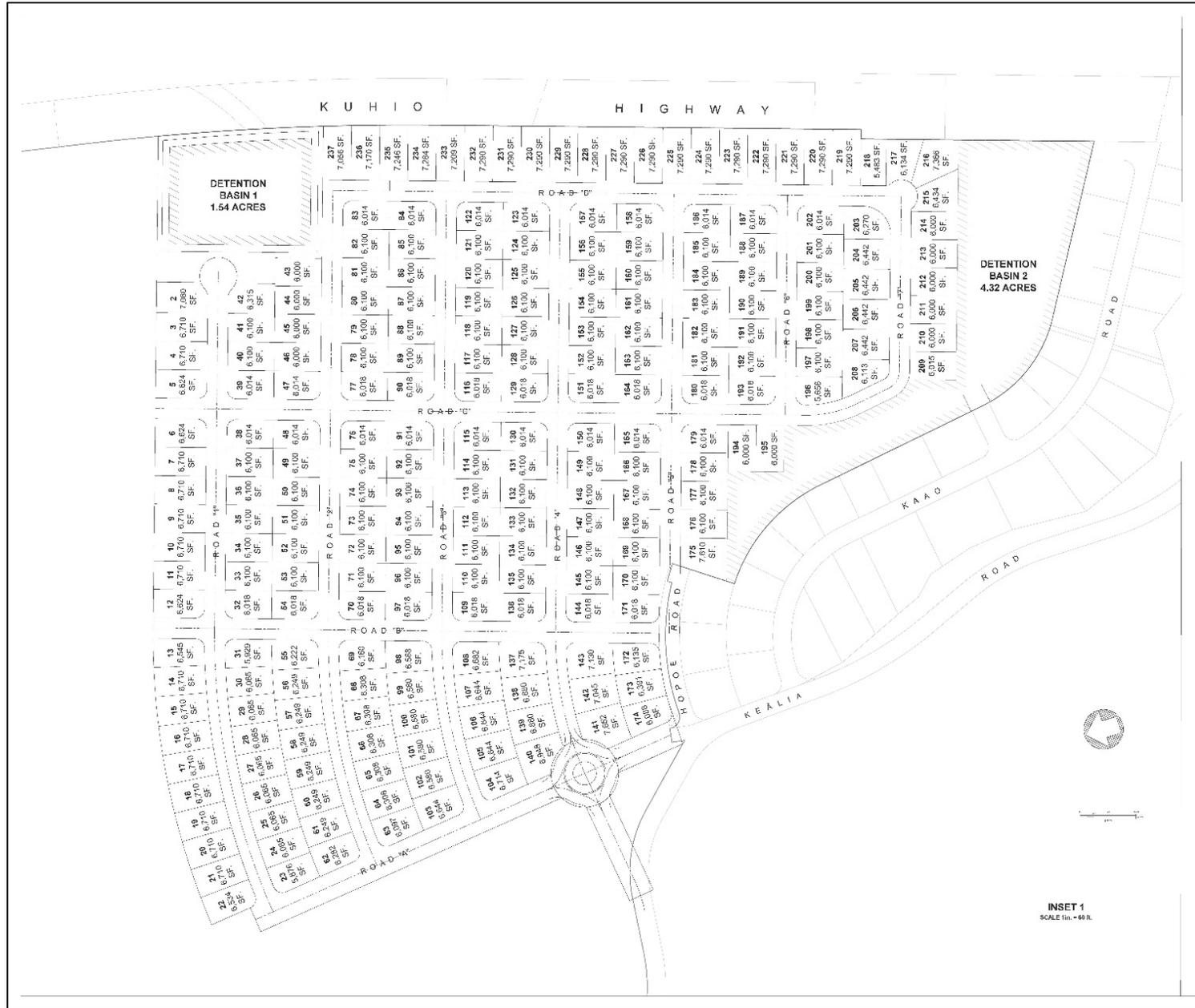


Figure 4. Layout of the proposed Keālia Mauka Homesites (courtesy of client)

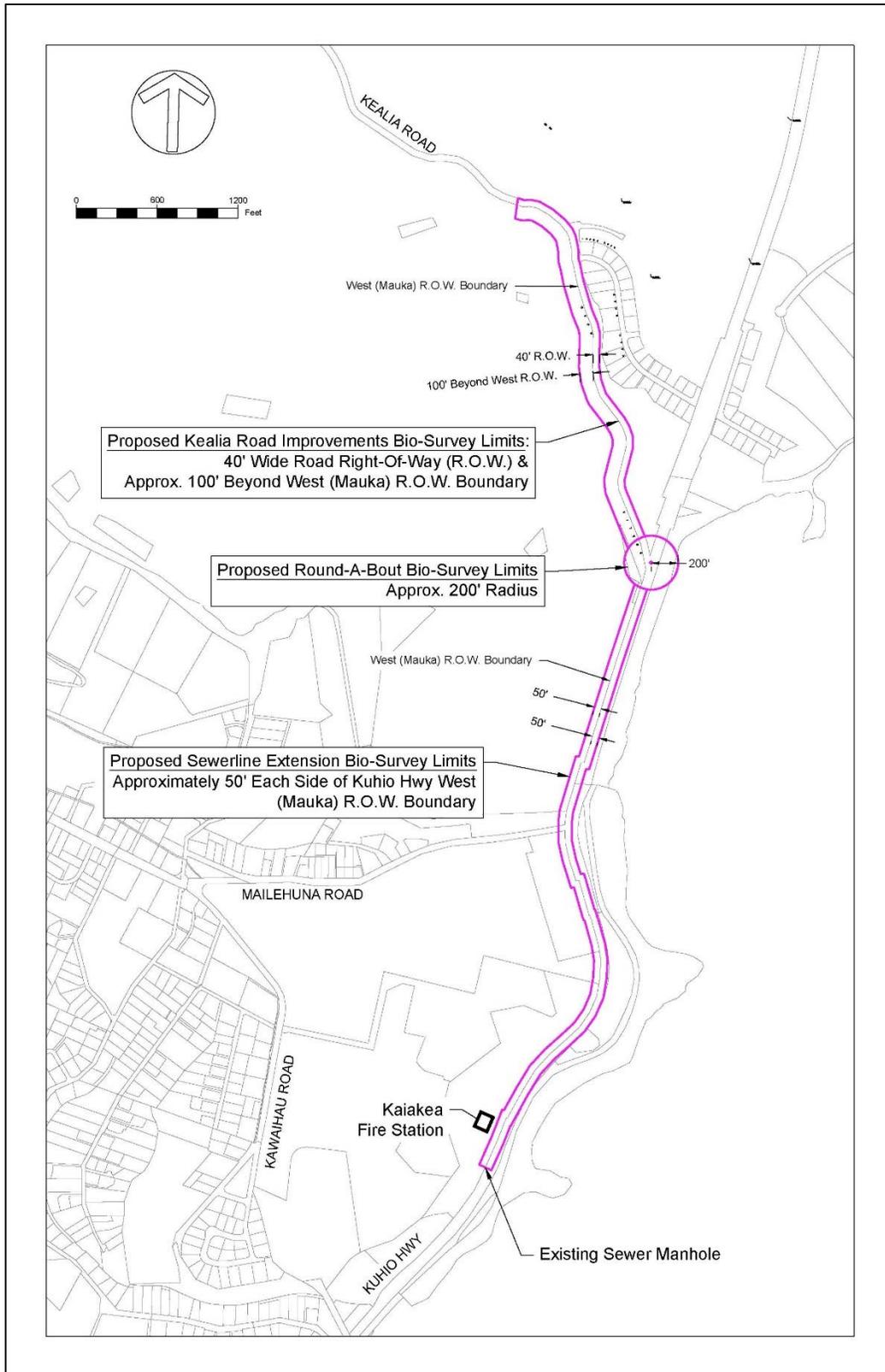


Figure 5. Layout of the proposed sewer line (in purple, courtesy of client)

Consultation was conducted with SHPD on 2 October 2018; a supplemental AIS was requested, to include further recording of associated features of SHIP # -7013 (New Kumukumu Camp), evaluation of integrity and significance, mitigation recommendations for the entirety of the Keālia Mauka Homesites project area, including the sewer line corridor. This study integrates information from the original 2006-2007 AIS ((Drennan 2007; Drennan et al. 2006, Drennan and Dega 2007a, Drennan et al. 2007, and Drennan and Dega 2007b).

1.2 Historic Preservation Regulatory Context and Document Purpose

This document fulfills the requirements of Hawai'i Administrative Rules (HAR) §13-276 and was conducted to identify, document, and assess significance and provide mitigation recommendations of any historic properties. This document is intended to support the proposed project's historic preservation review under Hawai'i Revised Statutes (HRS) §6E-42 and HAR §13-284. A project's effect and potential mitigation measures are evaluated based on the project's potential impact to "significant" historic properties, that is, those historic properties assessed as significant based on the five State of Hawai'i historic property significance criteria. The document is also intended to support any project-related historic preservation consultation with stakeholders such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. This AIS investigation also addresses comments made during a consultation meeting with SHPD on 2 October 2018.

1.3 Environmental Setting

1.3.1 Natural Environment

The project area within Kapa'a and Keālia Ahupua'a is located on the windward side of Kaua'i and is exposed to the prevailing tradewinds and their associated weather patterns. Rainfall on the coastal plains and plateaus of Kapa'a and Keālia averages approximately 40 inches per (Juvik and Juvik, 1998:56). Kapa'a can be characterized as fairly flat, with irregularly shaped gulches and small valleys in the uplands, through which small tributary streams run including Kapahi, Makaleha, and Moalepe. While some of these streams combine with other tributaries in neighboring Keālia to form Kapa'a Stream (often referred to as Keālia River), which empties into the ocean at the northern border of the *ahupua'a* (land division), others flow directly into the lowlands of Kapa'a creating a large (approximately 170-acre) swamp area that has been mostly filled in modern times (Handy and Handy 1972:394, 423). Two canals have been constructed to drain the marshy areas behind Kapa'a Town, Waika'ea Canal (known to most local people as Waiakea Canal) and Moikeha Canal. Kapa'a Town is built upon a sand berm that forms the *makai* buffer to the inland swamp. To the north of Kapa'a, Keālia Ahupua'a shows more characteristics of a typical stream valley with a good sized alluvial plain dissected by a major stream, the Kapa'a Stream (Keālia River) in addition to a plateau land dissected by a few small drainages including Kumukumu and Hōmaikawa'a streams.

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), soils within the current investigation include Ioleau silty clay loam, 2 to 6% slope (IoB); Ioleau silty clay loam, 6 to 12% slope (IoC); a small portion of Ioleau silty clay loam, 12 to 20% slope (IoD2), Rough broken land (rRR), Lihue silty clay, 25 to 40% slope (LhE2) in the northern portion; majority of the central portion contains Mokuleia fine sandy loam (Mr), part of Keālia Stream and Mokuleia clay loam,

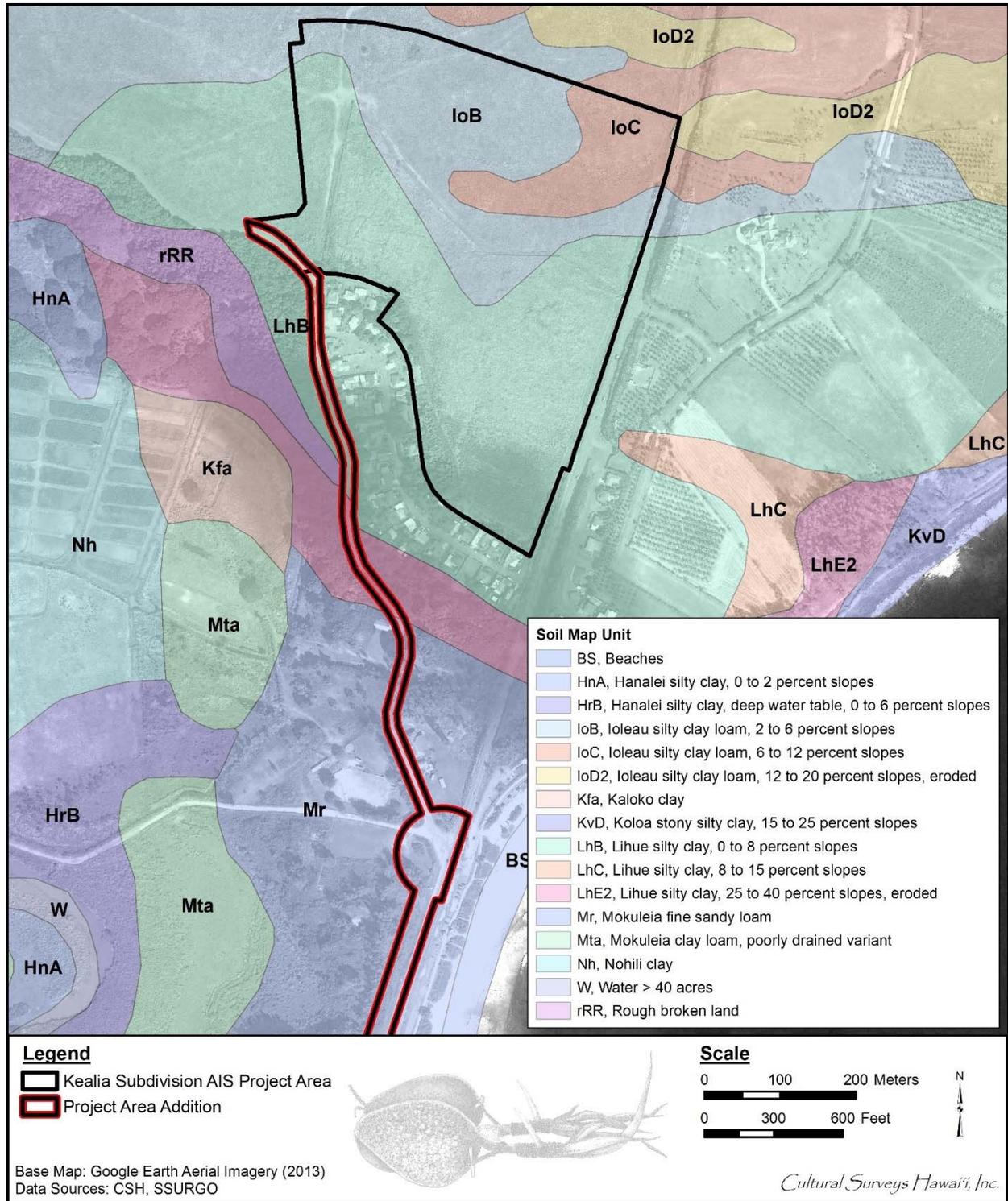


Figure 6. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within the northern portion and part of the central portion of the current investigation and the surrounding area (USDA SSURGO 2001)

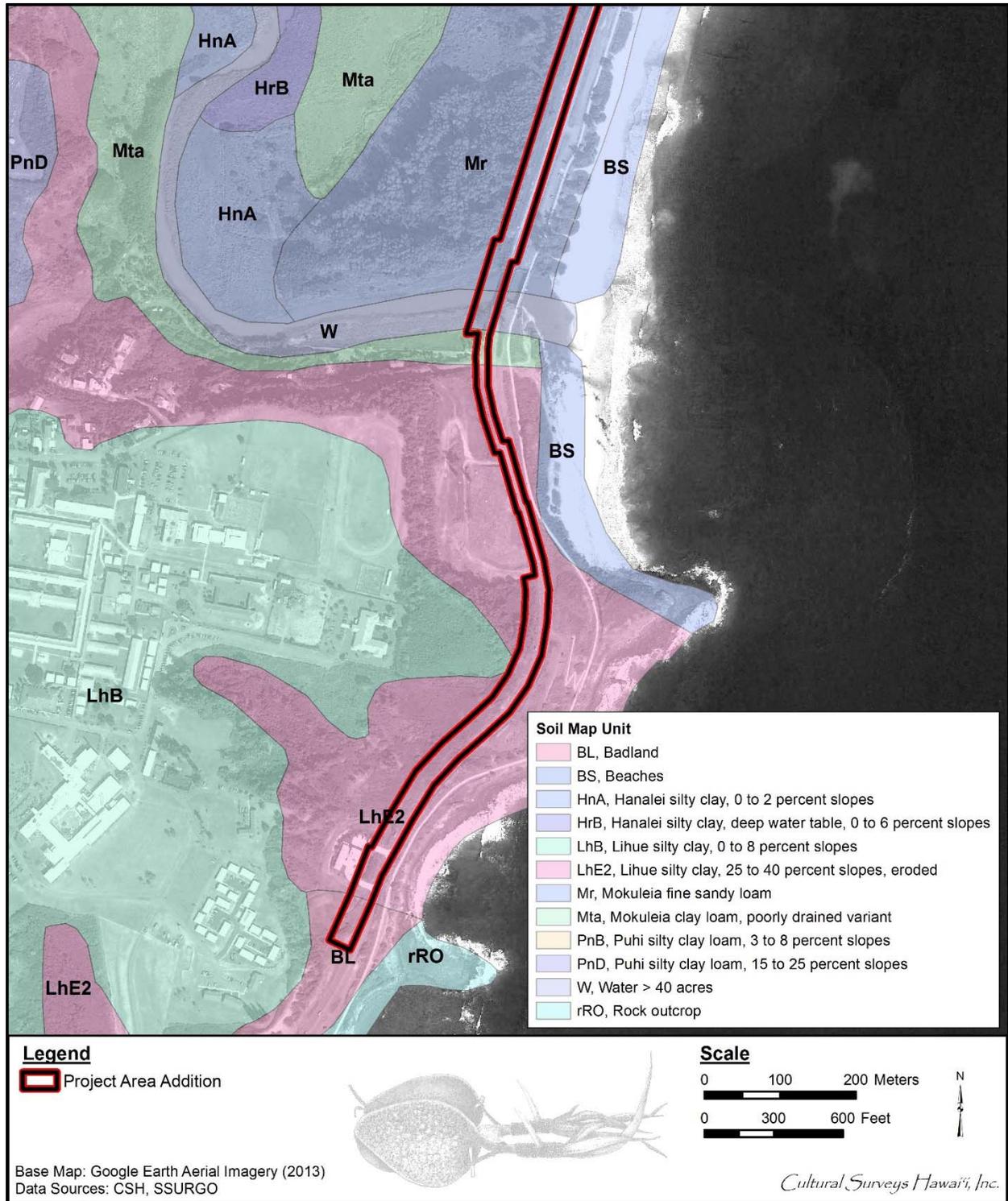


Figure 7. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within a part of the central portion and the southern portion of the current investigation and the surrounding area (USDA SSURGO 2001)

poorly drained variant (Mta), and the majority of the southern portion of the current investigation includes Lihue silty clay, 25 to 40% slope (LhE2) and Badland (BL) (Figure 6 and Figure 7).

Soils of the Ioleau Series are described as follows:

This series consists of well-drained soils on uplands on the island of Kauai. These soils developed in material weathered from basic igneous rock, probably mixed with volcanic ash. They are gently sloping to steep. Elevations range from 100 to 750 feet. The annual rainfall amounts to 40 to 70 inches. The mean annual soil temperature is 72° F. Ioleau soils are geographically associated with Lihue and Puhi soils.

These soils are used for irrigated sugarcane, pasture, pineapple, irrigated orchards, irrigated truck crops, wildlife habitat, and woodland. The natural vegetation consists of lantana, koa haole, guava, and associated shrubs and grasses. [Foote et al. 1972:47]

Soils of the Lihue Series are described as follows:

This series consists of well-drained soils on uplands on the island of Kauai. These soils developed in material weathered from basic igneous rock. They are gently sloping to steep. Elevations range from nearly sea level to 800 feet. The annual rainfall amount to 40 to 60 inches. The mean annual soil temperature is 73° F. Lihue soils are geographically associated with Ioleau and Puhi soils.

These soils are used for irrigated sugarcane, pineapple, pasture, truck crops, orchards, wildlife habitat, woodland, and homesites. The natural vegetation consists of lantana, guava, koa haole, joe, kikuyugrass, molassesgrass, guineagrass, bermudagrass, and Java plum. [Foote et al. 1972:82]

Soils of the Mokuleia Series are described as follows:

This series consists of well-drained soils along the coastal plains on the islands of Oahu and Kauai. These soils formed in recent alluvium deposited over coral sand. They are shallow and nearly level. Elevations range from nearly sea level to 100 feet. The annual rainfall amounts to 15 to 40 inches on Oahu and 50 to 100 inches on Kauai. The mean annual soil temperature is 74° F. Mokuleia soils are geographically associated with Hanalei, Jaucas, and Keaau soils.

The soils are used for sugarcane, truck crops, and pasture. The natural vegetation consists of kiawe, klu, koa haole, and bermudagrass in the drier areas and napiergrass, guava, and joe in the wetter areas. [Foote et al. 1972:95]

Rough Broken Land is described as follows:

Rough broken land (rRR) consists of very steep land broken by numerous intermittent drainage channels. In most places it is not, stony. It occurs in gulches and on mountainsides on all the Islands except Oahu. The slope is 40 to 70 percent. Elevations range from nearly sea level to about 8,000 feet. The local relief is generally between 25 and 500 feet. Runoff is rapid, and geologic erosion is active. The annual rainfall amounts to 25 to more than 200 inches. These soils are variable.

They are 20 to more than 60 inches deep over soft, weathered rock. In most places some weathered rock fragments are mixed with the soil material. Small areas of rock outcrop, stones, and soil slips are common. [Foote et al. 1972:119]

Badland is described as follows:

Badland consists of steep or very steep, nearly barren land, ordinarily not stony. The soil-forming material is generally soft or hard saprolite. The annual rainfall amounts to 22 to 60 inches. Elevations range from nearly sea level to about 3,000 feet. [Foote et al. 1972:28]

1.3.1 Built Environment

The built environment within the Keālia Mauka Homesites project area consists of former sugarcane agricultural lands grassed for cattle ranching including the location of razed former “New Kumukumu Camp” (Figure 8). A residential subdivision along Ka‘ao Road is located at the south boundary of the project area and is accessed from the historic Keālia Road corridor from Kūhiō Highway. Keālia valley bottom is crossed from north to south by the Kūhiō Highway *makai* (seaward) of which is a county beach park with vehicle access, parking, showers, and bathroom facilities. Along the *mauka* (inland) side of Kūhiō Highway from north to south are former and existing agricultural lands, road side improvements of Kūhiō Highway, the Kapa‘a Stream Bridge, the intersection of Mailihuna Road, St. Catherine’s Cemetery, and the Kaiakea Fire Station.

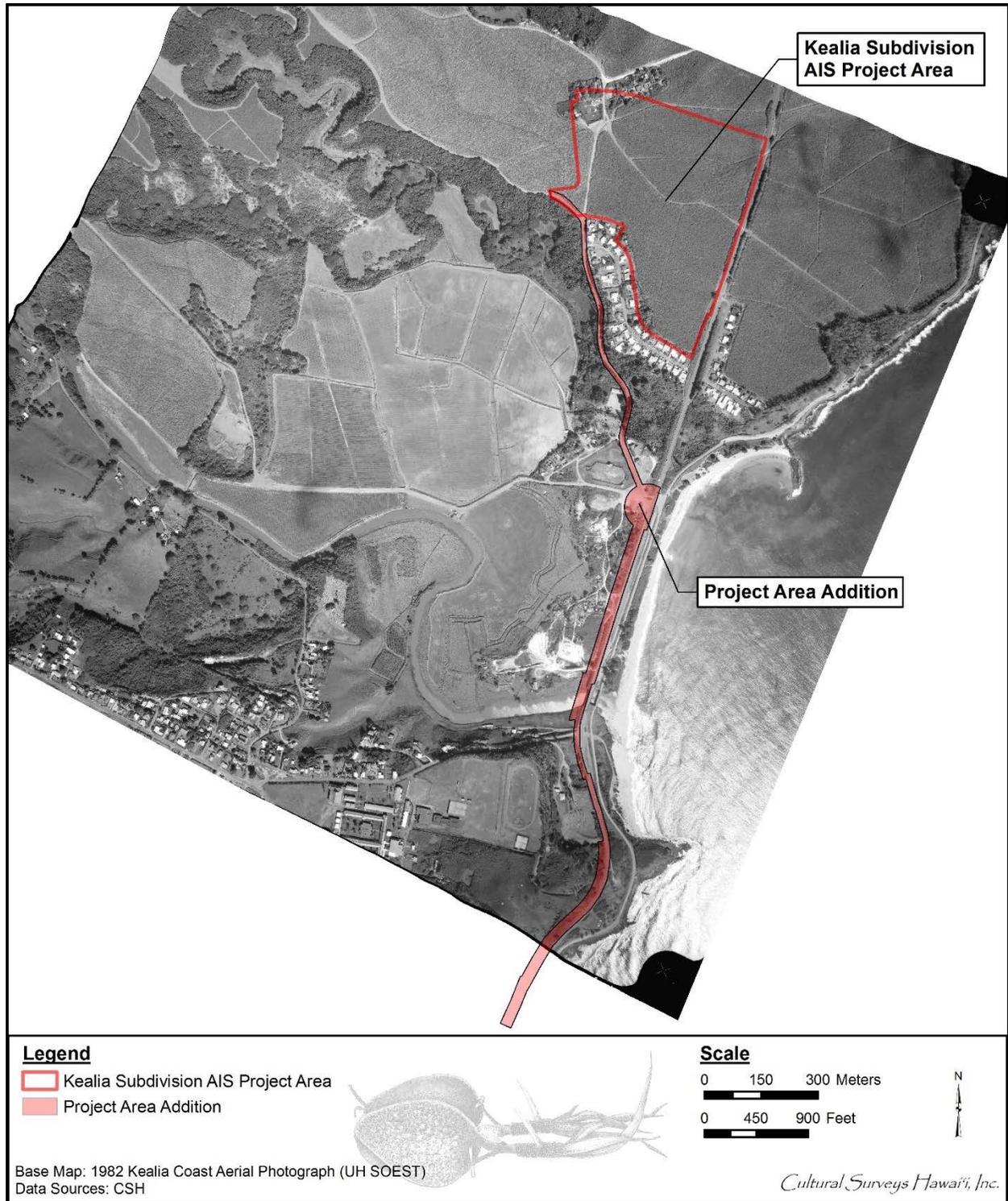


Figure 8. 1982 area photo (UH SOEST) showing cane lands in majority of the project area, “New Kumukumu Camp” in the north corner, residential housing along Ka’ao and Hōpoe roads to the south, and Kūhiō Highway to the east

Section 2 Methods

2.1 Field Methods

Fieldwork for this project was conducted under state archaeological fieldwork permit numbers 18-15 (2018) and 19-07 (2019) issued by SHPD, per HAR §13-282, in accordance with the standards described in HAR §13-276.

CSH archaeologists completed the fieldwork component for current investigation in three stages: on 15 October 2018, CSH archaeologists Scott A. Belluomini, B.A., and Samantha Sund, B.A., completed the recordation of the five newly identified features associated with SHIP # - 7013, New Kumukumu Camp, within the northwest corner in the proposed Keālia Mauka Homesites project (see Figure 32 and Figure 33). CSH archaeologists Laura Vollert, B.A., and Jonathon Alperstein, B.A., surveyed the proposed sewer line corridor on 11 January 2019, and William Folk, B.A., and Missy Kamai, B.A., continued the sewer line survey on 27 February 2019. All fieldwork was conducted under the general supervision of Principal Investigator Hallett H. Hammatt, Ph.D. This work required approximately 6 person-days to complete.

2.1.1 Pedestrian Survey

A 100%-coverage pedestrian inspection of the residential lot section of the project area was undertaken for historic property identification and documentation.

The level terrain and generally low, grazed state of the vegetation in the residential section of the project area allowed the pedestrian survey here to be accomplished through systematic sweeps at approximately 10-15-m intervals.

The sewer line corridor section of the project area is comprised in large part of the embankments of the Kūhiō Highway ROW and has been previously disturbed by not just the highway construction in the 1950s but also by various utility installations paralleling the highway and within the highway ROW. These are documented in Section 3.4, Previous Archaeological Research. The sewer line project area was surveyed by walking the Keālia Road ROW, and the west *mauka* side of the Kūhiō Highway ROW. No newly identified historic properties were identified during the sewer line corridor survey, except for Keālia Road and the backslope retaining wall associated with that road. In consultation with the SHPD the historic property comprising Keālia Road was assigned SIHP # 50-30-08-2390 and the back slope retaining wall SIHP # 50-30-08-2391.

The newly identified historic properties within the project area were located with the Trimble ProXH, survey equipment of submeter accuracy, and post-processed with Trimble GPS Pathfinder Office Version 5.85. The documentation and recordation of newly identified historic properties complies with the *Secretary of the Interior's Standards and Guidelines*, including the following:

1. A detailed written description and evaluation of function, interrelationships, and significance;
2. Photographs with photo scale;
3. Drawings of plan views and site profiles to scale using standard tape-and-compass mapping procedures; and
- 4.

Previously identified historic property GIS location data was extrapolated from the maps of the previous archaeological research reports where those properties were subterranean or not confirmed. Bridges, roads, and property boundaries are from the 7.5-minute series USGS topographical maps, and other standard government mapping systems. Previous documentation was reviewed and where helpful supplementary recording with descriptive text, maps, photographs and GIS location data was collected as available.

2.2 Laboratory Methods

No cultural materials or midden were collected during this AIS; therefore, no laboratory work was conducted.

2.2.1 Disposition of Materials

All data sets generated during this AIS are stored at the CSH offices in Honolulu and Līhu'e.

2.2.2 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai'i, the Hawai'i State Archives, the Mission Houses Museum Library, the Hawai'i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai'i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona 'Aina database (Waihona 'Aina 2000).

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of historic properties in the project area.

2.3 Consultation Method

Meetings were conducted with SHPD, the project proponent, and CSH on 26 September 2018 and 2 October 2018 at the SHPD's Kapolei office.

A separate study, *Cultural Impact Assessment Report for the Proposed Keālia Subdivision Keālia Ahupua'a, Kawaihau District, Kaua'i TMKs: [4] 4-7-004:001* (Hammatt 2019), focuses on the project-related historic preservation consultation with stakeholders including state and county agencies, interested Native Hawaiian Organizations (NHOs), community groups and individuals.

Section 3 Background Research

3.1 Traditional and Historical Background

The current investigation is located in the *ahupua'a* (traditional land division) of Keālia and Kapa'a in the ancient district of Puna, one of five ancient districts on Kaua'i (King 1935:228) (Figure 9). For taxation, educational, and judicial reasons, new districts were created in the 1840s. The Puna District, with the same boundaries, became the Līhu'e District, named for an important town in that district. In 1878, by act of King Kalākaua in securing a future and name for the new Hui Kawaihau, the new district of Kawaihau was created. This new district encompassed the *ahupua'a* ranging from Olohena on the south to Kīlauea on the north. Subsequent alterations to district boundaries in the 1920s left Kawaihau District with Olohena as its southernmost boundary and Moloa'a as its northernmost boundary (King 1935:222).

3.2 Traditional and Legendary Accounts

3.2.1 Traditional and Legendary Accounts of Kapa'a

3.2.1.1 Palila and Ka'ea

High in the *mauka* region of Kapa'a in the Makaleha mountains at a place called Ka'ea, is reported to be the supernatural banana grove of the Kaua'i *kupua* or demigod Palila, grandson of Hina (Handy and Handy 1972:424). Joseph Akina, writing for *Kuokoa* newspaper in 1913, describes Palila's banana grove:

The stalk could hardly be surrounded by two men, and was about 35 feet high from the soil to the lowest petiole. The length of the cluster from stem to lowest end of the bunch of bananas was about 1 3/4 fathoms long (one anana and one muku). There were only two bananas on each about 4 inches around the middle. There were just two bananas, one on the east side and one on the west, each about a foot or more in length. The one on the east side was tartish, like a waiawi (Spanish guava) in taste and the one on the west was practically tasteless. The diameter of the end of the fruit stem of this banana seemed to be about 1 foot. This kind of banana plant and its fruit seemed almost supernatural. [Akina 1913]

3.2.1.2 Ka Lulu O Mō'ikeha

Kapa'a was the home of the legendary *ali'i* (chief), Mō'ikeha. Born at Waipi'o on the island of Hawai'i, Mō'ikeha sailed to Kahiki (Tahiti), the home of his grandfather Maweke, after a disastrous flood. On his return to Hawai'i, he settled at Kapa'a, Kaua'i. Kila, Mō'ikeha's favorite of three sons by the Kaua'i chiefess Ho'oipoikamalani, was born at Kapa'a and was said to be the most handsome man on the island. It was Kila who was sent by his father back to Kahiki to slay his old enemies and retrieve a foster son, the high chief La'amaikahiki (Beckwith 1970:352–358; Fornander 1916:160; Handy and Handy 1972:424; Kalākaua 1888:130–135). Mō'ikeha's love for Kapa'a is recalled in the *'ōlelo no'eau* (proverb): “Ka lulu o Moikeha i ka laulā o Kapa'a. *The calm of Moikeha in the breadth of Kapa'a*” (Pukui 1983:157).

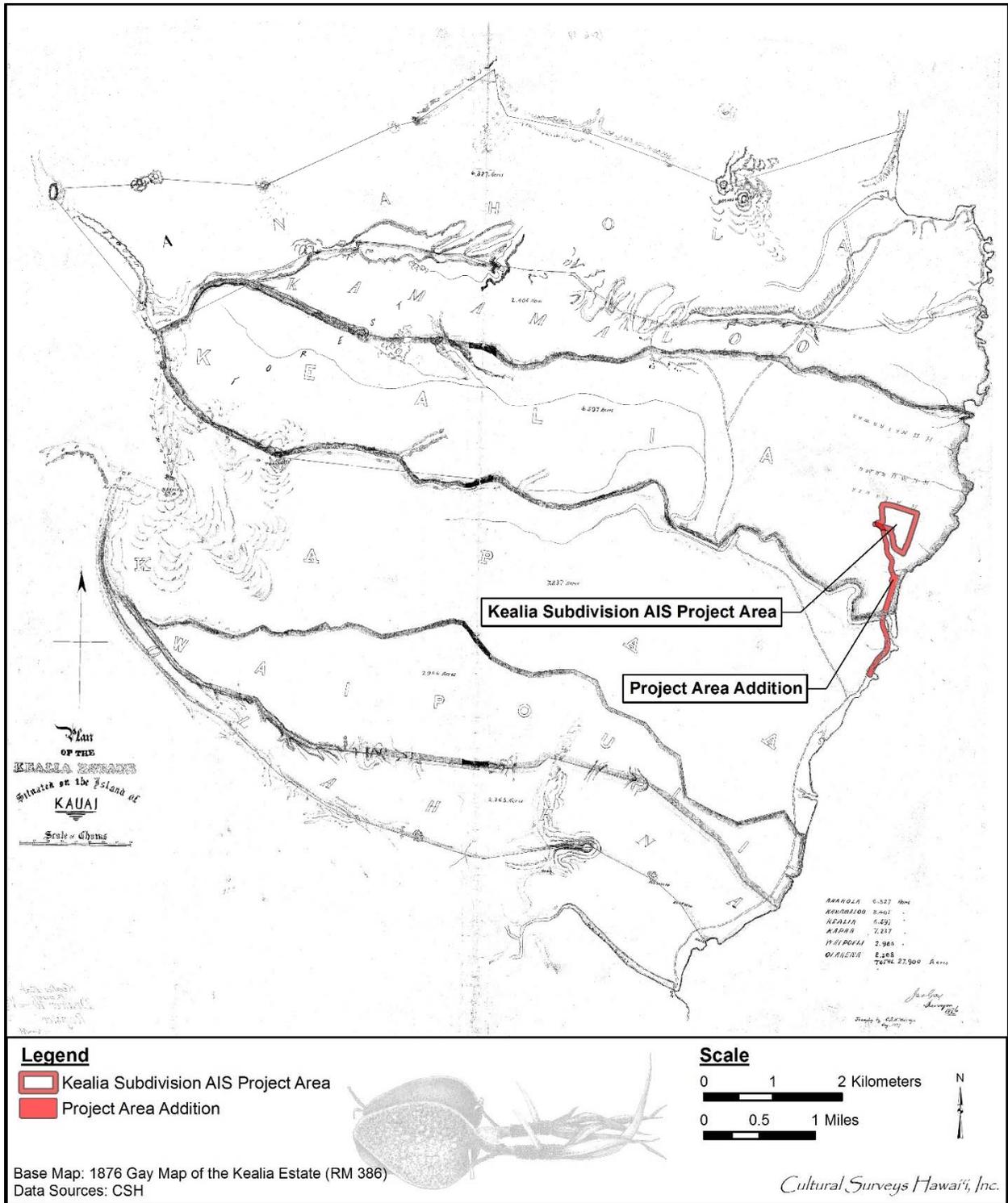


Figure 9. 1876 Gay map showing the *ahupua'a* of Keālia and Kapa‘a

“Lulu-o-Moikeha” is described as being situated “near the landing and the school of Waimahanalua” (Akina 1913:5). The landing in Kapa‘a was known as the Makee Landing and was probably constructed in the late 1870s, along with the Makee Sugar Mill. Today, in place of the old Makee Landing is part of a breakwater located on the north side of Moikeha Canal near the present day Coral Reef Hotel.

Akina (1913) tells the story of how Mō‘ikeha’s son Kila stocks the islands with the *akule*, *kawakawa* (mackerel tuna), and ‘*ōpelu* (mackerel scad) fish. When Kila travels to Kahiki, he seeks out his grandfather Maweke and explains he is the child of Mō‘ikeha. When Maweke asks Kila if Mō‘ikeha is enjoying himself, Kila answers with the following chant of Puna:

My father enjoys the billowing clouds over Pōhaku-pili, The sticky and delicious poi, With the fish brought from Puna, The broad-backed shrimp of Kapalua, The dark-backed shrimp of Pōhakupai, The potent awa root of Maiaki‘i, The breadfruit laid in the embers at Makialo Makialo, The large heavy taros of Keah‘āpana The crooked surf of Makāiwa too The bending hither and thither of the reed and rush blossoms, The swaying of the kalukalu grasses of Puna The large, plump, private parts of my mothers, Of Ho‘oipoikamalanai and Hinau-u, The sun that rises and sets, He enjoys himself on Kaua‘i, All of Kaua‘i is Mō‘ikeha’s [Akina 1913:6]	I walea no ku‘u makuakāne i ke ao ho‘okanunu, iluna o Pōhakupili I ka poi uouo ono ae no a, Me ka i‘a i na mai o ka Puna, Ka opae hoainahanaha o Kapalua; Na opae kua hauli o Pohakupai, Na puawa ona mai no o Maiakii, Me ka ulu moelehu mai no o Me na kalo pehi hua o Keahapana, A i kekee nalu ae no hoi o Makaiwa, A i ke kahuli aku kahuli mai o ka pua uku me ka pua neki, A i ka nu‘a ae no o ke kalukalu o Puna, A i na mea nui nepunepu no a ku‘u mau makuahine. O Hoiipo ikamalanai me Hinau-u, A i ka la hiki ae no a napoo aku, Walea ai no ka nohona ia Kaua‘i Ua puna a puni Kaua‘i ia Mō‘ikeha
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Maweke was delighted and when the boy is questioned as to his purpose, Kila tells his grandfather he is seeking fish for his family. Maweke tells Kiwa to lead the fish back to his homeland. This is how Kila led the *akule*, *kawakawa*, and ‘*ōpelu* to Hawai‘i.

3.2.1.3 Pāka‘a and the Wind Gourd of La‘amaomao (Keahiahi)

Kapa‘a also figures prominently in the famous story of Pāka‘a and the wind gourd of La‘amaomao. Pāka‘a was the son of Kūanu‘uanu, a high-ranking retainer of the Big Island ruling chief Keawenuia‘umi (the son and heir to the legendary chief ‘Umi), and La‘amaomao, the most beautiful girl of Kapa‘a and member of a family of high status *kahuna* (priests). Kūanu‘uanu left the island of Hawai‘i, traveled throughout the other islands and finally settled on Kaua‘i at Kapa‘a.

It was there that he met and married La‘amaomao, although he never revealed his background or high rank to her until the day a messenger arrived, calling Kūanu‘uanu back to the court of Keawenuia‘umi. By that time, La‘amaomao was with child but Kūanu‘uanu could not take her

with him. He instructed her to name the child Pāka'a if it turned out to be a boy. Pāka'a was raised on the beach at Kapa'a by La'amaomao and her brother Ma'ilou, a bird snarer. He grew to be an intelligent young man and it is said he was the first to adapt the use of a sail to small fishing canoes. Although Pāka'a was told by his mother from a very young age that his father was Ma'ilou, he suspected otherwise and after constant questioning, La'amaomao told her son the truth about Kūanu'uauu.

Intent on seeking out his real father and making himself known to him, Pāka'a prepared for the journey to the Big Island. His mother presented to him a tightly covered gourd containing the bones of her grandmother, also named La'amaomao, the goddess of the winds. With the gourd and chants taught to him by his mother, Pāka'a could command the forces of all the winds in Hawai'i. While this story continues on at length about Pāka'a and his exploits on the Big Island and later on Moloka'i, it will not be dwelt upon further here. It is important to note that several versions of this story do include the chants that give the traditional names of all of the winds at all the districts on all the islands, preserving them for this and future generations (Beckwith 1970:86–87; Fornander 1918-1919:5:78–128; Nakuina 1990; Rice 1923:69–89; Thrum 1923:53–67).

Frederick Wichman (1998:84) writes that Pāka'a grew up on a headland named Keahiahi, which the bike path traverses. Here, Pāka'a learned to catch *mālolo*, his favorite fish. After studying the ocean and devising his plan to fabricate a sail, Pāka'a wove a sail in the shape of a crab claw and tried it out on his uncle's canoe. One day, after going out to catch *mālolo*, he challenged the other fishermen to race to shore. He convinced them to fill his canoe with fish, suggesting it was the only way he could truly claim the prize if he won:

The fishermen began paddling toward shore. They watched as Pāka'a paddled farther out to sea and began to fumble with a pole that had a mat tied to it. It looked so funny that they began to laugh, and soon they lost the rhythm of their own paddling. Suddenly Pāka'a's mast was up and the sail filled with wind. Pāka'a turned toward shore and shot past the astonished fishermen, landing on the beach far ahead of them. That night, Pāka'a, his mother, and his uncle had all the *mālolo* they could eat. [Wichman 1998:85]

3.2.1.4 Kaweloleimākua

Kapa'a is also mentioned in traditions concerning Kawelo (Kaweloleimākua), Ka'ililauokekoa (Mō'ikeha's daughter, or granddaughter, dependent on differing versions of the tale), the *mo'o* Kalamainu'u and the origins of the *hīna'i hīnālea* or the fish trap used to catch the *hīnālea* fish, and the story of Lonoikamakahiki (Fornander 1917:4[2]:318, 4[3]:704–705; Kamakau 1976:80; Rice 1923:106–108; Thrum 1923:123–135).

3.2.1.5 Kalukalu grass of Kapa'a

“*Kūmoena kalukalu Kapa'a*,” or “Kapa'a is like the *kalukalu* mats,” is a line from a chant recited by Lonoikamakahiki. *Kalukalu* is a sedge grass, apparently used for weaving mats (Fornander 1917:4[2]:318–319). Pukui (1983:187) associates the *kalukalu* with lovers in “Ke kalukalu moe ipo o Kapa'a: *The kalukalu of Kapa'a that sleeps with the lover.*” According to Wichman (1998:84), “a *kalukalu* mat was laid on the ground under a tree, covered with a thick pile of grass, and a second mat was thrown over that for a comfortable bed,” thus the association

with lovers. Kaua'i was famous for this particular grass, and it probably grew around the marshlands of Kapa'a. It is thought to be extinct now, but an old-time resident of the area recalled that it had edible roots, "somewhat like peanuts." Perhaps it was a famine food source (Kapa'a Elementary School 1933:vi).

3.2.2 Traditional and Legendary Accounts of Keālia

3.2.2.1 Hi'iaka and Wahine'ōma'o in Keālia

The area also features in the epic poem that recounts the adventures of Pele's sister, Hi'iakaikapoliopole. On their way to Hā'ena, Hi'iaka and her companion Wahine'ōma'o stopped near Keālia to help a man cook his *lū'au* (taro leaves) to eat with his *poi*. Noticing an ailing woman in the man's house, Hi'iaka said a prayer that brought the woman back to health. All the *kahuna* (priest, healer) in the region had been unable to help the woman previously (Rice 1974:14).

3.2.2.2 Kaweloleimākua and Kauahoa in Waipahe'e

In the *mauka* areas of Keālia is a place called Waipahe'e, a slippery slide used for recreation up until recent times. This *wahi pana* (storied place) is associated with Kaweloleimākua and Kauahoa, who one day traveled to this place with their companion 'Aikanaka (Wichman 1998:86). Here the two boys engaged in a contest of who could make the best *lei* for their chief. Kauahoa won this contest by making his *lei* of *liko lehua* while Kaweloleimākua made his of fern. The boys then held a contest *na'ina'i mimi* to see who could urinate the longest, but because Kauahoa was much bigger than Kawelo, he also won this contest. Later, when the two were men engaged in war, Kawelo reminded Kauahoa of this boyhood excursion in an attempt to avoid bloodshed between them, however, he was unsuccessful.

3.3 Place Names and *Wahi Pana* (Celebrated Places)

3.3.1 Place Names of Keālia

"In Hawaiian culture, if a particular spot is given a name, it is because an event occurred there which has meaning for the people of that time" (McGuire and Hammatt 2000:17). *Wahi pana* were passed on through the oral tradition, preserving the unique significance of each place. Hawaiians named all sorts of objects, places, and points of interest. In the following sentences and paragraphs, the place names (*wahi pana*) are in bold. Although the legendary accounts and celebrated places (*wahi pana*) of Keālia pale in comparison to those of nearby Wailua, there are several accounts that refer to the area.

'Āhihi Point, in Kamalomalo'o, what some consider to be the northernmost *ahupua'a* of Puna, is another *wahi pana*. 'Āhihi is a headland that juts out into the ocean between what is now known as Keālia and Anahola. Wichman (1998:87) retells a story about 'A'aka, the name of the plain *mauka* of 'Āhihi and the name of a *menehune* (small, mythical people), Hōmaikawa'a, the valley adjacent to 'A'aka, and 'Āhihi, a plant with long runners. One of 'A'aka's favorite pastimes was to throw a stone into the ocean from 'Āhihi Point and then jump in after it. Once, when a large white shark almost swallowed him whole, 'A'aka, devised a plan to fabricate a net made from *āhihi* to catch the shark. After ordering the canoe, *Hōmaikawa'a*, he and his companions were able to catch the shark and tow it to the reef at 'Aliomanu, near Anahola.

Akiana is the name of a land, possibly an *'ili* (land division smaller than an *ahupua'a*) in Keālia (Land Commission Award [LCA] 10907).

Awikiwili is the name of a land, possibly an *'ili* in Keālia (LCA 10907).

Hala'ula is a name associated in the Hanalei and Kawaihau districts. The literal meaning is “red panadanus” (Soehren 2002:12; Pukui et al. 1984:36). This name was also given to a historic plantation camp associated with Makee Sugar Company at Keālia. As seen in Figure 1, Hala'ula is also the name of a reservoir.

Haleki is the name of a land, possibly an *'ili* in Keālia (LCA 7966).

Haulei is the name of a land, possibly an *'ili* in Keālia (LCA 8060, 1980).

Hawaipahea is the name of a land, possibly an *'ili* in Keālia (LCA 8060, 1980).

Hōmaikawa'a means “give me the canoe” (Soehren 2002:22; Pukui et al. 1974:48). The name also refers to a stream and land division.

Hulilua is the name of the wind at Hanaikawaa [*sic*] (Hōmaikawa'a) (Fornander 1916-1919:5:96, 97).

Kaea is a *wahi pana* associated with Palila and his banana grove located in the *mauka* region of the Kawaihau district.

Ka'ele'ele is the name of a land, possibly an *'ili* in Keālia (LCA 10473, 1980).

Kahue is the name of a land, possibly an *'ili* in Keālia (LCA 8834).

Kalualihilihi is the name of the area where Krull Dairy was located near Waipahe'e in Keālia in the mid-1800s (Kapa'a Elementary School 1983); name of a fishing grounds in Puna district famed in chant (HEN 1885:215).

Kapalua is a place in the Puna district famed in chant for its “broad-backed shrimp” (HEN: *Kuokoa*, May 1913).

Kapuka is a place in the Puna district famed in chant for its sea urchins (HEN 1885:215).

Kapuna is the name of a land, possibly an *'ili* in Keālia (LCA 8061).

Kapunakai is the name of a land, possibly an *'ili* in Keālia (LCA 3413).

Kapuahola/Kapuaahole is the name of a land, possibly an *'ili* in Hōmaikawa'a (LCA 10689).

Kauaha/Kanaha/Kaha is the name of a land, possibly an *'ili* in Keālia (LCA 8842).

Kaukuolono is the name of a land, possibly an *'ili* in Keālia (LCA 10906).

Kaunakakai is the name of a land, possibly an *'ili* in Keālia (LCA 10628).

Keahapana is a place in the traditional Puna district famed in chant for its “heavy taro” (HEN: *Kuokoa*, May 1913). In an interview conducted by CSH in 2002, Keahapana was also the name for an area located up the Keālia River where Hawaiians continue to live and where taro was grown until the late 1990s.

Keālia is the name of an *ahupua'a* in the ancient Puna District, which was changed to the historic district of Kawaihau during the reign of Kalākaua. Rice (1974:14) tells the story of Hi'iaka and Wahine'ōma'o in Keālia. On their way to Hā'ena, Hi'iaka and Wahine'ōma'o stopped near Keālia to help a man cook his *lū'au* to eat with his *poi*. Noticing an ailing woman in the man's house, Hi'iaka said a prayer that brought the woman back to health. All the *kahuna* in the region had been unable to help the woman previously.

Kealohipaa is the name of a land, possibly an *'ili* in Keālia (LCA 10149, 8060).

Kuaiula is the name of a land, possibly an *'ili* in Keālia (LCA 10628).

Kuakahi/Kuahaki/Makuahaki is the name of a land, possibly an *'ili* in Keālia (LCA 10473).

Kulehaole/Kulehale/Kulihaele is the name of a land, possibly an *'ili* in Keālia (LCA 8833).

Kumukumu is a name associated in the Kawaihau district and possibly an old *ahupua'a* name in the ancient Puna District. The literal meaning is “stubs” (Soehren 2002:112; Pukui et al. 1974:124). This name was also given to a historic plantation camp associated with Makee Sugar Company at Keālia, located in the northwest corner of the project area (see Figure 32 and Figure 33). Kumukumu is also the name of a stream north of the project area.

Kuna is the Hawaiian name to a place referred to as “Donkey Beach” (Bushnell et al. 2002:36).

Mahuaku/Mahuali is the name of a land, possibly an *'ili* in Keālia (LCA 7966).

Makapono/Makahono is the name of a land, possibly an *'ili* in Keālia (LCA 8842).

Malamalamaiki is a wind name of Keālia (Fornander 1916-1919:5:96, 97).

Moalepi/Moalepe is the name of a *pu'u* (hill) in the *mauka* region of Keālia (Hawai'i State Archives, Interior Department, Land, 23 June 1862).

Naapakukui is the name of a land, possibly an *'ili* in Kumukumu (LCA 10660).

Niau is the name of the northern side of Keālia Bay and location of Keālia Landing; name of a place in Puna district famed in chant for its short, breaking surf (HEN I:215).

Opeka is the name for a tributary in the *mauka* region of Keālia (Hawai'i State Archives, Interior Department, Land, 23 June 1862).

Palikū is the name of a seaside cliff on the southern end of Kuna Bay, noted for fishing (Bushnell et al. 2002:37).

Pauahi is the name of a land, possibly an *'ili* in Keālia (LCA 10473).

Pohakuomanu is the name of a low hillock in Keālia (Hawai'i State Archives, Interior Department, Land, 23 June 1862).

Pohakupili is the name of a mountain in Puna district famed in chant for a place where clouds gather (HEN I:211–216). It is also the name of a mountain peak in Keālia (Hawai'i State Archives, Interior Department, Land, 23 June 1862).

Pualani is the name of a mountain peak in Keālia (Hawai'i State Archives, Interior Department, Land, 23 June 1862).

Puhokea is the name of a land, possibly an *'ili* in Keālia (LCA 10473).

Pukahulu is the name of a *pu'u* in the *mauka* region of Keālia (Hawai'i State Archives, Interior Department, Land, 23 June 1862).

Waipahe'e means “slippery water” in Hawaiian (HEN I:227). In the *mauka* areas of Keālia is a place called Waipahe'e, a slippery slide used for recreation up until recent times. This *wahi pana* is associated with Kaweloleimākua and Kauahoa, who one day traveled to this place with their companion 'Aikanaka (Wichman 1998:86). Here the two boys engaged in a contest of who could make the best *lei* for their chief. Kauahoa won this contest by making his *lei* of *liko lehua* while Kaweloleimākua made his of fern. The boys then held a contest—*na 'ina 'i mimi*—to see who could urinate the longest, but because Kauahoa was much bigger than Kawelo, he also won this contest. Later, when the two were men engaged in war, Kawelo reminds Kauahoa of this boyhood excursion in an attempt to avoid bloodshed between them, however, he was unsuccessful.

Waipunaula is the name of a land, possibly an *'ili* as well as a fishpond in Keālia (LCA 08833).

3.3.1.1 Place Names of Kapa'a

Kapa'a is the name of a land section, town, ditch, elementary school, weir, and beach park in the Kawaihau District in Kaua'i. Kapa'a literally translates as “the solid or the closing.” The name Kapa'a is also a place in Kailua, O'ahu where a rock quarry has been located since the 1950s. While Pukui et al. (1974) believed the name Kapa'a may have been derived from the solid rock of the place, no explanations are offered for how Kapa'a on the island of Kaua'i was named.

Kahana is the name of a land (possibly) and *'ili* in Kapa'a where uncultivated *lo'i* were claimed (Land Commission Award [LCA] 03971). Kahana literally translates as “cutting.”

Kalolo/Kaloko is the name of a village or house lot in the Kapa'a Ahupua'a (LCA 3638, 8843).

Kaloloku is the name of a swamp in the back of Kapa'a and Waipouli.

Kehau is the name of a wind of Kapa'a (Fornander 1916-1919:5:96–97).

Kuahiahi/Kaahiahi/Keahiahi are the possible names of a rocky headland at the north end of Kapa'a Ahupua'a; it is also the location of the first Kapaa School from 1883 to 1908 and the location of a former *heiau* (pre-Christian place of worship) called Kuahiahi (Lahainaluna Students 1885:216). It is also the place where the legendary figure and keeper of the wind gourd of La'amaomao, Pāka'a (sometimes spelled Paka'a, e.g., in Pukui 1983), grew up and fished (Wichman 1998:85).

Kupanihi is the name of a pond in the Puna district associated with Kaeo, Kaumuali'i's older brother (Lahainaluna Students 1885:216). It is also the name of a fishpond and land in Kapa'a claimed in LCA 3971, 3243.

Maele'le is the name of a land division, possibly and *'ili* in Kapa'a in which *lo'i* were cultivated (LCA 3638).

Mailehuna is the name of a hill where the present day Kapaa School is located. It is also the name of a former *heiau* at this location (HEN 1885).

Moikeha Canal is the canal traversed by two plantation-era railroads near the present day Kapa‘a Public Library and the Coral Reef Hotel.

Puhi is the name of a village or house lot in the Kapa‘a Ahupua‘a claimed in LCAs 3554, 3599.

Waika‘a/Waikae is a canal and boat ramp in Kapa‘a described as being located in the uplands near Nonou (Akina 1913).

Waimahanalua is the name of a stream and school located near the old Makee Landing near the present day Moikeha Canal (Akina 1913). The name *mahanalua* suggests the stream was forked and fed by multiple streams, which could well be the case since the backlands of Kapa‘a were swamp lands fed by many streams.

Ulukiu is the name of a village or house lot in the Kapa‘a Ahupua‘a claimed in LCA 08837.

3.3.2 Heiau of Keālia and Kapa‘a

During their expeditions around Hawai‘i in the 1880s collecting stories from *ka po‘e kahiko* (elders), Lahainaluna students stopped in Keālia and Kapa‘a and gathered information regarding *heiau* of the region (HEN 1885). Ten *heiau* were named, suggesting Keālia as well as Kapa‘a *ahupua‘a* were probably more politically significant in ancient times. Table 1 lists the names of the *heiau*, their location if known, their type, associated chief and priest, any comments, and the reference. The exact locations of these *heiau* are unknown.

Table 1. List of *heiau* in Keālia and Kapa‘a (source: Bushnell et al. 2002)

Name	Location	Type	Associated Chief/Priest
Kaluluomoikeha	Kapa‘a	Unknown	Mō‘ikeha
Kuahiahi	Kapa‘a (Where government school stands now)	Unknown	Kiha/ Lukahakona
Kumalae	Kapa‘a/Keālia	Unknown	Kiha/ Lukahakona
Mailehuna	Kapa‘a (Mailehuna is the area of the present day Kapa‘a School)	Unknown	Kiha, Kaumuali‘i/ Lukahakona
Makanalimu	Upland of Kawaihau	Unknown	Kaumuali‘i
Mano	Kapa‘a/Keālia	Unknown	Kiha/ Lukahakona
Napuupaakai	Kapa‘a/Keālia	Unknown	Kiha/ Lukahakona
Noemakalii	Kapa‘a/Keālia	“Heiau for birth of Kauai Chiefs, like Holoholokū”	Unknown
Pahua	Kapa‘a/Keālia	Unknown	Kiha/ Lukahakona
Piouka	Kapa‘a/Keālia	“Unu-type heiau”	Unknown

Name	Location	Type	Associated Chief/Priest
Pueo	Kapa'a	Unknown	Kiha, Kaumuali'i/ Lukahakona
Puukoa	Kapa'a/Keālia	"Unu" (<i>heiau</i> for fishermen or an agricultural <i>heiau</i>)	Unknown
Una	Kapa'a/Keālia	Unknown	Kiha/ Lukahakona
Waiehumalama	Kapa'a/Keālia	Unknown	Kiha/ Lukahakona

3.3.1 The Māhele and the Kuleana Act

The Organic Acts of 1845 and 1846 initiated the process of the Māhele, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the crown (Hawaiian government), the royalty (*ali'i*), and their land managers (*konohiki*) received their land titles. The common people (*maka'āinana*) began to receive their *kuleana* awards (individual land parcels) after the Kuleana Act of 6 August 1850, but not until after the Alien Land Ownership Act of 10 July granted the right to own land in Hawai'i to foreigners (Van Dyke 2008:50). It is through records for Land Commission Awards (LCAs) generated during the Māhele that the first specific documentation of life in Hawai'i as it had evolved up to the mid-nineteenth century comes to light. Although many Hawaiians did not submit or follow through on claims for their lands, the distribution of LCAs can illuminate patterns of residence and agriculture. Many of these patterns likely had existed for centuries past. Examination of the patterns of *kuleana* LCA parcels near the project area can provide insight into the likely intensity and nature of Hawaiian activity in the area.

Keālia was granted to the *ali'i* Miriam Ke'ahikuni Kekau'onohi (LCA 11216; Royal Patent 6071). Kekau'onohi was a granddaughter of Kamehameha, one of Liholiho's wives, and served as Kaua'i governor from 1842 to 1844. Eighteen *kuleana* land claims were made, however, one claimant, Lono, relinquished his Keālia land to the *konohiki* (LCA 00973). Of the 17 claims, 15 were awarded, and the majority of those claims were adjacent to Kapa'a Stream (also referred to Keālia River). Other properties were located adjacent to 'auwai (ditch) or streams north of Kapa'a Stream. Two ditches or 'auwai are recorded, Kaauwaelalo (LCA 01980) and Kahaukua (LCA 10148). Keālia River and Keahapuna (Keahapana; also Keapana) River were also named as boundaries, although they may refer to the same river. This information suggests taro farming continued to be central to Keālia. In addition, four *kō'ele* (land cultivated by the tenant for a local chief) are named in the Keālia documents. This suggests the *konohiki* of Keālia maintained a fair amount of power and played an active role in land and water distribution even as population was declining and foreign powers were beginning to trickle in. The LCA records indicate the presence of four ponds or *loko wai* within Keālia, though no specific reference to location is given for the two. Akiana Pond (LCA 8060) is thought to be in the 'ili of Akiana, while Loko Waipunaula (LCA 8833) is thought to be in the 'ili of Waipunaula. Additionally, the Keālia records indicate freshwater fish were also caught in the rivers and streams. One individual claims a *kahe 'o'opu* or 'o'opu fish trap (LCA 2381). In Māhele documents, individual *lo'i* are referred to with their personal names in ten instances. There were 67 cultivated *lo'i* (taro terraces) claimed. Māhele documents also indicate people were raising turkeys, goats, and pigs. One individual (LCA 8061)

claimed a *mauka* parcel of land with *noni*, a useful medicinal plant and *wauke*, a plant used in making *kapa* and cordage. There were several disputes over orange trees (LCAs 3413B, 2381, 10473). In one case, the *konohiki* affirmed he himself had taken away two orange trees belonging to a claimant. Some of the awards were to the *ali'i* and could be quite large; most awards to the common people consisted of one or two lots under an acre in size.

3.3.1.1 Keālia LCAs

Keālia was granted to the *ali'i* (chief) Miriam Ke'ahikuni Kekau'onohi (LCA 11216; Royal Patent 6071). Kekau'onohi was a granddaughter of Kamehameha, one of Liholiho's wives and served as Kaua'i governor from 1842 to 1844.

Eighteen *kuleana* land claims were made (Table 2 and Figure 10). One claimant, Lono (LCA 09973) relinquished his Keālia land to the *konohiki* (land supervisor) and went to live in Wai'oli. Of the 17 claims registered, 15 were awarded. The great majority of claims were made on lands adjacent to Keālia River, a good-sized stream capable of supporting large-scale irrigation projects. Other *kuleana* lands were situated adjacent to smaller streams or *'auwai* (ditch) north of Keālia River. Sixty-seven cultivated *lo'i* are claimed in the *kuleana*, with reference to numerous uncultivated *lo'i* and boundaries of other cultivated *lo'i* that were not claimed. In the Māhele documents, individual *lo'i* are referred to with their personal names in ten instances. Two ditches or *'auwai* are recorded, Kaauwaelalo (LCA 01980) and Kahaukua (LCA 10148). Keālia River and Keahapuna (Keahapana) River were also named as boundaries, although they may refer to the same river. This information suggests taro farming continued to be central to Keālia. In addition, four *kō'ele* (land cultivated by the tenant for a local chief) are named in the Keālia documents. This suggests the *konohiki* of Keālia maintained a fair amount of power and played an active role in land and water distribution even as population was declining and foreign powers were beginning to trickle in.

Another noteworthy resource in Keālia were ponds or *loko*. Four ponds were mentioned, though no reference to location is given for two. Akiana Pond (LCA 8060) is thought to be in the *'ili* of Akiana and Loko Waipunaula (LCA 8833) is thought to be in Waipunaula *'ili*. In addition to the fishponds providing fresh fish, the Keālia records indicate freshwater fish were also caught in the rivers and streams. One individual claims a *kahe 'o'opu* or *'o'opu* fish trap (LCA 2381). Māhele documents for Keālia indicate people were raising turkeys, goats, and pigs. One individual (LCA 8061) claimed a *mauka* parcel of land with *noni*, a useful medicinal plant and *wauke*, a plant used in making *kapa* and cordage. There were several disputes over orange trees (LCAs 3413B, 2381, 10473). In one case, the *konohiki* affirmed he himself had taken away two orange trees belonging to a claimant.

3.3.1.2 Kapa'a LCAs

During the Māhele, Kapa'a was retained as Crown Lands (Office of the Commissioner of Public Lands of the Territory of Hawaii 1929). The *'ili* of Paikahawai and Ulukiu in Kapa'a Ahupua'a were retained as Government Lands. The LCAs during this period show that six individuals other than *ali'i* or chiefs were awarded land parcels in the relatively large *ahupua'a* of Kapa'a.

Table 2. Keālia Ahupua'a Land Commission Awards

LCA	Claimant	<i>Ili</i>	Claims	Award
01980	Puali	Haulei, Kaeleele	House lot, four <i>lo'i</i> (taro terrace), <i>kula</i> (pasture)	One parcel
02381	Kekoowai		Five <i>lo'i</i> , two ponds, two orange trees, one <i>kahe 'o'opu</i> (fish trap), <i>kula</i>	Not awarded
03413	Kaaki	Kapunakai	House lot, <i>kula</i> , 11 <i>lo'i</i> , two orange trees	One parcel
07966	Keaonui and Paekaia	Mahuaku, Haleki	Five <i>lo'i</i> , <i>kula</i> , house lot	One parcel
08060	Hulialo	Haulei, Kalohipa	House lot, two <i>lo'i</i> , <i>kula</i>	One parcel
08833	Kiaipa	Waipunaula, Kiohale	Five <i>lo'i</i> , <i>kula</i> , house lot	Two parcels
08834	Kalawaia	Lapanui, Kahue	House lot, two <i>lo'i</i> , <i>kula</i>	Two parcels
8842	Kaawapupuole	Kauaha, Makapono	House lot, four <i>lo'i</i> , <i>kula</i>	Two parcels
08061	Hainau	Kapuna	House lot, four <i>lo'i</i> , <i>kula</i>	One parcel
09973	Lono		<i>Lo'i</i> and <i>kula</i>	Relinquished land to <i>konohiki</i> (steward)
10148	Mamaki	Lapanui	House lot, two <i>lo'i</i> , <i>kula</i>	Two parcels
10149	Makuahine	Kealohipaa	Three <i>lo'i</i> , <i>kula</i>	One parcel
10451	Naawa		Ten <i>kihapai</i> (garden), goat enclosure	Not awarded
10473	Nahi	Pauahi, Kuakahi, Kaeleele	House lot, 15 <i>lo'i</i> , <i>kula</i> , orange trees	Three parcels
10628	Puhi	Kaunakakai, Kuaiula	House lot, one <i>lo'i</i>	Two parcels
10906	Umiumi	Kaukuolono	House lot, two <i>lo'i</i> , <i>kula</i>	Two parcels
10907	Umiumi	Akiana, Hawaipaea, Awikiwili	Two <i>lo'i</i> , one <i>kula</i> , house lot	Two parcels
11216 K	Kekauonohi	Keālia Ahupua'a		6,500 acres

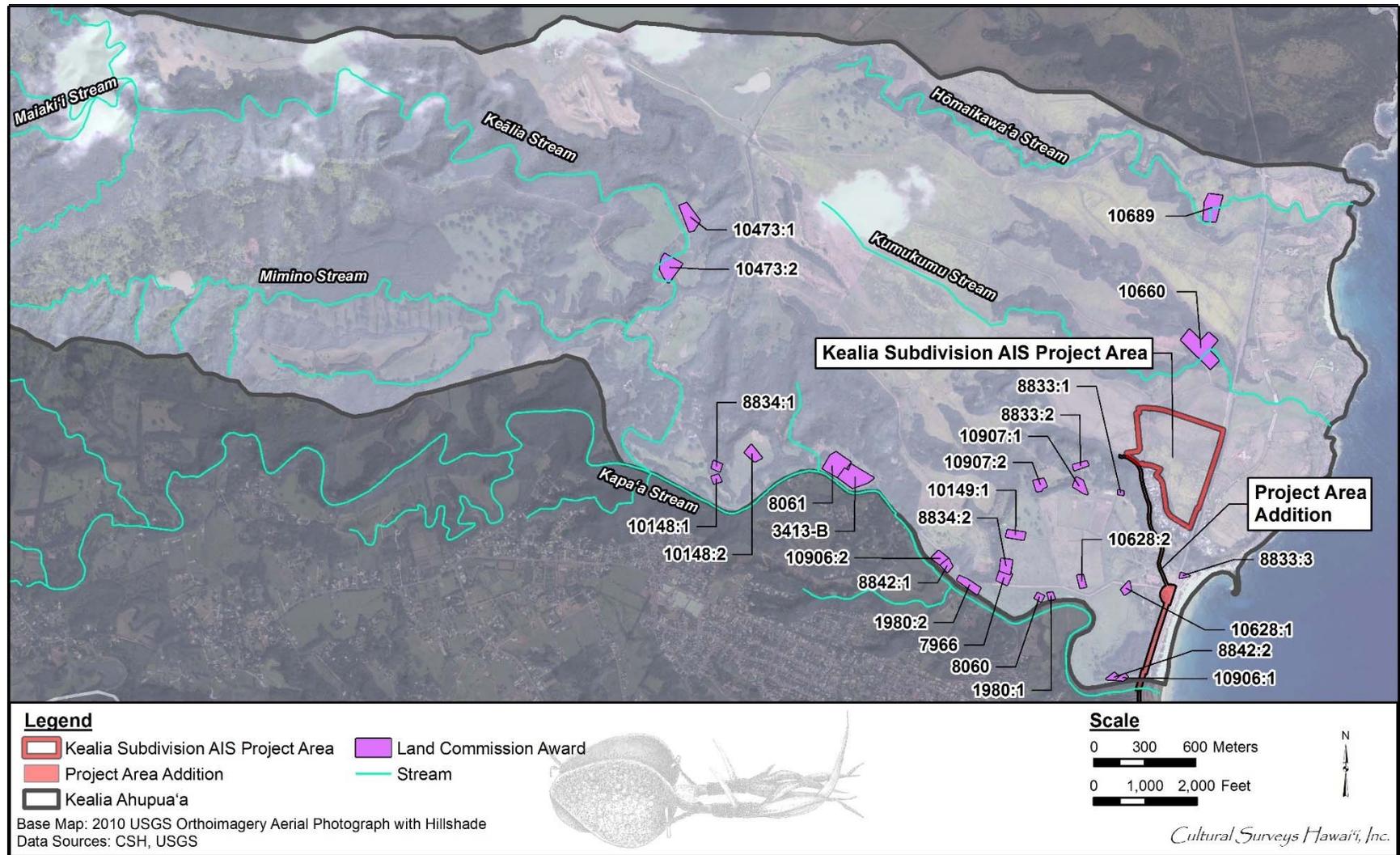


Figure 10. 2011 aerial photo (USGS Orthoimagery) showing LCA parcels in the ahupua'a of Keālia and Kapa'a

3.3.2 Early Historic Accounts of Keālia and Kapa'a

The earliest written documentation of life in the *ahupua'a* appears in the 1830s when missionary censuses recorded a total population of 283, comprising 265 adults and 18 children within Keālia (Schmitt 1973:25). Other Protestant missionary records focused more specifically on areas where mission stations were established. An 1847 census of 23 land divisions in the Hanalei and Kawaihau Districts gives population figures for Keālia (Schmitt 1969). Most notable is the decline in population in Keālia, from 283 in the 1830s to 143, a reduction of almost half (Schmitt 1969:229). Accounting for the high death toll caused by the introduction of foreign disease, this still seems like an extremely high death rate. Kapa'a's population during this time period is unknown. A population distribution map by Coulter (1931) (Figure 11) indicates the population of Kaua'i ca. 1853 "was concentrated chiefly on the lower flood plains and delta plains of rivers where wet land taro was raised on the rich alluvial soil" (Coulter 1931:14).

Although most of the historic documents for Kaua'i in this period revolve around missionary activities and the missions themselves, there was indication that the Kapa'a area was being considered for new sugarcane experiments, similar to those occurring in Kōloa. In a historic move, Ladd and Company received a 50-year lease on land in Kōloa from Kamehameha III and Kaua'i Governor Kaikio'ewa. The terms of the lease allowed the new sugar company "the right of someone other than a chief to control land" and had profound effects on "traditional notions of land tenure dominated by the chiefly hierarchy" (Donohugh 2001:88). In 1837, a very similar lease with similar terms was granted to Wilama Ferani, a merchant and U.S. citizen based in Honolulu (Hawai'i State Archives, Interior Department, Letters, August 1837). The lease was granted by Kamehameha III for the lands of Kapa'a, Keālia, and Waipouli for 20 years for the following purpose:

[F]or the cultivation of sugar cane and anything else that may grow on said land, with all of the right for some place to graze animals, and the forest land above to the top of the mountains and the people who are living on said lands, it is to them whether they stay or not, and if they stay, it shall be as follows: They may cultivate the land according to the instructions of Wilama Ferani and his heirs and those he may designate under him. [Hawai'i State Archives, Interior Department, Letters, August 1837]

Unlike Ladd & Company, which eventually became the Koloa Sugar Company, there is no further reference to Wilama Ferani and his lease for lands in Kapa'a, Keālia, and Waipouli. In a brief search for information on Honolulu merchant Wilama Ferani, nothing was found. It is thought that perhaps Wilama Ferani may be another name for William French, a well-known Honolulu merchant who is documented as having experimented with grinding sugarcane in Waimea, Kaua'i at about the same time the 1837 lease for lands in Kapa'a, Keālia, and Waipouli was signed (Joesting 1984:152).

In 1849, William P. Alexander, son of a Wai'oli missionary, recorded a trip he took around Kaua'i. Although, he focuses on the larger mission settlements like Kōloa and Hanalei, he does mention Keālia:

A few miles from Wailua, near Kapaa we passed the wreck of a schooner on the beach, which once belonged to Capt. Bernard. It was driven in a gale over the reef, and up on the beach, where it now lies. A few miles further we arrived at Keālia.

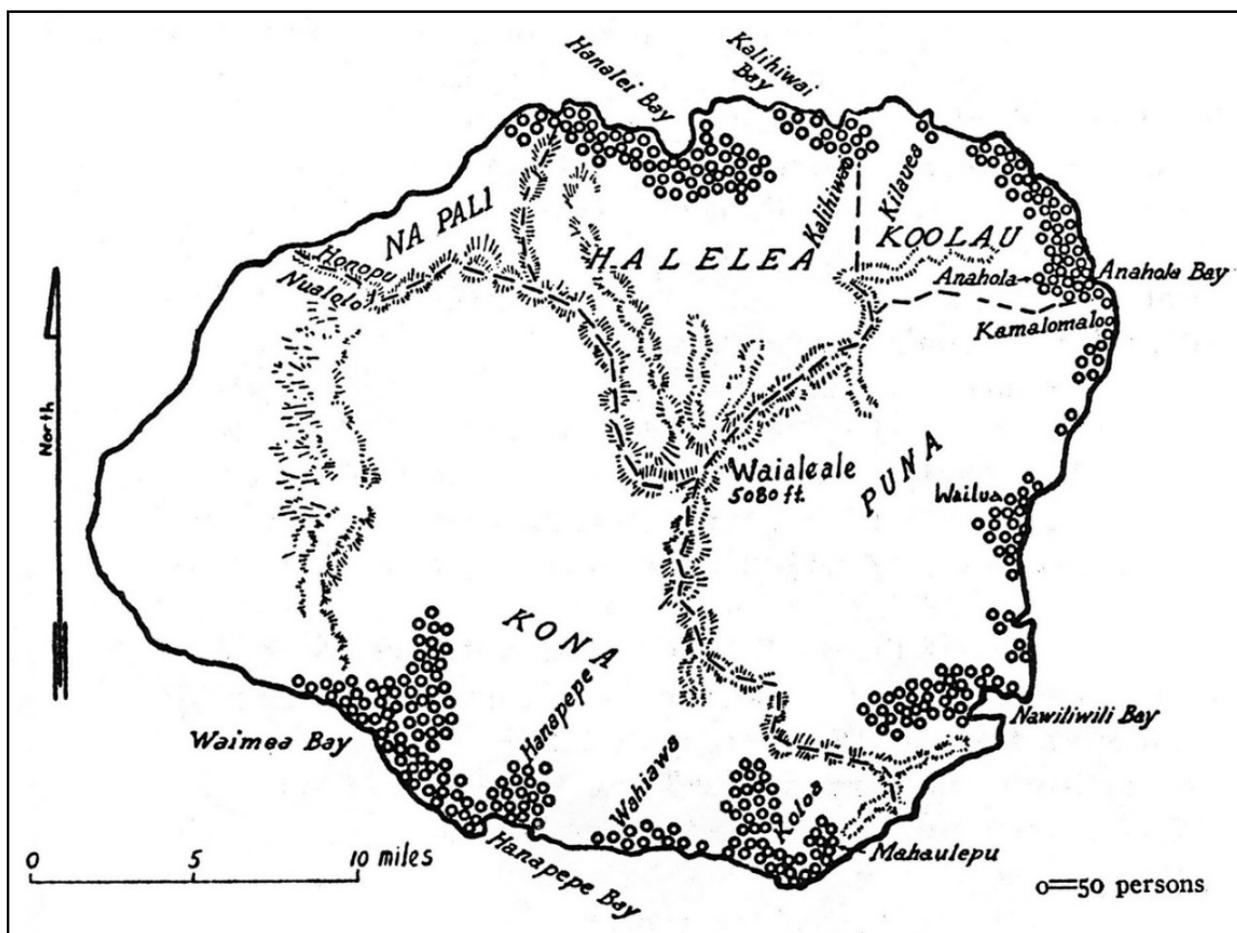


Figure 11. Map showing population estimate for Kaua'i in 1853 (Coulter 1931:16)

We had some difficulty crossing the river at this place, owing to the restiveness of our horses. The country here near the shore was rather uninviting, except the valley which always contained streams of water. [Alexander 1991:123]

In later years, the notorious Kapa'a reef was to become the location of many shipwrecks once a landing was built there in the 1880s.

One of the first people to succeed in business in the Keālia area was a German by the name of Ernest Krull. In 1854, a government survey was prepared for Kumukumu, Kaua'i. In handwritten notes of the map, it is indicated that Mr. Krull desired to buy government interest to the land for \$200.00. Apparently, Mr. Krull was successful in obtaining Kumukumu because by the early 1860s, he was running a thriving business supplying whaling ships with beef and dairy products (Joesting 1984:171). Mr. Krull's ranch and dairy were located in the Waipahe'e area of Kumukumu in a place called Kalualihilihi (Kapa'a Elementary School 1983:4). By 1870, Krull apparently had purchased the entire *ahupua'a* of Keālia. In a 22 July 1870 petition to the Commissioner of Boundaries for the Fourth Judicial District, Island of Kaua'i, Krull states "he is the owner and in possession of the ahupuaas of lands called Kealia Halaaula & Komaikawaa" (Boundary Commission, Kaua'i:1:11, Figure 12). *The ahupua'a* boundaries were decided by the

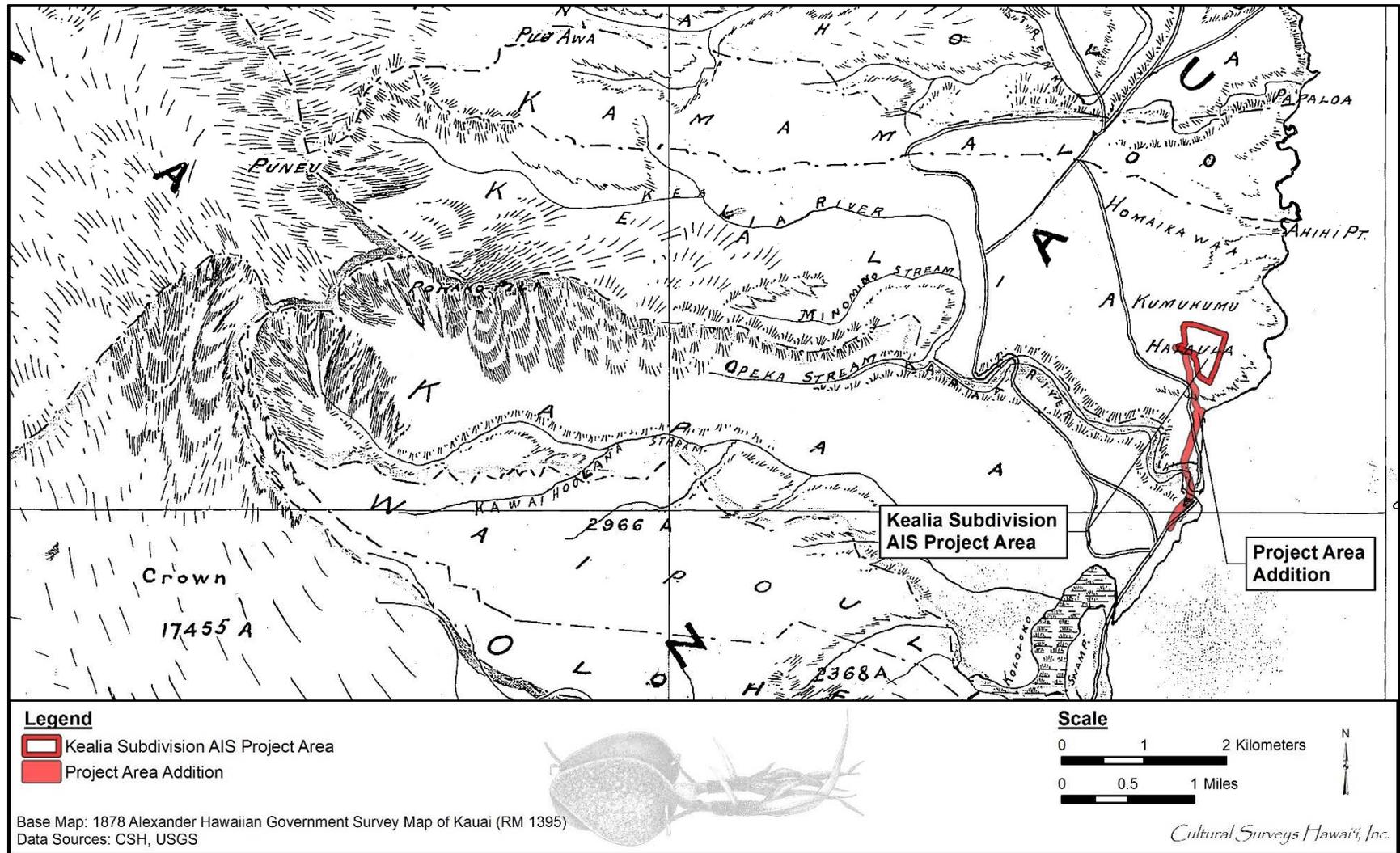


Figure 12. 1878 Alexander Hawaiian Government Survey Map of Kauai (RM 1395) showing the current investigation project area

Commissioner on 5 December 1870. The only man-made features noted in the decision were along the Keālia/Kamalomalo‘o boundary—the “Kealia auwai” and the “old mountain road into the forest.” His residence also served as a rest stop for travelers during the 1860s (Lydgate 1991:142). Mr. Krull continued to lease a portion of the tablelands above Keālia until 1876 when he sold his ranch to Colonel Z.S. Spalding and Captain James Makee (Hawai‘i State Archives, Interior Department, Letters, 1879; Kapa‘a Elementary School 1983:4).

The first large-scale agricultural enterprise in the Kapa‘a/Keālia area was begun in 1877 in Kapa‘a by the Makee Sugar Plantation and the Hui Kawaihau (Dole 1916:8, Figure 13 through Figure 17). The Hui Kawaihau was originally a choral society begun in Honolulu whose membership consisted of many prominent names, both Hawaiian and *haole* (Caucasian). It was Kalākaua’s thought that the Hui members could join forces with Makee, who had previous sugar plantation experience on Maui, to establish a successful sugar corporation on the east side of Kaua‘i. Captain Makee was given land in Kapa‘a to build a mill and he agreed to grind cane grown by Hui members. Kalākaua declared the land between Wailua and Moloa‘a a fifth district called Kawaihau and for four years the Hui attempted to grow sugarcane at Kapahi, on the plateau lands above Kapa‘a. After a fire destroyed almost one half of the Hui’s second crop of cane and the untimely death of Captain James Makee, one of their principal advocates, the Hui began to disperse and property and leasehold rights passed on to Makee’s son-in-law and the new Makee Plantation owner, Colonel Z.S. Spalding (Dole 1916:14).

As part of the infrastructure of the new plantation, a sugar mill was erected and the Makee Landing was built in Kapa‘a (Figure 18). Following Captain Makee’s death, Colonel Spalding took control of the plantation and in 1885 moved the mill to Keālia (Cook 1999:51, see Figure 13 through Figure 17). The deteriorating stone smokestack and landing were still there well into the 1900s (Damon 1931:359; see Figure 18). Condé and Best (1973:180) suggest railroad construction for the Makee Plantation started just prior to the mid-1890s. There is one reference to a railroad line leading from the Kapa‘a landing to Keālia in 1891. During Queen Lili‘uokalani’s visit to Kaua‘i in the summer of 1891, the royal party was treated to music by a band, probably shipped in from O‘ahu. “The band came by ship to Kapa‘a and then by train to Keālia” (Joesting 1984:252). This line is depicted on a 1910 USGS map that shows it heading south from Keālia Mill and splitting near the present Coral Reef Hotel, one finger going to the old Kapaa Landing (Makee Landing) and another line heading *mauka*, crossing the present Moikeha Canal, traveling southwest up Lehua Street and through what is now goat pasture, along a plateau and into the *mauka* area behind Kapa‘a swamp lands (Figure 19). This railroad line was part of a 20-mile network of plantation railroad with some portable track and included a portion of Keālia Valley and the *mauka* regions of the plateau lands north of Keālia (Condé and Best 1973:180).

By the late 1800s, Makee Plantation was a thriving business employing more than 1,000 workers (Cook 1999:51). Hundreds of Portuguese and Japanese immigrants found work on Makee Plantation and the new influx of immigrants required more infrastructure. In 1883, a lease for a school lot was signed between Makee Sugar Company and the Board of Education (Kapa‘a School 1983:9). Stipulations found in the Portuguese immigrant contracts with Makee Sugar Company stated that “children shall be properly instructed in the public schools” (*Garden Island* 1983). The original Kapa‘a School was constructed in 1883 on a rocky point adjacent to the Makee Sugar Company railroad (Figure 20). Traditionally, this point was known as Kaahiahi (Kapa‘a School

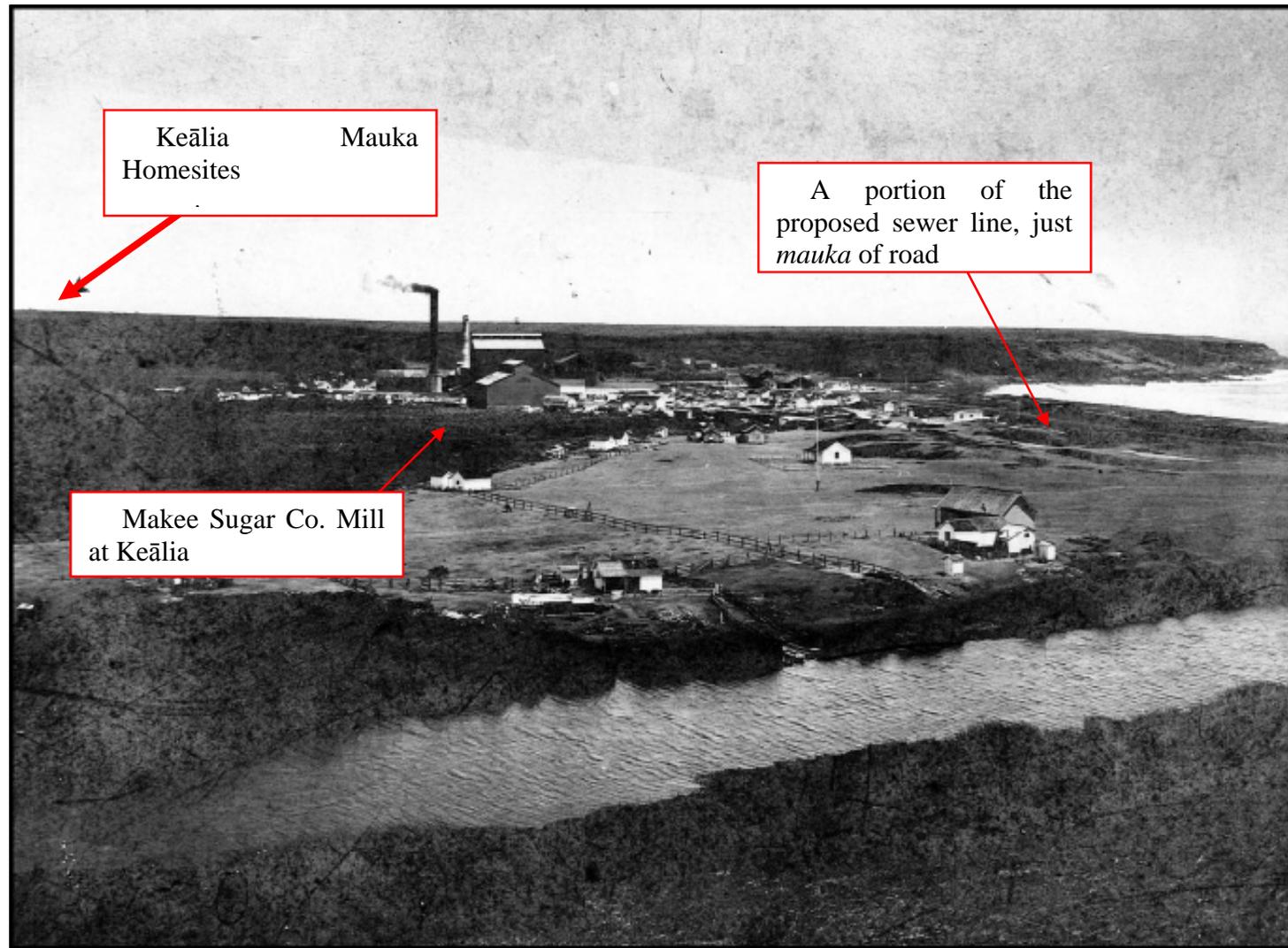


Figure 13. Makee Sugar Company Mill and Camp at Keālia, ca. 1894 (taken from Hammatt and Chiogioji 1998:14) showing the Keālia Mauka Homesite project area and a portion of the proposed sewer line

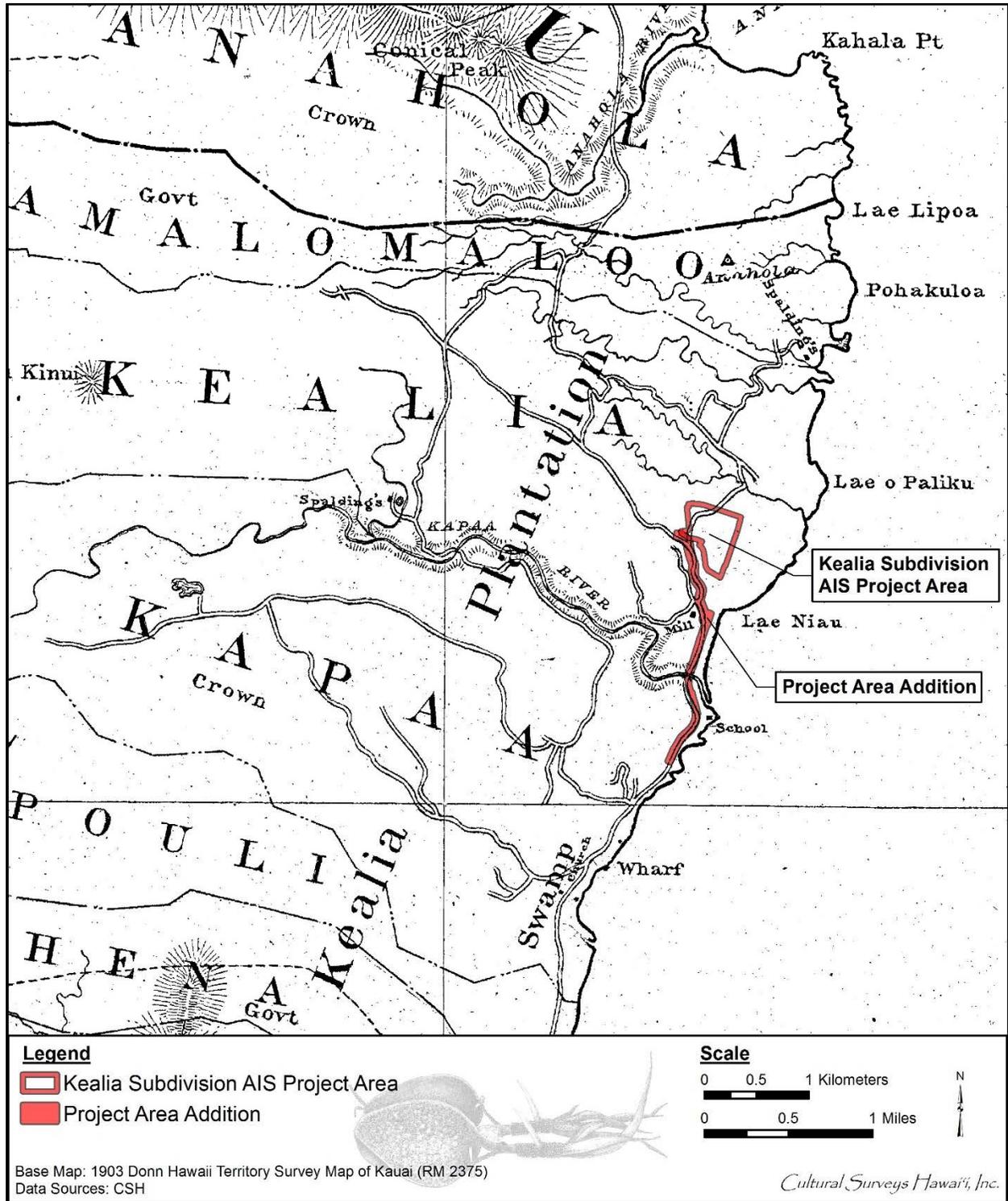


Figure 14. 1903 Donn Hawaii Territory Survey map of Kaua'i showing the current investigation project area near the former location of the mill at Keālia

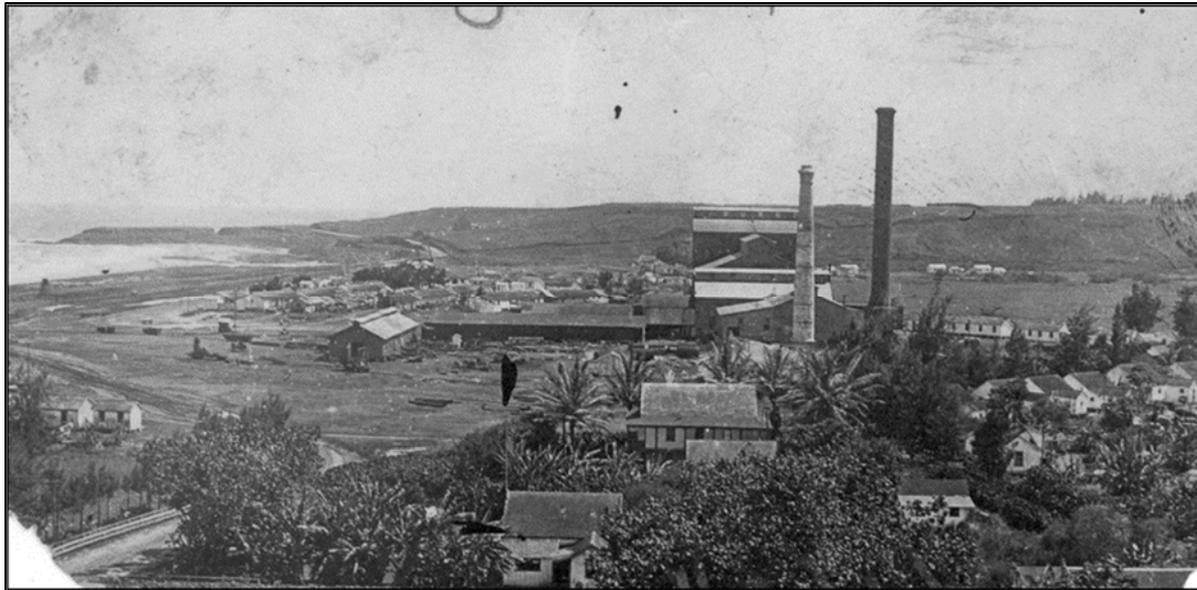


Figure 15. Photograph (date unknown) of Kealia Sugar Mill area (from the collections of Kaua'i Historical Society); view to south

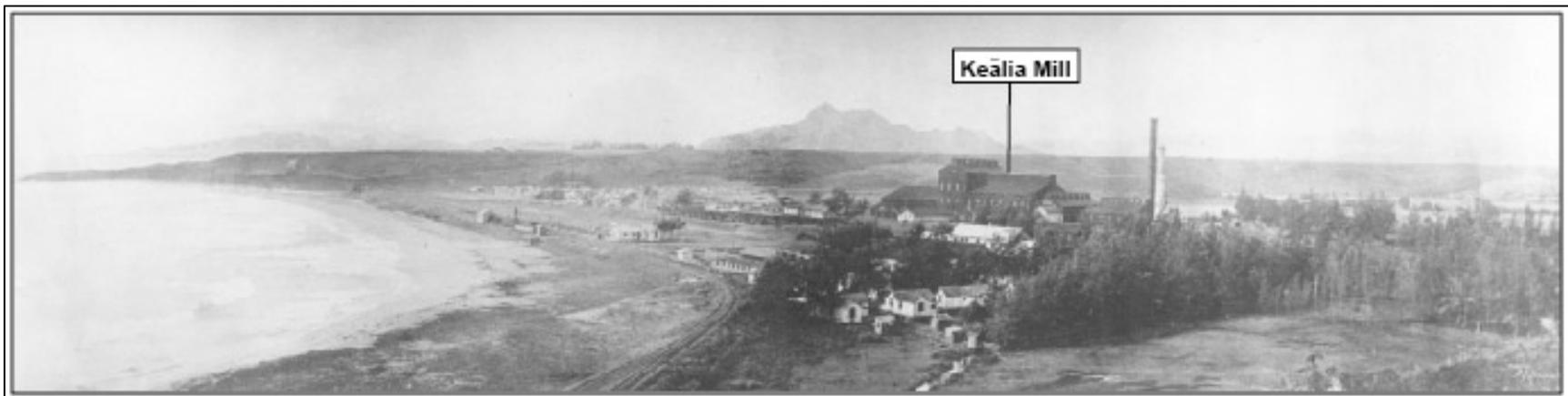


Figure 16. L.E. Edgeworth photo (October 1919) of Makee Sugar Company Mill in Keālia (taken from O'Hare et al. 2003:13); view to southwest

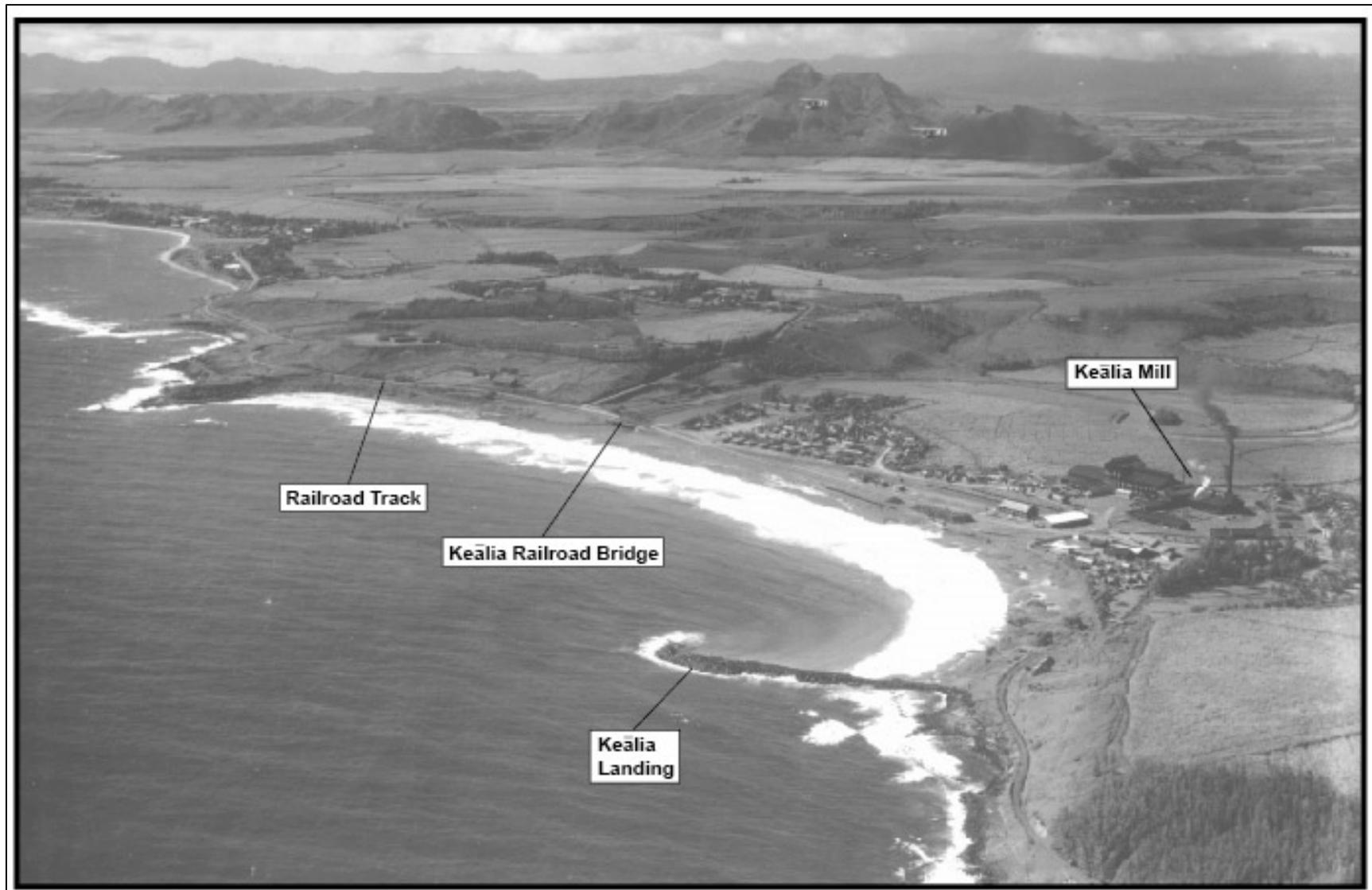


Figure 17. 1933 aerial view of Keālia (taken from O'Hare et al. 2003:14); view to west-southwest

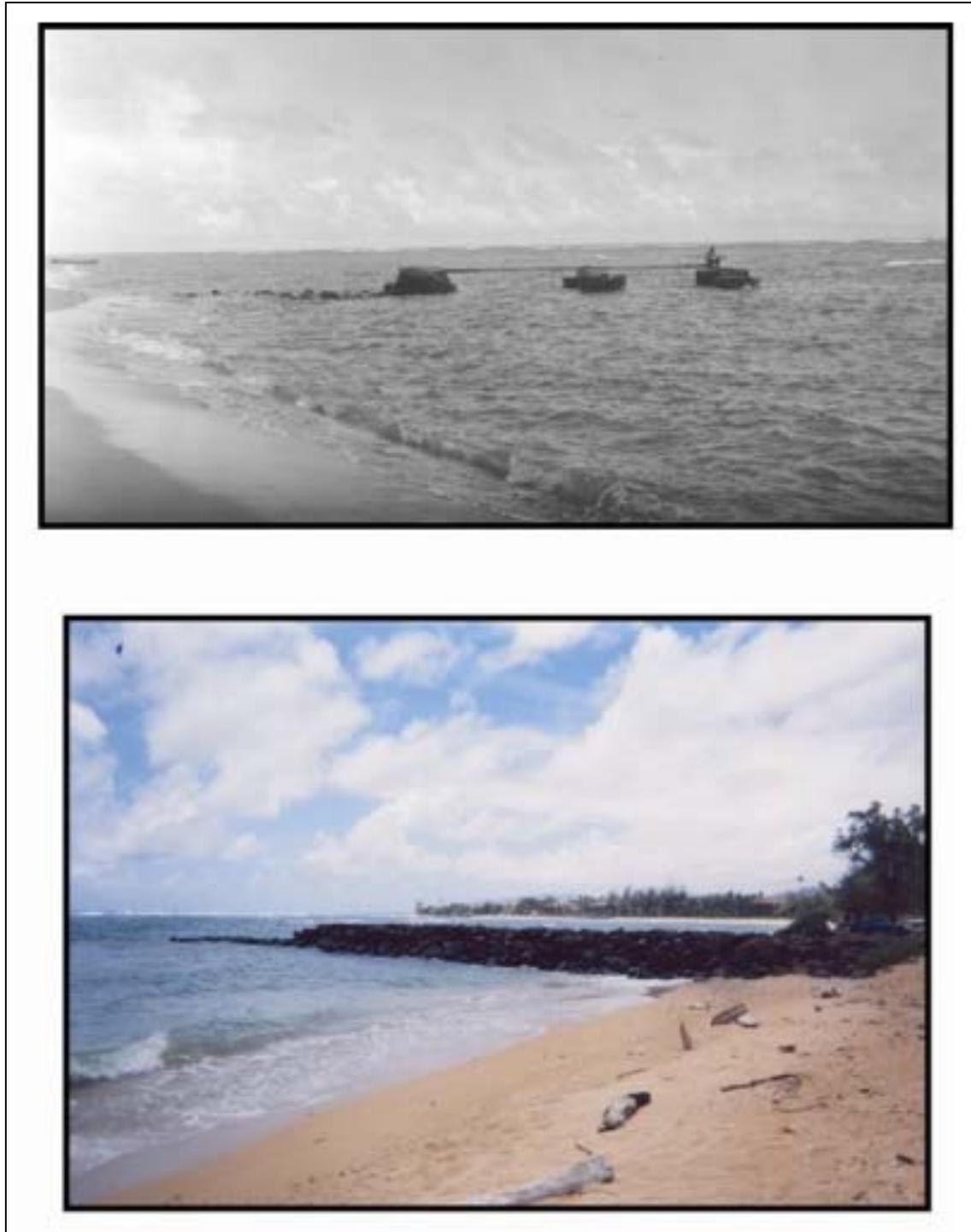


Figure 18. “Kapaa Wharf Remains, Kapaa, Kauai, Hawaii” (ca. 1934) also known as the Old Makee Landing (top photo) with the view to north. Today a breakwater is associated with the Moikeha Canal in the same general location (bottom photo) (Bushnell et al. 2002) with the view to south-southwest