EXHIBIT "F-4"

Figure 23. Dense area of tall grass in the south portion of the large project area, view to southwest

Figure 24. View of the approximate location of an old cane road (as indicated on a 1963 map and 1978 aerial photograph), view to southeast

EXHIBIT "F-4"

GENERAL CLASS III AND IV REQUIREMENTS CHECKLIST				
Project Name: **KAPAI'A SOLAR PROJECT**			TMK: (4) 3-8-002:002 (por.)	
Applicant: **SOLARCITY CORPORATION**			Permit Nos.	
REQUIRED INFORMATION				
Applicant and Property Information			Exhibit and/or Page Number	Staff Comments
1	Zoning Permit Application Form or Petition for Amendments. The Application Form or Petition shall be completed and provide the required information pertaining to the property, such as, the Tax Map Key number(s), State Land Use District Designation, General Plan Designation, and County Zoning Designation.		Sections 1.2, 2.1, 2.2 Exhibits C-1, C-2, C-4, C-5, C-6	
2	Documents that verify ownership of the property under the subject application(s) or that the applicant is the authorized agent of the property owner.		Sections 1.1, 1.3 Exhibit B-1	
3	If the applicant is not the owner of the subject parcel, then a notarized written authorization for the application by the owner shall be included. Said authorization shall include he owner's name, mailing addresses and telephone numbers.		Section 1.1 Exhibits A-1, A-2	
4	Agent's name, mailing address, and telephone numbers.			
GRAPHIC AND SCHEMATIC REQUIREMENTS			Exhibit and/or Page Number	Staff Comments
5	Location Map identifying the site, adjacent roadways and identifying landmarks.		Exhibits C-1, C-2, C-3, C-4, C-10	
6	Schematic Site Development Plan or Plot Plans drawn to scale, which identify the following:			
	a	Property lines and easements with its dimensions and total land or parcel area calculations;	Exhibits C-3	
	b	County and SLUD Zoning and General Plan Designation areas of the property and applicable densities;	Sections 7, 8, 9 Exhibits C-4, C-5, C-6	
	c	Flood Zones and required elevations;	Exhibit C-9	
	d	Location, size, and dimensions of all existing and proposed buildings, structures, improvements and uses;	Exhibit C-3	
	e	Building setback distances to properties lines, between buildings, right of ways, and parking lots;	Exhibit C-3	
	f	Proposed Lot Coverage calculations and areas;	Section 3.3.a.(iii)	
	g	Offstreet Parking layouts and calculations for existing and proposed uses;	Exhibit C-3	
	h	Topographic information showing existing features, conditions and drainage patterns and proposed grading and finished grade elevations and drainage patterns;	Exhibits C-3, C-9	
	i	Location of environmentally sensitive areas, habitat and botanical features which include, but are not limited to, wetlands, streams, rock outcroppings, endangers plants and animals and exceptional trees;	Sections 4.2, 6.1, 6.2 Exhibit C-9	
	j	Existing and proposed landscaping which depicts open spaces, plantings and trees;	Section 3.5	
	k	Existing and proposed roadways and accesses to the project; and	Exhibits C-2, C-3, C-10	
	l	Certified Shoreline, shoreline setback lines, stream and other setback lines.	N/A	
7	Conceptual Building Plans drawn to scale showing:		N/A	
	a	All existing and/or proposed building elevations with finished materials called out. Building elevation plans shall contain existing and finished grade.		
	b	Building heights, maximum wall plate height, sections which are drawn to scale and which clearly define the architectural character of the development.		
	c	Floor plans of all buildings and typical unit types for multi-family project.		
WRITTEN REQUIREMENTS			Exhibit and/or Page Number	Staff Comments
8	A report or statement addressing the following:			
	a	Description of the proposed project and proposed uses, operations and management of the proposed use which includes, but is not limited to, proposed employee housing plan, hours of operation.	Sections 3.1 thru 3.10, 6.9b	
	b	Summary of Permits (i.e. Use Permit, Special Permit, Class IV etc.) or Land Use Amendments requested and the applicable section of the Kauai County Code or regulation citing the specific standards and criteria for granting of the permit or amendment.	Sections 5.1, 5.2 & 5.3 7.1 thru 7.5, 8.1 & 8.2, 9.1 thru 9.4, 10.1 thru 10.4, 11.1 & 11.2, 12.1 thru 12.6, 13.1, 14.1	
	c	Policies and objectives of the General Plan; the provisions of the community development plan applicable to the application (including design standards and application requirements); the provisions of the applicable zoning district; and an analysis of the extent to which the application, if granted, conforms to these provisions of the applicable district; and an analysis of the extent to which the application, if granted, conforms to these policies, objectives and provisions.	Sections 5.1 & 5.2, 8.1 & 8.2, 9.1 thru 9.4, 10.1 thru 10.4, 11.1 & 11.2	

	d	Detailed land use history of the parcel which includes, but is not limited to former and existing State and County land use designations, violations and uses.	Sections 2.2a thru 2.2g Exhibits C-4, C-5, C-6	
	e	Status reports of all Zoning Amendment Ordinance Conditions, existing Land Use Permit Conditions, and Subdivision Permit Conditions pertaining to the project.	Sections 2.2f & g	
	f	Analysis of the secondary impacts of the proposed use on surrounding uses which includes, but is not limited to increases in property value, population, housing, community services and facility needs, second jobs and employment generated and compatibility with surrounding uses.	Sections 6.3 thru 6.12	
	g	Water Source, supply and distribution system analysis which includes, but is not limited to, methods of irrigation existing on the parcel and proposed for the application, location and use of groundwater and nonpotable water sources.	Sections 4.2f & 6.5a	
	h	Sewage disposal analysis, a description of a proposed method of sewage disposal.	Section 6.6	
	i	Solid waste disposal analysis, a description of a proposed method of solid waste disposal, including recycling, reclamation and waste stream diversion.	Section 6.7	
	j	Description of environmentally sensitive areas, habitat and botanical features which include, but are not limited to, wetlands, streams, rock outcroppings, endangered plants and animals and exceptional trees.	Sections 4.2, 6.1, 6.2, 6.12 Exhibits C-4, C-7, C-8, C-9	
9		Completed Evaluation form or written comments from Housing Division relative to the requirements of Ordinance #850		
		ADDITIONAL INFORMATION (SUBJECT TO DIRECTOR'S DETERMINATION)		
		Applicant and Property Information	Exhibit and/or Page Number	Staff Comments
10		Title Report of for properties involving Kuleanas a copy of Title Insurance acquired for the property.	B-1	
		GRAPHIC AND SCHEMATIC REQUIREMENTS	Exhibit and/or Page Number	Staff Comments
11		Schematic Site Development Plans or Plot Plans drawn to scale, which identify the following:		
	a	Location of existing or required access to shoreline or traditional sites either on property or adjacent.	N/A	
	b	Certified Shoreline, shoreline setback lines, stream and other setback lines.	N/A	
12		Three (3) dimensional drawings or models which clearly indicates the relation of the proposed development to other uses and structures within the surrounding area and show the development in the context of significant viewplanes.	N/A	
13		Photographs of the subject site, existing structures and surrounding area which are dated.	Exhibits F-1 to F-4	
		WRITTEN REQUIREMENTS	Exhibit and/or Page Number	Staff Comments
14		Additional information to be included in the required report.		
	a	Preliminary archaeological and historical data.	Section 6.2	
	b	A preservation/mitigation plan.	N/A	
	c	Traffic impact analysis showing level of service with and without the project, when required by State DOT or Department of Public Works.	N/A	
	d	A transportation master plan which includes vehicle, pedestrian and other forms of circulation to adjacent services and destinations.	N/A	
	e	For parcels located in SLUD Agriculture or County Zone Agriculture an assessment of the impact which the proposed use may have on agricultural use of the parcel which includes, but is not limited to, a feasibility analysis of potential agricultural uses suited to the site.	Sections 4.3, 4.4	
	f	A water master plan which aligns to the goals of the 2020 Water Plan for Kauai.	N/A	
	g	A baseline study and preservation/mitigation plan for environmentally sensitive areas and endangered species habitat.	Section 6.1	
	h	A report of all meetings held between the applicant and any community or residential group which may be impacted by the applicant's request, the issues raised by these meetings and any measures proposed by the applicant to deal with or to mitigate these issues.	Section 14.1	
	i	For properties adjacent to the shoreline or containing traditional access or sites requiring access, a preservation/mitigation plan detailing how access will be allowed and managed.	N/A	
	j	For projects near the shoreline, riparian areas or wetlands, or those involving intensive landscaping or turf management, such as golf courses, identification and assessment of chemicals and fertilizers used including, but not limited to, detailing effects upon surface, underground and marine water resources and neighboring properties and surrounding flora and fauna. If applicable, a mitigation plan and maintenance program and schedule.	N/A	
	k	For properties listed on the Kauai Historic and Non-Historic Resource Inventory an inventory and description of historic features on the property.	N/A	
	l	Proposed employee housing plan.	Section 6.9b	
	m	Description of sustainable strategies incorporated into project including but not limited strategies to reduce water and energy and materials consumption, promote alternative forms of transportation, reduce wastewater and storm runoff, waste stream diversion and encourage the preservation of functioning ecosystems i.e. LEEDS, Los Impact Design, Green Building principles, recycling, composting, BMP's etc.	N/A	

ADDITIONAL PERMITS		Exhibit and/or Page Number	Staff Comments
15	If the property is in the Special Treatment District the applicant shall comply with necessary requirements of section 8-9.5. and provide info noted in the Special Treatment Checklist.	N/A	
16	If property is in the Special Management Area of the County of Kauai, the applicant shall complete and submit an SMA Assessment of the proposed development.	N/A	
17	If the property is within 500' feet of the shoreline the applicant shall comply with the section 8-27 of the Kauai County Code- Shoreline Setback and Coastal Protection and provide info noted in the Shoreline Setback Checklist.	N/A	
18	If applicable, the petition requirements and content for a Special Permit Planning pursuant to Chapter 13 of the Rules of Practice and Procedures of the Commission and Chapter 205 of the Hawaii Revised Statutes.	N/A	
19	A Finding of No Significant Impact or Final E.I.S. when required by Chapter 343, Hawaii Revised Statutes.	N/A	
20	Any other information as may be required by the Director of Planning of the County of Kauai.	N/A	

DEPARTMENT Or PLANNING

STANDARD ZONING PERMIT APPLICATION

One (1) original; If providing plans, five (5) sets, including original, required.
Fees vary based on permits required and range from $30 to over $1000.
Proof of 75% fee ownership rights or authorized agent must be attached.

Check One: [X] Paper Plans [ ] Electronic Plans

This application shall be filled out by all seeking Zoning, Use, Variance, SMA Use or PDU permits pursuant to the Kauai County Code, Hawaii Revised Statutes Chapter 205A and all relevant rules and regulations of the Planning Commission and Department. Supplemental information may be attached to form. SMA applications may also require additional SMA assessment forms. **THIS FORM MUST BE ON GOLDENROD COLORED PAPER.**

DEPARTMENT USE ONLY			
Zoning			Intake By:
Use			
Variance			Intake Date:
SMA			
PDU			Acceptance Date/By:
TOTAL FEE:			
Additional Fees:			
Receipt Number:			
Building Permit No.:			
Associated Permits (e.g. SSD):			

Fill in below:			
Tax Map Key Number	(4) 3-8-002:002 (por.)	Condominium Number	N/A
Applicant Name	SolarCity Corporation		
Property Address	Kapai'a, Hanamaulu, Kauai, Hawaii		
Mailing Address	c/o Belles Graham Proudfoot Wilson & Chun, LLP 4334 Rice Street, Suite 202, Lihue, Kauai, Hawaii 96766		
Parcel Size	5,341.49 acres (50 acre portion)		
Zoning Designation	SLUC Agricultural District CZO Agriculture District	Contact Phone	(808) 246-6962

Applicant Declarations (incorrect responses may slow your permit review) Please place an "X" under Yes or No under the following:

		Yes	No	Staff Verification
1	Is this property located in the Special Management Area (SMA)?		X	
2	Is this property part of a Condominium Property Regime (CPR)?		X	
3	Is this property within 550 feet of the shoreline?		X	
4	Is this property within the Agriculture Zoning District?	X		
5	Is there a structure on the property that is 50 years old or older?		X	
6	Do you have an Additional Dwelling Unit Certificate?		X	
7	Is this a permit for an after-the-fact construction or activity?		X	
8	I hold at least a 75% property interest in the property.		X	
9	Are you an agent for the property owner?	X		
10	Has a similar application been previously denied?		X	
11	Is this an application for an agriculture structure under 200 sq. ft.		X	

1. What is the proposed construction and/or intended use of the structure or parcel (may attach additional info)?
   Solar photovoltaic array and battery energy storage facility – see attached Application.

2. If this is not the first dwelling unit on the subject property identified on this application, please state how many dwelling units presently exist: 2 on Lot 1-A-3/None on 50 acre portion

Submittal Checklist

Please **INITIAL** under "Yes" or not applicable "N/A" regarding each of the statements:

		Yes	N/A	Staff Verification
1	All plot plans I have submitted are drawn to scale.		mg	
2	I have ensured all TMK numbers are visible on all plan sheets.		mg	
3	Any plans I have submitted clearly show all structures and setback dimensions.		mg	
4	My plans provide lot coverage calculations.		mg	
5	I have ensured kitchens are marked with the 8' radii required by Planning Dept. Administrative Rules		mg	
6	Because this application involves a CPR, the plot plan shows all existing structures.		mg	

Acknowledgements - Please **INITIAL** next to each of the statements:

I understand:	Initial Here
Additional fees and/or the submittal of other application forms may be necessary to complete this application for acceptance and processing.	mg
Tender of fees by the County does not imply acceptance of this application.	mg
Errors in self-declaration or missing or incomplete information will delay acceptance and processing of your application.	mg
Any purposeful misrepresentations in this application may result in delay, denial, permit revocation, violations, fines and even criminal prosecution.	mg

The owner and/or authorized representative is hereby made aware that the construction, work, use or activity approved in this permit shall be subject to inspection by Planning Department personnel. The applicant is advised that inspection may occur prior to or during construction and use to ascertain the activity is conducted in compliance with the law. Further, I am a duly authorized agent or have 75% ownership rights.

OWNER/AGENT SIGNATURE: _____ DATE: 9/30/2015

FOR PLANNING DEPARTMENT USE ONLY (THIS CONSTITUTES PERMIT IF FILLED OUT BY DEPT.):

APPROVED_____ DENIED_____ BY:_____ DATE: _____

DIRECTOR'S CONDITIONS OF APPROVAL (staff to **initial** next to applicable conditions):

This permit shall expire if no building permit is issued within one (1) year following approval date and/or if construction does not start within one (1) year of building permit issuance.	
Director's standard conditions for non-residential agricultural structures (attach)	
Additional Conditions (State):	

Bernard P. Carvalho, Jr.
Mayor

Nadine K. Nakamura
Managing Director

Michael A. Dahilig
Director of Planning

Ka'āina S. Hull
Deputy Director of Planning

PLANNING DEPARTMENT
County of Kaua'i, State of Hawai'i
4444 Rice Street, Suite A-473, Lihu'e, Hawai'i 96766
TEL (808) 241-4050 FAX (808) 241-6699

NOTICE OF PUBLIC HEARING NOTIFICATION PROCEDURES

Pursuant to Sections 8-19.6(d), 8-20.6, 8-21.5, 8-22.3(c), 8-27.9(c) of the Kaua'i County Code of Ordinances, as amended, Section 9.0 of the County of Kaua'i Special Management Area Rules and Regulations, and Chapter 13 of the Planning Commission's Rules of Practice and Procedures, the following notification requirements shall apply:

TYPE OF PERMIT	NOTIFICATION DEADLINE		
	Twelve (12) days	Twenty (20) days	Thirty (30) days
USE PERMIT within the Residential, Agriculture and Open zoning districts	X		
PROJECT DEVLEOPMENT USE PERMIT pursuant to Section 8-20.6 of the County Code of Ordinances, as amended	X		
VARIANCES involving height limitations pursuant to Section 8-21.5	X		
AMENDMENTS pursuant to Section 8-22.3(c)	X		
SPECIAL PERMITS pursuant to Chapter 13 of the Planning Commission's Rules of Practice and Procedures		X	
SPECIAL MANAGEMENT AREA USE PERMITS pursuant to Section 9.0 of the County of Kaua'i Special Management Area Rules and Regulations		X	
SHORELINE SETBACK VARIANCES pursuant to Section 8-27.9(c) of the County Code of Ordinances, as amended			X

EXHIBIT 14

Prior to the scheduled date of public hearing, the Applicant shall either hand deliver written notice to persons listed on the current Notice of Property Assessment Card File located at the Real Property Division of the Department of Finance of the County of Kaua'i, or mail, by certified mail, written notice to the addresses shown on such Notice of Property Assessment Cards for at least **eighty-five per cent (85%)** of all parcels of real property within **300 feet** from the nearest point of the premises involved in the application to the nearest point of the affected property. For each condominium project within the affected area, one notice of the hearing shall be sent addressed "To the Residents, Care of the Manager", followed by the name and address of the condominium involved. The notice shall include the following information and shall be in a form approved by the Planning Director:

1. Date;
2. Time;
3. Location;
4. Purpose; and
5. Description or sketch of property involved.

For SHORELINE SETBACK VARIANCES, the Applicant shall mail notices of public hearing by certified or registered mail, postage prepaid, **to owners of real property which abut the parcel** that is the subject of the application. The notice shall include the information identified in the preceding paragraph noted above.

SUPPLEMENTAL INFORMATION
The following additional information shall be included in the public hearing notice:

TYPE OF PERMIT	REQUIRED ADDITIONAL INFORMATION
SPECIAL PERMITS	1. Land area of proposed use; and 2. A statement that persons may petition for intervention pursuant to Chapter 4 of the Planning Commission's Rules of Practice and Procedures, as amended.

Attached for your information and use is a copy of the public hearing notice which may be transmitted to adjacent and abutting landowners. Any other public hearing notice that does not contain the information as noted in the enclosed public hearing notice must be reviewed and approved by the Director of Planning.

At least **seven** (7) days prior to the hearing date, the applicant shall file with the Planning Commission an affidavit as to the mailing or delivery of such notice and a list of persons to which such notices were sent.

Should the Applicant fail to submit the affidavit within the time required, the public hearing shall be postponed. In this case, the Planning Commission shall reschedule another hearing within sixty (60) days of the postponed hearing. The Applicant shall be required to pay for the republication costs and shall follow the same notice requirements of this paragraph in the renotification of affected persons.

PLEASE CONTACT THE PLANNING DEPARTMENT SHOULD YOU HAVE ANY QUESTIONS RELATIVE TO THE ABOVE NOTIFICATION REQUIREMENTS.

MICHAEL A. DAHILIG
Director of Planning

Encl.

COUNTY OF KAUAI PLANNING DEPARTMENT, LIHUE, KAUAI

4444 Rice St., Kapule Building, Lihue, Hawaii 96766. Tel: 241-4050. Pursuant to the provisions of State Land Use Commission Rules and Regulations and provisions of Chapter 8 of the Kauai County Code 1987, as amended: NOTICE IS HEREBY GIVEN of a hearing to be held by the Planning Commission of the County of Kauai at the Lihue Civic Center, Moikeha Building, Meeting Rooms 2A and 2B, 4444 Rice Street, Lihue, Kauai on Tuesday, October 27, 2015, starting at 9:00 a.m. or soon thereafter to consider the following:

1. Class IV Zoning Permit Z-IV-2016-5, Use Permit U-2016-5 and Special Permit SP-2016-2 to permit the construction and operation of a solar power facility on a parcel located in Kapaia; the facility is proposed to be located approx. 900 ft. southwest of the Ehiku Street and Maalo Road intersection, further identified as Tax Map Key 3-8-002:002, and being a portion of a parcel containing a total area of 5,341.493 acres.

All persons may present testimony for or against any application as public witnesses. Such testimony should be made in writing and presented to the Department prior to the hearing. Late written testimony may be submitted up to seven days after the close of the hearing in cases where the Commission does not take action on the same day as the hearing. Any party may be represented by counsel if he or she so desires. Also, individuals may appear on their own behalf, a member of a partnership may represent the partnership, and an officer or authorized employee of a corporation or trust or association may represent the corporation, trust or association. Petitions for intervenor status must be submitted to the Commission and the applicant at least seven days prior to the date of the hearing advertised herein and shall be in conformance with Chapter 4 of the Rules of Practice and Procedure of the Planning Commission. Proposed plans and the Rules of Practice and Procedure of the Planning Commission are available for inspection during normal business hours at the address above. Copies of the proposal may be mailed to any person willing to pay the required fees for copying and postage. Mailing requests may be made to the Department in writing at the address above. Special accommodations for those with disabilities are available upon request five days prior to the meeting date by contacting the Department at the information above. KAUAI PLANNING COMMISSION Angela Anderson, Chairperson, By Michael A. Dahilig, Clerk of the Commission.

For October 3, 2015 Publication

BELLES GRAHAM PROUDFOOT WILSON & CHUN, LLP

ATTORNEYS AT LAW

MICHAEL J. BELLES
MAX W.J. GRAHAM, JR.
DONALD H. WILSON
JONATHAN J. CHUN

Federal I.D. No. 99-0317663

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4334 RICE STREET, SUITE 202
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OF COUNSEL
DAVID W. PROUDFOOT

COUNSEL
LORNA A. NISHIMITSU

ASSOCIATE:
IAN K. JUNG

October 6, 2015

VIA CERTIFIED MAIL

SUBJECT: **In The Matter Of The Application Of SolarCity Corporation, a Delaware corporation, for a Use Permit, a Class IV Zoning Permit and a Special Permit for real property situated at Kapai'a, Hanamaulu, Lihue, Kauai, Hawaii, identified by Kauai Tax Map Key No. (4) 3-8-002:002 (por.)**
Use Permit No. U-2016-5
Class IV Zoning Permit No. Z-IV-2016-5
Special Permit No. SP-2016-2

To Whom It May Concern:

The SolarCity Corporation, a Delaware corporation ("Applicant"), has filed the above-referenced Application with the Planning Commission of the County of Kauai.

I have enclosed a copy of a "Notice of Public Hearing Before The Planning Commission Of The County Of Kauai", together with a copy of an October 3, 2015 Publication, from the County of Kauai Planning Department, Lihue, Kauai, Hawaii, concerning the public hearing on the Application which will be conducted by the Planning Commission on **Tuesday, October 27, 2015, at 9:00 a.m., or soon thereafter, at the Lihue Civic Center, Mo'ikeha Building, Meeting Room 2A-2B, 4444 Rice Street, Lihue, Kauai, Hawaii.**

The purpose of the Application is to have the Planning Commission approve Use Permit U-2016-5, Class IV Zoning Permit Z-IV-2016-5, and Special Permit SP-2016-2 to allow the Applicant to develop new improvements on certain property ("Subject Property") located at Kapai'a, Hanamaulu, Lihue, Kauai, Hawaii. The Planning Commission's decision concerning the Special Permit will be advisory to the State Land Use Commission, which will make the final decision on the approval or denial of the Special Permit.

The Applicant wishes to construct an approximately 17 Mega Watt-Direct Current (MW-dc)/13 Mega Watt-Alternating Current (MW-ac) ground-mount solar PV system, coupled with a 13 MW-ac/52 Mega Watt hour (MWh) Battery Energy Storage System (BESS), and related interconnection and ancillary facilities ("Solar Facility"). The Solar Facility will be ground-mounted and will consist of the following: (1) solar resource and weather measurement equipment; (2) supporting structures; (3) operation and maintenance equipment and facilities;

(4) foundations and pads; (5) footings; (6) access roads; (7) security facilities; (8) one or more photovoltaic power systems, including, without limitation, solar panels, mounting substrates or supports, wiring and connections, power inverters, service equipment, metering equipment, utility interconnections, energy storage and any and all related equipment; (9) electric transmission and distribution lines, including wires, poles, and towers; and (10) other related facilities and equipment for the collection, transmission, distribution, storage and sale of electric power generated on the Subject Property.

In accordance with Section 8-7.7(4), Section 8-8.7, Section 8-19.6(d), and Section 8-20.6 of the Comprehensive Zoning Ordinance, as codified in the Kauai County Code, 1987, as amended, the Applicants are required to mail written notice of the Public Hearing at least 12 days prior to the Public Hearing to at least eighty-five percent (85%) of all parcels of real property located within a three hundred-foot (300') radius of the Subject Property, as well as any other persons or entities who have requested that they be given notice of proceedings.

This Notice is being given to the persons or owners listed in the current Notice of Real Property Assessment Card File located at the Real Property Division of the Department of Finance of the County of Kauai. Consequently, we are sending you a copy of the enclosed Notice.

A copy of the Application is available for your review at the Planning Department of the County of Kauai, at 4444 Rice Street, Suite 473, Lihue, Kauai, Hawaii.

In the event you have any questions concerning the Application, or in the event you are in need of any further information or clarification regarding the Application or the matters described in this letter, please feel free to contact me at (808) 246-6962.

Thank you very much.

Sincerely yours,

BELLES GRAHAM PROUDFOOT
WILSON & CHUN, LLP

Max W. J. Graham, Jr.

MWJG:jgm
Enclosures

NOTICE OF PUBLIC HEARING
BEFORE THE PLANNING COMMISSION OF THE COUNTY OF KAUAI

A public hearing before the Planning Commission of the County of Kauai has been scheduled in this matter to allow the Planning Commission to take testimony from the Applicant and public witnesses. The schedule for, and subject matter of, the hearing is as follows:

I. PUBLIC HEARING.

1. Date: Tuesday, October 27, 2015

2. Time: 9:00 a.m. or as soon thereafter as the matter can be heard.

3. Place of Hearing: Lihue Civic Center
Mo'ikeha Building
Meeting Room 2A-2B
4444 Rice Street
Lihue, Kauai, Hawaii 96766

4. Purpose: To allow the Planning Commission to take testimony from the Applicant and interested members of the public concerning the Application in this matter.

5. Permits under consideration: Use Permit U-2016-5, Class IV Zoning Permit Z-IV-2016-5, and Special Permit SP-2016-2

6. Applicant: SolarCity Corporation, a Delaware corporation

II. APPLICATION.

The Applicant, SolarCity Corporation, a Delaware corporation, wishes to construct an approximately 17 Mega Watt-Direct Current (MW-dc)/13 Mega Watt-Alternating Current (MW-ac) ground-mount solar PV system, coupled with a 13 MW-ac/52 Mega Watt hour (MWh) Battery Energy Storage System (BESS), and related interconnection and ancillary facilities ("Solar Facility"). The Solar Facility will be ground-mounted and will consist of the following: (1) solar resource and weather measurement equipment; (2) supporting structures; (3) operation and maintenance equipment and facilities; (4) foundations and pads; (5) footings; (6) access roads; (7) security facilities; (8) one or more photovoltaic power systems, including, without limitation, solar panels, mounting substrates or supports, wiring and connections, power inverters, service equipment, metering equipment, utility interconnections, energy storage and any and all related equipment; (9) electric transmission and distribution lines, including wires, poles, and towers; and (10) other related facilities and equipment for the collection, transmission, distribution, storage and sale of electric power generated on the Subject Property.

A complete copy of the Application filed in this matter, together with maps, studies, reports, photographs, plans, and other supporting materials (collectively, the "Plans"), is available for inspection at the Planning Department, Lihue Civic Center, Mo'ikeha Building, Suite 473, 4444 Rice Street, Lihue, Kauai, Hawaii 96766.

III. DESCRIPTION OF SUBJECT PROPERTY.

The Subject Property is described as a fifty (50) acre portion of Lot 1-A-3 located in Kapai'a, Hanamaulu, Lihue, Kauai, Hawaii, identified by Kauai Tax Map Key No. (4) 3-8-002:002. The Subject Property is shown colored in yellow on the map attached hereto as ***Exhibit "1"***.

IV. PROCESS.

After completion of the public hearing process in this case, at the originally scheduled hearing date or at such subsequent hearing dates as may be held, the Planning Commission will decide whether to approve, approve with conditions, or deny the Application. The Planning Commission's decision regarding the Use Permit and the Zoning Permit will be final, subject to any party's or aggrieved person's right to file an appeal in the Fifth Circuit Court, State of Hawaii. The Planning Commission's decision regarding the Special Permit is advisory only to the Land Use Commission of the State of Hawaii.

All interested persons may present testimony for or against the Application as public witnesses. Such testimony may be made in writing and may be presented to the Planning Commission at or prior to the public hearing. Late written testimony may be submitted up to seven (7) days after the close of the public hearing in cases where the Planning Commission does not take action on the same day the hearing was held.

Any party may be represented by counsel if he or she so desires. In addition, individuals may appear on their own behalf, a member of a partnership or limited liability company may represent the partnership or limited liability company, and an officer or authorized employee of a corporation or trust or association may represent the corporation, trust or association.

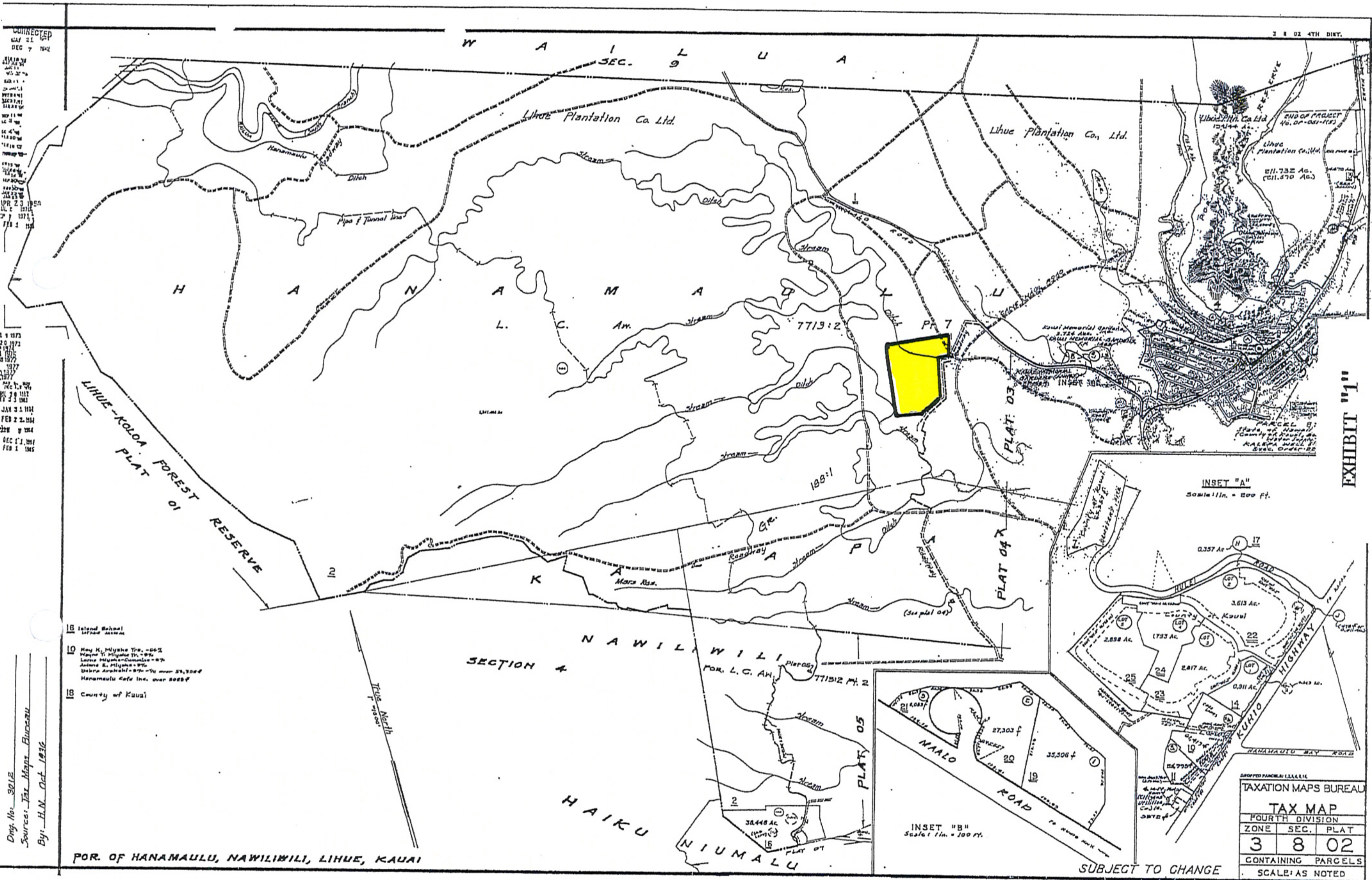
Petitions for intervenor status must be submitted to the Planning Commission at least seven (7) days prior to the date of the hearing advertised herein and shall be in conformance with Chapter 4 of the Rules of Practice and Procedure of the Planning Commission.

The Application, Plans, and the Rules of Practice and Procedure of the Planning Commission are available for inspection at the Planning Department which is located at 4444 Rice Street, Suite 473, Lihue, Kauai, Hawaii 96766.

V. CONTACTS.

County of Kauai: Ka'aina Hull, Deputy Director of Planning, County of Kauai Planning Department (241-4050)

Applicant's Representative: Michael J. Belles, Esq. and Max W. J. Graham, Jr., Esq. Belles Graham Proudfoot Wilson & Chun, LLP (246-6962)



WAILUA
SEC. 9
Lihue Plantation Co. Ltd.
Lihue Plantation Co. Ltd.
HANAMAULU
L.C. Aw. 7713:2
PLAT 03
PLAT 04
PLAT 05
LIHUE-KOLOA FOREST RESERVE PLAT 01
KALAPAKI
Gr. 188:1
NAWILIWILI
SECTION 4
Por. L.C. Aw. 7713:2 Pt. 2
HAIKU
NIUMALU
True North
INSET "A"
Scale: 1 in. = 200 ft.
INSET "B"
Scale: 1 in. = 100 ft.
NAALO ROAD
KUHIO HIGHWAY
HULEI ROAD
16 Island School
18 County of Kauai
Dwg. No: 3012
Source: Tax Maps Bureau
By: H.N. Oct 1936
POR. OF HANAMAULU, NAWILIWILI, LIHUE, KAUAI
SUBJECT TO CHANGE
TAXATION MAPS BUREAU
TAX MAP
FOURTH DIVISION
ZONE 3
SEC. 8
PLAT 02
CONTAINING PARCELS
SCALE: AS NOTED

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C/O AGRIBUSINESS DEVELOPMENT CORPORATION
Street & Apt. No., or PO Box No.: ~~STATE OFFICE TOWER~~ 235 S BERETANIA STREET ROOM 205
City, State, ZIP+4: HONOLULU HI 96813

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7013 1710 0001 1088 3078

Sent To: UNIVERSITY OF HAWAII
C/O CARRIE K OKINAGA ESQ GENERAL COUNSEL
Street, Apt. No., or PO Box No.: 2444 DOLE STREET
City, State, ZIP+4: HONOLULU HI 96822

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7014 1820 0000 0313 4080

Sent To: COUNTY OF KAUAI
C/O OFFICE OF THE COUNTY ATTORNEY
Street & Apt. No., or PO Box No.: 4444 RICE STREET SUITE 220
City, State, ZIP+4: LIHUE KAUAI HI 96766

PS Form 3800, July 2014 — See Reverse for Instructions

EXHIBIT 17

BELLES GRAHAM PROUDFOOT WILSON & CHUN, LLP

MAX W. J. GRAHAM, JR. 926-0
MICHAEL J. BELLES 1577-0
4334 Rice Street, Suite 202
Lihue, Kauai, Hawaii 96766
Telephone: (808) 246-6962
Facsimile: (808) 245-3277
Email: mwg@kauai-law.com
mjb@kauai-law.com

Attorneys for Applicant,
SOLARCITY CORPORATION,
a Delaware corporation

BEFORE THE PLANNING COMMISSION

OF THE

COUNTY OF KAUAI

In The Matter Of The Application Of SOLARCITY CORPORATION, a Delaware corporation, for a Use Permit, a Class IV Zoning Permit, and a Special Permit for real property situated at Kapai'a, Hanamaulu, Lihue, Kauai, Hawaii, identified by Kauai Tax Map Key No. (4) 3-8-002:002 (por.).	USE PERMIT NO. U-2016-5 CLASS IV ZONING PERMIT NO. Z-IV-2016-5 SPECIAL PERMIT NO. SP-2016-2 **AFFIDAVIT AS TO MAILING OF NOTICE; EXHIBITS "A" & "B"** **(KAPAI'A SOLAR PROJECT)**

AFFIDAVIT AS TO MAILING OF NOTICE

STATE OF HAWAII)
) SS:
COUNTY OF KAUAI)

MAX W. J. GRAHAM, JR., having been duly sworn on oath, deposes and says:

1. I am a resident of the County of Kauai, State of Hawaii.

2. I am an attorney licensed to practice law in the State of Hawaii, and am one of the attorneys representing the Applicant, SOLARCITY CORPORATION, a Delaware corporation, in the above-entitled matter.

3. On October 6, 2015, in fulfillment of Section 8-19.6(d) of the Kauai County Code of Ordinances, as amended, and Chapter 13 of the Planning Commission Rules of Practice and Procedure, I caused a Notice Of Public Hearing Before The Planning Commission Of The County Of Kauai (a copy of which is attached hereto and incorporated herein as ***Exhibit "A"***) to be mailed to at least eighty-five percent (85%) of the persons or owners listed in the current Notice of Property Assessment Card File, located at the Real Property Division of the Department of Finance of the County of Kauai, of all parcels of real property within three hundred feet (300') from the nearest point of the tax map parcel involved in the Application, to the nearest point of the affected tax map parcel. A listing of those persons or owners who received a copy of the Notice, their Tax Map Key Numbers and their mailing addresses are attached hereto as ***Exhibit "B"*** and incorporated herein by reference.

4. All of the Notices were mailed by certified or registered mail from the Lihue Post Office, Lihue, Kauai, Hawaii, postage prepaid, and copies of the receipts for such certified or registered mailings are available for inspection upon request.

Further, affiant sayeth naught.

MAX W. J. GRAHAM, JR.

Doc. Date: undated # Pages: 3

Doc. Description: Affidavit as to Mailing of Notice re: Solarcity application

Notary Name: SHARI E. OGATA Fifth Circuit

Subscribed and sworn to before me this 12th day of October, 2015

Notary Public, State of Hawai'i

My commission expires: 10/05/2016

LS.

NOTICE OF PUBLIC HEARING
BEFORE THE PLANNING COMMISSION OF THE COUNTY OF KAUAI

A public hearing before the Planning Commission of the County of Kauai has been scheduled in this matter to allow the Planning Commission to take testimony from the Applicant and public witnesses. The schedule for, and subject matter of, the hearing is as follows:

I. PUBLIC HEARING.

1. Date: Tuesday, October 27, 2015

2. Time: 9:00 a.m. or as soon thereafter as the matter can be heard.

3. Place of Hearing: Lihue Civic Center
Mo'ikeha Building
Meeting Room 2A-2B
4444 Rice Street
Lihue, Kauai, Hawaii 96766

4. Purpose: To allow the Planning Commission to take testimony from the Applicant and interested members of the public concerning the Application in this matter.

5. Permits under consideration: Use Permit U-2016-5, Class IV Zoning Permit Z-IV-2016-5, and Special Permit SP-2016-2

6. Applicant: SolarCity Corporation, a Delaware corporation

II. APPLICATION.

The Applicant, SolarCity Corporation, a Delaware corporation, wishes to construct an approximately 17 Mega Watt-Direct Current (MW-dc)/13 Mega Watt-Alternating Current (MW-ac) ground-mount solar PV system, coupled with a 13 MW-ac/52 Mega Watt hour (MWh) Battery Energy Storage System (BESS), and related interconnection and ancillary facilities ("Solar Facility"). The Solar Facility will be ground-mounted and will consist of the following: (1) solar resource and weather measurement equipment; (2) supporting structures; (3) operation and maintenance equipment and facilities; (4) foundations and pads; (5) footings; (6) access roads; (7) security facilities; (8) one or more photovoltaic power systems, including, without limitation, solar panels, mounting substrates or supports, wiring and connections, power inverters, service equipment, metering equipment, utility interconnections, energy storage and any and all related equipment; (9) electric transmission and distribution lines, including wires, poles, and towers; and (10) other related facilities and equipment for the collection, transmission, distribution, storage and sale of electric power generated on the Subject Property.

EXHIBIT "A"

A complete copy of the Application filed in this matter, together with maps, studies, reports, photographs, plans, and other supporting materials (collectively, the "Plans"), is available for inspection at the Planning Department, Lihue Civic Center, Mo'ikeha Building, Suite 473, 4444 Rice Street, Lihue, Kauai, Hawaii 96766.

III. DESCRIPTION OF SUBJECT PROPERTY.

The Subject Property is described as a fifty (50) acre portion of Lot 1-A-3 located in Kapai'a, Hanamaulu, Lihue, Kauai, Hawaii, identified by Kauai Tax Map Key No. (4) 3-8-002:002. The Subject Property is shown colored in yellow on the map attached hereto as ***Exhibit "1"***.

IV. PROCESS.

After completion of the public hearing process in this case, at the originally scheduled hearing date or at such subsequent hearing dates as may be held, the Planning Commission will decide whether to approve, approve with conditions, or deny the Application. The Planning Commission's decision regarding the Use Permit and the Zoning Permit will be final, subject to any party's or aggrieved person's right to file an appeal in the Fifth Circuit Court, State of Hawaii. The Planning Commission's decision regarding the Special Permit is advisory only to the Land Use Commission of the State of Hawaii.

All interested persons may present testimony for or against the Application as public witnesses. Such testimony may be made in writing and may be presented to the Planning Commission at or prior to the public hearing. Late written testimony may be submitted up to seven (7) days after the close of the public hearing in cases where the Planning Commission does not take action on the same day the hearing was held.

Any party may be represented by counsel if he or she so desires. In addition, individuals may appear on their own behalf, a member of a partnership or limited liability company may represent the partnership or limited liability company, and an officer or authorized employee of a corporation or trust or association may represent the corporation, trust or association.

Petitions for intervenor status must be submitted to the Planning Commission at least seven (7) days prior to the date of the hearing advertised herein and shall be in conformance with Chapter 4 of the Rules of Practice and Procedure of the Planning Commission.

The Application, Plans, and the Rules of Practice and Procedure of the Planning Commission are available for inspection at the Planning Department which is located at 4444 Rice Street, Suite 473, Lihue, Kauai, Hawaii 96766.

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Applicant's Representative: Michael J. Belles, Esq. and Max W. J. Graham, Jr., Esq. Belles Graham Proudfoot Wilson & Chun, LLP (246-6962)

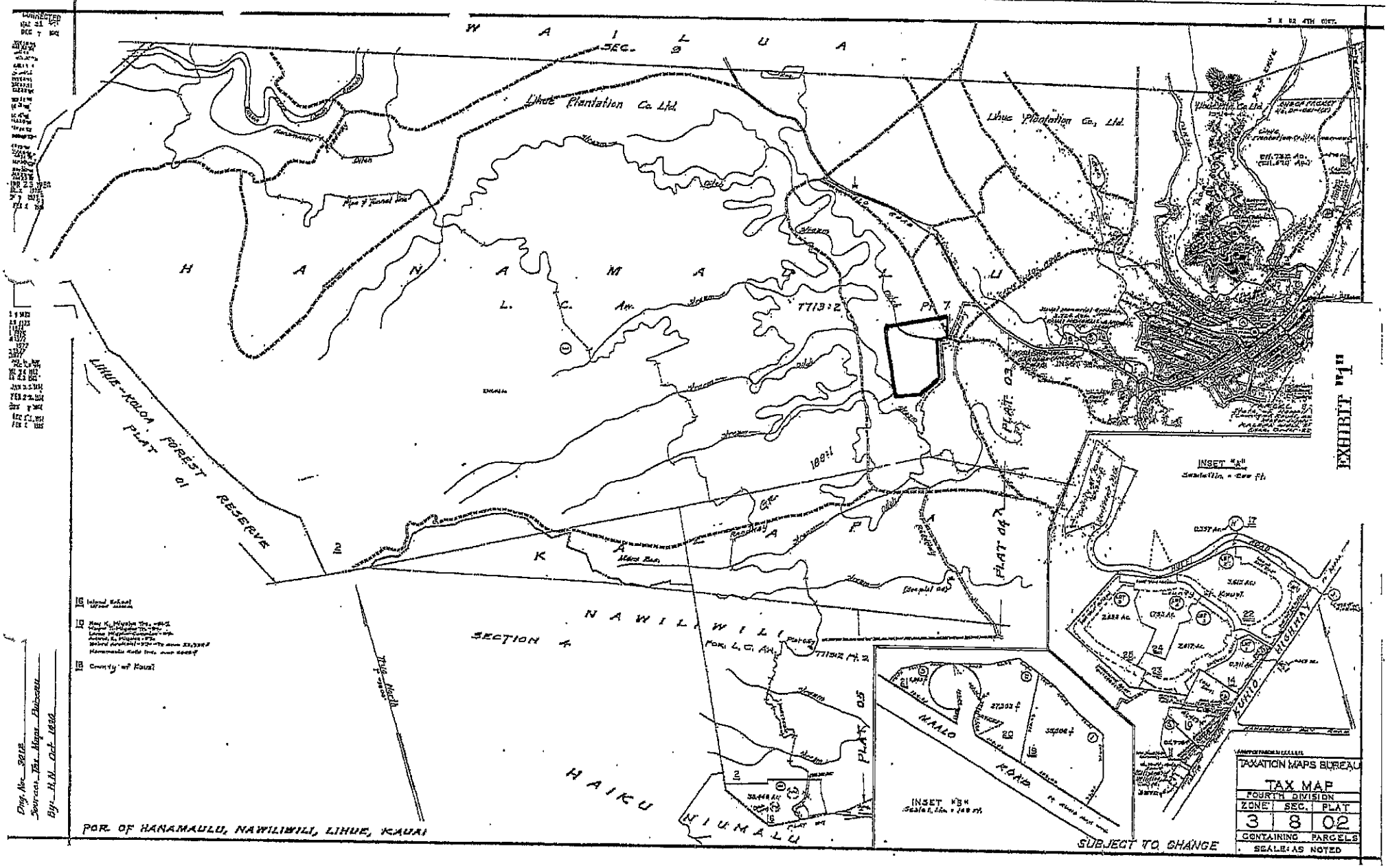


EXHIBIT "1"
W A I L U A
SEC. 3
Lihue Plantation Co. Ltd.
H A N A M A A
L. C. Aw. 7713:2
LIHUE-KALOA FOREST RESERVE
PLAT 01
PLAT 03
PLAT 04
PLAT 05
N A W I L I W I L I
SECTION 4
H A I K U
N I U M A L U
INSET "A"
INSET "B"
KUHIO HIGHWAY
NAALO ROAD
TAXATION MAPS BUREAU
TAX MAP
FOURTH DIVISION
ZONE 3 SEC. 8 PLAT 02
CONTAINING PARCELS
SCALE: AS NOTED
SUBJECT TO CHANGE
POR. OF HANAMAULU, NAWILIWILI, LIHUE, KAUAI

EXHIBIT "B"

ADJACENT PROPERTY INDEX

TMK	OWNER/ADDRESS
(4) 3-4-005:003 (4) 3-4-005:013 (4) 3-8-001:001 (4) 3-8-002:001 (4) 3-8-003:001 (4) 3-8-004:001 (4) 3-8-004:006 (4) 3-8-005:003	GROVE FARM COMPANY, INCORPORATED 3-1850 KAUMUALII HWY LIHUE KAUAI HI 96766
(4) 3-4-007:001	UNIVERSITY OF HAWAII c/o DEPARTMENT OF ATTORNEY GENERAL 425 QUEEN STREET HONOLULU HI 96813
(4) 3-8-003:011	KAUAI ISLAND UTILITY COOPERATIVE 4463 PAHEE STREET LIHUE KAUAI HI 96766
(4) 3-8-005-:019 (4) 3-9-002:036	COUNTY OF KAUAI C/O OFFICE OF THE COUNTY ATTORNEY 4444 RICE STREET SUITE 220 LIHUE KAUAI HI 96766
(4) 3-9-001:002 (4) 3-9-002:001 (4) 3-9-002:020	STATE OF HAWAII (ADC-HDOA) C/O AGRIBUSINESS DEVELOPMENT CORPORATION STATE OFFICE TOWER 235 S BERETANIA STREET ROOM 205 HONOLULU HI 96813

COUNTY OF KAUA'I
PLANNING DEPARTMENT
LĪHU'E, KAUA'I

PLANNING DIRECTOR'S REPORT

Date of Receipt of Completed Application:	September 30, 2015
Date of Director's Report:	October 12, 2015
Date of Public Hearing:	October 27, 2015
60th Day:	December 11 , 2015 (Dec 8: Commission)
Additional Hearing Dates:	**None—Time Extension Necessary**

PROJECT:	Class IV Zoning Permit Z-IV-2016-5 Use Permit U-2016-5 Special Permit SP-2016-2
APPLICANT:	Solar City Corporation

FINDINGS

LOCATION:	Kapai'a, Kaua'i

TAX MAP KEY:	3-8-002:002	**AREA:**	50 acre portion of a 5341.493 acre lot of record
ZONING:	Open (O)/Agriculture (A)	**SLUD:**	Agricultural (A)
GEN. PLAN:	Agriculture	**EXIST. USE:**	Vacant

I. ACTIONS REQUIRED:

Pursuant to Chapter 8-2.4 of the K.C.C., the construction of a utility facility requires a Use Permit when proposed within the Agriculture (A) Zoning District.

Pursuant to Chapter 8-8.7, a Class IV Zoning Permit is a procedural requirement for obtaining a Use Permit in the Agriculture (A) Zoning District.

Pursuant to Section 205-4.5 of the Hawaii Revised Statutes (HRS), a solar energy facility that occupies more than ten per cent of the acreage of the parcel, or more than twenty acres of land within the State Land Use Agricultural District (Soil Classification A or B) requires a Special Permit.

Pursuant to Section 205-6 of the HRS, Special Permits for proposals on lands greater than fifteen (15) acres in size shall be subject to the approval of the State Land Use Commission.

EXHIBIT 19

DR Rec'd
OCT 13 2015

E.1.a.
OCT 27 2015
P.H.

II. PROJECT DESCRIPTION AND USE:

As stated in the application, the Applicant proposes to construct an approximately seventeen (17) megawatt solar generation facility on the subject property. In addition to the solar panel arrays, a thirteen (13) megawatt battery energy storage system and related interconnection and ancillary facilities are also proposed.

The solar facility will be ground mounted and will be approximately 6.5 feet in height at its highest point. Each panel is roughly 1.6 inches in width by 3.2 feet in length. Approximately 54,285 panels are proposed to be installed. The panels will be spaced to allow infiltration of runoff through sheet flow. The total surface area of the panels will be approximately 45.85 acres.

Please refer to the application for further description.

III. LEGAL REQUIREMENTS:

This report is being transmitted to the Applicant and Planning Commission in order to satisfy the requirements of Section 8-3.1 of the Kauai County Code (K.C.C.), relating to the provision of the Planning Director's report and recommendation on the subject proposal within sixty (60) days of the filing of a completed application.

In accordance with Section 8-3.1 the public hearing for this matter is scheduled on October 27, 2015.

In accordance with Section 8-3.1 the Applicant shall notify at least 85 % of the property owners of all parcels within 300 feet from the nearest point of the premises involved in the application of the subject permits' application, the proposed use, and the corresponding public hearing date.

IV. APPLICANT'S REASONS/JUSTIFICATION:

Please refer to Applicant's petition.

Additional Findings

Property Information

The subject site is located in Kapaia, and the facility is to be located 900 feet southwest of the Ehiku Street and Maalo Road intersection. There are no existing structures at the subject site. The site was previously used for agriculture purposes.

Surrounding Area
The surrounding area is all within the Agriculture (A) and Open (O) Zoning Districts. These lands are either vacant or are primarily used for agriculture purposes. The closest residential structures are located within the Residential (R-4 and R-6) Zoning District, which is located approximately 0.85 miles east of the project site.

AGENCY COMMENTS: (forthcoming)

V. PRELIMINARY EVALUATION

In evaluating the Applicant's request to construct and operate the proposed solar utility facility, the following should be considered:

General Plan

1. Section 5.2 of the Kaua'i General Plan sets the following polices concerning Agriculture Lands:

    a. Lands included within the Agriculture designation shall be predominantly used for or held in reserve to be used in the future for agricultural activities. These activities include breeding, planting, nourishing and caring for, gathering, and processing of any animal or plant organism, including aquatic animals and plants, for the purpose of producing food or material for non-food products; the commercial growing of flowers or other ornamental plants; the commercial growing of forest products; and the commercial breeding and caring for domestic animals and pets.

    b. The primary intent of the Agriculture designation is to conserve land and water resources in order to:

        (1) Insure an excellent resource base for existing and potential agricultural uses;

        (2) Assure a sufficient supply of land available for sale or lease at a cost that is economically feasible for agricultural enterprise; and

        (3) Promote and preserve open agricultural lands as a key element of Kaua'i's rural character and lifestyle, essential to its image as "The

Garden Island" and to the continued viability and development of Kaua'i's visitor industry.

2. The overall parcel will remain predominantly free of development and the proposed structures will function in conjunction with the overall agriculture use of the parcel.

Use Permit

1. The proposed request is to be evaluated pursuant to Section 8-3 of the Kauai County Code (KCC), 1987, as amended, relating to the standards of issuance for a Use Permit:

   A Use Permit may be granted only if the Planning Commission finds that the establishment, maintenance, or operation of the construction, development, activity, or use in particular case is a compatible use and is not detrimental to health, safety, peace, morals, comfort, and general welfare of persons residing or working the neighborhood of the proposed use, or detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the community, and will not cause any substantial harmful environmental consequences on the land of the applicant or on other lands or waters, and will not be inconsistent with the intent of this Chapter and the General Plan.

2. A solar utility facility is permissible in the Agriculture (A) Zoning District with a Use Permit.

3. As previously stated, the overall parcel will remain predominantly free of development and proposed structures will function in conjunction with the overall agriculture use of the parcel.

4. The useable portions of the site will be leased for pasture purposes at a rate or rates that are at least fifty percent (50 %) below the fair market rental value.

5. The proposed use will not interfere with other agricultural uses that are generally allowed within the Agriculture (A) Zoning District.

6. Following the anticipated twenty-five (25) to thirty (30) year life and operation of the solar facility, all equipment will either be retrofitted with new equipment or will be removed from the site, and the site will be restored to its preconstruction condition.

7. The nearest residential structure is approximately .85 miles east of the subject site; therefore, no significant impacts should be generated that affect those residing on the

closest residential properties.

8. The proposed panels will follow the natural terrain of the land thereby mitigating visual impacts that the facility may create.

9. The proposed site is to be landscaped so as to mitigate any additional visual impacts created by the site.

10. The proposed operation should not be detrimental to the health, safety, peace, morals, comfort, and general welfare of persons residing or working in the surrounding area, and should not cause any substantial harmful environmental consequences.

Special Permit

1. The use will not be contrary to the objectives sought to be accomplished by the HRS Chapter 205 and 205A, and the SLUC Rules.

   - The useable portions of the site will be leased for pasture purposes at a rate or rates that are at least fifty percent (50 %) below the fair market rental value.

   - The proposed use will not interfere with other agricultural uses that are generally allowed within the Agricultural District.

   - It is located in close proximity to a power plant so as to minimize the impacts on agriculture activities in the area.

   - Following the anticipated twenty-five (25) to thirty (30) year life and operation of the solar facility, all equipment will either be retrofitted with new equipment or will be removed from the site, and the site will be restored to its preconstruction condition.

2. The desired use will not adversely affect surrounding property.

   - The proposed use will be compatible with the surrounding area, and it will not prevent surrounding lands from being used for agricultural purposes.

   - As previously stated, the nearest residential structure is approximately .85 miles east of the subject site; therefore, no significant impacts should be generated that affect those residing on the closest residential properties.

3. The use will not unreasonably burden public agencies to provide roads and

streets, sewers, water, drainage and school improvements, and police and fire protection.

- The proposed use is not anticipated to place an additional burden on public agencies.

4. Unusual conditions, trends and needs have arisen since the district boundaries and regulations were established.

   - As stated in the application, the State has recently recognized the need to promote alternative energy production, including solar energy production. Such facilities require large tracts of land. As compared to the State Land Use Urban or Rural Districts, these large tracts are predominantly located in the State Land Use Agriculture District. Provided such new uses do not prevent or adversely impact agricultural uses in the surrounding area, they are recognized as necessary and permissible in the Agricultural District.

5. The land on which the proposed use is sought is unsuited for the uses permitted within the District.

   - As proposed in the application, through grazing opportunities, the site will be used for agricultural production.

VI. PRELIMINARY CONCLUSION

Based on the foregoing findings and evaluation, it is hereby concluded that the proposed solar utility facility is appropriate, and it is compatible with other uses on the property. The use should not be detrimental to persons, property, or the environment in the surrounding area.

The Applicant should institute the "Best Management Practices" to insure that the operation of this facility does not generate impacts that may affect the health, safety, and welfare of those in the surrounding area of the proposal.

VII. PRELIMINARY RECOMMENDATION NUMBER 1 (CZO PERMITS)

Based on the foregoing evaluation and conclusion it is hereby recommended that subject request to construct and operate a solar utility facility under Use Permit U-2016-5 and Class IV Zoning Permit Z-IV-2016-5 be approved with the following conditions:

1. The solar utility facility shall be constructed and operated as represented. Any changes to the facility and/or operation shall be reviewed by the Department to determine whether Planning Commission review and approval is required.

2. Pursuant to HRS 205-4.5, the area occupied by the solar energy facility shall also be made available for compatible agricultural activities at a lease rate that is at least fifty percent (50 %) below the fair market rent for comparable properties.

3. Pursuant to HRS 205-4.5, the solar energy facility shall be decommissioned at the owner's expense according to the following requirements:

   a. Removal of all equipment related to the solar energy facility within twelve months of the conclusion of operation or useful life; and

   b. Restoration of the disturbed earth to substantially the same physical condition as existed prior to the development of the solar energy facility.

   The Applicant shall incorporate this condition in the license and/or lease agreement with the land owner, and said license and/or lease agreement shall be reviewed for approval by the Planning Department.

4. The Applicant shall comply with the requirements of the State Department of Health, the County's Fire Department, the Department of Water, and the Department of Public Works, as well as any other applicable government agencies.

5. The Applicant shall develop and utilize Best Management Practices (B.M.P.'s) during all phases of development in order to minimize erosion, dust, and sedimentation impacts of the project to abutting properties.

6. The applicant is advised the should any archaeological or historical resources be discovered during ground disturbing/construction work, all work in the area of the archaeological/historical findings shall immediately cease and the applicant shall contact the State Department of Land and Natural Resources, Historic Preservation Division and the Planning Department to determine mitigation measures.

7. In order to minimize adverse impacts on the Federally Listed Threatened Species, Newell's Shearwater and other seabirds, all external lighting shall be only of the following types: shielded lights, cut-off luminaries, or indirect lighting. Spotlights aimed upward or spotlighting of structures, landscaping, or the ocean shall be prohibited.

8. To the extent possible within the confines of union requirements and applicable legal prohibitions against discrimination in employment, the Applicant shall seek to hire Kauai contractors as long as they are qualified and reasonably competitive with other contractors, and shall seek to employ residents of Kauai in temporary construction and permanent jobs. It is recognized that the applicant may have to employ non- Kauai residents for particular skilled jobs where no qualified Kauai resident possesses such skills. For the purposes of this condition, the Commission shall relieve the applicant of this requirement if the applicant is subjected to anti-competitive restraints on trade or other monopolistic practices.

9. The Applicant shall implement to the extent possible sustainable building techniques and operational methods for the project, such as Leadership in Energy and Environmental Design (L.E.E.D.) standards or another comparable state-approved, nationally recognized, and consensus-based guideline, standard, or system, and strategies, which may include but is not limited to recycling, natural lighting, extensive landscaping, solar panels, low-energy fixtures, low energy lighting and other similar methods and techniques. All such proposals shall be reflected on the plans submitted for building permit review.

10. The Planning Commission reserves the right to revise, add, or delete conditions of approval in order to address or mitigate unforeseen impacts the project may create, or to revoke the permits through the proper procedures should conditions of approval not be complied with or be violated.

11. The Applicant is advised that additional government agency conditions may be imposed. It shall be the applicant's responsibility to resolve those conditions with the respective agencies.

IIX. PRELIMINARY RECOMMENDATION NUMBER 2 (SPECIAL PERMIT)

Based on the foregoing evaluation and conclusion it is hereby recommended that subject request to construct and operate a solar utility facility under Special Permit SP-2016-2 be recommended to be approved to the State Land Use Commission with the following conditions:

1. The solar utility facility shall be constructed and operated as represented. Any changes to the facility and/or operation shall be reviewed by the Department to determine whether Planning Commission review and approval is required.

2. Pursuant to HRS 205-4.5, the area occupied by the solar energy facility shall also be made available for compatible agricultural activities at a lease rate that is at least fifty percent (50 %) below the fair market rent for comparable properties.

3. Pursuant to HRS 205-4.5, the solar energy facility shall be decommissioned at the owner's expense according to the following requirements:

   a. Removal of all equipment related to the solar energy facility within twelve months of the conclusion of operation or useful life; and

   b. Restoration of the disturbed earth to substantially the same physical condition as existed prior to the development of the solar energy facility.

   The Applicant shall incorporate this condition in the license and/or lease agreement with the land owner, and said license and/or lease agreement shall be reviewed for approval by the Planning Department.

4. The Applicant shall comply with the requirements of the State Department of Health, the County's Fire Department, the Department of Water, and the Department of Public Works, as well as any other applicable government agencies.

5. The Applicant shall develop and utilize Best Management Practices (B.M.P.'s) during all phases of development in order to minimize erosion, dust, and sedimentation impacts of the project to abutting properties.

6. The applicant is advised the should any archaeological or historical resources be discovered during ground disturbing/construction work, all work in the area of the archaeological/historical findings shall immediately cease and the applicant shall contact the State Department of Land and Natural Resources, Historic Preservation Division and the Planning Department to determine mitigation measures.

7. In order to minimize adverse impacts on the Federally Listed Threatened Species, Newell's Shearwater and other seabirds, all external lighting shall be only of the following types: shielded lights, cut-off luminaries, or indirect lighting. Spotlights aimed upward or spotlighting of structures, landscaping, or the ocean shall be prohibited.

8. To the extent possible within the confines of union requirements and applicable legal prohibitions against discrimination in employment, the Applicant shall seek to hire Kauai contractors as long as they are qualified and reasonably competitive with other contractors, and shall seek to employ residents of Kauai in temporary construction and permanent jobs. It is recognized that the applicant may have to employ non-

Kauai residents for particular skilled jobs where no qualified Kauai resident possesses such skills. For the purposes of this condition, the Commission shall relieve the applicant of this requirement if the applicant is subjected to anti- competitive restraints on trade or other monopolistic practices.

9. The Applicant shall implement to the extent possible sustainable building techniques and operational methods for the project, such as Leadership in Energy and Environmental Design (L.E.E.D.) standards or another comparable state-approved, nationally recognized, and consensus-based guideline, standard, or system, and strategies, which may include but is not limited to recycling, natural lighting, extensive landscaping, solar panels, low-energy fixtures, low energy lighting and other similar methods and techniques. All such proposals shall be reflected on the plans submitted for building permit review.

10. The Planning Commission reserves the right to revise, add, or delete conditions of approval in order to address or mitigate unforeseen impacts the project may create, or to revoke the permits through the proper procedures should conditions of approval not be complied with or be violated.

11. The Applicant is advised that additional government agency conditions may be imposed. It shall be the applicant's responsibility to resolve those conditions with the respective agencies.

12. Should the State Land Use Commission approve the subject Special Permit, any additions or modifications the State Land Use Commission makes to these conditions of approval shall have the final authority.

The applicant is advised that additional government agency conditions may be imposed. It shall be the applicant's responsibility to resolve those conditions with the respective agencies. The Planning Commission is further advised that this report does not represent the Planning Department's final recommendation in view of the forthcoming public hearing process scheduled for October 27, 2015 whereby the entire record should be considered prior to decision making. The entire record should include but not be limited to:

a. pending government agency comments;

b. testimony from the general public;

c. the Applicant's response to staff's Director's Report and recommendation as provided herein.

By _____
Ka`aina Hull
Deputy Director of Planning

Approved & Recommended to Commission

By _____
Michael A. Dahilig
Director of Planning

Date 10/12/2014

KAUAI PLANNING COMMISSION
REGULAR MEETING

Tuesday, October 27, 2015

9:01 a.m. or Soon Thereafter
Līhu'e Civic Center, Moikeha Building
Meeting Room 2A-2B
4444 Rice Street, Lihue, Kauai, Hawai'i

AGENDA

A. CALL TO ORDER

B. ROLL CALL

C. APPROVAL OF AGENDA

D. RECEIPT OF ITEMS FOR THE RECORD

E. HEARINGS AND PUBLIC COMMENT **(Noticed hearings will not commence until 9:00 a.m. or soon thereafter.) Individuals may orally testify on items on this agenda during the Public Comment Period. Please call the Planning Department prior to the meeting or notify Commission Staff at the meeting site. Testimony shall also be accepted when the agenda item is taken up by the Commission. However if an individual has already testified during this period, additional testimony at the agenda item testimony may be allowed at the discretion of the Chair. Testifiers shall limit their testimony to three (3) minutes, but may be extended longer at the discretion of the Chair. Written testimony is also accepted. An original and twelve (12) copies of written testimony can be hand delivered to the Planning Department or submitted to Commission Staff at the meeting site.**

1. New Agency Hearing

   a. Class IV Zoning Permit Z-IV-2016-5, Use Permit U-2016-5 and Special Permit SP-2016-2 to permit the construction and operation of a solar power facility on a parcel located in Kapaia; the facility is proposed to be located approx. 900 ft. southwest of the Ehiku Street and Maalo Road intersection, further identified as Tax Map Key 3-8-002:002, and being a portion of a parcel containing a total area of 5,341.493 acres = ***SolarCity Corporation.*** [Director's Report received by Clerk of the Commission, Michael Dahilig 10/13/15.]

F. NEW BUSINESS

1. For Action – See Agenda E for Project Descriptions

G. ADJOURNMENT

EXHIBIT 20

EXECUTIVE SESSION: The Commission may go into an executive session on an agenda item for one of the permitted purposes listed in Section 92-5(a) Hawaii Revised Statutes ("H.R.S."), without noticing the executive session on the agenda where the executive session was not anticipated in advance. HRS Section 92-7(a). The executive session may only be held, however, upon an affirmative vote of two-thirds of the members present, which must also be the majority of the members to which the board is entitled. HRS Section 92-4. The reason for holding the executive session shall be publicly announced.

NOTE: Special accommodations and sign language interpreters are available upon request five (5) days prior to the meeting date, to the County Planning Department, 4444 Rice Street, Lihue, Hawaii 96766. Telephone: 241-4050

Reginald E. David — **Terrestrial Vertebrate Biologist**

Years of Professional Experience

Over the past 29 years I have worked as a terrestrial vertebrate biologist in Hawai'i and the Tropical Pacific. I specialize in avian and mammalian species with an emphasis on endangered species.

Experience Summary

Between 1986 and the present I have conducted over 1000 faunal surveys for the USFWS, the State of Hawaii, and numerous private concerns, on all of the main Hawaiian Islands as well as on Midway, Nihoa, Necker, and Kure Atolls. I have extensive field experience in New Zealand, Tahiti, Kiritimati, Guam, Saipan, Tinian, Gilbert Islands, Vanuatu, Republic of Palau, Eastern Siberia, Korea and the western United States. I am also experienced in the radar tracking of seabirds and bats as well as ultrasonic and thermal imaging censusing of bats. I have authored/co-authored over 30 peer-reviewed papers, one book and over 750 technical reports on birds and mammals. I am also the co-discoverer of a seabird new to science, which has recently been described at Bryan's Shearwater (*Puffinus bryani*).

I have a good working knowledge of USFWS, State of Hawai'i, and the Federal Department of Transportation environmental laws and regulations. I am experienced in preparing Biological Assessments (BA's) required under Section "7" of the Endangered Species Act (ESA) and in negotiating mitigation under Section "7" of the ESA with the USFWS as well as under section "10" of the ESA and Hawaii State Statute 195D. I also have experience in preparing Natural Resource Management Plans (NRMP's) and DoD, Integrated Natural Resource Management Plans (INRMP's) as well as State of Hawai'i Section 343 Environmental Assessments.

Over the past 18 years I have functioned as the senior biologist on several large projects, responsible for overseeing all biological work performed by scientists covering the full spectrum of biological disciplines from geology to wetlands and marine sciences. I have also performed as the lead biologist representing federal clients before state and federal regulatory agencies on complex projects like the Federal Highways Administration, Saddle Road Project.

Related Activities:

- Vice-chair Hawaii Bird Records Committee 2013- present
- US Fish & Wildlife & DLNR, Newell's Shearwater Working Group
- US Fish & Wildlife & DLNR, Hawaiian hoary bat Technical Working Group
- State of Hawaii Department of Land and Natural Resources, Natural Areas Reserve Commission (NARS) Commissioner: 1999 – 2004
- Moderator – HawaiiBirding internet chatline and website 1999-present
- Hawai'i Natural Heritage Program, Ornithological Advisory Committee.
- The Mauna Kea Management Board – Environmental Committee.
- US Fish & Wildlife Service, 'Alala Recovery Team Member: 1994 – Present.
- National Audubon Society: Board of Directors member: 1993-1996
- Hawaii Audubon Society: Board of Directors member: 1989 - 1996, 1998
- Hawai'i Audubon Society: Treasurer 1998
- Hawai'i Audubon Society: President 1990-1994
- US Fish & Wildlife & DLNR, Hawaii Endangered Waterfowl Recovery Team Advisory Committee

Professional Experience

A 45-page list of my publications, and technical reports is available upon request.

Dennis M. Esaki,

President, Esaki Surveying & Mapping, Inc.

Land Surveying, Mapping, Civil Engineering

Licensed Professional Land Surveyor, Hawaii

Licensed Land Court Surveyor, Hawaii

Licensed Commercial Airplane and Helicopter Pilot

Licensed Real Estate Salesperson (Inactive) Hawaii

Experience: 41 years

5 Years Surveying throughout Hawaii and the Pacific Islands

36 Years Private Surveying/Mapping/Civil Engineering Company

BS Geology, 1972 University of Hawaii, Manoa

Graduate studies in Urban and Regional Planning

Some Clients represented:

Grove Farm

State of Hawaii

County of Kauai

KIUC

Princeville Corp.

A&B

Kukuiula Dev.

Various land owners and realtors

Other land use attorneys and consultants

EXHIBIT 22

Some Past Community Service:

Governor's Representative for Kauai

State of Hawaii Land Use Commission

State of Hawaii Housing Finance and Dev. Corp, Director

University of Hawaii Foundation, Trustee

National Rural Electric Cooperative Assn, Director (Arlington, Va.)

Contractors Assn of Kauai, Director

Kauai Developers Council, Founding Director

Island School, Director

Kokee State Park Advisory Council

Community Service:

KIUC, Director (Co-founder)

Crown Prince Akihito Foundation, Trustee

KIUC Foundation, Director

Lawai International Center, Honorary Board

440 De Haro St., Suite #101
San Francisco, CA, 94107

Rrudd@solarcity.com
415-827-5653

Robert W. Rudd

Experience

SolarCity Corporation San Mateo, CA May 2012 – Present
Director – Project Development, Energy Storage

- Oversee all project development efforts with Utilities, Fortune 500 firms, and Public Sector clients
- Lead origination for over $100M in contracted business from 2014 – 2015 and international expansion
- Responsible for $2M OpEx budget and P&L of division; prepare and maintain revenue forecasts
- Manage team of 10 individuals coordinating project financing, engineering, and technology development

Sharp Electronics Corporation San Francisco, CA June 2011 – May 2012
Manager – Utility Projects

- Manage development, construction, interconnection, and sale of 14 MWp PV project in Ontario, Canada
- Coordinated non-recourse project financing of $60M; credit diligence, contract negotiations, closing
- Oversee business development efforts for a-Si tandem junction thin film through utility and IPP channels
- Lead project acquisition analysis and due diligence on over 750MW throughout North / South America

DRI Energy Oakland, CA September 2009 – June 2011
Project Developer

- Senior member of development team responsible for ~15 MW ($60M) in PV projects from 2009-2011
- Direct site identification, acquisition, and entitlement; experience with CEQA and other local agencies
- Prepare project construction estimates, revenue forecasts, operational budgets, and pro forma financials
- Manage project engineering, procurement, and construction of over 5 MW of ground mounted projects

Sustainable Energy Partners San Francisco, CA August 2007 – September 2009
PV Project Analyst

- Performed feasibility analysis of PV projects to determine technical, financial, and operational viability
- Prepared financial pro formas for renewable energy PPAs, sale-leasebacks, and tax-flip structures
- Developed a portfolio of PV projects for multiple REITs resulting in over 3 MW of projects implemented

KLNB Retail Baltimore, MD April 2007 – August 2007
Land Development Analyst

- Analyzed prospective land acquisitions for the development of large retail and mixed-use properties
- Identified land parcels, determined zoning, retrieved ownership data, and managed acquisition of sites
- Coordinated with local planning and permitting boards to determine conditional use permit requirements

Education

University of Colorado Boulder, CO May 2004 – May 2006

- B.S. Business Administration: Finance, Entrepreneurship; 3.5 GPA, Dean's List Member

University of Virginia Charlottesville, VA August 2002 – May 2004

- Division I NCAA Athlete, ACC Champion 2003, Transferred to CU after 2 year swimming career

Skills Sets & Achievements

- Able to read, write, and speak Spanish fluently; extensive experience living & traveling internationally
- Deeply knowledgeable on energy regulations including PUC processes, rate tariffs, wholesale markets
- Detailed understanding of both solar PV industry and energy storage trends and market specifics nuances
- Understanding of contract terms and negotiations for PPA, EPC, interconnection, and service agreements
- Swimming: Member of #9 NCAA Division I team, Georgia State Record Holder, Olympic hopeful

Brad W. Rockwell

Profile

Motivated, personable professional with progressing responsibility in both military and civilian careers. Strong technical, operational, and people skills, resulting in ability to create teams that succeed in demanding, 24/7 operational environments. Able to quickly sort through large amounts of data to find and apply key information necessary to solve difficult problems. Flexible and versatile – able to maintain calm under pressure. Poised, confident, and competent – embraces diversity and thrives on deadlines.

Skills Summary

- Power Generation
- Renewable Energy
- Business Development
- Negotiations
- Media Relations
- Strategic Planning
- Electric Grid Operations
- Emergency Actions
- Joint Operations

Civilian Professional Experience

KAUAʻI ISLAND UTILITY COOPERATIVE (KIUC), LIHUE, HI

- 2012 - Present: Power Supply Manager. Responsible for energy supply business development, both conventional and renewable, and all aspects of power supply and grid operations for the island of Kauaʻi. Increased renewable energy supply from 10% to 40% in just three years.
- 2006 - 2011: Production Manager. Responsible for all aspects of power supply and grid operations for the island of Kauaʻi, including leadership of 50 personnel and management of $100M in budgets (fuel, operations, maintenance, and capex).
- 2004 - 2005: Kapaia Plant Manager. Responsible for newest and most efficient power plant on Kauaʻi, which generates 45% of island's annual energy, including leadership of 10 personnel, over $30M in budgets.

PURENERGY LLC / KAUAʻI POWER PARTNERS, LIHUE, HI

- 2002 - 2003: Kapaia Plant O&M Supervisor. Led system design and testing for power plant under construction (online Sep 2002), hired and trained crew, planned and coordinated all maintenance activity, and ensured reliable and efficient operation. Plant was sold to KIUC in December 2003 and I became Plant Manager.

FIELD ENGINEER / SIX SIGMA BLACK BELT, GENERAL ELECTRIC INC., ONTARIO, CA

- 1999 - 2001: As Field Engineer, supervised overhauls of over 30 power plants in Western U.S. As Black Belt, developed and implemented quality improvement measures for GE Power Systems Western Region.

TEST ENGINEER, SOLAR TURBINES INC., SAN DIEGO, CA

- 1998 - 1999: Supervised testing of new generator according to performance and emissions guarantees.

Military Professional Experience

NAVY RESERVE OFFICER, PEARL HARBOR, HI

- 2014 - present: US Pacific Fleet N3 (Operations Directorate), Pearl Harbor, HI
- 2010 - 2013: US Pacific Command J3 (Operations Directorate), Camp H.M. Smith, HI
- 2009: recalled to active duty, serving with Multi National Corps - Iraq C33 (Current Operations), Baghdad, Iraq
- 2003 - 2008: SEAL Delivery Vehicle Team ONE, Pearl City, HI

SURFACE WARFARE OFFICER, UNITED STATES NAVY, PACIFIC FLEET

- Active duty 1993 - 1998 following graduation from USNA and Surface Warfare Officer School
- Served aboard two destroyers, deploying to the Western Pacific and Arabian Gulf on both ships
- Consistently above peers in warfare and watch qualifications, awards, fitness, and annual evaluations

Education / Other

Master of Business Administration, University of Hawaiʻi at Mānoa, Honolulu, HI
B.S. Marine Engineering, United States Naval Academy, Annapolis, MD
Licensed Professional Engineer (Mechanical), State of Hawaii
Management Internship Program (MIP), National Rural Electric Cooperative Association (NRECA)
Advanced Joint Professional Military Education (AJPME), Joint Forces Staff College, Norfolk, VA
Joint Professional Military Education (JPME), Air Command & Staff College, Montgomery, AL

2502D Puʻu Rd. ◆ Kalaheo, I

EXHIBIT 24

drockwell@icloud.com

David Shideler, M.A. **Cultural Surveys Hawai'i Project Manager**

Education:

1997 Ph.D. Candidate – ABD (all but dissertation) certified status, History of Hawaiian Islands, University of Hawai'i at Mānoa
1987 M.A. – Asian Religions, University of Hawai'i at Mānoa
1984 M.P.H. – Environmental Health Management, University of Hawai'i at Mānoa
1977 B.A. – Anthropology and Religion, University of Hawai'i at Mānoa
1976 B.S. – Zoology with Minor and Certificate in Environmental Studies, University of Florida
1973 Punahou School, Honolulu (12 years)

Qualifications:

- Archaeologist with the Archaeological Research Center Hawai'i (Lāwa'i, Kaua'i) in the 1970s and the Bernice Pauahi Bishop Museum, Honolulu in the 1980s
- Original member of CSH's management with a 35-year career in Hawaiian and Pacific archaeology
- Conducted over 800 archaeological projects in Hawai'i and has managed many large scale, multi-task projects, including numerous federal projects at many Hawai'i military installations
- Diverse background and familiarity with all levels of historic preservation regulations and recognized by the Land Use Commission as an expert in archaeology and cultural impact assessments
- Has taught courses in the History of Hawai'i and the History of the Hawaiian Kingdom in the History Department and courses in Hawaiian Religion, Polynesian Religion, and Pele and Kamapua'a Traditions in the Religion Department at the University of Hawai'i at Mānoa and continues to lecture for the School of Pacific and Asian Studies every year.

Special Training, Honors, and Certifications:

- Hawaiian Language Proficiency, Certified 1996 by the School of Indo-Pacific Languages, University of Hawai'i at Mānoa
- HART's Safety/Environmental Orientation Training
- First Aid / CPR (Current)

Representative Experience:

- A Preservation Plan for SIHP # 50-30-08-680, a Lagoon Comprising Components of Debora Kapule's Weuweu-Kawai-iki Fishponds at the Coco Palms Resort, Wailua Ahupua'a, Puna District, Island of Kaua'i
- Archaeological Assessment Report for Kaua'i High School Improvements Project for Off-Site Parking, Nāwiliwili Ahupua'a, Līhu'e District, Kaua'i
- Archaeological Inventory Survey for the Kauai Beach Resort Overflow Parking Project Hanamā'ulu Ahupua'a, Līhu'e District, Kaua'i TMK: [4] 3-7-003: 017 por.
- Archaeological Inventory Survey (AIS) for the Island School State Land Use District Boundary Amendment Project, Nāwiliwili Ahupua'a, Līhu'e District, Kaua'i
- Archaeological Assessment with Subsurface Testing for the Longs Kapa'a Project, Waipouli Ahupua'a, Kawaihau District, Kaua'i Island
- Archaeological Assessment for the Kīlauea Point National Wildlife Refuge Fencing Project Kīlauea Ahupua'a, Hanalei District, Island of Kaua'i TMK: (4) 5-2-004: 103 por.

Daniel H. Valdez

533 Valverde Drive ● South San Francisco, CA 94080 ● (808) 738-6852 ● dvaldez@solarcity.com

SENIOR COMMERCIAL PROJECT MANAGER

Senior commercial project manager currently managing SolarCity's largest carport installation in Northern California. Previously a Project Manager managing the Commercial Project teams consisting of 75 Project Managers and Construction Managers, developing trainings and rollouts for new processes and maintaining a consistence across the company. Project manager with success overseeing all phases of multimillion-dollar construction of Photovoltaic Systems for Federal, State and Private clients. Successfully managing Commercial Projects includes overseeing safety, managing subcontractors, contract negotiations, writing statements of work, value engineering, logistics, procurement and managing crews of up to 65 in the construction of Photovoltaic Systems consisting of Electricians, Roofers, Carpenters, Masons, Heavy Equipment Operators and other tradesmen. Inventory management and a proven history of on-time, on-budget, safe and high-quality project completions.

Key Skills

- *Large PV roof and ground Projects*
- *Client Management*
- *Inventory Management*
- *Site Safety*
- *QC/Field Engineering*
- *Problem Solving*
- *Budgeting & Cost Controls*
- *Material Requisition*
- *Subcontractor/Crew Supervision*

Employer Summary

SOLARCITY (Foster City, CA) — **Senior Commercial Project Manager**, 9/07 to Present

Entered the Solar industry as an installer, shortly after began working on larger Commercial Projects. Promoted to Construction Manager in 6/08 and Project Manager in 2009. In 2013, promoted to Senior Commercial Project Manager

CITY AND COUNTY OF SAN FRANCISCO (San Francisco, CA) — **Peace Officer**, 4/06 to 8/07

Street patrol, traffic patrol, community involvement, drug enforcement.

J&D HAULING AND HANDYMAN SVCS. (Burlingame, CA) — **Owner/ Operator**, 2/03 to 4/06

Successfully operated a four-man hauling and handyman company. Book keeping, invoicing, scheduling and servicing.

Technical Skills and Certifications

Proficiency in Microsoft Office: Word, PowerPoint, Excel, Project, Outlook. Great Plains Inventory Management, Heavy Equipment Operation, First Aid, First Responder, CPR Certified and OSHA 30.

Project Highlights

Kauai Island Utility Cooperative (2013-2014) ● 14.2 MW

Ground-mounted RBI rack system consisting of 24-AE 500 Inverters and 45,360 Suniva modules. Successfully managed under budget and ahead of schedule without any safety incidents.

Maui Arts and Cultural Center (2012) ● 464 kW

Ground-mounted TerraFix rack system consisting of 4-PV Powered 95 Inverters and 2,016 Yingli modules. Successfully managed without safety incidents and on schedule.

Gallo Farms (2015) ● 2.038 MWW

Ground-mounted RBI rack system consisting of 56 Solectria PVI-28TL inverters and 7,840 modules. Successfully managed under budget and awarded as fastest install in SolarCity history for the racking type and size.

eBay (2008) ● 650 kW

Roof-top system using a non-penetrating rack. Constructed on 5 different buildings with numerous mounting planes each. System consisted of multiple Xantrex GT inverters and 3,250-BP 200's.

Experience on a number of other Residential and Commercial solar projects.

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In The Matter Of The Petition Of GROVE FARM COMPANY, INCORPORATED For A Declaratory Order To Designate Important Agricultural Lands For Approximately 11,026.2 Acres At Hā`upu and Līhu`e, Kaua`i, Hawai`i	DOCKET NO. DR12-48 FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER

2013 FEB 25 A 11:51

LAND USE COMMISSION
STATE OF HAWAII

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER AND CERTIFICATE OF SERVICE

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawai`i.

February 25, 2013 by

Executive Officer

EXHIBIT 27

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

LAND USE COMMISSION
STATE OF HAWAII
2013 FEB 25 A 11:51

In The Matter Of The Petition Of	)	DOCKET NO. DR12-48
GROVE FARM COMPANY, INCORPORATED For A Declaratory Order To Designate Important Agricultural Lands For Approximately 11,026.2 Acres At Hā`upu and Līhu`e, Kaua`i, Hawai`i	)	FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER

GROVE FARM COMPANY, INCORPORATED ("Petitioner"), filed a Petition for Declaratory Order to Designate Important Agricultural Lands ("Petition") on November 30, 2012, pursuant to Hawai`i Revised Statutes ("HRS") §§205-44 and 45, and Hawai`i Administrative Rules ("HAR") chapter 15-15, to designate as Important Agricultural Lands ("IAL") approximately 11,026.2 acres of land, situated at Hā`upu and Līhu`e, Kaua`i, Hawai`i, Tax Map Key Nos. 2-8-01: 01 (por.); 2-8-02: 01 (por.); 3-4-01: 01 (por.), 02 (por.), 03 (por.); 3-4-05: 03 (por.), 04 (por.), and 13; 3-8-01: 01 (por.); and 3-8-02: 02 (por.) (collectively "Petition Area").

The State of Hawai`i Land Use Commission ("Commission"), having heard and examined the testimony, evidence, and argument of counsel presented during the hearing, along

with the pleadings filed herein, hereby makes the following Findings of Fact, Conclusions of Law, and Decision and Order..

FINDINGS OF FACT

PROCEDURAL MATTERS

1. On November 30, 2012, the Petitioner filed its Petition and Exhibits "A" through "F" of the Petition.

2. On December 3, 2012, the Commission mailed letters to the State of Hawai`i Office of Planning ("OP"), the State of Hawai'i Department of Agriculture ("DOA"), and the Kaua`i County Planning Department ("County"), requesting comments on the Petition.

3. On December 3, 2012, the Petitioner filed a compact disk ("CD") containing digital files of the Petition.

4. On January 9, 2013, the Petitioner filed a Revised Exhibit "D-2".

5. On January 11, 2013, DOA and OP requested, via electronic mail, additional time in which to file comments, until January 17, 2013. The Executive Officer acknowledged extending the comment response deadline.

6. On January 17, 2013, the Commission received electronic mail from the County containing a comment letter from Michael Dahilig, Planning Director.

7. On January 17, 2013, OP filed comments on the Petition. OP's comments included comments on the Petition from the Natural Resources and Conservation Services ("NRCS"), United States Department of Agriculture, dated January 4, 2013; the State of Hawai`i Energy Office dated January 7, 2013; and the University of Hawai`i at

Mānoa, College of Tropical Agriculture and Human Resources ("CTAHR"), dated January 14, 2013.

8. On January 22, 2013, DOA filed comments on the Petition.

9. On January 30, 2013, the Commission sent its Notice of Hearing and Agenda for its February 7-8, 2013, meeting to all Parties and the Commission's Statewide, Maui, and Kaua`i mailing lists.

10. On February 1, 2013, the Petitioner filed its response to comments on the Petition received by the Commission from OP, DOA, and the County.

11. On February 8, 2013, the Commission held a site visit to view the Petition Area in Hā`upu and Līhu`e, Kaua`i, Hawai`i.

12. On February 8, 2013, the Commission held an action meeting on the Petition in Līhu`e, Kaua`i, Hawai`i. Curtis T. Tabata, Esq., Benjamin M. Matsubara, Esq., and Michael Tressler appeared on behalf of Petitioner. Bryan Yee, Esq., Jesse Souki, and Rodney Funakoshi appeared on behalf of OP. Mauna Kea Trask, Esq., and Michael Dahilig appeared on behalf of the County Planning Department.[1]

13. The Commission entered, without objection, the written comments of OP, the DOA, the County, and Petitioner's response thereto. There was no public testimony.

14. On February 13, 2013, the Commission received written correspondence from Kaua`i Economic Development Board, Inc.

DESCRIPTION OF PETITION AREA

[1] At the meeting, Acting Chair Heller disclosed that his law practice has provided legal services to the County of Kaua`i, but that he was not aware of what the details of the involvement was. Mr. Mauna Kea Trask, Deputy Corporation Counsel for the County, noted that he was not involved in those cases. There were no objections by Petitioner, OP, or the County to Commissioner Heller's or Mr. Trask's participation in this docket.

15. The Petition Area consists of approximately 11,026.2 acres of land, situated at Hā`upu and Līhu`e, Kaua`i, Hawai`i, Tax Map Key Nos. 2-8-01: 01 (por.); 2-8-02: 01 (por.); 3-4-01: 01 (por.), 02 (por.), 03 (por.); 3-4-05: 03 (por.), 04 (por.), and 13; 3-8-01: 01 (por.); and 3-8-02: 02 (por.).

16. The description of the Petition Area acreage by Tax Map Key Numbers and Tax Maps depicting the Petition Area is shown in Petitioner's Exhibits "B" and "D", which are attached hereto and incorporated herein by reference as Exhibit "1."

17. The Līhu`e Petition Area is owned in fee simple interest by Petitioner, and the Hā`upu Petition Area is owned by Hā`upu Land Company LLC.

18. Hā`upu Land Company LLC is the owner of the fee simple interest in the Hā`upu Petition Area and has given its written consent to the filing of the Petition and the designation of the Hā`upu Petition Area as IAL.

DESCRIPTION OF REQUEST

19. Petitioner seeks a determination from the Commission that the lands identified by Petitioner in this Petition should be designated as IAL pursuant to HRS §§ 205-44 and 45.

20. Petitioner's position is that the Petition Area meets the qualifications for designation as IAL under HRS §205-44, meets the purpose of Article XI, Section 3, of the Hawai`i State Constitution and the objectives and policies for IAL in HRS §§ 205-42 and 205-43, and that the Commission should issue a declaratory order designating the Petition Area as IAL pursuant to HRS §205-45.

21. Petitioner is not seeking to reclassify any agricultural lands to the State Land Use Urban, Rural or Conservation Districts.

22. Petitioner has represented that it is not claiming and will not claim any credits described in HRS §205-45(h).

CONFORMANCE WITH THE STANDARDS AND CRITERIA FOR THE IDENTIFICATION OF IAL

22. Approximately 6,000 acres of the Līhu`e Petition Area is in active agricultural production, including cattle ranching, biomass, diversified agriculture, and livestock.

23. Approximately 285 acres of the Hā`upu Petition Area is in active cattle ranching.

24. Approximately 9,890 acres of the Līhu`e Petition Area is subject to a lease option with Hawai`i BioEnergy LLC for growing bioenergy crops, including trees and grasses.

25. The Līhu`e Petition Area soils do have good physical properties and with proper fertilization can be productive for a wide range of crops, are suitable for producing a wide range of tree crops, pasture, vegetables and fruits and can be managed to produce many agricultural products sustainably.

26. The Līhu`e Petition Area has soil qualities and growing conditions suitable for the cultivation of trees and grasses which are strong candidates for energy crops for sugar and fiber production.

27. In 1977, the State Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawai`i ("ALISH"). The classification system is based primarily, though not exclusively, upon the soil characteristics of the lands. The three (3) classes of ALISH lands are: "Prime," "Unique," and "Other," with all remaining lands termed "Unclassified." When utilized with modern farming methods, "Prime" agricultural lands have a soil quality, growing season, and moisture supply necessary to produce sustained crop yields economically.

"Unique" agricultural lands possess a combination of soil quality, growing season, and moisture supply to produce sustained high yields of a specific crop. "Other" agricultural lands include those that have not been rated as "Prime" or "Unique." The ALISH system classifies approximately 41.4% of the non-reservoir Hā`upu Petition Area as "Prime," 33.6% of the non-reservoir Hā`upu Petition Area as "Other," and the balance is "Unclassified."

28. The Petition Area has access to irrigation water, including on-site and off-site water sources and water transmission distribution systems. In addition, the Līhu`e Petition Area receives between 60 to 100 inches of rainfall annually and is adequate for rain-fed production of many crops.

29. The Petition Area's agricultural classification is consistent with the General Plan of the County of Kaua`i.

30. The Petition Area is situated within the State Land Use Agricultural District.

31. The Petition Area contributes to maintaining a critical land mass important to agricultural operating productivity.

32. The Petition Area is fully integrated with the infrastructure necessary to support agricultural production, including roads, gates, reservoirs, ditches and streams. Located within the Hā`upu Petition Area is Waitā Reservoir which covers 415 acres and has a capacity of 2.3 billion gallons of irrigation water. Waitā Reservoir is the largest body of inland water in the State of Hawai`i and irrigates 3,700 acres of agricultural lands, including 1,533 acres of IAL in Māhā`ulepū.

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the Petition pursuant to HRS §§ 91-8, 205-44, and 205-45 and HAR §15-15-98.

2. Pursuant to HRS §205-44(a), the Commission has the authority to designate lands as IAL so long as any of the criteria in HRS §205-44(c) are met.

3. The Petition Area is currently used for agricultural production in accordance with HRS §205-44(c)(1).

4. The Petition Area has soil qualities and growing conditions that support agricultural production in accordance with HRS §205-44(c)(2).

5. The Petition Area constitutes lands identified under agricultural productivity rating systems, such as the ALISH system adopted by the Board of Agriculture on January 28, 1977, in accordance with HRS §205-44(c)(3).

6. The Petition Area includes traditional Native Hawaiian agricultural uses such as taro cultivation in accordance with HRS §205-44(c)(4).

7. The Petition Area has sufficient quantities of water to support viable agricultural production in accordance with HRS §205-44(c)(5).

8. The Petition Area's designation as IAL is consistent with the General Plan of the County in accordance with HRS §205-44(c)(6).

9. The Petition Area contributes to maintaining a critical land mass that is important to agricultural operating productivity in accordance with HRS §205-44(c)(7).

10. The Petition Area is within close proximity to or is near support infrastructure conducive to agricultural productivity, such as transportation to markets, water, or power in accordance with HRS § 205-44(c)(8).

11. The designation of the Petition Area as IAL meets the purposes of Article XI, Section 3, of the Hawai`i State Constitution by conserving and protecting agricultural lands, promoting diversified agriculture, increasing agricultural self-sufficiency, and assuring the availability of agriculturally suitable lands.

12. The designation of the Petition Area as IAL meets the objectives of HRS §205-42(b) by contributing to the maintenance of a strategic agricultural land resource base that can support a diversity of agricultural activities and opportunities that expand agricultural income and job opportunities and increase agricultural self- sufficiency for current and future generations.

13. The designation of the Petition Area as IAL meets the policies of HRS §205-43(1) by promoting the retention of IAL in blocks of contiguous, intact, and functional land units large enough to allow flexibility in agricultural production and management.

14. The designation of the Petition Area as important agricultural lands meet the policies of HRS § 205-43(2) by discouraging the fragmentation of important agricultural lands and the conversion of these lands to nonagricultural uses.

15. The designation of the Petition Area as important agricultural lands meet the policies of HRS § 205-43(8) by promoting the maintenance of essential agricultural infrastructure systems, including irrigation systems.

16. The Petition Area meets the requirements of HRS §205-45 for designation as IAL.

17. Any conclusion of law herein improperly designated as a finding of fact should be deemed or construed as a conclusion of law; any finding of fact herein improperly designated as a conclusion of law should be deemed or construed as a finding of fact.

DECISION AND ORDER

This Commission, having duly considered the Petition, the oral and/or written comments of Petitioner, OP, the DOA, the County of Kaua`i, and a motion having been made at a meeting on February 8, 2013, in Līhu`e, Kaua`i, Hawai`i, and the motion having received the affirmative votes required by HAR §15-15-13 and HRS §205-45(e), and there being good cause for the motion,

HEREBY ORDERS that the Petition Area, consisting of approximately 11,026.2 acres of land, situated at Hā`upu and Līhu`e, Kaua`i, Hawai`i, Tax Map Key Nos. 2-8-01: 01 (por.); 2-8-02: 01 (por.); 3-4-01: 01 (por.), 02 (por.), 03 (por.); 3-4-05: 03 (por.), 04 (por.), and 13; 3-8-01: 01 (por.); and 3-8-02: 02 (por.), and shown approximately on Exhibit "1," attached hereto and incorporated by reference herein, shall be and is hereby designated as IAL as governed by HRS chapter 205.

IT IS FURTHER ORDERED that the designation of the Petition Area as IAL shall be subject to the following conditions:

1. Petitioner shall comply with representations made to the Commission with respect to not claiming any credits described in HRS §205-45(h) with respect to the Petition Area.

2. Within seven days of the issuance of the Commission's Decision and Order, Petitioner shall record it with the Bureau of Conveyances.

ADOPTION OF ORDER

This ORDER shall take effect upon the date this ORDER is certified by this Commission.

Done at Honolulu, Hawai'i, this 25th, day of FEB., 2013, per motion on February 8, 2013.

LAND USE COMMISSION

STATE OF HAWAI'I

APPROVED AS TO FORM

Deputy Attorney General

By _____
RONALD I. HELLER
Acting Chairperson and Commissioner

Filed and effective on:

2-25-13

Certified by:

DANIEL ORODENKER
Executive Officer

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

In The Matter Of The Petition Of	)	DOCKET NO. DR12-48
	)	
GROVE FARM COMPANY, INCORPORATED	)	FINDINGS OF FACT, CONCLUSIONS OF LAW,
For A Declaratory Order To Designate Important Agricultural Lands	)	AND DECISION AND ORDER
For Approximately 11,026.2 Acres	)	
At Hā`upu and Līhu`e, Kaua`i, Hawai`i	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that a copy of the **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER** was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by regular or certified mail as noted:

	HAND DELIVERED	REGULAR MAIL	CERTIFIED MAIL
JESSE SOUKI, DIRECTOR Office of Planning 235 S. Beretania Street Rm. 600 Honolulu, Hawai`i 96813	X		
BRYAN YEE, ESQ. Deputy Attorney General Hale Auhau, Third Floor 425 Queen Street Honolulu, Hawai`i 96813		X	

	HAND DELIVERED	REGULAR MAIL	CERTIFIED MAIL
CURTIS T. TABATA, ESQ. Matsubara-Kotake 888 Mililani Street, 8th Floor Honolulu, Hawai`i 96813			X
MAUNA KEA TRASK, ESQ. Office of the County Attorney, County of Kauai 4444 Rice Street, Suite 220 Lihue, Hawai`i, 96766			X
MICHAEL A. DAHILIG Director of Planning 4444 Rice St. Suite 453 Lihue, Hawai`i, 96766		X	
RUSSELL S. KOKUBUN Chairperson State Department of Agriculture 1428 South King Street Honolulu, Hawai`i 96814-9613		X	

Dated: Honolulu, Hawai`i, 2/25 /13.

DANIEL ORODENKER
Executive Officer

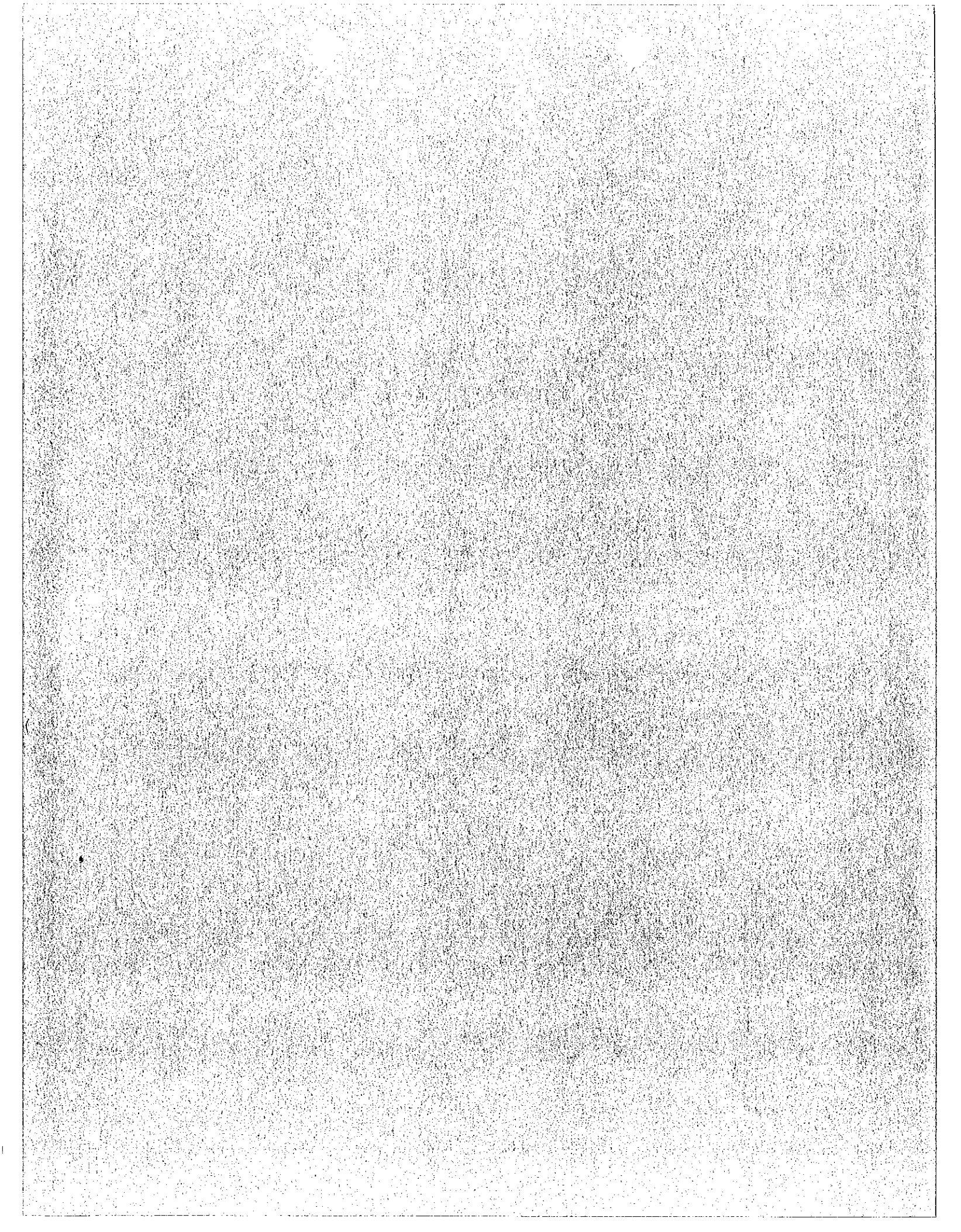


EXHIBIT B

Tax Map Key Description

for

Grove Farm Company, Incorporated

Līhu'e, Kaua'i

November 2012

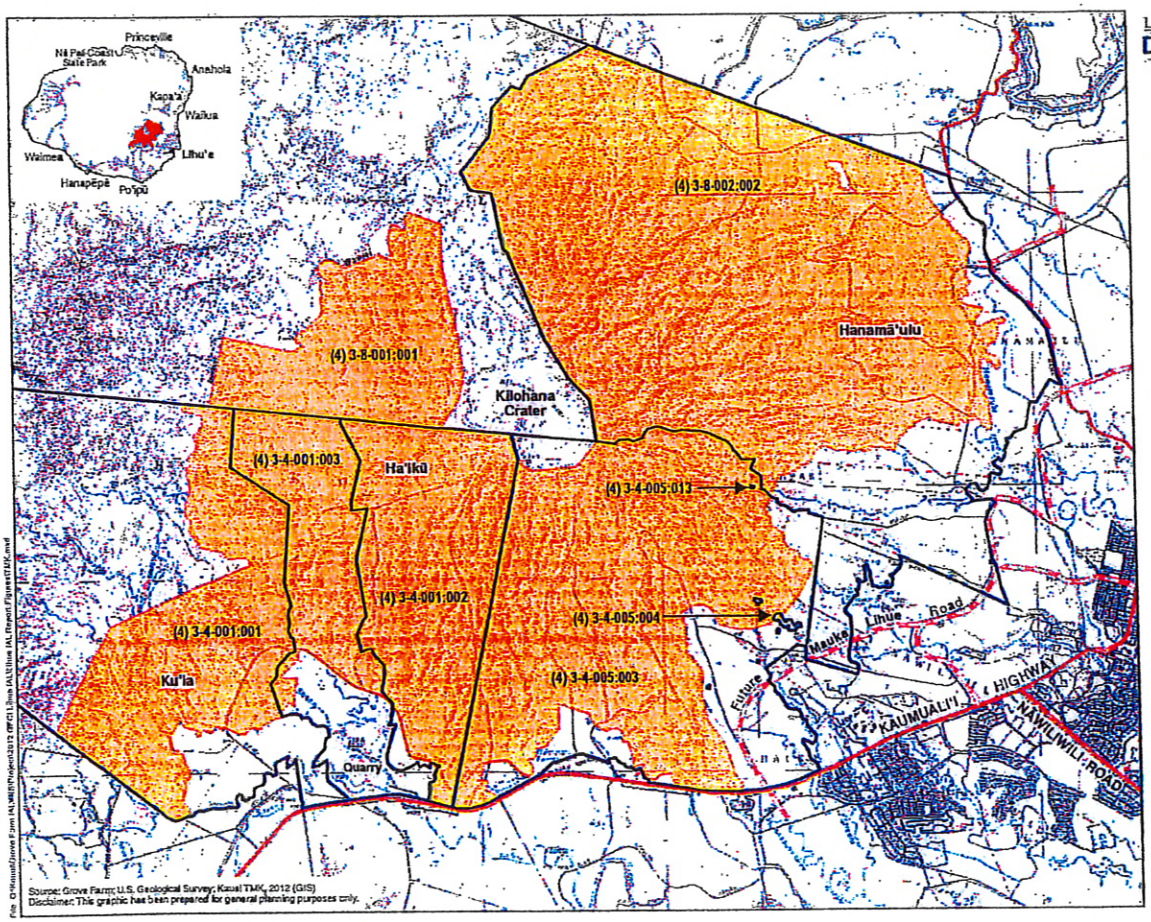
Tax Map Key Description

Approximately 10,266 acres of land owned by Grove Farm Company on Kaua'i are proposed to be designated as IAL. These lands are specifically described as TMK numbers: 3-4-01:01 (portion), 3-4-01:02 (portion), 3-4-01:03 (portion), 3-4-05:03 (portion), 3-4-05:04 (portion), 3-4-05:13, 3-8-01:01 (portion), and 3-8-02:02 (portion).

The following table shows a summary of TMK parcels and approximate acreage for the proposed IAL lands:

TMK NUMBER	*APPROXIMATE ACREAGE*
3-4-01:01 (Por.)	1,202.3
3-4-01:02 (Por.)	1,156.8
3-4-01:03 (Por.)	645.9
3-4-05:03 (Por.)	2,239.0
3-4-05:04 (Por.)	0.8
3-4-05:13	0.3
3-8-01:01 (Por.)	871.1
3-8-02:02 (Por.)	4,150.0
TOTAL:	10,266.2

Exhibit B illustrates the proposed IAL lands and the related Tax Map Key parcels. To illustrate the individual TMK parcels, Exhibits B-1, B-2, B-3, and B-4 are provided to identify the individual TMK parcels and portions thereof that are proposed to be designated IAL.



LEGEND

IAL Lands Related TMK Parcels

Proposed IAL Designation

EXHIBIT B

DATE: 11/6/2012

TMK Parcel Map

LĪHU'E IAL

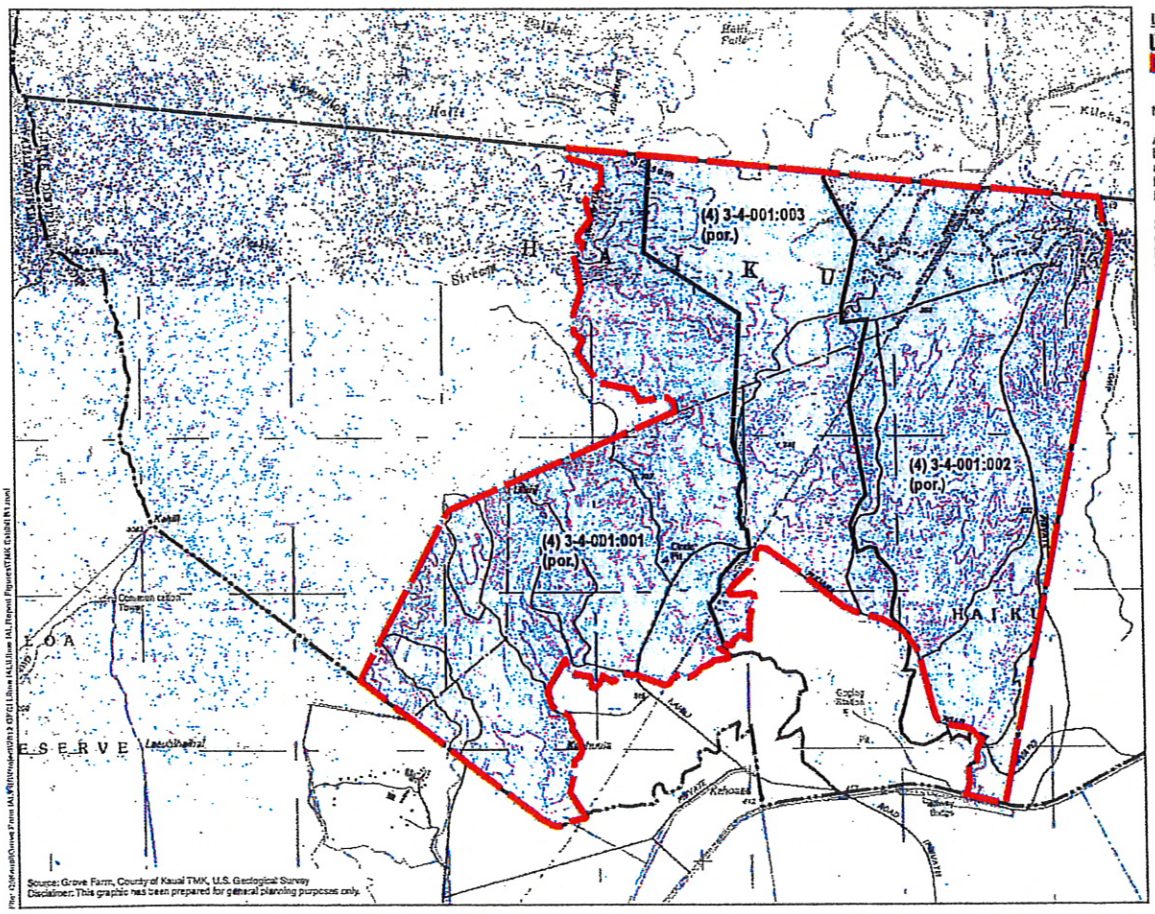
Grove Farm Land Company

Island of Kaua'i

North

Linear Scale (feet)

0 750 1,500 3,000



LEGEND

TMK Parcel Boundary

Proposed IAL Designation

Note:

As of 11/26/2012, the shown TMK boundaries in Zone 3 - Section 4 - Plat 01 are confirmed to be current. However, the County of Kauai Tax Map for the same area is not up to date.

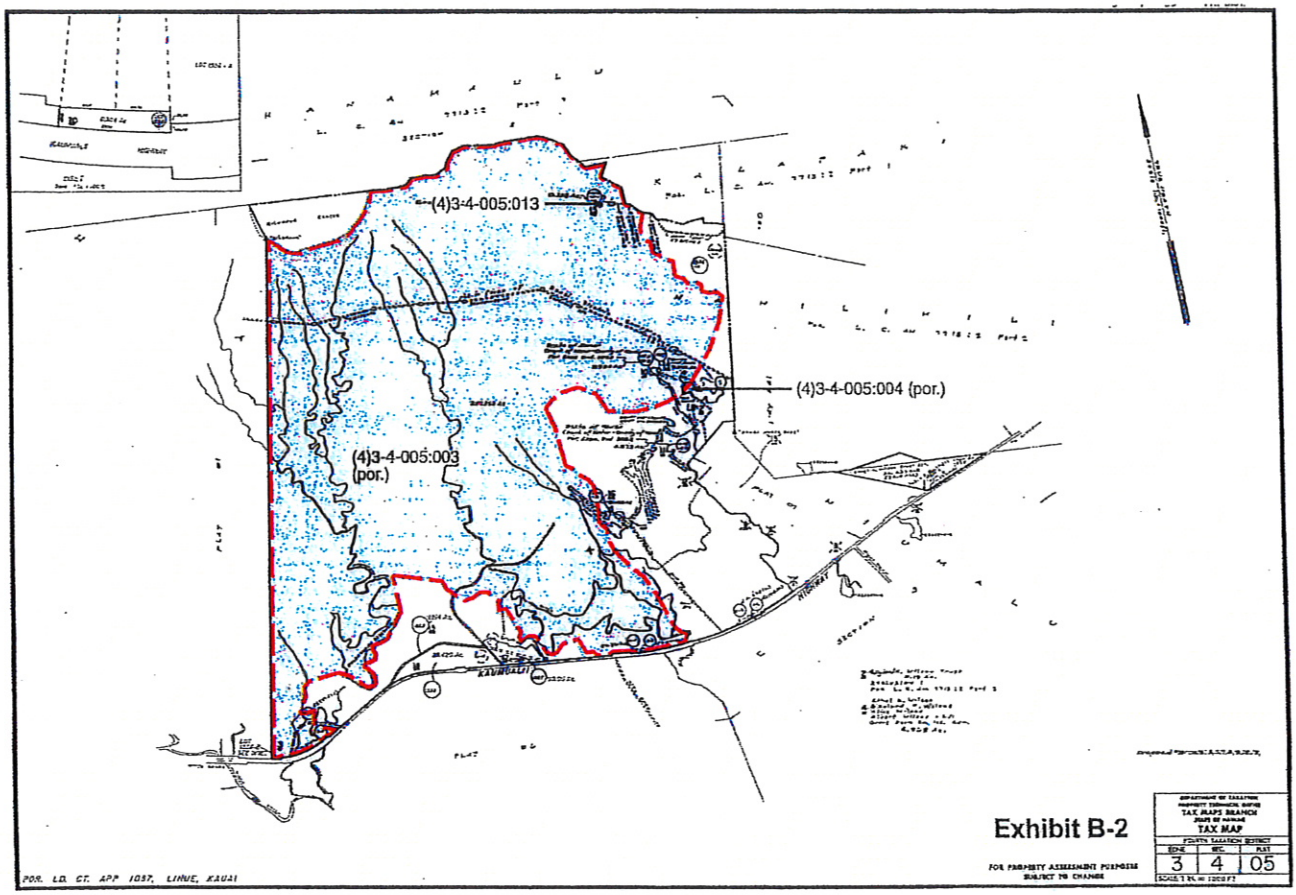
Since the current County Tax Map is unavailable, the parcel boundaries illustrated on this exhibit is based on the County GIS Data TMK layer.

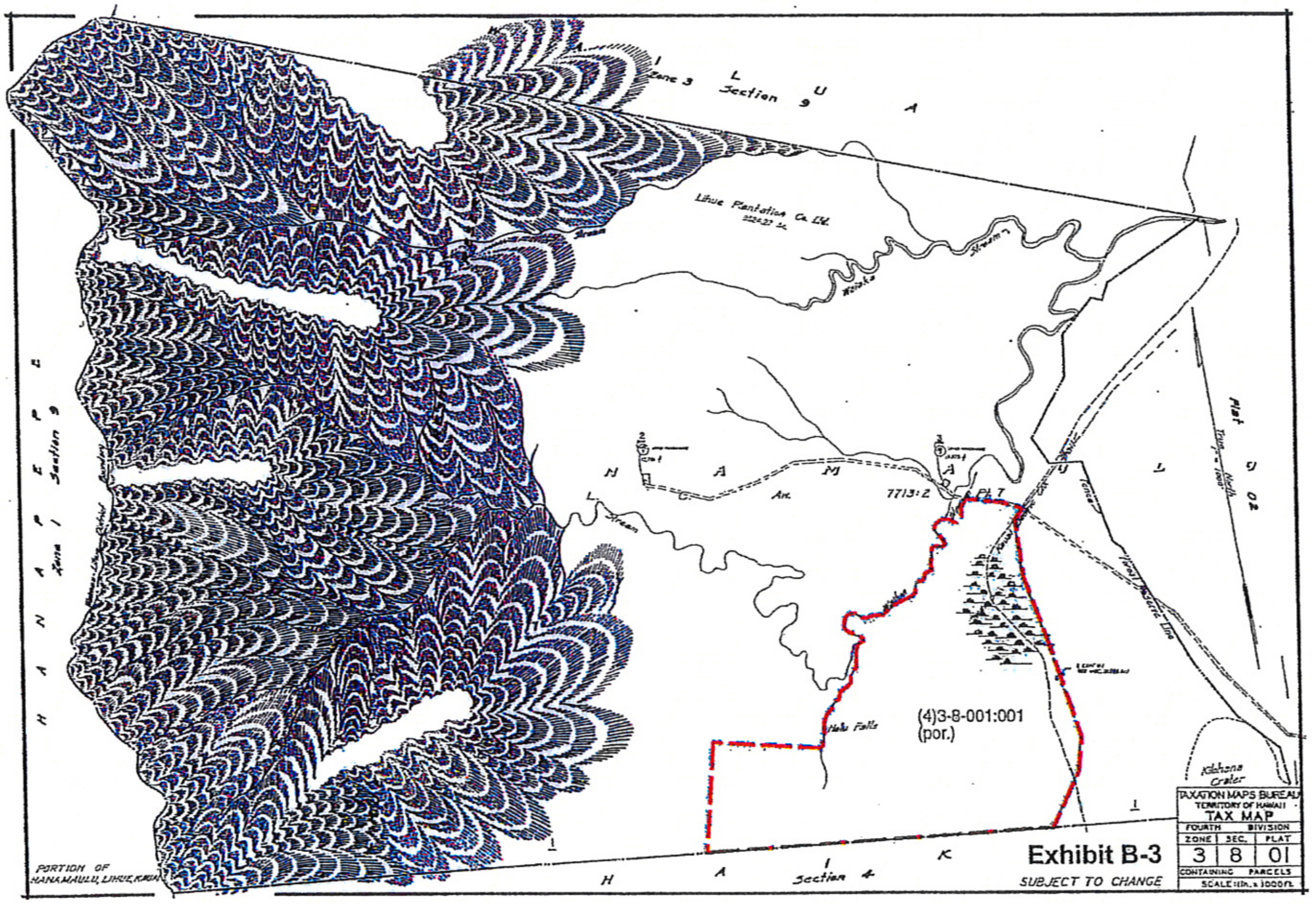
EXHIBIT B-1 DATE: 11/29/2012

LĪHU'E IAL

Grove Farm Land Company — Island of Kauai

North — Linear Scale (feet) 0 500 1,000 2,000


(4)3-4-005:013
(4)3-4-005:004 (por.)
(4)3-4-005:003
(por.)
Exhibit B-2
FOR PROPERTY ASSESSMENT PURPOSES
SUBJECT TO CHANGE
TAX MAPS BRANCH
TAX MAP
FOURTH TAXATION DISTRICT
ZONE 3
SEC 4
PLAT 05
POR. LD. CT. APP 1037, LIHUE, KAUAI


Zone 3 Section 9
Lihue Plantation Co. Ltd.
Waiaka Stream
Hala Falls
7713:2
(4)3-8-001:001
(por.)
Kilohana
Crater
Zone 1 Section 9
Section 4
PORTION OF
HANAMAULU, LIHUE, KAUAI
Exhibit B-3
SUBJECT TO CHANGE
TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP
FOURTH DIVISION
ZONE SEC. PLAT
3 8 01
CONTAINING PARCELS
SCALE: 1 in. = 1000 ft.

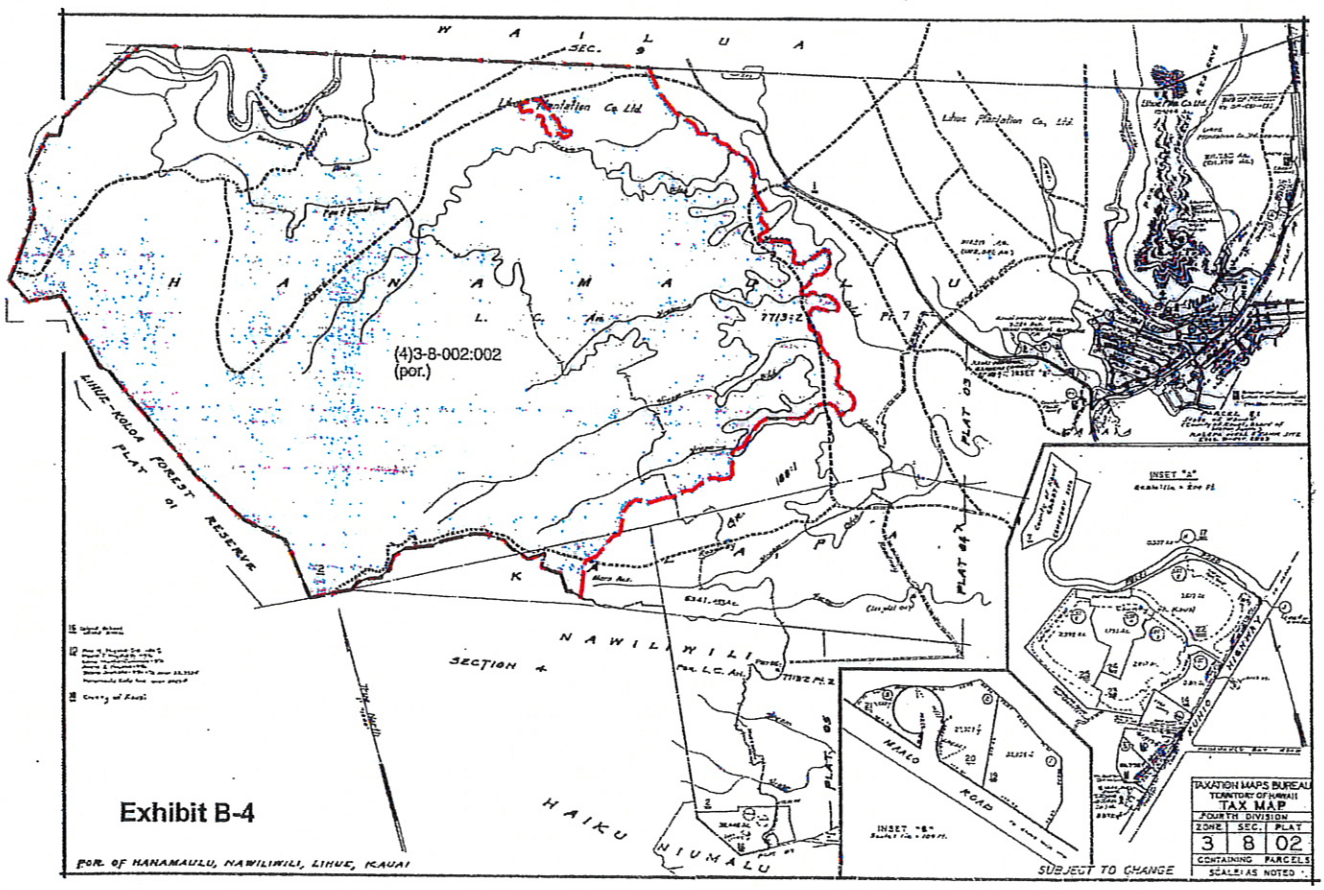

(4)3-8-002:002
(por.)
Exhibit B-4
POR. OF HANAMAULU, NAWILIWILI, LIHUE, KAUAI
SUBJECT TO CHANGE
TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP
FOURTH DIVISION
ZONE 3 | SEC. 8 | PLAT 02
CONTAINING PARCELS
SCALE AS NOTED
INSET "A"
INSET "B"
MIALO ROAD
LIHUE-KOLOA FOREST RESERVE
NAWILIWILI
SECTION 4
HAIKU
HIUMALU
PLAT 03
PLAT 04
PLAT 05

EXHIBIT C

Agricultural Land Assessment

for

Hā'upu Land Company LLC

Hā'upu, Kaua'i

November 2012

Prepared for: Hā'upu Land Company LLC
3-1850 Kaumuali'i Highway
Līhu'e, HI 96766

Prepared by: PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813

Flora and Fauna Surveys Conducted for the Kapaia Solar Photovoltaic and Battery Energy Storage Project, (TMK # [4] 3-8-002:002), Līhu'e District, Island of Kaua'i, Hawai'i

Prepared by:
Reginald E. David
Rana Biological Consulting.
P.O. Box 1371
Kailua-Kona, Hawai'i 96745
&
Maya LeGrande
LeGrande Biological Surveys, Inc.
68-569 Crozier Drive
Waialua HI 96791

Prepared for:
Belles Graham Proudfoot Wilson & Chun, LLP

October 15 2015

EXHIBIT 28

Table of Contents

Introduction and Background

SolarCity Corporation proposes to construct the Kapaia Solar Photovoltaic and Battery Energy Storage Project (Project), an approximately 17 megawatt direct current (MWdc) / 13 megawatt alternating current (MWac) solar photovoltaic (PV) facility, coupled with a battery energy storage system (BESS). The Project will be located on an approximately 46.5-acre portion of land zoned for Agricultural use on a portion of land identified as, Tax Map Key (TMK) Number (4) 3-8-002:002 (Figure 1).

This report describes the methods used and the results of the botanical, avian and terrestrial mammalian surveys conducted on the project site as part of the environmental disclosure process associated with the proposed project.

The primary purpose of the surveys was to determine if there are any botanical, avian or terrestrial mammalian species currently listed, or proposed for listing under either federal or State of Hawai'i endangered species statutes within or adjacent to the study area. We were also asked to evaluate the potential impacts that the development of the project might pose to any sensitive or protected native botanical, avian or mammalian species, and to propose appropriate minimization measures that could be implemented to reduce or eliminate any such impacts. The federal and State of Hawai'i listed species status follows species identified in the following referenced documents, (Department of Land and Natural Resources (DLNR) 1998, U. S. Fish & Wildlife Service (USFWS) 2014). Fieldwork was conducted on October 12 and 13, 2015.

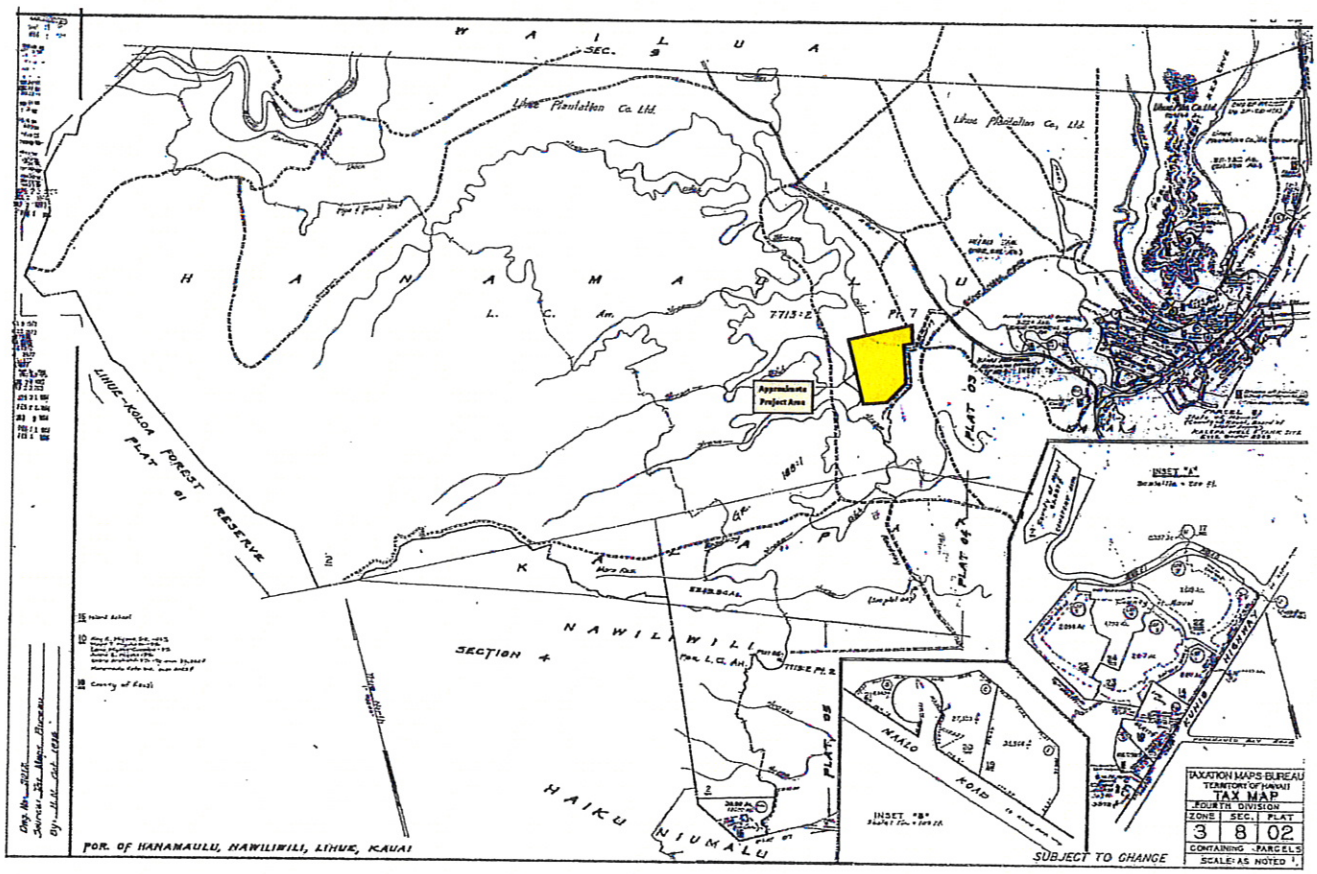
Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text.

General Project and Site Description

The proposed Project will be located on an approximately 46.5-acre portion of a 5,341-acre parcel of land owned by Grove Farm, located immediately west of the existing Kaua'i Island Utility Cooperative's (KIUC) Kapaia Power Station located directly across Ehiku Road from the project site in the Līhu'e District, County of Kaua'i, Hawai'i.

The Project will consist of an approximately 17 MWdc / 13 MWac ground-mount solar PV system, coupled with a 13 MWac/52 MWh BESS, and related interconnection and ancillary facilities. The interconnection facilities will include dedicated 12.47 kilovolt (kV) overhead infrastructure that will run from the Project site, located directly adjacent to KIUC's existing Kapaia Power Plant and switchyard, to a generator step-up transformer located on KIUC property just outside the Kapaia switchyard footprint that will convert the power generated into utility-quality power, and tie into KIUC's existing transmission system. Additional communication connections and equipment will be installed to interface with KIUC's supervisory control and data acquisition (SCADA) system so that the energy generated by the Project can be remotely controlled and dispatched by KIUC.

Insert Figure I – Site plan



Electrical power will be transmitted from the project to the KIUC Kapaia Power Station at distribution voltage, on overhead lines strung on a mix of existing and new poles at approximately 22 feet above ground. Once the power reaches a KIUC's transformer it will be converter to transmission voltage and the line will be run underground from that point to the tie in at the plant. A seven-foot tall chain link security fence will surround the Project.

The project area was historically used for sugar cane production. Since the cessation of sugar cane production in the general Līhu'e area the project site has been leased to various tenants for ranching and diversified agricultural operations, most recently those activities have been centered on growing seed corn.

Vegetation on the site is best categorized as agricultural fields in various stages of planting along with fallow fields that are dominated by low growing weedy vegetation. Very few trees are present within the main project areas proposed for the PV panels. The tree species in the gulch to the east of the project area were included in the survey and are characterized by a Lowland Mesic Forest dominated by introduced species (Figures 2 and 3).

Figure 2 – Seed cornfield showing current habitat on the bulk of the site, looking northwest

Figure 3 – Project site looking west showing weedy secondary vegetation and Lowland Mesic vegetation adjacent to the project site

Methods

Botanical Survey Methods

The taxonomy and nomenclature used in this report follow Wagner *et al.* (1990), Wagner and Herbst (1999) and Staples and Herbst (2005) (Monocots and Dicots). Recent name changes are those recorded in the Hawaii Biological Survey series (Evenhuis and Eldredge, eds. 1999-2002).

Plants were inventoried during a pedestrian survey; the two main project areas were surveyed by walking transects along the project perimeters as well as haphazard transects running through the proposed PV panel fields. Vegetation in the gulch to the east of the project area was also included in the inventory (though this area is not within the development footprint). Notes were collected on plant associations and plant distribution, disturbances, topography, substrate types, exposure, drainage, and related factors.

Avian Survey Methods

The avian phylogenetic nomenclature used in this report follows the *AOU Check-List of North American Birds* (American Ornithologists' Union, 1998), and the 42nd through the 56th supplements to the Check-List (American Ornithologists' Union, 2000; Banks et al., 2002, 2003, 2004, 2005, 2006, 2007, 2008; Chaser et al., 2009, 2010, 2011, 2012, 2013, 2014, 2015). Mammalian species scientific names follow (Wilson and Reeder, 2005). Place names follow (Pukui et al., 1976).

A total of eight avian point count stations were sited approximately equidistant from each other within the project site. Eight-minute point counts were made at each of the count stations. Each station was counted once. Field observations were made with the aid of Leica 8 X 42 binoculars and by listening for vocalizations. Point counts were concentrated during the early morning hours, the peak of daily bird activity. Time not spent counting point count stations was used to search the remainder of the project site for species and habitats that were not detected during count sessions.

Mammalian Survey Methods

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

Results

Botanical Survey

Vegetation

The proposed project site is presently nearly all agricultural fields and dirt roadways. The agricultural fields vary between ones that have recently been tilled and those in various states of weedy regrowth. The fields are a mix of corn crop, open ground and weedy growth; other fields are densely overgrown with grasses and other herbaceous plants. Trees are few and scattered, mostly in the gulch to the east of the project area. Nearly all of this forest is outside of the survey area, it was visited at numerous points along the margin but not entered. Thus, the vegetation within the project area is herbaceous and typical of regularly disturbed land (i.e., agricultural).

Flora

By "flora" it is meant the species diversity of plants growing in the survey area. A plant checklist (Table 1) was compiled from field observations, with entries arranged

alphabetically under plant family names (standard practice). Included in the list are scientific name, common name, and status (for example, whether native or non-native, naturalized or ornamental) for each species observed during the survey.

Table 1 – Flora for the Kapaia Solar Site, Kaua'i, October 2015

Scientific Name	*Common Name*	*Status*
	FLOWERING PLANTS	
	DICOTYLEDONS	
ACANTHACEAE		
Thunbergia fragrans Roxb.	white thunbergia	Nat
AMARANTHACEAE		
Alternanthera pungens Kunth	khaki weed	Nat
Amaranthus viridis L.	slender amaranth	Nat
Amaranthus spinosus L.	spiny amaranth	Nat
ANACARDIACEAE		
Schinus terebinthifolius Raddi	Christmas berry	Nat
ASTERACEAE (COMPOSITAE)		
Ageratum conyzoides L.	*maile hohono*	Nat
Bidens pilosa L.	*ki*	Nat
Conyza bonariensis (L.) Cronq.	hairy horseweed	Nat
Crassocephalum crepidioides Benth		Nat
Emilia fosbergii Nicolson	Flora's paintbrush	Nat
Parthenium hysterophorus L.	false ragweed	Nat
Sonchus oleraceus L.	sow thistle	Nat
CAPPARACEAE		
Cleome gynandra L.	wild spider flower	Nat
CONVOLVULACEAE		
Ipomoea obscura (L.) Ker-Gawl.	---	Nat
Ipomoea triloba L.	little bell	Nat
CUCURBITACEAE		
Momordica charantia L.	wild bitter melon	Nat
EUPHORBIACEAE		
Euphorbia hirta L.	garden spurge	Nat
Euphorbia hypericifolia L.	graceful spurge	Nat
Euphorbia prostrata Aiton	prostrate spurge	Nat
Euphorbia heterophylla L.	kaliko	Nat
Macaranga tanarius (L.) Mull.Arg.		Nat
Phyllanthus debilis Klein ex Willd.	*niuri*	Nat
Ricinis communis L.	castor bean	Nat
FABACEAE		
Albizia lebbeck (L.) Benth	Siris tree	Nat

Table 1 continued

Scientific Name	*Common Name*	*Status*
FABACEAE continued		
Canavalia cathartica Thours	*maunaloa*	Nat
Chamaecrista nictitans (L.) Moench	partridge pea	Nat
Crotalaria assamica Benth.	Rattlepod	Nat
Crotalaria incana L.	fuzzy rattlepod	Nat
Crotalaria pallida Aiton	smooth rattlepod	Nat
Desmanthus pernambucanus (L.) Thellung	virgate mimosa	Nat
Desmodium incanum DC.	Spanish clover	Nat
Desmodium trifolium (L.) DC.	---	Nat
Indigofera suffruticosa Mill.	indigo	Nat
Leucaena leucocephala (Lam.) deWit	*koa haole*	Nat
Macroptilium lathyroides (L.) Urb.	cow pea	Nat
Mimosa pudica L.	sensitive plant	Nat
Senna occidentalis (L.) Link	coffee senna	Nat
Senna surattensis (N.L. Burm.) H. Irwin & Barneby	*kolomana*	Nat
MALVACEAE		
Hibiscus tiliaceus L.	*Hau*	Ind?
Malvastrum coromendalianum (L.) Garcke	false mallow	Nat
Sida acuta N. L. Burm.	---	Nat
Sida ciliaris L.		Nat
Sida cordifolia L.		Nat
Sida rhombifolia L.	Cuba jute	Nat
Sida spinosa L.	prickly sida	Nat
Waltheria indica L.	*'uhaloa*	Ind
MORACEAE		
Ficus microcarpa L.f.	*Chinese banyan*	Nat
MYRTACEAE		
Syzygium cumini (L.) Skeels.	Java plum	Nat
NYCTAGINACEAE		
Boerhavia coccinea Mill.	false *alena*	Nat
OXALIDACEAE		
Oxalis corniculata L.	Yellow wood sorrel	Nat
PAPAVERACEAE		
Argemone glauca L.	Mexican poppy	Nat
POLGALACEAE		
Polygala paniculata L.	bubblegum plant	Nat
PORTULACACEAE		
Portulaca oleracea L.	pigweed	Nat
RUBIACEAE		
Richardia brasiliensis Gomes		Nat
Spermacoce assurgins Ruiz & Pav.	buttonweed	Nat

Table 1 continued

Scientific Name	*Common Name*	*Status*
SAPINDACEAE		
Lantana camara L.	lantana	Nat
Stachytarpheta cayennensis (Rich.) Vahl	nettle-leaved vervain	Nat
SAPOTACEAE		
Chrysophyllum oliviforme L.	Satin leaf	Nat
VERBENACEAE		
Verbena litoralis Kunth	Vervain	Nat
MONOCOTYLEDONS		
CYPERACEAE		
Cyperus rotundus L.	nut grass	Nat
Kylinga brevifolia Rottb.	*kili'o'opu*	Nat
POACEAE (GRAMINEAE)		
Axonopus compressus (Sw.) P. Beauv.	brd-lvd carpetgrass	Nat
Axonopus fisifolius (Raddi) Kuhlm.	nrw-lvd carpetgrass	Nat
Cenchrus echinatus L.	Common sandbur	Nat
Chloris barbata (L.) Sw.	swollen fingergrass	Nat
Chloris radiata (L.) Sw.	radiate fingergrass	Nat
Cynodon dactylon (L.) Pers.	Bermuda grass	Nat
Dichanthium cf. *aristatum* (Poir.) Hubb.	Wilder grass	Nat
Digiteria ciliaris (Retz.) Koeler	Henry's crabgrass	Nat
Digitaria violascens Link	violet crabgrass	Nat
Echinochloa crus-galli (L.) P. Beauv.	barnyard grass	Nat
Eragrostis pectinacea (Michx.) Nees	Carolina lovegrass	Nat
Eragrostis tenella (L.) P. Beauv. ex Roem. & Schult.	lovegrass	Nat
Melinus repens (Willd.) Zizka	Natal redtop	Nat
Paspalum conjugatum P.J. Bergius	Hilo grass	Nat
Paspalum fimbriatum Kunth	fimbriate paspalum	Nat
Paspalum dilatatum Poir.	Dallis grass	Nat
Paspalum urvillei Steud.	Vasey grass	Nat
Pennisetum purpureum	Napier grass	Nat
Urochloa maxima (Jacq.) Webster	Guinea grass	Nat
Urochloa mutica (Forssk.) Nguyen	California grass	Nat

Legend to Table 1

Status = Distributional status
Ind = Indigenous; native to Hawai'i, but not unique to the Hawaiian Islands.
Nat = Naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.

In all, 81 species of plants were identified from various parts of the survey area. Only two of these (or 2.4%) are native Hawaiian species, both of these are considered indigenous species. The remaining 79 species detected are naturalized species. Naturalized species are plants introduced into the Hawaiian Islands that have spread on their own and many now dominate the lowlands of all the Islands.

Corn (*Zea mays*) has recently been cultivated within the project area. Because this species is still dominant on the bulk of the site it was not included in the overall species list as naturalized. Prevalent weed species growing in and around the agricultural fields include, false ragweed (*Parthenium hysterophorus*), little bell (*Ipomoea triloba*), fuzzy rattlepod (*Crotalaria incana*), sensitive plant (*Mimosa pudica*), castor bean (*ricinus communis*), Cuba jute (*Sida rhombifolia*), spiny amaranth (*Amaranthus spinosa*), common sandbur (*Cenchrus echinatus*), and fimbriate paspalum (*Paspalum fimbriatum*). The indigenous *uhaloa* (*Waltheria indica*) was observed infrequently along the edges of the dirt roadways. A few trees are located near the entrance to the survey site; they include Chinese banyan (*Ficus microcarpa*) and *Macaranga tanarius*. A gulch to the east and south of the project area harbored the majority of the tree species included in the species list. Although the gulch is not technically encompassed within the project area, the obvious tree species were included due to the close proximity. They include, java plum (*Syzygium cumini*), *Macaranga tanarius*, hau (*Hibiscus tiliaceus*), satin leaf (*Chrysophyllum oliviforme*), and siris tree (*Albizia lebbeck*). The *hau* is the only species observed in the gulch area considered to be indigenous to the Hawaiian Islands.

Avian Survey Results

A total of 1389 individual birds of 25 species, representing 16 separate families, were recorded during station counts (Table 2). Of the 25 species detected during station counts, two, Nēnē (*Branta sandvicensis*) and Pacific Golden-Plover (*Pluvialis fulva*) are native species. One of these the Nēnē is endemic to the Hawaiian Islands and is also listed as endangered under both federal and State of Hawai'i endangered species statutes. The second, Pacific Golden-Plover is a native migratory waterbird species. The remaining 23 avian species detected are alien to the Hawaiian Islands (Table 2).

Avian diversity was in keeping with the location of the property. Densities of the three species of pigeons and doves were extremely high in response to the large amount of seed corn still on the ground following the harvesting of the corn crop this season. Three species, Rock Pigeon (*Columba livia*), Spotted Dove (*Streptopelia chinensis*) and Zebra Dove (*Geopelia striata*), accounted for 75% of all birds recorded during station counts. The most commonly recorded species was Rock Pigeon, which accounted for 42 percent of the total number of individual birds recorded. An average of 174 individual birds was recorded per station count, a number that is extremely high for a lowland site on Kaua'i.

Table 2 – Avian Species Detected Kapaia Solar Site, October 2015			
Common Name	*Scientific Name*	*ST*	*RA*
	ANSERIFORMES		
	ANATIDAE - Ducks, Geese & Swans		
	Anserinae - Geese & Swans		
Hawaiian Goose	*Branta sandvicensis*	ER	2.25
	PHASIANIDAE - Pheasants & Partridges		
	Phasianinae - Pheasants & Allies		
Black Francolin	*Francolinus francolinus*	A	0.13
Red Junglefowl	*Gallus gallus*	A	3.63
Ring-necked Pheasant	*Phasianus colchicus*	A	0.50
	PELECANIFORMES		
	ARDEIDAE - Herons, Bitterns & Allies		
Cattle Egret	*Bubulcus ibis*	A	2.25
	CHARADRIIFORMES		
	CHARADRIIDAE - Lapwings & Plovers		
	Charadriinae - Plovers		
Pacific Golden-Plover	*Pluvialis fulva*	IM	0.75
	COLUMBIFORMES		
	COLUMBIDAE - Pigeons & Doves		
Rock Pigeon	*Columba livia*	A	72.25
Spotted Dove	*Streptopelia chinensis*	A	35.88
Zebra Dove	*Geopelia striata*	A	22.50
	PSITTACIFORMES		
	PSITTACULIDAE - Lories, Lovebirds, and Indomalayan and Papua-Australasian Parrots		
Rose-ringed Parakeet	Psittacula krameri	A	4.25
Nanday Parakeet	Aratinga nenday	A	0.13
	PASSERIFORMES		
	ZOSTEROPIDAE - White-eyes		
Japanese White-eye	*Zosterops japonicus*	A	3.75
	TIMALIIDAE - Babblers		
Chinese Hwamei	*Garrulax canorus*	A	0.25
	TURDIDAE - Thrushes		
White-rumped Shama	*Copsychus malabaricus*	A	1.00
	MIMIDAE - Mockingbirds & Thrashers		
Northern Mockingbird	*Mimus polyglottos*	A	0.13

Table 2 – continued

Common Name	*Scientific Name*	*ST*	*RA*
	STURNIDAE - Starlings		
Common Myna	*Acridotheres tristis*	A	6.00
	THRAUPIDAE - Tanagers		
Red-crested Cardinal	*Paroaria coronata*	A	3.38
	CARDINALIDAE - Cardinals & Allies		
Northern Cardinal	*Cardinalis cardinalis*	A	0.88
	ICTERIDAE - Blackbirds		
Western Meadowlark	*Sturnella neglecta*	A	1.13
	FRINGILLIDAE - Fringilline and Carduline Finches & Allies		
	Carduelinae - Carduline Finches and Hawaiian Honeycreepers		
House Finch	*Haemorhous mexicanus*	A	2.38
	ESTRILDIDAE - Estrildid Finches		
Common Waxbill	*Estrilda astrild*	A	1.88
Red Avadavat	*Amandava amandava*	A	4.13
Java Sparrow	Lonchura oryzivora	A	0.75
Scaly-breasted Munia	*Lonchura punctulata*	A	2.00
Chestnut Munia	*Lonchura atricapilla*	A	2.25

Legend to Table 2

ST = Status

A = Alien – Introduced to the Hawaiian Islands by humans

ER = Endemic, Endangered Resident, native an unique to the Hawaiian Islands, and also listed as an endangered species

IM = Indigenous Migratory – a species which is native but not unique to the Hawaiian Islands, and does not breed in the Islands, but rather spends the winter months in Hawaii

RA = Relative Abundance - Number of birds detected divided by the number of count stations (8)

Mammalian Survey Results

We recorded three terrestrial mammalian species while on the site. Several herd of cattle (*Bos taurus*) were seen within paddocks on lands to the west and south of the subject property. Tracks and scat of pigs (*Sus scrofa*) were encountered along several of the dirt roads within the project site. Dogs (*Canis familiaris*) were heard barking from sites to the north, west and south of the site, additionally; tracks of this species were also encountered along several of the dirt roads with the site.

No mammalian species proposed for listing, or listed as endangered or threatened under either federal or state of Hawai'i endangered species statutes, was recorded during the course of this survey (DLNR 1998; USFWS 2014).

Discussion

Botanical Resources

The current and historical uses of the land for intensive agriculture limits the natural botanical resources anticipated to occur on the site. The results of our survey substantiate this prediction. The low percentage (2%) of native plant species recorded during the course of this survey is an indication that due to the constant disturbances to vegetation on the site, only species adapted to such conditions can survive, and with but a few exceptions, the species that are successful in this scenario are non-native species.

Avian Resources

The findings of the avian survey are consistent with the location of the property. As previously mentioned the density of three species of pigeons and doves was extremely high. There presence in such high numbers and the presence of feeding Nēnē, was in response to the concentrated seasonal food source that the corn residue currently presents to granivorous bird species.

During the course of this survey we recorded 25 avian species during point counts, no additional species were recorded during the time we were present on the site. Of the 25 species detected two, Nēnē, and Pacific Golden-Plover are native species. The former is an endemic species, which is also listed as an endangered species under both federal and state of Hawaii endangered species statutes. The plover is an indigenous migratory shorebird species which nest in the high Arctic during the late spring and summer months, returning to Hawai'i and the tropical Pacific to spend the fall and winter months each year. They usually leave Hawai'i and return to the Arctic in late April or the very early part of May. The remaining 23 avian species detected are alien to the Hawaiian Islands (Table 2). One of the species detected, Nanday Parakeet (*Aratringa nenday*) is an alien parrot species that has never been recorded free flying on the Island of Kaua'i (Pyle and Pyle 2009; David, 2015), whether the bird seen flying in loose association with a flock of Rose-ringed Parakeets (*Psittacula krameri*), a well established parrot species, is in fat established as well will require further study.

Although not detected during this survey, the endangered Hawaiian Petrel (*Pterodroma sandwichensis*), and the threatened endemic Newell's Shearwater (*Puffinus newelli*) have been recorded over-flying the general project area between April and the end of November each year (David, 1995, 2014; Morgan *et al.*, 2003, 2004; David and Planning Solutions 2008). Additionally, the Save Our Shearwaters Program has recovered both species from the general Kapaia area over the past three decades (Morgan *et al.*, 2003, 2004; David and Planning Solutions, 2008; Save our Shearwater Program, 2014).

The petrel is listed as endangered, and the shearwater as threatened under both Federal and State of Hawai'i endangered species statutes. The primary cause of mortality in both Hawaiian Petrels and Newell's Shearwaters is thought to be predation by alien mammalian

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

Mammalian Resources

The findings of the mammalian survey are consistent with the location of the property and the habitat currently present on the site. We did not record Hawaiian hoary bats overflying the site. Hawaiian hoary bats are widely distributed in the low to mid-elevation areas on the Island of Kaua'i, and have been documented in and around almost all areas that still have some dense vegetation (Tomich, 1986; USFWS 1998, David, 2015).

No rodent species were detected during this survey it is probable that one or more of four established alien muridae found on Kaua'i, European house mice (*Mus musculus domesticus*), roof rat (*Rattus rattus*), brown rat (*Rattus norvegicus*), and possibly Polynesian rats (*Rattus exulans hawaiiensis*) use various resources found within the general project area. All of these introduced rodents are deleterious to native ecosystems and the native faunal species dependent on them

Potential Impacts to Protected Species

Botanical

No protected botanical species occur on the project property, thus the construction and operation of the proposed solar generation facility and associated infrastructure is not expected to result in deleterious impacts to any protected botanical species.

Nēnē

The principal potential impact that construction of the proposed solar generation facility and associated infrastructure poses to Nēnē is during the clearing and grubbing phases of the project where construction activity potentially could disturb nesting birds or in a worst case scenario a bird could potentially be injured or killed by construction associated vehicular traffic.

Between four and seven Nēnē were seen on the site during the course of this survey. The main reason that Nēnē were using the site during the course of the surveys was due to the presence of a lot of seed corn on the ground following harvest of the last corn crop on the site. As soon as that corn is depleted and/or plowed under during clearing and grubbing

phases of the project the likelihood that Nēnē will regularly use resources on the site are relatively small.

Seabirds

The principal potential impact that construction of the proposed solar generation facility and associated infrastructure poses to protected seabirds is the increased threat that birds will be downed after becoming disoriented by lights associated with the project during the nesting season. The two main ways that outdoor lighting could pose a threat to these nocturnally flying seabirds is if, 1) during construction it is deemed expedient, or necessary to conduct nighttime construction activities, and 2) following build-out, the potential operation of streetlights or other security lighting.

Hawaiian hoary bats

It is likely that Hawaiian hoary bats overfly the project area on a seasonal basis. The principal potential impact that the development of the proposed solar generation facility and associated infrastructure poses to bats is during the clearing and grubbing phases of construction as vegetation is removed. The removal of vegetation within the project site has the potential to temporarily displace individual bats, which may use the vegetation as a roosting location. As bats use multiple roosts within their home territories, the potential disturbance resulting from the removal of the vegetation is likely to be minimal. During the pupping season, females carrying their pups may be less able to rapidly vacate a roost site as the vegetation is cleared. Additionally, adult female bats sometimes leave their pups in the roost tree while they forage. Very small pups may be unable to flee a tree that is being felled. Potential adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 meters (15-feet), between June 1 and September 15, the period in which bats are potentially at risk from vegetation clearing. With that said, there are no suitable roost trees within the proposed project site, thus it is not expected that the project will result in deleterious impacts to this listed mammalian species.

Recommendations

Construction

During the construction phase of the project we recommend the following minimization measures and training be implemented to ensure that construction activities do not result in deleterious impacts to the listed faunal species that may be encountered during construction.

- Develop an endangered species awareness training module
- Construction workers should undergo endangered species awareness training prior to starting work on the project

- If nighttime construction activity or equipment maintenance is proposed during the construction phases of the project, all associated lights should be shielded, and when large flood/work lights are used, they should be placed on poles that are high enough to allow the lights to be pointed directly at the ground.

- If streetlights or exterior facility lighting is installed in conjunction with the project, it is recommended that the lights be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights and man-made structures (Reed et al., 1985; Telfer et al., 1987).

- Barbed wire should not be used on the top of the perimeter fence, as this can potentially snag foraging bats.

Critical Habitat

There is no federally delineated Critical Habitat for any species present on, or adjacent to the project area. Thus the development and operation of the proposed project will not result in impacts to federally designated Critical Habitat. There is no equivalent statute under State law.

Glossary

Alien – Introduced to Hawai'i by humans
Commensal – Animals that share human's food and lodgings, such as rats and mice.
Crepuscular – Twilight hours
Endangered – Listed and protected under the Endangered Species Act of 1973, as amended (ESA) as an endangered species
Endemic – Native to the Hawaiian Islands and unique to Hawai'i
Granivorous – Animals that feed on grain and seed
Indigenous – Native to the Hawaiian Islands, but also found elsewhere naturally
Muridae – Rodents, including rats, mice and voles, one of the most diverse families of mammals
Naturalized – A plant or animal that has become established in an area that it is not indigenous to
Nocturnal – Night-time, after dark
'Ōpe'ape'a – Endemic endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*)
Pelagic – An animal that spends its life at sea – in this case seabirds that only return to land to nest and rear their young
Phylogenetic – The evolutionary order that organisms are arranged by
Ruderal – Disturbed, rocky, rubbishy areas, such as old agricultural fields and rock piles
Sign – Biological term referring to tracks, scat, rubbing, odor, marks, nests, and other signs created by animals by which their presence may be detected
Threatened – Listed and protected under the ESA as a threatened species.

AMSL – Above mean sea level
BESS – Battery energy storage system
DLNR – Hawai'i State Department of Land & Natural Resources
DOFAW – Division of Forestry and Wildlife
ESA – Endangered Species Act of 1973, as amended
KIUC – Kauai Island Utility Cooperative
kV - Kilovolt
MWac – Megawatt direct current
MWdc – Megawatt alternating current
MWh – Megawatt hours
PV - photovoltaic
SCADA - Supervisory control and data acquisition
TMK – Tax Map Key
USFWS – United State Fish & Wildlife Service

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EXHIBIT 29

Management Summary

Reference	Archaeological Inventory Surface Survey for the Kapaia Solar Photovoltaic and Battery Energy Storage Project, Hanamā'ulu Ahupua'a, Līhu'e District, Kaua'i, TMK: [4] 3-8-002:002 por.
Date	September 2015
Project Number(s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: HANAMAULU 12
Investigation Permit Number	CSH completed the archaeological inventory survey (AIS) fieldwork under Hawai'i State Historic Preservation Division/Department of Land and Natural Resources (SHPD) permit number 15-03, issued per Hawai'i Administrative Rules (HAR) §13-13-282.
Agencies	State Historic Preservation Division (SHPD), State of Hawai'i, Kaua'i County Planning Department
Land Jurisdiction	Private, Grove Farm
Project Proponent	Solar City Corporation
Project Funding	Solar City Corporation
Project Location	The project area is located approximately 1,200 meters (m) northwest of the north end of Līhu'e and approximately 1,600 m west of the south end of Kālepa Ridge, just east of the Hanamā'ulu (Kapaia) Stream Valley. The project location is immediately west of Kaua'i Island Utility Cooperative's (KIUC) Kapaia Power Station across Ehiku Road.
Project Description	Proposed development includes the construction and installation of a solar photovoltaic (PV) system including an approximately 17 megawat direct current/13 megawat alternating current solar PV facility coupled with a battery energy storage system
Project Size	Approximately 18.8 hectares (46.5 acres)
Area of Potential Effect (APE) and Survey Area Size	The area of potential effect is understood as the same as the project area (approximately 18.8 hectares or 46.5 acres).
Historic Preservation Regulatory Context	This AIS report was prepared to support the proposed project's historic preservation review under Hawai'i Revised Statutes (HRS) §6E-42 and HAR §13-13-284. In consultation with the SHPD, the investigation was designed to fulfill the State requirements for an archaeological inventory survey per HAR §13-13-276.
Fieldwork Effort	Fieldwork was accomplished on 27 October 2015 by Missy Kamai, B.A. and David W. Shideler, M.A., under the general supervision of Hallett. H. Hammatt, Ph.D. (Principal Investigator). This work required approximately 2 archaeologist days to complete.

Number of Historic Properties Identified	One historic property, consisting of Lihue Plantation infrastructure including two features, a cane haul road and a remnant ditch, were identified.
Historic Properties Identified and Historic Property Significance	The Lihue Plantation infrastructure identified is evaluated under HAR § 13-284-6 as significant under criterion "d" (have yielded, or is likely to yield, information important for research on prehistory or history).
Effect Recommendation	CSH's project-specific effect recommendation is "no historic properties affected" as the only historic property identified (Lihue Plantation infrastructure consisting of an actively used former cane haul road and a remnant ditch) have been adequately documented in the present study.
Recommendations	No further archaeological work is recommended. Early consultation with the SHPD is recommended regarding any possible need for subsurface testing (a rationale for no subsurface testing is presented).

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Section 1 Introduction

1.1 Project Background

At the request of Belles Graham Proudfoot Wilson & Chun, LLP on behalf of Solar City Corporation, Cultural Surveys Hawai'i, Inc. (CSH) conducted an archaeological inventory surface survey for the Kapaia Solar Photovoltaic and Battery Energy Storage project, Hanamā'ulu Ahupua'a, Līhu'e District, Kaua'i, TMK: [4] 3-8-002:002 por. The approximately 18.8-hectare (46.5-acre) project area (a portion of a 5,341-acre parcel of land owned by Grove Farm) is located approximately 1,200 meters (m) northwest of the north end of Līhu'e and approximately 1,600 m west of the south end of Kālepa Ridge, just east of the Hanamā'ulu (Kapaia) Stream Valley on a plateau of former Lihue Plantation sugarcane lands at the approximately 240-foot (ft) elevation above sea level. The project location is immediately west of Kaua'i Island Utility Cooperative's (KIUC) Kapaia Power Station across Ehiku Road. The project area is depicted on a portion of the 1998 U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), a 2012 aerial photograph (Figure 3), as well as a photovoltaic array layout received from the client (Figure 4).

1.2 Project Description

The proposed project consists of the construction and installation of a solar photovoltaic (PV) system including an approximately 17 megawatt direct current/ 13 megawatt alternating current solar PV facility coupled with a battery energy storage system (BESS) (see Figure 4). Solar City will build, operate, maintain, and repair the project.

Proposed construction is described as follows:

> The general sequence of construction is to install sediment and erosion control measures, install posts, underground electrical conduit and wire, solar panel racking, panel installation, array wiring, battery storage array, and finally electrical equipment installation and connection. The posts are installed via hydraulic driver to a predetermined depth according to soil conditions. The posts are structural and do not generally require the addition of concrete footers or foundations. The solar racking spans the posts, and the panels bolt to the racking to form the array. The terminus of each array will include an approximately two-foot wide and three-foot deep trench for the conduit providing underground electrical connection to the power inverters and BESS. All wiring is performed and inspected to National Electric Code and best industry practices. Trench excavation is performed with a backhoe and trench backfilling is done with the excavated, native soil, and compacted to design specifications in order to prevent sinking. Disturbed soil is stabilized and seeded per sediment and erosion control plans and applicable state environmental guidelines. In addition to post drivers and backhoes as noted above, typical construction equipment includes all-terrain forklifts, skidsteer with fork attachments for unloading and dispersing material, and other equipment as necessary. [Solar City 2015:2]

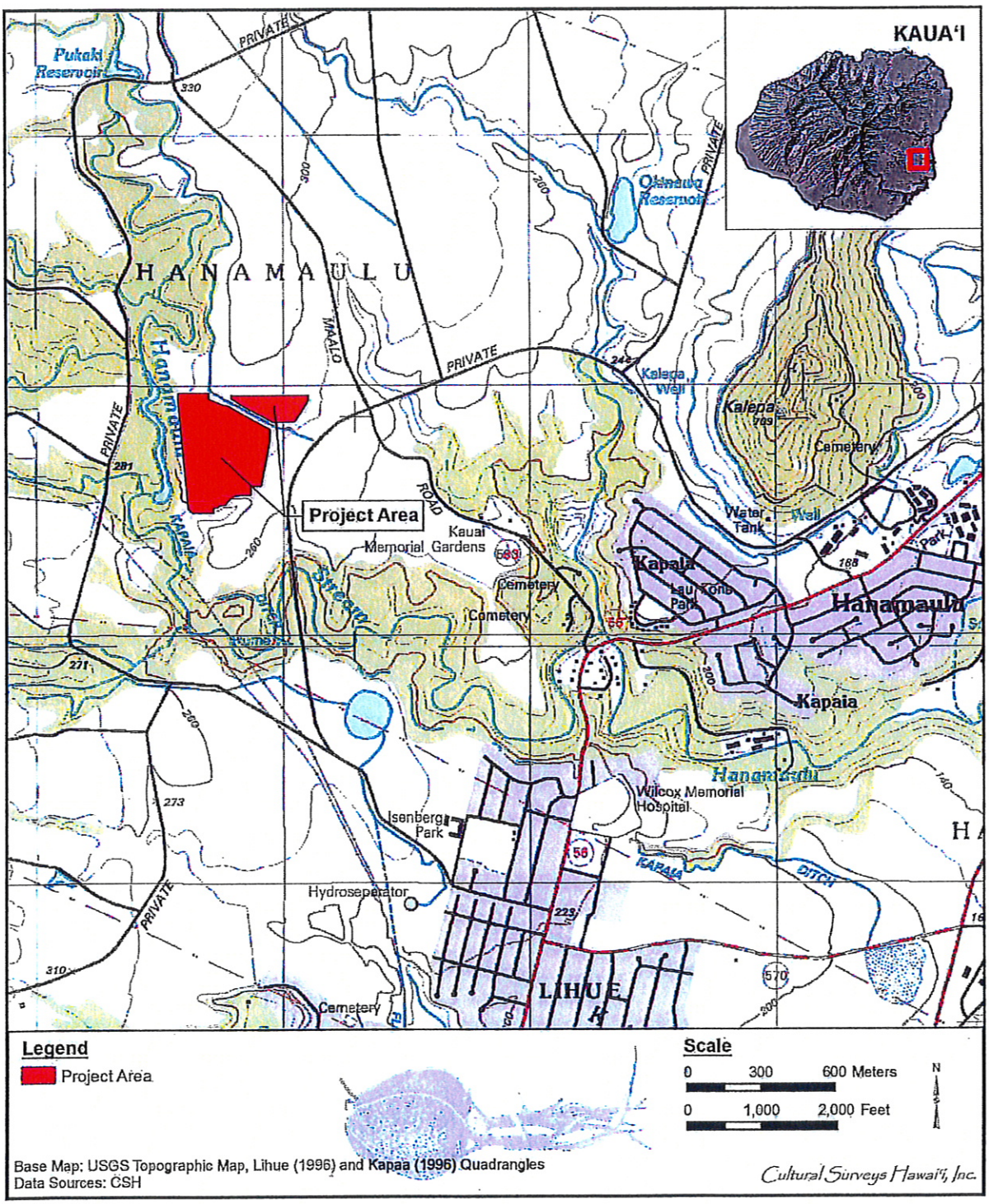

Figure 1. Portion of 1996 Lihue and Kapaa USGS 7.5-minute topographic quadrangles, showing the location of the project area

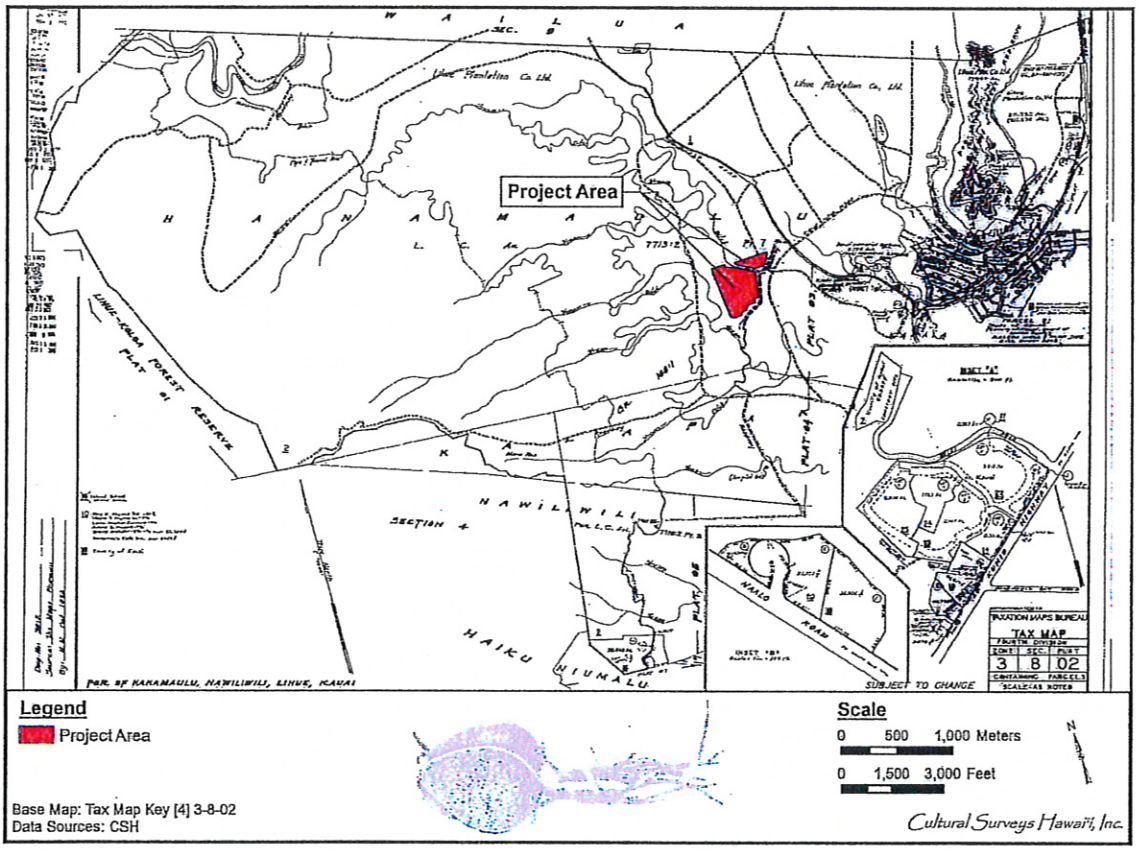

Figure 2. Tax Map Key (TMK) [4] 3-8-02 showing the location of the project area (Hawai'i TMK Service)

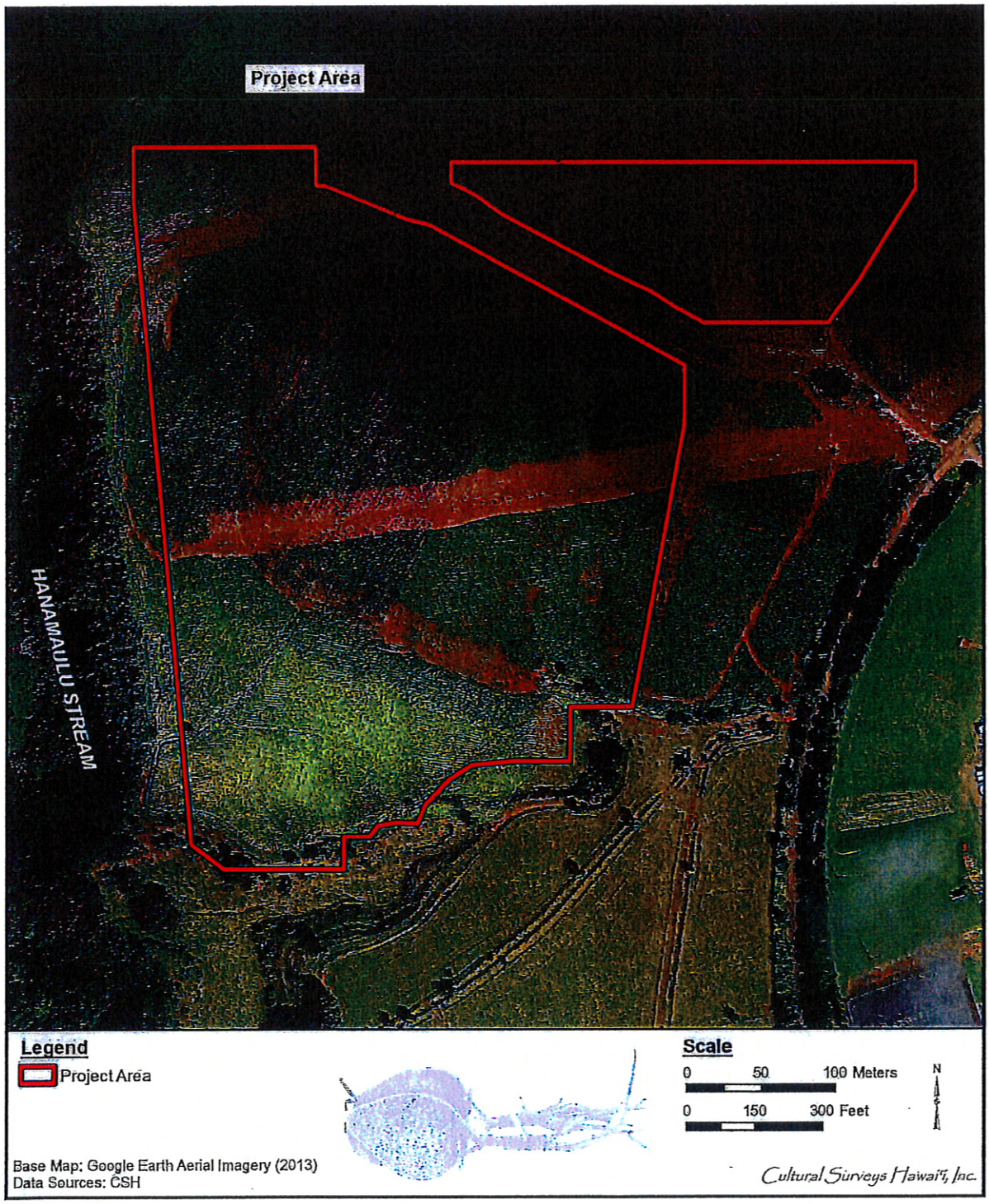

Figure 3. Aerial orthophotographic map showing the project area (Google Earth 2013)

Figure 4. Photovoltaic array layout (courtesy of client)

Additional descriptive information for the project is provided below:

> The proposed ground-mount solar PV system will be approximately 6.5 feet (77 inches) in height at its highest point. Each panel is roughly 1.6 inches in width by 3.2 feet (39 inches) in length, and approximately 54,285 total panels will be installed. Given that panels will be spaced to allow infiltration of runoff through sheet flow, the total amount of new impervious surface from the PV system will be minimal (less than 1 acre). Accordingly, while the overall surface area of the panels will be approximately 45.85 acres, less than 1 acre of new ground disturbance will occur as a result of the PV system installation.
>
> The BESS units will be approximately 7.2 feet (86 inches) in height, and each BESS unit is roughly 4.3 feet (52 inches) in width by 3.2 feet (38 inches) in length. Approximately 520 BESS units will be installed, requiring a total area of approximately 0.65-acre. [Solar City 2015:2]

1.3 Context of the Archaeological Inventory Surface Survey

The goal of this archaeological inventory surface survey is to identify and inventory historic properties visible on the ground surface, to evaluate the significance of those historic properties present, to determine the effects of the current project on significant historic properties, and to recommend any appropriate further study or the form of mitigation for effected properties in the project area. This study is intended as a planning document and as a basis for consultation with the State Historic Preservation Division (SHPD) regarding fulfilling any project requirements under Hawai'i Revised Statutes (HRS) §6E-42 and Hawai'i Administrative Rules (HAR) §13-13-284 as well as any project environmental review under HRS §343. It 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.

Should this project fall under the purview of the SHPD, early consultation is recommended regarding any supplemental archaeological inventory survey subsurface testing as may be determined by the SHPD as appropriate (Section 2.1.2 presents a rationale for no subsurface testing). In consultation with the SHPD this study and any appropriate supplemental subsurface testing work would address HAR §13-276 governing standards for archaeological inventory surveys and reports.

1.4 Scope of Work

The scope of work for this report was designed to satisfy the Hawai'i State requirements for archaeological inventory surveys (HAR §13-275, §13-276, and §13-284):

1) Historic and archaeological background research, including a search of historic maps, written records, Land Commission Award documents, and reports from prior archaeological investigations. This research focused on the specific project area's past land use, with general background on the pre-Contact and historic settlement patterns of the Hanamā'ulu Ahupua'a, Līhu'e district of Kaua'i. This background information was used to compile a predictive model for the types and locations of historic properties that could be expected to be found within the project area.

2) A complete (100%) systematic pedestrian inspection of the project area to identify any potential surface historic properties. Documentation included photographs and scale drawings.

3) As appropriate, consultation with knowledgeable individuals regarding the project area's history, past land use, and the function and age of historic properties documented within the project area.

4) As appropriate, laboratory work to process and gather relevant environmental and/or archaeological information from collected samples.

5) Preparation of this archaeological inventory survey report, which includes the following:

   a. A project description;

   b. A section of a USGS topographic map showing the project area boundaries and the location of all recorded historic properties;

   c. Historical and archaeological background sections summarizing prehistoric and historic land use of the project area and its vicinity;

   d. Descriptions of all historic properties, including selected photographs, scale drawings, and discussions of age, function, laboratory results, and significance, per the requirements of HAR §13-276. Each historic property will be assigned a Hawai'i State Inventory of Historic Properties (SIHP) number;

   e. If appropriate, a section concerning cultural consultations (per the requirements of HAR §13-276-5[g] and HAR §13-275/284-8[a][2]).

   f. A summary of historic property categories, integrity, and significance based upon the State of Hawai'i significance criteria;

   g. A project effect recommendation;

   h. Treatment recommendations to mitigate the project's adverse effect on any historic properties identified in the project area that are assessed as significant.

This scope of work included full coordination with the SHPD relating to archaeological matters.

1.5 Environmental Setting

1.5.1 Natural Environment

The project area is located in Hanamā'ulu Ahupua'a, approximately 3 kilometers (km) inland from the eastern shoreline of Kaua'i Island. Lands within the project area include three soil units; Puhi silty clay loam, 3 to 8% slopes (PnB) in the northeast and central portions of the project area, Puhi silty clay loam, 8 to 15% slopes (PnC) that dominates the south portion of the project area and Rough broken land (rRR) in a narrow swath along the extreme southern edge of the project area (Figure 5).

Puhi Series soils are described as follows:

> This series consists of well-drained soils on uplands on the island of Kauai. These soils developed in material derived from basic igneous rock. They are nearly level to steep. Elevations range from 175 to 500 feet. The annual rainfall amounts to 60 to 80 inches. The mean annual soil temperature is 73° F. Puhi soils are geographically associated with Lihue and Kapaa soils.
>
> These soils are used for sugarcane, pineapple, truck crops, orchards, pasture, woodland, wildlife habitat, water supply, and homesites. The natural vegetation consists of guava, Java plum, pangolagrass, kikuyugrass, elephantopus, joee, yellow foxtall, and rhodomyrtus. [Foote et al. 1973:115]

For Puhi silty clay loam, 3 to 8% slopes (PnB) and 8 to 15% slopes (PnC) runoff is slow and the erosion hazard is slight (Foote et al. 1973:115).

Rough broken land (rRR) 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. Included in mapping were areas of colluvium and alluvium along gulch bottoms.
>
> This land type is used primarily for watershed and wildlife habitat. In places it is used also for pasture and woodland. The dominant natural vegetation in the drier areas consists of guava, lantana, Natal redtop, bermudagrass, koa haole, and molassesgrass. Ohia, kukui, koa, and ferns are dominant in the wetter areas. Puakeawe, aalii, and sweet vernalgrass are common at the higher elevations. [Foote et al. 1973:119]

The project area is situated near the southeast coast of Kaua'i, and is exposed to the prevailing northeast trade winds (generally from 10–20 miles per hour) and experiences 40 to 50 inches of rainfall annually. Rainfall increases to 75 to 100 inches in more inland (western) localities. The annual average temperature ranges from 75–80° F within the vicinity of the project area. Vegetation in the project area consists of cultivated maize and a variety of noxious weeds, grasses and vines. The east and north portions are covered exclusively in tall grasses (Foote et al. 1972:58).

1.5.2 Built Environment

The project area (see Figure 1) is in an undeveloped area of former cane lands approximately 1,200 m northwest of the north end of residential subdivisions (around Isenberg Park) of Līhu'e Town, the county seat. The small residential community of Kapaia is approximately the same distance to the east-southeast. The KIUC Kapaia Power Station is immediately to the east across 'Ehiku Road.

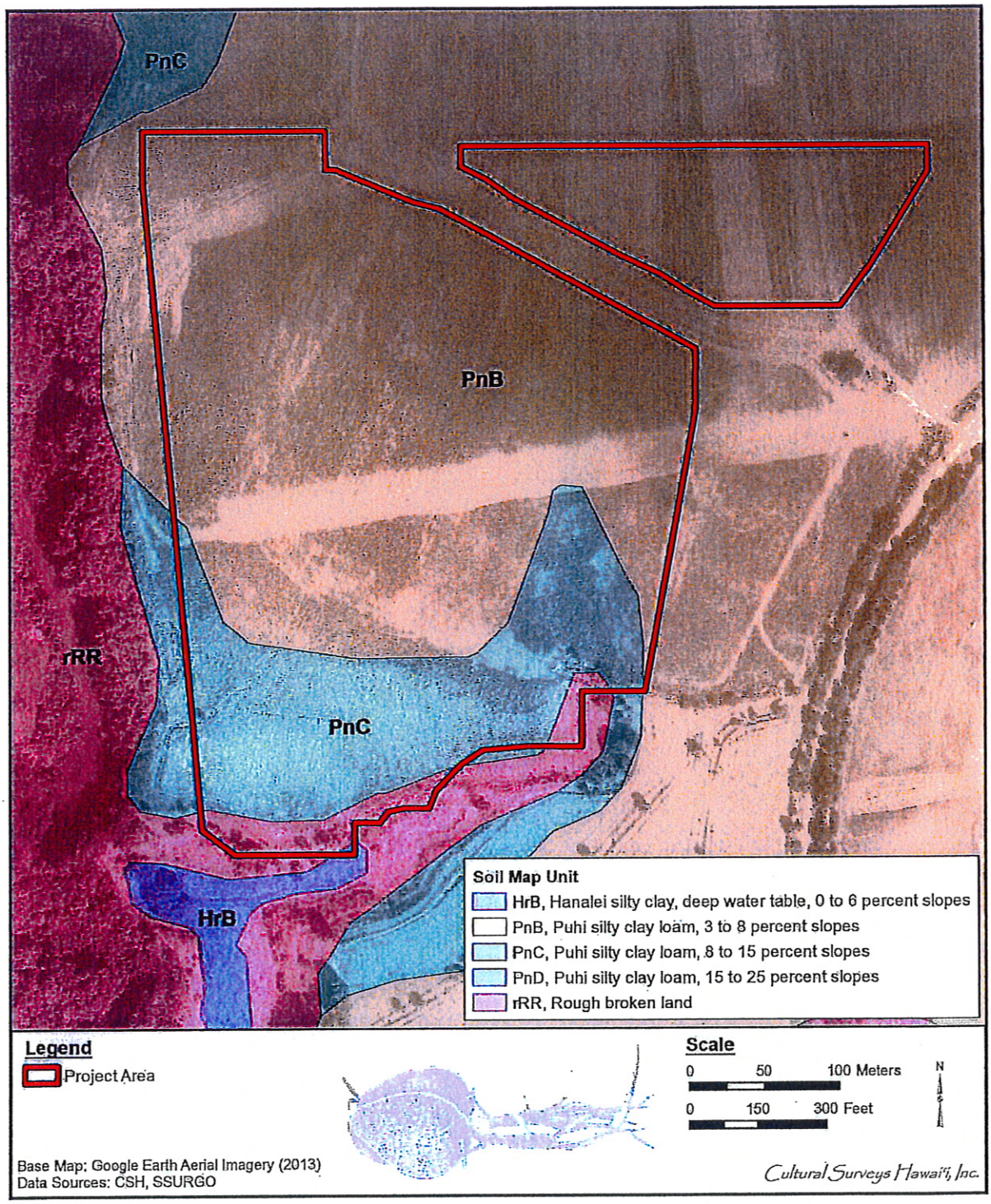

Figure 5. Overlay of the *Soil Survey of Hawaii* (Foote et al. 1972), indicating soil types within the project area (Google Earth 2013)

Section 2 Methods

2.1 Field Methods

The fieldwork component of this investigation was carried out under archaeological permit number 15-03, issued by the SHPD, per HAR §13-282. This AIS surface survey was conducted on 27 September 2015. The CSH field crew consisted of Missy Kamai, B.A., and David W. Shideler, M.A., under the general supervision of principal investigator Hallett H. Hammatt, Ph.D. The surface survey fieldwork required approximately 2 person-days to complete.

2.1.1 Pedestrian Survey

A pedestrian survey of the project area was undertaken for the purpose of historic property identification and documentation. The pedestrian survey was accomplished by two archaeologists in transects generally spaced 6 m apart.

2.1.2 Rationale for No Subsurface Testing

No subsurface testing was undertaken as a part of this archaeological surface survey archaeological inventory survey. Background historic research indicates that the Hanamaulu Plantation began developing sugar cane lands in the 1870s. The earliest identified map (W.D. Alexander's 1878 map, see Figure 8) showing Hanamaulu Plantation fields indicates that the earliest area planted was to the southeast of the present project area(s). The W.D. Alexander map does, however, indicate that by 1878 the Hanamaulu Plantation fields had already expanded to be adjacent to the east side of the NE project area. A comparison of the indicated extent of sugar cane fields in the 1878 map (see Figure 8) with the 1906 Donn Survey map (see Figure 10) indicates very rapid expansion of the extent of sugar cane fields. The 1900 Monsarrat map (see Figure 9) indicates that the project area(s) were in Lihue Plantation sugar cane fields by that time (Hanamaulu Plantation merged with Lihue Plantation in 1898). It seems likely that the present project areas were developed as commercial sugar cane fields in the 1880s following the explosive development of sugar cane lands that followed the Reciprocity Treaty of 1876. The 1978 USGS Orthophotoquad aerial photograph (see Figure 15) indicates the entire project area was developed in commercial sugar cane fields. These fields are understood to have been active until very close to when Lihue Plantation ceased operations in November 2,000. Thus it appears that the project area was under intensive commercial sugar cane cultivation for well over a century.

The history of a century of intensive commercial sugar cane cultivation is only one part of the rationale for no subsurface testing. We note that the only identified historic properties within 1,200 m in any direction are culverts (see Table 2). This is an area that is believed to have had a very low level of traditional Hawaiian use (no LCAs in the vicinity) and no historic use prior to sugar cane field development.

Early consultation with the SHPD regarding subsurface testing is recommended.

2.2 Document Review

Historic and archival research included information obtained from the University of Hawai'i at Mānoa Hamilton Library, the State Historic Preservation Division Library, the Hawai'i State Archives, the State Land Survey Division, and the Bishop Museum Archives. Previous

archaeological reports for the area were reviewed, as were historic maps and primary and secondary historical sources. Information on Land Commission Awards was accessed through the Waihona 'Aina (2000) database.

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

Section 3 Background Research

3.1 Traditional and Historical Background

The *ahupua'a* (traditional Hawaiian land division) of Hanamā'ulu is on the southeast coast of Kaua'i in the traditional Puna district and the modern Līhu'e judicial district, between the *ahupua'a* of Wailua to the north and Kalapakī to the south. The *ahupua'a* name means "tired (as from walking) bay" (Pukui et al. 1974:41). Wichman (1998:61) relates that Hanamā'ulu Bay was given this name because it was "off the main around-the-island trail and a traveler had to walk extra miles to get there."

Historic documentation records the changing name of the district in which the *ahupua'a* of Hanamā'ulu is located. In earlier days, the *ahupua'a* was considered to be in the *moku* (district) of Puna, but today it is in the judicial district of Līhu'e (meaning "cold chill," or "goose-flesh").

> The name, Līhu'e, applied in a larger sense, included the districts of what are now Kawaihau and Līhu'e, reaching from Anahola to the Gap, being made so by law in about the year 1861, according to early court records, but some years later divided into the present two districts. The large district was also known as the Puna district, and is found on early maps as such. It was August thirteenth, 1880, that the district was divided into two, by act of Legislature with King Kalākaua's signature. . . . Līhu'e, in a local sense, and from which the name of the district was derived meant only that little portion of land upon which the present village, as consisting of bank, post office and store, now stands. [Rice 1914:46]

Hanamā'ulu was permanently inhabited and intensively used in pre-Western Contact (pre-1778) Hawai'i. As suggested by the *ahupua'a* name with its clear coastal references to the distinctive bay, the coastal zone of Hanamā'ulu was the locus for permanent habitation, *heiau* (religious structures), and numerous trails. Intensive agriculture, including irrigated *kalo lo'i* (irrigated taro patches), covered the valley floodplain of the Hanamā'ulu River and extended 2.5 miles inland (Handy 1940:67) In these inland areas, taro patches were often in the gulches, while houses and sweet potato patches were scattered on the *kula* (dryland areas) on each side of the gulches (Handy 1940:154). Native forests were used for their resources (wood, birds, medicinal plants, etc.) and were used for the cultivation of such plants as *wauke* (paper mulberry), which was used to make their tapa clothing (Handy 1940;198).

Hawaiian traditional stories (*mo'olelo*) and the meanings behind noted places (*wahi pana*) elaborate on many of these features of the landscape.

3.1.1 *Mo'olelo* (Stories) and *Wahi Pana* (Noted Places)

On a visit to Kaua'i, the Hawaiian volcano goddess Pele met the handsome Kaua'i chief, Lohi'ahu. When he requested a dance, Pele instead said she would chant all the wind guardians for Nihoa and Kaua'i. Going from west to east, she chanted the names of the winds, from Nāwiliwili Ahupua'a to Kalapakī Ahupua'a, to Ahukini Point in Kalapakī, to a reference to the inland area of the district of Līhu'e, to Kapaia, a village and *'ili* (small land division) within Hanamā'ulu, then Hanamā'ulu Ahupua'a itself (place name locations from Soehren 2014).

He Hu'eone ka makani o Nāwiliwili	The wind of Nāwiliwili is a Hu'eone
He Wāmua ka makani o Kalapakī	The wind of Kalapakī is a Wāohue
He 'Ehukai ka makani o Ahukini	The wind of Ahukini is an 'Ehukai
He Pāhola ke kiu holo ki'i makani	A Pāhola wind is the scout that fetches
Lele kula o Līhu'e	the winds sweeping the Līiu'e plains
He Kuli 'āhiu ka makani o Kapaia	The wind of Kapaia is a Kuli'āhiu
He Ho 'oluako 'inehe ka makani o	The wind of Hanamā'ulu is a
Hanamā 'ulu	Ho'oluako'inehe

[Ho'oulumāhiehie 2006a:18; 2006b:17)

The name of the wind (*makani*) of Hanamā'ulu, "Ho'oluako'inehe", is not translated, but several Hawaiian winds begin with the term *ho 'olua*, which is a strong, or forceful wind (Kent 1986:438). The name of the *makani* of neighboring Kapaia "Kuli'āhiu" is also uncertain but "'āhiu" is a name for a wind of Kahana O'ahu with a connotation of "wild" or "untamed" (Pukui and Elbert 1984:7).

In the story of Kuapaka'a, the hero chants the winds of the Kaua'i for his father Paka'a:

He alaoli ko	The alaoli is of Huleia,
He waikai ko Kalapaki,	The waikai is of Kalopaki,
He kaao ko Hanamaulu	The kaao is of Hanamaulu,

[Fornander 1918a:5:96–97]

In this chant, the wind is *kā'ao*. This term in relation to winds usually means "to be calm in one place while the wind blows in another; to be smooth, as the sea in a calm, but not a dead calm" (Kent 1986:439).

Many references to Hanamā'ulu Ahupua'a are made in the "Legend of Kawelo." Kawelo-leimakua, called Kawelo, was born at Hanamā'ulu. After having become the paramount chief of Kaua'i, he returned to Hanamā'ulu, where he lived with his parents and his wife, Kanewahineikiaoha (Fornander 1918b:4:2, 62). The hero of this *mo 'olelo* lived in the last half of the seventeenth and early decades of the eighteenth century (Hommon 1976:135).

On his return from a stay in the island of O'ahu, Kawelo and his two uncles traveled in a canoe through the passage of Kaieiewaho between Wai'anae on O'ahu and Wailua Ahupua'a on Kaua'i. To navigate to the island, Kawelo followed Keolewa, the morning star.

> Soon after this the dawn began to break, and Keolewa was then plainly seen by them all to windward, while the hill of Kalanipuu was also seen as though wading in the sea to meet them. When Kawelo's uncles saw these different objects, they saw that Kawelo was right after all. At this time, they were directly off of Hanamaula, so the two uncles said to Kawelo in a chant as follows;

E Kaweloleimakua,	Say, Kaweloleimakua,
E Pae—e, e pae—e,	Let us land, let us land.
E kama hanau a ka lapa o Puna,	Say, offspring from the cliffs of Puna,
Na maka o Haloa i luna,	The eyes of Haloa are looking from above,
Kuu haku, Kuu alii.	My lord my chief.

[Fornander 1918b:4:34–33]

Kalanipu'u is a hill in Niumalu, an *ahupua'a* to the south of Hanamā'ulu. It was once a "calling hill" (*pu'u kahea*) from which the movements of fish were called out" (Pukui et al. 1974:75). It would also have been a point used for navigation to find the location of the Hanamā'ulu coast. The name Haloa may also refer to the star called Haloa (Makemson 1939:592), which could have been used for navigation.

There are a number of *wahi pana*, notable places, that have associated stories explaining the origin of the names. One of the inland streams in Hanamā'ulu is Waiahi, which means "fiery water." This steams merges with Waiaka, "reflecting stream." The water of this stream was the body of a *kupua*, a supernatural creature that could take several forms. One day the villagers on the stream caught 40 *'o 'opu* (gobies) in a bamboo trap. They ate all of the fish, without sharing any with their neighbors. The overeating gave then diarrhea, a fitting punishment for their disrespect, greed, and selfishness (Wichman 1998:60).

The story of the volcano goddess Pele provides more information on the reputation of the *ahupua'a*.

> Two brothers of Pele, who had come from foreign lands, saw Lohiau's body lying as a stone where the lava flow had overtaken him. Pity welled up in their hearts and they brought Lohiau to life again. One of these brothers made his own body into a canoe and carried the unfortunate Lohiau to Kauai, where he was put ashore at Ahukini. [Rice 1923:14]
>
> Coming to Hanamā'ulu, Lohiau found all the houses but one closed. In that one were two old men, one of whom recognized him and asked him to enter. The men were making *tapa,* which they expected to carry soon to Kapa'a, where games were being held in honor of Kaleiapaoa and his bride, Hi'iaka. [Rice 1923:16]

The suggestion of inhospitality at Hanamā'ulu recorded by Rice ("Lohiau found all the houses but one closed") is reminiscent of the Hawaiian proverb *No Hanamā'ulu ka ipu puehu,* or "the quickly emptied container belongs to Hanamā'ulu" (Pukui 1983:252), which implies the food containers of Hanamā'ulu were often bare—a plausible reason for the local residents to be stingy.

A ridge parallel to the shore is called Kālepa, meaning "to flutter." When a resident had something to trade, he waved a flag from the ridge, which resulted in the word *kālepa* being also used for a peddler or tradesman (Wichman 1998:60).

Another peak is called Ka'ili'iliahi, meaning "pebblestone of the clear fire," a reference to the stones used in playing the Hawaiian checker game called *kōnane*. Wichman (1998:62) speculates this might be a good place to find small pebbles that could be used for game pieces. This *pu'u*, or peak/hill, called Ka'ilihinalea in Rice's (1923:49–50) version of this story is associated with a story of two brothers, Wa'awa'aikina'auao and Wa'awa'aikina'aupō, The-Wise-One and The-Stupid-One, who lived on the flats of Nukole between Hanamā'ulu and Wailoa [Wailua] Stream. Nukole is probably a reference to Nukoli'i, a beach area on the boundary between Hanamā'ulu and Wailua Ahupua'a (Clark 1990:6). One day they traveled inland up this ridge to collect birds. The-Wise-One said that he claimed all of the birds with two holes in their beak. At the end of the day he had all of the birds and his brother had none. The-Stupid-One told his mother what his brother had done, and she explained to him the trick and devised a scheme for his revenge. The next time they went to the bird grounds, she told her son to pluck all the feathers off the birds, to

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smear his body with breadfruit gum, and then roll in the feathers. He snuck up behind his brother, and yelled "Apau! The akua of the mountain is after you! He will grab you!" (Rice 1923:50). This frightened his brother so badly that he dropped all of his claimed birds, which The-Stupid-One then claimed for his own (Rice 1923:49–50; Wichman 1998:62–63).

There are caves in the cliffs of Hanamā'ulu. One of these is called Na-pali-'o'oma-o-, the concave cliffs of Hanamā'ulu. A man named Pueo lived here and could not find a wife to satisfy him. He traveled all the way to O'ahu and met a woman named Ke'alohiwai who had also refused to take a mate, saying she was waiting for the man of her dreams. When the two met, they recognized each other as the one they had been waiting for and Pueo and Ke'alohiwai returned to Hanamā'ulu to live in the caves, which were named Ke'alohiwai after the couple's death (Aukai n.d.; Wichman 1998:62).

One *heiau* mentioned in traditional literature is Kalauokamanu, which means the "tip of the endpiece of the canoe" (Wichman 1998:61). The *heiau* was located at the south tip of Kālepa Ridge approximately 2 km to the east and the place name may be a reference to its location at the tip of the long linear ridge. It was destroyed in 1855 and the stones were used to build the Hanamaulu Sugar Mill (Bennett 1931:125). Human sacrifice was conducted at this *heiau* and travelers would pass by the temple quickly, holding their noses to avoid the great stench coming from the dead bodies (Wichman 1998:62). According to a study by Lahainaluna School students:

> Kalauokamani (Kalauokamanu) was another heiau. It was named for a real woman and this is a little story pertaining to it:
>
> Two men came from Kauai, Uukanipo and Kaipoleimanu. While they lived at Kahikimaiaea, they heard of the beauty of Kalauokamani and went in search of her until they arrived in the upland of Wailua. Kalauokamani was dead but her spirit saw the men, followed after them and asked, 'Where are you going?' They answered, 'To see Kalauokamani to be our wife.' The spirit said, 'There is no woman, for she is dead.' The spirit again warned them, 'Do not go up this way but go down below. There is the woman for you, Moeapakii. Do not go up this way lest you smell the stench of the body of the woman [you seek] for she lies unburied.'
>
> The men insisted on going up on the upper side of Wailua and they did smell the stench of the woman and both died. They stand at Kaohokaualu to this day. Both had turned to stone. [Lahainaluna Students 1885:I:218]

As a whole, these *mo'olelo* contain a number of recurrent threads. Canoe landings are mentioned and would have been easy in the uniquely protected environs of Hanamā'ulu Bay. Whether arriving by canoe or land, travelers did not find much sustenance here, either due to lack of resources, the tight-fisted nature of the residents, or both. Finally, it is likely Hanamā'ulu was the residence of some *ali'i* (chiefly class)-status individuals, as suggested in the *mo'olelo* of Kawelo and the presence of a major sacrificial *heiau* (temple), Kalauokamanu.

3.1.2 Early Historic Period

Captain Cook, commander of the British ships *Resolution* and *Discovery*, was the first westerner to see the Hawaiian Islands. In 1778 he anchored off Waimea Bay, Kaua'i. Waimea and the shores of the neighboring island of Ni'ihau were the favored anchorages of early explorers and ships involved in the early fur trade on the northwest coast of America. The Islands were visited

in the next few years by traders (mainly fur traders) who picked up furs on the northwest coast of America, stopped in Hawai'i for provisions, and then sailed to China to trade the furs for luxury goods. Pigs, sweet potatoes, and salt, among other items, were traded with these ships. It is likely that at this time agricultural production in Hanamā'ulu began to grow beyond traditional subsistence patterns (Joesting 1984;46-47).

In 1791, Captain John Kendrick anchored off Ni'ihau to get provisions. He left three of his men there, and ordered them to sail to Kaua'i to look for "pearls and sandalwood." When the British Captain Vancouver landed at Waimea in 1792, he met two of these men, named Rowbottom and Williams, as noted in his journal:

> Previously to the departure of Rowbottom and Williams, they informed me, that their captain had conceived that a valuable branch of commerce might be created, by the importation of the sandal-wood of this country into India, where it sells at an exorbitant price; that, in the fur trade, immense profits had been gained, insomuch that it was expected not less than twenty vessels would, on these pursuits, sail with their captain (Kendrick) from New England, and that they were desired to engage the native to provide several cargoes of this wood, which is easily procured, as the mountain of Attowai [Kaua'i] as well as those of Owhyhee [Hawai'i], abound with the trees from which it is produced . . . [Vancouver 1798:188]

Cutting and shipping sandalwood to the Orient was probably the first real "industry" seen from a western perspective. Sandalwood was shipped from the Islands, possibly first as firewood, as early as 1791 (Joesting1984:45). An indirect reference to sandalwood trade in the Līhu'e area is supplied by Ethel Damon who recorded that Chief Forester C.S. Judd had told an early settler, Richard Isenberg, that Mount Kālepa had formerly been covered with sandalwood (Damon 1931:913).

Vancouver did sail by the north coast of Kaua'i, but could find no safe anchorage. However, he did note the Wailua area, north of Hanamā'ulu, was "the most fertile and pleasant district of the island" and the principal residence of the king (Vancouver 1798:221).

Missionary accounts, mainly unpublished, from the first half of the nineteenth century provide the majority of the early written records for this portion of Kaua'i, and in some ways they confirm and expand upon what can be gathered from oral tradition. Ethel Damon, in *Koamalu* (her history of the Rice family of Kaua'i), repeated the scenic description of Līhu'e given by Reverend Hiram Bingham in his book, *A Residence of Twenty-One Years in the Sandwich Islands*, published in 1847:

> In 1824, when walking around the island from Waimea to counsel the people after the wreck of *The Cleopatra's Barge*, Rev. Hiram Bingham crossed from Hanapepe, as has been seen, over the old upland trail back of Kilohana, and wrote of it as 'a country of good land, mostly open, unoccupied and covered with grass, sprinkled with trees, and watered with lively streams that descend from the forest-covered mountains and wind their way along ravines to the sea, —a much finer country than the western part of the island.'[Damon 1931:401]

William DeWitt Alexander, son of Waioli missionary William P. Alexander, traveling from Kōloa to the north shore of Kaua'i in 1849 recorded some descriptive notes of Hanamā'ulu:

> A few miles further on we crossed the picturesque valley of Hanamaulu. This valley is prettily bordered by groves of Kukui, koa, & hala trees, and is well cultivated with taro. A fine stream flows through the midst of it, which makes a remarkable bend at this place like a horse shoe. We then traveled along the seashore at the foot of a range of hills through groves of hau, & among hills of sand. It was now after dark, but the moon shone brightly, and there was no difficulty in finding our way. About eight o-clock we arrived at the banks of the Wailua river. [Kaua'i Historical Society 1991:121]

3.1.3 The Māhele

In 1845, the Board of Commissioners to Quiet Land Titles, also called the Land Commission, was established "for the investigation and final ascertainment or rejection of all claims of private individuals, whether natives or foreigners, to any landed property" (Chinen 1958:8).

The first *māhele*, or division, of lands between the monarch, Kamehameha III, and the *ali'i* (chiefs) and their land agents (*konohiki*) took place 27 January 1848; the last was 7 March 1848. The king and over 240 *ali'i* and *konohiki* took part in this division; the list of *ahupua'a* (large land divisions) and *'ili* (smaller land divisions) awarded to the king or each claimant was listed in a large book, now called the *Buke Māhele* (Māhele Book) (see Barrère 1994 for a detailed study of these awards). These awards became known as Konohiki Awards.

For Konohiki lands, a claim first had to be approved by the Land Commissioners. Upon confirmation of the claim, a certificate was awarded to the claimant. This certificate was called a Land Commission Award (LCA), which confirmed the claim of an individual for a parcel. The awardee could then obtain from the Minister of the Interior a Royal Patent (R.P.), which indicated that the government's interest in the land had been settled by the payment of a commutation fee. Commutation means "an exchange, or replacement." The commutation fee to conclude the government's interest in the land was usually set at a maximum of one-third of the value of the unimproved land. The fee could be settled by the exchange of cash, but was usually settled by the return of one-third of the lands (or cumulative value of the lands) originally awarded to the claimant. For example, if the claimant was awarded three lands, he could "return" one of the lands to pay the commutation fee, and he would "retain" the remaining two lands.

On 8 March 1848, Kamehameha III enacted two instruments listed in the Māhele Book dividing his lands into the King's Land (the king's private lands) and Government Lands, which were set aside to generate revenue for the government. On 1 January 1865, a statute was passed to make the King's Lands inalienable, meaning they could not be sold and restrictions were placed on their lease. At this time, the lands reserved for the monarchy changed their name to Crown Lands.

On 19 October 1849, the Hawaiian Privy Council adopted resolutions to protect the rights of native tenants, the *maka'āinana*, or the "common" people. Native tenants, and long-term foreign residents, could be awarded lands that they occupied or that they cultivated as Kuleana Awards. No commutation fee was necessary to apply for a Royal Patent for a *kuleana* award, as the commutation fee had presumably already been paid by the *ali'i / konohiki* who had been awarded the entire *ahupua'a, or 'ili* in which the native tenant claimed his own small parcels. An exception was made in the claims for house lots in the urban centers of Honolulu, Hilo, and Lahaina; both *konohiki* and *maka'āinana* had to pay a commutation fee worth one-fourth of their value for these properties.

Under the Kuleana Act of 1850, the *maka'āinana* were required to file their claims with the Board of Commissioners to Quiet Land Titles (Land Commission) within a specified time period in order to apply for fee-simple title to their lands. The claim could only be filed after the claimant arranged and paid for a survey and two witnesses testified that they knew the claimant and the boundaries of the land, knew that the claimant had lived on the land since 1839, and knew that no one challenged the claim. Then, the *maka'āinana* could present their claims to the Land Commission to receive their Land Commission Award (LCA) (Kame'eleihiwa 1992).

Not everyone who was eligible to apply for *kuleana* lands did so, and not all submitted claims were awarded. Some claimants failed to follow through and come before the Land Commission, some did not produce two witnesses, and some did not get their land surveyed. In addition, some *maka'āinana* may have been reluctant to claim *'āina* (land) that had been traditionally controlled by their *ali'i*, many may not have been familiar with the concept of private land ownership, and many may have not known about the Māhele, the process of making claims (which required a survey), or the strict deadline for making claims. Further, the Land Commission was comprised largely of foreign missionaries, so the small number of claimants and awards may reflect only those *maka'āinana* who were in good standing with the church. Significantly, the surveying of the land was not standardized (Kame'eleihiwa 1992:296–297).

A total of 14,195 claims were filed and 8,421 awards were approved, averaging 3 acres each, equaling about 29% of the 29,220 adult Native Hawaiian males living at the time of the Māhele (Kame'eleihiwa 1992:295). Out of the potential 2,500,000 acres of Crown and Government lands, 28,658 acres of land were awarded to the *maka'āinana*, less than 1% of the total acreage of Hawai'i (Kame'eleihiwa 1992:295). The small number of *kuleana* awards and their small size prevented the *maka'āinana* from maintaining their independent subsistence, often forcing them to abandon their newly acquired property (Chinen 1958:32).

Although many Hawaiians did not submit or follow through on claims for their lands, the distribution and written testimonies of LCAs provide insight into patterns of residence and agriculture. Many of these patterns may have existed for centuries. By examining the patterns of *kuleana* LCA parcels in the vicinity of the project area, insight can be gained as to the likely intensity and nature of Hawaiian activity in the area at the time.

Victoria Kamāmalu was awarded the *ahupua'a* of Hanamā'ulu as part of a *konohiki* award, LCA 7713, *'Āpana* (Lot) 2 (Waihona 'Aina 2000). Since the *ali'i* and *konohiki* were not required to record the use of their large land awards, the surrounding smaller *kuleana* awards of the *maka'āinana* assist in identifying land use of this area of Hanamā'ulu. Twenty *kuleana* parcels were claimed within Hanamā'ulu Ahupua'a. Of these parcels, five were not awarded (LCA 2659*K, 3370, 3392B, 3641, and 5640B) due to undocumented circumstances. The *kuleana* parcels were along the wide *makai* flood plain of Hanamā'ulu Stream and only extend about 100 m *mauka* of the Kapaia Bridge on Kūhiō Highway (no *kuleana* parcels were located in the vicinity of the project area).

Nearly every LCA claim in Hanamā'ulu contained an *'auwai* (ditch), necessary for *lo'i* cultivation. The claims for LCA lots in Hanamā'ulu mention that Hawaiian *hale* (houses), *lo'i*, and *kula* lands (lands used for dryland agriculture or pasture) were located along both sides of Hanamā'ulu River, extending from the shore up to the village of Kapaia. The *lo'i* and *kula* lands were often included together in one *'āpana*, with house sites belonging to separate *'āpana*. Overall,

the LCA documentation indicates indigenous Hawaiian subsistence activities being practiced in and around Hanamā'ulu Stream, which likely included the project area (Waihona 'Aina 2000).

3.1.4 Transition to Sugar Cane Cultivation

By 1842, missionaries had moved into the area and had established five schools. Some of these missionaries attempted to introduce cotton as a cash crop, but were unsuccessful (Damon 1931:375). Sugar, however, caught on. The Lihue Plantation Company was first established in 1849 by Henry A. Pierce, Judge William Little Lee (the chairman of the Land Commission), and Charles Reed Bishop. Together they formed the Henry A. Pierce and Company (Damon 1931:409) (Figure 6, Figure 7). The first 3,000 acres were purchased in Nāwiliwili (Damon 1931:414) and an additional 300 acres were purchased in Ahukini in 1866 (Hibbard and Wichman 2008:7). The Lihue Plantation became the most modern plantation at that time in all Hawai'i. It featured a steam-powered mill built in 1853 (Figure 7), the first use of steam power on a Hawaiian sugar plantation (Dorrance and Morgan 2000:28), and the 10-mile-long Hanamaulu Ditch built in 1856 by plantation manager William H. Rice, which was the first large-scale irrigation project for any of the sugar plantations (Moffatt and Fitzpatrick 1995:103).

The success of Lihue Plantation allowed it to continue to expand. When the owner of Hanamā'ulu Ahupua'a, Victoria Kamāmalu, died in 1870, all 9,177 acres (according to the acre number in the Māhele award) in the *ahupua'a* were purchased by Paul Isenberg (manager of Lihue Plantation from 1862–1878), which he established as a separate company, the Hanamaulu Plantation. The land commission report was in error, however, and the deed to the tract found that the early Māhele survey had underestimated the acreage, which was actually something over 19,000 acres. An even later survey placed the acreage at 17,000 acres (Damon 1931:742–747). A total of 30,000 leased acres in Wailua were added in 1878 (Hibbard and Wichman 2008:7). In 1898, Hanamaulu Plantation merged with the Lihue Plantation (Condé and Best 1973:165). The extent of the sugarcane fields near the turn of the nineteenth century can be seen in an 1878 Hawaiian Government Survey map (Figure 8). In this map, there are not yet sugarcane fields depicted in the current project area; however, well before 1910 the project area was heavily altered by the cultivation of sugarcane (Figure 9 through Figure 11). Given the indicated land contours on the 1910 map (Figure 11) it seems probable significant grading took place in the southeast corner of the larger project area in the early twentieth century.

The expansion of Lihue Plantation's sugarcane cultivation accelerated throughout the area in the early decades of the twentieth century, transforming nearly the entirety of the traditional landscape of Hanamā'ulu. By 1931, Lihue Plantation had 6,712 acres in cane (Wilcox 1996:73). Condé and Best's map of Lihue Plantation in 1941 shows the extent of the lands making up the Lihue Plantation, and indicates the entire project area is within sugarcane fields (L-6 and Hm.15) at this time. Railroad tracks are shown northeast of the project area(s) in 1910 (Figure 11) and north of the project area in 1941 (Figure 12) but there is no reason to believe there were ever train tracks in the project areas. By 1950 the train tracks were gone (Figure 13) with cane hauling accomplished by trucks. The only plantation infrastructure within the project areas indicated up through 1950/51 is a north/south trending cane haul road in the east portion of the northeast project area (Figure 13). Lihue Plantation ceased operations on November 17, 2000 after 151 years of sugar production (Kauai Museum 2015: Lihue Plantation Company)

Figure 6. Historical photo of Hanamā'ulu Bay (believed to be dated July 4, 1924), showing Lihue Plantation in the background (Kaua'i Historical Society, n.d.)

Figure 7. Lihue Plantation Mill, view of the Boiling House (Kaua'i Historical Society, n.d.)

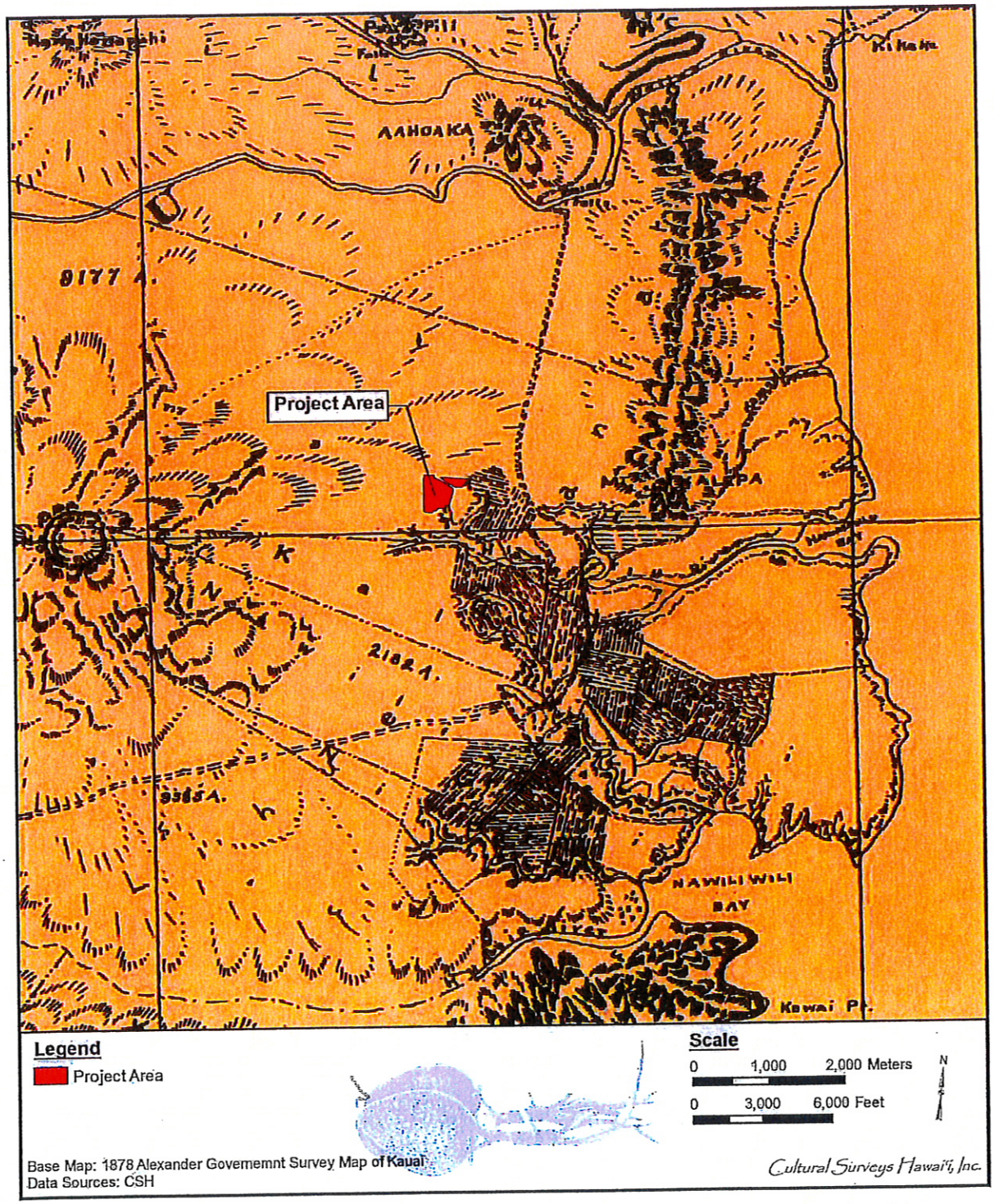

Figure 8. Portion of W.D. Alexander's 1878 Kaua'i Government Survey map showing the project area

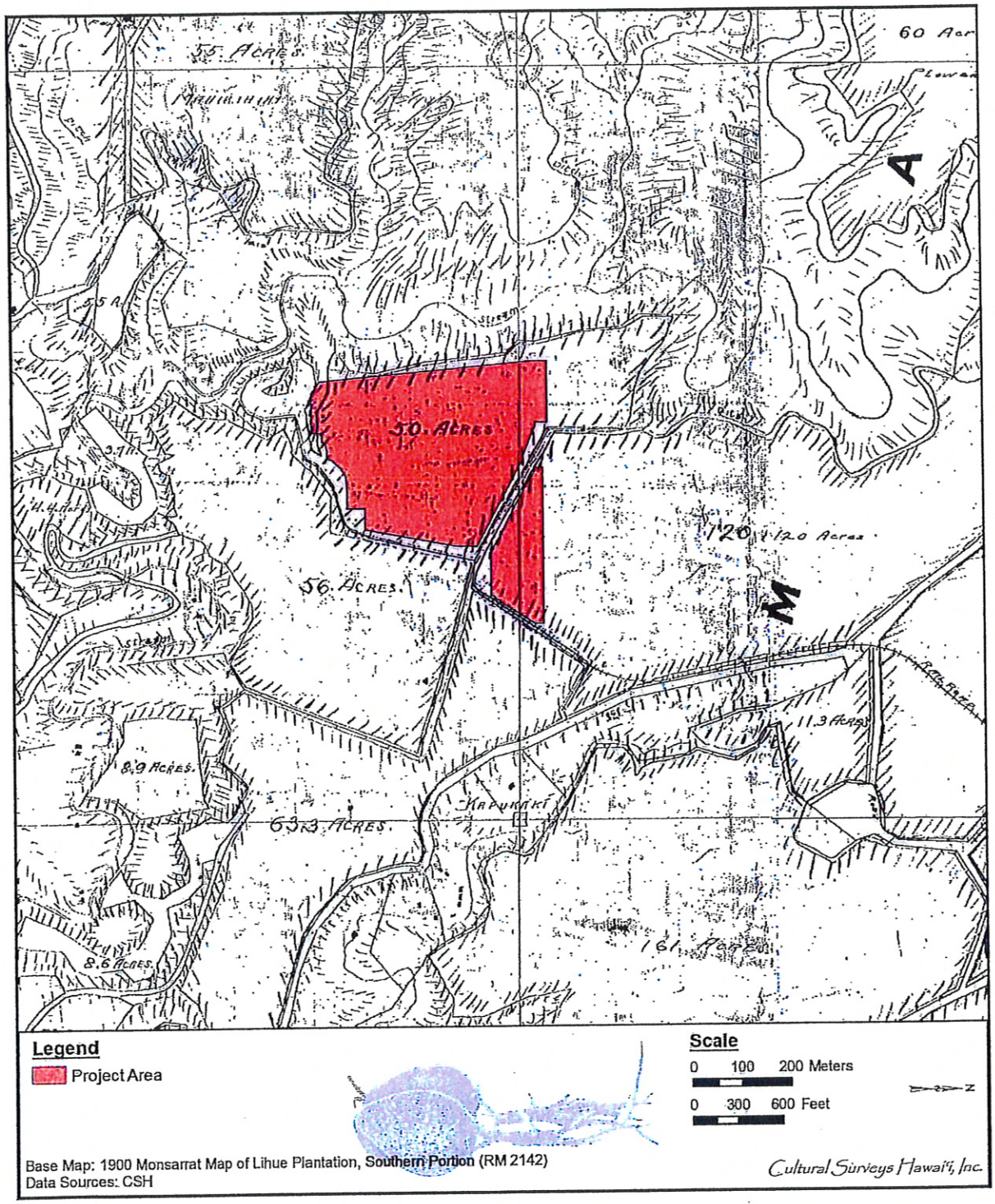

Figure 9. 1900 Monsarrat map of Lihue Plantation, southern portion showing the project area

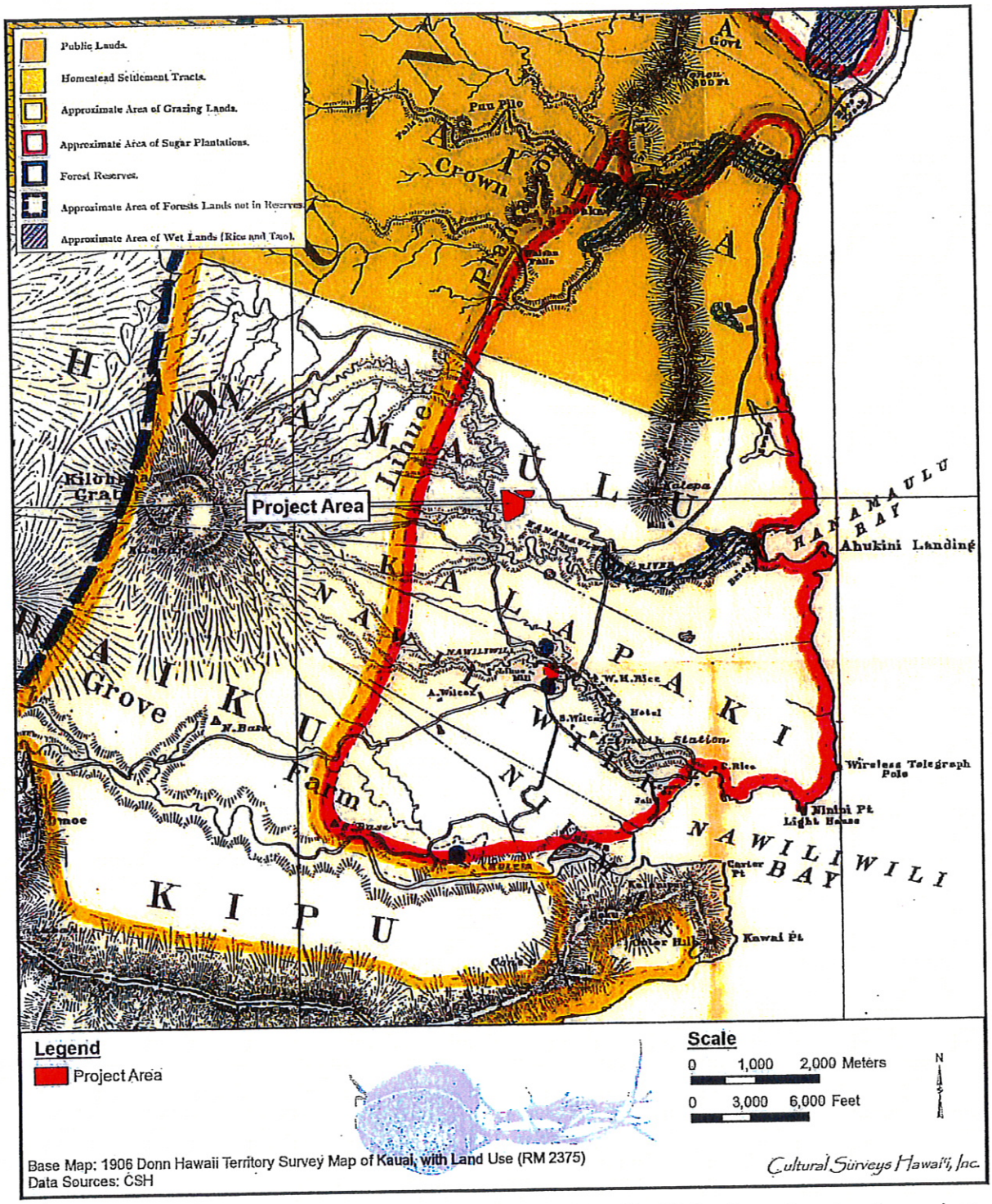

Figure 10. 1906 Donn Hawaii Territory Survey map of Kaua'i with land use showing the project area well within the "Approximate Area of Sugar Plantation"

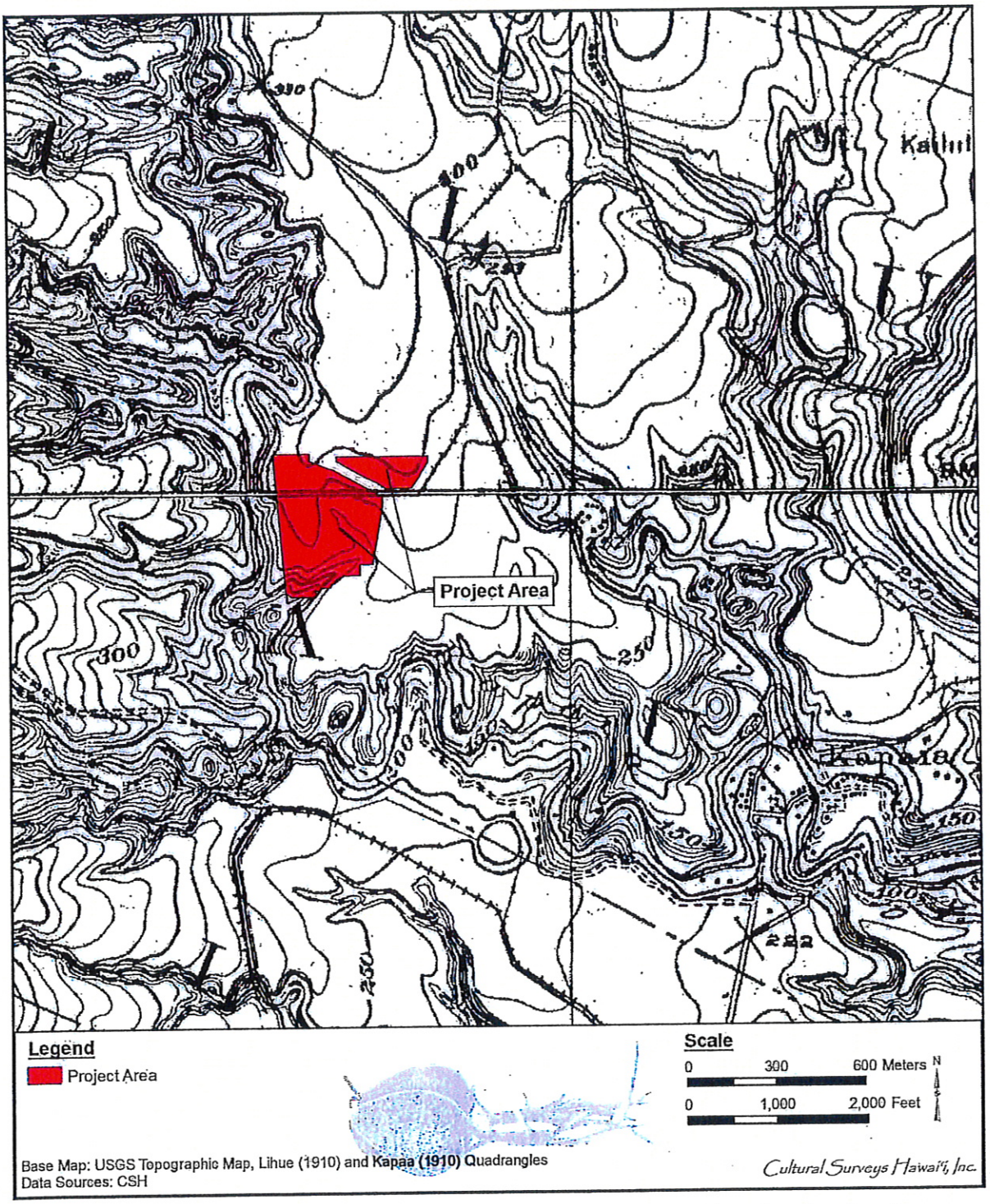

Figure 11. Portion of a 1910 Lihue and Kapaa USGS topographic quadrangles showing the project area

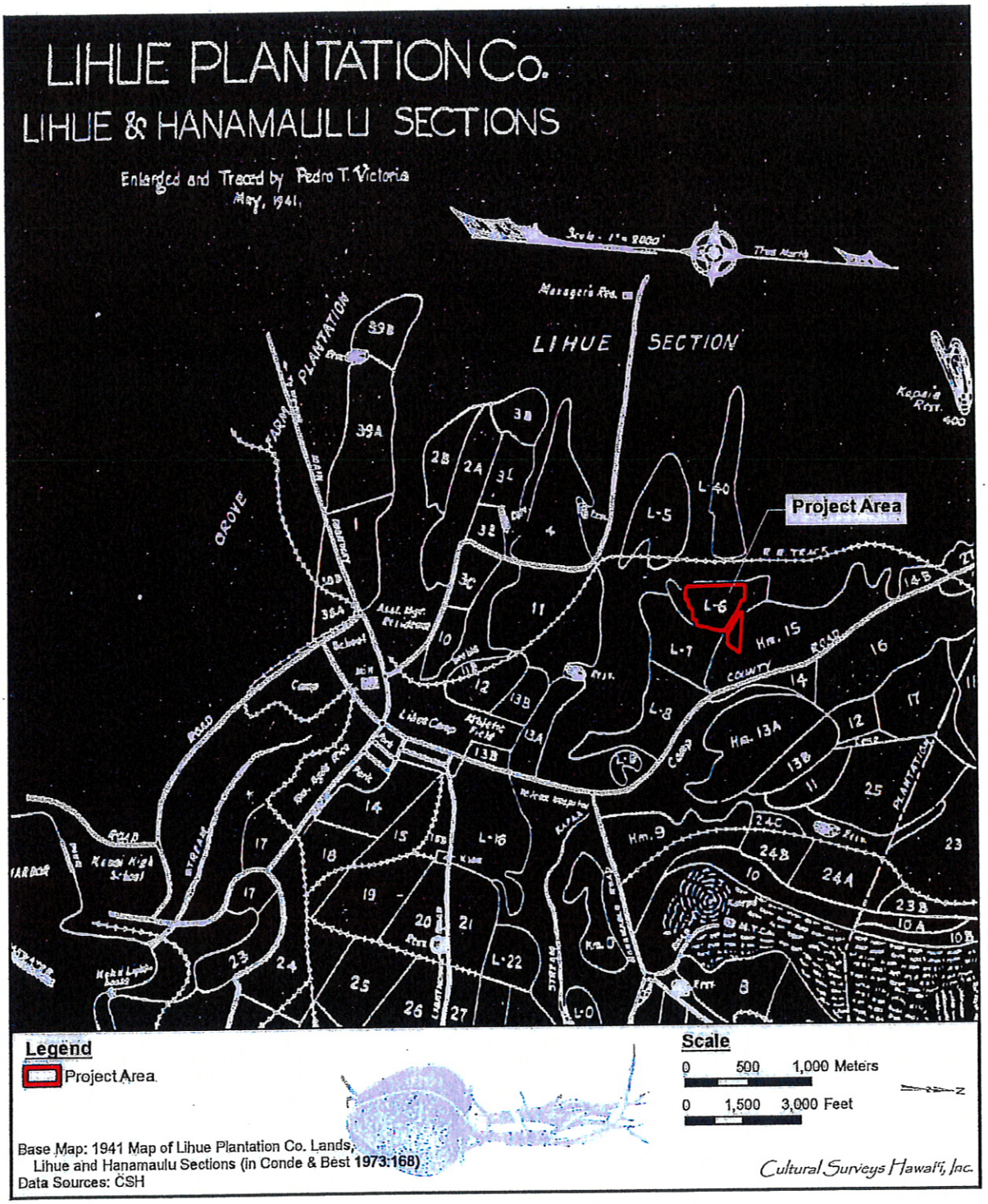

Figure 12. 1941 Lihue Plantation Company Map showing the project area within Plot L-6, *makai* of the railroad tracks (Condé and Best 1973:168)

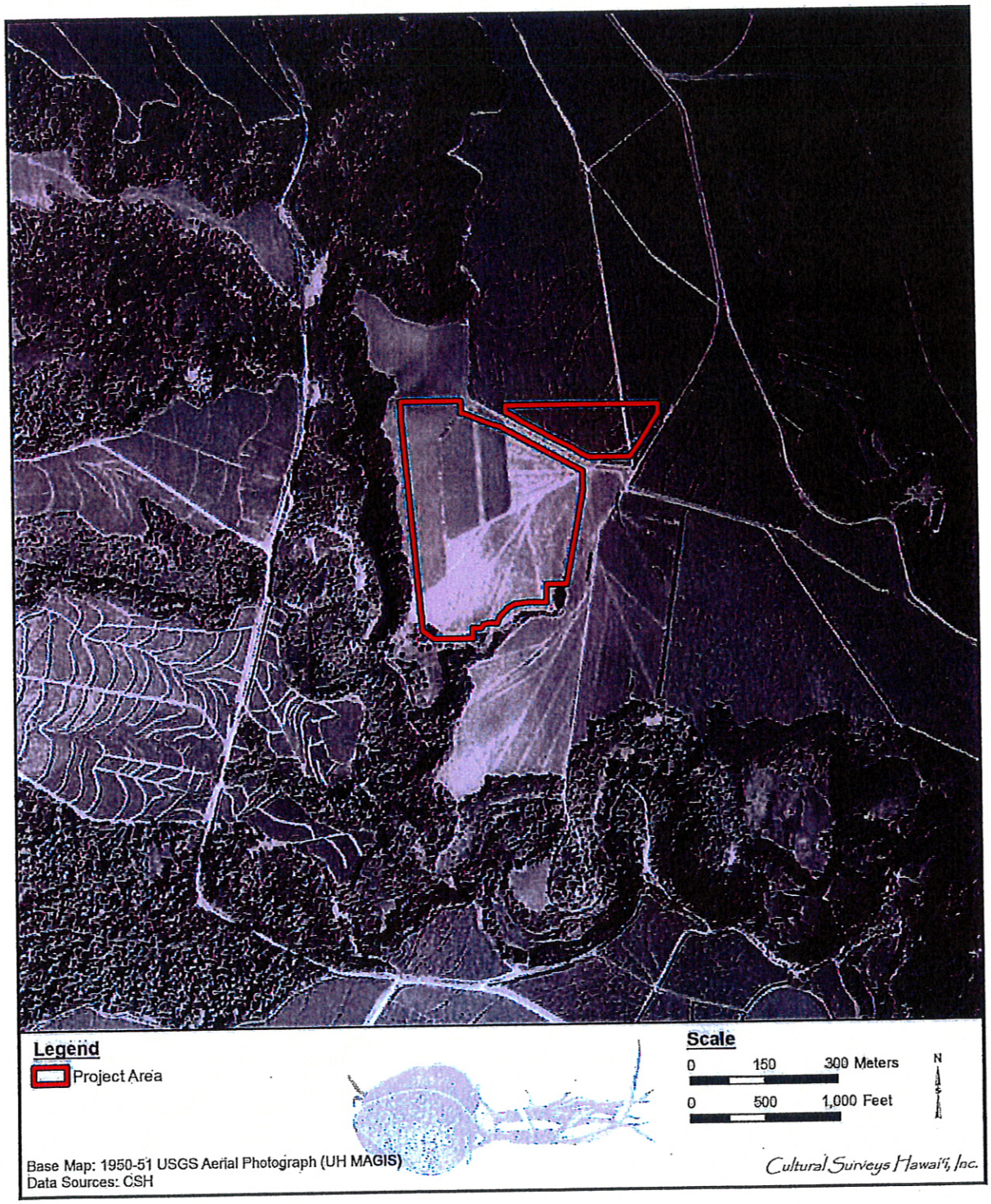

Figure 13. 1950-1951 USGS aerial photograph (UH MAGIS) showing the project area

3.1.5 Other Twentieth Century Developments

By the end of the nineteenth century, fishing on Kaua'i was minimal, even though the waters were said to teem with fish "largely accounted for by the fact that the efforts of the islanders are devoted almost exclusively to sugar-cane growing, in which more money can be made than in fishing" (Cobb 1902:498). However, the ocean and shoreline that had been so integral to the traditional Hawaiian way of life in Hanamā'ulu began to take on importance with growing harbor facilities of the early twentieth century.

Hanamaulu Sugar Company, established in 1870 (Condé and Best 1973:165) originally had its own wharf at Kou, on the north side of Hanamā'ulu Bay (Condé and Best 1973:179). This became the first wharf and boat landing area built sometime before 1885, beginning as a small wooden wharf on the beach. In 1898, this sugar company merged with the Lihue Plantation Company (Condé and Best 1973:179) and the railroads of the two companies also connected and merged. Sometime prior to 1906 the shipping operations relocated to the south side of the bay to Ahukini Landing. Newspaper accounts note that Ahukini Landing was refurbished between 1906 and 1909 (Condé and Best 1973:165). However, as sugar production increased and shipping vessels became larger and drew more water, a modern wharf was needed where ships could draw up alongside and load and unload supplies and passengers. Operations for this large harbor, the most modern harbor in the Islands, began in 1921, with the establishment of the Lihue Plantation-sponsored Ahukini Terminal & Railway Company (AT&R), which operated until 1934 (Condé and Best 1973:165). The AT&R railway track traversed the coastline from Ahukini Pier at Hanamā'ulu Bay to Keālia through today's Wailua Golf Course and the Kauai Beach Resort. Ahukini pier became the principal port through which sugar and pineapple was exported in the early part of the twentieth century prior to the construction of Nāwiliwili Port.

3.1.6 Modern Land Use

Background research indicates the project area was entirely within the Lihue Plantation Company sugarcane fields (see Figure 12). The historical agricultural use of the project area resulted in grading and repeated plowing of the land surface. A comparison of the 1950/51 aerial photograph (Figure 13) with the 1963 USGS map (Figure 14) indicates the creation of additional plantation infrastructure in the form of a ditch between (but not within) the project areas and the creation of an arcing road within the central portion of the larger southwestern project area. While this road depicted on the 1963 USGS map (Figure 14) is quite distinct on the 1978 aerial photograph (Figure 15) it is not shown on contemporary USGS maps (see Figure 1) and is barely discernible on a contemporay aerial photograph (see Figure 3). It was not discernible on the ground during the archaeological inventory survey fieldwork. The dendritic grid of field access roads shown on the 1978 aerial photograph (Figure 15) were probably even more ephemeral and may have moved with each planting cycle.

The project area continues in agricultural production now for seed corn propagation. Extensive portions of the project area appear to have been in seen corn production for some time.

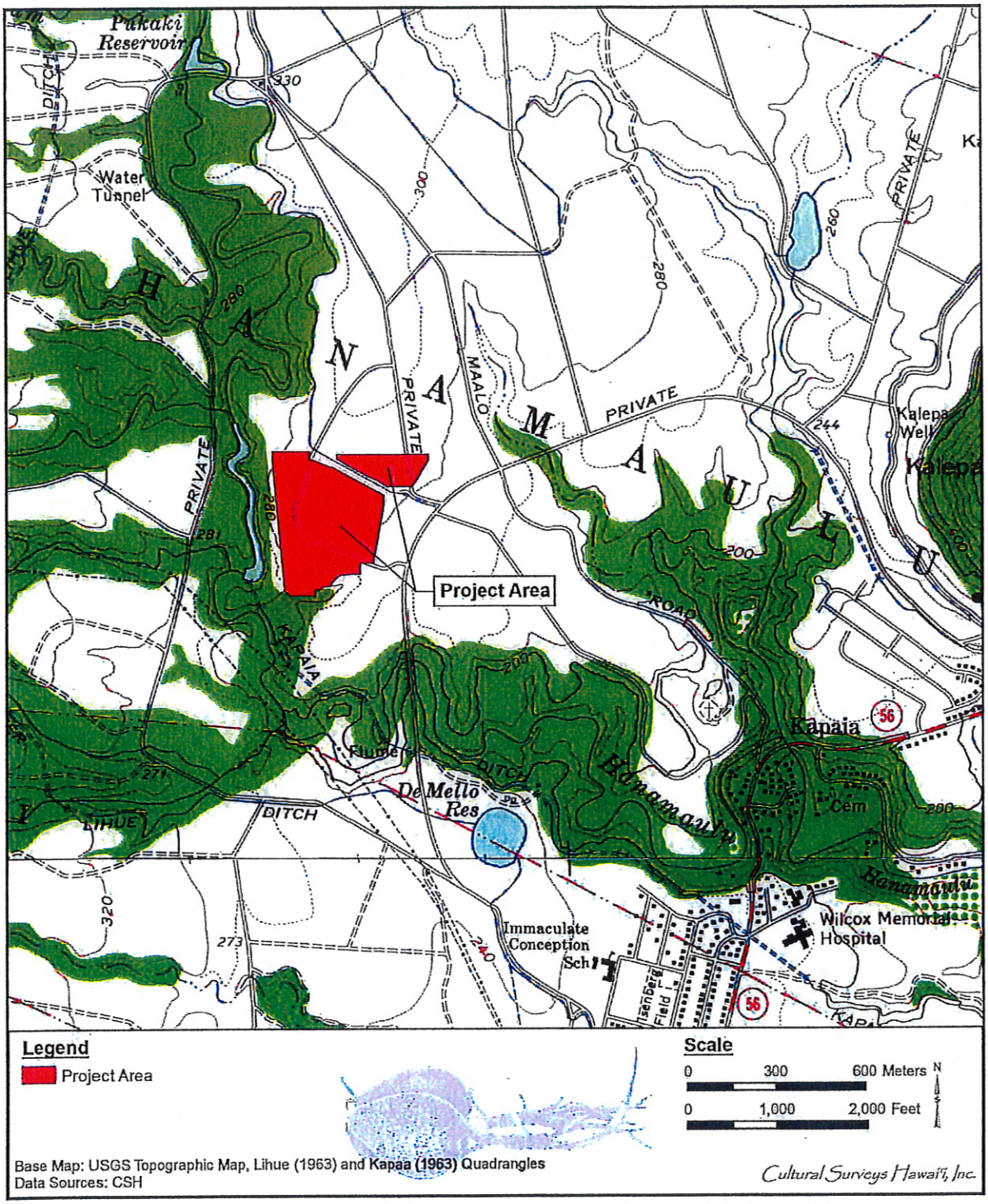

Figure 14. Portion of 1963 Lihue and Kapaa USGS topographic quadrangles showing the project area

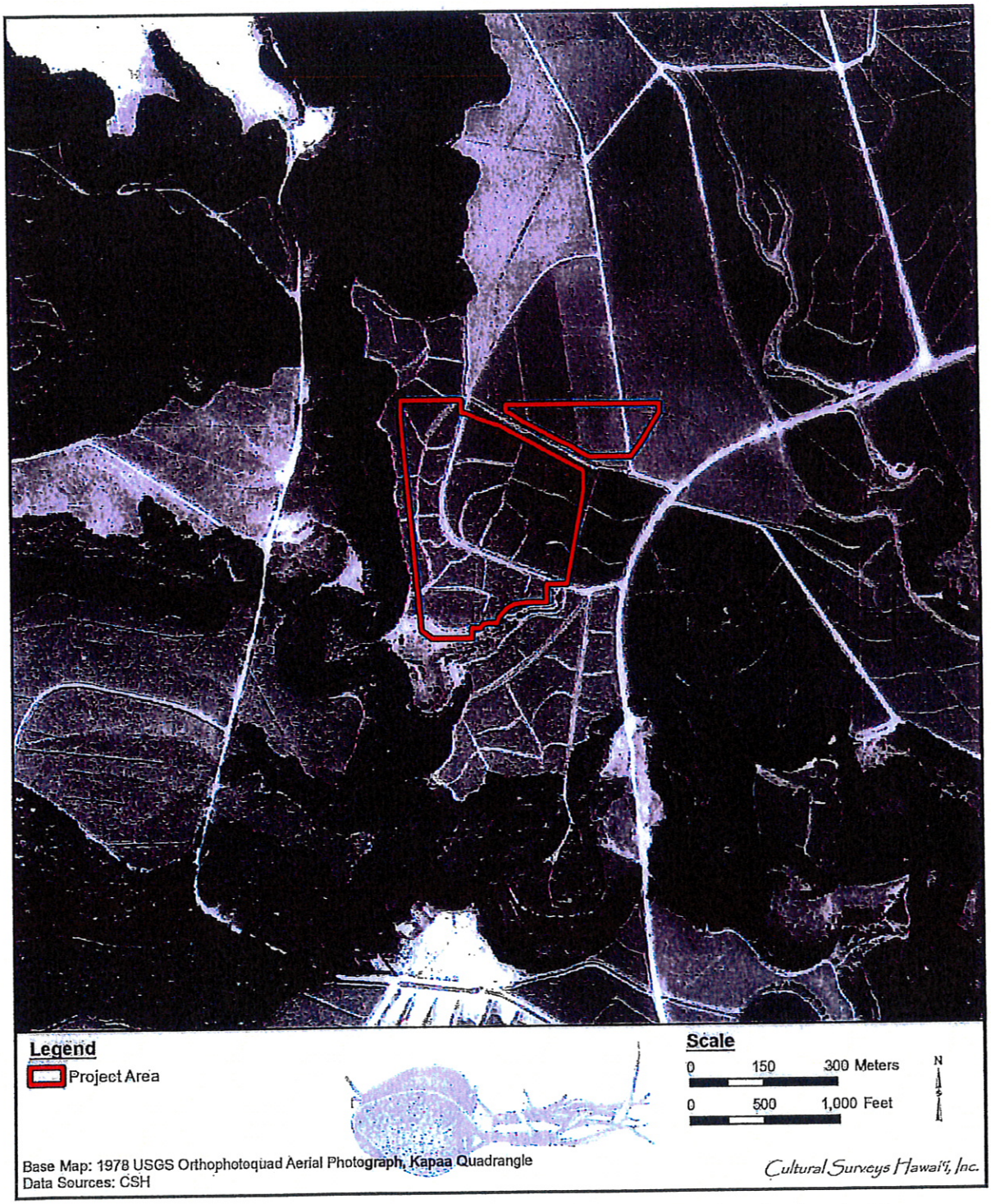

Figure 15. 1978 USGS Orthophotoquad aerial photograph, Kapaa quadrangle showing the project area

3.2 Previous Archaeological Research

This section details previous archaeological studies within the vicinity of the current Kapaia Solar Photovoltaic and Battery Energy Storage project area. These studies and the historic properties inventoried are summarized in Table 1, their locations are provided on Figure 16, and they are described in the following paragraphs.

3.2.1 Thrum 1906

Thomas Thrum, the publisher of the *Hawaiian Almanac*, gathered lists of *heiau* on all islands. For the *ahupua'a* of Hanamā'ulu, he noted one *heiau*—Kalauokamanu—as "a large walled heiau that stood above the present mill; destroyed about 1855. Of pookanaka class" (Thrum 1906:40). This site is located approximately 2 km southwest of the current project area and was designated as site number 102.

3.2.2 Bennett 1931

The first comprehensive archaeological survey on the island of Kaua'i was undertaken by Wendell Bennett and published in 1931. Bennett noted Thrum's description of Kalauokamanu Heiau, designated as Site 102, but there is no evidence that he physically searched for the remains of this *heiau* during his survey. Bennett also documented sand dune burials (Site 103) in Hanamā'ulu toward the Wailua River.

Ethel Damon provided additional information on Kalauokamanu Heiau:

> Within the ahupua'a of Hanamaulu was a large walled heiau called Ka-lau-o-ka-manu of the poo-kanaka type, or one in which human sacrifices were offered; but in the almost unconscious days of transition, when popular interest in such things was still asleep, most of the stones from this enclosure were taken to make firm the foundation of the Hanamaulu sugar mill. [Damon 1931:397]

A 1934 *Garden Island Press* newspaper account quoted by Ethel Damon gives additional information on the location of this *heiau*:

> Another *heiau* located in Hanamā'ulu [sic] is Kalauokamanu. This was situated just west of the Lihu'e [sic] Plantation Yard and adjacent to a cane haul road. It is said to be of the *pookanaka* class and was destroyed in 1855 (*Garden Island Press* 1934 in Corbin et al. 2002:14).

3.2.3 Rosendahl 1990

In 1990, Paul H. Rosendahl, Inc. (PHRI) conducted an archaeological field inspection and limited subsurface testing for the Kalepa Radio Station and Kālepa Road improvements project. The previously identified burial platform designated SIHP # 50-30-11-1827 and areas of both disinterred and in situ burial remains were inspected to identify any archaeological remains on or alongside the road. No new historic properties were identified during the inspection of both the radio station and the road improvements. Backhoe testing was conducted in two of the three alternate radio station sites. Testing showed the units consisted of sterile silty clay mixed with weathered bedrock. No cultural materials or deposits were discovered in the units.

Table 1. Previous Archaeological Investigations in the Vicinity of the Current Project Area

Source	Location	Nature of Study	Results
Thrum 1906	Island-wide	*Heiau* study	Kalauokamanu Heiau described, but listed as already destroyed by 1855
Bennett 1931	Island-wide	Archaeology of Kaua'i	Site 102, Kalauokamanu Heiau; Site 103, dune burials in sand dunes that run along shore halfway between Hanamā'ulu and Wailua River
McMahon 1990	Nāwiliwili, Kalapakī, and Hanamā'ulu Ahupua'a	Archaeological field check	Documented three previously identified historic residential sites (SIHP #s 50-30-11-9390, -9401, and -9402).
Rosendahl 1990	Kālepa Ridge, Hanamā'ulu Ahupua'a	Archaeological field check with limited subsurface testing	Confirmed SIHP # 50-30-11-1827, boulder rubble mound; backhoe testing units consisted of sterile silty clay; no cultural materials or deposits present
Walker et al. 1991	Lands in Hanamā'ulu, Kalapakī, Nāwiliwili, Niumalu, and Wailua *ahupua'a*	Archaeological inventory survey	Identified ten sites, three pre-Contact, seven historic (SIHP #s 50-30-08-1838 through -1847)
Kikuchi 1992	Hanamā'ulu	Archaeological study for a use permit	Identified a post-Contact wall (SIHP # 50-30-08-0818)
Kikuchi and Remoaldo 1992	Island-wide	Cemeteries of Kaua'i	Cemeteries inventoried in Hanamā'ulu include Kaua'i Memorial Gardens (SIHP # 50-30-08-B008), Hanamā'ulu Immaculate Conception Church II (SIHP # 50-30-08-B009); Kapaia Chinese Cemetery (SIHP # 50-30-08-B010); Immaculate Conception Roman Catholic Church Cemetery (SIHP # 50-30-08-B011)
Akana 1994	GTE Kalepa, Kālepa Ridge, Hanamā'ulu Ahupua'a	Archaeological monitoring	Monitored rock wall revetment for burial site, SIHP # 50-30-08-0746
Franklin and Walker 1994	Hanamā'ulu and Kalapakī Ahupua'a	Archaeological inventory survey	Identified a boundary/agricultural wall: SIHP #50-30-11-1842

Source	Location	Nature of Study	Results
Dega and Powell 2003	Phase I of Kaua'i Rural Fiber Optic Duct Lines project	Archaeological monitoring	Two previously disturbed burials of traditional context identified (SIHP # 50-30-08-103) and subsurface cultural layer dating to AD 1440-1660 (SIHP # 50-30-08-356)
Dye and Jourdane 2006	Kālepa Grove Farm, Hanamā'ulu Ahupua'a	Archaeological assessment	Based on existing information, human burials and cultural deposits similar to those already found at Kālepa Ridge possibly present
Hammatt 2006	23.5 acres in Kalapakī and Hanamā'ulu Ahupua'a	Archaeological literature review and field inspection	Study concluded no surface historic properties of archaeological concern present within the project area
Giannasio et al. 2014	Kālepa Ridge in Hanamā'ulu Ahupua'a	Cultural monitoring report	No historic properties identified within designated Area of Potential Effect
Kamai and Hammatt 2015	Approx. 16.8 km for proposed new *mauka* Līhu'e Hanamā'ulu road within five *ahupua'a*; Hanamā'ulu, Kalapakī, Nawiliwili, Ha'iku, and Niumalu (TMKs: [4] 3-4-005, 007; 3-8-002, 003, 005)	Archaeological literature review and field inspection	Identified historic properties related to plantation era (ditches, culverts, and a cemetery) located along both sides of existing cane haul roads including features associated with SIHP # 50-30-11-2218 (Morris and Hammatt 2014; Yucha et al. 2014) and five historic properties including ditches, culverts, and a siphon related to plantation water control
Morriss et al. 2015	Proposed municipal solid waste landfill and resource recovery park, Hanamā'ulu and Wailua Ahupua'a	Archaeological inventory survey	One newly identified historic property identified; SIHP # 50-30-11-2218 consists of a complex of 32 plantation-era features related to water control, transportation, and agriculture

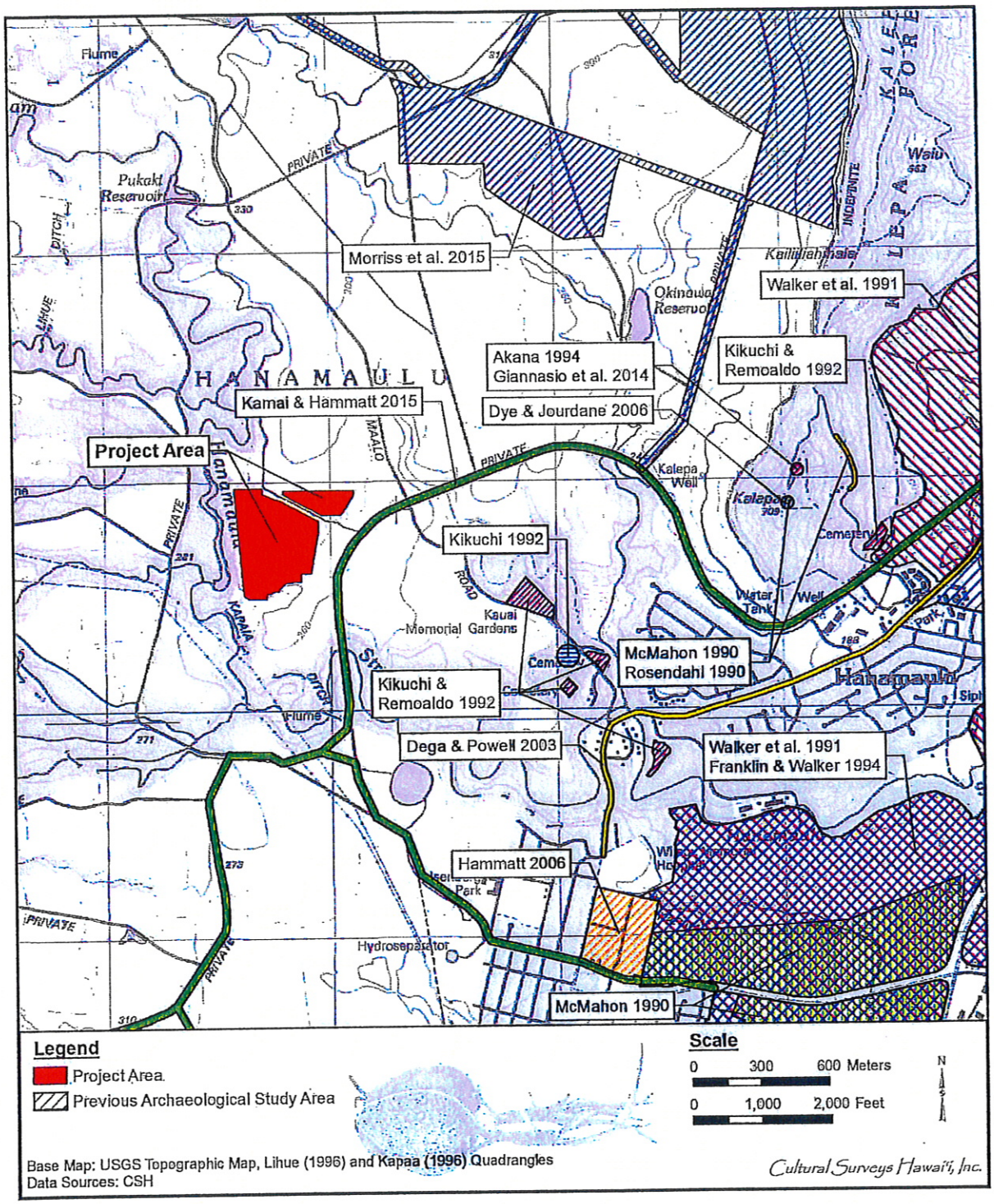

Figure 16. Previous archaeological study areas within the vicinity of the current project area (1996 Lihue and Kapaa USGS topographic quadrangles)

Table 2. Previously Identified Historic Properties in the Vicinity of the Project Area

SIHP # (50-30-)	Nature of Site	Source	Comment
03-09353	Temple (Lihue Hongwanji Mission)	SHPD Database	1,500 m to SE
08-00102	Kalauokamanu Heiau	Bennett 1931	2,000 m to E on S edge of Kālepa Ridge
08-00621	Cemetery (Kapaia Chinese Cemetery)	Kikuchi and Remoaldo 1992	1,200 m to SE
08-00746	Burial (1)	Akana 1994	1,800 m E on Kālepa Ridge
08-00818	Wall (post-Contact)	Kikuchi 1992	1,200 m to SE
08-01827	Burial (2)	Rosendahl 1990	1,800 m E on Kālepa Ridge
08-01844	Cemetery	Walker et al. 1991	1,900 m E on Kālepa Ridge
08-B008	Cemetery	Kikuchi and Remoaldo 1992	1,000 m to SE
08-B009	Cemetery (Immaculate Conception Church Cemetery II)	Kikuchi and Remoaldo 1992	1,200 m to SE
08-B011	Cemetery (Immaculate Conception Church Cemetery)	Kikuchi and Remoaldo 1992	1,700 m to SE
11-01842	Wall (post-Contact)	Walker et al. 1991	2,200 m to SE
11-02218	Plantation infrastructure	Morriss et al. 2015	Features widely scattered in area 1,500 m to NE
11-09077	Bridge (Kapaia Swinging Bridge)	Hawai'i Register of Historic Places	1,500 m to SE
11-09402	Historic building	McMahon 1990	2,500 m to SE
No SIHP # (CSH 3)	Culverts	Kamai and Hammatt 2015	700 m to S
No SIHP # (CSH 4)	Culverts	Kamai and Hammatt 2015	2,400 m to SE
No SIHP # (CSH 5)	Ditch (post-Contact)	Kamai and Hammatt 2015	2,300 m to SE

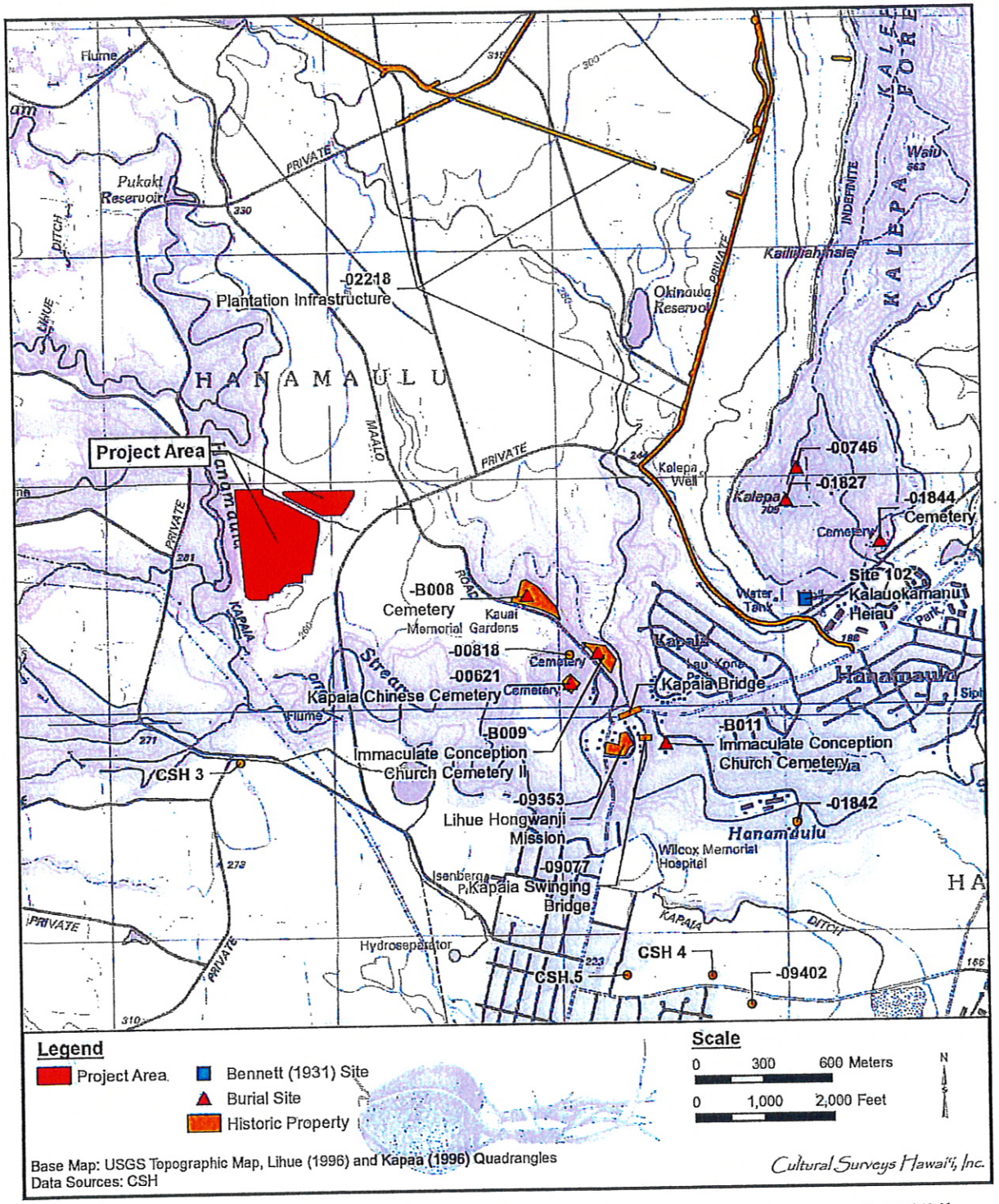

Figure 17. Previously identified historic properties in the vicinity of the project area (1996 Lihue and Kapaa USGS topographic quadrangles)

3.2.1 McMahon 1990

In 1990, Nancy McMahon surveyed three possible locations for a new Kaua'i Judiciary Building in Nāwiliwili. Three previously identified historic residential sites (SIHP #s 50-30-11-9390, -9401, and -9402) were recorded. SIHP # -9390 is the Grove Farm manager's house; SIHP #s -9401 and -9402 are two other plantation-era residences.

3.2.2 Walker et al. 1991

In 1990, PHRI conducted an archaeological inventory survey in lands in the *ahupua'a* of Hanamā'ulu, Kalapakī, Nāwiliwili, Niumalu, and Wailua. The investigation identified ten sites: SIHP #s 50-30-11-1838 (pre-Contact cultural deposits), -1839 (pre-Contact wall and terrace), -1840 (retaining wall), -1841 (road), -1842 (wall), -1843 (concrete foundation, road, and concrete wall), -1844 (historic cemetery), -1845 (railroad bridge), -1846 (concrete bridge), and -1847 (river valley—possible pre-Contact agriculture). SIHP # -1838, a cultural deposit with charcoal flecks and shell and coral fragments, yielded a radiocarbon date of AD 1170-1400 (Walker et al. 1991:72). As one would expect, the three pre-Contact sites including SIHP # -1838 were in areas never cultivated for sugarcane. Two of the three sites were located along the shoreline and the third was in the river valley.

3.2.3 Kikuchi 1992

William Kikuchi carried out a brief reconnaissance for a sandblasting project documenting one post-Contact wall (SIHP # 50-30-08-00818).

3.2.4 Kikuchi and Remoaldo 1992

Kikuchi and Romoaldo (1992) conducted a survey and inventory of cemeteries on the island of Kaua'i. They documented 17 cemeteries within the Līhu'e District.

Six cemeteries were identified within Hanamā'ulu Ahupua'a: SIHP # 50-30-08-B007 (inventoried but not surveyed); Kaua'i Memorial Gardens Cemetery, SIHP # -B008 (inventoried but not surveyed); Immaculate Conception Church Cemetery II, SIHP # -B009; Kapaia Chinese Cemetery, SIHP # -B010; Immaculate Conception Church Cemetery, SIHP # -B011; and SIHP # -B019 (not located).

None of the cemeteries near the vicinity of the current project should be affected during the proposed current project.

3.2.5 Akana 1994

In 1994, CSH conducted archaeological monitoring for a GTE Hawaiian Tel project involving a rock wall revetment for the burial site designated SIHP # 50-30-08-0746. Monitoring was conducted primarily for the possible presence of remains eroding along the dirt bank. Skeletal fragments were observed during the excavation eroding out of the dirt bank. Remains were reinterred behind the retaining wall in the location where the remains were observed.

3.2.6 Franklin and Walker 1994

PHRI carried out an archaeological inventory survey of 552.3 acres of Molokoa Lands that included a portion of the airport. Two sites were located: a boundary/agricultural wall, SIHP # 50-30-11-1842, along the south side of Hanamā'ulu Valley near Kapaia; and a re-identified SIHP #

50-30-08-9402, a historic building associated with radio station KIVM (Franklin and Walker 1994:27) located in the Kalapakī portion of the airport.

3.2.7 Dega and Powell 2003

In 2003, Scientific Consultant Services conducted archaeological monitoring along Kūhiō Highway in eastern Kaua'i (Dega and Powell 2003). A total of ten archaeological sites were identified: SIHP #s 50-30-08-868 (traditional Hawaiian and historic burials), -871 (traditional Hawaiian and historic burials), -872 (traditional Hawaiian burials), -884 (traditional Hawaiian cultural layer with artifacts, charcoal, historic artifacts, and railroad bedding), -885 (historic irrigation ditch), -886 (pre-Contact hearth, historic ditch, traditional Hawaiian burial), -887 (traditional Hawaiian cultural layer with charcoal), -1711 (pre-Contact hearth), -1848 (pre-Contact post molds and hearth), and -1849 (pre-Contact cultural layer). Of these, only SIHP # -0885 is located in Hanamā'ulu Ahupua'a.

3.2.8 Dye and Jourdane 2006

T.S. Dye and Colleagues conducted an archaeological assessment for the proposed Cingular Wireless Kālepa Grove Farm Cell Site (Dye and Jourdane 2006). Based on existing historical literature and previous archaeological documents, it was deemed possible that human burials and cultural deposits might be present, similar to those found at Kālepa Ridge.

3.2.9 Hammatt 2006

CSH carried out an archaeological literature review and field inspection of a 23.5-acre project area proposed for the expansion of the existing Wal-Mart store in Kalapakī and Hanamā'ulu Ahupua'a. As confirmed by historical records, maps and photographs, sugarcane cultivation was the dominant land use within the project area and surrounding lands throughout the twentieth century until the closing of Lihue Plantation at the century's end. As documented during the field inspection, no surface historic properties of archaeological concern are present within the project area.

3.2.10 Giannasio et al. 2014

CSH (Giannasio et al. 2014) produced a cultural monitoring report for the installation of communications equipment for the U.S. Coast Guard's Rescue 21 system on Kālepa Ridge in Hanamā'ulu Ahupua'a. No historic properties were identified within the designated Area of Potential Effect.

3.2.11 Kamai and Hammatt 2015

CSH (Kamai and Hammatt 2015) prepared an archaeological literature review and field inspection study for an approximately 16.8-km "Līhu'e Hanamā'ulu New Mauka Road and a Future Potential Mauka Road" project. The study reported historic properties related to the plantation era including ditches, culverts, and a cemetery located along both sides of the existing portions of cane haul roads.

3.2.12 Morriss et al. 2015

In 2013, CSH began an AIS for a proposed Municipal Solid Waste Landfill and a Resource Recovery Park project in Hanamā'ulu and Wailua Ahupua'a (Morriss and Hammatt 2015). Thirty-two plantation-era features related to water control, transportation, and agriculture were identified.

Documented feature types consisted of ditches, culverts, sluice gates, and roadways. Following the Morriss and Hammatt (2014) investigation, the project area was expanded to include several proposed access roads (Potential Access Roads A through E). As a result, an addendum AIS was required for the undocumented areas of the revised project area. In 2014, CSH conducted the addendum AIS for the proposed access roads.

3.3 Background Summary and Predictions

Creed et al. (2006) provides a detailed synthesis of the settlement patterns and prehistory of the *ahupua'a* of Hanamā'ulu. This synthesis includes extensive research on how the *ahupua'a* fits into the settlement patterns of Kaua'i as a whole. The synthesis presented here is derived from Creed et al. (2006).

As pointed out by Franklin and Walker (1994:17), two important *ahupua'a* and large rivers lie on either side of Hanamā'ulu lands. The first—Wailua Ahupua'a, home of the royal chiefs—lies immediately to the north. The other, Hulē'ia River Valley and the *ahupua'a* of Ha'ikū, lies to the south beyond Nāwiliwili and Niumalu. Thus Hanamā'ulu Ahupua'a would be expected to have less varied pre-Contact resources than its more dominant neighbors, which had greater populations along large river valleys.

Hanamā'ulu, however, would hardly have been devoid of pre-Contact structures as traditional stories assign considerable importance to the region. They portray Hanamā'ulu as the birth and death place of Kawelo, a late seventeenth century paramount chief. They reference paths crossing Hanamā'ulu as well as frequent canoe landings, and they speak of a number of *heiau,* including the large Kalauokamanu Heiau at the south tip of Kālepa Ridge, where human sacrifice was conducted. Based on Māhele records, archeological surveys, and ethno-historical accounts, the population in Hanamā'ulu was concentrated in the lower stream valley (with *kuleana* LCAs only extending about 100 m upstream of Kapaia Bridge on Kūhiō Highway) and near the shore. The *kula* lands were used for *wauke* and other dryland crops.

The large amount of *kula* land and the importance of the sugar industry in Hanamā'ulu dramatically altered land use patterns, perhaps more so than in prestigious traditional *ahupua'a* like Wailua and Ha'ikū. Many people moved away from the river valleys to make a living through cash crop agriculture. As a result, Hanamā'ulu should have a very high number of cultural resources, both relatively and absolutely, related to sugar plantations.

The explosion of the sugar industry in Hawai'i fundamentally transformed the *ahupua'a* of Hanamā'ulu. The pattern of plantation land use (e.g., plowing, rock removal) generally obliterates most traces of pre-Contact and early historic land use. Nearly all traditional Hawaiian structures outside the lower Hanamā'ulu stream flood plain were almost certainly destroyed by commercial sugarcane operations. If archaeological remains are to be encountered they will likely relate to commercial sugarcane cultivation and plantation life.

Section 4 Results of Fieldwork

4.1 Pedestrian Survey

A pedestrian survey of the project area was undertaken for the purpose of historic property identification and documentation. The pedestrian survey was conducted on 27 September 2015. The CSH field crew consisted of Missy Kamai, B.A., and David W. Shideler, M.A., under the general supervision of principal investigator Hallett H. Hammatt, Ph.D. The surface survey fieldwork required approximately 2 person-days to complete. The distance between archaeologists was typically about 7 m on these transects. A GPS track log of the route of one of two archaeologists during the archaeological inventory surface survey is presented in Figure 18.

Those portions of the project area(s) not under active cultivation (Figure 19 through Figure 21) were in weeds including buffel grass, spiny amaranth, castor bean, sensitive plant, morning glory, Flora's paint brush, and a variety of other exotic weeds and vines (Figure 22). The project area continues in agricultural production now for seed corn propagation and the pedestrian survey was often conducted between rows of drying seed corn.

Ground visibility was generally very good throughout the smaller northeastern project area and in 70% of the larger southwestern project area but there were two areas of exceedingly thick 2-m-high grasses. The track log aerial photograph (Figure 18) shows a lighter green area in the north corner and southwest corner of the larger southwestern parcel that corresponds to these areas of very dense, very tall grass (Figure 23). The pedestrian tracks in these areas are shown as more erratic due to the difficulty of pedestrian traverse. Typically in these areas the grass was so thick it impeded forward progress with the resulting methodology employed of either walking backward or effectively falling into the thick grass wall knee first so as to smash down the grass with short steps. In portions of these areas the grass was sufficiently thick to support the weight of the archaeologist 20 cm above the ground surface. In these areas there were places where the ground surface was visible but for the most part the ground surface was not visible in this tall grass.

The main observation was that all portions of the project area appeared to have been previously graded; this is consistent with a century of commercial sugarcane cultivation. In the case of a remnant ditch feature in an area of tall grass in the southwest corner of the larger southwestern parcel, the ditch appeared to have been largely filled in by later grading activity.

Two features were observed during the fieldwork, an actively used former cane haul road running north/south through the east portion of the smaller northeastern project area and an earthen ditch remnant in the southwest corner of the larger southwestern parcel. Both features are regarded as part of one historic property, Lihue Plantation infrastructure, and are described further below.

The field archaeologists were cognizant that a 1963 Lihue and Kapaa USGS topographic map (see Figure 14) and a 1978 aerial photograph (see Figure 15) show a Lihue Plantation cane haul road arcing through the central portion of the larger southeastern project area. This road is not shown on the 1950-1951 USGS aerial photograph (see Figure 13) and thus the road construction dates to the span of 1950 to 1963. This former road alignment is vaguely visible on contemporary aerial photographs (see Figure 3). This was actively sought on the ground but was not identified in the course of the pedestrian inspection (see Figure 24). Because it was not discerned on the ground, no feature designation was given to this ephemeral 1950s access road.

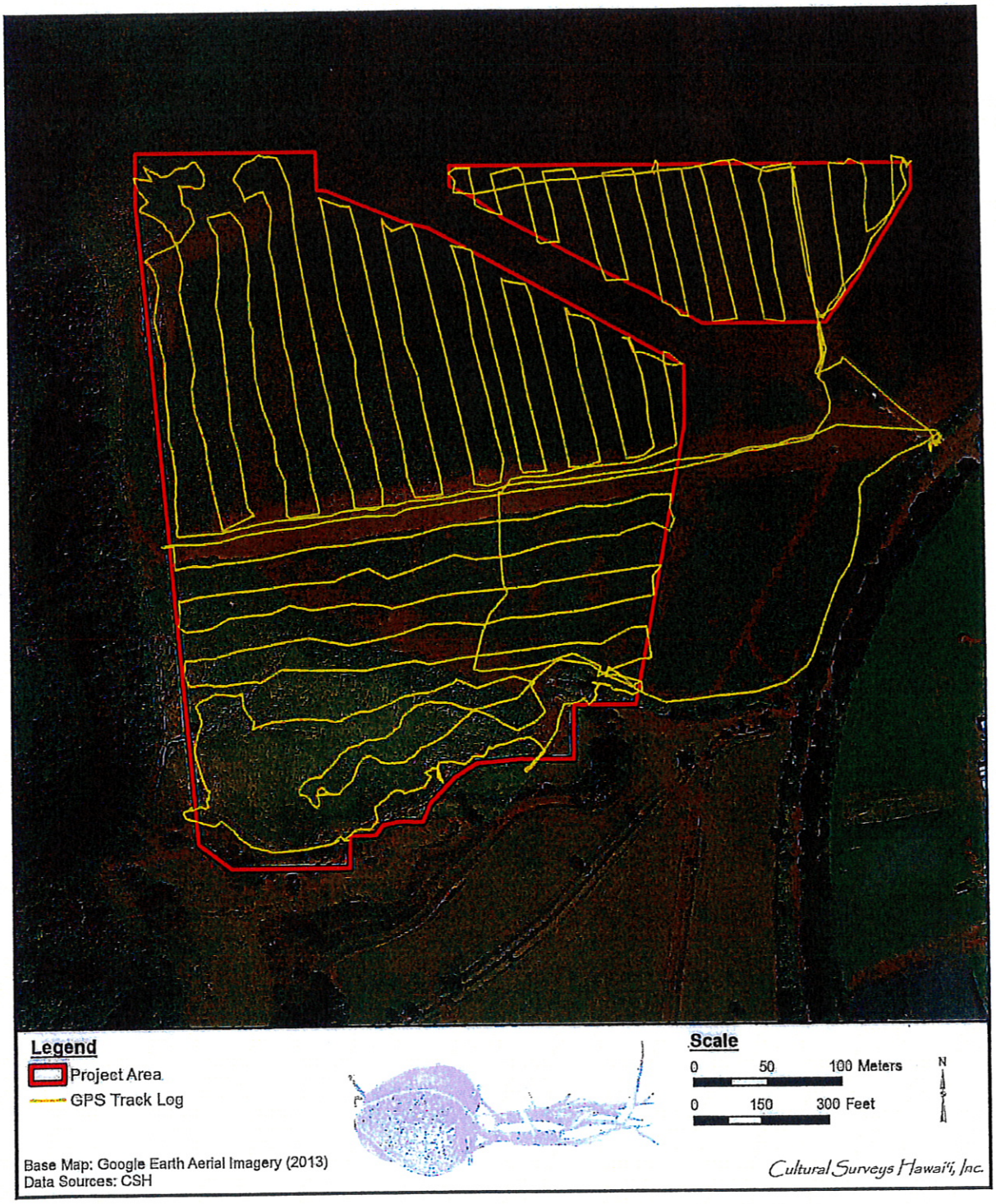

Figure 18. GPS track log of one of two archaeologists during the archaeological inventory surface survey

Figure 19. General view of northeast project area from northwestern corner, view to southwest

Figure 20. General view of northeast project area from northwestern corner, view to southeast

Figure 21. General view of central portion of large southwestern project area, view to north

Figure 22. General view of central portion of large southwestern project area, view to south

Figure 23. Dense area of tall grass in the south portion of the large project area, view to southwest

Figure 24. View of the approximate location of an old cane road (as indicated on a 1963 map and 1978 aerial photograph), view to southeast

4.1 Historic Property Description

4.1.1 SIHP # 50-30-08-XXXX (SIHP # to be assigned)

FORMAL TYPE:	Lihue Plantation infrastructure including a cane haul road and remnant ditch
FUNCTION:	Truck cccess and water control
# OF FEATURES:	Two, one actively used unimproved dirt road and one linear remnant of a ditch
AGE:	Historic ca. 1940s
DIMENSIONS:	The road is approximately 100 m long. The ditch remnant is approximately 40 m long.
LOCATION:	The road runs north/south through the east portion of the smaller northeastern project area. The remnant ditch is located in the southwest portion of the larger southwestern project area.
TAX MAP KEY:	TMK: [4] 3-8-002:002 por.
LAND JURISDICTION:	Grove Farm

SIHP # 50-30-08-XXXX, mid-twentieth century field infrastructure of the Lihue Plantation Company, includes two designated features within the project area, an actively used unimproved dirt road and one linear remnant of a ditch. The locations of these two features are depicted on a 1996 Lihue and Kapaa USGS topographic quadrangles (Figure 25), a contemporary aerial photograph (Figure 26) and a 1978 USGS Orthophotoquad aerial photograph (Figure 27).

The road (presently designated CSH 1) is clearly visible on a 1950-1951 USGS aerial photograph (see Figure 13) but does not appear on a map of Lihue Plantation from 1941 (see Figure 12). This road is actively used today and extends significantly beyond the project area to the north and south. The road is constructed of compacted clay loam with approximately 15% # 3 (3/4-inch sized) gravel, which is primarily basalt aggregate but includes some small coral pebbles. The north end of the road measures 5.3 m wide and the south end measures 4.7 m wide and is generally about 5 m wide. The road has no curbing and no constructed drainage (Figure 28 and Figure 29).

The ditch remnant (presently designated CSH 2) is a linear earthen depression extending roughly east-west identified in the southwest corner of the larger southwestern project area in an area of exceedingly thick, tall grass. The ditch is approximately 1 m deep, 1 m wide at the bottom, and 2 m wide at the top. While it is possible this ditch formerly was used for irrigation, it seems most likely it served to provide drainage. It appears this is a remnant that has been largely destroyed by grading activity. A contemporary aerial photograph (Figure 26) indicates the ditch

The ditch continues for at least 100 m arcing slightly to the south. This eastern portion of the ditch could not be discerned on the ground in the very dense grass. The 1978 USGS orthophotoquad aerial photograph appears to show a ditch in this location running on the south side of a minor access road. This 1978 aerial photograph appears to show the ditch ending in the south central portion of the project area supporting that it was just a minor drainage feature.

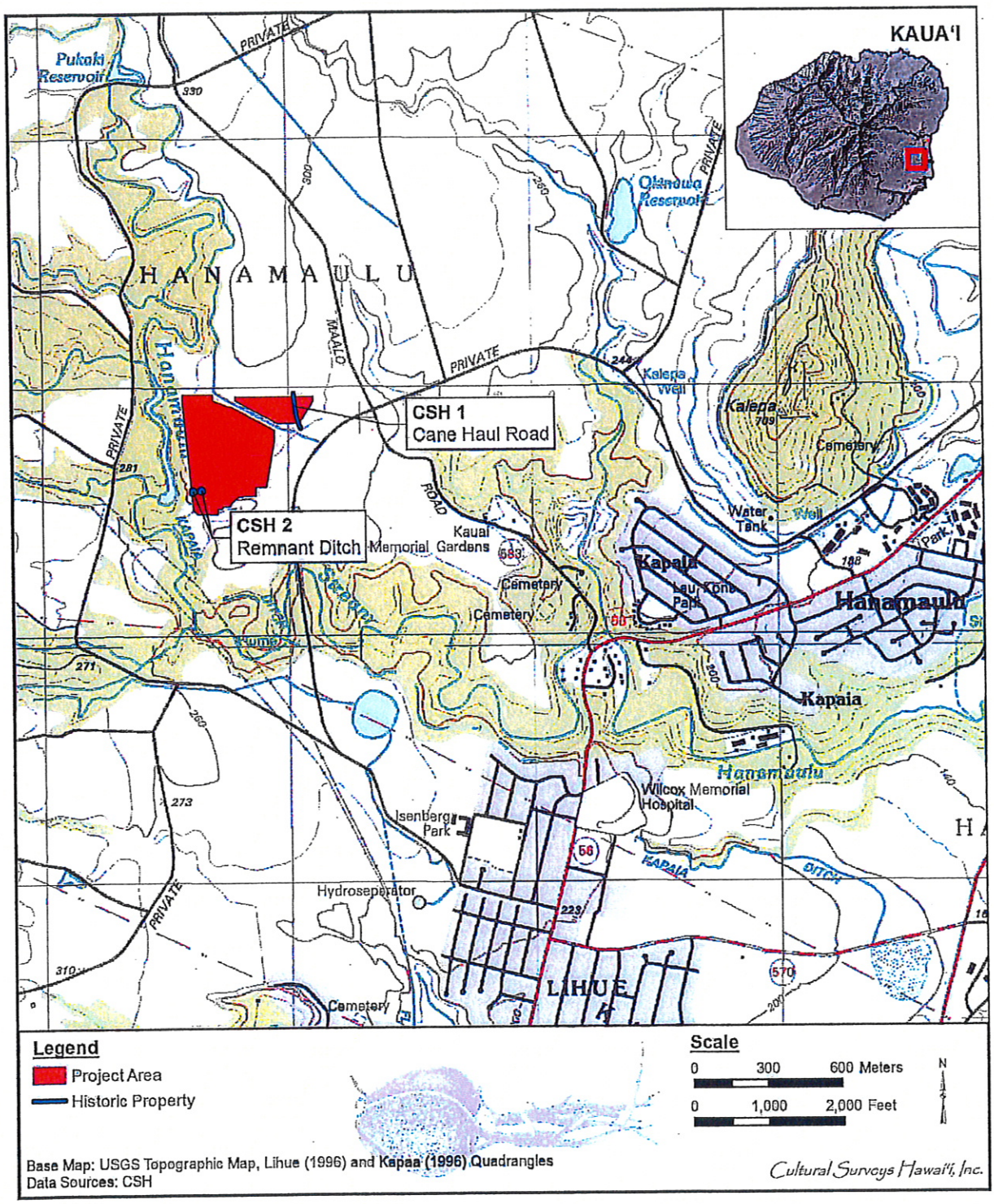

Figure 25. Locations of observed Lihue Plantation infrastructure (1996 Lihue and Kapaa USGS topographic quadrangles)

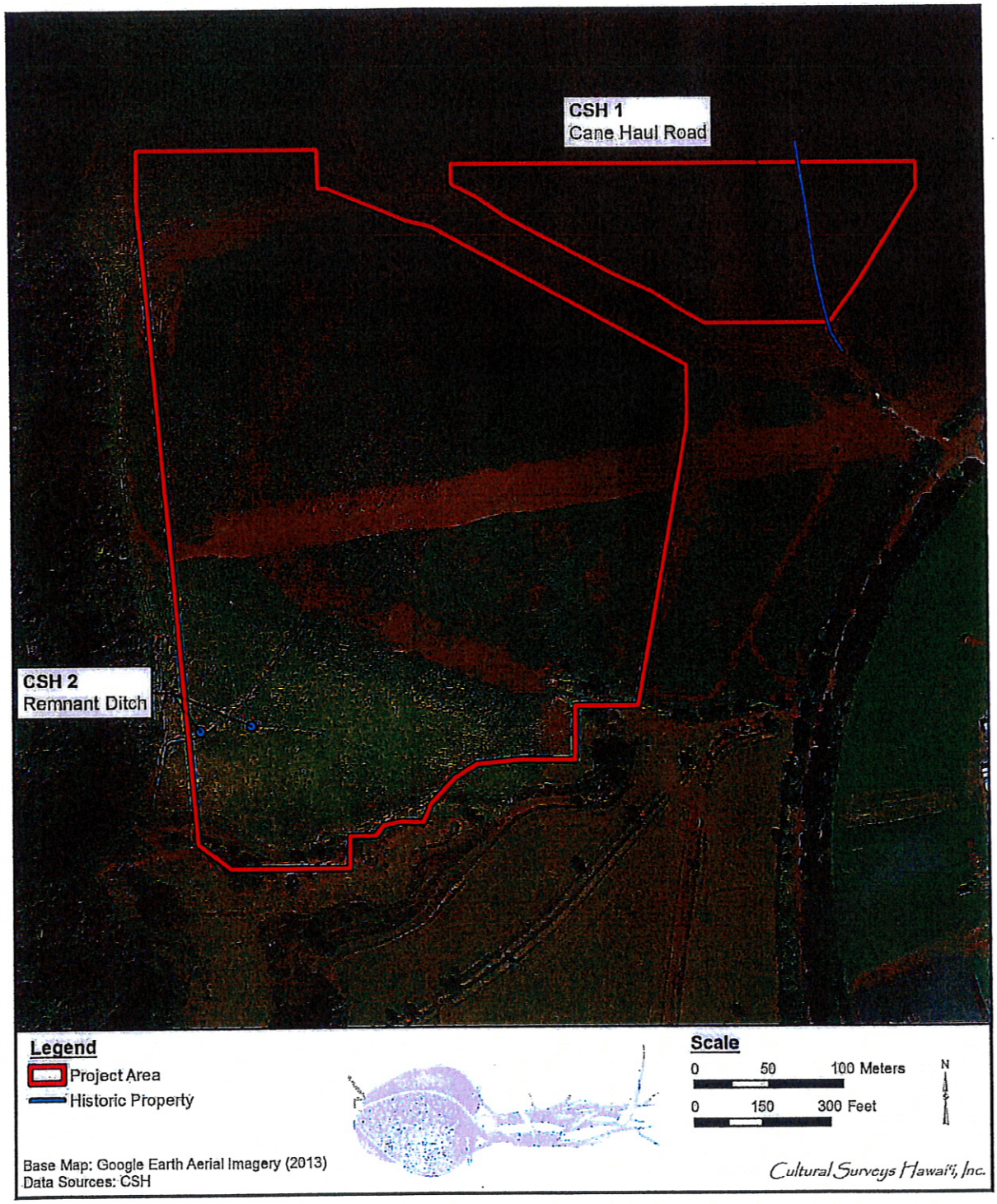

Figure 26. Locations of observed Lihue Plantation infrastructure (Google Earth 2013)

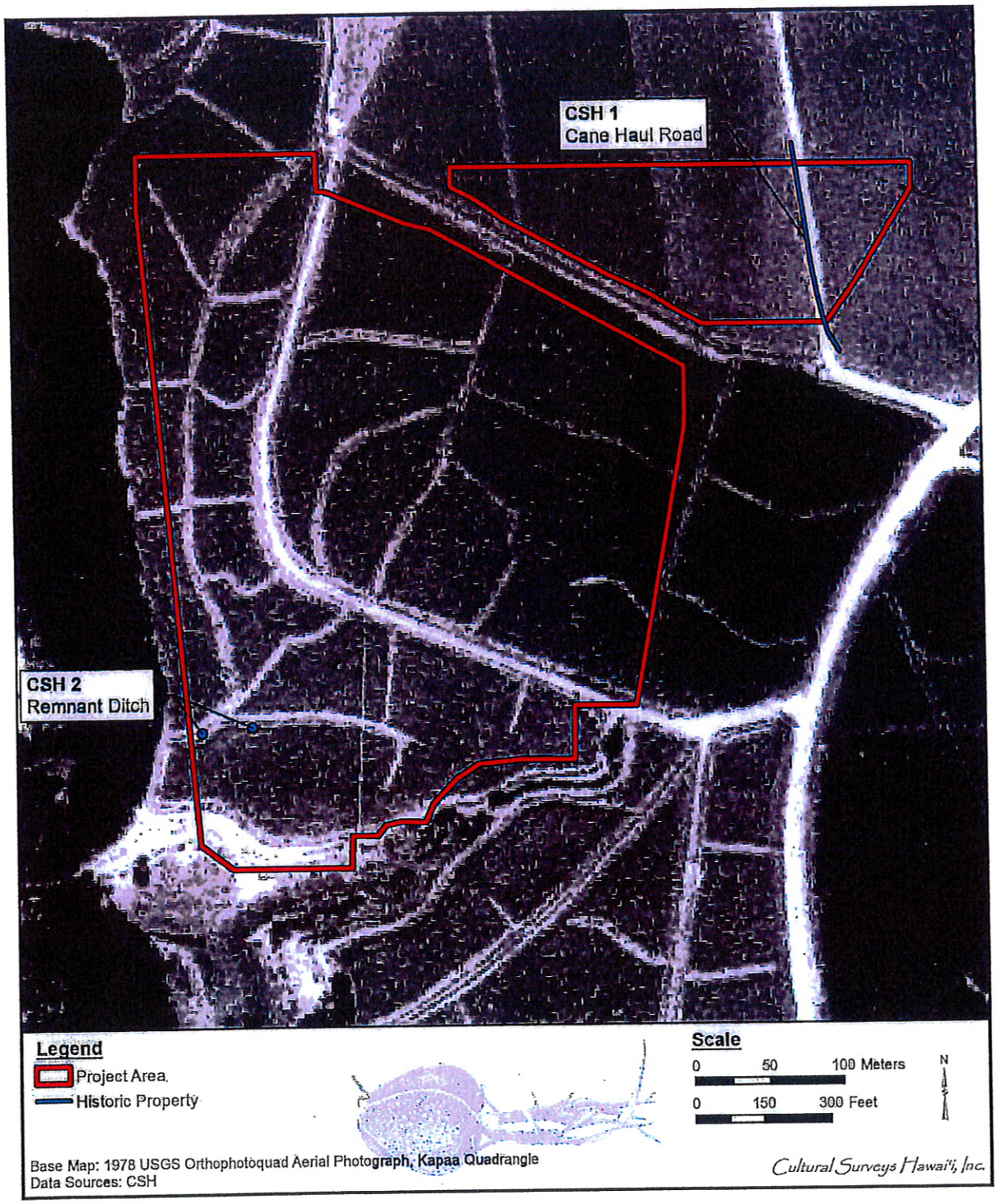

Figure 27. Locations of observed Lihue Plantation infrastructure (1978 USGS Orthophotoquad aerial photograph, Kapaa Quadrangle)

Figure 28. General view of cane haul road in east portion of the northeastern project area, view to south

Figure 29. General view of cane haul road in east portion of the northeastern project area, view to north

Section 5 Summary and Recommendations

Fieldwork for the archaeological inventory survey was accomplished on 27 September 2015 and included a good faith effort at a 100% pedestrian survey of the project area. The thickness of the 2-m-high grass in the north and southwest corners of the larger southwestern parcel significantly inhibited ground visibility but it is believed nothing of significance was missed. Only two minor remnants of Lihue Plantation field infrastructure were observed, an actively used former cane haul road and a remnant drainage ditch.

CSH's project specific effect recommendation is "no historic properties affected." The proposed development will not adversely affect any significant historic properties located within the project's APE, based on the lack of cultural subsurface deposits observed in the field. Accordingly, no further archaeological work is recommended within the project area.

It is recommended that should this project be under SHPD purview, early consultation with the SHPD take place regarding the possible need for subsurface testing. A rationale against the need for subsurface testing is presented in Section 2.1.2 above.

Section 6 Significance Assessments

Historic property significance is evaluated and assessed based on the five State of Hawai'i historic property significance criteria. To be considered significant, a historic property must possess integrity of location, design, setting, materials, workmanship, feeling, and/or association and meet one or more of the following broad cultural/historic significance criteria (in accordance with HAR §13-13-284-6):

a. Be associated with events that have made an important contribution to the broad patterns of our history;

b. Be associated with the lives of persons important in our past;

c. Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value;

d. Have yielded, or is likely to yield, information important for research on prehistory or history; or

e. Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity.

SIHP # 50-30-08-XXXX, mid-twentieth century field infrastructure of the Lihue Plantation Company, includes two designated features within the project area, an actively used unimproved dirt road and one linear remnant of a ditch. These are evaluated per HAR §13-284-6 as significant under Criterion "d" for the information they have yielded as documented in the present study. No mitigation for these features and no further archaeological work is recommended.

Section 7 Project Effect and Mitigation Recommendations

CSH's project-specific effect recommendation is "no historic properties affected." No further archaeological work is recommended.

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