DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR

GEORGE I. ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2012/ED-9(JL)

May 10, 2013

Mr. Gary Gill, Acting Director
Office of Environmental Quality Control
State of Hawaii
State Office Tower, Room 702
235 South Beretania Street
Honolulu, Hawaii 96813-2437

Dear Mr. Gill:

Subject: Chapter 343, Hawaii Revised Statutes
Revised Final Environmental Assessment (FEA) Determination
Finding of No Significant Impact

Applicant:	Philippe and Sonia Kahn
Landowner:	Kahn Family Trust
Agent:	Analytical Planning Consultants, Inc.
Location:	146 Wailupe Circle - Wailupe
Tax Map Key:	3-6-1: 38
Requests:	Shoreline Setback Variance
Proposal:	The revised proposal includes the construction of a new, two-foot high concrete rubble masonry (CRM) retaining wall mauka (landward) of the seawall, with an approximately three-foot wide planting and/or terraced area between the two walls, including excavation and backfilling to the top of the two-foot high CRM wall (landward) to match the existing grade of the yard.
Determination:	Issued: A Finding of No Significant Impact

Attached and incorporated by reference is the revised FEA prepared by the Applicant for the proposal to satisfy the requirements of Chapter 343, Hawaii Revised Statutes. We have determined that an Environmental Impact Statement is not required and have issued a Finding of No Significant Impact for the project. We request publication of our determination in The Environment Notice.

Enclosed are a completed OEQC Publication Form, one copy of the document in pdf format on a CD, and one hard copy of the revised FEA.

APPLICANT ACTIONS
SECTION 343-5(C), HRS
PUBLICATION FORM (JANURARY 2013 REVISION)

Project Name: Wailupe Circle Residential Project
Island: Oahu
District: Honolulu
TMK: 3-6-1: 38
Permits: Shoreline Setback Variance (SSV)
Approving Agency:
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813
Contact: Jenny Lee Tel. 768-8027
Applicant: Philippe and Sonia Kahn (Property Owner)
c/o Darcey Builders, Inc.
501 Sumner Street, #605
Honolulu, HI 96817
Consultant: Analytical Planning Consultants, Inc.
928 Nuuanu Avenue, Suite 502
Honolulu, HI 96817
Contact: Lauri Clegg, Tel. 536-5695
Status (check one only):

__DEA-AFNSI	Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day comment period ensues upon publication in the periodic bulletin.
X FEA-FONSI	Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov; no comment period ensues upon publication in the periodic bulletin.
__FEA-EISPN	Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day consultation period ensues upon publication in the periodic bulletin.
__Act 172-12 EISPN	Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov. NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
__DEIS	The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the

	summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
__FEIS	The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
__ Section 11-200-23 Determination	The approving agency simultaneous transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.
__Statutory hammer Acceptance	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.
__Section 11-200-27 Determination	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.
__Withdrawal (explain)	

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page)**:**

Project Summary: The Applicant is seeking a Shoreline Setback Variance (SSV) for the following work within the shoreline setback area: Repairs and reinforcement of an existing seawall, including an increase in the width of the base of the six-foot high concrete rubble masonry (CRM) seawall and/or retaining wall and construction of a new, two-foot high terraced CRM retaining wall mauka (landward) of the seawall, with an approximately three-foot wide planting area between the two walls. The proposed work will also include excavation and backfilling to the top of the existing seawall as well as excavation for construction of the two-foot high terraced retaining wall.

On April 28, 2011, the Department of Planning and Permitting (DPP) granted an SSV for partial approval of the Applicants request, to allow repair and reinforcement of the nonconforming seawall. The DPP has determined that the revised proposal to further increase the width of the seawall base and construct a new two-foot high terraced retaining wall exceeds the scope of the previous project and environmental analysis and requires a new SSV application and additional environmental review.

ADDENDUM TO FINAL ENVIRONMENTAL ASSESSMENT
SHORELINE SETBACK VARIANCE
APPLICATION FOR A SEAWALL

Kahn Residence
146 Wailupe Circle
Honolulu, East Oahu, Hawaii

TMK: 3-6-001: 038

Submitted to:
The Department of Planning & Permitting
650 S. King Street, 7th Floor
Honolulu, Hawaii 96813

Prepared by:
Analytical Planning Consultants, Inc.
928 Nuuanu Avenue, Suite 502
Honolulu, Hawaii 96817
(808) 536-5695

April, 2013

PHONE (BUS): (808) 536-5695
FAX: (808) 599-1553

ANALYTICAL PLANNING CONSULTANTS, INC.
928 NUUANU AVENUE, SUITE 502 • HONOLULU, HI 96817

MEMORANDUM

DATE: April 17, 2013

TO: Mr. George I. Atta, Director Designate
City & County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

FROM: Lauri Clegg, Analytical Planning Consultants

SUBJECT: 146 WAILUPE CIRCLE SEAWALL - ADDENDUM TO FINAL ENVIRIONMENTAL ASESSMENT SHORELINE SETBACK VARIANCE APPLICATION FOR A SEAWALL TMK: (1) 3-6-001:038.

This memo addresses the Addendum to the Final Environmental Assessment for the Shoreline Setback Variance to repair portions of the historic seawall along the makai boundary of the property located at 146 Wailupe Circle, Honolulu, Hawaii (TMK: 3-6-001: 038). On November 19, 2012 notice was mailed to pertinent government agencies to make them aware of a draft Addendum to the previously accepted Final Environmental Assessment for the project.

The Final Environmental Assessment investigated the environmental impacts to repair the existing seawall along the makai property line, replacing missing rocks and extending the height of the seawall to match the height of the existing grade of the rear yard and the walls of the adjoining properties. Pictures were included showing the deteriorating condition of the existing seawall with the top of the seawall below the grade of the Kahn property by as much as 5-feet in places. The plans showed the repaired wall to be 8-feet high and 5.5-feet in width at the base.

A Finding of No Significant Impact (FONSI) was issued for the project on June 25, 2010 and a Shoreline Setback Variance (SSV) submitted to the Department of Planning and Permitting DPP). On April 28, 2011 the DPP granted partial approval of the Variance request to repair and restore the seawall along the seaward boundary of the property to a height of 8-feet (2010/SV-10). In his review of the 2010 SSV application, the Director concluded that the proposed 8-foot height of the seawall was not essential to shoreline protection and thus approved a height of 6-feet for the seawall.

This plan would leave 2-feet of the rear yard existing grade exposed to erosion. To address this issue, a new proposal will be submitted to construct a 2-foot high retaining wall mauka of the 6-foot seawall with landscaping in between to protect the existing grade and provide visual relief. Since the Wailupe Fishpond is of historic and cultural importance and the new design is different from what was reviewed during the processing of the Environmental Assessment, this addendum contains additional information that wasn't available at the time the FEA was reviewed. The intent of this addendum is to ensure that consideration is given to the potential impacts of the proposed action upon the natural and man-made environment. It is anticipated that a FONSI

will be issued and a new Shoreline Setback Variance can be submitted so that the property can be protected from erosion.

To ensure that adequate public outreach accompanied the draft addendum the following agencies received copies and were invited to comment. As a result, additional information is contained in this Addendum to the Final Environmental Assessment.

AGENCY	Comment Dated
County	
Department of Planning and Permitting	January 7, 2012
State	
Department of Land and Natural Resources (DLNR) Land Division	December 13, 2012
DLNR Division of Aquatic Resources	December 21, 2012
DLNR Engineering Division	December 19, 2012
DLNR Office of Conservation and Coastal Lands	
DLNR State Historic Preservation Division	January 3, 2013
Department of Business and Economic Development and Tourism	December 18, 2012
Land Use Commission	
Department of Health (Environmental Health Administrator)	
Federal	
United States Army Corp of Engineers	
U.S. Fish and Wildlife Services	
Community	
Kuliouou/Kalani Iki Neighborhood Board No. 2	
Ala Moana Satellite City Hall	
Aina Haina Public Library	
Aina Haina Community Association	

The addendum to the FEA includes extended information on the following areas as well as additional Appendices. New information that was not included in the draft Addendum is shaded.

- Revised Plans
- Alternative Designs
- Archeological Inventory Study
- Impacts and Mitigation
- Best Management Practices
- Significant Criteria
- Permits Required

Appendices:

Appendix 1	Revised Engineering and Architectural Plans /Site Elevations/Certified Shoreline
Appendix 2	Evaluation of the Archeological Inventory Study by SHPD and Proposed Mitigation
Appendix 3	Alternative Designs
Appendix 4	Best Management Practices
Appendix 5	Updated photographs
Appendix 6	Erosion Report
Appendix 7	2010 FONSI and Draft Addendum EA Comments & Response Letters

An electronic copy of the Final Archeological Inventory Study and the Monitoring Plan accepted by the State Historic Preservation Division (SHPD) on April 12 are included on the enclosed CD.

If you have any questions or require additional information, please contact me at 536-5695.

Sincerely,

Lauri Clegg

Lauri Clegg, President
Agent for the Applicant

ADDENDUM TO FINAL ENVIRIONMENTAL ASESSMENT
SHORELINE SETBACK VARIANCE APPLICATION FOR A SEAWALL
146 WAILUPE CIRCLE - TMK: (1) 3-6-001:038

REVISED PLANS

Appendix 1 contains the plans to construct a 6-foot high CRM lava rock seawall and a proposed additional 2-foot high 8-inch wide CMU retaining wall set back 1.5-feet behind the seawall. The purpose of the terraced design will be twofold – first to protect the grade and control the erosion and second to provide a landscape area in between the two walls that will both help retain the soil and provide visual relief along the walled shoreline. The base width of the seawall is 5'8" which is the same width approved by the DPP in the 2011 SSV. As shown on plan S-1 prepared by Randal S. Furumoto Structural Engineer, the mauka portion of the wall will include an additional ledge to support the 2-foot high retaining wall and landscaping area. The 3-foot high cable railing will be placed upon the 2-foot high retaining wall instead of the seawall as shown on the FEA plans. Weep holes will be placed 6-feet on center to equalize the water level and prevent a buildup of pressure behind the wall. Drainage pipes, 6-feet on center, will provide drainage for the proposed landscape area (see plans S-1 and S-2 Appendix 1). As per SHPD conditions these pipes will not extend into either the existing seawall addition or the underlying fishpond wall.

The length of the property and the existing wall along the shoreline property is 75-feet as shown on the survey of the property included in the FEA. The 2-tiered wall and fence will be approximately the same length and placed 1.5 feet mauka.

Land Use Ordinance (LUO) Section 21-4.40 requires that heights of terraced walls or combinations of retaining walls shall be measured combining all walls located in the required yard. As such, an application for a Zoning Adjustment to permit the combined total height of the two retaining walls to exceed 6-feet will be also submitted.

Engineer's Design Justification

The proposed seawall design has been revised to limit the height of the seawall to 6 feet per DPP. Since the existing lot grade is approximately 8 feet above the ocean bottom, a 2 feet tall CMU retaining wall has been added landside of the seawall to retain the balance of the lot. The proximity of the added CMU wall causes an increase in active earth pressure imposed upon the seawall (surcharge) and therefore, the CRM wall section required widening to maintain lateral stability (the ledge) The contribution of weight of the CMU wall, which bears on the widened CRM wall, was considered in the seawall structural design in order to minimize the increase in wall cross section. Increasing the wall thickness was the only possible option available as removing any portion of the underlying historic fishpond wall to provide embedment below the ocean bottom was prohibited. The approximate increase in CRM volume is 7.6% with an increase in weight on the foundation of 50 lbs/ft of wall or 1.7%.

The adjacent lots at the north and south property lines are at approximately the same elevation as this lot. Since the CRM seawall was limited to 6 feet tall, right angle returns

were provided at each end of the CMU wall. The return at the north end is required to prevent undermining of the neighboring CMU fence wall, and the return at the south end is required to retain the neighboring lot and prevent erosion at that corner. The length of the returns will not project beyond the top of the CRM seawall below.

Summary of New Information Regarding the Project Plans

- A 2-foot high retaining wall will be placed behind the 6-foot high seawall to protect the rear yard from additional erosion.
- New engineering plans S-1 & S-2.
- Revised architectural plans showing the 2-foot wall and return walls (A-1.1-2, A-2.1-2)
- The plans included in the FEA showed the repaired wall to be 8-feet high and 5.5-feet in width at the base. The new plans show the wall to be 6-feet high and 5'8" in width (as approved by the DPP).
- The mauka portion of the 6-foot high seawall will be increased slightly to accommodate a ledge to support the 2-foot high retaining wall and landscape area.
- The top of the 6-foot seawall will be reduced in width from 1'8" to 1"6".
- The 3-foot high cable railing will be placed upon the 2-foot high retaining wall instead of the seawall.

ALTERNATIVE DESIGNS

The original FEA considered 3 alternatives; (1) no action, (2) repair and replacement of fallen rocks with no raising of the seawall to the existing grade and (3) the preferred alternative of replacing the lava rocks that have fallen onto the shore and construction of the height of the wall to 8-feet to match the existing grade and the height of the walls on both sides of the property. Alternative (2) approved by the Department of Planning and Permitting (DPP), was not acceptable to the applicant so the proposed 2-tier design has been suggested as a compromise. The design allows for the seawall to remain at 6-feet in height but for the 2-feet of additional grade of the rear yard to be retained by a two-foot high retaining wall with landscaping. If the original preferred alternative of an 8-foot wall is not to be permitted then the currently proposed 2-tier wall is the alternative favored by the engineer and the applicant because it will provide protection for the existing grade of the rear yard.

The engineer in his review of alternatives (Appendix 3) also considered reconstruction of the wall to 8-feet. This would not be acceptable because it would destroy the remnants of the historical wall and could potentially cause runoff into the bay during construction.

A landscaping alternative would attempt to retain the exposed soil of the rear yard by planting grass or naupaka instead of the 2-foot high retaining wall. In this situation, where erosion has already begun, landscaping is best utilized for visual and aesthetic reasons but not as a way to retain the soil from drifting into the shoreline waters of the Bay. The existing naupauka has already eroded the fill area behind the seawall causing

the grade to begin gradually sloping towards the shoreline. This movement is threatening the patio pool area and other hardscape features and could eventually affect the foundation of the house and the stability of the seawall.

ARCHEOLOGICAL INVENTORY SURVEY

In the letter dated August 15, 2011, the DPP added Condition M to the approval of Shoreline Setback Variance No. 2010/SV-10 in response to new concerns of the State Historic Preservation Division (SHPD) regarding the project's potential to adversely affect the fishpond as a historical resource (letter dated 4/28/11).

> Condition M
> "Prior to the start of any wall-altering activities, the Applicant shall provide the DPP with written documentation from the State Department of Land and Natural Resources, Historic Preservation division confirming its receipt of an acceptable Archeological Inventory Survey (AIS) and mitigation course. The Applicant shall consult with SHPD regarding the AIS and acceptable mitigation measures, including confirmation that the AIS and mitigation measures are the only means to address the concerns of SHPD, or if there are any other alternatives.

Appendix 2 contains the evaluations from SHPD for the AIS undertaken by Archeological Consultants of the Pacific and required mitigation measures. The AIS reviewed impacts to archeological resources based on the revised plan S-1 showing construction of the 2-foot high retaining wall (Appendix 1). The AIS included excavation of 3 trenches perpendicular to the existing seawall measuring 3m long by 1m wide and 2m deep. The following is taken from the evaluation letter from SHPD:

> "Based on the AIS field work and the SHPD visit, only a single wall has been identified within the project area. The existing seawall was constructed atop the earlier Wailupe Fishpond wall or wall remnant (suggested by minimal extant height). Historical data suggests the existing seawall likely correlates in location with the earlier Wailupe Fishpond wall and the initial modification of the wall dates from the 1940's. Historical descriptions and photos indicate variation in wall thickness and overall morphology of the Wailupe Fishpond wall. In addition, they indicate that Wailupe Peninsula was created in the 1940's by dredging a channel and filling in the fishpond. The draft AIS report states that the walls of Wailupe Fishpond were damaged in the 1946 tsunami and some of the existing seawall is described as being remnants of the original Hawaiian walls.
>
> Based on the archeological data, the proposed construction plans will have an 'effect, with agreed upon mitigation commitments' on the existing post 1940 seawall and the underlying Wailupe Fishpond wall. Both walls are assessed as being significant under Hawaii Register Criterion 'd' (has yielded or is likely to yield information important in prehistory or history). In addition, both walls are assessed as being significant under Criterion 'c' (embodies the distinctive characteristics of a type, period or method of construction; or is the work of a

master; or possesses high artistic values; or represents a significant and distinguishable entity).

Based on the AIS data and the proposed construction plans, SHPD concurs with the applicant's proposal to repair the seawall at 146 Wailupe Circle with the following agreed to stipulations.

(1) Repair using matching stone material the damaged sections of the existing seawall post-1940 addition, to the height and original width of the existing intact sections (~6-6.5' above coral reef). Repaired sections may be mortared on *Mauka* (inland) side only above both the Wailupe Fishpond wall and the water line with the mortar extending no closer than 6-inches to the *makai* face (seaward side) of the wall, as necessary to preserve structural integrity;
(2) Construct a 2-foot high and 8-inch wide CMU retaining wall 1.5-feet behind the seawall to correlate with the existing grade of the rear yard. The landscape area between the seawall and the CMU wall to be planted to lessen the visual impact;
(3) Remove using hand tools, the *naupaka* hedge present between the *mauka* face of the existing sea wall addition and the *makai* edge of the existing rear yard (lawn);
(4) Remove using hand tools, the sediments below the hedge, approximately -8'±, between the *mauka* face of the existing sea/Fishpond wall and the *makai* edge of the existing rear yard (lawn and pier stairs) to the water line;
(5) No repairs or modification will be made to the Wailupe Fishpond wall section without prior consultation and written approval by SHPD;
(6) Install structural materials/rubble fill within the hand-excavated space between the sea/Fishpond wall and the rear yard (as shown on the plans) to allow the surf to flow in and out of this space and to reduce soil erosion into the bay. The new structural materials/rubble fill encased in concrete/mortar will provide the structural integrity of the repaired wall;
(7) Install drain leaders (pipes) extending from the *mauka* face of the existing sea/Fishpond wall through the new structural materials. These pipes will not extend into either the existing seawall addition or the underlying Fishpond wall;
(8) Plant a new *naupaka* hedge in the same location as the removed hedge after the repair work is completed;
(9) Install the metal safety rail on, along, or adjacent to the concrete edging demarking the *makai* extent of the rear yard (lawn) rather than atop the sea wall; and
(10) Facilitate scheduling SHPD site visits during the hand excavation of the sediments *mauka* (behind) the sea/Fishpond wall and installation of the rubble fill, thereby allowing SHPD staff to document the wall repair work and the Wailupe Fishpond section of the wall."

In their review of the draft Addendum to the FEA (letter dated January 3, 2013), SHPD concurs with the design of the terraced retaining wall and the agreed upon mitigation measures and with Condition M that written confirmation of an acceptable AIS and mitigation measures be reviewed prior to the start of any wall-altering activities. The SHPD staff met on-site January 22, 2013 with SCS Archeology (Scientific Consultant Services, Inc.) who is preparing the Final AIS and Archeological Monitoring Plan as required by SHPD.

Summary of New Information Regarding Archeological Concerns

- The AIS and the evaluation by SHPD had not been done at the time that the previous EA was granted a FONSI determination.

- There is a single wall along the seaward property boundary. The wall constructed in the 1940's was built on top of remnants of the original Fishpond wall.
- Both the Wailupe Fishpond (remnant) and the seawall constructed on top in the 1940's are assessed as being significant under Hawaii Register Criterion 'd' and 'c'.
- SHPD has detailed specific agreed upon conditions to be followed during repair of the seawall and construction of the 2-foot high retaining wall.
- SHPD staff will monitor excavation mauka of the Wailupe sea/Fishpond wall and installation of the rubble fill so that documentation of the wall can be made.
- SHPD concurs with the design of the terraced retaining wall and the agreed upon mitigation measures in their letter dated January 3, 2013
- The final AIS was approved by SHPD in their letter dated April 12, 2013 and the Monitoring Plan on April 17, 2013 (Appendix 2).

IMPACTS AND MITIGATION

Shoreline Impacts

The previous environmental review determined that there would be no significant environmental impact on the shoreline area as a result of repair and construction of an 8-foot high seawall/retaining wall within the 40-foot shoreline setback area. In his review of the 2010 SSV application, the Director concluded that the proposed 8-foot height of the seawall was not essential to shoreline protection and thus approved a height of 6-feet and a base of 5'8" for the seawall; however, leaving 2-feet of the existing rear yard exposed. While shoreline conditions along the Bay may not require an 8-foot seawall, the elevation of the rear yard requires a retaining wall to mitigate any erosion and runoff into the Bay. Construction of the 2-foot retaining wall behind the seawall is a good compromise as it will protect the rear grade thus protecting the shoreline from impacts from erosion. The landscaping that will be planted in between the two walls will cover the retaining wall and lesson visual impacts along the walled shoreline.

At the time that the original Environmental Assessment was reviewed in 2010, the project site was designated as Flood Zone A with No Base Flood Elevation determined. The current FIRM map shows the project site to be in the Coastal High Hazard VE District with a flood elevation of 12-feet and subject to the City and County of Honolulu Land Use Ordinance Section 21-9.10-7. The proposed action is intended to protect the property from ocean generated water hazards in conditions that vary from typical to moderate wave action and storm surges that could cause flooding. The purpose of the revised proposal to construct a two-foot retaining wall behind the six-foot high seawall is to protect the property from erosion that could endanger the existing dwelling and pollute the shoreline waters.

Historical Impacts

The SHPD has determined that the repair of the 6-foot high seawall and construction of the 2-foot retaining wall can be safely monitored to insure protection of the remnants of the Wailupe Fishpond. The agreed upon mitigative measures include monitoring by SHPD staff (see Appendix 2).

Visual Impacts

The original proposal for repair of the seawall that was discussed in the 2010 Final Environmental Assessment, would have allowed for repair of the seawall up to the top of the rear grade for the property (for a total height of 8-feet). The existing naupaka would have been removed and a 3-foot cable rail fence installed on top of the seawall. Both of the adjoining properties have Naupaka that extends over the walls which provides visual relief along the shoreline.

The purpose of the proposed 2-tiered terraced design will be twofold – first to protect the grade and control the erosion and second to provide a landscape area in between the two walls that will both help retain the soil and provide visual relief along the walled shoreline. The proposed 2-foot high 8-inch wide CMU retaining wall will be set back 1.5-feet behind the seawall creating a landscape area between the seawall and the retaining wall. The plants will grow against the 2-foot wall hiding it from view. The main view of this portion of the Wailupe development along the Maunalua Bay is from the Wailupe Beach Park on Kalanianeole Highway. Pictures show that all the properties along this portion of the Wailupe Circle have both rock seawalls (ranging in height from 6-8 feet) with greenery above (Appendix 5). The proposed design will harmonize visually with the existing environment.

The purpose of the proposed 3-foot high stainless steel cable-rail fence that will be placed on or slightly landward of the 2-foot high retaining wall is to provide safety at the edge of the rear yard without restricting views to or from the property. These fences are made of strong thin cables placed 4-5-inches apart and can be seen through. The proposed placement of the cable fence should not affect views from or to the site.

Best Management Practices (Appendix 4)

To protect the shoreline and adjoining properties construction will be confined to the project site with Best Management Practices employed. The existing wall will remain in place during the reconstruction providing protection for the Class A near shore marine waters. In order to contain all materials onsite, the wall will be repaired from the mauka side in four segments with each segment monitored by an archeologist as necessary. Excavation will be by hand. All care will be taken not to disturb any aquatic resources.

SIGNIFICANT CRITERIA - HRS Chapter 343, HRS as amended, and Title 11, Chapter 200, HAR 1996.

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

The project would not change, alter, or destroy any natural or cultural resources. The project would restore an existing feature that is substantially the same as adjacent existing features and add a 2-foot high retaining wall to control future erosion of the property. The landscaping planted between the seawall and the retaining wall will preserve the visual harmony along the Wailupe development. The preliminary Archeological Inventory Survey reviewed by the State Historic Preservation Division (SHPD) has revealed and documented the condition of the historic Fishpond Wall enhancing the knowledge of this cultural resource. The SHPD will monitor any excavation performed near the seawall to document existing conditions.

(2) Curtail the range of beneficial uses of the environment.

No changes to beneficial uses of the environment would result from the proposed action. Public access to Maunalua Bay would not be affected; visual resources would not be impaired; and no changes in environmental processes would result from the proposed action.

(3) *Conflicts with the State's long term goals and guidelines as expressed in Chapter 343, HRS and any revisions thereof and amendments thereto, court decisions, or executive orders.*

As proposed, the project conforms with the state's long-term goals and guidelines as expressed in Chapter 343, HRS. The project is also in compliance with the East Honolulu Sustainable Communities Plan.

(4) *Substantially affects the economic or social welfare of the community or state.*

As proposed, the project does not significantly impact the economic or social welfare of the community or state. The proposed action will have a positive economic impact on the applicant as well as on the other residents of Wailupe Circle by preventing further erosion of property and maintaining safety measures that have a stabilizing effect on properties located on Wailupe Peninsula.

(5) *Substantially affects public health.*

As proposed, there would be no effect on public health from the proposed action. Use of Best management Practices will prevent and discharge into the Class A waters during repair of the seawall and construction of the retaining wall.

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

As proposed, the project would not have secondary effects, such as changes in demographics and infrastructure. No new infrastructure will be required and the demand on existing infrastructure will not change.

(7) Involves a substantial degradation of environmental quality.

The project as planned would not result in the significant degradation of environmental quality. Best management Practices will be used to protect the Bay from any runoff during construction and all excavation will be by hand. It will not degrade water quality or impact marine or terrestrial flora and fauna. The proposed repairs to the seawall will make it functionally consistent with the protective structures fronting all of the protected properties along that portion of the shoreline.

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

As proposed, there would be no cumulative adverse effects on the environment or a commitment for larger actions resulting from the proposed action. Some of the alternative actions have negative cumulative impacts, however. The no-action alternative would reduce property values and would possibly – if large scale wave action or storm surges damaged properties adjacent to the project site – diminish the ability of the area to be used for residential purposes. To repair and replace rocks only to a height of 6-feet would leave the rear yard exposed for future erosion. Total reconstruction of the wall to a height of 8-feet would destroy the historic portion of the wall and impact the visual environment. Landscaping of the rear yard without a 2-foot high retaining wall is basically what exists now and has not controlled the erosion.

(9) *Substantially affects a rare, threatened or endangered species or habitat*

As proposed, the project would not impact any rare, threatened, or endangered species. As suggested by the State of Hawaii Department of Land and Natural Resources Division of Aquatics Resources care will be taken not to disturb any aquatic resources.

(10) Detrimentally affects air or water quality or ambient noise levels.

As proposed, the project would not have any adverse impacts on air or water quality or on ambient noise levels. There may be a temporary increase in noise levels during the construction phase of the proposed project; therefore, construction activities will be restricted to the period of 7:30 a.m. to 6:00 p.m., Monday through Friday and Saturday 8:00 a.m. to 5:00 p.m. as needed. No material will be placed in the near shore water. All cautions will be taken to prevent construction debris from entering the coastal waters. Best Management Practices will be followed during construction to minimize environmental pollution and damage (Appendix 4).

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

The current FIRM map shows the project site to be in the Coastal High Hazard VE District with a flood elevation of 12-feet and subject to the City and County of Honolulu Land Use Ordinance Section 21-9.10-7. The proposed structure is below the existing grade of the property as shown on the survey map in Appendix 1 and has been certified by the engineer for the project that it will not result in an increase of the regulatory flood levels. All requirements of the Department of Planning and Permitting for projects in the VE Flood Zone will be met.

Fletcher et al. (2002), in the *Atlas of Natural Hazards in the Hawaiian Coastal Zone,* rank the flooding hazard and exposure to hazards from tsunami in this area high. If a tsunami or storm surge should approach Wailupe Peninsula, flooding should be anticipated. The proposed seawall and retaining wall would not protect against such natural hazards. The proposed improvements to the seawall are designed to provide erosion and wave protection for a single family residence. If a tsunami should approach from the south, flooding can be anticipated.

(12) *Substantially affects scenic vistas and view planes identified in county or state plans or studies.*

The East Honolulu Sustainable Communities Plan does not include the Wailupe peninsula in its significant viewplanes. The peninsula and Historic Fishpond Wall are mainly visible from the Wailupe Park on Kalanianaole Highway. The proposed action will ensure the integrity of the property boundary along the peninsula and would have no effect on scenic vistas or view planes.

(13) *Requires substantial energy consumption.*

The proposed action does not require long-term additional consumption of energy.

CONCLUSION

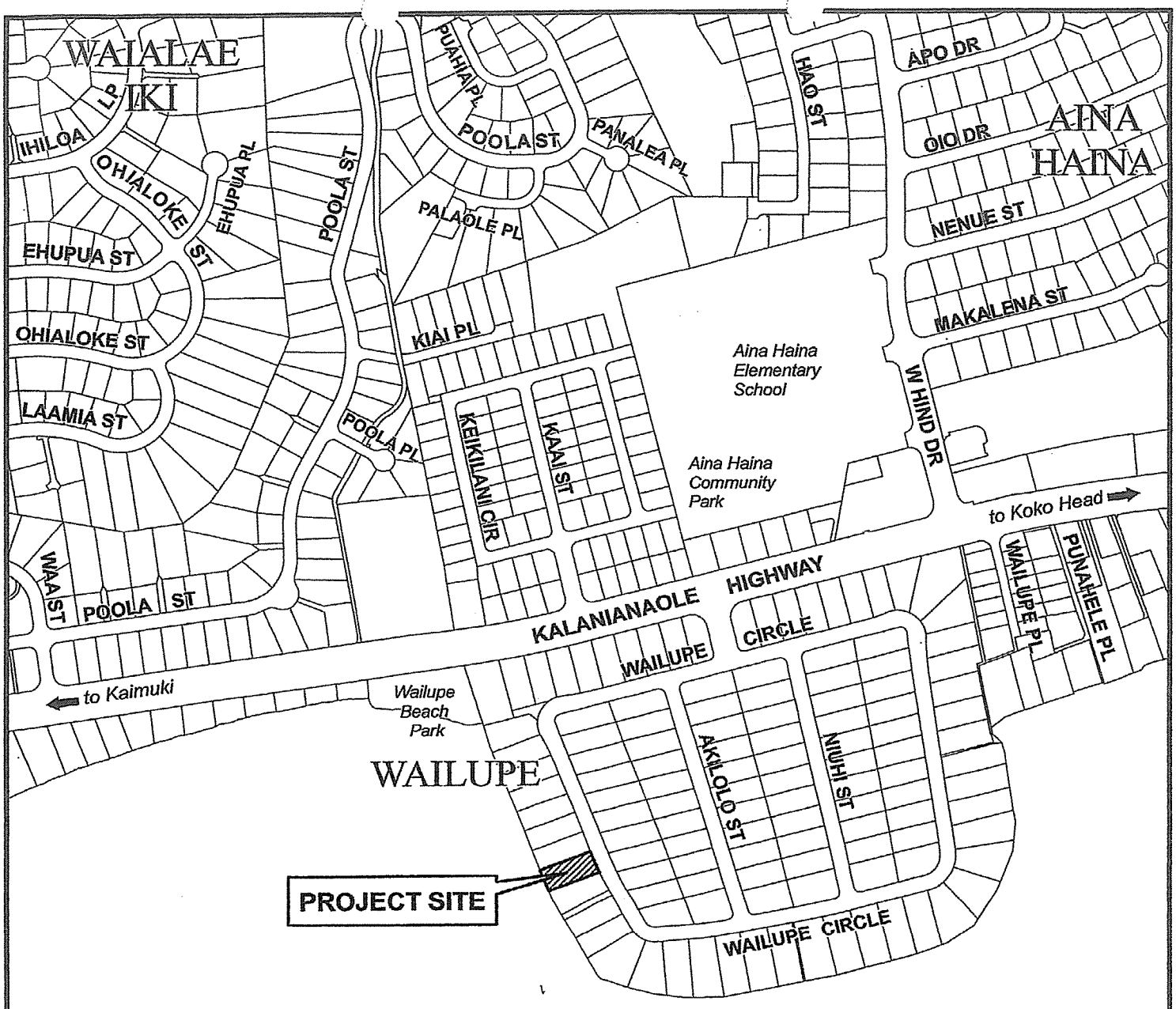
The proposed revision to the original FEA is not anticipated to impose adverse environmental impacts at the project site or in any other area. A Finding of No Significant Impact (FONSI) is requested for the revised proposal including construction of a new, two-foot high CMU retaining wall, mauka (landward) of the existing seawall, with planting between the two walls. Work to include excavation and backfilling to the top of the two-foot high CMU wall (landward) to match the existing grade of the yard.

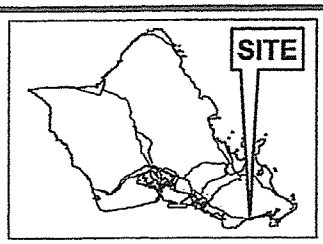
PERMITS REQUIRED

Finding of No Significant Impact	Hawaii Revised Statutes Chapter 343
Shoreline Setback Variance	Revised Ordinances of Honolulu Chapter 23
Zoning Adjustment for Height	Land Use Ordinance Chapter 21-2.140 (1)
Certified Shoreline	Hawaii Administrative Rules 13-222
Building Permit	Revised Ordinances of Honolulu Chapter 18
Grading Permit	Civil Engineering Branch Department of Planning and Permitting

Appendix 1

Revised Engineering and Architectural Plans/Site Elevations/Certified Shoreline





VICINITY MAP

0 250 500 1,000

1 INCH = 500 FEET

LOCATION MAP

WAILUPE

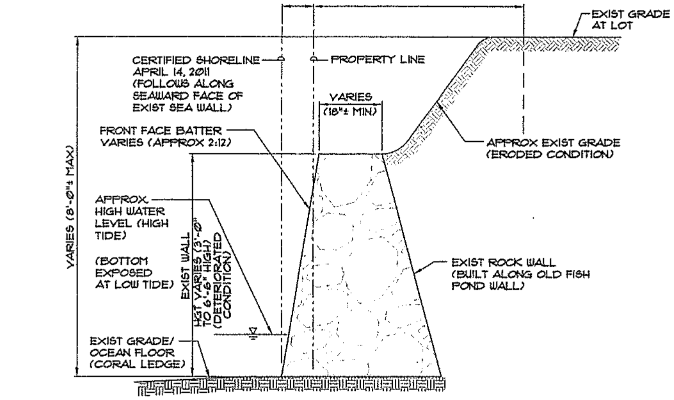
EXHIBIT A-2

TMK: 3-6-001: 038 (PROJECT SITE)

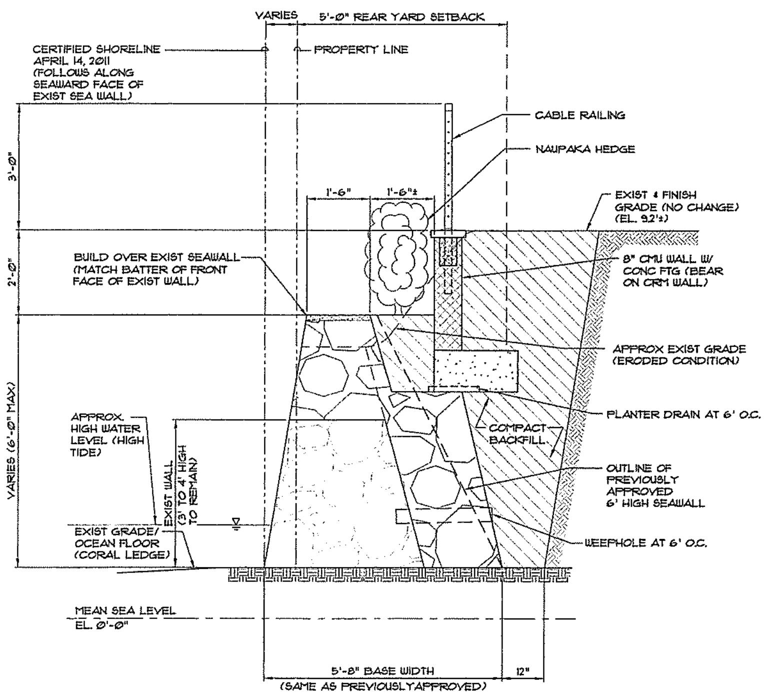
FILE NO.: 2010/SV-10

Prepared by: Department of Planning & Permitting
City and County of Honolulu

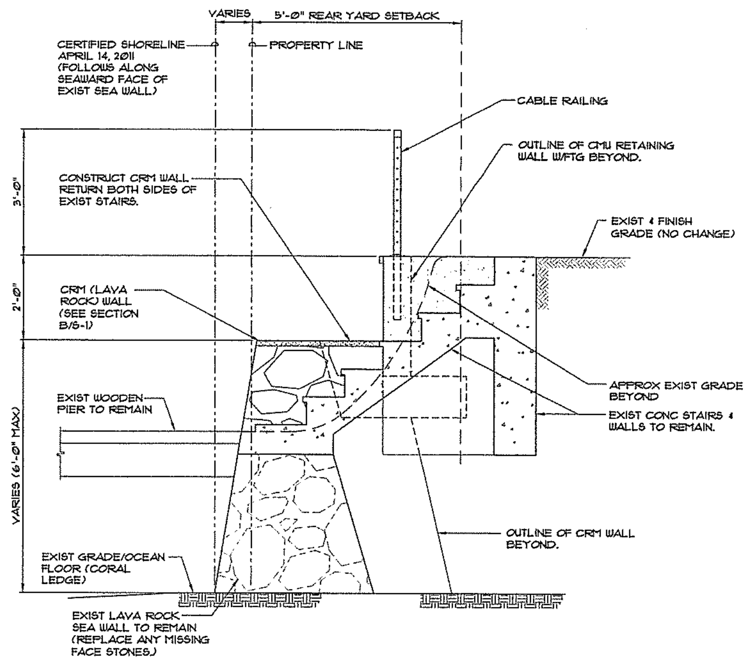
Date Prepared: January 18, 2011



A TYP EXISTING WALL SECTION
S-1 SCALE: 3/4"=1'-0"



B TYPICAL NEW WALL SECTION
S-1 SCALE: 3/4"=1'-0"



C SECTION THRU STAIRS
S-1 SCALE: 3/4"=1'-0"

GRAPHIC SCALE
1 0 1 2 3 4 5
3/4"=1'-0"

No.	Date	Revision

This work was prepared by me or under my supervision, and construction of this project will be under my observation. Observation of construction as defined in Hawaii Administrative Rules Title 16 Chapter 115.

License Expiration Date: April 30, 2014

★RANDAL S. FUROMOTO★ LICENSED PROFESSIONAL ENGINEER No.8130-S HAWAII, U.S.A.

1188 Bishop Street, Suite 1411
Honolulu, Hawaii 96813-3306
Tel: 808.545.4000
Fax: 808.545.4024
www.lapishawaii.com

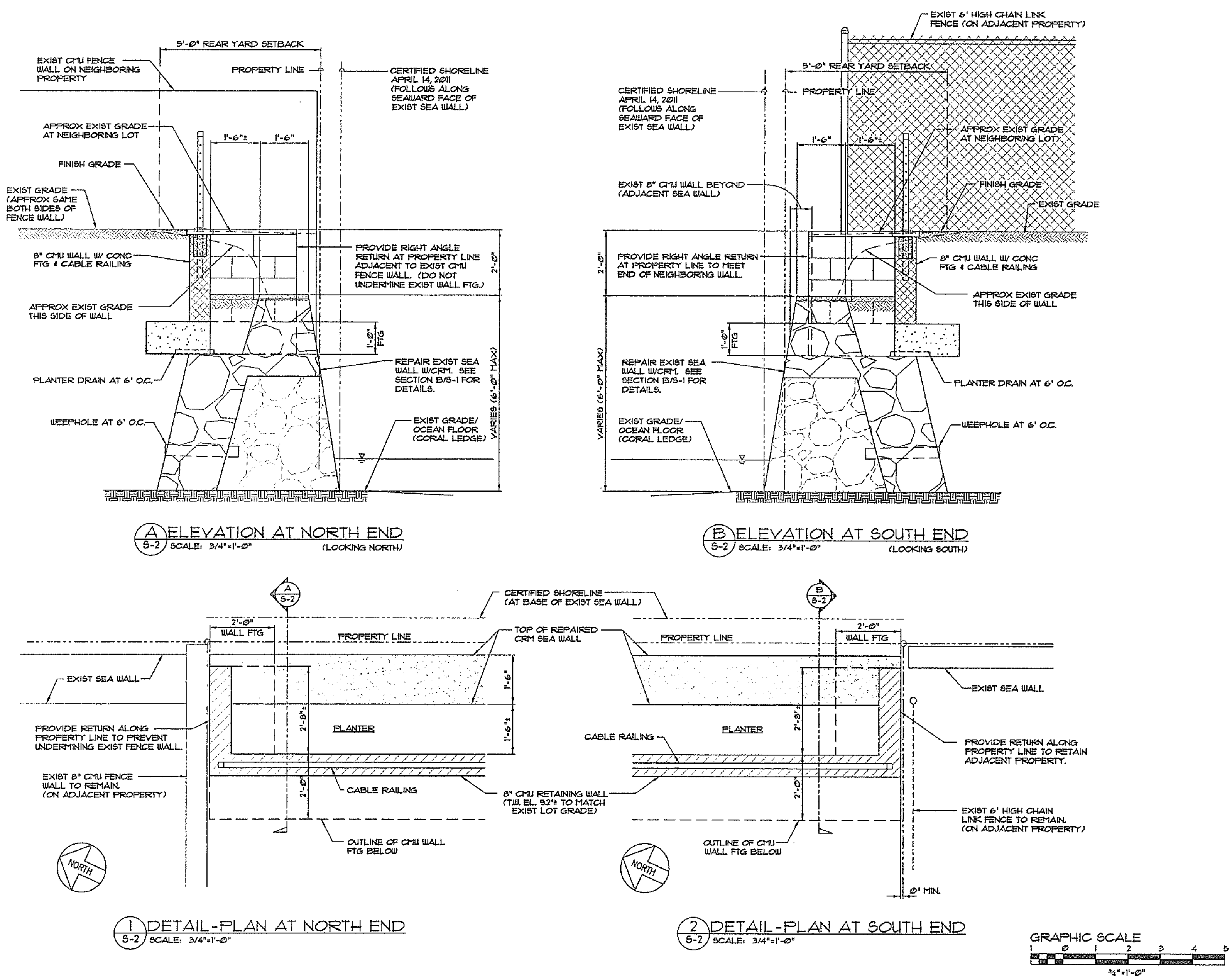
LAPIS DESIGN PARTNERS
Residential Architecture & Interior Design

Kahn Residence
Sea Wall Repair
146 Wailupe Circle, Honolulu, Hawaii
TMK: 3-6-001-038

Wall Sections

S-1 Wall Sections Revised 8/14/12

Issue Date: 6 MAY 13
Job #: 07-KWC
Sheet Number: S-1
Total Sheets:



No.	Date	Revision

This work was prepared by me or under my supervision, and construction of this project will be under my observation. Observation of construction as defined in Hawaii Administrative Rules Title 16 Chapter 115.
License Expiration Date: April 30, 2014

RANDAL S. FURUMOTO LICENSED PROFESSIONAL ENGINEER No.6130-S HAWAII, U.S.A.

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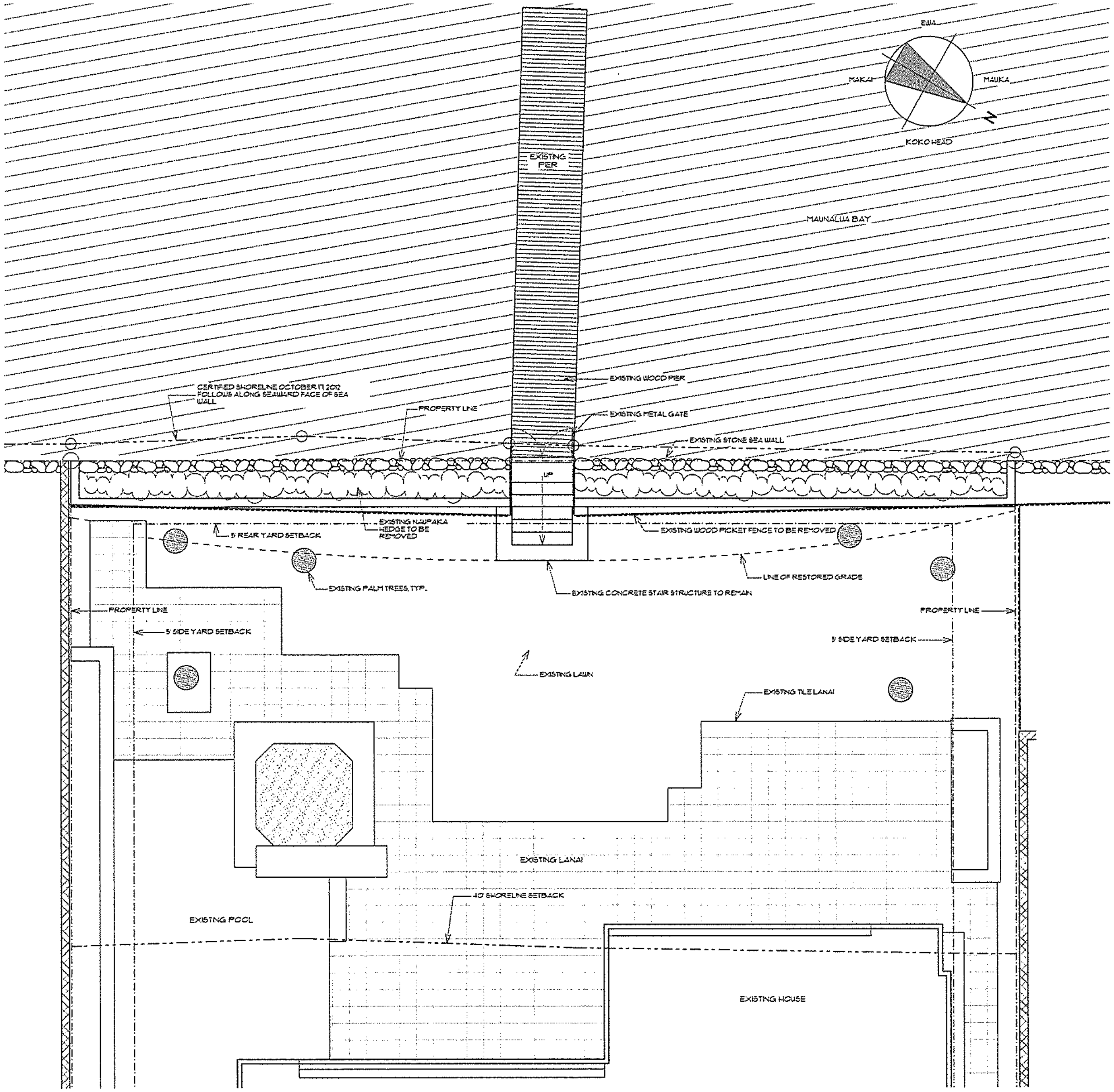
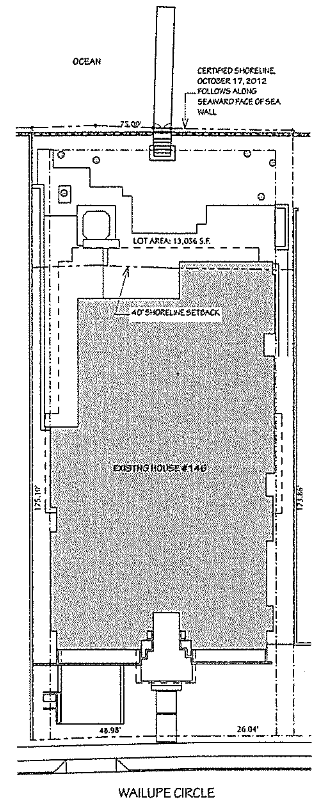
Kahn Residence
Sea Wall Repair
146 Wailupe Circle, Honolulu, Hawaii
TMK: 3-6-001-038

Wall Elevations
S-2 Revised 8/31/12

Issue Date: 6 MAY 13
Job #: 07-KWC
Sheet Number: S-2
Total Sheets:



2 Plan Detail @ Sea Wall
Scale: 1/4" = 1'-0"



1 Site Plan
Scale: 1/16" = 1'-0"

No	Date	Revision
1	3/24/08	Remove Cable Rail
2	5/05/13	Adjust Cable Rail

This work was prepared by me or under my supervision, and construction of this project will be under my observation. Observation of construction as defined in Hawaii Administrative Rules Title 16 Chapter 115.
License Expiration Date 04/2014

JOHN AUGUST BLACK
LICENSED PROFESSIONAL ARCHITECT
NO. 5829
HAWAII, U.S.A.

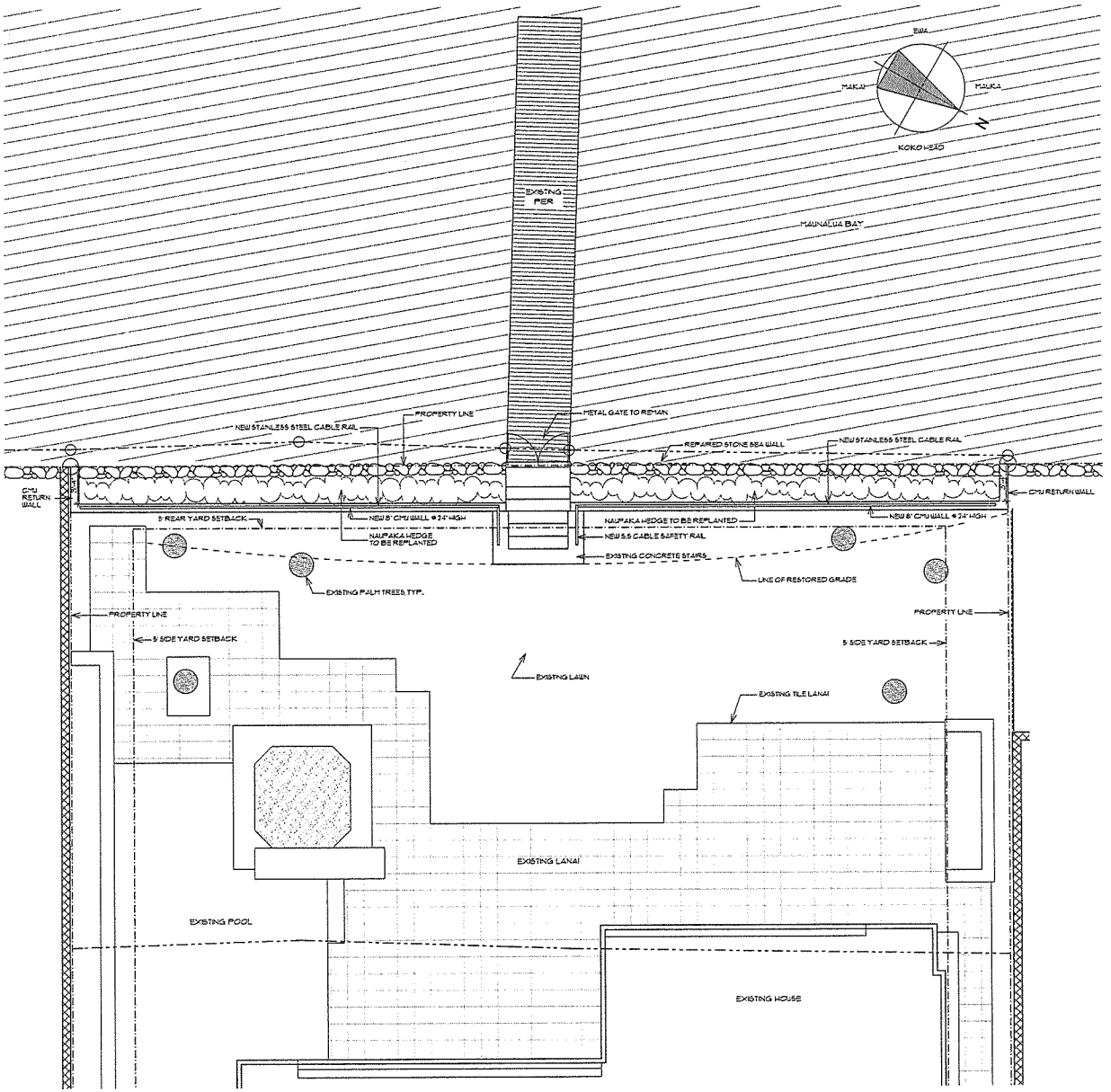
1188 Bishop Street, Suite 1411
Honolulu, Hawaii 96813-3306
Tel: 808.545.4000
www.lapishawaii.com

LAPIS DESIGN PARTNERS
Residential Architecture & Interior Design

Kahn Residence
Sea Wall Repair
146 Wailupe Circle, Honolulu, Hawaii
TMK: 3-6-01: 38

Site Plan & Existing Sea Wall Plan

Issue Date: 05 MAY 13
Job #: 07-KWC
Sheet Number:
A-1.1



1 Proposed Sea Wall Plan @ 146 Wailupe Circle

No.	Date	Revisions
1	2/24/08	Remove Cable Rail
2	5/9/13	Add Wall Height

This work was prepared by me or under my supervision and construction of this project will be under my direct supervision as provided for by the Hawaii Administrative Rules Title 16 Chapter 115.
License Expiration Date: 04/30/14

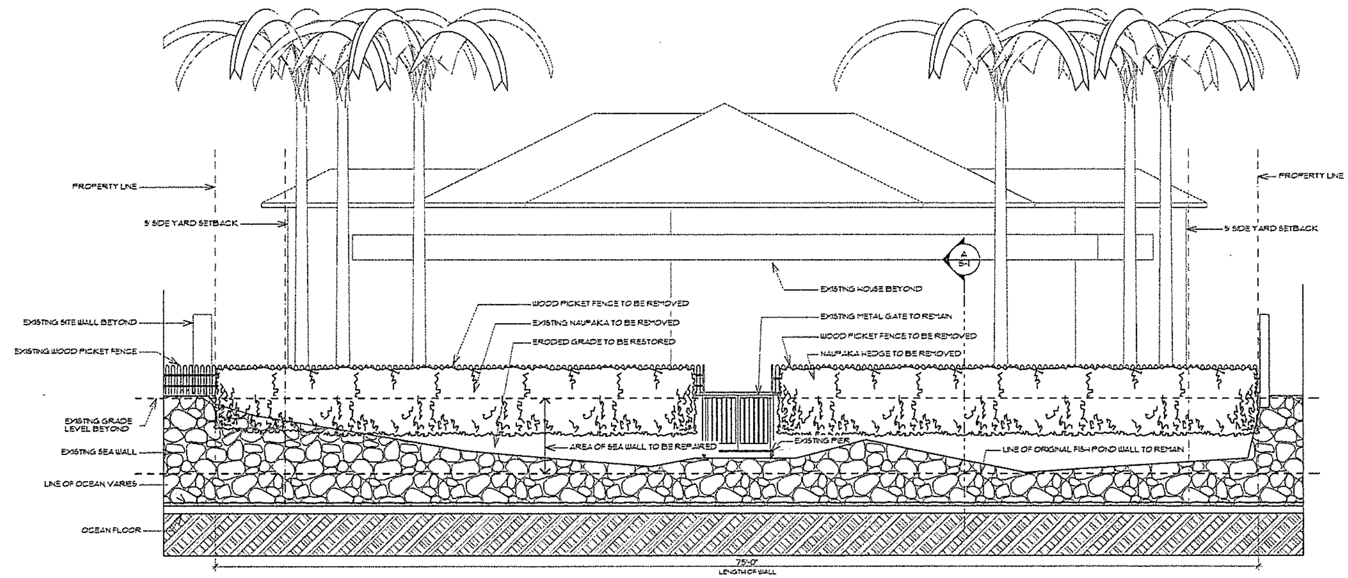
1188 Bishop Street, Suite 1411
Honolulu, Hawaii 96813-3306
Tel: 808.545.4000
www.lapishawaii.com

LAPIS DESIGN PARTNERS
Residential Architecture & Interior Design

Kahn Residence
Sea Wall Repair
146 Wailupe Circle, Honolulu, Hawaii
TMK: 3-6-01:38

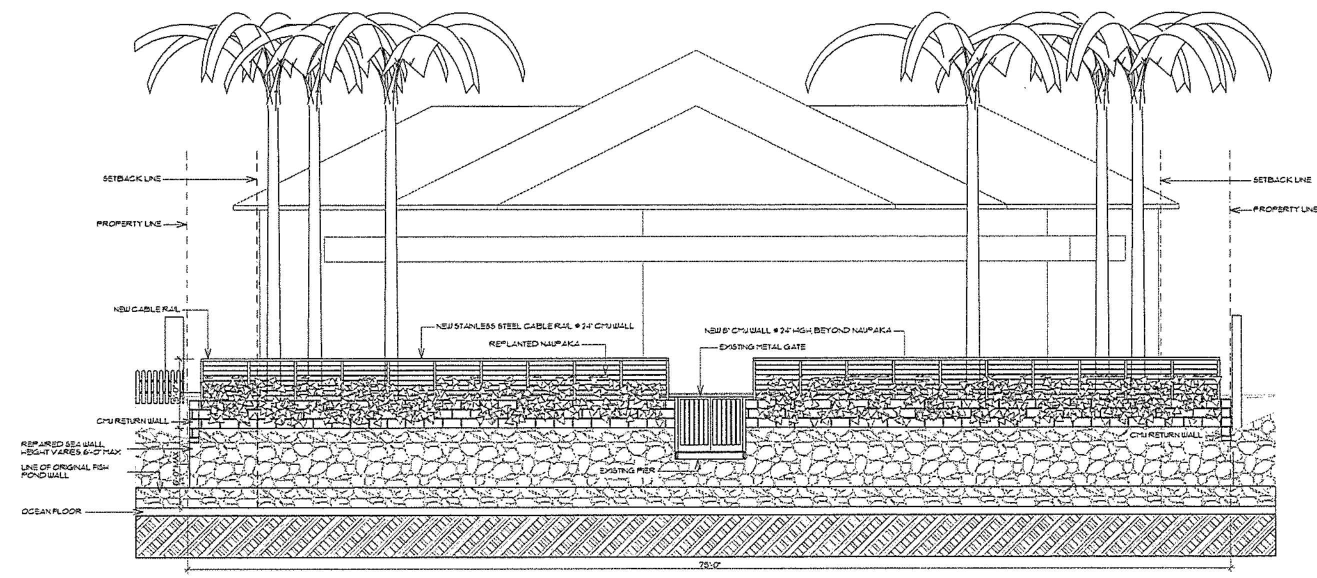
Proposed Sea Wall Plan

Issue Date: 05 MAY 13
Job #: 07-KWC
Sheet Number:
A-1.2



1 Existing Sea Wall Elevation @ 146 Wailupe Circle

0 2' 4' 8'



2 Repaired Sea Wall Elevation @ 146 Wailupe Cirlce

0 2' 4' 8'

No.	Date	Revision
1	3/24/08	Remove Cable Rail
2	3/29/12	Sitdwell/Nalg/Rail

This work was prepared by me or under my supervision, and construction of this project will be under my observation. Observation of construction as defined in Hawaii Administrative Rules Title 16 Chapter 115.
License Expiration Date: 04/2014

JOHN AUGUST BLACK
LICENSED PROFESSIONAL ARCHITECT
NO. 8839
HAWAII, U.S.A.

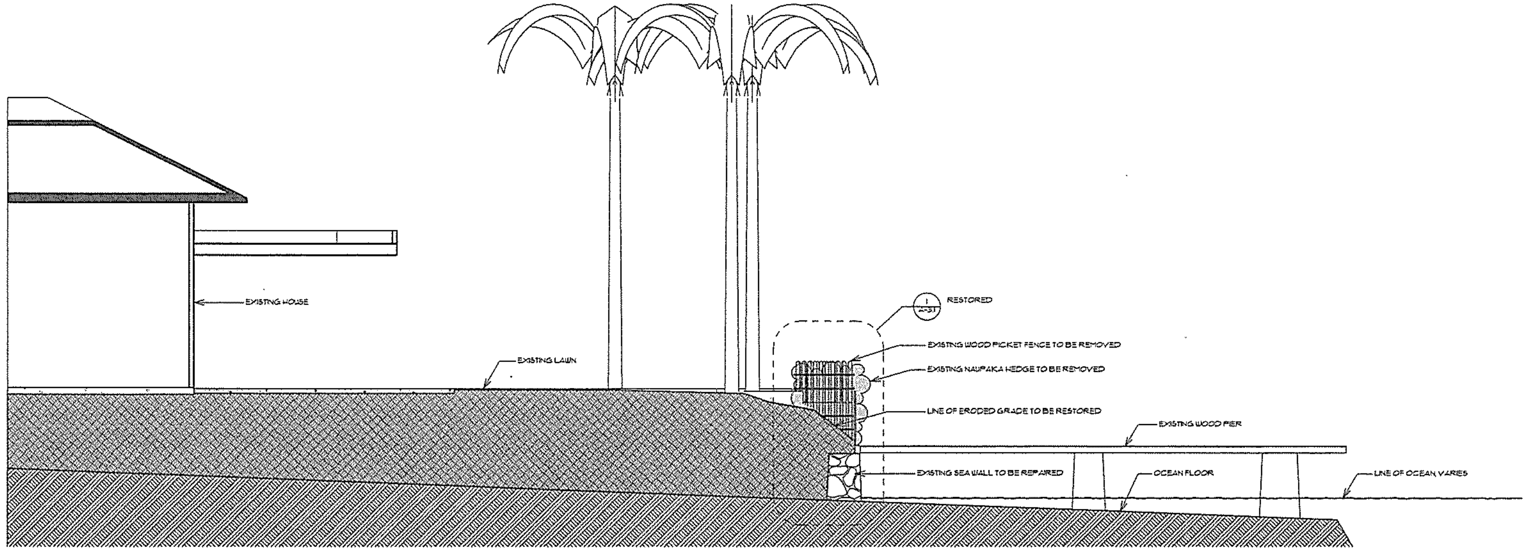
LAPIS DESIGN PARTNERS
Residential Architecture & Interior Design

1188 Bishop Street, Suite 1411
Honolulu, Hawaii 96813-3306
Tel: 808.545.4000
www.lapishawaii.com

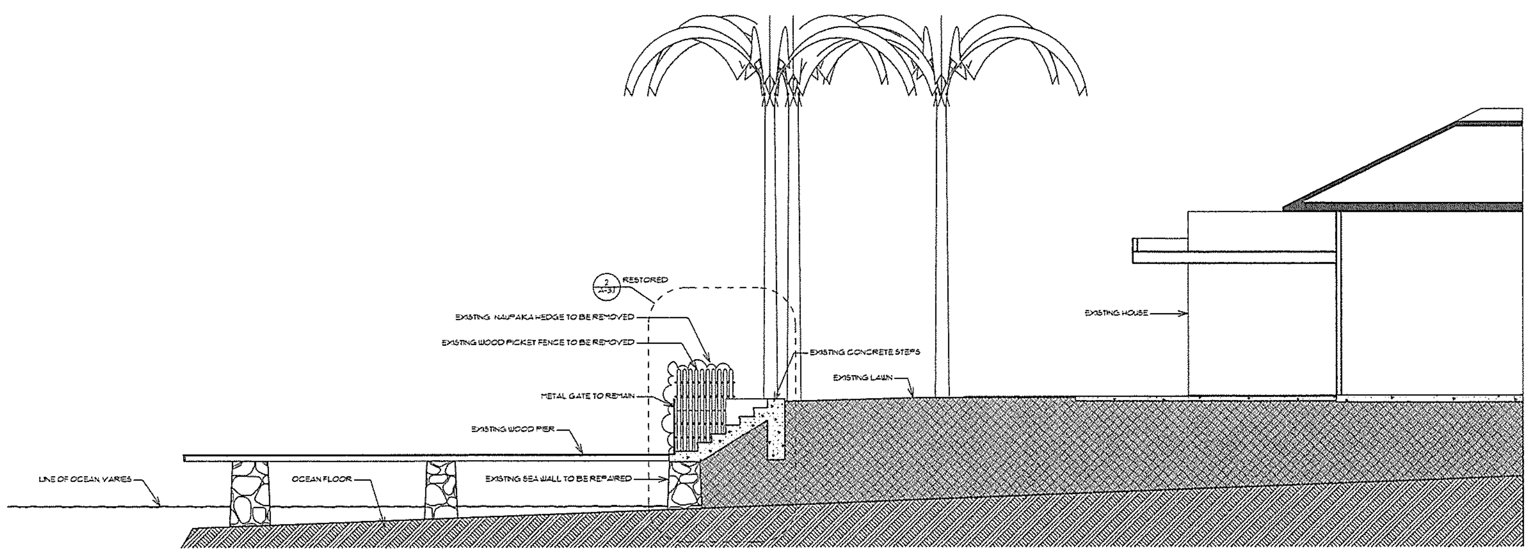
Kahn Residence
Sea Wall Repair
146 Wailupe Circle, Honolulu, Hawaii
TMK: 3-6-01: 38

Existing & Proposed Sea Wall Elevations

Issue Date: 05 MAY 13
Job #: 07-KWC
Sheet Number: A-2.1



1 Existing Sea Wall Section Towards Makai
Scale: 1/4" = 1'-0"



2 Existing Sea Wall Section @ Pier
Scale: 1/4" = 1'-0"

No.	Date	Revision
1	3/24/08	Remove Cable Rail
2	5/05/11	Adjust Cable Rail

This work was prepared by me or under my supervision, and construction of this project will be under my observation. Observation of construction as defined in Hawaii Administrative Rules Title 16 Chapter 115.
License Expiration Date: 04/30/14

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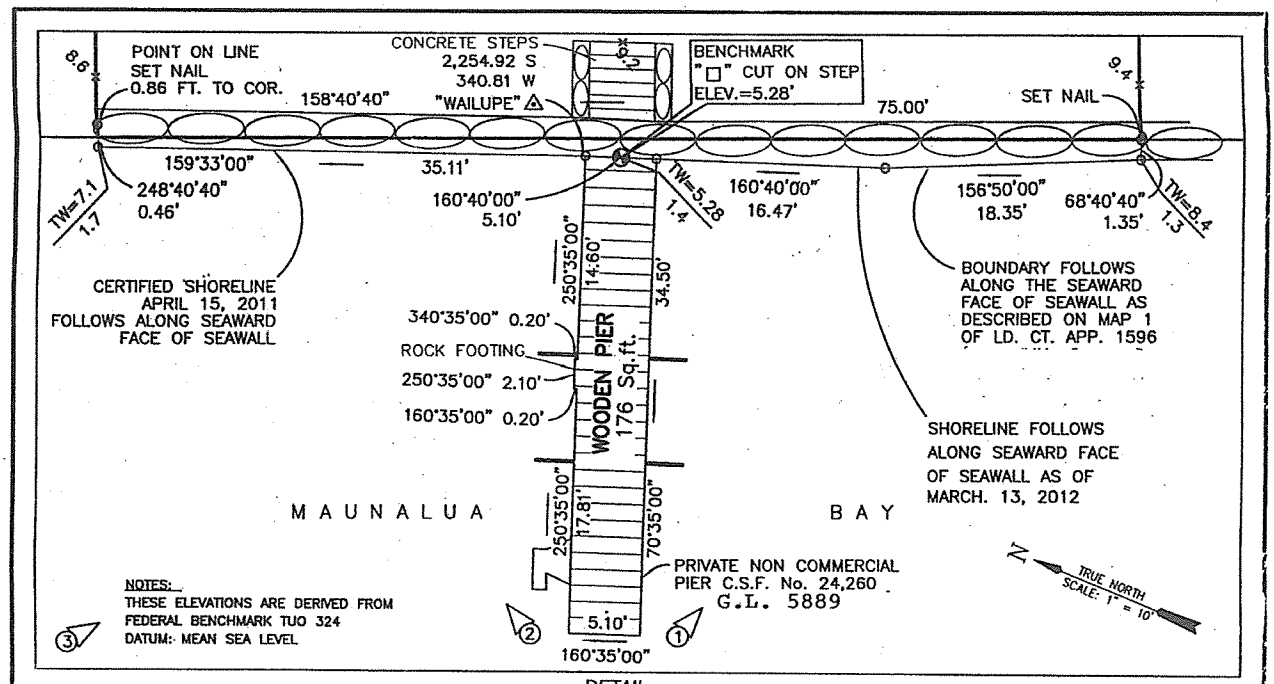
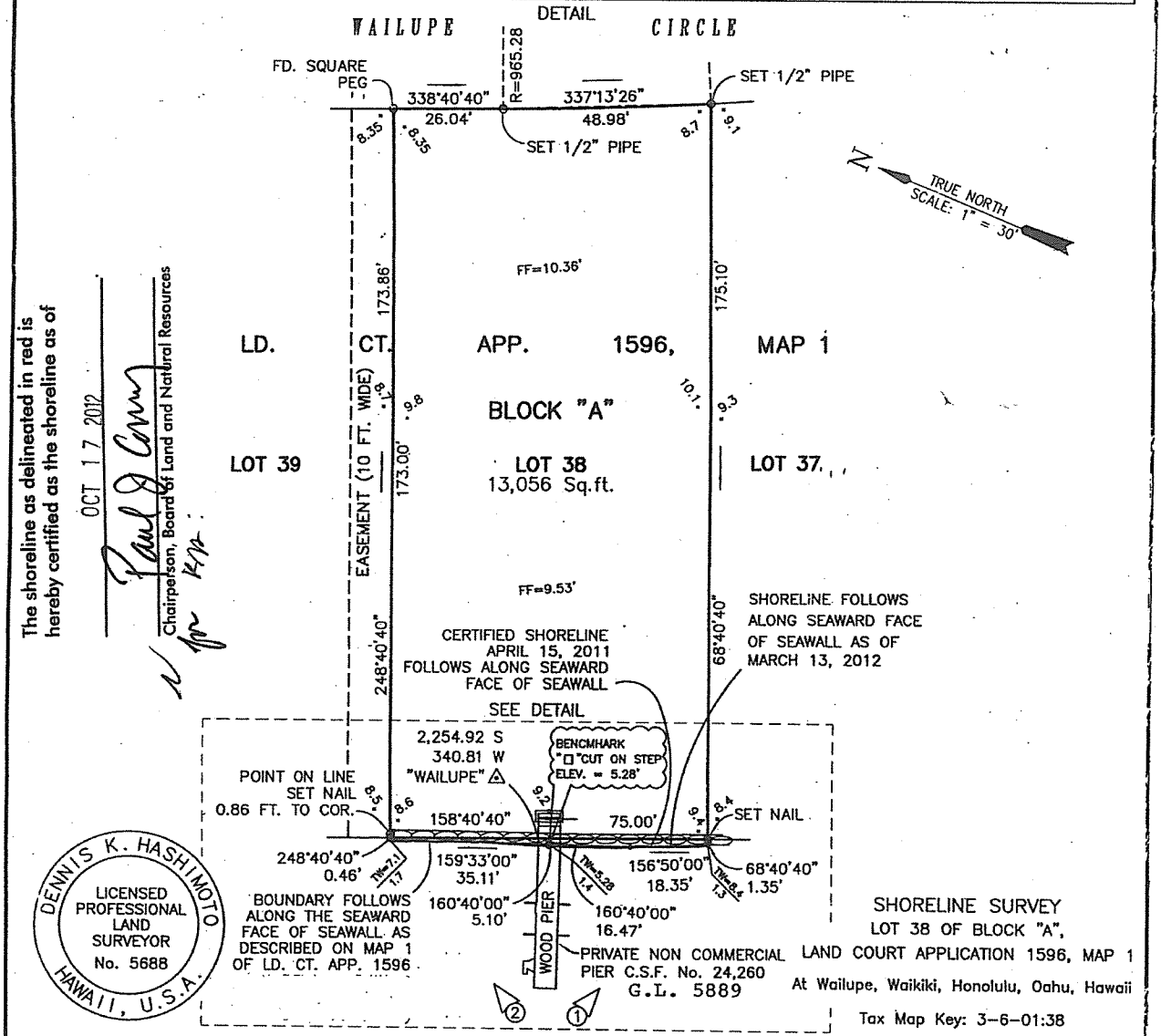
Kahn Residence
Sea Wall Repair
146 Wailupe Circle, Honolulu, Hawaii
TMK: 3-6-01: 38

Existing Sea Wall
Sections

Issue Date: 05 MAY 13
Job #: 07-KWC
Sheet Number:
A-2.2



DETAIL



The shoreline as delineated in red is hereby certified as the shoreline as of OCT 17 2012

Chairperson, Board of Land and Natural Resources

DENNIS K. HASHIMOTO
LICENSED PROFESSIONAL LAND SURVEYOR
No. 5688
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

DENNIS K. HASHIMOTO

EXPIRATION DATE: 4/30/12

NOTE:
1) ELEV. DATUM: MEAN SEA LEVEL

SHORELINE SURVEY

LOT 38 OF BLOCK "A",
LAND COURT APPLICATION 1596, MAP 1
At Wailupe, Waikiki, Honolulu, Oahu, Hawaii

Tax Map Key: 3-6-01:38

Date: March 13, 2012

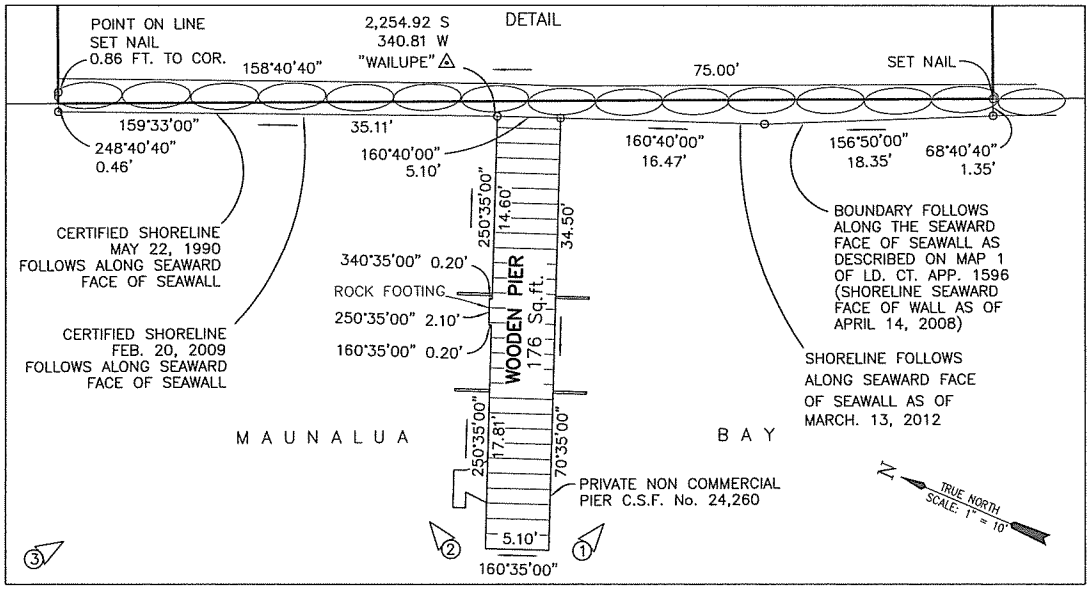
Address: 146 Wailupe Circle

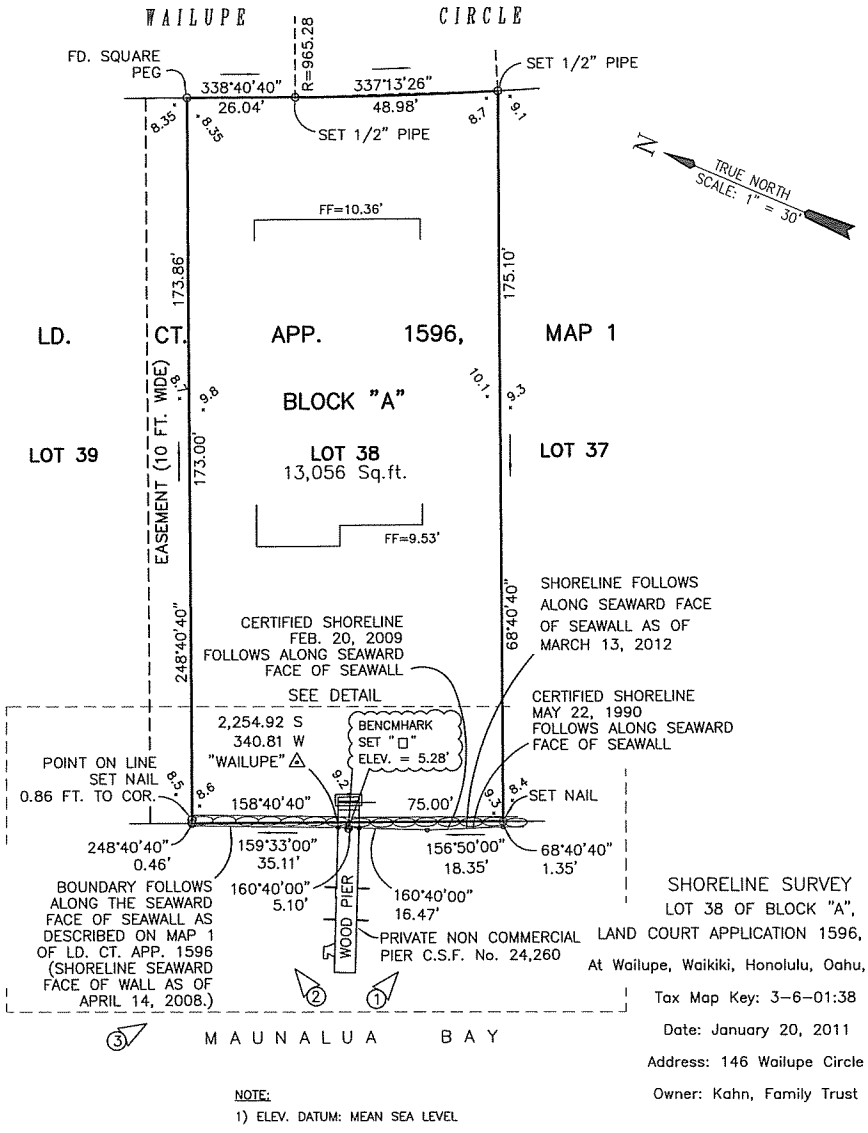
Owner: Kahn, Family Trust

FIELD BOOK 231:17

DJNS SURVEYING & MAPPING, INC.
P.O. BOX 25636, Honolulu, Hawaii 96825

JOB #9536.6





SHORELINE SURVEY
LOT 38 OF BLOCK "A",
LAND COURT APPLICATION 1596, MAP 1
At Wailupe, Waikiki, Honolulu, Oahu, Hawaii
Tax Map Key: 3-6-01:38
Date: January 20, 2011
Address: 146 Wailupe Circle
Owner: Kahn, Family Trust

NOTE:
1) ELEV. DATUM: MEAN SEA LEVEL

FIELD BOOK 231:17

DJNS SURVEYING & MAPPING, INC.
P.O. BOX 25636, Honolulu, Hawaii 96825

JOB #95366

Site Elevations

Appendix 2

Evaluation of Archeological Inventory Study by SHPD and Proposed Mitigation

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ESTHER KIA'AINA
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

HISTORIC PRESERVATION DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

601 Kamokila Boulevard, Suite 555
Kapolei, HI 96806

April 17, 2013

Archaeological Consultants of the Pacific, Inc.
C/O Dr. Michael Dega
725 Kapiolani Blvd. #1205
Honolulu, Hawaii 96813
mike@scshawaii.com

LOG NO: 2013.2435, 2013.2762
DOC NO: 1304SL13
Archaeology

Dear Dr. Dega:

SUBJECT: Chapter 6E-42 Historic Preservation Review–
An Archaeological Monitoring Plan for a Property Located at TMK: 003-006-001:038 in Wailupe Circle in Wailupe Ahupua'a, Kona District Island of O'ahu
TMK: (1) 3-6-001:038

Thank you for the opportunity to review this draft report titled *An Archaeological Monitoring Plan for a Property Located at TMK: 003-006-001:038 in Wailupe Circle in Wailupe Ahupua'a, Kona District Island of O'ahu* (Dega, March 2013). We received this submittal on March 25, 2013 (Log No. 2013.2345) and revisions via email on April 17, 2013 (Log No. 2013.2762).

In 2011, SHPD requested an archaeological inventory survey (AIS) be conducted in advance of a proposed project to reconstruct the existing seawall at 146 Wailupe Circle in order to identify if any remnants of Wailupe Fishpond (SIHP 50-80-15-0056) remain and to select a proper course of mitigation because the project has potential to adversely affect this historic property (April 28, 2011; Log No. 2011.0847, Doc. No. 1104MV14).

The archaeology inventory survey report describes the subject property as consisting of 13,056 ft^2 and including a single family detached dwelling, a seawall, and a recreational use pier. The subject seawall extends the entire length of the property line, a total of 75 feet, and adjoins parcel 39 to the north and parcel 37 to the south. The seawall is unstable and is in poor condition, with some portions of the original stone masonry having fallen into Maunalua Bay.

The archaeological inventory survey (AIS) identified two wall sections, a lower portion believed to be the traditional fishpond wall and an overlying section representing a 1940s addition. SIHP 0056 was evaluated as being significant under Criterion "d" for its information potential. Archaeological monitoring is recommended to further document the seawall during ground-altering activities associated with the proposed restoration project. The AIS report was accepted by SHPD on April 12, 2013 (Log No. 2013.2436, Doc. No. 1304SL07).

This archaeological monitoring plan meets the requirements of Hawaii Administrative Rule (HAR) §13-279-4. It is accepted by SHPD. Please send one hardcopy of the document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library.

Please contact me at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Susan A. Lebo

Susan A. Lebo, PhD
O'ahu Lead Archaeologist

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ESTHER KIA'AINA
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WILLIAM M. TAM
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AQUATIC RESOURCES
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

HISTORIC PRESERVATION DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

601 Kamokila Boulevard, Suite 555
Kapolei, HI 96806

April 12, 2013

Archaeological Consultants of the Pacific, Inc.
C/O Dr. Michael Dega
725 Kapiolani Blvd. #1205
Honolulu, Hawaii 96813
mike@scshawaii.com

LOG NO: 2013.2436
DOC NO: 1304SL07
Archaeology

Dear Dr. Dega:

SUBJECT: **Chapter 6E-42 Historic Preservation Review–**
An Archaeological Inventory Survey for a Property Located at TMK: 003-006-001:038 in Wailupe Circle in Wailupe Ahupua'a, Kona District Island of O'ahu
TMK: (1) 3-6-001:038

Thank you for the opportunity to review this draft report titled *An Archaeological Inventory Survey for a Property Located at TMK: 003-006-001:038 in Wailupe Circle in Wailupe Ahupua'a, Kona District Island of O'ahu* (Beauchan and Kennedy, February 2013). We received this submittal on March 25, 2013 and additional revisions on April 4, 2013.

In 2011, SHPD requested an archaeological inventory survey (AIS) be conducted in advance of a proposed project to reconstruct the existing seawall at 146 Wailupe Circle in order to identify if any remnants of Wailupe Fishpond (SIHP 50-80-15-0056) remain and to select a proper course of mitigation because the project has potential to adversely affect this historic property (April 28, 2011; Log No. 2011.0847, Doc. No. 1104MV14).

The archaeology inventory survey report describes the subject property as consisting of 13,056 ft^2 and including a single family detached dwelling, a seawall, and a recreational use pier. The subject seawall extends the entire length of the property line, a total of 75 feet, and adjoins parcel 39 to the north and parcel 37 to the south. The seawall is unstable and is in poor condition, with some portions of the original stone masonry having fallen into Maunalua Bay.

Three hand-excavated trenches dug in the rear yard revealed portions of the *mauka* (inland) side of the seawall. Two wall portions were identified, a lower section believed to be the traditional fishpond wall and an overlying section identified as the 1940s addition. Both are of dry-stacked construction consisting of primarily basalt boulders and cobbles. Some mixed coral fill is evident in the lower, traditional wall section. SIHP 0056 is evaluated as being significant under Criterion "d" for its information potential. Archaeological monitoring is recommended to further document the seawall during ground-altering activities associated with the proposed restoration project.

SHPD concurs with the significance assessment of SIHP 0056 and the recommendation of archaeological monitoring to further document the condition, construction methods, and construction materials of both the lower and upper sections of the seawall.

The revisions made to this archaeological inventory survey report adequately address the concerns raised in our prior correspondence (October 22, 2012; Log No. 2012.1560, Doc. No. 1208SL05) and recent discussions. The report provides sufficient discussion of the environment, historic background, previous investigations and the field methods. It also documents the inadequacies of the field work and results and recommends an archaeological monitoring plan to obtain additional information about SIHP 0056.

This revised report meets the requirements of Hawaii Administrative Rule (HAR) §13-276-5. It is accepted by SHPD. Please send one hardcopy of the document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library.

Please contact me at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Susan A. Lebo

Susan A. Lebo, PhD
O'ahu Lead Archaeologist

NEIL ABERCROMBIE
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COMMISSION ON WATER RESOURCE MANAGEMENT

PAUL J. CONRY
INTERIM FIRST DEPUTY

WILLIAM M. TAM
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CONSERVATION AND COASTAL LANDS
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ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

August 21, 2012

LOG NO: 2011.2654
LOG NO: 2012.1560
DOC NO: 1208SL02
Archaeology

Ms. Lauri Clegg, President
Analytical Planning Consultants, Inc.
928 Nuuanu Avenue, Suite 502
Honolulu, Hawaii 96817
DCleggAPC@hawaii.rr.com

Dear Ms. Clegg:

SUBJECT: **Chapter 6E-42 Historic Preservation Review–**
Shoreline Setback Variance Application No. 2010/SV-10 and Zoning Adjustment Application Number 2010/ZA-32, Repair of Existing Sea Wall, 146 Wailupe Circle, Wailupe Ahupua'a, Kona District, Island of O'ahu
TMK: (1) 3-6-001:038

Thank you for the opportunity to review this *Shoreline Setback Variance Application No. 2010/SV-10 and Zoning Adjustment Application Number 2010/ZA-32, Repair of Existing Sea Wall, 146 Wailupe Circle, Wailupe Ahupua'a, Kona District Island of O'ahu TMK: (1) 3-6-001:038*. Your initial submittal was received by SHPD on March 2, 2010; we apologize for the delayed review and thank you for your patience.

On March 2, 2010, SHPD received a draft Environmental Assessment (EA) for review and comment concerning a request for an "After-the-fact Shoreline Setback Variance" to "repair and increase the height of an existing concrete rubble masonry (CRM) seawall along a residential beachfront lot" at TMK: (1) 3-6-001:038. SHPD responded that "we have no comments at this time" because the project "has already taken place" (March 9, 2010; Log No. 2010.0556, Doc. No. 1003NM10).

On March 24, 2011, SHPD received a request to review "Shoreline Setback Variance Application No. 2010/SV-10 and Zoning Adjustment Application Number 2010/ZA-32" pertaining to the same proposed project– reconstruction of an existing sea wall at 146 Wailupe Circle. SHPD reviewed and requested an archaeological inventory survey (AIS) be conducted to identify any remnants of Wailupe Fishpond (SIHP 50-80-15-0056) and to select a proper course of mitigation prior to the commencement of the project. SHPD indicated that the proposed project occurs within the boundaries of the fishpond and that when the pond was filled in for development, the pond wall and the sediments within the pond were preserved beneath the fill. As such, the project has the potential to adversely affect this historic property as the plans involve demolition of portions of the existing sea wall and a possible remnant of the original pond wall, and possible subsurface excavation into the original pond sediments (April 28, 2011; Log No. 2011.0847, Doc. No. 1104MV14).

On September 29, 2011, SHPD received a response to the aforementioned review requesting an archaeological inventory survey, which involved the following project clarifications:

(1) The seawall will be repaired and restored, not reconstructed as earlier stated;
(2) The repair will require removal of loose or unsound portions of the existing 1946 section of the seawall; and
(3) The bottom portion of the wall will not be removed, thus no historic properties below the wall will be affected (Letter from Analytical Planning Consultants, Inc.; Log No. 2011.2654).

On November 11, 2011, SHPD received an additional clarification stating that Analytical Planning Consultants, Inc., would request Department of Planning and Permitting (DPP), City and County of Honolulu, approval for a terraced plan that would allow a 2-foot wall setback from the wall with landscaping in order to protect the

existing grade of the property (Letter from Analytical Planning Consultants, Inc.; Log 2012.2244). A third clarification received by SHPD on November 16, 2011, states the following:

> If the existing fishpond wall is discovered, it is presumed that it will be sufficiently stable to support the new wall and there should be no need to remove it. Any gaps could be either filled in with new rocks or mortar. Since it is advantageous to limit construction to above the water level it is hoped that the old fish pond wall will be found. However, if there is no wall discovered, the new wall will have to be constructed to greater depth. The worst case is that the wall must be constructed on the coral ledge as shown. In this case, since no original fish pond wall is encountered, the archaeological impact is also nil. As subsurface conditions are unknown, a determination of whether or not the existing conditions are unknown, a determination of whether or not the existing condition will adequately support the new wall must be made upon excavation (email from Analytical Planning Consultants, Inc.; Log No. 2012.2245).

SHPD received for review a draft report titled *An Inventory Level Survey for a Property Located at TMK: 003-006-001:038 in Wailupe Circle in Wailupe Ahupua'a, Kona District Island of O'ahu* (Beauchan and Kennedy, May 2012). The report was received by SHPD on May 30, 2012. Due to the recent death of Mr. Kennedy, we have extracted the pertinent details from the draft AIS report to complete without undue delay our review of your permit request.

The draft AIS report (Beauchan and Kennedy 2012) indicates that the project property is 13,056 ft^2 and consists of a single family detached dwelling, a seawall, and a recreational use pier. The subject 1946 seawall extends the entire length of the property line, a total of 75 feet, and adjoins parcel 39 to the north and parcel 37 to the south. The seawall is identified as the "current fishpond wall" (page 1) and is described as being in unstable and poor condition, with some portions of the original stone masonry having fallen into Maunalua Bay (page 4). It states that "current fishpond wall on the Kahn property was originally refurbished in 1948 by developer Robert Hind, Ltd., during the original construction of the peninsula" (page 1). A wooden picket fence has been erected alongside the wall and a hedge of *naupaka* grows atop the wall (page 4); the *naupaka* hedge actually is *mauka* of the seawall, growing in a narrow space between the seawall and the picket fence that extends along the *makai* edge of the rear yard or lawn.

In addition, the draft AIS report states that in consultation with SHPD, a testing strategy was designed and implemented to document the horizontal and vertical extent of the Wailupe Fishpond wall. Three trenches were excavated perpendicular to the existing seawall and sufficiently spaced to obtain a representative sample of wall exposure along the width of the rear yard of the project property. The trenches are described as measuring 2 m long by 1 m wide and 2 m deep, and having been excavated to culturally sterile soils and sand. The exposed stratigraphy consisted of topsoil fill overlying crushed coral fill, including coral heads. No artifacts and no fishpond sediments were identified (page 21). Photographs taken during the AIS work include an overview of the excavation trenches in the rear yard, close-up views of the wall rocks exposed in each trench, of the *makai* (outer) facing of the seawall, and of the *naupaka* hedge growing in the small space between the seawall and the rear yard (Appendix B). The existing seawall is described as being about only 25% the thickness of the original Wailupe Fishpond wall, which was described by McAllister (1930) as having been 12 feet in width (page 22).

Based on the excavation results, the draft AIS report describes the "Wailupe Fishpond wall" as follows within Trenches 1-3 (pages 22-23):

- Trench 1: "the inner portion of the prehistoric fishpond wall was found at the end of the trench, just below the existing property line and seawall;
- Trench 2: "the end of the trench, directly below the existing sea wall, revealed portions of the prehistoric fishpond wall;
- Trench 3: "the inner portion of the prehistoric fishpond wall was found at the end of trench, just below the existing property line and seawall."

In addition, the Wailupe Fishpond (SIHP 56) is assessed as being significant for listing in the Hawaii Register under Criterion "d". No further work is recommended because the wall is described as having been substantially altered from its prehistoric form (during the dredging and filling of the pond in the 1940's) and therefore, has lost its integrity" and the planned work will have "'no negative' impact on the fishpond wall" (page 25).

SHPD determines that the draft AIS report exhibits inadequacies, including insufficient documentation of the field methods and findings. The report lacks a project map showing the location and actual dimensions of the test trenches, description of the height of the original fishpond wall, or a description of the interface of the original fishpond wall with the later sea wall additions or with the underlying coral reef. In addition, no investigations were conducted to determine the potential of buried fishpond sediments. No stratigraphic profiles are provided for Trenches 1 and 3, and the profile provided for Trench 2 is incomplete. SHPD determined that a site visit was needed in order to properly review the findings and recommendations presented in the draft AIS.

Susan A. Lebo, SHPD staff archaeologist, conducted a site visit on August 6, 2012 with Randy Uchytil (contractor for client) and Lauri Clegg (agent for client). Mr. Uchytil indicated that he, along with 5-6 construction workers from Suncrete Hawaii, Inc., excavated the three trenches to expose, identify, and describe the Wailupe Fishpond wall. The trenches were excavated using hand equipment and measured more than 3 m in length, not the 2 m indicated in the report. When the excavators reached the concrete edging and the wooden picket fence demarking the *makai* edge of the rear yard and lawn, they extended their trench *makai* by "tunneling" beneath the concrete edging, fence, and the *naupaka* hedge growing between the fence and the existing seawall. They terminated each trench upon exposing dry laid, stacked basalt and/or coral cobbles and boulders. The depth of these wall materials is not recorded in profiles for Trenches 1 or 3. In Trench 2, the top of the rock wall is shown in a profile as being about 45cm below "ground level" (page C-1). However, the "ground level" shown in the profile does not correlate with the rear yard ground level, which is higher than the ground level associated with the *naupaka* hedge, under which the trenches were excavated. This aside, the base of the wall rocks exposed in each of the trenches sit atop the coral reef. The exposed wall sections measured about 0.8-1.0 m in height and 1.0 m in width.

Mr. Uchytil indicated that the rock wall sections exposed by the crew in Trenches 1-3 were the *mauka* (interior) side of the Wailupe Fishpond wall and that they were instructed to terminate excavating upon reaching the wall. He stated that there no visible change in wall construction from top to bottom within the exposed sections or in construction materials from the *makai* (outer) facing of the existing sea wall. The photographs taken during the AIS work (Appendix B), including those provided to SHPD by Ms. Clegg and Mr. Uchytil indicate the exposed sections of the Wailupe Fishpond wall are dry laid and consists of cobbles and boulders. While the *makai* side of the wall consists of many large basalt boulders, some over 1 m in length, it also includes many basalt cobbles and some coral cobbles. he *mauka* exposure in Trench 1 indicates a mixture of coral blocks and coral cobbles, as well as basalt cobbles and boulders. The stones appear loosely stacked. The *mauka* exposure in Trench 2 consists of a mixture of basalt cobbles and boulders, including one possible dressed boulder, and some coral cobbles, while the exposure in Trench 3 indicates a section of mostly waterworn basalt cobbles and boulders and a few coral cobbles. No coral blocks are present. At least one section of rebar extends into each of the trenches adjacent to the *mauka* wall rocks.

Based on the AIS field work and the SHPD site visit, only a single wall has been identified within the project area. The existing sea wall was constructed atop the earlier Wailupe Fishpond wall or wall remnant (suggested by minimal extant height). Historical data (see below) suggests the existing sea wall likely correlates in location with the earlier Wailupe Fishpond wall and the initial modification of the wall dates from the 1940s. Historical descriptions and photos indicate variation in wall thickness and overall morphology of the Wailupe Fishpond wall. In addition, they indicate that Wailupe Peninsula, in which the subject property is located, was created in the 1940s by dredging a channel and filling in the fish pond. The draft AIS report states that the walls of Wailupe Fishpond were damaged in the 1946 tsunami and some of the existing sea wall is described as being remnants of the original Hawaiian walls (pages 14-15).

Based on the above archaeological data, the proposed construction plans will have an "effect, with agreed upon mitigation commitments" on the existing post-1940 sea wall and the underlying Wailupe Fishpond wall. Both walls are assessed as being significant under Hawaii Register Criterion "d" (has yielded or is likely to yield information important in prehistory or history). In addition, both walls are assessed as being significant under Criterion "c" (embodies the distinctive characteristics of a type, period or method of construction; or is the work of a master; or possesses high artistic values; or represents a significant and distinguishable entity). The traditional Hawaiian Wailupe Fishpond wall is dry laid, stacked basalt cobble and boulder construction, with some coral cobbles and coral blocks. Although it consists primarily of water worn stones, some stones are cut or dressed. The overlying post-1940 addition exhibits similar construction materials and methods, but also extensive erosion along its length fronting the subject property.

Based on the AIS data and the proposed construction plans, SHPD concurs with the applicant's proposal to repair the sea wall at 146 Wailupe Circle with the following agreed to stipulations:

(1) Repair using matching stone material the damaged sections of the existing seawall post-1940 addition to the height and original width of the existing intact sections (~6-6.5' above coral reef). Repaired sections may be mortared on *mauka* (inland) side only above both the Wailupe Fishpond wall and the water line with the mortar extending no closer than 6" to the *makai* face (seaward side) of the wall, as necessary to preserve structural integrity;
(2) Construct a 2-foot high and 8-inch wide CMU retaining wall 1.5-feet behind the seawall to correlate with the existing grade of the rear yard. The landscape area between the seawall and the CMU wall to be planted to lessen the visual impact;
(3) Remove using hand tools, the *naupaka* hedge present between the *mauka* face of the existing sea wall addition and the *makai* edge of the existing rear yard (lawn);
(4) Remove using hand tools, the sediments below the hedge, approximately - 8'±, between the *mauka* face of the existing sea/Fishpond wall and the *makai* edge of the existing rear yard (lawn and pier stairs) to the water line;
(5) No repairs or modification will be made to the Wailupe Fishpond wall section without prior consultation and written approval by SHPD;
(6) Install structural materials/rubble fill within the hand-excavated space between the sea/Fishpond wall and the rear yard (as shown on the plans) to allow the surf to flow in and out of this space and to reduce soil erosion into the bay. The new structural materials/rubble fill encased in concrete/mortar will provide the structural integrity of the repaired wall;
(7) Install drain leaders (pipes) extending from the *mauka* face of the existing sea/Fishpond wall through the new structural materials. These pipes will not extend into either the existing sea wall addition or the underlying Fishpond wall;
(8) Plant a new *naupaka* hedge in the same location as the removed hedge after the repair work is completed;
(9) Install the metal safety rail on, along, or adjacent to the concrete edging demarking the *makai* extent of the rear yard (lawn) rather than atop the sea wall; and
(10) Facilitate scheduling SHPD site visits during the hand excavation of the sediments *mauka* (behind) the sea/Fishpond wall and installation of the rubble fill, thereby allowing SHPD staff to document the wall repair work and the Wailupe Fishpond section of the wall.

Please contact Susan A. Lebo at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Theresa K. Donham
Archaeology Branch Chief

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

PETER B. CARLISLE
MAYOR

DAVID K. TANOUE
DIRECTOR

JIRO A. SUMADA
DEPUTY DIRECTOR

2011/ELOG-970(JL)
2010/SV-10 and 2010/ZA-32

August 15, 2011

Ms. Laurie Clegg
Analytical Planning Consultants, Inc.
928 Nuuanu Avenue, Suite 502
Honolulu, Hawaii 96817

Dear Ms. Clegg:

Subject: Additional Condition of Approval
Shoreline Setback Variance No. 2010/SV-10
Zoning Adjustment No. 2010/ZA-32
Philippe R. and Sonia Lee Kahn
146 Wailupe Circle - Wailupe
Tax Map Key 3-6-1: 38

On May 2, 2011, after the Director of the Department of Planning and Permitting (DPP) had granted partial approval to Shoreline Setback Variance No. 2010/SV-10 (to allow repair and enlargement of an existing seawall), the State Department of Land and Natural Resource Historic Preservation Division (SHPD) submitted a letter outlining its concerns (copy enclosed) regarding the above project.

Essentially, SHPD states that the project has the potential to adversely affect the fishpond as a historical resource, since the Applicant's plans indicate the existing seawall, a possible remnant of the original pond wall, will be demolished. Further, if excavation occurs below the fill layer into original pond sediments, the "information content" of the site may be affected. Therefore, SHPD suggests that an Archaeological Inventory Survey (AIS) be done to identify any remnants of the historical site and determine a proper course of mitigation prior to the commencement of the project.

As stated in Condition K in the Decision and Order dated April 28, 2011, "The Director of the DPP may modify the conditions of the approval by imposing additional conditions, modifying existing conditions, or deleting conditions deemed satisfied upon a finding that circumstances related to the approved project have significantly changed so as to warrant a modification to the conditions of approval". In response to the SHPD comments, we have added the following condition (Condition M) of approval:

> "Prior to the start of any wall-altering activities, the Applicant shall provide the DPP with written documentation from the State Department of Land and Natural Resources, Historic Preservation Division (SHPD) confirming its receipt and review of an acceptable

Archaeological Inventory Survey (AIS) and mitigation course. The Applicant shall consult with SHPD regarding the AIS and acceptable mitigation measures, including confirmation that the AIS and mitigation measures are the only means to address the concerns of SHPD, or if there are any other alternatives."

The approved plans and conditions of SV Permit No. 2010/SV-10 shall remain in force except as modified herein.

Should you have any questions or need additional information, please contact Jenny Lee of our staff at 768-8027.

Very truly yours,

David K. Tanoue, Director
Department of Planning and Permitting

DKT:nw

ENCL: Copy of letter from SHPD
CC: DLNR (SHPD)

VAR/10 SV-10/11 ELOG-970

2011.2206-470

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

'11 MAY -2 A10:02

CITY & COUNTY OF HONOLULU

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 28, 2011

David Tanoue
City and County of Honolulu
Department of Planning and Permitting
650 So. King St
Honolulu, HI 96813

LOG NO: 2011.0847
DOC NO: 1104MV14
Archaeology

Dear Mr. Tanoue:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
Shoreline Setback Variance Application No. 2010/SV-10 and
Zoning Adjustment Application Number 2010/ZA-32
Wailupe Ahupua'a, Kona District, Island of O'ahu
TMK: (1) 3-6-001:038

Thank you for the opportunity to review the aforementioned project that was received by our office on March 24, 2011. We apologize for the delayed review and thank you for your continued patience. This project involves the reconstruction of an existing sea wall/retaining wall at 146 Wailupe Circle. Our records indicate that this project takes place within the boundaries of the filled in Wailupe Fishpond, which is listed as site number 50-80-15-0056 on the state inventory of historic places. When the pond was filled in for development the pond wall, and the sediments within the pond wall were preserved beneath the fill. This project has the potential to adversely affect this historic resource as plans indicate that the existing sea wall, a possible remnant of the original pond wall, will be demolished. In addition, this project has the potential to affect the information content of this site if excavation for the new retaining wall proceeds below the fill layer into original pond sediments. Therefore, we believe that an Archaeological Inventory Survey (AIS) is needed to identify any remnants of this historic site and select a proper course of mitigation prior to the commencement of the project.

Please contact Michael Vitousek at (808) 692-8029 or Michael.Vitousek@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Pua Aiu
Administrator
Historic Preservation Division

Appendix 3

Alternative Designs

ENGINEERING REPORT

FOR

SEA WALL REPAIR

AT

KAHN RESIDENCE

146 WAILUPE CIRCLE
MAUNALUA, OAHU, HAWAII

T.M.K. 3-6-001: 038

PREPARED BY:
RANDAL S. FUROMOTO & ASSOCIATES, INC.
98-1247 KAAHUMANU STREET, SUITE 312
AIEA, HAWAII 96701

APRIL 4, 2011

Randal S. Furomoto and Associates, Inc.
STRUCTURAL ENGINEERS
98-1247 KAAHUMANU STREET, SUITE 312 AIEA, HAWAII 96701 PHONE (808) 484-0212 FAX (808) 484-1358

ENGINEERING REPORT
FOR
SEAWALL REPAIR
AT
KAHN RESIDENCE
146 WAILUPE CIRCLE
T.M.K. 3-6-001: 038

April 4, 2011

Project Description

The aging seawall along the ocean facing (rear) property line of 146 Wailupe Circle has deteriorated and requires significant repairs. (See Plates 1 and 2 for project location.) The existing wall is an unmortared rubble (lava rock) wall built on a fish pond perimeter wall during the original development of the residential subdivision. Because it consists of loosely placed stones and coral fragments, the wall has deteriorated over the years with rocks and backfill gradually eroding into the ocean. The wall presently varies in height from approximately 3.0 feet to over 6.5 feet tall measured from the ocean bottom at the front face of wall. The irregular condition has been masked by a hedge which has somewhat held the backfill, but has also caused crumbling and loosening of stones with its aggressive root system.

The certified shoreline follows along the face of the existing seawall which extends beyond the rear property line into the State Conservation District. The certified shoreline was last certified on February 20, 2009. (Plate 3) The seawalls at adjacent properties follow the same alignment with ocean face extending beyond the rear property lines as well. The height of the adjacent seawalls generally matches the grade of the subdivision which is fairly level and measures approximately 8 feet above the ocean floor at this lot. The adjacent walls have been better maintained and are at full height of the subdivision grade.

Under this project it is proposed that the seawall be restored to fully retain the property and to provide protection against potential flooding due to wave action.

Discussion of Alternatives

Several alternatives were considered. The factors used to develop the final repair strategy include:

1. Structural Design: The wall must be designed to meet stability requirements (i.e. required factors of safety against overturning and sliding), be proportioned for a reasonably conservative soil bearing pressure, and be embedded for scour protection due to wave action and long term erosion. The wall height therefore, is a major factor in the proportioning of the cross section. The type of wall and its construction could be changed, but since a repair approach has been taken and in order to provide the most cost effective solution, a gravity wall constructed out of cement rubble masonry (lava rock) is the obvious choice.

2. Foundation Conditions: The condition of the existing wall (both the developer added wall and original fish pond wall on the ocean bottom) as a structurally sound base for the seawall was evaluated. Based upon visual observations it was determined that the upper portion consisting of loosely placed stones intermixed with coral fragments requires replacement. The bottom courses, which rest on a coral ledge, are sound and can be used to support the wall. Mortaring joints from the backfill side will help to ensure that the base has sufficient integrity. Since the base of the wall rests on a coral ledge undermining due to scour is unlikely.

3. Flood Hazard: According to the latest FEMA flood hazard map the statutory flood elevation at this property is +12.0' MSL. This is well above the top of all existing sea walls, but indicates that providing at least equal protection against flooding due to wave action as the adjacent seawalls is prudent. Meeting the flood elevation of +12.0 is difficult and impractical since the entire subdivision would be inundated at that level and raising the wall at only this property would not improve this condition. Limiting the height to just 6 feet is well below the flood elevation and reduces protection of not only this property, but the entire subdivision.

4. Rear Property Line vs. Certified Shoreline: The existing seawalls extend beyond the rear property lines and follow the certified shoreline. This seawall adjoins the seawalls at adjacent properties and, if built along the rear property line, will not completely enclose those properties. In addition to an irregular appearance, setting the wall back along the property line causes potential structural issues, increases possible scour at the end conditions, and may expose the adjacent properties to flooding given gaps at the ends.

Three schemes are presented in this report in order to illustrate the rationale used to develop the proposed scheme. The existing condition is shown for reference in Plate 4. The various schemes are depicted in Plates 5 through 7. The pros and cons for each follows:

Alternative "A"- Repair Wall Using Base of Existing Wall to 8' Max. Height (Plate 5)

Pros:

1. Reuses the base of existing wall thereby reducing material and construction cost.
2. Eliminates exposure of excavation to ocean and minimizes work below the water table. In addition to making construction less difficult and significantly reducing construction cost, this minimizes potential environmental issues.
3. Matches the alignment of the existing wall providing a fairly smooth face which reduces scour and improves resistance to wave action. This is better aesthetically also.
4. Matching the height and ocean face of the adjacent walls provides best possible protection against flooding.
5. Restores the full backfill height of the lot thereby reducing soil loss (erosion).

Cons:

1. Wall extends beyond rear property line encroaching into the State Conservation District.
2. Wall height exceeding 6 feet requires a zoning adjustment.

Alternative "B"- Reconstruct Wall in Its Entirety (Plate 6)

Pros:

1. Complete reconstruction provides solid base for new wall.
2. Provides a smooth face on the ocean side reducing scour and improving resistance to wave action. This is better aesthetically also.
3. Matching the height and ocean face of the adjacent walls provides best possible protection against flooding.
4. Restores the full backfill height of the lot thereby reducing soil loss (erosion).

Cons:

1. Excavation will be exposed to the ocean. This significantly increases the potential environmental impact and permitting issues. It also results in a **substantial** increase in construction cost.
2. More work below the water table than Alternative "A".
3. If wall is built along the certified shoreline the wall will extend beyond rear property line encroaching into the State Conservation District.
4. If wall is built along the property line, there will be jogs at both ends resulting in possible structural and flooding issues.
5. Wall height exceeding 6 feet requires a zoning adjustment.
6. Not as aesthetically pleasing because of discontinuities at the both adjacent properties.

Alternative "C"- Repair Wall to 6' Max. Height (Plate 7)

Pros:

1. Reuses the base of existing wall and reduces height thereby minimizing material and construction cost.
2. Eliminates exposure of excavation to ocean and minimizes work below the water table making construction less difficult and significantly reduces construction cost.
3. Matches the alignment of the existing wall providing a fairly smooth face which reduces scour and improves resistance to wave action.
4. Limiting height to 6 feet eliminates the need for a zoning adjustment.
5. Limiting height to 6 feet does not increase the nonconformity of the encroachment into the State Conservation District.

Cons:

1. Height insufficient to retain existing height of the lot. Increased soil loss (erosion).
2. Additional rear facing and side walls may be required to retain the existing height of the lot. Even if these are provided wave action overtopping the lower wall will erode the backfill at that level. Additional walls also increase construction cost.
3. If additional walls are not constructed as described above, a wall height of only 6' requires that the existing rear yard be regraded. In either case, a significant loss of usable yard space results.
4. Reduces protection against flooding, including protection of adjacent properties. The property will not be adequately protected against wave action.
5. May create structural problems at rear yard hardscapes, pool and spa.
6. Wall extends beyond the rear property line encroaching into the State Conservation District.
7. Aesthetics is questionable given the lower height of seawall at this property and increased exposure of the existing rear yard to view from the ocean. The taller wall provides more uniformity of the waterfront.

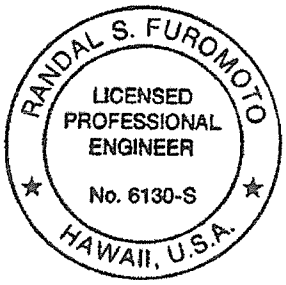
Conclusions and Recommendations

Given the significant advantages and lack of disadvantages from an engineering point of view, Alternative "A" is recommended as the "best" solution. It is also the most cost effective solution. The disadvantages listed have to do with permitting issues which have to do with existing conditions at this and other properties along the waterfront throughout the subdivision.

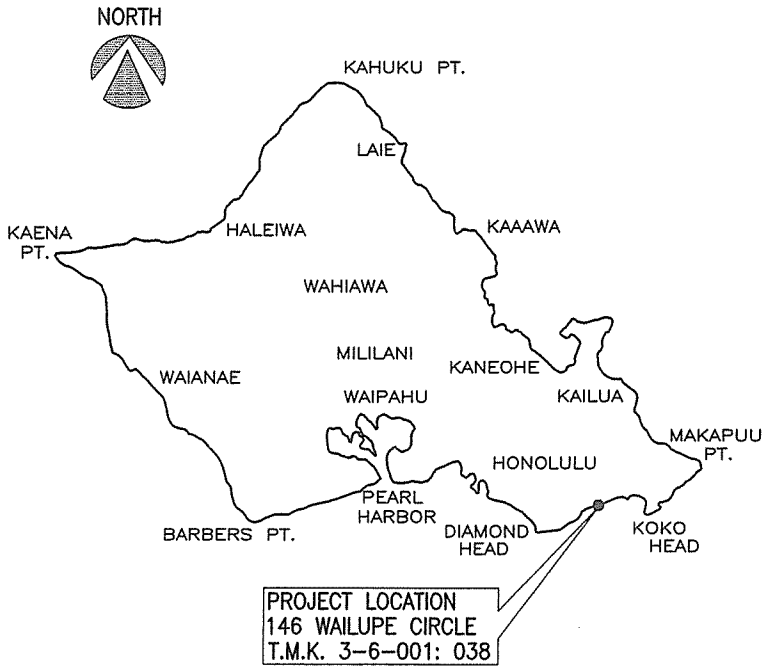
Should there be any questions or comments, please contact me.

Respectfully submitted,

Randal S. Furomoto
Structural Engineer

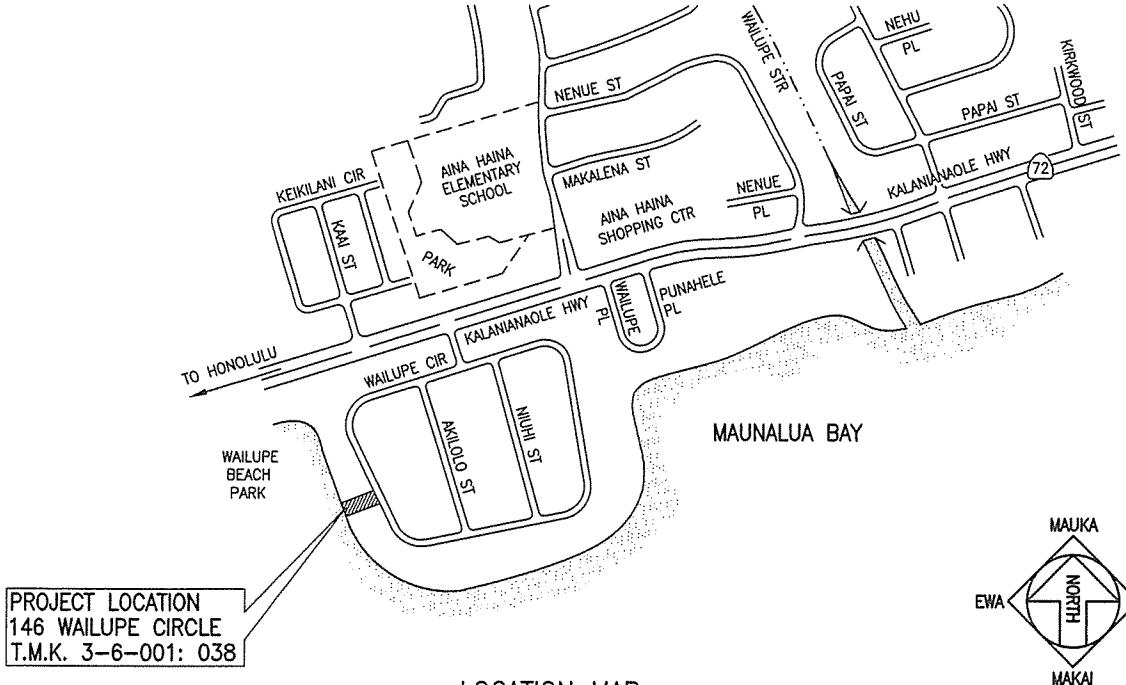


Attachments: Plates 1 thru 7



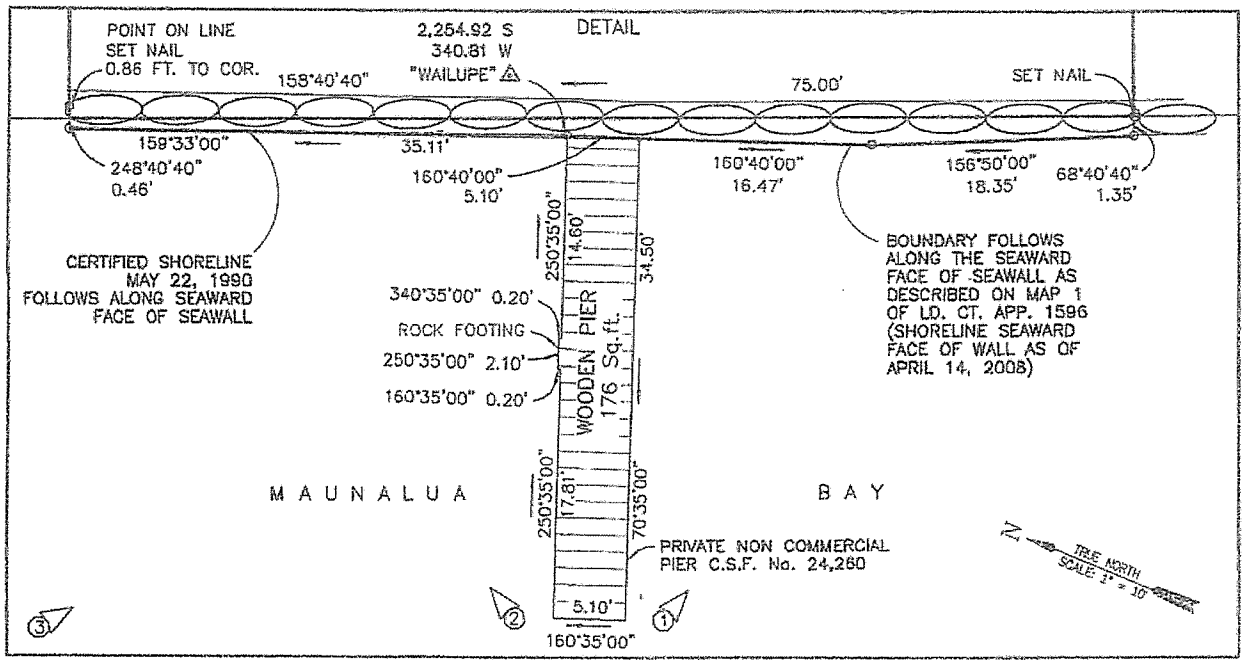
VICINITY MAP – ISLAND OF OAHU
NOT TO SCALE

PLATE - 1



LOCATION MAP
NOT TO SCALE

PLATE - 2



DENNIS K. HASHIMOTO
LICENSED PROFESSIONAL LAND SURVEYOR
No. 5688
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

DENNIS K. HASHIMOTO

EXPIRATION DATE: 4/30/08

SHORELINE SURVEY

LOT 38 OF BLOCK "A",
LAND COURT APPLICATION 1596, MAP 1

At Wailupe, Waikiki, Honolulu, Oahu, Hawaii

Tax Map Key: 3-6-01:38

Date: April 14, 2008

Address: 146 Wailupe Circle

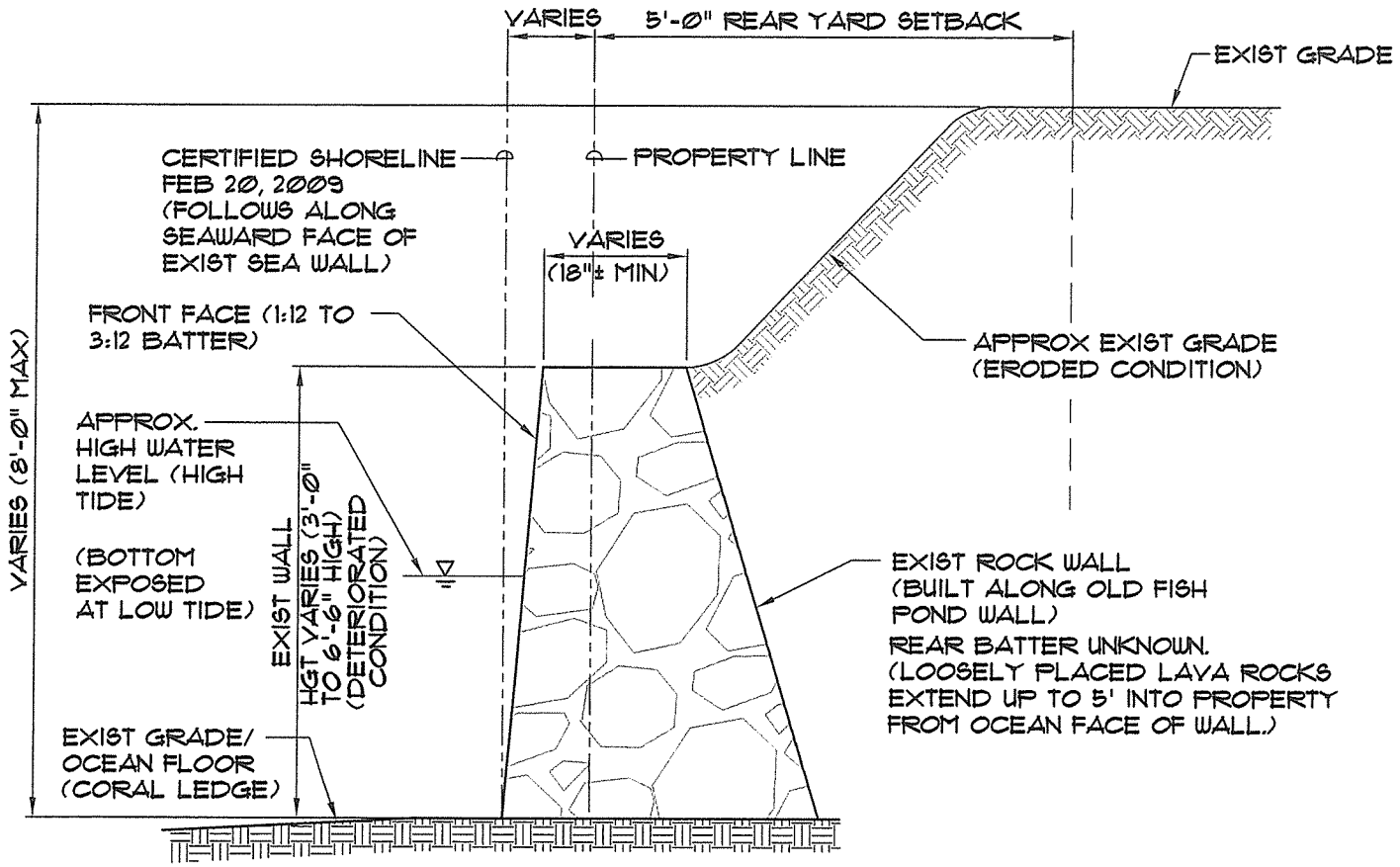
Owner: Kahn, Family Trust

FIELD BOOK 231:17

DJNS SURVEYING & MAPPING, INC.
P.O. BOX 25636, Honolulu, Hawaii 96825

Plate 3

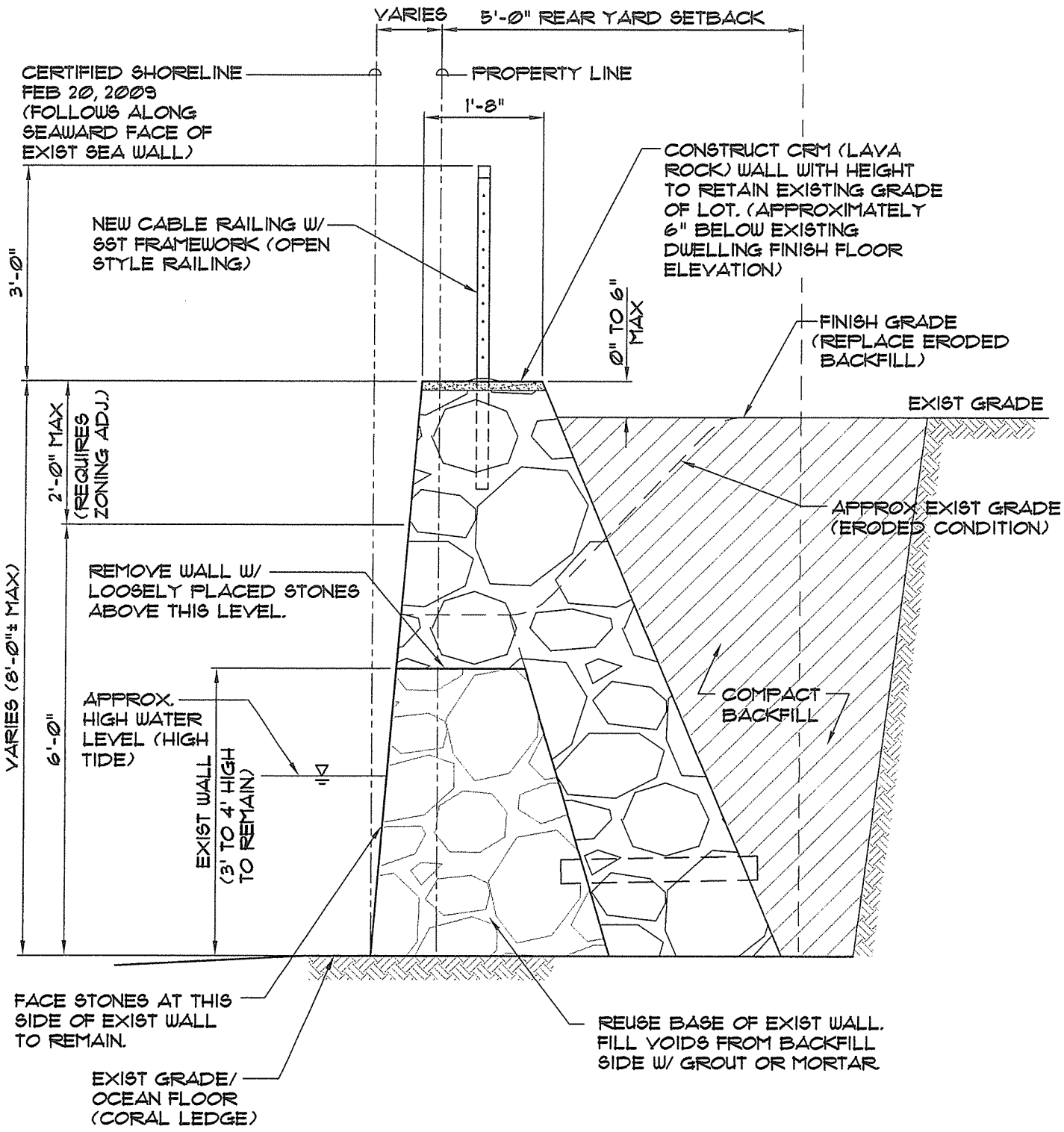
JOB #95366



EXISTING WALL SECTION

SCALE: ½"=1'-Ø"

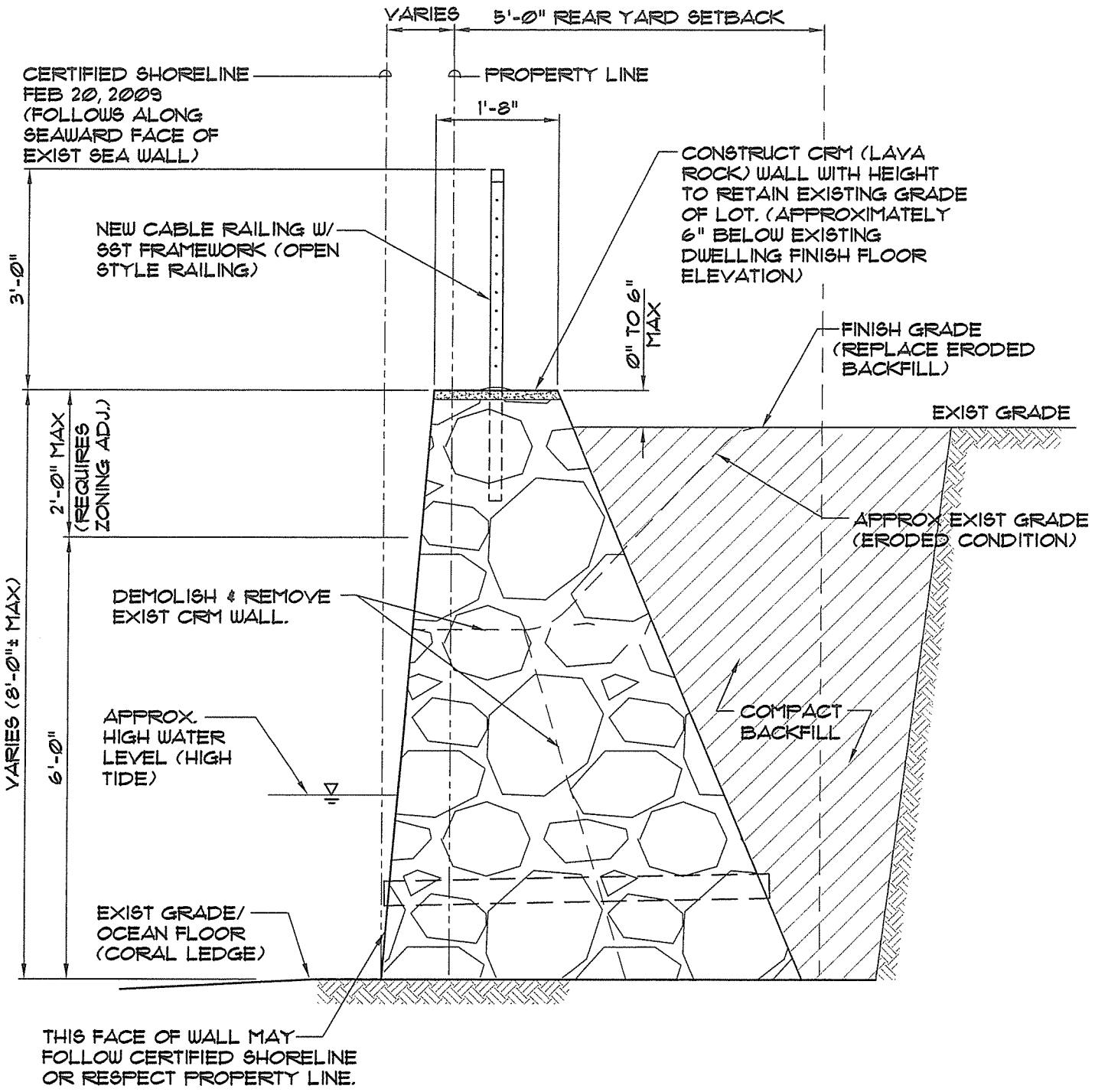
PLATE - 4



WALL SECTION (ALTERNATIVE "A" - REPAIR USING EXIST BASE TO 8' MAX. HGT)

SCALE: ½"=1'-Ø"

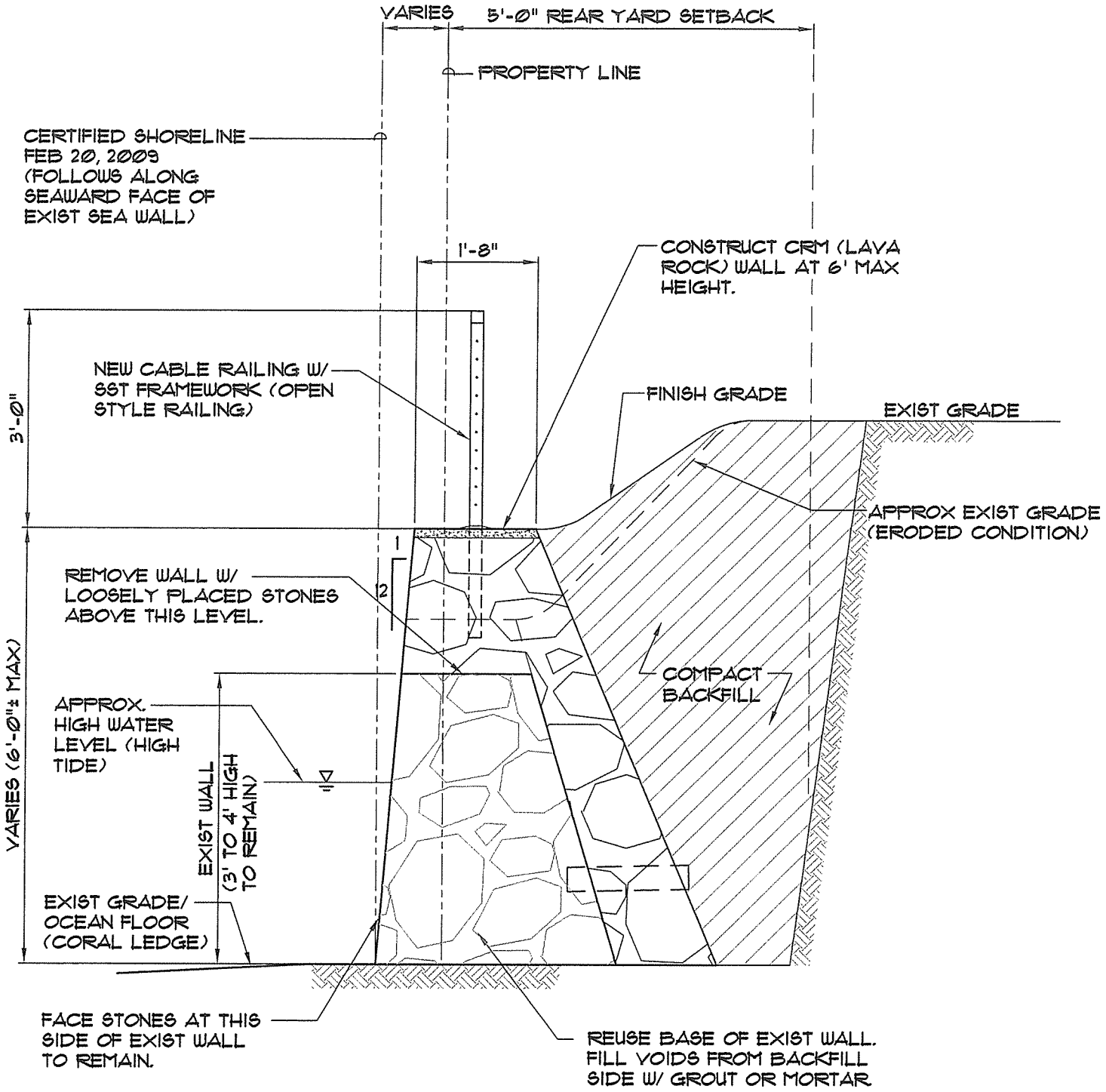
PLATE - 5



WALL SECTION (ALTERNATIVE "B" - RECONSTRUCT WALL IN ITS ENTIRETY)

SCALE: ½"=1'-Ø"

PLATE - 6



WALL SECTION (ALTERNATIVE "C" - REPAIR WALL TO 6' MAX HEIGHT)

SCALE: ½"=1'-0"

PLATE - 7

Appendix 4

Best Management Practices

Best Management Practices
Erosion Control and Shoreline Preservation

Best Management Practices

1) A City and County of Honolulu building permit will be obtained and kept enforced through completion of the project.
2) Construction activities will be restricted to the period of 7:30 a.m. to 6:00 p.m., Monday through Friday and Saturday 8:00 a.m. to 5:00 p.m. as required.
3) All work will be performed from private property.
4) Stockpiles of excavated materials and rock will not be located in drainage ways or other areas of concentrated flows. All spoils generated and import materials will be stored on the residential property. Sediment fences will be used around the base of all stockpiles.
5) Construction material will be free of contaminants or pollutants to the extent possible.
6) Reconstruction of the seawall will be done in stages to prevent damage to the historical components. Excavation will be by hand.

Shoreline Preservation

1) Access to the shoreline will be from the site with entry along the side of the dwelling.
2) No equipment will be used or materials stored within or past the shoreline.
3) All repair will be done landward of the existing seawall.
4) All cautions will be taken to prevent construction debris from entering the coastal waters.
5) No construction rocks or materials will be stored in the aquatic environment. Care will be taken to not harm any coral or endangered aquatic species.

Erosion Control

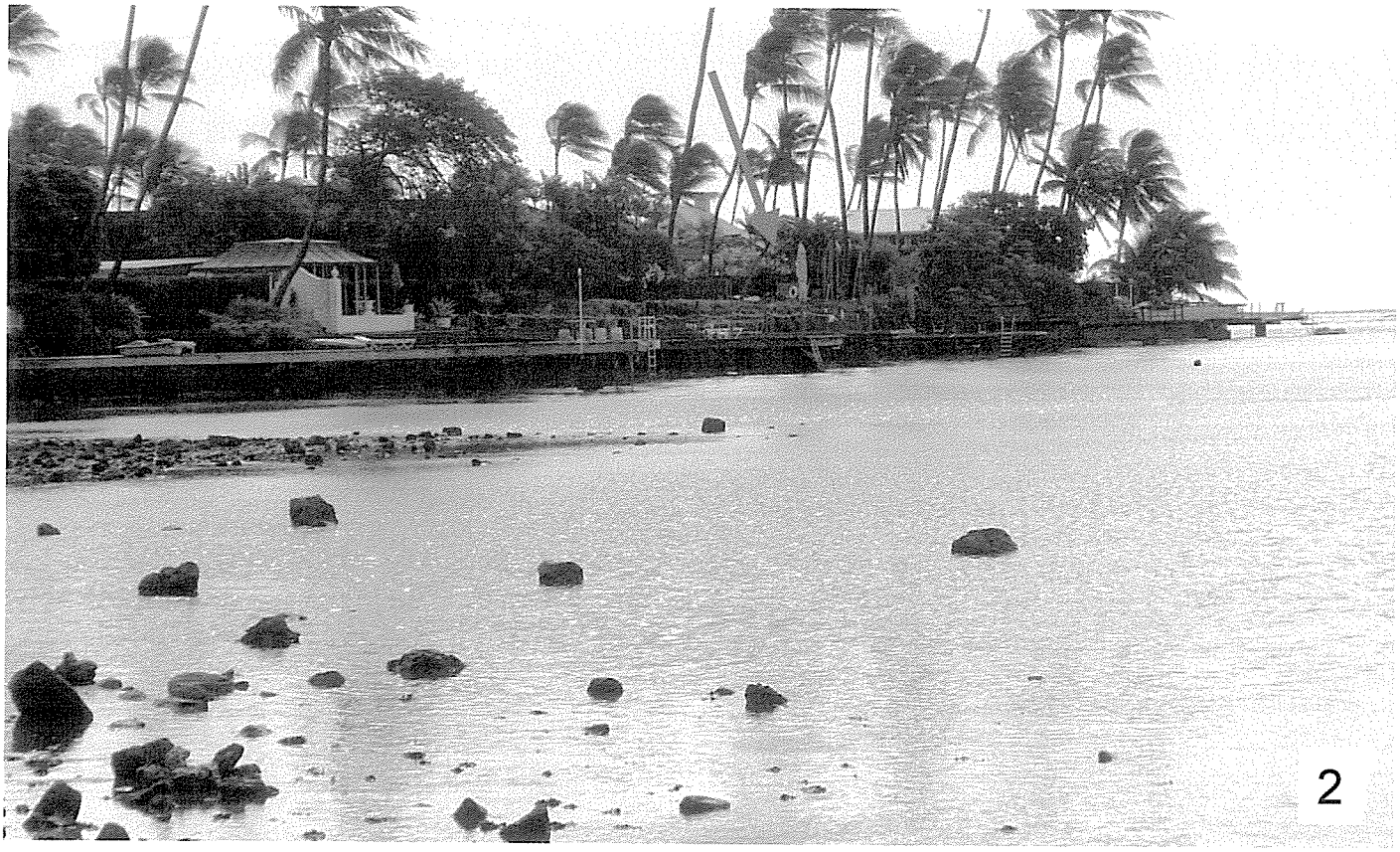
1) All disturbed areas will be stabilized with silt fencing and sediment control measures will be used to prevent debris from falling into the ocean.
2) Slope protection will be used to control surface flow and dust as needed.

Appendix 5

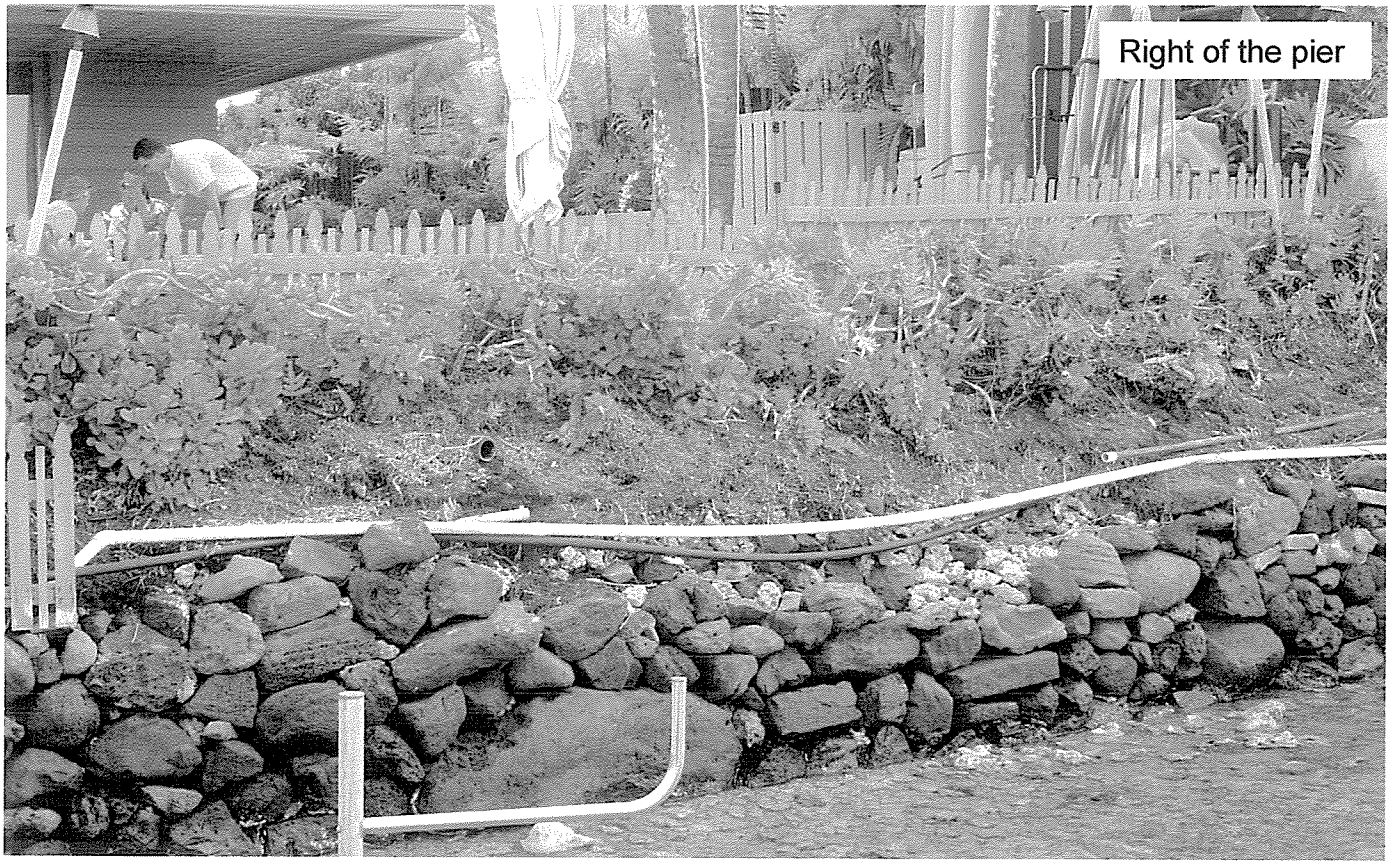
Updated Photographs

Picture taken from the pier on the shoreline looking towards the rear of the dwelling. The red arrow shows the existing grade of the backyard approximately 8-feet above the base of the seawall. The eroded condition of the rear slope of the property between the top of the crumbling seawall and the existing grade is visible.

Picture 1



Photos taken from Wailupe Beach Park on Kalanianaole Hwy showing walls and landscaping along the shoreline of the development. The arrow points to the subject property,barely visible from the Park.



Photos taken from the pier looking right and left showing erosion of the rear yard above the seawall. The distance from the base of the seawall to the top of the existing rear grade is approximately 8-feet. The proposed plan will restore the seawall to 6-feet and provide for a 2-foot high retaining wall behind the seawall to protect the grade from further erosion.

Appendix 6

Erosion Report

HIDA, OKAMOTO & ASSOCIATES, INC.
CONSULTING ENGINEERS

HARVEY K. HIDA, P.E.
ALAN T. OKAMOTO, P.E.

April 11, 2011

Mr. David K. Tanoue, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

SUBJECT: 146 Wailupe Circle Property
Aina Haina, Honolulu, Oahu
Tax Map Key: 3-6-001:038
HO&A Job No. 11-2454

I have visited a shoreline property located at 146 Wailupe Circle in Aina Haina (Tax Map Key: 3-6-001:038) on April 18, 2011.

Based on my field observation, I do hereby confirm that the existing sloping grade under napaka tree along the fishpond wall that front the property is eroding because the wall has crumbled.

The old fishpond wall is dry stock lava rockwall and was not intended to retain the soils on landside. Enclosed are pictures showing the conditions of site and fishpond wall.

Should you have any questions, please feel free to call me at 942-0066 ext. 11.

Very truly yours,

HIDA, OKAMOTO & ASSOCIATES, INC.

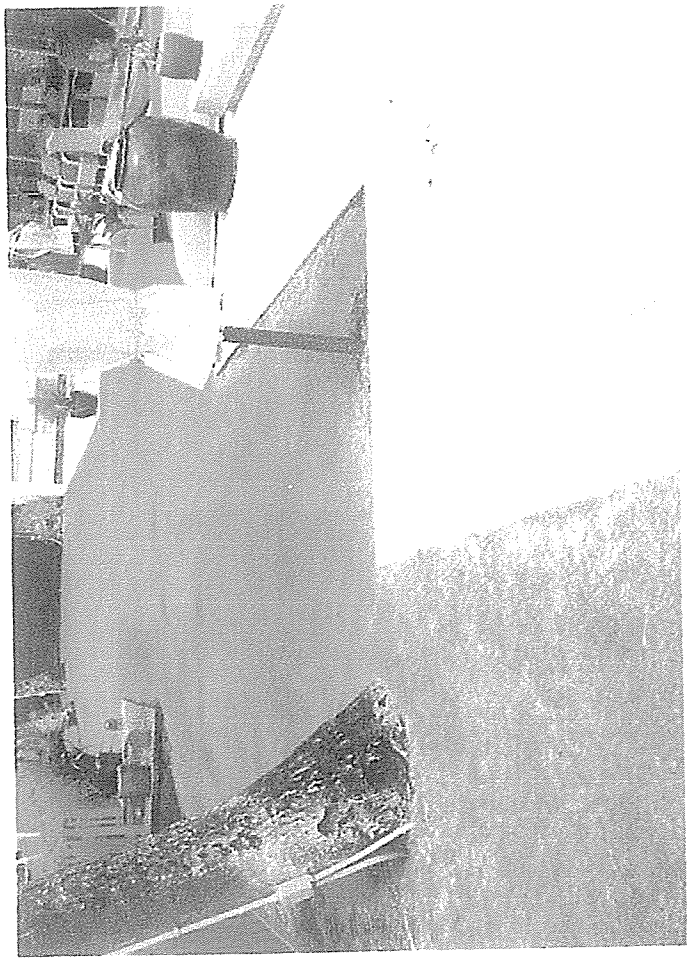
Harvey K. Hida, P.E.
President

HARVEY K. HIDA
LICENSED
PROFESSIONAL
ENGINEER
No. 4363-C
HAWAII, U.S.A.

Enclosure

11-2454.L01

Pacific Guardian Tower* 1440 Kapiolani Boulevard* Suite 1120 * Honolulu, Hawaii 96814
Phone: (808) 942-0066 * Fax: (808) 947-7546
e-mail address: hidaokamoto@hawaii.rr.com



Appendix 7

2010 FONSI and Draft EA Addendum Comments and Responses

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

MUFI HANNEMANN
MAYOR

DAVID K. TANOUE
DIRECTOR

ROBERT M. SUMITOMO
DEPUTY DIRECTOR

2009/ED-15(JM)

June 25, 2010

Ms. Katherine Puana Kealoha, Director
Office of Environmental Quality Control
State of Hawaii
State Office Tower, Room 702
235 South Beretania Street
Honolulu, Hawaii 96813-2437

Dear Ms. Kealoha:

Subject: Chapter 343, Hawaii Revised Statutes (HRS)
Final Environmental Assessment (EA) Determination
Finding of No Significant Impact (FONSI)

Recorded Owner:	Kahn Family Trust
Applicant:	Philippe Kahn
Agent:	Wil Chee – Planning & Environmental
Location:	146 Wailupe Circle - Wailupe
Tax Map Key:	3-6-1: 38
Request:	After-the-fact Shoreline Setback Variance
Proposal:	Repair and increase the height of an existing concrete rubble masonry (CRM) seawall along a residential beachfront lot.

Attached and incorporated by reference is the Final EA prepared by the applicant for the above project pursuant to Chapter 343, HRS. We have determined that the preparation of an Environmental Impact Statement is not required and have issued a FONSI. Enclosed are a 3-1/2" Floppy Disk with a "Summary" of the subject project, Publication Form, a CD, and one hard copy of the Final EA. We request publication of a notice in The Environmental Notice.

If you have any questions, please contact James Morisato of our staff at 768-8026.

Very truly yours,

for David K. Tanoue, Director
Department of Planning and Permitting

DKT:nt

Encl.

Doc. No. 775241

781684

Project Name:	Kahn (After-the-fact) seawall
Applicable Law:	Chapter 23, Revised Ordinances of Honolulu (ROH)
Type of Document:	Final Environmental Assessment
Island:	Oahu
District:	Wailupe
Tax Map Key:	3-6-1: 38
Applicant:	Philippe Kahn
Landowner:	Kahn Family Trust
Approving Agency:	Department of Planning and Permitting City and County of Honolulu 650 South King Street, 7th Floor Honolulu, Hawaii 96813
Consultant:	Wil Chee – Planning & Environmental

Project Summary:

The applicant seeks an after-the-fact shoreline setback variance to repair and increase the height of an existing variable height concrete rubble masonry (CRM) seawall that extends along the 75-foot seaward boundary of the subject parcel located at 146 Wailupe Circle in Wailupe. A wood pier extends seaward from the seawall which retains a backfilled lawn. The parcel is developed with a single-family dwelling.

The Department of Planning and Permitting (DPP) records indicate that there is a nonconforming shoreline protection structure (seawall) at this location. Rocks have fallen off, and most of the existing wall is 6.5 feet high, with the lowest parts 3 feet high. Both measurements are from the base of the wall, which is 2 feet below mean sea level. The applicant proposes to repair and construct the entire wall at a height of 8 feet and connect to adjacent walls.

Repairing and increasing the height of the existing seawall requires that an after-the-fact shoreline setback variance be obtained from the DPP.

As an improvement that is considered accessory to the single-family use of the lot, the seawall is not considered development and, therefore, is exempt from Special Management Area (SMA) requirements.

The project will require a 401 Water Quality Certification from the State Department of Health, and may require a Department of the Army permit from the Corps of Engineers.

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR

JIRO A. SUMADA
ACTING DIRECTOR

2012/ED-9 (JL)

January 7, 2013

Ms. Laurie Clegg
Analytical Planning Consultants, Inc.
928 Nuuanu Avenue, Suite 502
Honolulu, Hawaii 96817

Subject: Revised Draft Environmental Assessment (EA) No. 2012/ED-9
Project: The Kann Family Seawall
Location: 146 Wailupe Circle - Wailupe
Tax Map Key: 3-6-1: 38

Dear Ms. Clegg:

On December 8, 2012, notice of the availability of a Revised Draft Environmental Assessment (EA) for the project was published by the Office of Environmental Quality Control in The Environmental Notice. In accordance with the procedural requirements of Chapter 343, HRS, all comment letters received during the 30-day public comment period, which began with the initial publication, require a response addressed directly to the commentator. The Final EA must also include all comment letters received and responses to those letters, as well as appropriately revised text. Enclosed for your information and appropriate action are comments which were received by our department.

In addition to the above, the Department of Planning and Permitting (DPP) offers the following comments on the Draft EA:

1. The Final EA should include a discussion of the visual impacts of the proposed 2-tier wall and metal rail above, explain how public views will be affected, and if mitigation measures are necessary.

2. The Final EA should include a more detailed description of specific methods, Best Management Practices (BMP) to be implemented, in addition to the use of the silt fence and general sediment control measures mentioned on page 12 in the initial FEA. Discuss how the anticipated construction activity, including temporary stockpiling relating to the excavation, will not result in potential discharge into State waters (Class A).

3. The Final EA should list of all the required permits for the project.

4. Confirm and/or correct the following:

   1. Please correct the typographical error on page 4 of the Draft EA, to state that the Archaeological Inventory Survey recommends repaired sections of the fishpond wall may be mortared on the Mauka side only above both the fish pond wall and the water line with the mortar extending no closer than 6" to the makai face of the seawall.

5. The Final EA and site plan should identify the total length of the proposed 2-tier wall and metal railing above the seawall.

6. The Final EA should discuss alternatives, including a landscape alternative without the 2-foot high tiered wall to be constructed.

If you have any questions, please contact Jenny Lee of our staff at 768-8019.

Very truly yours,

for Jiro A. Sumada, Acting Director
Department of Planning and Permitting

JAS:hd

Enclosures: Copies of comment letters

PHONE (BUS): (808) 536-5695
FAX: (808) 599-1553

apc
ANALYTICAL PLANNING CONSULTANTS, INC.
928 NUUANU AVENUE, SUITE 502 • HONOLULU, HI 96817

February 1, 2013

Mr. Jiro Sumada, Acting Director
City & County of Honolulu
Department of Planning and Permitting (DPP)
650 South King Street, 7th Floor
Honolulu, HI 96813

SUBJECT: SHORELINE SETBACK VARIANCE (SSV)
CHAPTER 343 HAWAII REVISED STATUTES (HRS)
REVISED DRAFT ENVIRONMENTAL ASSESSMENT (DEA)

Dear Mr. Sumada:

Thank you for your review of the revised draft Environmental Assessment and for providing us with your comments. In accordance with the procedural requirements of Chapter 343 HRS, copies of all the comment letters received and our responses will be included in the revised final Environmental Assessment. Please find our responses to your comments below.

1. *The final Environmental Assessment shall include a discussion of the visual impacts of the proposed 2-tiered wall.*

The original proposal for repair of the seawall that was discussed in the 2010 Final Environmental Assessment, would have allowed for repair of the seawall up to the top of the rear grade for the property (for a total height of 8-feet). The existing naupaka would have been removed and a 3-foot cable rail fence installed on top of the seawall. Both of the adjoining properties have Naupaka that extends over the walls which provides visual relief along the shoreline.

The purpose of the proposed 2-tiered terraced design will be twofold – first to protect the grade and control the erosion and second to provide a landscape area in between the two walls that will both help retain the soil and provide visual relief along the walled shoreline. The proposed 2-foot high 8-inch wide CMU retaining wall will be set back 1.5-feet behind the seawall creating a landscape area between the seawall and the retaining wall. The plants will grow against the 2-foot wall hiding it from view. The main view of this portion of the Wailupe development along the Maunalua Bay is from the Wailupe Beach Park on Kalanianeole Highway. Pictures show that all the properties along this portion of the Wailupe Circle have both rock seawalls (ranging in height from 6-8 feet) with greenery above (Appendix 5). The proposed design will harmonize visually with the existing environment.

The purpose of the proposed 3-foot high stainless steel cable-rail fence that will be placed on or slightly landward of the 2-foot high retaining wall is to provide safety at the edge of the rear yard without restricting views to or from the property. These fences are made of strong thin cables placed 4-5-inches apart and can be seen through. The proposed placement of the cable fence should not affect views from or to the site.

2. *Include a more detailed description of Best Management Practices including how temporary stockpiling will not result in discharge into State waters.*

To protect the shoreline and adjoining properties construction will be confined to the project site and Best Management Practices employed. In order to contain all materials onsite, the wall will be repaired from the mauka side in four segments with each segment monitored by an archeologist as necessary. Excavation will be by hand which renders more control over containment. An expanded description of Best Management Practices is included in the Final Addendum to the FEA.

3. *List all required permits for the project.*

Finding of No Significant Impact	Hawaii Revised Statutes Chapter 343
Shoreline Setback Variance	Revised Ordinances of Honolulu Chapter 23
Zoning Adjustment for Height	Land Use Ordinance Chapter 21-2.140 (1)
Certified Shoreline	Hawaii Administrative Rules 13-222
Building Permit	Revised Ordinances of Honolulu Chapter 18

4. *Correct typo regarding distance mortar may extend to the Makai face of the fishpond wall.*

The information in the environmental assessment has been corrected to read that repaired sections may be mortared on mauka side only above both the Wailupe Fishpond wall and the water line with the mortar extending no closer than 6-inches to the makai face of the wall...as agreed upon with the State Historic Preservation Division.

5. *Identify the total length of the proposed 2-tier wall and metal railing on the site plan.*

The length of the property and the existing wall along the shoreline property is 75-feet as shown on the survey of the property included in the FEA and the revised environmental assessment. The 2-tiered wall and fence will be approximately the same length as they will be placed 1.5 feet mauka.

6. *The Final EA should discuss alternatives including a landscape alternative.*

The original FEA considered 3 alternatives; (1) no action, (2) repair and replacement of fallen rocks with no raising of the seawall to the existing grade and (3) the preferred alternative of replacing the lava rocks that have fallen onto the shore and construction of the height of the wall to 8-feet to match the existing grade and the height of the walls on both sides of the property. Alternative (2) approved by the Department of Planning and Permitting (DPP), was not acceptable to the applicant so the proposed 2-tier design has been suggested as a compromise. The design allows for the seawall to remain at 6-feet in height but for the 2-feet of additional grade of the rear yard to be retained by a two-foot high retaining wall with landscaping. If the original preferred alternative of an 8-foot wall is not to be permitted then the currently proposed 2-tier wall is the alternative favored by the engineer and the applicant because it will provide protection for the existing grade of the rear yard.

The engineer in his review of alternatives (Appendix 3) also considered reconstruction of the wall to 8-feet. This would not be acceptable because it would destroy the remnants of the historical wall and could potentially cause runoff into the bay during construction.

A landscaping alternative would attempt to retain the exposed soil of the rear yard by planting grass or naupaka instead of the 2-foot high retaining wall. In this situation, where erosion has already begun, landscaping is best utilized for visual and aesthetic reasons but not as a way to retain the soil from drifting into the shoreline waters of the Bay. The existing naupauka has already eroded the fill area behind the seawall causing the grade to begin gradually sloping towards the shoreline. This movement is threatening the patio pool area and other hardscape features and could eventually affect the foundation of the house and the stability of the seawall.

Thank you for taking the time to prepare your comments and for your consideration of the request for a Finding of No Significant Impact for the proposed action.

Sincerely

Lauri Clegg, President
Agent for the Applicant

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ESTHER KIA'AINA
INTERIM FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

RECEIVED
JAN - 3 2013
DEPT. OF PLANNING AND PERMITTING

January 3, 2013

Ms. Jenny Lee
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
Jlee3@honolulu.gov

LOG NO: 2012.3378
DOC NO: 1301SL07
Archaeology

Dear Ms. Lee:

SUBJECT: **Chapter 6E-42 Historic Preservation Review–**
Revised (Addendum) Draft Environmental Assessment, Kahn Family Trust
Shoreline Setback Variance, Repair of Existing Sea Wall, 146 Wailupe Circle
Wailupe Ahupua'a, Kona District, Island of O'ahu
TMK: (1) 3-6-001:038

Thank you for the opportunity to review this *Revised (Addendum) Draft Environmental Assessment for Shoreline Setback Variance Application No. 2010/SV-10 and Zoning Adjustment Application Number 2010/ZA-32, Repair of Existing Sea Wall, 146 Wailupe Circle, Wailupe Ahupua'a, Kona District Island of O'ahu TMK: (1) 3-6-001:038*. We received several submittals on November 27 and December 13, 2012.

SHPD concurs with the new variance which will allow the owners to obtain building permits to construct a 2-foot high CMU retaining wall *mauka* of a 6-foot high retaining/seawall within the 5-foot rear and side yards within the 40-foot shoreline set back area at 146 Wailupe Circle, Honolulu, Hawaii, TMK: (1) 3-6-001:038. The terraced retaining wall will protect the existing grade of the rear of the property from continuing erosion and provide a landscape area that will soften the visual impact of the seawall.

We also concur with **Condition M** added by the Department of Planning and Permitting (DPP) in a letter dated August 15, 2011. This condition stipulates the following:

> Prior to the start of any wall-altering activities, the Applicant shall provide the DPP with written documentation from the State Department of Land and Natural Resources, Historic Preservation Division confirming its receipt of an acceptable Archaeological Inventory Survey (AIS) and mitigation course. The Applicant shall consult with SHPD regarding the AIS and acceptable mitigation measures, including confirmation that the AIS and mitigation measures are the only means to address the concerns of SHPD, or if there are any other alternatives.

SHPD still awaits submittal of an archaeological inventory survey report that meets the requirements of Hawaii Administrative Rule (HAR) §13-276-5, including mitigation recommendations. Based on our review of the initial draft archaeological inventory survey report and a site visit, we made the following determinations: (1) the proposed construction plans will have an "effect, with agreed upon mitigation commitments" on the existing post-1940 sea wall and the underlying Wailupe Fishpond wall; (2) both walls are assessed as being significant under Hawaii Register Criteria "c" and "d" (August 21, 2012; Log Nos. 2011.2654, 2012.1560, Doc. No. 1208SL02).

In addition, SHPD concurs with the applicant's proposal to repair the sea wall with the following agreed upon mitigation commitments stipulated in our earlier correspondence (August 21, 2012; Log Nos. 2011.2654, 2012.1560, Doc. No. 1208SL02) and which are clearly stated in the Revised Environmental Assessment:

(1) Repair using matching stone material the damaged sections of the existing seawall post-1940 addition to the height and original width of the existing intact sections (~6-6.5' above coral reef). Repaired sections may be mortared on *mauka* (inland) side only above both the Wailupe Fishpond wall and the water line with the mortar extending no closer than 6" to the *makai* face (seaward side) of the wall, as necessary to preserve structural integrity;
(2) Construct a 2-foot high and 8-inch wide CMU retaining wall 1.5-feet behind the seawall to correlate with the existing grade of the rear yard. The landscape area between the seawall and the CMU wall to be planted to lessen the visual impact;
(3) Remove using hand tools, the *naupaka* hedge present between the *mauka* face of the existing sea wall addition and the *makai* edge of the existing rear yard (lawn);
(4) Remove using hand tools, the sediments below the hedge, approximately - 8'±, between the *mauka* face of the existing sea/Fishpond wall and the *makai* edge of the existing rear yard (lawn and pier stairs) to the water line;
(5) No repairs or modification will be made to the Wailupe Fishpond wall section without prior consultation and written approval by SHPD;
(6) Install structural materials/rubble fill within the hand-excavated space between the sea/Fishpond wall and the rear yard (as shown on the plans) to allow the surf to flow in and out of this space and to reduce soil erosion into the bay. The new structural materials/rubble fill encased in concrete/mortar will provide the structural integrity of the repaired wall;
(7) Install drain leaders (pipes) extending from the *mauka* face of the existing sea/Fishpond wall through the new structural materials. These pipes will not extend into either the existing sea wall addition or the underlying Fishpond wall;
(8) Plant a new *naupaka* hedge in the same location as the removed hedge after the repair work is completed;
(9) Install the metal safety rail on, along, or adjacent to the concrete edging demarking the *makai* extent of the rear yard (lawn) rather than atop the sea wall; and
(10) Facilitate scheduling SHPD site visits during the hand excavation of the sediments *mauka* (behind) the sea/Fishpond wall and installation of the rubble fill, thereby allowing SHPD staff to document the wall repair work and the Wailupe Fishpond section of the wall.

Please contact Susan A. Lebo at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Theresa K. Donham
Archaeology Branch Chief

cc: Lauri Clegg, President, Agent for the Applicant, DCleggAPC@hawaii.rr.com

PHONE (BUS): (808) 536-5695
FAX: (808) 599-1553

apc
ANALYTICAL PLANNING CONSULTANTS, INC.
928 NUUANU AVENUE, SUITE 502 • HONOLULU, HI 96817

January 14, 2013

Ms. Pua Aiu, Administrator
State Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Blvd.
Kapolei, Hawaii 96707

Dear Ms. Aiu:

SUBJECT: SHORELINE SETBACK VARIANCE (SSV)
CHAPTER 343 HAWAII REVISED STATUTES (HRS)
REVISED DRAFT ENVIRONMENTAL ASSESSMENT (DEA)

Thank you for your review of the revised draft Environmental Assessment and for providing us with your comments. Please find our responses to your comments below.

1. *SHPD concurs with the new variance which will allow the owners to obtain building permits to construct a 2-foot high CMU retaining wall mauka of a 6-foot high retaining/seawall within the 5-foot rear and side yards within the 40-foot setback area. The terraced retaining wall will protect the existing grade of the rear property from continuing erosion and provide a landscape area that will soften the visual impact of the seawall.*

2. *SHPD concurs with the Department of Planning and Permitting's stipulation that the Applicant provide the DPP with written documentation from the State Department of Land and Natural Resources, Historic Preservation Division confirming its receipt of an acceptable Archeological Inventory Study (AIS) and mitigation course.*

   The draft AIS submitted to the SHPD by Archeological Consultants of the Pacific May 29, 2012 is being revised as per comments by SHPD. Approval of the AIS is required prior to the start of any wall-altering activities.

3. *SHPD concurs with the applicant's proposal to repair the seawall with the agreed upon mitigation commitments contained in the revised draft Environmental Assessment.*

Thank you for taking the time to prepare your comments and for participating in the environmental review process.

Sincerely

Lauri Clegg

Lauri Clegg, President
Agent for the Applicant

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ESTHER KIA'AINA
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WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813
Telephone: 587-0100

December 21, 2012

RECEIVED
'12 DEC 31 P2:00
DEPT OF PLANNING AND PERMITTING
CITY & COUNTY OF HONOLU

Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
ATTN: Jenny Lee

RE: Transmittal from the Department of Pl
City and county of Honolulu
November 19, 2012 (Letter No. 2012/
Shoreline Setback Variance
Kahn Family Trust Seawall

The Division of Aquatic Resources of the Department of Land and Natural Resources notes the following issues:

Project details

There appears to be a transcription error in the addendum that should be clarified. On page four of the letter from Analytical Planning Consultants, Inc., it states that "Repaired sections may be mortared on the *Mauka* (inland) side…with the mortar extending no closer than 6' to the *makai* face (seaward side) of the wall." The maximum width of the wall is planned to be 5'8", so this is not physically possible. A similar description appears in the letter from State Historic Preservation Division, but the minimum distance mortar may be from the *makai* face is 6". This discrepancy should be rectified prior to implementation of the work plan.

Erosion

This project will involve removal of vegetation above the wall, and excavation and backfill of soils on the *mauka* side of the seawall. These activities, and the pile of soil that will presumably have to be temporarily stored on the property prior to backfill, present significant opportunities for erosion of soils into Class A near shore marine waters. Photos of the work site show that there is currently soil on top of the wall, and this soil must also be considered when planning work activities to prevent pollution of marine waters as it may be dislodged with the vegetation is removed. The applicants state that "Best Management Practices" will be used to prevent erosion, but no information is given about what these practices will be. Therefore it is not possible to determine if the planned protections are adequate to protect adjacent coral reef habitat from being impacted by this project based on the information provided.

State protected resources

Hawaii Administrative Rule (HAR) §13-95-1 states that "'Live rock' means any rock or coral to which marine life is visibly attached or affixed." HAR §13-95-71 further states, "It is unlawful for any person to take live rock, or to break or damage with crowbar, chisel, or any other implement, any rock or coral to which marine life is visibly attached or affixed. (b) It is unlawful for any person to sell any rock or coral to which marine life is visibly attached or affixed. [Eff 12/03/98; am Dec 9 2002] (Auth: HRS §§187A-5, 189-6) (Imp: HRS §§187A-5, 189-6)"

The project description states that stones that have fallen from the seawall be removed from the water and possibly replaced in the seawall. If these rocks have been in the water for sufficient time that marine organisms have attached to the rocks or reside in them, they would be considered "live rock" per the legal definition above. Such rocks would therefore be protected and may not legally be removed from the water.

Effects of construction activity on endangered/threatened species

The information provided about this project states that "There are no naturally occurring endemic or endangered plants located on the peninsula. However, there is no mention of endangered or threatened (E/T) marine species. The shoreline in the proposed work location is habitat that may be used as a resting site by sea turtles and/or the highly endangered Hawaiian monk seal. Monk seals hauled out on shore are sensitive to the presence of nearby humans, and monk seal mothers may abandon their nursing pups if subjected to repeated disturbance. Construction and associated activities should not result in the disturbance of monk seals or other E/T species. It is illegal to harass or disturb seals or other protected species, whether the disturbance is intentional or not. All construction activities should be postponed if these species are within 50 yards of the work site or any associated activity.

Sea level rise

The Final Environmental Assessment notes that "Wailupe Peninsula and the greater Diamond Head coastal district of Oahu are experiencing lower rates of sea level rise than other coastal areas of Hawaii (Fletcher et al. 2002)." This relative comparison does not precisely or adequately address the issue of sea level rise. Even if this area does not experience as severe effects as other areas, that does not automatically mean that it is safe from adverse impacts due to rising sea levels. A more meaningful metric to present would be the actual, projected increase in sea level. It should also be noted that projections of sea level rise have been revised since the Fletcher et al. (2002) document was written, and projections have increased significantly. Plans to maintain this shoreline should make use of the most up-to-date estimates available in order to effectively plan for impending environmental changes.

Dr. Robert Nishimoto
Program Manager

apc

PHONE (BUS): (808) 536-5695
FAX: (808) 599-1553

ANALYTICAL PLANNING CONSULTANTS, INC.
928 NUUANU AVENUE, SUITE 502 • HONOLULU, HI 96817

January 14, 2013

Mr. William M. Tam, Acting Director
State of Hawaii Department of Land & Natural Resources
Division of Aquatic Resources
P.O. Box 2867
Honolulu, Hawaii 96803

Dear Mr. Tam:

SUBJECT: SHORELINE SETBACK VARIANCE (SSV)
CHAPTER 343 HAWAII REVISED STATUTES (HRS)
REVISED DRAFT ENVIRONMENTAL ASSESSMENT (DEA)

Thank you for your review of the revised draft Environmental Assessment and for providing us with your comments. Please find our responses to your comments below.

1. *Transcription error on page 4 of the revised draft EA – mitigation stipulation (1) should read 6" and not 6' (corrected)*
2. *Concerns regarding opportunities for erosion of soils into Class A near shore marine waters during reconstruction of the retaining wall.*

   Please be aware of the fact that during construction activities all of the Best Management Practices for construction sites will be applied to ensure that there will be no contamination of the Class A waters that surround Wailupe Peninsula. This is required for obtaining building permits. The existing seawall will remain in place providing protection for the shoreline during the reconstruction to restore the height of the seawall to 6-feet and to strengthen the mauka side. Storage of all materials will be on-site behind the existing seawall.

3. *State protected resources - Concerns regarding removal of fallen rocks that may now be considered to be "Live rock" to which marine life is visibly attached or affixed.*
4. *Effects of construction activity on endangered/threatened species e.g. monk seals.*

   These concerns have been noted and included in the revised draft EA.

5. *Plans to maintain this shoreline should make use of the most up-to-date estimates available in order to effectively plan for impending environmental changes.*

   The subject project area is contained within the VE Coastal High Hazard Flood District. The most current maps show a 12-foot flood elevation as opposed to no flood elevation determination during the time the original EA was reviewed. Repair of the seawall and the addition of the 2-foot retaining wall mauka of the seawall will help protect the subject property and the Wailupe Peninsula development from coastal impacts.

Thank you for taking the time to prepare your comments and for participating in the environmental review process.

Sincerely

Lauri Clegg, President
Agent for the Applicant

NEIL ABERCROMBIE
GOVERNOR
RICHARD C. LIM
DIRECTOR
MARY ALICE EVANS
DEPUTY DIRECTOR
JESSE K. SOUKI
DIRECTOR
OFFICE OF PLANNING

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

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

Telephone: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-13815

December 18, 2012

RECEIVED
'12 DEC 21 P3:23
DEPT OF PLANNING AND PERMITTING CITY & COUNTY OF HONOLULU

Mr. Jiro A. Sumada, Acting Director
Department of Planning and Permitting
City and County of Honolulu
650 S. King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Sumada:

Subject: Revised Draft Environmental Assessment for Shoreline Setback Variance Application at 146 Wailupe Circle, Oahu, Tax Map Key (1)3-6-001: 038

Thank you for the opportunity to provide comments on the revised (addendum) Draft Environmental Assessment (EA), consisting of a previously accepted Final EA and supplemental information, for the revised proposal including the construction of a new 2-foot high retaining wall within the 40-foot shoreline setback area.

The Office of Planning has reviewed the subject Draft EA (addendum) and has the following comments to offer:

1. The Final EA should clarify whether the new proposed wall is a concrete rubble masonry (CRM) retaining wall or a concrete masonry unit (CMU) retaining wall. Both terms are used in the revised Draft EA, including the project summary and addendum.

2 The letter from the agent Analytical Planning Consultants, Inc. to the Department of Planning and Permitting (DPP) dated September 25, 2012, states that "As shown on the plans included in the FEA, this plan would leave 2-feet of the rear yard existing grade exposed to erosion." The Final EA should specifically cite or provide a plot plan to illustrate the 2 feet of the rear yard existing grade, and assess the situation of erosion and the existing exposure to erosion.

3. The revised plans on page 2 of the letter dated September 25, 2012, describe the proposed retaining wall as 2-foot high 8-inch wide, with a 1.5-foot setback behind the seawall. The Final EA should provide information about the length of the proposed retaining wall.

4. In accordance with the information provided by the addendum, the height of the proposed rock seawall has been revised from 8 feet to 6 feet per DPP comments. The revised proposal adds a 2-foot high retaining wall, upon which a 3-foot high cable railing will be placed. As such, an application for a Zoning Adjustment to permit the combined total height of the two retaining walls to exceed 6 feet will be submitted. The Final EA should assess the visual impacts of the revised proposal and provide specific mitigation measures, including a landscaping plan, to minimize any adverse impacts on public views to, from, and along the shoreline.

5. We note that the previously accepted Final EA dated May 2010, did not include a list of required permits and approvals. Pursuant to Hawaii Administrative Rules §11-200-10, the Final EA should provide a list of all permits and approvals required for the proposed action.

If you have any questions regarding this comment letter, please contact Leo Asuncion, Coastal Zone Management Program Manager, at 587-2875.

Sincerely,

Jesse K. Souki
Director

c: Ms. Lauri Clegg, Analytical Planning Consultants, Inc.

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 4, 2013

Department of Planning and Permitting
Attn: Ms. Jenny Lee
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

via email: jlee3@honolulu.gov

Dear Ms. Lee,

SUBJECT: Shoreline Setback Variance (SSV), Chapter 343 HRS, Revised Draft Environmental Assessment, Kahn Family Trust

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

At this time, enclosed are comments from (1) Land Division – Oahu District; and (2) Engineering Division on the subject matter. No other comments were received as of our suspense date. Should you have any questions, please feel free to call Supervising Land Agent Steve Molmen at 587-0439. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)

C: Analytical Planning Consultants, Inc.
Attn: Lauri Clegg, President
Via email to DCleggAPC@hawaii.rr.com

PHONE (BUS): (808) 536-5695
FAX: (808) 599-1553

apc
ANALYTICAL PLANNING CONSULTANTS, INC.
928 NUUANU AVENUE, SUITE 502 • HONOLULU, HI 96817

January 14, 2013

Mr. Jesse K. Souki, Director
Department of Business Economic Development & Tourism
Office of Planning
235 South Beretania Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Souki:

SUBJECT: SHORELINE SETBACK VARIANCE (SSV)
CHAPTER 343 HAWAII REVISED STATUTES (HRS)
REVISED DRAFT ENVIRONMENTAL ASSESSMENT (DEA)

Thank you for your review of the revised draft Environmental Assessment and for providing us with your comments. Please find our responses to your comments below.

1. *Clarification of whether new wall is a concrete rubble masonry (CRM) retaining wall or a concrete masonry unit (CMU) retaining wall.*

   The draft EA has been revised to clarify that the new 2-foot wall will be a CMU wall and repairs to the existing seawall will be CRM.

2. *The revised Final EA should specifically cite or provide a plot plan to illustrate the 2 feet of the rear existing grade and assess the situation of erosion and the existing exposure to erosion.*

   The revised draft EA includes Plan S-1 that shows the top of the rear yard 2-feet above the 6-foot height of the wall. The elevations shown on the site survey also show the rear yard elevation to be more than 2-feet above the height of a 6-foot wall.

3. *The revised Final EA should provide information about the length of the proposed 2-foot high retaining wall.*

   The site survey shows the length of the seawall to run along the 75-foot long rear property boundary. This information will be clarified in the Final EA.

4. *The revised Final EA should assess the visual impacts of the revised proposal and provide specific mitigation measures, including a landscaping plan, to minimize any adverse impacts on public views, to from, and along the shoreline.*

   The 2010 FEA proposed repair of the seawall to 8-feet with a 3-foot steel cable fence on top. The impact on public or private views was discussed in Section

4.12 Visual Resources with the conclusion that the proposed action would have no effect. Further discussion will be included in the revised FEA as per your concerns.

5. *The Final EA should provide a list of all permits and approvals required for the proposed action.*

   A list of permits and approvals will be included in the revised Final EA pursuant to Hawaii Administrative Rules §11-200-10..

Thank you for taking the time to prepare your comments and for participating in the environmental review process.

Sincerely

Lauri Clegg, President
Agent for the Applicant

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 7, 2012

MEMORANDUM

TO:

DLNR Agencies:
X Div. of Aquatic Resources
_ Div. of Boating & Ocean Recreation
X Engineering Division
Div. of Forestry & Wildlife
Div. of State Parks
_ Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Shoreline Setback Variance (SSV), Chapter 343, HRS, Revised Draft Environmental Assessment, Kahn Family Trust
LOCATION: 146 Wailupe Circle - Wailupe; TMK (1) 3-6-1: 38
APPLICANT: Philippe and Sonia Kahn for Kahn Family Trust, by Agent Analytical Planning Consultants, Inc.

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

The consultant provided only a single CD for review, which is available for check-out at our reception area. Unfortunately, due to budget constraints, we are unable to copy the CD for you. Please check-out the CD and immediately copy the files to your staff computers as necessary, then promptly return the CD to our reception area so that it is available to the other Divisions.

Please submit any comments by January 3, 2013. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed: _____
Print Name: Tommy Chee
Date: 12/13/12

cc: Central Files

PHONE (BUS): (808) 536-5695
FAX: (808) 599-1553

apc
ANALYTICAL PLANNING CONSULTANTS, INC.
928 NUUANU AVENUE, SUITE 502 • HONOLULU, HI 96817

January 14, 2013

Mr. Russell Y. Tsuji, Land Administrator
Land Division, State of Hawaii Department of Land & Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Tsuji:

SUBJECT: SHORELINE SETBACK VARIANCE (SSV)
CHAPTER 343 HAWAII REVISED STATUTES (HRS)
REVISED DRAFT ENVIRONMENTAL ASSESSMENT (DEA)

We understand that the Land Division - Oahu District has no comments at this time.

Thank you for reviewing the revised draft Environmental Assessment and participating in the environmental review process.

Sincerely

Lauri Clegg, President
Agent for the Applicant

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 7, 2012

MEMORANDUM

TO: FROM

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

FROM: TO:
Russell Y. Tsuji, Land Administrator
SUBJECT: Shoreline Setback Variance (SSV), Chapter 343, HRS, Revised Draft Environmental Assessment, Kahn Family Trust
LOCATION: 146 Wailupe Circle - Wailupe; TMK (1) 3-6-1: 38
APPLICANT: Philippe and Sonia Kahn for Kahn Family Trust, by Agent Analytical Planning Consultants, Inc.

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

The consultant provided only a single CD for review, which is available for check-out at our reception area. Unfortunately, due to budget constraints, we are unable to copy the CD for you. Please check-out the CD and immediately copy the files to your staff computers as necessary, then promptly return the CD to our reception area so that it is available to the other Divisions.

Please submit any comments by January 3, 2013. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(✓) Comments are attached.

Signed:
Print Name: Carty S. Chang, Chief Engineer
Date: 12/19/12

cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/SteveMolmen
Ref.: RevisedDEAWailupe6'SeawallKahnFamily
Oahu.913

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone

(X) Please take note that based on the maps provided it appears that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zones X and VE. The Flood Insurance Program does not have any regulations for developments within Flood Zone X however; it does regulate developments within ZoneVE as indicated in bold letters below.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is .

(X) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

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

(X) Mr. Mario Siu Li at (808) 768-8098 or Ms. Ardis Kim at (808) 768-8296 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works

( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning

( ) Ms. Wynne Ushigome at (808) 241-4890 of the County of Kauai, Department of Public Works

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update

( ) Additional Comments: _____

( ) Other:

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258

Signed
CARTY S. CHANG, CHIEF ENGINEER

Date

PHONE (BUS): (808) 536-5695
FAX: (808) 599-1553

apc
ANALYTICAL PLANNING CONSULTANTS, INC.
928 NUUANU AVENUE, SUITE 502 • HONOLULU, HI 96817

January 14, 2013

Mr. Russell Y. Tsuji, Land Administrator
Land Division, State of Hawaii Department of Land & Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Tsuji:

SUBJECT: SHORELINE SETBACK VARIANCE (SSV)
CHAPTER 343 HAWAII REVISED STATUTES (HRS)
REVISED DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
COMMENTS FROM ENGINEERING DIVISION

Thank you for reviewing the revised draft Environmental Assessment and providing us with your comments. Please find our responses to your comments below.

1. *The project site is located in Flood Zones X and VE. The Flood Insurance Program does not have any regulations for development with Flood Zone X however; it does regulate development within Zone VE. Questions regarding the local flood ordinance should be directed to the City and County Department of Planning and Permitting National Flood Insurance Program Coordinator Mr. Mario Siu Li at 768-8098.*

2. *The applicant should include project water demands and infrastructure required to meet water demands. The implementation of any State sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering division before it can receive a building permit and/or water meter. The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.*

At the time that the original Environmental Assessment was reviewed in 2010, the project site was designated as Flood Zone A with No Base Flood Elevation determined. The current FIRM map shows the project site to be in the Coastal High Hazard VE District with a flood elevation of 12-feet and subject to the City and County of Honolulu Land Use Ordinance Section 21-9.10-7.

As noted in the Final Environmental Assessment the proposed action is intended to protect the property from ocean generated water hazards in conditions that vary from typical to moderate wave action and storm surges that could cause flooding. The purpose of the revised proposal to construct a two-foot retaining wall behind the six-foot high seawall is to protect the property from erosion that could endanger the existing dwelling.

In reference to comment number 2, the project will not include any water demands nor is it a State sponsored project.

Thank you for taking the time to prepare your comments and for participating in the environmental review process.

Sincerely

Lauri Clegg, President
Agent for the Applicant

AN ARCHAEOLOGICAL MONITORING PLAN FOR A PROPERTY LOCATED AT TMK 3-6-001:038 IN WAILUPE CIRCLE, WAILUPE AHUPUA`A, KONA DISTRICT, ISLAND OF OAHU

Prepared by:
Michael F. Dega, Ph.D.
for Archaeological Consultants of the Pacific, Inc.
March, 2013
DRAFT

Prepared for: Lauri Clegg
Analytical Planning Consultants
928 Nu'uanu Avenue, Suite 502
Honolulu, HI 96817

JOSEPH KENNEDY
Archaeologist

59-624 Pupukea Road Haleiwa, Hawai'i 96712 Phone: 638-7442/Fax: 638-0703
e-mail: acp@hawaii.rr.com & kennedy@lava.net
website: ACPHawaii.org

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Introduction

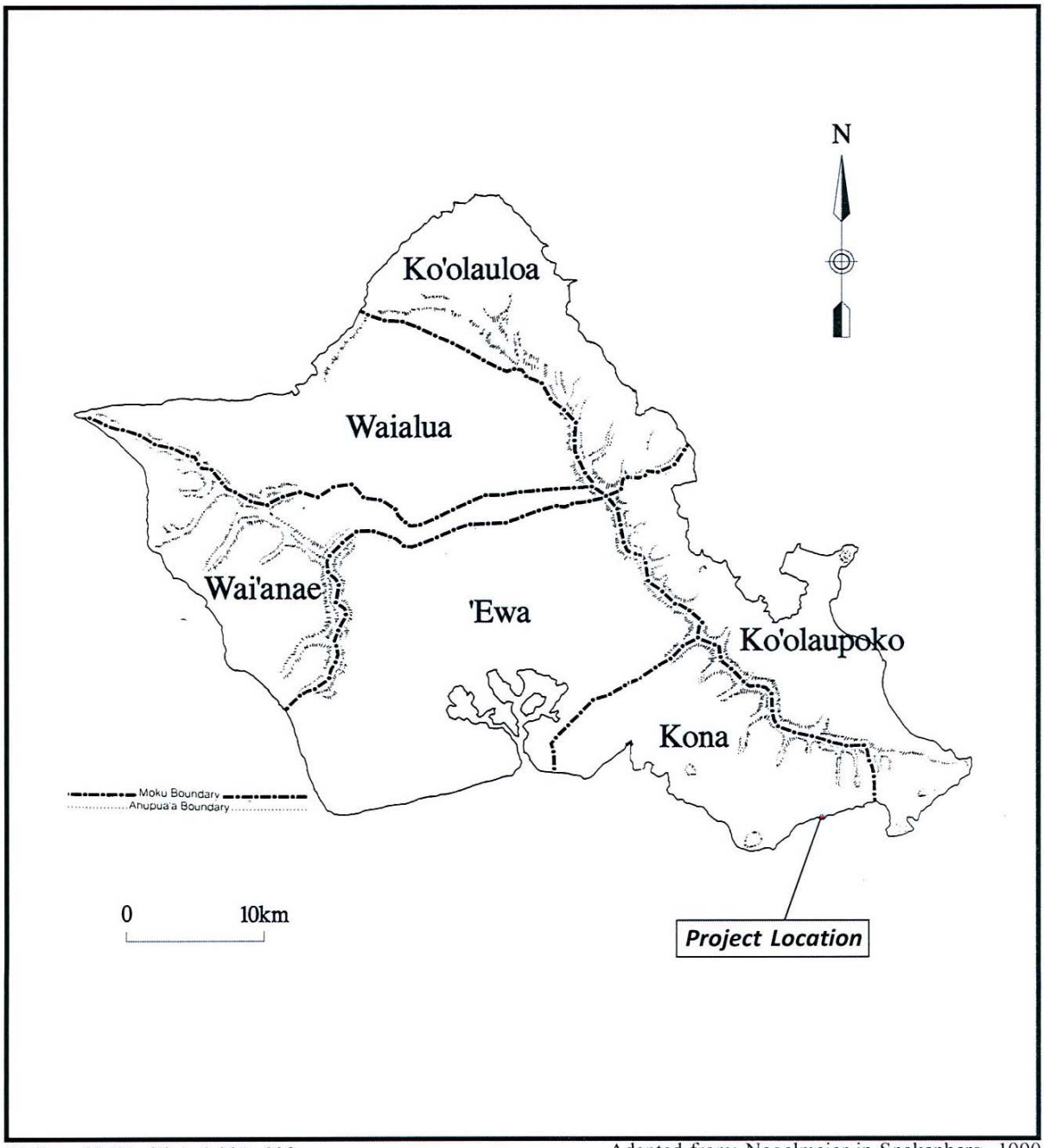
At the request of Analytical Planning Consultants, Inc., Archaeological Consultants of the Pacific, Inc. (ACP) is submitting this Archaeological Monitoring Plan (AMP) in advance of modest construction and restoration work to occur on a 13,056 square foot parcel located on Wailupe Circle, Wailupe Ahupua`a, Kona District, Island of O'ahu [TMK: 3-6-001:038] (Figures 1 and 2). The work is to repair and stabilize an existing sea wall on the coastal flank of the property. Work plans allow for a 2-foot wall to be placed behind the existing 6-foot wall, and for a landscaping space (1.5 feet wide) to be placed between the two wall structures. Monitoring will aid in further defining the Wailupe Fishpond wall (Site -0056) and its association with an historic wall component (see below).

Archaeological Inventory Survey (AIS) was conducted on the parcel in 2012 (Beauchan and Kennedy (2013). The investigation took the form of subsurface testing involving manual excavation of three trenches. Two portions of the *loko i'a* or fishpond wall were identified, a traditional wall remnant and an overlying 1940s wall segment. These consist of dry stacked basalt boulders and cobbles. The traditional wall is represented by basalt stones (few) in a mixed coral fill matrix on the inland side and which has been truncated and heavily modified through time. Identified portions of the *loko i'a* were profiled and photographed. No artifacts were recovered during the subsurface investigation. The integrity of both the prehistoric and 1940s wall sections associated with the subject property were evaluated as "poor" due to numerous disturbances over the past decades of peninsula use, from both natural (tsunami) and cultural (dredging, construction) processes. Due to the limited findings of the AIS (Beaucham and Kennedy 2013), Archaeological Monitoring was recommended during all ground altering activity associated with repairs of the wall to further document both wall components and to further assess their historical and/or archaeological significance. This Archaeological Monitoring Plan (AMP) shall be submitted to, and approved by, the SHPD prior to the construction and restoration work.

Reason For Monitoring

As noted above, an AIS was performed on the property in 2012 (Beauchan and Kennedy 2013). The AIS was specific to Site -0056, the modified traditional/historic period fishpond wall which occurs along the western length of the current parcel (see Figures 1 and 2). While AIS-level work was completed through trenching, AIS-level recordation was not met. The current Monitoring program will be conducted to more accurately discern and record the prehistoric and historic wall sections (if possible), fully describe associated sediments and stratigraphic relationships of the wall, and provide other descriptive information available for the site that was not obtained during the AIS research and report writing. Monitoring should also provide a second occasion during which to more fully assess the presence/absence of traditional-period fishpond wall components along the bay side of the property.

This Archaeological Monitoring Plan (AMP) outlines the monitoring procedures, including the methods to be used in the event that significant cultural deposits are identified during the course of construction and restoration. The AMP also delineates the course of action to be followed in the unlikely event that any human burials are identified. This AMP provides additional background information regarding the proposed construction work and results of previous archaeological work conducted in the general environs on the current project area.



Wailupe TMK: (1) 3-6-001: 038 Adapted from: Nogelmeier in Snakenberg 1990

Figure 1: Project location shown on a Map of O`ahu

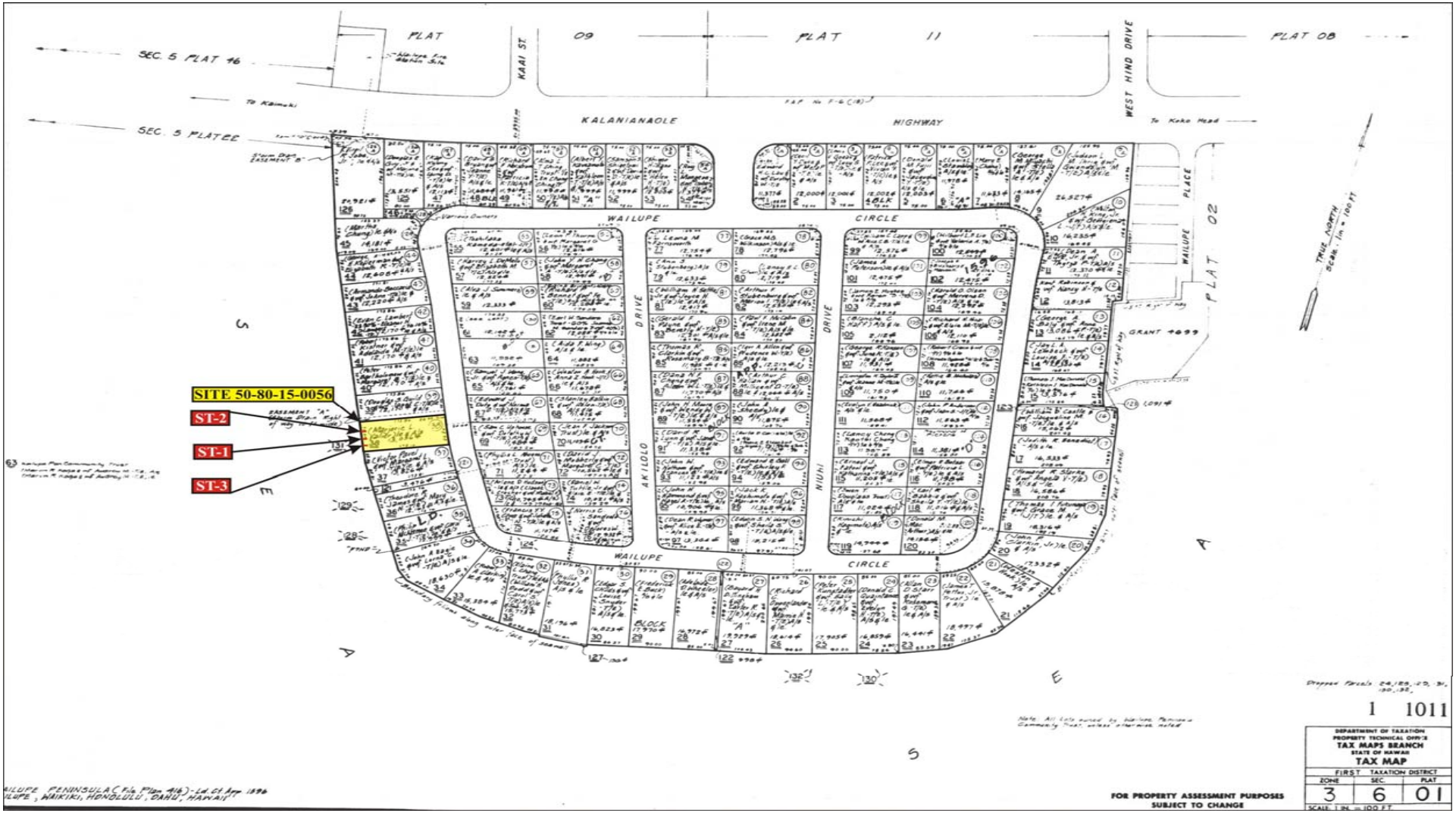


Figure 2: Project location shown on a TMK map for TMK:(1) 3-6-001.

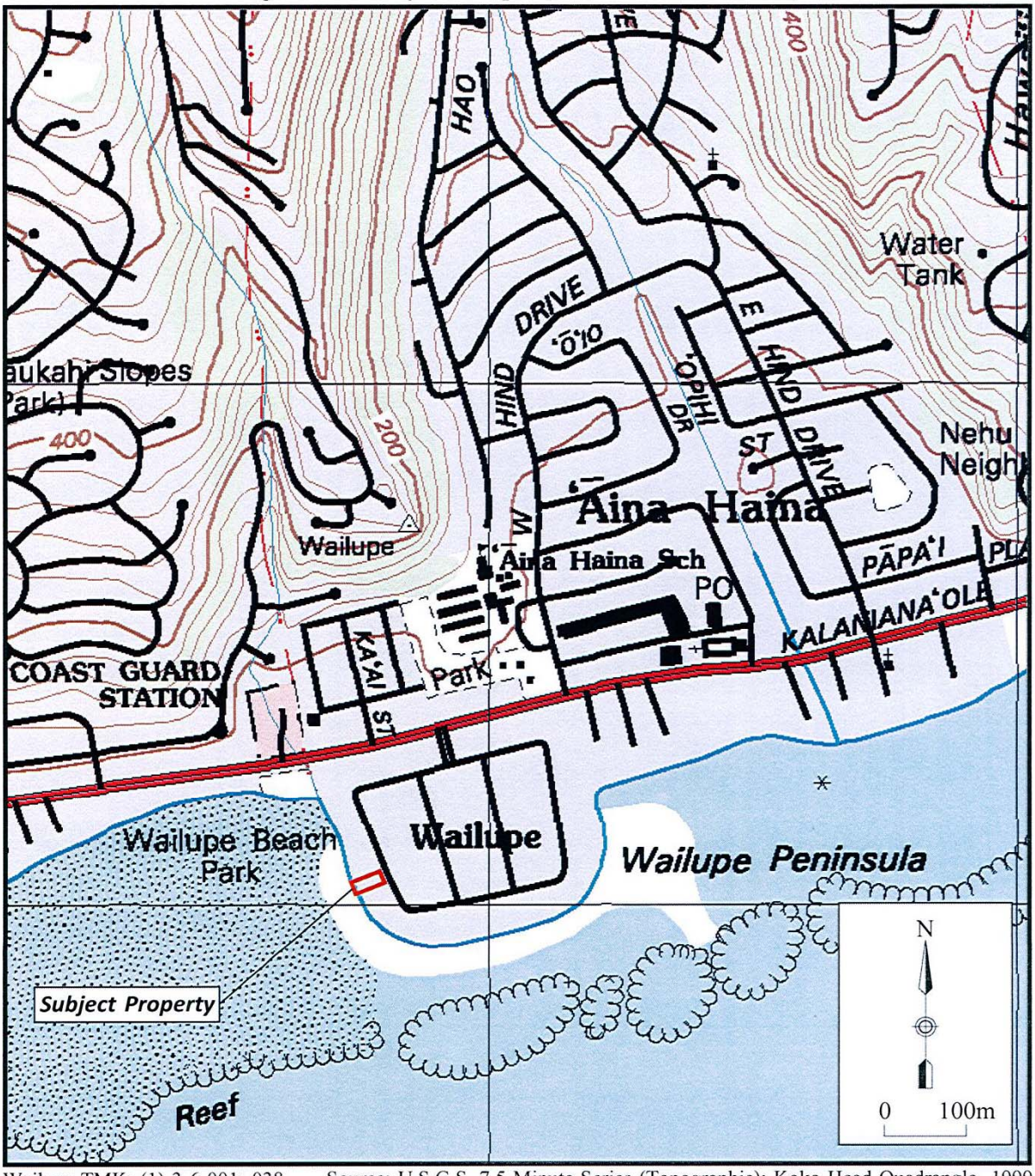
Physical Setting

The project site is located in the residential area of Wailupe Circle, on the west-facing, *makai* side of Wailupe Peninsula (see Figures 1 and 2; Figure 3). The peninsula is located off Kalanianaole Highway, slightly northeast of Diamond Head, and extends into Maunalua Bay.

The subject property is 13,056 ft², and consists of a single-family, detached dwelling, a seawall, and a recreational use pier. The property has a current certified shoreline (October 17, 2012). The project area includes the present seawall, as well as a 5 ft setback in the back yard toward the coastline. Erosion is evident on the parcel, as exhibited by a slope in the back yard. The unstable condition of the current seawall is recognizable by its varying elevations. The wall, despite its poor condition, runs the entire length of the western (*mauka*) property line, a total of 75 feet, and adjoins Parcel 39 to the north and Parcel 37 to the south. Portions of original stone masonry have eroded and fallen into the waters of Maunalua Bay, their remains visibly dotting the sea floor (Chee 2009:4). A wooden picket fence has been erected alongside the wall. A *naupaka* hedge is growing on the *mauka* side of the sea wall, growing in a narrow space between the seawall and the picket fence that extends along the *makai* edge of the back yard. A metal gate attached to the seawall allows access to the pier and bay.

Soils on the property are primarily comprised of fill land (FL)- mixed variety (Foote *et al*. 1972: Sheet 68). Areas filled with mixed soils are generally found at shoreline locations, such as Wailupe Peninsula. The mixed fill land of Wailupe Peninsula consists of compacted fossil coral reef dredged from the nearby waters of Maunalua Bay (Chee 2009:10). Most of the dredging work was completed from 1947-1948 during build-up of the peninsula for residential housing.

Groundwater at the project site is brackish due to the proximity of the site to Maunalua Bay. The composition of fossilized coral and topsoil for fill, proves to be extremely porous, hence the rapid accumulation of rainfall in the ground.



Wailupe TMK: (1) 3-6-001: 038 Source: U.S.G.S. 7.5 Minute Series (Topographic); Koko Head Quadrangle 1999

Figure 3: 1983 USGS Honolulu Quadrangle Showing Project Area.

Historic Background

Wailupe Place-Name

Numerous features have been entitled Wailupe, including an *ahupua'a,* a beach, a fishpond (currently filled with dredged coral, and known as the residential area of Wailupe Circle), a gulch, a stream, a spring, and a valley (O'Hare *et al*. 2009:13). Pukui *et al*. (1974:225) explain that Wailupe, literally translates as "kite-water," describes the region of southeastern O'ahu utilized by ancient Hawaiians for kite-flying. According to ethnographer Emma Beckley, the name has also been attributed to the legend of a *mo'o* (spirit) known as Lupe (Beckley, n.d. Hawai'i State Archives). According to ancient Hawaiian traditions, nearly all water sources were guarded by *mo'o.* These spirits were known to take the shapes of beautiful women or reptilian creatures. Whether benevolent or malevolent, their purpose was to safeguard the body of water to which they belonged, in this case the area where Wailupe Stream once converged with the fishpond. Hence, the name Wailupe refers to the waters belonging to, or guarded by the *mo'o* Lupe.

Mythological and Traditional Accounts

There exist two legends regarding the area of Wailupe, consisting of the tales of the Goddess Hi'iaka and her travels through southeastern O'ahu, and of the journey of the gods Kane and Kanaloa along the Wai'alae Coast. Mythological and traditional accounts dealing specifically with the ancient fishpond are rare; however, the *ahupua'a* of Wailupe is often mentioned in passing in such accounts. The relationship existing between legends and place-names is a significant one. Legends often relate significant events in the history of a region, as is often the case for traditional Hawaiian myths; these mythological and traditional accounts often include historical, familial and mythological elements that in turn, are adapted to local landscapes. The following myths concerning Hi'iaka, Kāne, and Kanaloa were obtained from O'Hare *et al*. (2009). For the tale of Hi'iaka, traditional accounts from Ho'oulumāhiehie (2006a, 2006b) and Emerson (1993) were utilized. For the tale of Kāne and Kanaloa, traditional accounts from both Pukui and Elbert (1986), as well as Beckley (n.d.) were utilized.

Hi‘iaka’s Travels through Southeastern O‘ahu

Hi‘iaka, sister of Pele, the Hawaiian volcano goddess, traveled through Wai‘alae and Wailupe. Hi‘iaka, with her traveling companions Wahine ‘ōmao‘o and Lohiau, several monsters in the uplands of Kaimukī in Pālolo Valley. They descended to the coast to meet up with the chief Kaulanakalā, who had agreed to carry them in his canoe to Molokai.

> *…huli akula kēia i kai o Wai‘alae a ‘ike akula kēia i ka wa‘a o Kaulanaokalā e holo a‘e ana, a laila, ha‘alele lākou nei i Kaimukī a hele akula no lākou nei a hala ‘o Wai‘alae, a hala ‘o Wailupe, a hō‘ea lākou nei i Maunalua, a hala ia wahi i hope, hō‘ea lākou nei i Niu, I Kuli‘ou‘ou; i nānā aku ka hana o lākou nei, e lawai‘a mai ana kekahi mau wāhine, ‘o ka pāpa‘ me ka ‘ōhune kā lāua i’e e ulawai‘a ana.*

…(Hi’iaka) turned to look seaward of Wai‘alae and saw Kaulanaokalā’s canoe sailing along. They departed Kaimukī and traveled past Wai‘alae, past Wailupe, and reached Maunalua. When that area had fallen behind them, they arrived in Niu, then Kuli‘ou‘ou. They looked about, and saw some women fishing for ‘*ōhune* (goby) fish and crabs (Ho‘oulumāhiehie 2006a:295; Ho‘oulumāhiehie 2006b:317).

Hi‘iaka requested some fish from the local women, but they answered rudely, telling her that she should collect her own fish. In response to this rudeness, Hi‘iaka offered the following *mele* (chant):

He makani Holo‘uha
Ko Ka‘eleke‘i Paukū
Pau wale ho‘i ke aho i ke noi ‘ana
‘O kā lā ho ‘i ē.

The following is a translation of Hi‘iaka’s *mele*:

A Holo‘uha, a wind that comes to nothing
Blows at Ka‘eleke‘i of Paukū
Breath is wasted on a request
Like asking for the sun.

The Emerson version of the Hi‘iaka chant varies slightly, notably with the terms *makani holo-uha* and *Pau-kua* being utilized. *Makani holo-uha* alludes to a cold wind that chills the naked legs of the fisherfolk. *Pau-kua*, a place name, meaning consumed in the back refers to the fact that the Kahuna’s black art very frequently made its fatal ravages by attacking first the back (Emerson 1993:186-187).:

He <u>makani holo uhā</u>	Here’s a blast shall posset the blood,
Ko Ka-ele-kei a <u>Pau-kua</u>	As the chant of Kahuna the back

Pau wale kea ho I ka noi ana,	Our patience exhausts with delay,
O ka loa ho‘i, e!	We’re famished from the length of the way!

When the chant was completed, Hi‘iaka and her friends turned away, and when they were out of sight, the women fell dead.

The Gods Kāne and Kanaloa along the Wai‘alae Coast

The god Kāne and his brother Kanaloa often traveled around the Hawaiian Islands. When they grew tired, they looked for the ‘*awa* plant and for some fresh water to mix with the pounded root to make a slightly narcotic drink. When the gods were in a dry area, Kanaloa complained to his brother that there was no water. The powerful god Kāne would strike the earth with a staff and water would gush up from the hole. There are many springs in the Hawaiian Islands attributed to the god Kāne. Several of these were on the Wai‘alae coast.

According to ethnographer Emma Beckley (Emma Kailikapuolono Metcalf Beckley Nakuina; Beckley n.d. Hawai‘i State Archives), the gods were at Hanauma in Maunalua, traveling west. When they reached Kuli‘ou‘ou, Kanaloa took some ‘*awa* from the sacred grove at the base of Kuli‘ou‘ou Ridge. This grove was watched over by a *mo‘o,* a supernatural creature that could change form (a form like a crocodile) called Lupe. Thus, the spring was called ‘Elelupe, the ‘*ele* of Lupe. The word ‘*ele* means “a water hole, dark spring covered with growth” (Pukui and Elbert 1986:40). Kanaloa took some of the ‘*awa* he got from Lupe’s ‘*awa* grove and traveled to Wailupe. There he again demanded water from his brother. Kāne struck the coral shelf and the water gushed up. Beckley (n.d.) calls this Wailupe Spring, and gives a different translation for Wailupe than most other ethnographers. In her translation, Wailupe means “water of Lupe” since the spring was made for water to mix with ‘*awa* from Lupe’s sacred grove. This spring is probably one of the two springs, Punakou or Puhikahi, at the coast near Wailupe Pond.

Traditional Hawaiian Fishponds

Traditional Hawaiian fishponds, or aquaculture, represent one of the most important technologies developed within the Hawaiian Islands. From the 14th to the 19th Centuries, Hawaiian fishponds functioned as designated areas for the raising and harvesting of select fish varieties. For nearly five centuries the design of the fishponds remained relatively unchanged.

There are five varieties of fishponds, whose structures and contents vary according to their location (see Kikuchi 1976). *Loko i'a kalo* and *loko wai* are located in mountain streams, and upland freshwater ponds. *Loko pu'uone, loko ku'apā*, and *loko 'ume iki* comprise the ocean fishponds. The Wailupe fishpond operated as a *loko ku'apā,* typified by *ku'apā* (seawalls) constructed of interlocked stones and coral, with pebbles fitted into the gaps. The key element to the *ku'apā* fishponds were their brackish conditions. These ponds were located on reef flats near some sort of freshwater source, such as a stream or spring. The shoreline made up the inner wall, while the outer wall was equipped with openings known as *'auwai kai*, and fitted with *mākāhā* (sluice gates). The outer seawall or *ku'apā* leveled off at a point higher than the highest tides of the year, and were engineered at an angle less than 90° for wave energy dissipation. Modifications to fishpond architecture occurred in the early 1900's with the addition of movable gates to corral fish.

Species of flora and fauna collected within the *Loko ku'apā* included, *limu* (seaweed), *papa'i* (crabs), *'opae* (shrimp), *awa* (milkfish), *'ama'ama* (mullet), *aholehole* (flagtail), *weke, kumu* (goatfish), *awa'aua* (ladyfish), *'o'io* (bonefish), *manini* (convict tang), *palani* (eye-striped surgeonfish), *pualu* (yellow surgeonfish), *papio, ulua* (jacks), *nehu* (anchovy), *akule* (big eyed scad), *moi* (threadfin), *kaku* (barracuda), *uhu* (parrotfish), *hinalea* (wrasse), *kahala* (amberjack), *kala* (unicorn fish), *puhi* (eel), *'o'opu hue* (puffer fish), and *nahawele* (mussel).

Fishponds, or *loko i'a,* soon became status symbols in their own right, responsible for providing food, trade, and wealth for an entire *ahupua'a.* The *ali'i* who maintained *loko i'a* within their jurisdiction found considerable political clout. The fishpond functioned as a symbol of conspicuous consumption, as well as an indicator of the power and ability of an *ali'i* to control and tap his resources (Kikuchi 1976:295-299). As the traditional Hawaiian political structure was dissolved, so too did the traditional functions of the fishpond; eventually, by the 1930's fishponds fell into disuse, oftentimes filled in for residential use (*i.e.* Wailupe Peninsula).

Early Post-Contact Period

Based on accounts by early western visitors to the southeast coast of O'ahu, the region of land running from the edge of Maunalua Bay, including the *ahupua'a* of Wailupe, was well populated, with sufficient resources to carry the population of the area. When the *King George* anchored in Maunalua Bay, in 1786, Captain Nathaniel Portlock reported:

> Soon after our arrival, several canoes came off and brought a few cocoa-nuts and plantains, some sugar cane and sweet root; in return for which we gave them small pieces of iron and a few trinkets (Portlock 1789:69).
>
> ...The old man (a *kahuna*) informed me, that his (Kahekili's) residence was in a bay around the West point (Black Point), and importuned me very much to carry ships there, as that place, he said, afforded many fine hogs and vegetables. Indeed, I had some reason to think that the inhabitants on that part of the island were more numerous than in King George's Bay (Maunalua Bay), as I observed most of the double canoes came round the West point; but as the people now brought us plenty of water, I determined to keep my present situation, it being in many respects an eligible one; for we hitherto had been favored with a most refreshing sea breeze, which blows over the low land and vallies being in a high state of cultivation, and crowded with plantations of taro, sweet potatoes, sugar cane, &c., interspersed with a great number of cocoa-nut trees, which renders the prospect truly delightful. (Portlock 1789: 73-74). (O'Hare *et al*. 2009:26).

Captain Nathaniel Portlock's writings identified the southeast region of O'ahu as being quite productive, with the capability to support a high population density. Such productivity can be attributed to a well-functioning economic and political system. At the heart of this system were the fishponds, an important symbol of an *ahupua'a*'s wealth and resources. Wailupe fishpond, one of a few fishponds along the southeastern coast, was a part of the viable economic and political system observed by Captain Portlock at the time.

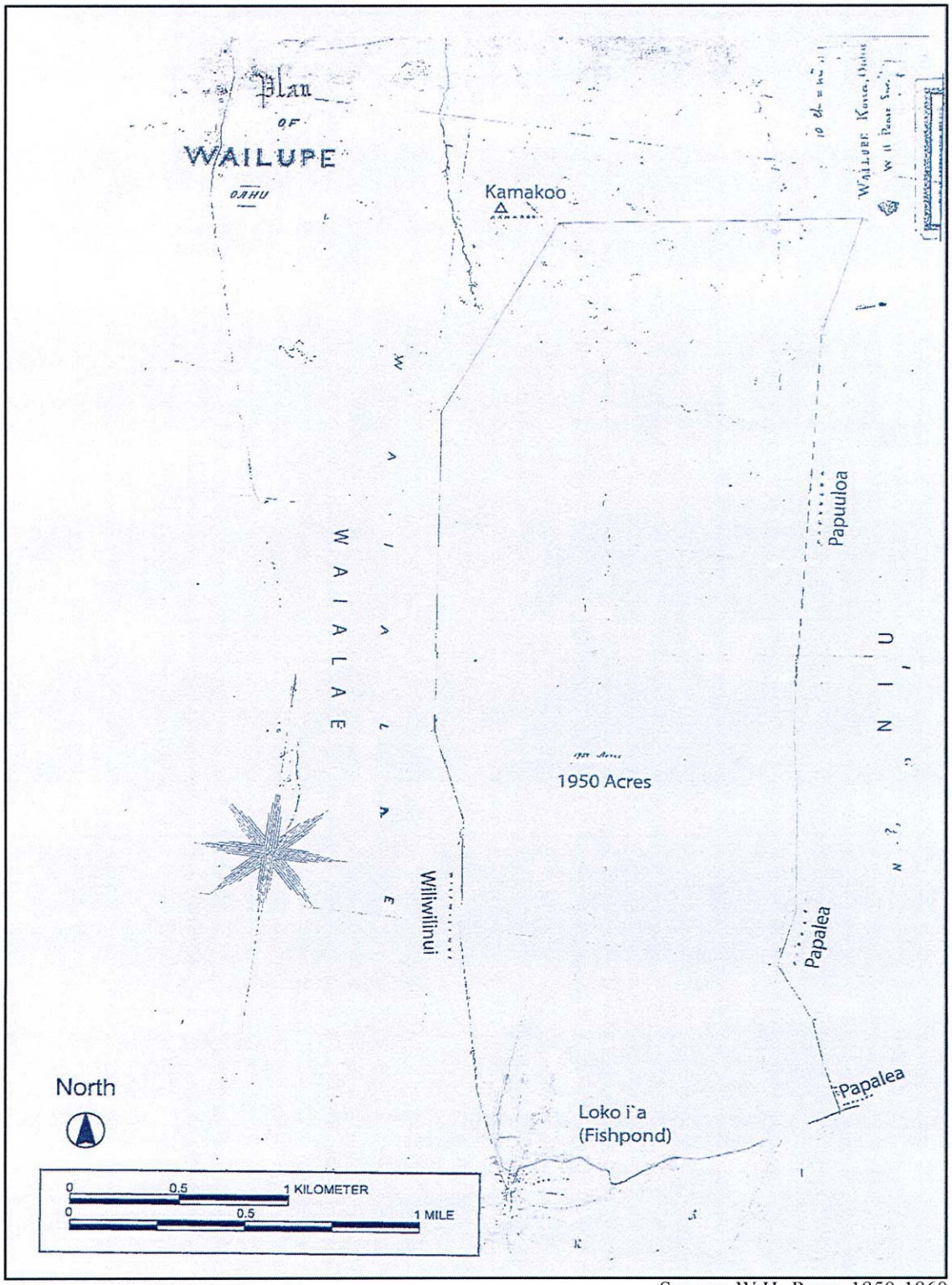
Mid-Nineteenth Century and LCA's

Half the *ahupua'a* of Wailupe was awarded to a *konohiki* (land manager) named Kamaha (LCA 6175), the other half to King Kamehameha III (O'Hare *et al*. 2009:35). The king's portion included "the large Fish pond (Wailupe Pond) and one acre of *Kula* land in the Ili of 'Wailupe' O'ahu" (Barrere 1994:204). The remainder was acquired by Kamaha, and included several small fishponds as well. Wailupe Land records from the 1840-50's detail several shoreline shallow reefs with walls built around them or modified brackish water swamps behind sand berms, including the larger Wailupe Pond (O'Hare *et al*. 2009:35). (Figure 4)

In Wailupe, 57 claims were made, with 37 awarded in total, as shown on a 1925 Land Court map (Figure 5). LCA claims were mainly for *kula* lands; these lots averaged 1.5 acres with two *kula* patches earmarked for sweet potato, coconut, orange, *hala, ipu,* and *pili* grass. Lots were centered in areas adjacent to the streams of Wailupe Valley.

By 1925, most of the Wailupe lands had been subdivided into residential lots owned by Westerners. LCA 2066 to Kalua can be seen on a 1903 grant map; it is this grant (Grant 4728),

that allows for the title of Wailupe Fishpond to be transferred to Antonio Perry (Figure 6). The map highlights several other features within and around Wailupe Pond, including several other small fishponds (awarded to Kamaha as part of LCA 6175), an inlet from Wailupe Pond to Punakou, and finally Punakou and Puhikahi Springs. Kamaha was the *konohiki* (land manager); he and Kalua (LCA 2066) are mentioned in several other awards as the donors of lands, or as witnesses (O'Hare *et al*. 2009:36). These documents indicate that both Kamaha and Kalua figured as prominent individuals within Wailupe.



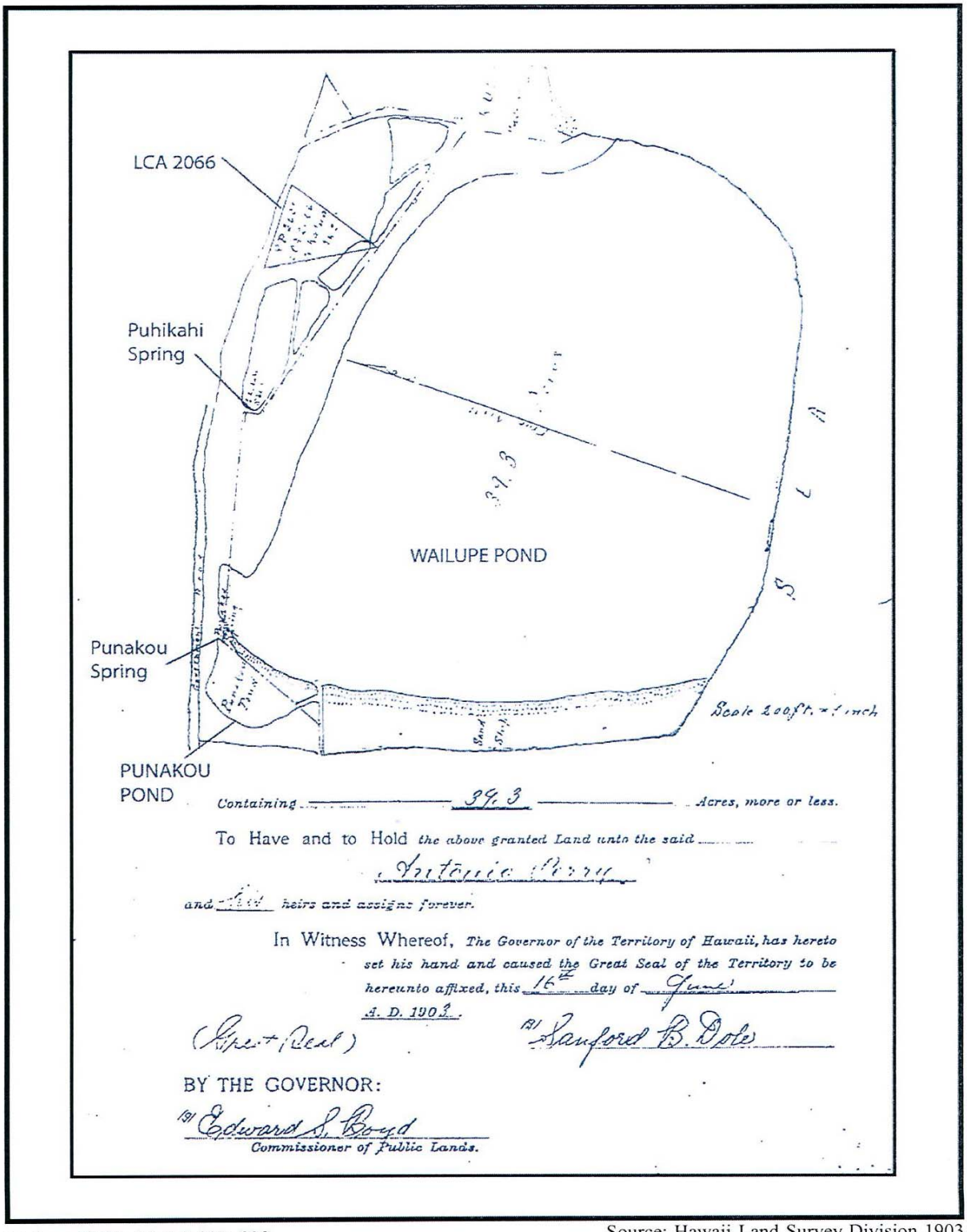
Wailupe TMK: (1) 3-6-001: 038

Source: W.H. Pease 1850-1860

Figure 4: Plan of Wailupe (1850-1860) by W.H. Pease, Hawai'i Land Survey Division, Registered Map No. 115.

Wailupe TMK: (1) 3-6-001: 038 Source: Hawaii Land Survey Division 1925

Figure 5: 1925 Land Court Application Map No. 656; Hawaii Land Survey Division.



Wailupe TMK: (1) 3-6-001: 038

Source: Hawaii Land Survey Division 1903

Figure 6: 1903 map of Grant 4728 to Antonio Perry for Wailupe Fishpond (Hawaii Land Survey Division).

Wailupe Land Use

By the early twentieth century, a substantial portion of Wailupe lands were owned by businessman of foreign ancestry, such as Antonio Perry and Robert Hind. Antonio Perry, the son of a Portuguese immigrant, and owner of a dry goods business in Honolulu (Siddall 1921:311), later sold his land holdings, including Wailupe Pond, to businessman Robert Hind. Hind, the son of an American sugar cane entrepreneur and prominent figure in the history of Wailupe, established a large dairy within the area known as the Hind-Clarke Dairy. However, in the late 1940's Hind sold his dairy operation, and began developing his land holdings for residential use. Between 1918-1941, Wailupe Fishpond itself was leased to Mr. Sankichi Nakano. In 1946, a tsunami destroyed much of the fishpond wall. It was at this time that the lands were sold to Hind. In 1948, the area of Wailupe fishpond was filled in by Hawaiian Dredging Company, forming the Wailupe Circle subdivision (Clark 1977:36-37). Also during this period, developer Robert Hind, Ltd., strengthened the existing pre-historic fishpond wall to protect the newly created land area. The area is still currently zoned as a residential district.

Historical accounts are identical in listing Wailupe Fishpond ("Punakou") as being 41 acres in size. The fishpond wall is typically described as "2500 feet long" (Sterling and Summers 1978:274-275; Maunalua.net) and containing a variable 3-4 *makaha* or sluice gates. The wall is 12 feet wide and composed of waterworn basalt, with the central portion of the pond being sand and sediment-filled. The current channel and anchorage areas were dredged in 1947 by Hawaiian Dredging, with the materials being pumped into the fishpond and also laid onto the peninsula.

According to the Ho`okuleana LLC website, "Loko Nui o Wailupe", otherwise referred to as Wailupe Fishpond and "Punakou Pond", was claimed as Crown land together with Punakou Spring, formerly occurring on the western flank of the pond. The pond was present in Wailupe Ahupua`a, owned by the Hind family. As noted above, after the 1946 tsunami had damaged considerable portions of the fishpond wall, the property (pond, peninsula) was sold by the Hind family to Lowell Dillingham, owner of Hawaiian Dredging Company. In 1948, the area was created into a residential subdivision. The website importantly notes that "A deep channel (depth

of approximately 12 to 20 feet) was dredged around the pond, as well as a channel through the reef to the open ocean and dredge material filled in the pond, creating what is now Wailupe Peninsula (commonly referred to as Wailupe Circle). The fishpond was filled with more than half a million cubic yards of coral (the at-grade elevation of the peninsula is approximately five feet above mean sea level."

Previous Archaeology

Table 1. Previous Archaeological Studies for Wailupe Fishpond

Reference	Location	Type of Investigation	Site Number	Description
McAllister 1933	Near Wai'alae/ Wailupe boundary	Island-wide Survey	50-80-15-56	Wailupe Fishpond
Hammatt and Bush 2001; Bush and Hammatt 2002	Kalaniana'ole Hwy	Monitoring for Water/Gas Mains	None	No subsurface features or burials found during monitoring of trench excavations. Boulders found in Wailupe section that might have been part of the Wailupe fishpond wall.
Beauchan and Kennedy 2013	Current Parcel	Fishpond Wall Investigations	50-80-15-0056	Wailupe Fishpond Wall; portions of fishpond wall and re-built section identified; more info. required.

There has been much archaeological activity in Wailupe Ahupua'a, especially in the lowland areas of Wailupe Valley, in the areas surrounding Kalaniana'ole Highway and its expansion, as well as in the areas of Wailupe Valley containing burial caves. However, the number of archaeological investigations conducted upon Wailupe fishpond, is extremely limited. The current project area was subject to previous archaeological investigation (see below).

The earliest and most substantive investigation of the Wailupe fishpond area was conducted by J. Gilbert McAllister (1933). McAllister's archaeological survey of O'ahu, counts as one of the first comprehensive surveys of archaeological sites on the island. In the report, McAllister recorded site 50-80-15-56, Wailupe Fishpond. According to McAllister: The pond is 41 acres in area. The wall is approximately 2,500 feet long. The west side is a broad sandy area, at least 50 feet wide, through which four outlets (*makaha*) now pass. The remainder of the wall is 12 feet wide, with water worn basalt faced higher on the outside than within. The central part is of a dirt and sand fill (McAllister 1933: 71).

In 2001 and 2002, Cultural Surveys Hawai'i, Inc. monitored the installation of a gas main (Hammatt and Bush 2001) and a water main (Hammatt and Bush 2002) from 'Ainakoa Avenue to West Hind Drive, including a section of Wailupe Ahupua'a to the east end of Wailupe Peninsula. Basalt boulders found in the Wailupe section were believed to have composed a portion of the former Wailupe fishpond wall. The boulders were identified to the north of the current project area.

Archaeological Inventory Survey was conducted on the property by Beauchan and Kennedy (2013) in May, 2012. The purpose of the investigation was to determine the extent of the known, prehistoric Wailupe Fishpond wall on the parcel, as well as properly document and evaluate the site as prescribed during discussions with DLNR-SHPD. Wailupe Fishpond has been designated as State Site No. 50-80-15-0056. Portions of the *loko i'a* or fishpond wall, consisting of dry stacked basalt boulders and cobbles and having been heavily modified, were identified during the survey. This included both prehistoric and historically modified segments, although both were difficult to discern in the coral rubble within and around the wall. No cultural deposits or materials were identified during excavation of three trenches against the fishpond wall.

Overall, the wall, which fronts the subject property, consists of two historic components: the Wailupe Fishpond wall section (Site -0056) and the post-1940 sea wall addition. However, these two are not easily discernable in profiles and photos. The original fishpond wall has been modified significantly, where concrete, coral, and imported fill have been spaced above, below, and within the original and modified wall context. If we are to mean basalt cobbles as indicating the original fishpond wall, its presence is only modest, compared with the re-built sections and large amount of coral and rubble fill in and around the wall matrix. The integrity of the site is poor, given the massive disturbances through time to the wall and property itself, from the 1946 tsunami to dredging and filling the peninsula itself in the late 1940s and after.

Given the lack of data from the original Inventory Survey fieldwork, as well as the disturbed, mixed nature of the wall within fill and dredged sediments, Archaeological Monitoring was recommended during any ground altering activity associated with re-construction of the wall. Some clarity needs to be made of wall boundaries, depths and width, and other basic descriptions including height and morphology that was lacking in the original Inventory Survey work. It will be with this information that a more informed determination may be made on the significance of the site.

Expected Findings

Based on the previous archaeological investigation (Beauchan and Kennedy 2013, it may be assumed that some portions of the ancient wall would be encountered during monitoring work. It is also expected that portions of the wall, strengthened and reconfigured, at least in terms of width, would include concrete fill, atypical to the traditional Hawaiian dry stone stacking technique. There is an expectation that the original pond wall will be in modest proportions, with reconstructed sections above, all within a mixed fill/coral mix of sediment. It is unlikely that habitation deposits via cultural strata, artifacts, or midden will be identified under fill layers in the project area.

MONITORING CONVENTIONS AND METHODOLOGY

This AMP is prepared in accordance with Hawaii Administrative Rules (HAR) 13-279-4. The archaeological monitor will adhere to the following guidelines during monitoring procedures:

1. A qualified archaeologist familiar with the project area and the results of previous archaeological work conducted in the area, will monitor all subsurface construction activities on the parcel. If significant deposits or features are identified, and additional field personnel are required, the archaeologist will notify the contractor before additional personnel are brought to the site. One monitor is required for each piece of ground altering machinery.

2. If features or cultural deposits are identified during Archaeological Monitoring, the on-site archaeologist shall contact and notify the SHPD-Oahu Lead Archaeologist immediately after temporarily suspending construction activities at the location so that the cultural feature(s) or deposit(s) may be fully evaluated and appropriate treatment of the cultural deposit(s) is conducted. SHPD will be consulted to establish feature

3. The stratigraphic sequence in which subsurface cultural deposits occur will be noted and photographed. If deemed significant by SHPD and the consulting archaeologist, these deposits will be sampled.

4. In the unlikely event that human remains are encountered, all work in the immediate area of the find will cease; no screening of back dirt will occur; no cleaning and/or excavation of the burial area will occur; no exploratory work of any kind will occur unless specifically requested by the SHPD. The area will be immediately secured from further activity until burial protocol has been completed. SHPD will be immediately notified about the inadvertent discovery of human remains on the property. Notification of the inadvertent discovery will also be made to the O`ahu Island Burial Council by either SHPD or by the archaeological monitor. SHPD, in consultation with appropriate parties, will determine if the remains will be preserved in place or if it is appropriate to remove and relocate any human remains. If SHPD authorizes removal of the remains, the archaeological monitor will remove and inventory the remains in accordance with HRS 6E-43.6 and SHPD directives.

5. To ensure that contractors and the construction crew are aware of this AMP and the nature of work being performed by the archaeological monitor, a brief coordination meeting will be held between the construction personnel and monitoring archaeologist prior to initiation of the project.

6. The archaeologist will provide all coordination with the client, contractor, SHPD, and any other group involved in the project. The archaeologist will coordinate all monitoring and sampling activities with the safety officers for the contractors to ensure that proper safety regulations and protective measures meet compliance.

7. As necessary, verbal and written reports will be made to SHPD and any other agencies as requested.

LABORATORY ANALYSIS

All non-burial artifacts and samples collected during the project will undergo cleaning, sorting and analysis at the contract archaeologist's laboratory. Photographs, illustrations, and all notes accumulated during the project will be curated at the contracting archaeologists office. laboratory. Significant artifacts will be photographed, sketched, and classified (qualitative analysis). All metric measurements and weights will be recorded (quantitative analysis). These

data will be presented in tabular form within the final monitoring report. Midden samples will be minimally identified to major 'class' (*e.g.*, bivalve, gastropod mollusk, echinoderm, fish, bird, and mammal). All data will be clearly recorded on standard laboratory forms which also include number and weight (as appropriate) of each constituent category. These counts will also be included in the final report.

Should any samples amenable to dating be collected from a significant cultural deposit, they will be submitted for taxa identification prior to being submitted for specialized radiocarbon analysis. Although primary emphasis for dating is placed on charcoal samples, we do not preclude the use of other materials such as marine shell or nonhuman bone materials. The archaeologist will consult with SHPD and the client if radiocarbon dates are deemed necessary.

All stratigraphic profiles will be drafted for presentation in the final report. In addition, representative plan views showing the location and morphology of identified sites, features, and/or cultural deposits will be compiled and illustrated. Photographs of excavations will be included in the monitoring report even if no historically significant sites are documented.

CURATION

If requested by the landowner, the contracting archaeologist will curate all collected materials (except human remains and associated burial items) until a permanent, more suitable curation locale is identified. The landowner (Kahn family) may request to curate all recovered materials once analysis has been completed.

REPORTING

An Archaeological Monitoring report documenting the project findings and interpretation in compliance with HAR 13-279-5 will be submitted within 180 days of the completion of fieldwork. If cultural features or deposits are identified during fieldwork, the sites will be evaluated for historical significance and assessed under State Significance Criteria. Should burials and/or human remains be identified, then other letters, memos, and/or reports may be requested by the SHPD's Culture and History branch for submittal, review, and/or approval. The Archaeological Monitoring report will be drafted until accepted by SHPD. The final report copies will be submitted to SHPD and the client.

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Land Survey Division, Department of Accounting and General Services, 1151 Punchbowl St., Room 210, Honolulu, Hawai‘i

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HISTORIC PRESERVATION DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

601 Kamokila Boulevard, Suite 555
Kapolei, HI 96806

April 12, 2013

Archaeological Consultants of the Pacific, Inc.
C/O Dr. Michael Dega
725 Kapiolani Blvd. #1205
Honolulu, Hawaii 96813
mike@scshawaii.com

LOG NO: 2013.2436
DOC NO: 1304SL07
Archaeology

Dear Dr. Dega:

SUBJECT: Chapter 6E-42 Historic Preservation Review–
An Archaeological Inventory Survey for a Property Located at TMK: 003-006-001:038 in Wailupe Circle in Wailupe Ahupua'a, Kona District Island of O'ahu
TMK: (1) 3-6-001:038

Thank you for the opportunity to review this draft report titled *An Archaeological Inventory Survey for a Property Located at TMK: 003-006-001:038 in Wailupe Circle in Wailupe Ahupua'a, Kona District Island of O'ahu* (Beauchan and Kennedy, February 2013). We received this submittal on March 25, 2013 and additional revisions on April 4, 2013.

In 2011, SHPD requested an archaeological inventory survey (AIS) be conducted in advance of a proposed project to reconstruct the existing seawall at 146 Wailupe Circle in order to identify if any remnants of Wailupe Fishpond (SIHP 50-80-15-0056) remain and to select a proper course of mitigation because the project has potential to adversely affect this historic property (April 28, 2011; Log No. 2011.0847, Doc. No. 1104MV14).

The archaeology inventory survey report describes the subject property as consisting of 13,056 ft^2 and including a single family detached dwelling, a seawall, and a recreational use pier. The subject seawall extends the entire length of the property line, a total of 75 feet, and adjoins parcel 39 to the north and parcel 37 to the south. The seawall is unstable and is in poor condition, with some portions of the original stone masonry having fallen into Maunalua Bay.

Three hand-excavated trenches dug in the rear yard revealed portions of the *mauka* (inland) side of the seawall. Two wall portions were identified, a lower section believed to be the traditional fishpond wall and an overlying section identified as the 1940s addition. Both are of dry-stacked construction consisting of primarily basalt boulders and cobbles. Some mixed coral fill is evident in the lower, traditional wall section. SIHP 0056 is evaluated as being significant under Criterion "d" for its information potential. Archaeological monitoring is recommended to further document the seawall during ground-altering activities associated with the proposed restoration project.

SHPD concurs with the significance assessment of SIHP 0056 and the recommendation of archaeological monitoring to further document the condition, construction methods, and construction materials of both the lower and upper sections of the seawall.

The revisions made to this archaeological inventory survey report adequately address the concerns raised in our prior correspondence (October 22, 2012; Log No. 2012.1560, Doc. No. 1208SL05) and recent discussions. The report provides sufficient discussion of the environment, historic background, previous investigations and the field methods. It also documents the inadequacies of the field work and results and recommends an archaeological monitoring plan to obtain additional information about SIHP 0056.

This revised report meets the requirements of Hawaii Administrative Rule (HAR) §13-276-5. It is accepted by SHPD. Please send one hardcopy of the document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library.

Please contact me at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Susan A. Lebo

Susan A. Lebo, PhD
O‘ahu Lead Archaeologist

AN ARCHAEOLOGICAL INVENTORY SURVEY FOR A PROPERTY LOCATED AT TMK:3-6-001: 038 IN WAILUPE CIRCLE IN WAILUPE AHUPUA'A, KONA DISTRICT ISLAND OF O'AHU

FEBUARY 2013

Prepared for: **Lauri Clegg**
Analytical Planning Consultants
928 Nu'uanu Avenue, Suite 502
Honolulu, HI 96817

Prepared by: **Archaeological Consultants of the Pacific, Inc.**
Brittany Beauchan, B.A.
Joseph Kennedy, M.A.
59-624 Pupukea Road
Haleiwa, Hawaii 96712

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Abstract

Archaeological Inventory Survey was conducted on a property located in Wailupe Circle, Wailupe Ahupua`a, Kona District, Island of O‘ahu [TMK (1) 3-6-001:038]. The purpose of the investigation was to determine the extent of the known, prehistoric Wailupe Fishpond wall on the parcel, as well as properly document and evaluate the site as prescribed during discussions with DLNR-SHPD. Wailupe Fishpond has been designated as State Site No. 50-80-15-0056.

The parcel of study measures 13,056 square feet and is located on the west-facing, *makai* side of Wailupe Peninsula, in Wailupe Circle. The current investigation took the form of subsurface testing, with three trenches having been manually excavated. Two portions of the *loko i‘a* or fishpond wall were identified: disturbed traditional wall and historic re-built segment above. These consist of dry stacked basalt boulders and cobbles. The traditional wall components were represented by basalt stones (few) occurring in a mixed coral fill matrix. The wall was mostly truncated and heavily modified through time. Identified portions of the *loko i‘a* were profiled and photographed. No artifacts were recovered during the subsurface investigation.

Based upon the results of the current investigations, the integrity of the site wall was evaluated as "poor", given numerous disturbances over the past decades of peninsula use, from natural (tsunami) to cultural (dredging, construction) formation processes. Due to the existence of two wall components: the Wailupe Fishpond wall section (Site -0056) and the post-1940 seawall addition and the need for additional documentation, Archaeological Monitoring is recommended during any ground altering activity associated with re-construction of the wall. An Archaeological Monitoring Plan (AMP) shall be submitted to, and approved by, the SHPD prior to the construction work. An Archaeological Monitoring Report will also be prepared following the work describing the wall, associated sediments and depths, and other descriptive information available for the site.

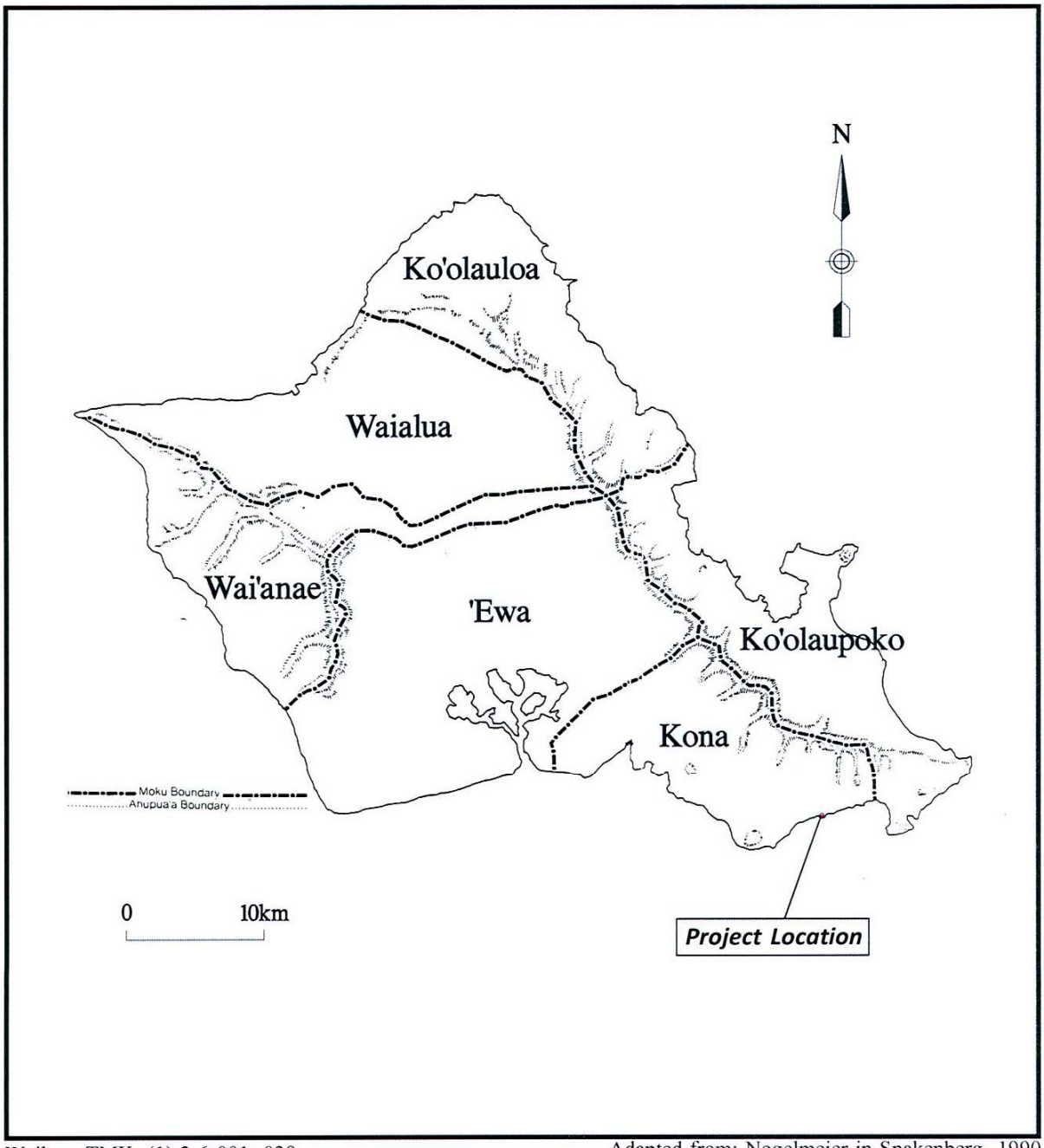
An Archaeological Inventory Survey for a Property Located at TMK: 3-6-001: 038 at Wailupe Circle in Wailupe Ahupua'a, Kona District, Island of O'ahu

Section 1: Introduction

At the request of property owners Mr. and Mrs. Philippe Kahn, Archaeological Consultants of the Pacific, Inc. (ACP) conducted Archaeological Inventory Survey investigations on a 13,056 square foot parcel located on Wailupe Circle, Wailupe Ahupua`a, Kona District, Island of O'ahu [TMK: 3-6-001:038] (Figure 1 and Figure 2). The purpose of the investigation was to determine the spatial extent of the known prehistoric Wailupe Fishpond wall (State Site Number 50-80-15-0056) on the parcel, as well as to properly document and evaluate the site as specified by the State of Hawai'i, Department of Land and Natural Resources, State Historic Preservation Division (DLNR-SHPD). The Inventory Level Survey was conducted to assess the presence/absence of additional prehistoric and historic resources, and to forward recommendations per potential mitigation of the ancient Wailupe fishpond wall.

The Kahn property residence and their seawall were constructed prior to the implementation of the shoreline setback regulations. The State of Hawai`i regulations included a mandatory setback of 10 feet in 1966 and a setback of 40 feet in 1970. A Shoreline Setback Variance was originally submitted for an 8-foot wall to protect the property's eroding backyard near the coastline. The Department of Planning and Permitting, however, approved a 6-foot wall. Consequently, Analytical Planning Consultants (APC), representing the owners, submitted new plans allowing for a 2-foot wall to be placed behind the 6-foot wall, and for a landscaping space (1.5 feet wide) to be placed between the two wall structures. The proposed construction and repairs will utilize 5 feet of the new wall near the back, coastal flank of the yard. The existing deteriorating seawall, ranging between 3-4 feet in height, and built alongside remnants of the original fishpond wall, is proposed to remain in place. These repairs will bear partially on the existing fishpond wall.

The remains of the pre-Contact Wailupe fishpond wall on the Kahn property was modified in 1948 by developer Robert Hind, Ltd., during original construction on the peninsula. The revised plans (2012), with the addition of the two foot wall, have been submitted as a new application to the Department of Planning and Permitting by APC (see Appendix A Design Plans 2012).



Wailupe TMK: (1) 3-6-001: 038

Adapted from: Nogelmeier in Snakenberg 1990

Figure 1: Project Location on a Map of O'ahu

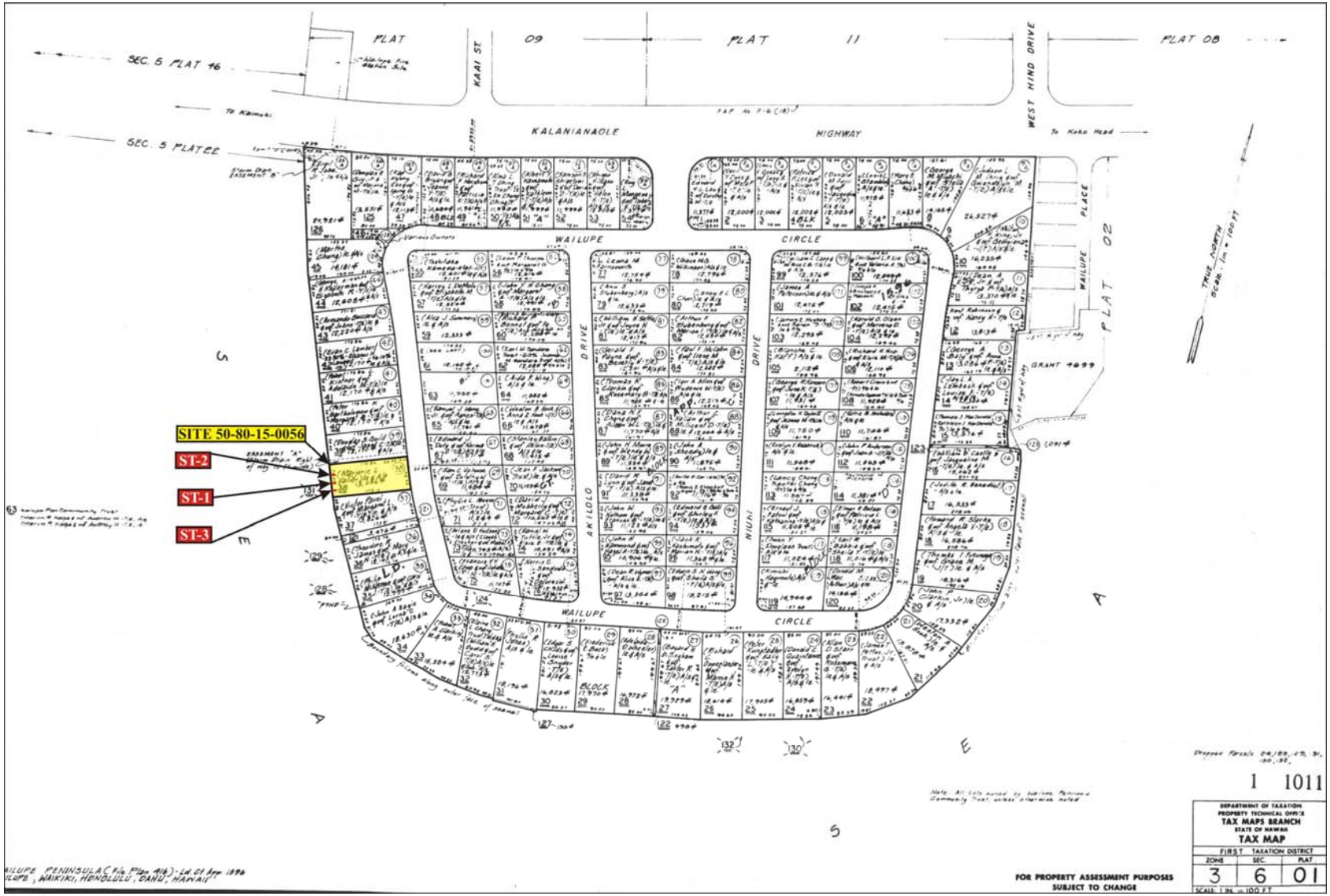


Figure 2: TMK Map of property

Section 2: Physical Setting

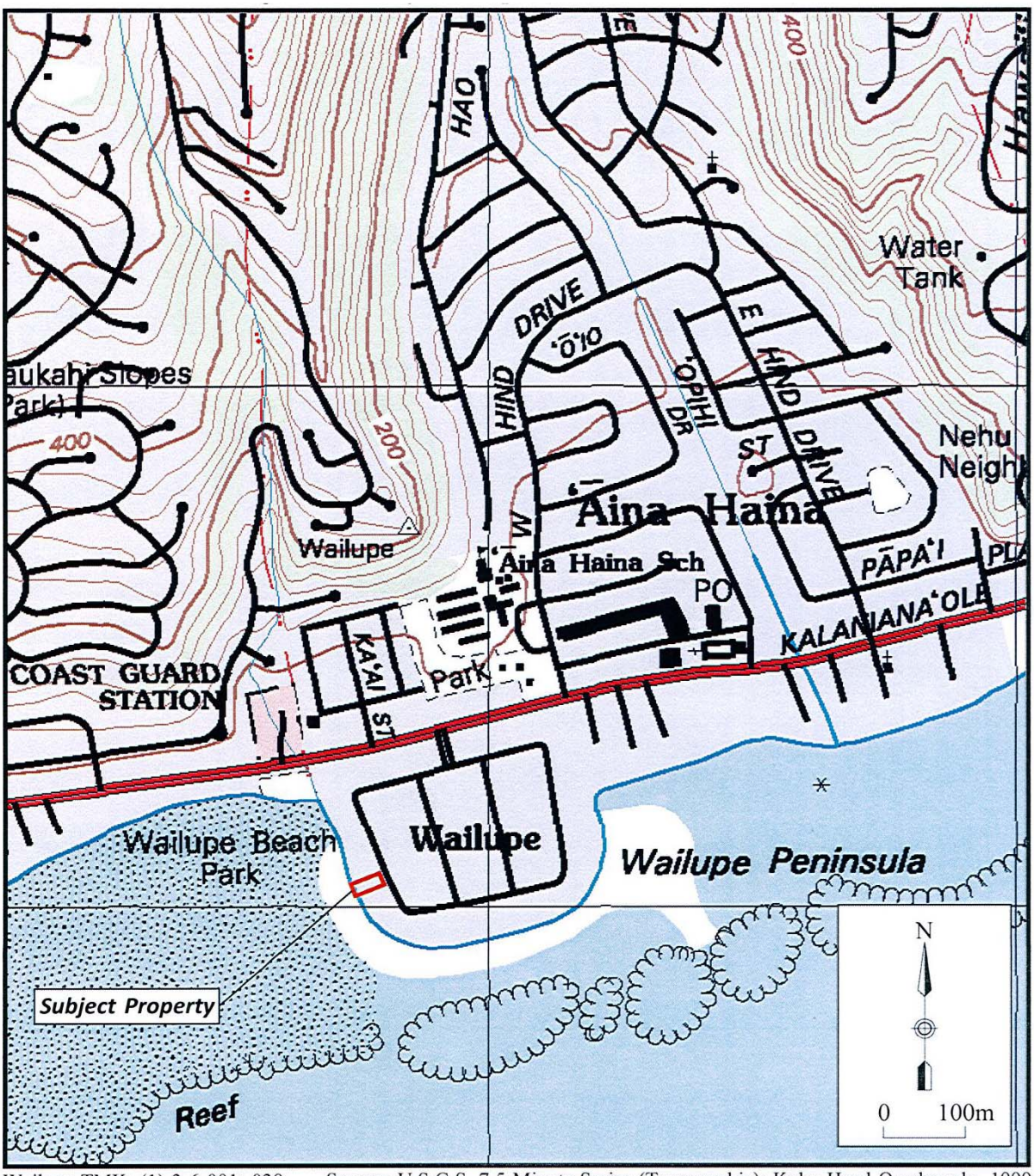
The project site is located in the residential area of Wailupe Circle, on the west-facing, *makai* side of Wailupe Peninsula (see Figures 1 and 2; Figure 3). The peninsula is located off Kalanianaole Highway, slightly northeast of Diamond Head, and extends into Maunalua Bay.

The subject property is 13,056 ft², and consists of a single-family, detached dwelling, a seawall, and a recreational use pier. The property has a current certified shoreline (October 17, 2012). The project area includes the present seawall, as well as a 5 ft setback in the back yard toward the coastline. Erosion is evident on the parcel, as exhibited by a slope in the back yard. The unstable condition of the current seawall is recognizable by its varying elevations. The wall, despite its poor condition, runs the entire length of the western (*mauka*) property line, a total of 75 feet, and adjoins Parcel 39 to the north and Parcel 37 to the south. Portions of original stone masonry have eroded and fallen into the waters of Maunalua Bay, their remains visibly dotting the sea floor (Chee 2009:4). A wooden picket fence has been erected alongside the wall. A *naupaka* hedge is growing on the *mauka* side of the sea wall, growing in a narrow space between the seawall and the picket fence that extends along the *makai* edge of the back yard. A metal gate attached to the seawall allows access to the pier and bay.

Soils on the property are primarily comprised of fill land (FL)- mixed variety (Foote *et al*. 1972: Sheet 68). Areas filled with mixed soils are generally found at shoreline locations, such as Wailupe Peninsula. The mixed fill land of Wailupe Peninsula consists of compacted fossil coral reef dredged from the nearby waters of Maunalua Bay (Chee 2009:10). Most of the dredging work was completed from 1947-1948 during build-up of the peninsula for residential housing.

The survey was conducted during the season of *kau* (May to October), where temperatures are warmer, with continuous east-northeasterly trade wind patterns, the sun reaching zenith directly overhead, and the setting of the *Na Huihui*, or Pleiades at sunrise.

Groundwater at the project site is brackish due to the proximity of the site to Maunalua Bay. The composition of fossilized coral and topsoil for fill, proves to be extremely porous, hence the rapid accumulation of rainfall in the ground.



Wailupe TMK: (1) 3-6-001: 038 Source: U.S.G.S. 7.5 Minute Series (Topographic); Koko Head Quadrangle 1999

Figure 3: Location of Subject Property on U.S.G.S. Map (1983)

Section 3: Historic Background

3.1: Wailupe Place Name

Numerous features have been entitled Wailupe, including an *ahupua'a,* a beach, a fishpond (currently filled with dredged coral, and known as the residential area of Wailupe Circle), a gulch, a stream, a spring, and a valley (O'Hare *et al*. 2009:13). Pukui *et al*. (1974:225) explain that Wailupe, literally translates as "kite-water," describes the region of southeastern Oʻahu utilized by ancient Hawaiians for kite-flying. According to ethnographer Emma Beckley, the name has also been attributed to the legend of a *moʻo* (spirit) known as Lupe (Beckley, n.d. Hawai'i State Archives). According to ancient Hawaiian traditions, nearly all water sources were guarded by *moʻo.* These spirits were known to take the shapes of beautiful women or reptilian creatures. Whether benevolent or malevolent, their purpose was to safeguard the body of water to which they belonged, in this case the area where Wailupe Stream once converged with the fishpond. Hence, the name Wailupe refers to the waters belonging to, or guarded by the *moʻo* Lupe.

3.2: Mythological and Traditional Accounts

There exist two legends regarding the area of Wailupe, consisting of the tales of the Goddess Hiʻiaka and her travels through southeastern Oʻahu, and of the journey of the gods Kane and Kanaloa along the Waiʻalae Coast. Mythological and traditional accounts dealing specifically with the ancient fishpond are rare; however, the *ahupua'a* of Wailupe is often mentioned in passing in such accounts. The relationship existing between legends and place-names is a significant one. Legends often relate significant events in the history of a region, as is often the case for traditional Hawaiian myths; these mythological and traditional accounts often include historical, familial and mythological elements that in turn, are adapted to local landscapes. The following myths concerning Hiʻiaka, Kāne, and Kanaloa were obtained from O'Hare *et al*. (2009). For the tale of Hi'iaka, traditional accounts from Hoʻoulumāhiehie (2006a, 2006b) and Emerson (1993) were utilized. For the tale of Kāne and Kanaloa, traditional accounts from both Pukui and Elbert (1986), as well as Beckley (n.d.) were utilized.

3.2.1: Hiʻiaka's Travels through Southeastern Oʻahu

Hiʻiaka, sister of Pele, the Hawaiian volcano goddess, traveled through Waiʻalae and Wailupe. Hiʻiaka, with her traveling companions Wahine ʻōmaoʻo and Lohiau, several monsters

in the uplands of Kaimukī in Pālolo Valley. They descended to the coast to meet up with the chief Kaulanakalā, who had agreed to carry them in his canoe to Molokai.

> *…huli akula kēia i kai o Waiʻalae a ʻike akula kēia i ka waʻa o Kaulanaokalā e holo aʻe ana, a laila, haʻalele lākou nei i Kaimukī a hele akula no lākou nei a hala ʻo Waiʻalae, a hala ʻo Wailupe, a hōʻea lākou nei i Maunalua, a hala ia wahi i hope, hōʻea lākou nei i Niu, I Kuliʻouʻou; i nānā aku ka hana o lākou nei, e lawaiʻa mai ana kekahi mau wāhine, ʻo ka pāpaʻ me ka ʻōhune kā lāua iʼe e ulawaiʻa ana.*

…(Hiʼiaka) turned to look seaward of Waiʻalae and saw Kaulanaokalā's canoe sailing along. They departed Kaimukī and traveled past Waiʻalae, past Wailupe, and reached Maunalua. When that area had fallen behind them, they arrived in Niu, then Kuliʻouʻou. They looked about, and saw some women fishing for ʻ*ōhune* (goby) fish and crabs (Hoʻoulumāhiehie 2006a:295; Hoʻoulumāhiehie 2006b:317).

Hiʻiaka requested some fish from the local women, but they answered rudely, telling her that she should collect her own fish. In response to this rudeness, Hiʻiaka offered the following *mele* (chant):

He makani Holoʻuha
Ko Kaʻeleke'i Paukū
Pau wale hoʻi ke aho i ke noi ʻana
ʻO kā lā hoʻi ē.

The following is a translation of Hiʻiaka's *mele*:

A Holoʻuha, a wind that comes to nothing
Blows at Kaʻeleke'i of Paukū
Breath is wasted on a request
Like asking for the sun.

The Emerson version of the Hiʻiaka chant varies slightly, notably with the terms *makani holo-uha* and *Pau-kua* being utilized. *Makani holo-uha* alludes to a cold wind that chills the naked legs of the fisherfolk. *Pau-kua*, a place name, meaning consumed in the back refers to the fact that the Kahuna's black art very frequently made its fatal ravages by attacking first the back (Emerson 1993:186-187).:

He <u>makani holo uhā</u>	Here's a blast shall posset the blood,
Ko Ka-ele-kei a <u>Pau-kua</u>	As the chant of Kahuna the back

Pau wale kea ho I ka noi ana,	Our patience exhausts with delay,
O ka loa ho‘i, e!	We’re famished from the length of the way!

When the chant was completed, Hi‘iaka and her friends turned away, and when they were out of sight, the women fell dead.

3.2.2: The Gods Kāne and Kanaloa along the Wai‘alae Coast

The god Kāne and his brother Kanaloa often traveled around the Hawaiian Islands. When they grew tired, they looked for the ‘*awa* plant and for some fresh water to mix with the pounded root to make a slightly narcotic drink. When the gods were in a dry area, Kanaloa complained to his brother that there was no water. The powerful god Kāne would strike the earth with a staff and water would gush up from the hole. There are many springs in the Hawaiian Islands attributed to the god Kāne. Several of these were on the Wai‘alae coast.

According to ethnographer Emma Beckley (Emma Kailikapuolono Metcalf Beckley Nakuina; Beckley n.d. Hawai‘i State Archives), the gods were at Hanauma in Maunalua, traveling west. When they reached Kuli‘ou‘ou, Kanaloa took some ‘*awa* from the sacred grove at the base of Kuli‘ou‘ou Ridge. This grove was watched over by a *mo‘o,* a supernatural creature that could change form (a form like a crocodile) called Lupe. Thus, the spring was called ‘Elelupe, the ‘*ele* of Lupe. The word ‘*ele* means “a water hole, dark spring covered with growth” (Pukui and Elbert 1986:40). Kanaloa took some of the ‘*awa* he got from Lupe’s ‘*awa* grove and traveled to Wailupe. There he again demanded water from his brother. Kāne struck the coral shelf and the water gushed up. Beckley (n.d.) calls this Wailupe Spring, and gives a different translation for Wailupe than most other ethnographers. In her translation, Wailupe means “water of Lupe” since the spring was made for water to mix with ‘*awa* from Lupe’s sacred grove. This spring is probably one of the two springs, Punakou or Puhikahi, at the coast near Wailupe Pond.

3.3: Traditional Hawaiian Fishponds

Traditional Hawaiian fishponds, or aquaculture, represent one of the most important technologies developed within the Hawaiian Islands. From the 14th to the 19th Centuries, Hawaiian fishponds functioned as designated areas for the raising and harvesting of select fish varieties. For nearly five centuries the design of the fishponds remained relatively unchanged.

There are five varieties of fishponds, whose structures and contents vary according to their location (see Kikuchi 1976). *Loko i'a kalo* and *loko wai* are located in mountain streams, and upland freshwater ponds. *Loko pu'uone, loko ku'apā*, and *loko 'ume iki* comprise the ocean fishponds. The Wailupe fishpond operated as a *loko ku'apā,* typified by *ku'apā* (seawalls) constructed of interlocked stones and coral, with pebbles fitted into the gaps. The key element to the *ku'apā* fishponds were their brackish conditions. These ponds were located on reef flats near some sort of freshwater source, such as a stream or spring. The shoreline made up the inner wall, while the outer wall was equipped with openings known as *'auwai kai*, and fitted with *mākāhā* (sluice gates). The outer seawall or *ku'apā* leveled off at a point higher than the highest tides of the year, and were engineered at an angle less than 90° for wave energy dissipation. Modifications to fishpond architecture occurred in the early 1900's with the addition of movable gates to corral fish.

Species of flora and fauna collected within the *Loko ku'apā* included, *limu* (seaweed), *papa'i* (crabs), *'opae* (shrimp), *awa* (milkfish), *'ama'ama* (mullet), *aholehole* (flagtail), *weke, kumu* (goatfish), *awa'aua* (ladyfish), *'o'io* (bonefish), *manini* (convict tang), *palani* (eye-striped surgeonfish), *pualu* (yellow surgeonfish), *papio, ulua* (jacks), *nehu* (anchovy), *akule* (big eyed scad), *moi* (threadfin), *kaku* (barracuda), *uhu* (parrotfish), *hinalea* (wrasse), *kahala* (amberjack), *kala* (unicorn fish), *puhi* (eel), *'o'opu hue* (puffer fish), and *nahawele* (mussel).

Fishponds, or *loko i'a,* soon became status symbols in their own right, responsible for providing food, trade, and wealth for an entire *ahupua'a.* The *ali'i* who maintained *loko i'a* within their jurisdiction found considerable political clout. The fishpond functioned as a symbol of conspicuous consumption, as well as an indicator of the power and ability of an *ali'i* to control and tap his resources (Kikuchi 1976:295-299). As the traditional Hawaiian political structure was dissolved, so too did the traditional functions of the fishpond; eventually, by the 1930's fishponds fell into disuse, oftentimes filled in for residential use (*i.e.* Wailupe Peninsula).

3.4: Early Post-Contact Period

Based on accounts by early western visitors to the southeast coast of O'ahu, the region of land running from the edge of Maunalua Bay, including the *ahupua'a* of Wailupe, was well populated, with sufficient resources to carry the population of the area. When the *King George* anchored in Maunalua Bay, in 1786, Captain Nathaniel Portlock reported:

> Soon after our arrival, several canoes came off and brought a few cocoa-nuts and plantains, some sugar cane and sweet root; in return for which we gave them small pieces of iron and a few trinkets (Portlock 1789:69).
>
> ...The old man (a *kahuna*) informed me, that his (Kahekili's) residence was in a bay around the West point (Black Point), and importuned me very much to carry ships there, as that place, he said, afforded many fine hogs and vegetables. Indeed, I had some reason to think that the inhabitants on that part of the island were more numerous than in King George's Bay (Maunalua Bay), as I observed most of the double canoes came round the West point; but as the people now brought us plenty of water, I determined to keep my present situation, it being in many respects an eligible one; for we hitherto had been favored with a most refreshing sea breeze, which blows over the low land and vallies being in a high state of cultivation, and crowded with plantations of taro, sweet potatoes, sugar cane, &c., interspersed with a great number of cocoa-nut trees, which renders the prospect truly delightful. (Portlock 1789: 73-74). (O'Hare *et al*. 2009:26).

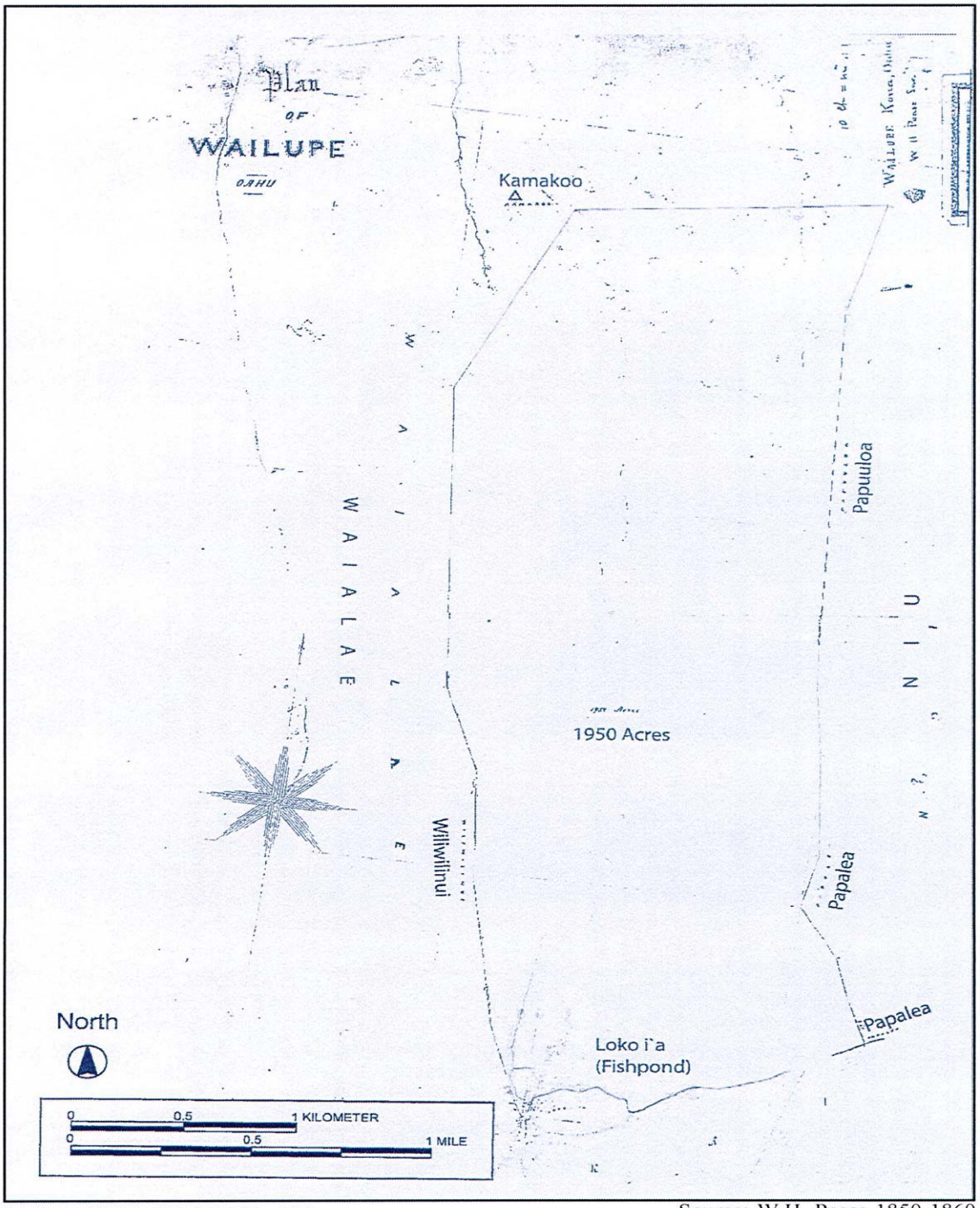
Captain Nathaniel Portlock's writings identified the southeast region of O'ahu as being quite productive, with the capability to support a high population density. Such productivity can be attributed to a well-functioning economic and political system. At the heart of this system were the fishponds, an important symbol of an *ahupua'a*'s wealth and resources. Wailupe fishpond, one of a few fishponds along the southeastern coast, was a part of the viable economic and political system observed by Captain Portlock at the time.

3.5: Mid-Nineteenth Century and LCA's

Half the *ahupua'a* of Wailupe was awarded to a *konohiki* (land manager) named Kamaha (LCA 6175), the other half to King Kamehameha III (O'Hare *et al*. 2009:35). The king's portion included "the large Fish pond (Wailupe Pond) and one acre of *Kula* land in the Ili of 'Wailupe' O'ahu" (Barrere 1994:204). The remainder was acquired by Kamaha, and included several small fishponds as well. Wailupe Land records from the 1840-50's detail several shoreline shallow reefs with walls built around them or modified brackish water swamps behind sand berms, including the larger Wailupe Pond (O'Hare *et al*. 2009:35). (Figure 4)

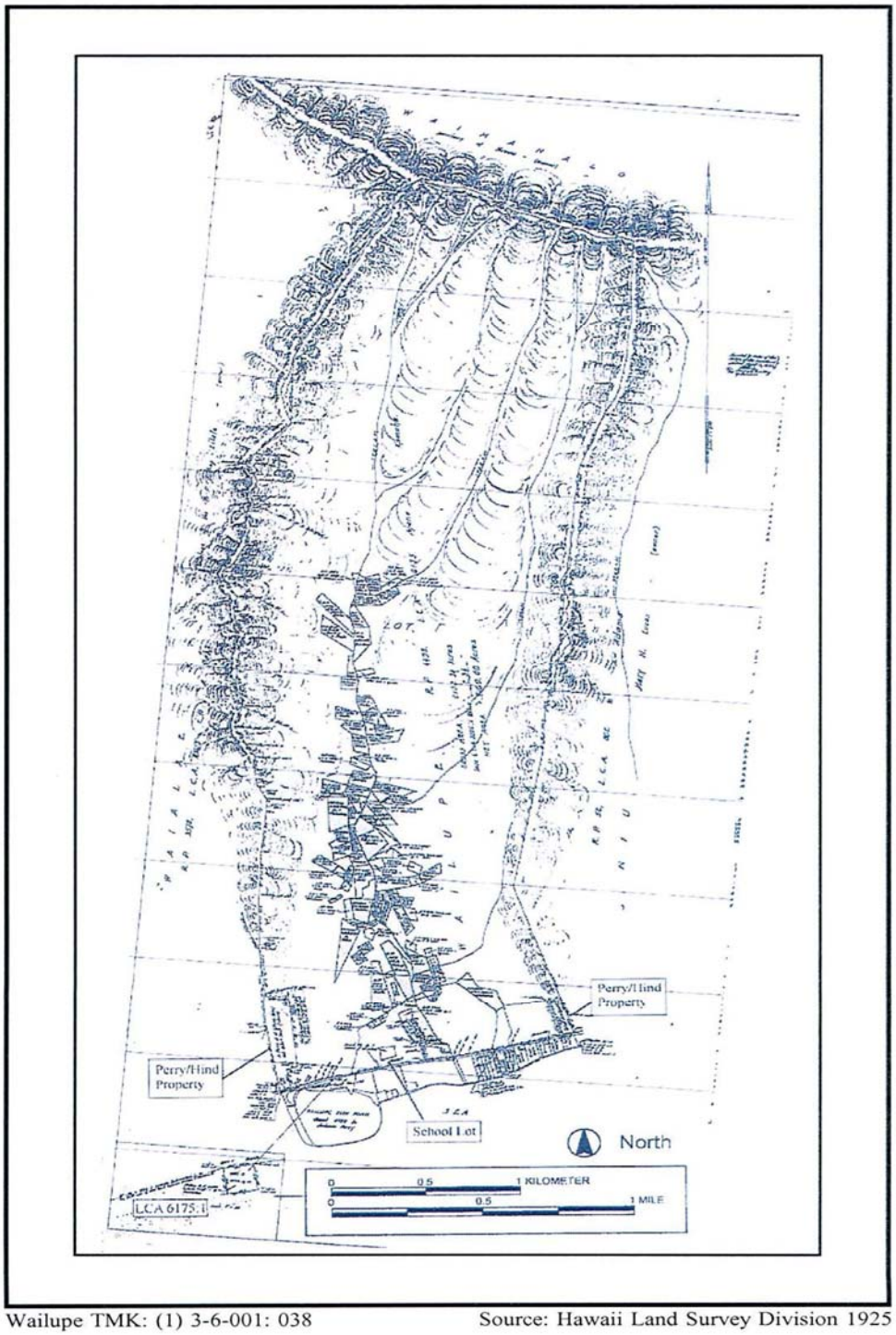
In Wailupe, 57 claims were made, with 37 awarded in total, as shown on a 1925 Land Court map (Figure 5). LCA claims were mainly for *kula* lands; these lots averaged 1.5 acres with two *kula* patches earmarked for sweet potato, coconut, orange, *hala, ipu,* and *pili* grass. Lots were centered in areas adjacent to the streams of Wailupe Valley.

By 1925, most of the Wailupe lands had been subdivided into residential lots owned by Westerners. LCA 2066 to Kalua can be seen on a 1903 grant map; it is this grant (Grant 4728), that allows for the title of Wailupe Fishpond to be transferred to Antonio Perry (Figure 6). The map highlights several other features within and around Wailupe Pond, including several other small fishponds (awarded to Kamaha as part of LCA 6175), an inlet from Wailupe Pond to Punakou, and finally Punakou and Puhikahi Springs. Kamaha was the *konohiki* (land manager); he and Kalua (LCA 2066) are mentioned in several other awards as the donors of lands, or as witnesses (O'Hare *et al*. 2009:36). These documents indicate that both Kamaha and Kalua figured as prominent individuals within Wailupe.



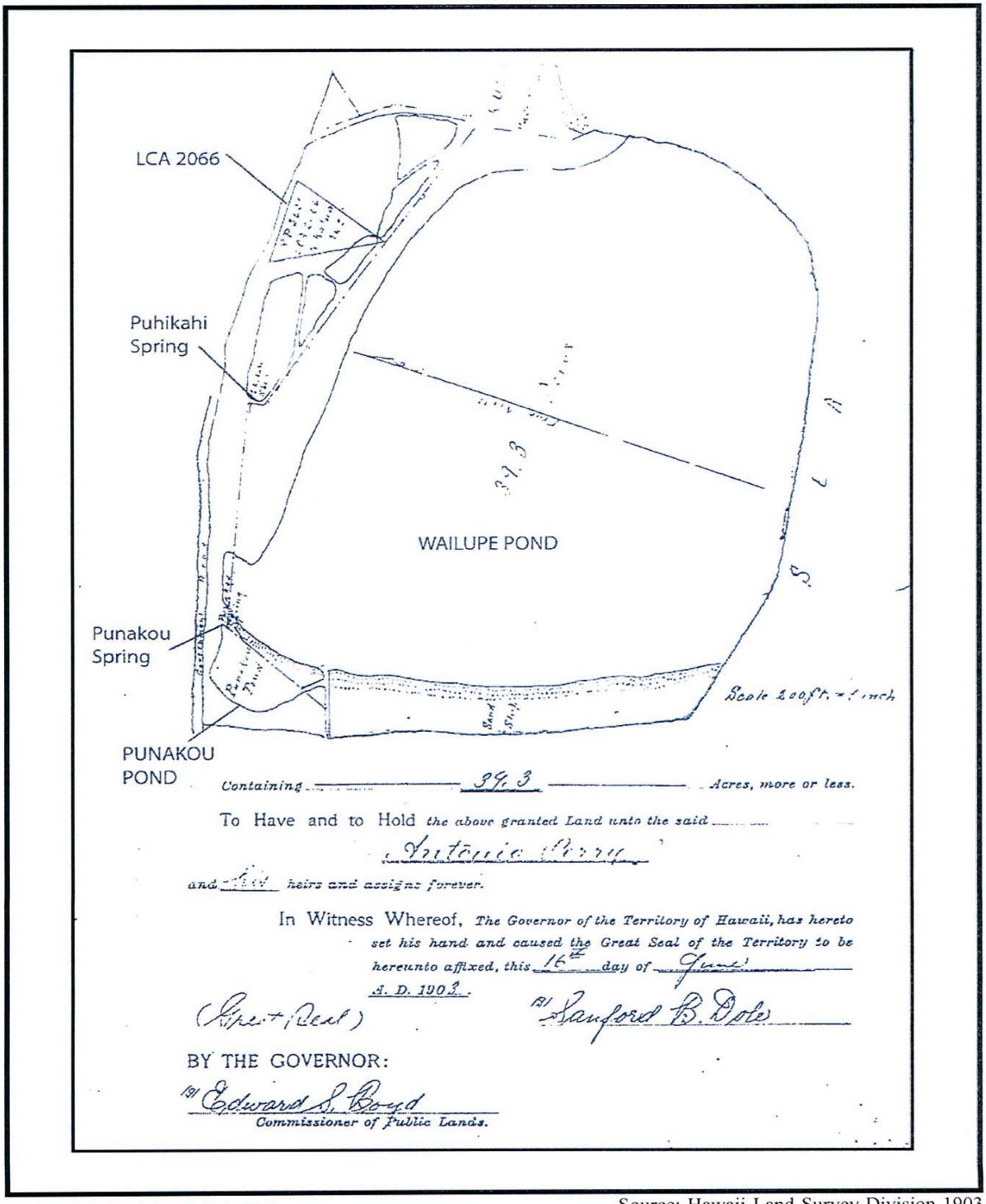
Wailupe TMK: (1) 3-6-001: 038 Source: W.H. Pease 1850-1860

Figure 4: Plan of Wailupe, by W.H. Pease (Hawai'i Land Survey Division, Registered Map No. 115) 1850-1860



Wailupe TMK: (1) 3-6-001: 038 Source: Hawaii Land Survey Division 1925

Figure 5: 1925 Land Court Application Map No. 656; Hawaii Land Survey Division



Wailupe TMK: (1) 3-6-001: 038

Source: Hawaii Land Survey Division 1903

Figure 6: 1903 map with Grant 4728 to Antonio Perry for Wailupe Fishpond (Hawaii Land Survey Division)

3.6: Wailupe Land Use

By the early twentieth century, a substantial portion of Wailupe lands were owned by businessman of foreign ancestry, such as Antonio Perry and Robert Hind. Antonio Perry, the son of a Portuguese immigrant, and owner of a dry goods business in Honolulu (Siddall 1921:311), later sold his land holdings, including Wailupe Pond, to businessman Robert Hind. Hind, the son of an American sugar cane entrepreneur and prominent figure in the history of Wailupe, established a large dairy within the area known as the Hind-Clarke Dairy. However, in the late 1940's Hind sold his dairy operation, and began developing his land holdings for residential use. Between 1918-1941, Wailupe Fishpond itself was leased to Mr. Sankichi Nakano. In 1946, a tsunami destroyed much of the fishpond wall. It was at this time that the lands were sold to Hind. In 1948, the area of Wailupe fishpond was filled in by Hawaiian Dredging Company, forming the Wailupe Circle subdivision (Clark 1977:36-37). Also during this period, developer Robert Hind, Ltd., strengthened the existing pre-historic fishpond wall to protect the newly created land area. The area is still currently zoned as a residential district.

Historical accounts are identical in listing Wailupe Fishpond ("Punakou") as being 41 acres in size. The fishpond wall is typically described as "2500 feet long" (Sterling and Summers 1978:274-275; Maunalua.net) and containing a variable 3-4 *makaha* or sluice gates. The wall is 12 feet wide and composed of waterworn basalt, with the central portion of the pond being sand and sediment-filled. The current channel and anchorage areas were dredged in 1947 by Hawaiian Dredging, with the materials being pumped into the fishpond and also laid onto the peninsula.

According to the Ho`okuleana LLC website, "Loko Nui o Wailupe", otherwise referred to as Wailupe Fishpond and "Punakou Pond", was claimed as Crown land together with Punakou Spring, formerly occurring on the western flank of the pond. The pond was present in Wailupe Ahupua`a, owned by the Hind family. As noted above, after the 1946 tsunami had damaged considerable portions of the fishpond wall, the property (pond, peninsula) was sold by the Hind family to Lowell Dillingham, owner of Hawaiian Dredging Company. In 1948, the area was created into a residential subdivision. The website importantly notes that "A deep channel (depth of approximately 12 to 20 feet) was dredged around the pond, as well as a channel through the reef to the open ocean and dredge material filled in the pond, creating what is now Wailupe Peninsula (commonly referred to as Wailupe Circle). The fishpond was filled with more than half a million cubic yards of coral (the at-grade elevation of the peninsula is approximately five feet above mean sea level."

3.7: Personal Accounts

3.7.1: Interview with Mr. Gregg Kashiwa

The following interview was obtained from the O'Hare *et al*. (2009) document:

Mr. Gregg Kashiwa, a resident of Wailupe for over 50 years, who had memories of the area from Kahala to Waimanalo, was interviewed by Cultural Surveys Hawai'i for a Cultural Impact Evaluation (CIE) on a private residential lot in Wailupe (see Stevens-Gleason and Hammatt 2008). Mr. Kashiwa is currently director of the Aina Haina Community Association and remains active in environmental protection. His recollections of the *loko i'a* (fishpond) are particularly noteworthy:

Wailupe Valley was the Hind-Clark Dairy owned by the Hind Family, thus today's name, Aina Haina (Hind land)... Later in the mid-1950s, Aina Haina was developed by the Hind Family... The Hind Clark Dairy operation occupied the area presently occupied by the Aina Haina Shopping Center and Aina Haina Elementary School. It stretched into the valley and go over the ridge now being Hawaii Loa Ridge subdivision. Hind Clark Dairy also had a small zoo near the library site today. They had a zebra in a pen that was killed by the tsunami. The most salient feature of Wailupe was its fish pond. The walls were severely damaged by the 1946 Tsunami. The Kaai (caretaker) for the pond lived on the knoll above Keikilani Circle that overlooked the pond. Later Hawaiian Dredging bought the pond and dredged the channel around what is today called Wailupe Peninsula by filling the pond. Some of the walls on its seaward sides are remnants of the original Hawaiian walls. (Figure 7)

An additional interview was conducted with Mr. Greg Kashiwa by Richard Wagner. (2011; obtained from the online source rjwagner49.com):

When I look at this picture it brings sadness to my heart, because it vividly evokes memories of a lost part of our Wailupe history. The most prominent feature therein is the Wailupe Fish Pond. This pond was constructed from a rock wall without cement or mortar (stacked) on its seaward boundary inclusive of requisite *makaha* (gates) for harvesting. The Top of Wall (To W) was about ten feet wide on which a pick up truck could traverse. Extrapolating To W dimensions, wall bottoms must have been approximately twenty feet wide. When you imagine building such a structure by hand, it took many skilled laborers many years to accomplish, resulting in a sustainable food source for the community. The pond lay within the Wailupe Ahupua'a owned by the Hind Family. The tsunami of 1946 severely damaged the seaward walls of the pond which prompted the Hind Family to sell the pond to Lowell Dillingham who resided where Kawaikui Beach Park now sits. Dillingham (Hawaiian Dredging) brought in his dredges and carved a deep channel around the pond and filled it in creating what is now Wailupe Peninsula. He did the same to the Niu Fish pond which created Niu Peninsula for the Lucus Family and the Thompsons who now brag of their ties to Hawaiian Royalty.

The Ka'ai for the pond resided where Unterman now proposes development, above Keikilani Circle. From that vantage, the Ka'ai could watch the pond. Old time fishermen will tell

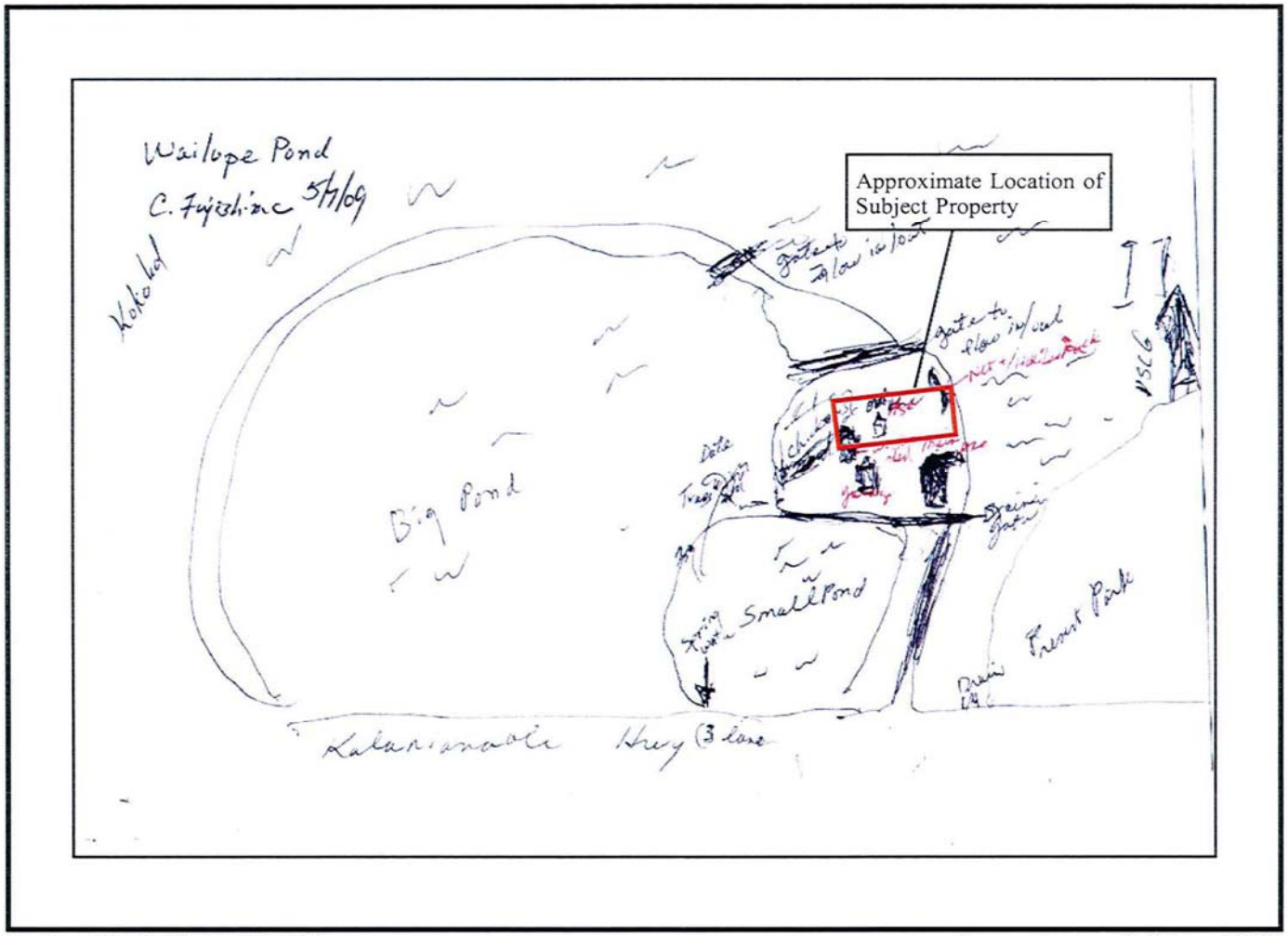
you that even torch fisherman were not allowed inside where fat mullet thrived. Most interesting was that the pond was fed by fresh water springs that bubbled up through the muddy bottom. Manure was periodically dumped in to promote algae growth on which the 'ama'ama fed. Ironically, one of the streets in the subdivision is named Ka'ai Street which is historically fitting much like Pia Street in Niu Valley.

I believe the Niu pond Ka'ai lived on the ridge above Paiko pond, and watched both ponds. Upon Statehood (1959) the old Hawaiian Konohiki system was abolished which left all fishponds unprotected.

Building these ponds was a monumental tribute to Hawaiian culture and wall construction techniques. I doubt if it could be duplicated today. I shudder to think about the labor required to build Kuapa Pond whose walls along Kalaniana‘ole Highway were at least ten feet above the road centerline. For those who recall, keep those memories bright. That is all that remains of an ancient legacy left us by those who left footprints in the sand.

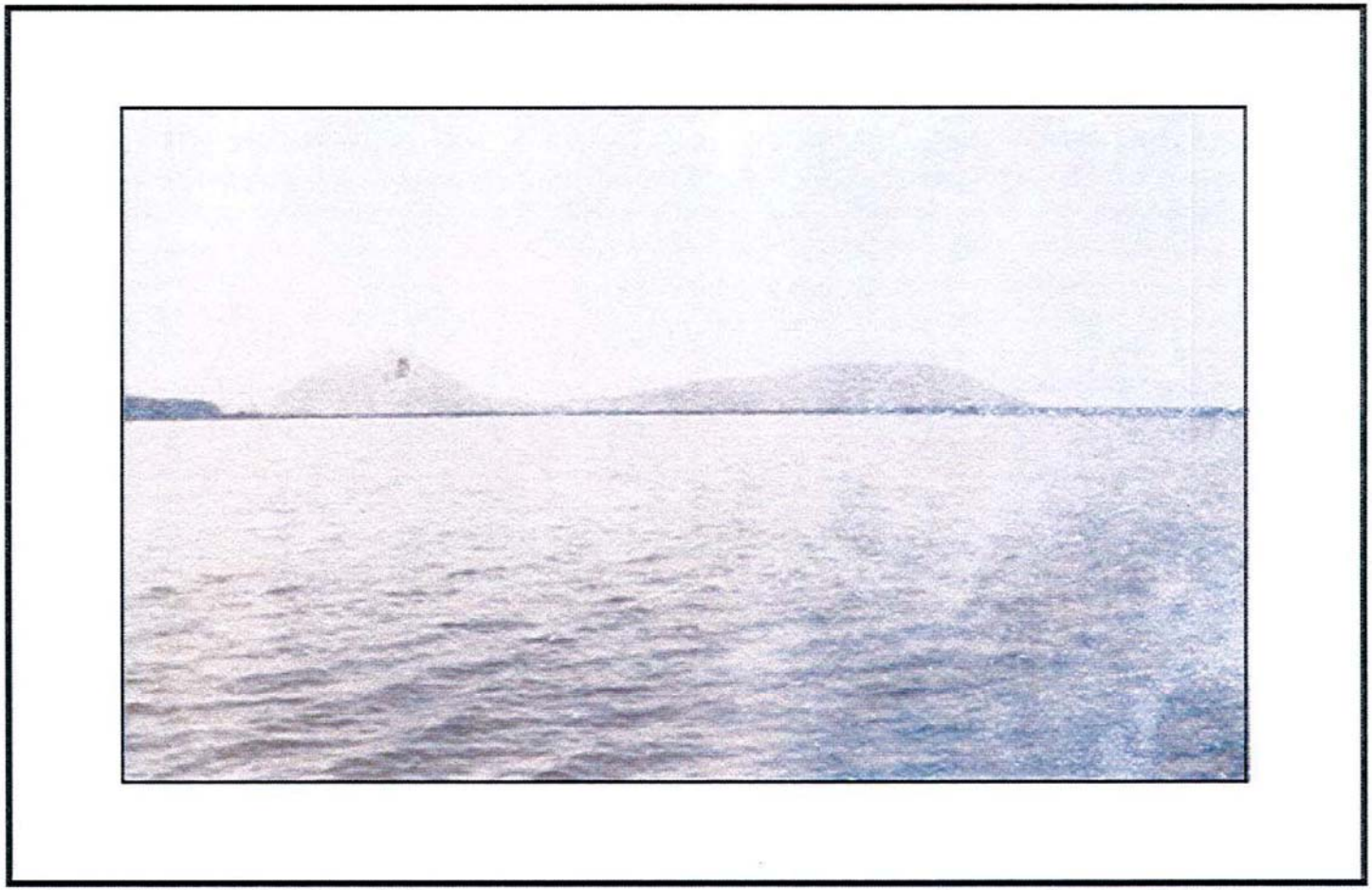
Wailupe TMK: (1) 3-6-001: 038 Source: Malama Maunalua 1935

Figure 7: Wailupe Valley circa 1935 from Malama Maunalua 2009



Wailupe TMK: (1) 3-6-001: 038 Source: Carolyn Fujishima 5/7/09

Figure 8: Sketch of Wailupe fishpond 5/7/09 Carolyn Fujishima



Wailupe TMK: (1) 3-6-001: 038 Source: Carolyn Fujishima 5/7/09

Figure 9: Photograph from Carolyn Fujishima

3.8: Previous Archaeological Work

Table 1. Previous Archaeological Studies for Wailupe Fishpond

Reference	Location	Type of Investigation	Site Number	Description
McAllister 1933	Near Wai'alae/ Wailupe boundary	Island-wide Survey	50-80-15-56	Wailupe Fishpond
Hammatt and Bush 2001; Bush and Hammatt 2002	Kalaniana'ole Hwy	Monitoring for Water/Gas Mains	None	No subsurface features or burials found during monitoring of trench excavations. Boulders found in Wailupe section that might have been part of the Wailupe fishpond wall.

There has been much archaeological activity in Wailupe Ahupua'a, especially in the lowland areas of Wailupe Valley, in the areas surrounding Kalaniana'ole Highway and its expansion, as well as in the areas of Wailupe Valley containing burial caves. However, the number of archaeological investigations conducted upon Wailupe fishpond, is extremely limited. The current project area has not been subject to any previous archaeological investigation.

The earliest and most substantive investigation of the Wailupe fishpond area was conducted by J. Gilbert McAllister (1933). McAllister's archaeological survey of O'ahu, counts as one of the first comprehensive surveys of archaeological sites on the island. In the report, McAllister recorded site 50-80-15-56, Wailupe Fishpond. According to McAllister: The pond is 41 acres in area. The wall is approximately 2,500 feet long. The west side is a broad sandy area, at least 50 feet wide, through which four outlets (*makaha*) now pass. The remainder of the wall is 12 feet wide, with water worn basalt faced higher on the outside than within. The central part is of a dirt and sand fill (McAllister 1933: 71).

In 2001 and 2002, Cultural Surveys Hawai'i, Inc. monitored the installation of a gas main (Hammatt and Bush 2001) and a water main (Hammatt and Bush 2002) from 'Ainakoa Avenue to West Hind Drive, including a section of Wailupe Ahupua'a to the east end of Wailupe Peninsula. Basalt boulders found in the Wailupe section were believed to have composed a portion of the former Wailupe fishpond wall. The boulders were identified to the north of the current project area.

3.9: Land Use Pattern

Based upon historical evidence, as well as previous archaeological work, certain summations can be made about land use within the project area and its vicinity, noting that the majority of archaeological work has been conducted in areas around the valley and the coastal plains. Historical evidence points to the presence of the traditional Hawaiian socio-economic practice of the self-sufficient *ahupua'a*. The need for a formal land division, such as the *ahupua'a,* is a direct result of population expansion. The taxation upon natural resources eventually demanded a new orientation of settlement patterns; from originally only occupying coastal regions, ancient Hawaiians created a new coastal-inland axis pattern of settlement. Archaeological studies, as well as observations such as those by Captain Nathaniel Portlock in 1786 indicate the Wailupe Ahupua'a was highly populated and utilized well into early historic times.

Aquaculture, in the form of man-made fishponds, such as the former Wailupe fishpond, was utilized for subsistence activities. Aquaculture would have been used in conjunction with other activities such as dry land agriculture in order to maximize an *ahupua'a's* productivity, and thus mitigate the problems associated with population expansion. Habitation locales existed mostly in the coastal regions of Wailupe, as well as along the Wailupe Stream floodplain. The urbanization occurring within Wailupe during the middle part of the 20th Century removed most of the original, pre-Contact cultural landscape. This is certainly the case within the project area at Wailupe Peninsula, where the area has been filled with dredged coral material and zoned for residential use.

3.10: Expected Finds

Based on archival research and previous archaeological work in the area, it was possible for ACP to enter the field with a set of expectations. Due to numerous sources mentioning the presence of the pre-historic fishpond wall, it may be assumed that some portions of the ancient wall would be encountered during survey work. It was also assumed that portions of the wall, strengthened and most likely reconfigured, at least in terms of width, by Robert Hind in the 1940's, would include concrete fill, atypical to the traditional Hawaiian dry stone stacking technique; these alterations would be considered post-contact/recent. There were also expectations that habitation deposits via cultural strata, artifacts, or midden could be identified under fill layers in the project area.

Section 4: Archaeological Methods

The current archaeological investigation was conducted over a two day period in May, 2012 (c. May 10 and 11). While fieldwork was conducted under the direction of the Principal Investigator, Joseph Kennedy, M.A., the actual excavation work was conducted by 5-6 construction workers from Suncrete Hawaii, Inc. ACP employees did not engage in excavation during this project, just the above noted company employees. Excavation occurred on May 10 and 11, 2012, according to ACP records, and took the form of three, manually-excavated shovel test trenches. No sediment samples were collected to investigate the potential of buried fishpond sediments and sediment was not screened through wire mesh. While only one stratigraphic profile (Trench 2) was presented in the original report; this report now contains profiles for Trench 1 and Trench 3, reconstructed from photographs and notes (see below).

Prior to fieldwork, multiple documents and materials were reviewed about the area. These are included in the text and the references section (see below). Locations visited for archival research included the State Historic Preservation Division library in Kapolei, Oahu, the Hawaii State Library (Honolulu), and the State Archives office (Honolulu).

Fieldwork was primarily centered on subsurface work to determine the vertical extent of the fishpond wall on the parcel. The visible portions of the wall were not mapped, GPS recorded, or measured via tape and compass. The wall and subsequent trenches were measured and photographed, however, as well as profiled. Minimal information from the original inventory survey was gleaned on soil texture, plasticity, Munsell color, and other basic descriptive information.

Subsurface investigation of the fishpond wall was accomplished by the excavation of three 1 m by c. 3 m test trenches. Each was excavated through a matrix of coral rubble fill and cobbles and reef (*makai* flanks) to the water table. According to the construction crew, the water table was a variable 6.5-9 feet, dependent on tidal influences. The trenches were used to ascertain the presence/absence of evidence for the prehistoric fishpond wall, as well as to document the horizontal and vertical extent of the wall. This sampling strategy was prescribed during discussions between the SHPD and ACP.

The trenches were oriented on an east/west axis and measured c. 1.35-1.50 m deep and to 2.40 m in the rear end of the yard. When excavators reached the concrete edging and wooden picket fence demarcating the *makai* edge of the rear yard and lawn, they extended the trenches in the *makai* direction by tunneling beneath the concrete edging, wooden fence, and *naupaka* hedge growing between the fence and the existing sea wall. The base of the wall rocks exposed in each of the trenches showed it resting upon the coral reef. Exposed wall sections measured approximately 1.0-1.8 m high and 1.0 m wide. Trench 1 was situated on the far right (north), several meters from Trench 2, the center trench. Approximately 3 m existed between Trench 2, the center trench, and Trench 3, the far left (south) trench.

Excavated soils from each trench included a layer of topsoil fill and a second layer of crushed coral fill. Wall remnants in the form of basalt cobbles, were evident in profiles, within a coral fill matrix. No screening of the soil was conducted. No cultural materials were discovered or collected during the survey. All basalt cobbles and boulders related to the fishpond wall were left in place and un-moved; photographs were taken to document their location, as well as their vertical and horizontal extent. Observations and photographs were taken of the outer facing wall, to extrapolate wall height. Measurements of wall thickness were also taken. Note that the findings presented herein only relate to the wall section extending along the subject property and may not reflect the morphology and/or integrity of the fishpond wall elsewhere along its length, beyond the project boundaries.

Section 5: Archaeological Findings

One site, State Site Number 50-80-15-0056, was identified during the current inventory survey). Site -0056 is a fishpond wall associated with Wailupe Fishpond, also called "Punakou". The site was initially identified during J.G. McAllister's survey (1933) of O'ahu archaeological sites, and labeled as Site 56. The site was listed as "destroyed" in Sterling and Summers (1978). Remnants of the wall identified during excavation for this project included small portions of dry stacked basalt stones and coral, with some original basalt stones occurring mostly unaligned in the coral fill matrix (see Appendix B). However, it remains unclear whether the exposed portions in each trench relate to the prehistoric wall section, the historic section, or both. No other features or cultural materials were identified during the present survey.

The existing sea wall was constructed on top of the earlier Wailupe Fishpond wall (Site -0056) or wall remnant, the latter which would be more in keeping with Sterling and Summers (1978) notation and current observations. Historical data corroborates that the existing sea wall geographically correlates (location) with the earlier Wailupe Fishpond wall. Initial modifications to the site occurred in the 1940s. The historical data also shows a high range of variability in pond wall thickness and morphology. Supporting historical documents show the Wailupe Peninsula development created in 1948 by dredging a channel and filling the fish pond. The walls of Wailupe Fishpond were also damanged in 1946 during a tsunami.

According to McAllister (1933), the central part of the wall (originally 12 feet in width) had been dirt and sand fill. During the current excavation work, trenches were primarily comprised of topsoil fill and coral fill, with scattered basalt cobbles occurring in the matrix. Using measurements and photographs, the height of the outer face of the wall, as well as inner face of the wall, were extrapolated. The outer facing wall of the historical fishpond reached a height of approximately 90 cm above surface, with the inner facing wall ranging in height from 64-74 cm above surface. The slope height from the outer wall to the inner wall corroborates information about ancient Hawaiian fishpond engineering and wave energy dissipation. Wall thickness measured approximately 1 m, nearly ¼ of the original thickness of the wall, as documented by McAllister (1933).

Overall, the wall, which fronts the subject property, consists of two historic components: the Wailupe Fishpond wall section (Site -0056) and the post-1940 sea wall addition. The wall runs north-south along the western property terminus to the bay. The walls, or modified wall segments, run horizontally across this property line for c. 75 feet. However, the earlier segment is not easily discernable in profiles and photos. The original fishpond wall has been modified significantly, as indicated in the photos below, where concrete, coral, and imported fill have been spaced above, below, and within the original wall context. If we are to mean basalt cobbles as indicating the original fishpond wall, its presence is only modest, compared with the re-built sections and large amount of coral and rubble fill in and around the wall matrix. In other terms, the upper section of the old fishpond wall was truncated and only a few basalt rocks, occurring in a coral matrix (Layer II c. 0.55-1.35 mbs), are present. The integrity of the original wall is very poor, given the massive disturbances through time to the wall and property itself, from the 1946 tsunami to dredging and filling the peninsula itself. The upper section of the old fishpond wall remains visible, albeit disturbed, while the lower remnant has mostly been removed or displaced. More succinctly, the upper wall represents the 1940 wall and the lower stones represent the prehistoric fishpond wall.

5.1: Results of Subsurface Testing

Test Trench 1: A 1 m by c. 3 m trench, facing *makai,* was placed against the current sea wall on the property. The test trench extended 2 m into the property from the existing fence line and 1 m *makai* under the fence to the existing sea wall. The trench represented the center of the three trenches. The ground surface in the area was covered with common lawn grass; numerous irrigation pipes and pvc piping were exposed during excavation, particularly in the c. 0.20-0.40 mbs range. Roots from nearby *naupaka* and palm trees were also exposed during excavation. Extending to a depth of approximately 1.0-1.8 meters below surface (mbs), excavation revealed two layers overlying the water table; the water table was at 1.98 m here, according to the excavators (Figure 10: Note: the stratigraphic profiles were taken from one portion of each trench, and may not reflect the final depth of excavation). Layer I (0-0.45 mbs) consisted of topsoil fill. Layer II (0.55-1.35 mbs) was composed of crushed coral fill, including pieces of large coral heads. Both layers were found to be culturally sterile. Interior waterworn basalt rocks probably representing a portion of the fishpond wall, were identified at the western end of the trench, just below the 1940s section of the seawall. The rocks occurred in a mixed fill/coral rubble matrix mostly between 0.55-1.20 mbs. Excavation was terminated at the water table.

Test Trench 2: A 1 m by c. 3 m trench, facing *makai,* was also placed against the current sea wall on the property. The trench was located to the north of Trench 1. The test trench extended 2

m into the property from the sea wall and an additional 1 m under the existing fence, in a *makai* direction. The ground surface of the trench was covered with common lawn grass. Numerous irrigation pipes and pvc piping were exposed during excavation in the 0.20-0.40 mbs range. Roots from nearby *naupaka* and palm trees were also exposed during excavation. Extending to a depth of approximately 1.50 mbs, the base of the trench was filled with brackish ground water. Trench excavation revealed two layers overlying the water table, the latter being a variable 6.5-9 feet depending on the tidal influence (Figure 11). Layer I (0-0.55 mbs) consisted of topsoil fill. Layer II 0.55-1.35 mbs) consisted of crushed coral fill. A small lens was identified in Layer I at 0.30-.037 m below surface. There are no notes discussing the texture or composition of the lens itself. The western flank of the trench, directly below the existing sea wall, revealed remnant stones likely associated with the fishpond wall, but within a mixed fill and coral matrix. Dredged coral material was found in sections against the basalt stone wall. Dry-stacking was evident in the basalt portions (possibly prehistoric wall) of the excavated wall in Layer II (see Appendix C). Excavation was terminated at the water table.

Test Trench 3: A 1 m by c. 3 m trench, facing *makai,* was also placed against the current sea wall on the property. The trench was placed to the south of Trench 1. The test trench extended 2 m into the property from the sea wall and another 1 m under the existing fence. The ground surface of the trench was covered with common lawn grass; numerous irrigation pipes and pvc piping was exposed during excavation (0.20-0.40 mbs). Roots from nearby *naupaka* and palm trees were also exposed during excavation. Extending to a depth of approximately 1.50 mbs, trench excavation revealed two strata overlying the variable depth of the water table. Layer I (0-0.55 mbs) consisted of topsoil fill (Figure 12). Layer II (0.55-1.35 mbs) consisted of crushed coral fill, including pieces of large coral heads. Both layers were culturally sterile. Interior remnants of the prehistoric fishpond wall (basalt cobbles) was identified at the western flank of the trench, just below the existing seawall, within a mixed coral matrix. Excavation was terminated at the water table.

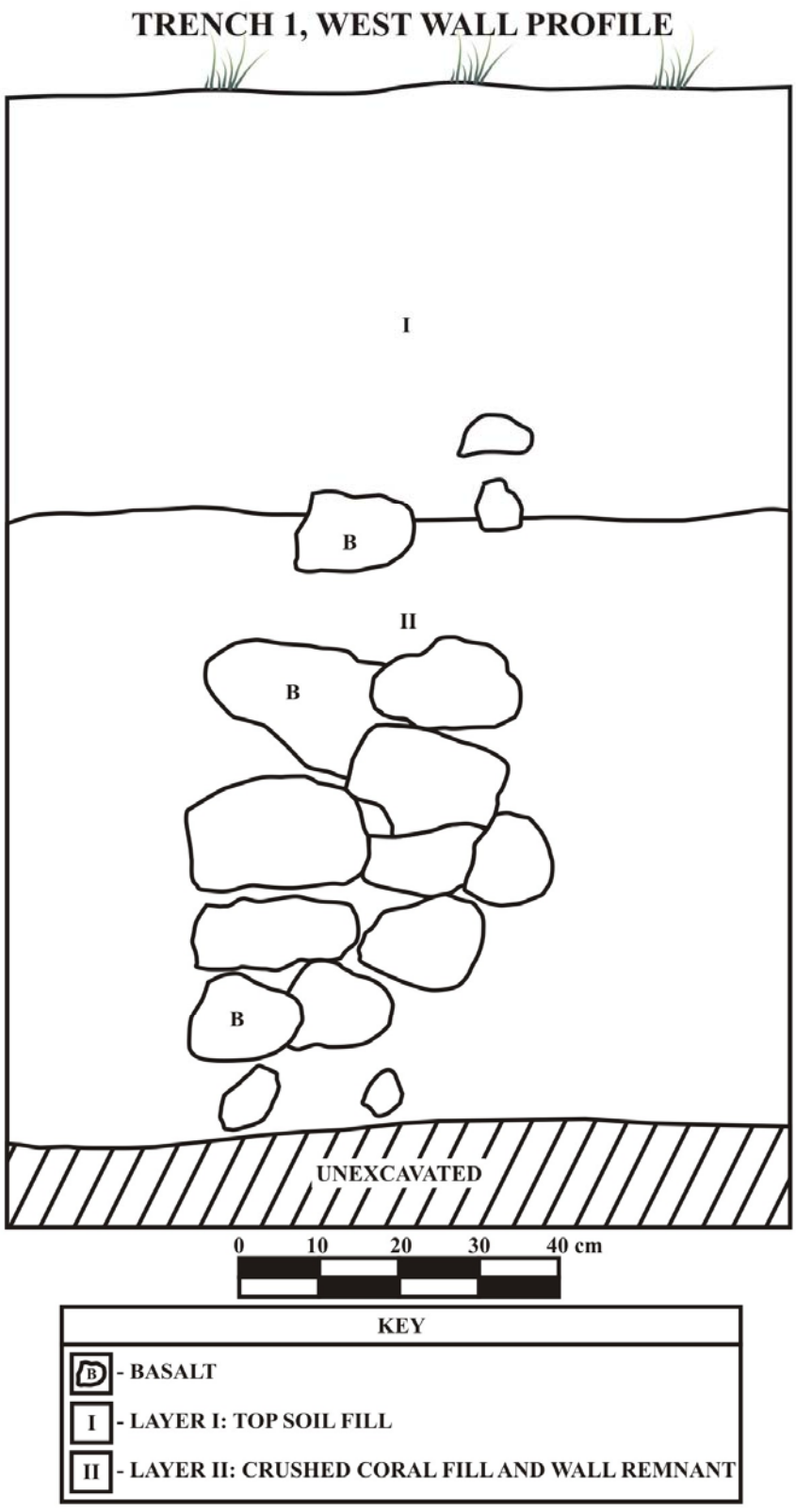


Figure 10: Trench 2 Stratigraphic profile.

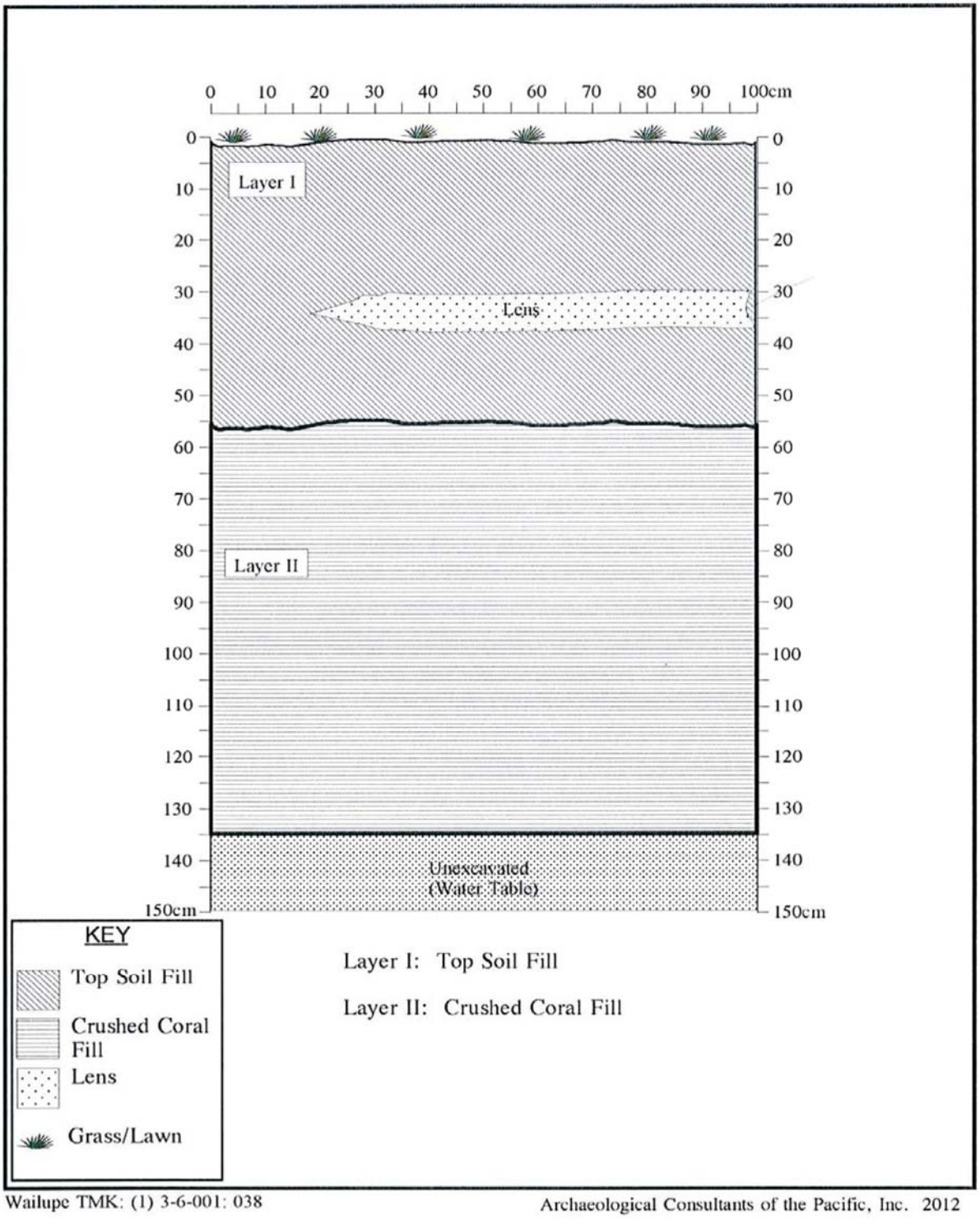


Figure 11: Profile of Trench 2, Wailupe.

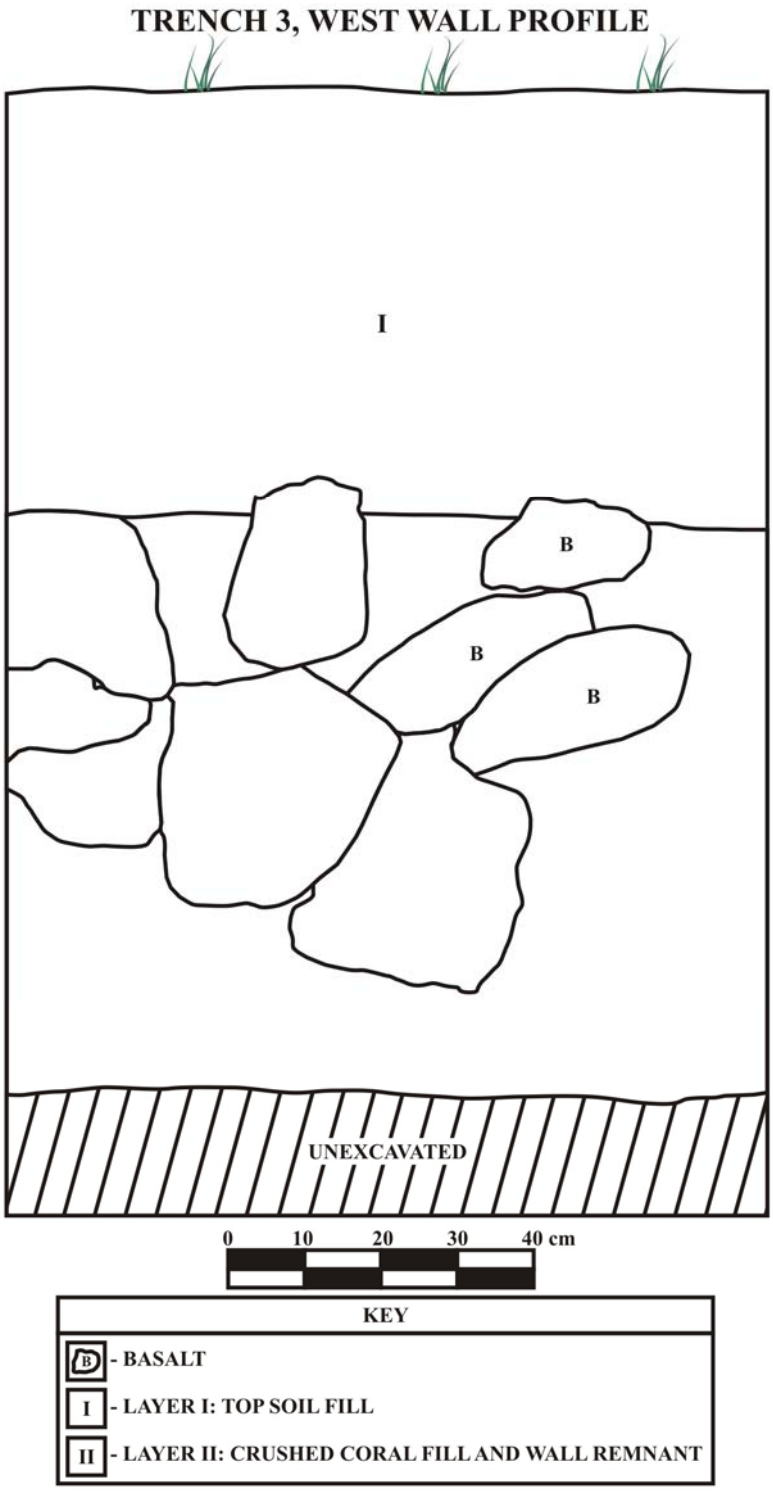


Figure 12: Trench 3, West Wall Profile.

Section 6: Evaluation of Site Significance

Based upon the criteria outlined below, Site -0056 is assessed as being significant under Criterion D (site has yielded, or is likely to yield, information important in prehistory or history). Site -0056 was originally designated as a basalt wall structure enclosing a fishpond (Wailupe Fishpond). Remnants of the ancient wall are still visible today, with the boundaries located on the outer *makai* wall of the Wailupe Circle residential area. However, the earlier wall component is not easily discernable in profiles and photos. This is due to the fact that the original fishpond wall has been modified significantly, as has been indicated in this report, where concrete, coral, and imported fill have been spaced above, below, and within the original wall context. If we are to mean basalt cobbles as indicating the original fishpond wall, its presence is only modest, compared with the re-built sections and large amount of coral and rubble fill in and around the wall matrix. The integrity of the original wall is very poor, given the massive disturbances through time to the wall and property itself, from the 1946 tsunami to dredging and filling the peninsula itself.

Both the pre-1940 and post-1940 walls have been comprised by a tsunami and construction/dredging of the peninsula for residential use. The modified/re-built sections has more integrity than the prehistoric fishpond segment. Thus, the upper section remnant mostly remains visible, albeit disturbed, while the lower remnant has mostly been removed or displaced. However, taken together as a whole, neither appears to have retained much integrity within the current project area. As may be seen by walking the peninsula, other locations appear to contain more intact sections of the historically modified wall and perhaps, the traditional-period portions as well.

Project area construction plans, provided by Analytical Planning Consultants, Inc., have indicated “no negative” impact on the wall itself. Overall, the current project led to the conclusion that the portion of Site -0056 running along the western boundary of the parcel has been substantially altered from its prehistoric form, particularly after the 1946 tsunami and subsequent dredging and filling of the pond and peninsula areas. When taken together, integrity of the prehistoric (lower) and historic (upper) sections remains only very modest.

Due to the existence of two historic components: the Wailupe Fishpond wall section (Site -0056) and the post-1940 seawall addition, as well as the inadequate field documentation by ACP of the three trench excavations, including sampling and photographic work, Archaeological Monitoring is recommended during any ground altering activity associated with repairs of the wall to further document both prehistoric (lower) and historic (upper) wall sections. An Archaeological Monitoring Plan (AMP) shall be submitted to, and approved by, the SHPD prior to the construction work. An Archaeological Monitoring Report will also be prepared following the work describing the wall, associated sediments and depths, and other descriptive information available for the site.

Table 2. Summary of Site Significance Evaluations

State Site Number	Description	Function	Significance Evaluations; Rec.
50-80-15-0056	Remnants of Wailupe *loko i'a* or fishpond wall	Aquaculture	D; Archaeological Monitoring

Conclusion

Archaeological Inventory Survey was conducted on a property located in Wailupe Circle, Wailupe Ahupua`a, Kona District, Island of O'ahu [TMK (1) 3-6-001:038]. The purpose of the investigation was to determine the extent of the known, prehistoric Wailupe Fishpond wall on the parcel, as well as properly document and evaluate the site as prescribed during discussions with DLNR-SHPD. Wailupe Fishpond has been designated as State Site No. 50-80-15-0056.

Portions of the *loko i'a* or fishpond wall, consisting of dry stacked basalt boulders and cobbles and having been heavily modified, were identified during the survey. This includes both prehistoric and historically modified segments, although both are difficult to discern in the coral rubble within and around the wall. No cultural deposits or materials were identified during excavation of three trenches against the fishpond wall.

Overall, the wall, which fronts the subject property, consists of two historic components: the Wailupe Fishpond wall section (Site -0056) and the post-1940 sea wall addition. However, these two are not easily discernable in profiles and photos. The original fishpond wall has been modified significantly, where concrete, coral, and imported fill have been spaced above, below, and within the original and modified wall context. If we are to mean basalt cobbles as indicating the original fishpond wall, its presence is only modest, compared with the re-built sections and large amount of coral and rubble fill in and around the wall matrix. The integrity of the site is poor, given the massive disturbances through time to the wall and property itself, from the 1946 tsunami to dredging and filling the peninsula itself in the late 1940s and after.

Due to the existence of two wall components and the limited archaeological documentation obtained about each during the Archaeological Inventory, Archaeological Monitoring is recommended during all ground altering activity associated with repair of the wall. The Archaeological Monitoring work will include obtaining additional information about both wall components (prehistoric and historic), including dimensions, construction materials and methods, modifications, condition, as well as the deposits and depths. This will allow for a more comprehensive, informed assessment of the archaeological integrity and significance to both the prehistoric and historic sections of the wall. An Archaeological Monitoring Plan (AMP) shall be submitted to, and approved by, the SHPD prior to the construction work. An Archaeological

Monitoring Report will also be prepared following the work describing the field methods, results, and assessment of site significance.

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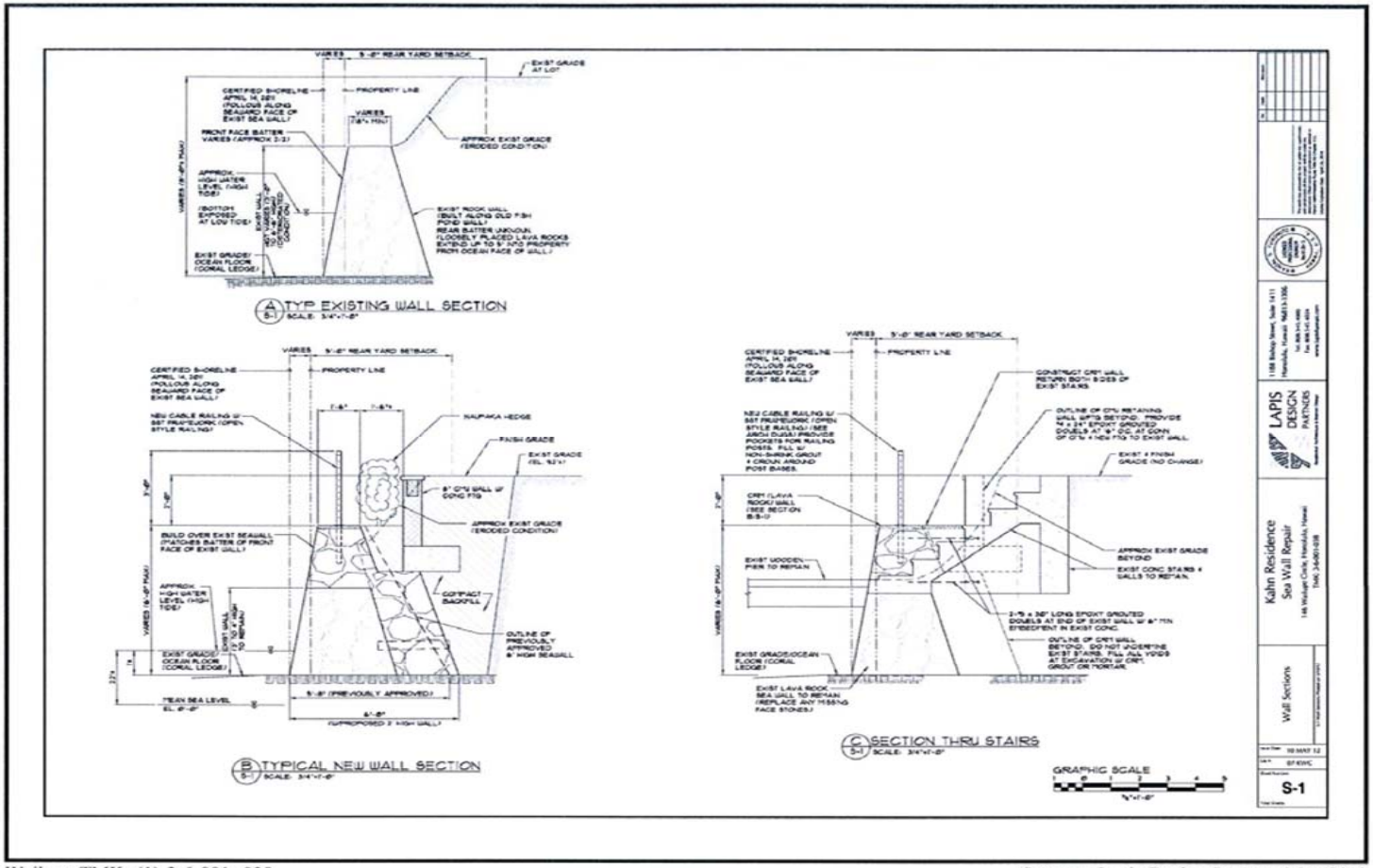
Appendix A

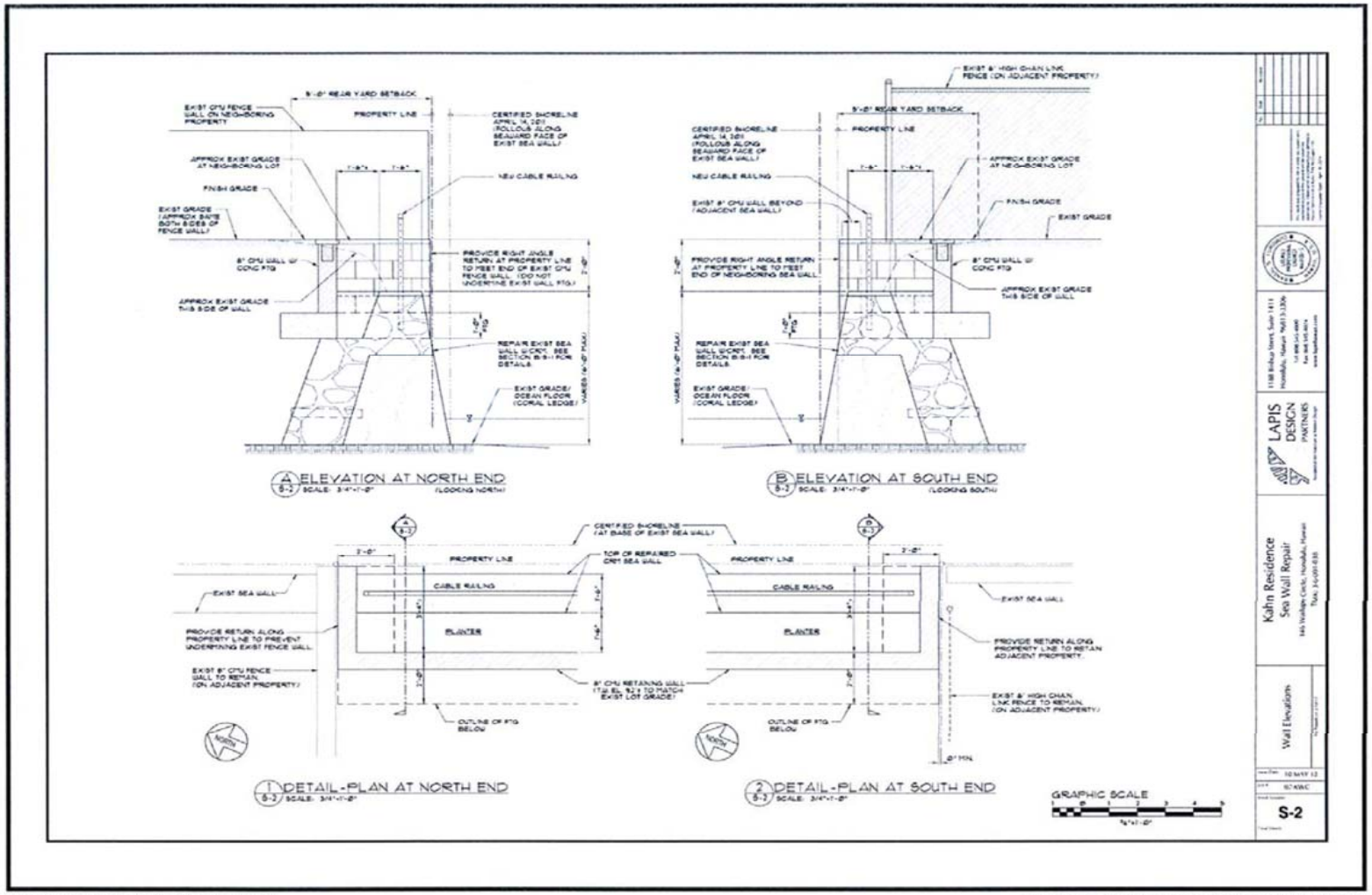
Design Plans 2012



Wailupe TMK: (1) 3-6-001: 038

Source: Lapis Design Partners May 2012

Rockwell Plans: 1 of 2



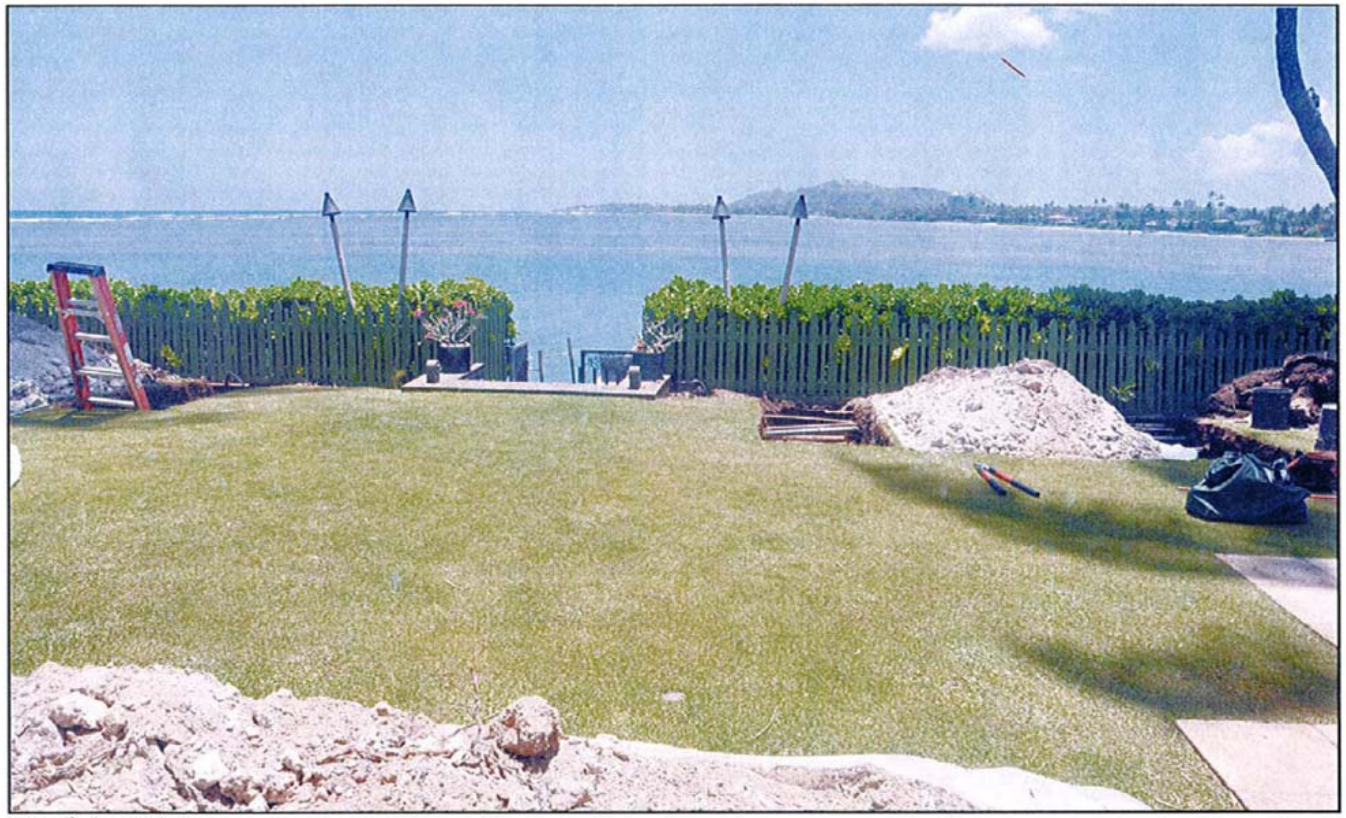
Wailupe TMK: (1) 3-6-001: 038

Source: Lapis Design Partners May 2012

Rockwell Plans: 1 of 2

Appendix B

Selected Photographs from Test Trenches



View facing Makai

Wailupe TMK: (1) 3-6-001: 038 Archaeological Consultants of the Pacific, Inc. 2012

Photo of Overview of Trench Area

View facing Makai

Wailupe TMK: (1) 3-6-001: 038 Archaeological Consultants of the Pacific, Inc. 2012

Photo of Trench 1 West Wall.

View facing Makai

Wailupe TMK: (1) 3-6-001: 038 Archaeological Consultants of the Pacific, Inc. 2012

Photo of Trench 1 West Wall.

View facing Makai

Wailupe TMK: (1) 3-6-001: 038 Archaeological Consultants of the Pacific, Inc. 2012

Photo of Trench 2 West Wall.

View facing Makai

Wailupe TMK: (1) 3-6-001: 038 Archaeological Consultants of the Pacific, Inc. 2012

Photo of Trench 3 West Wall.

View facing Mauka

Wailupe TMK: (1) 3-6-001: 038 Archaeological Consultants of the Pacific, Inc. 2012

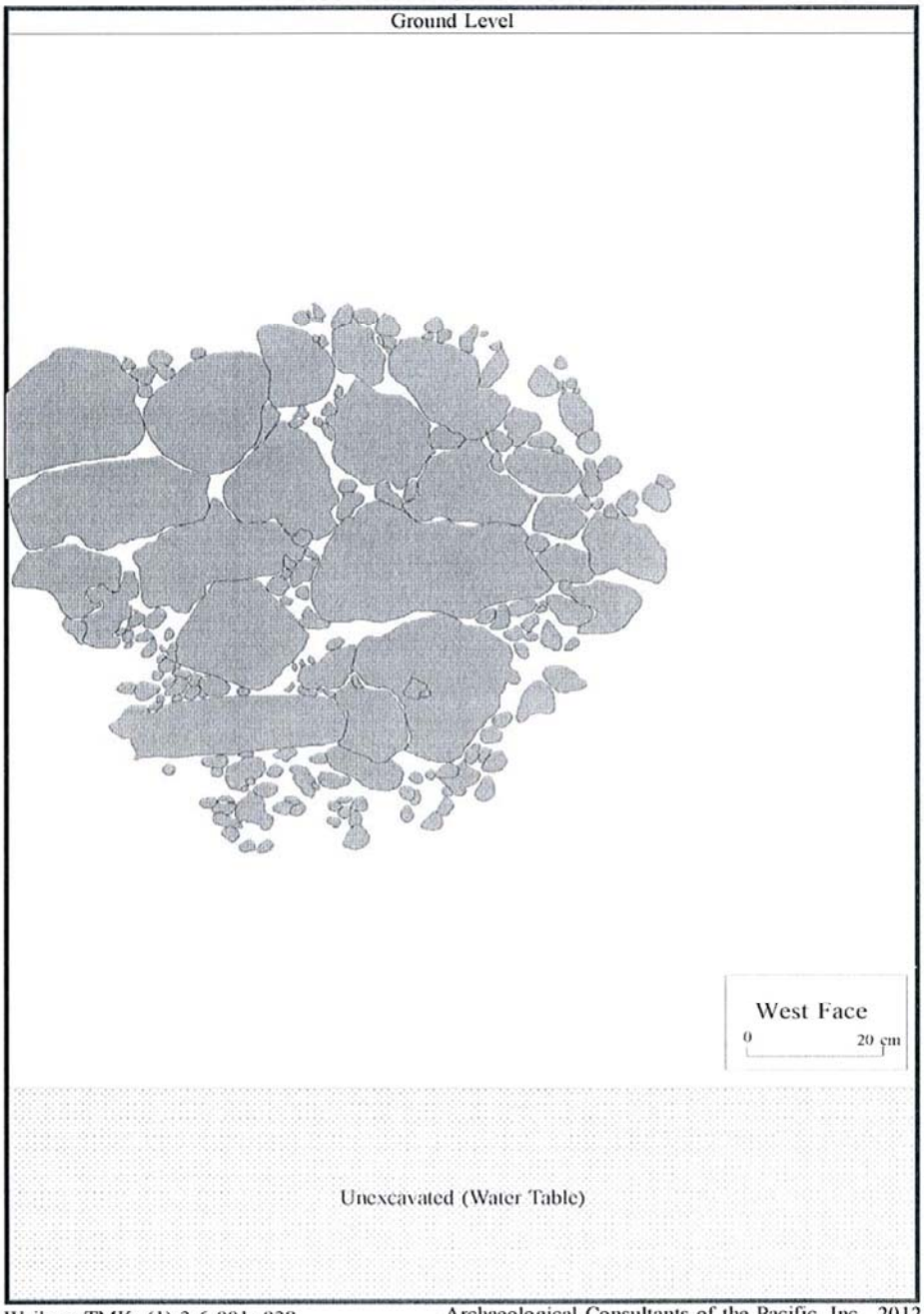
Photo of Exterior Wall.

View facing Mauka

Wailupe TMK: (1) 3-6-001: 038 Archaeological Consultants of the Pacific, Inc. 2012

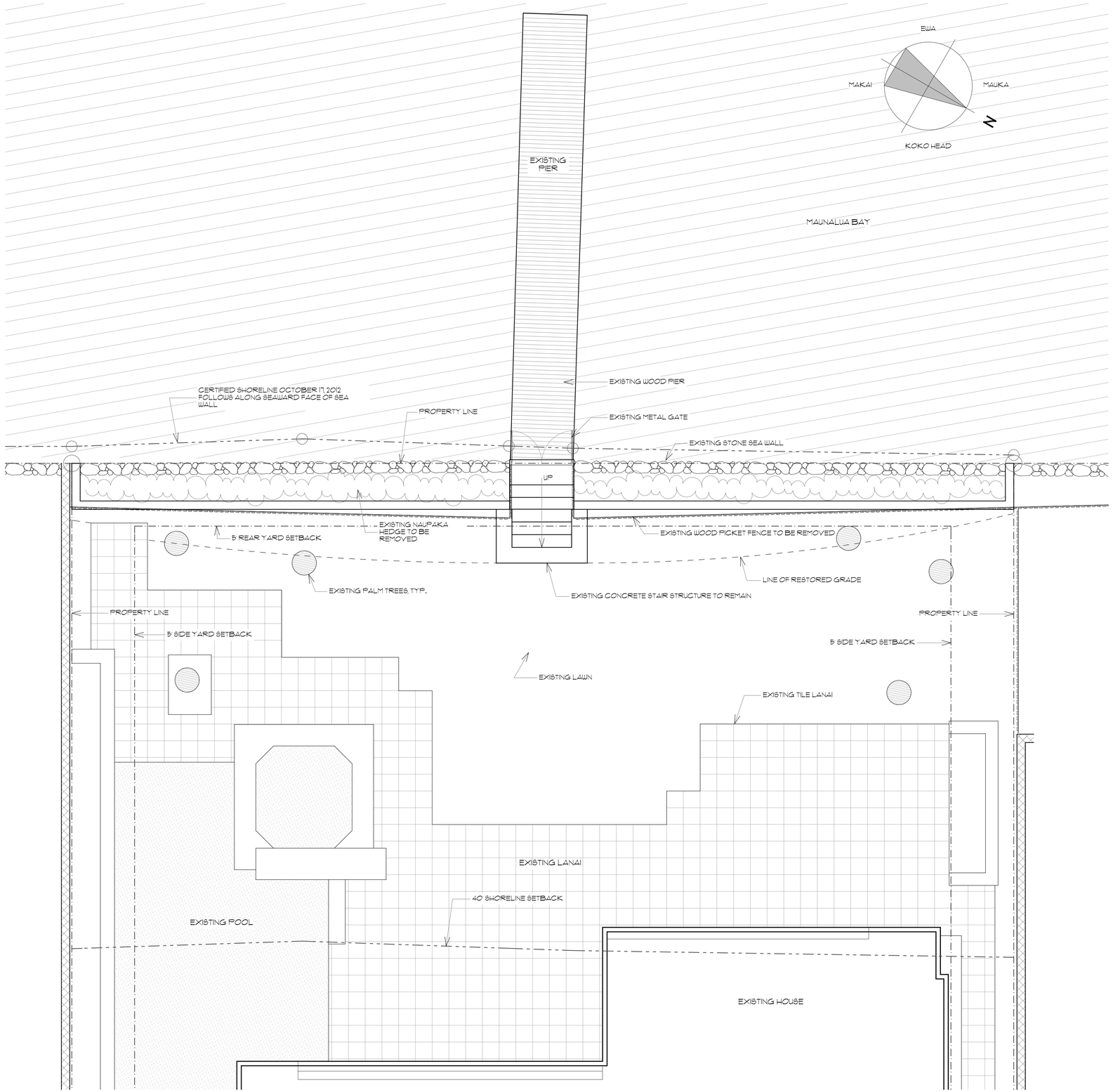
Photo of Exterior Wall with Pier

Appendix C



Wailupe TMK: (1) 3-6-001: 038 Archaeological Consultants of the Pacific, Inc. 2012

Rock Wall Profile Trench 2



2 Plan Detail @ Sea Wall
Scale: 1/4" = 1'-0"

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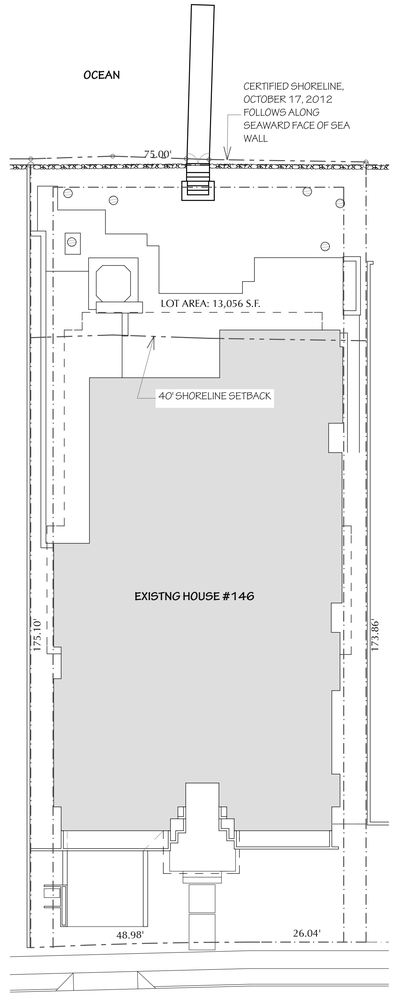

1 Site Plan
Scale: 1/16" = 1'-0"

0 8' 16' 32'

No.	Date	Revision
1	3/24/08	Remove Cable Rail
2	5/05/13	Adjust Cable Rail

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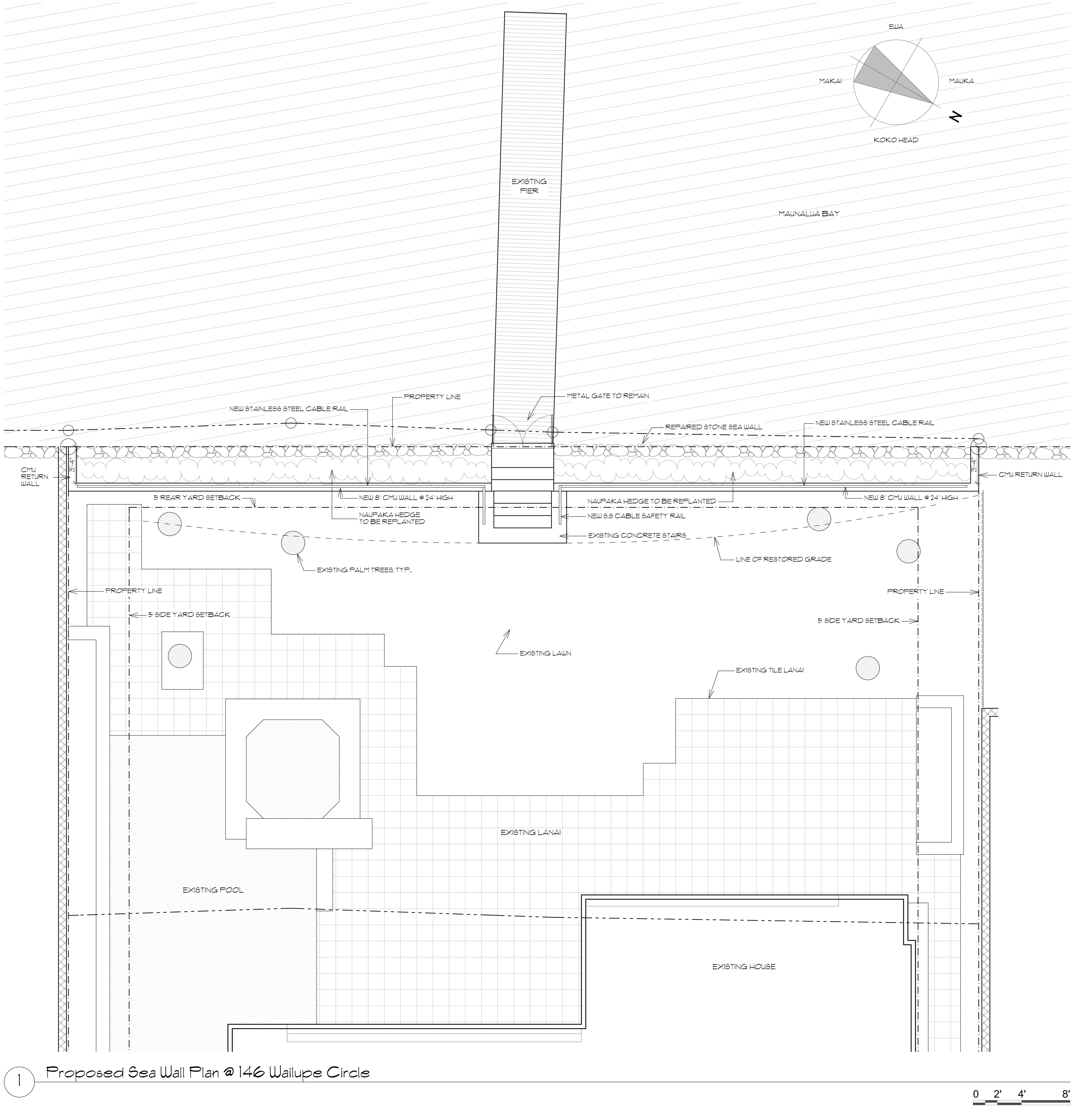
Kahn Residence
Sea Wall Repair
146 Wailupe Circle, Honolulu, Hawaii
TMK: 3-6-01: 38

Site Plan & Existing Sea Wall Plan

Issue Date: 05 MAY 13
Job #: 07-KWC
Sheet Number:
A-1.1



1 Proposed Sea Wall Plan @ 146 Wailupe Circle

0 2' 4' 8'

No.	Date	Revision
1	3/24/08	Remove Cable Rail
2	5/05/13 3/29/12	Sea Wall Height Adjust Cable Rail

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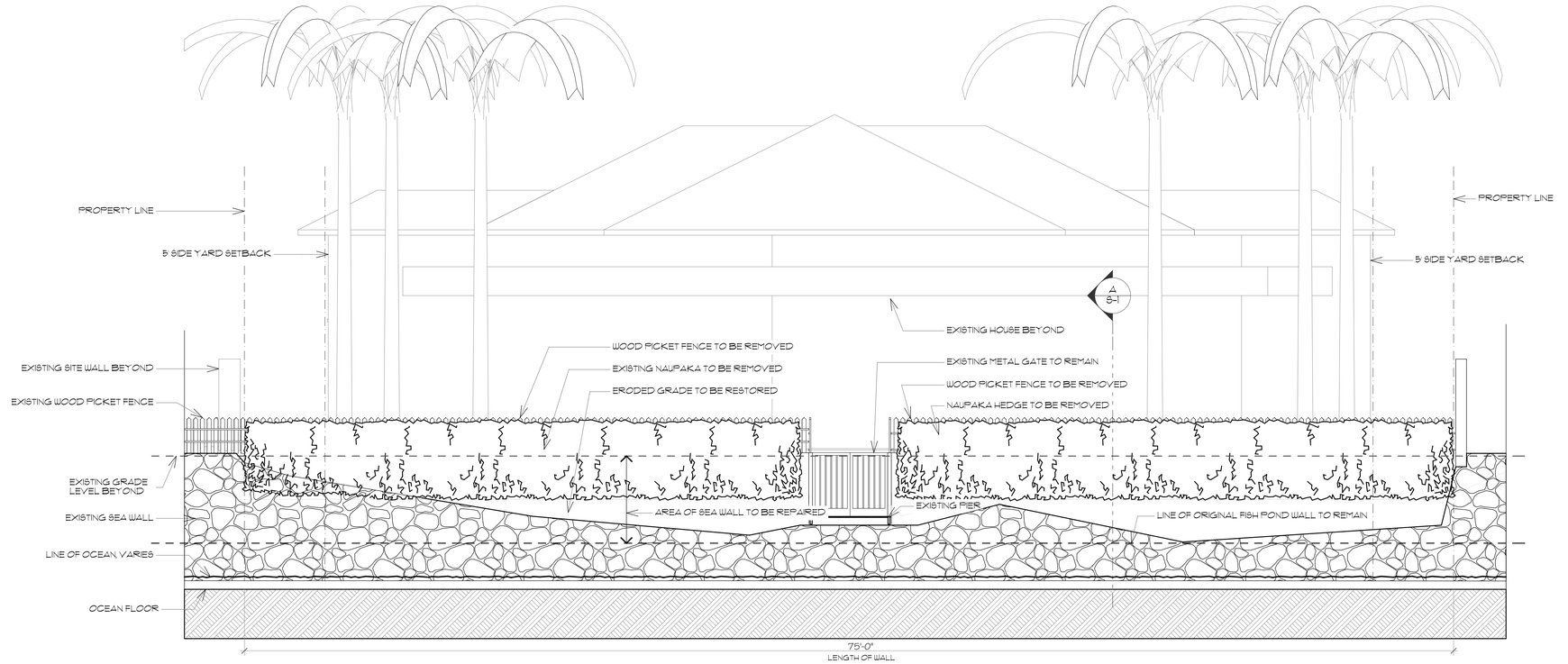
TMK: 3-6-01: 38

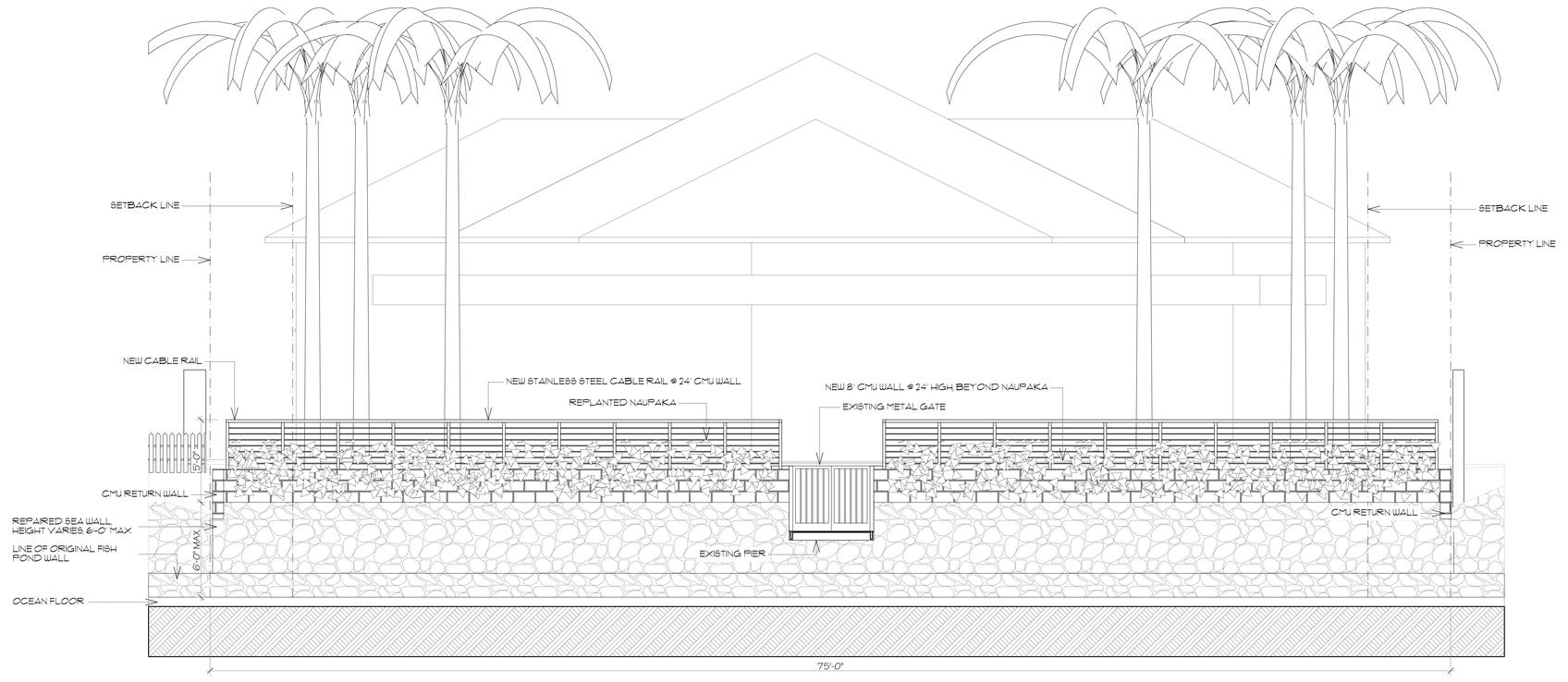
Proposed Sea Wall Plan

Issue Date: 05 MAY 13
Job #: 07-KWC
Sheet Number:
A-1.2



1 Existing Sea Wall Elevation @ 146 Wailupe Circle

0 2' 4' 8'



2 Repaired Sea Wall Elevation @ 146 Wailupe Circle

0 2' 4' 8'

No.	Date	Revision
1	3-24-08	Remove Cable Rail
2	3/19/13	Shorten Hedge

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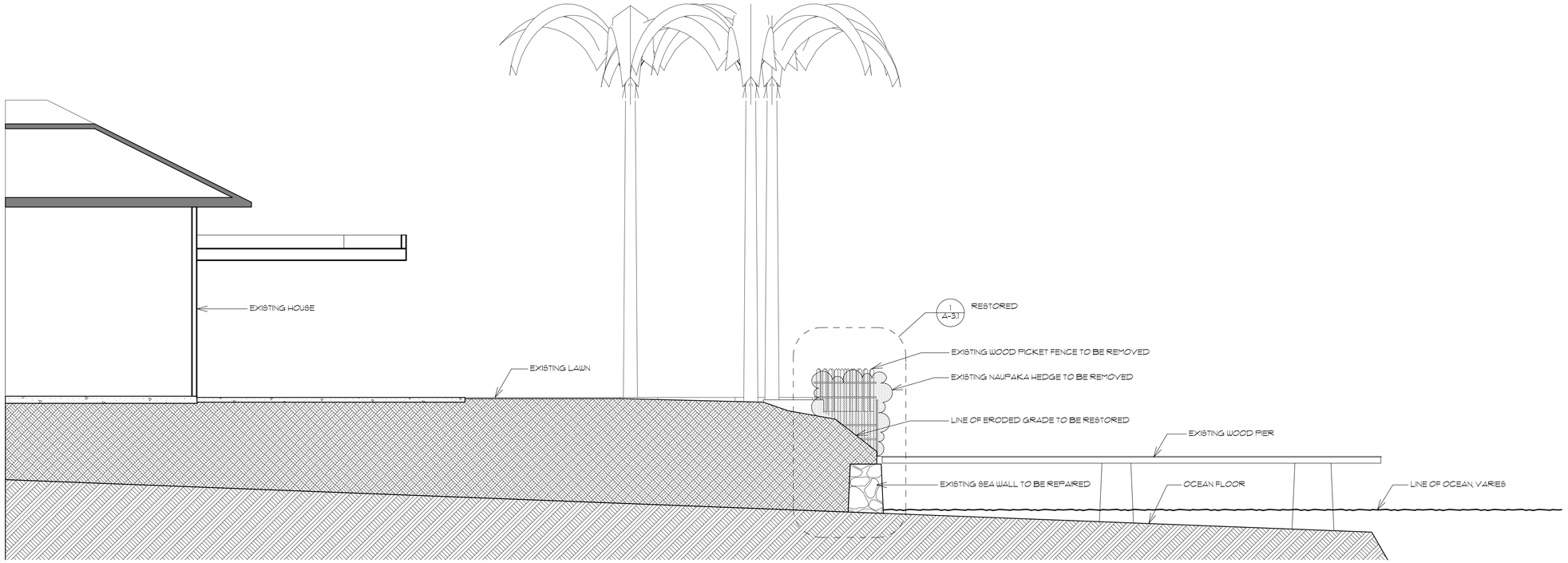
TMK: 3-6-01: 38

Existing & Proposed
Sea Wall Elevations

Issue Date: 05 MAY 13
Job #: 07-KWC
Sheet Number:
A-2.1



1 Existing Sea Wall Section Towards Makai

Scale: 1/4" = 1'-0"

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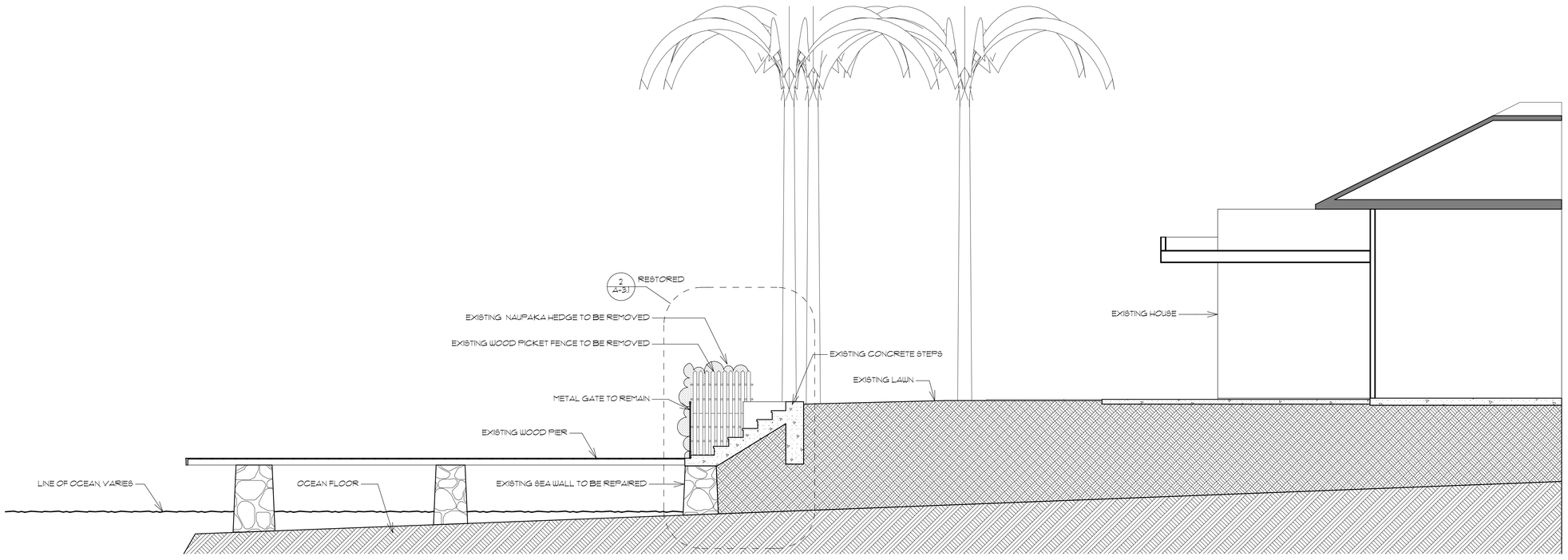

2 Existing Sea Wall Section @ Pier

Scale: 1/4" = 1'-0"

0 2' 4' 8'

No.	Date	Revision
1	3/24/08	Remove Cable Rail
2	5/05/13	Adjust Cable Rail

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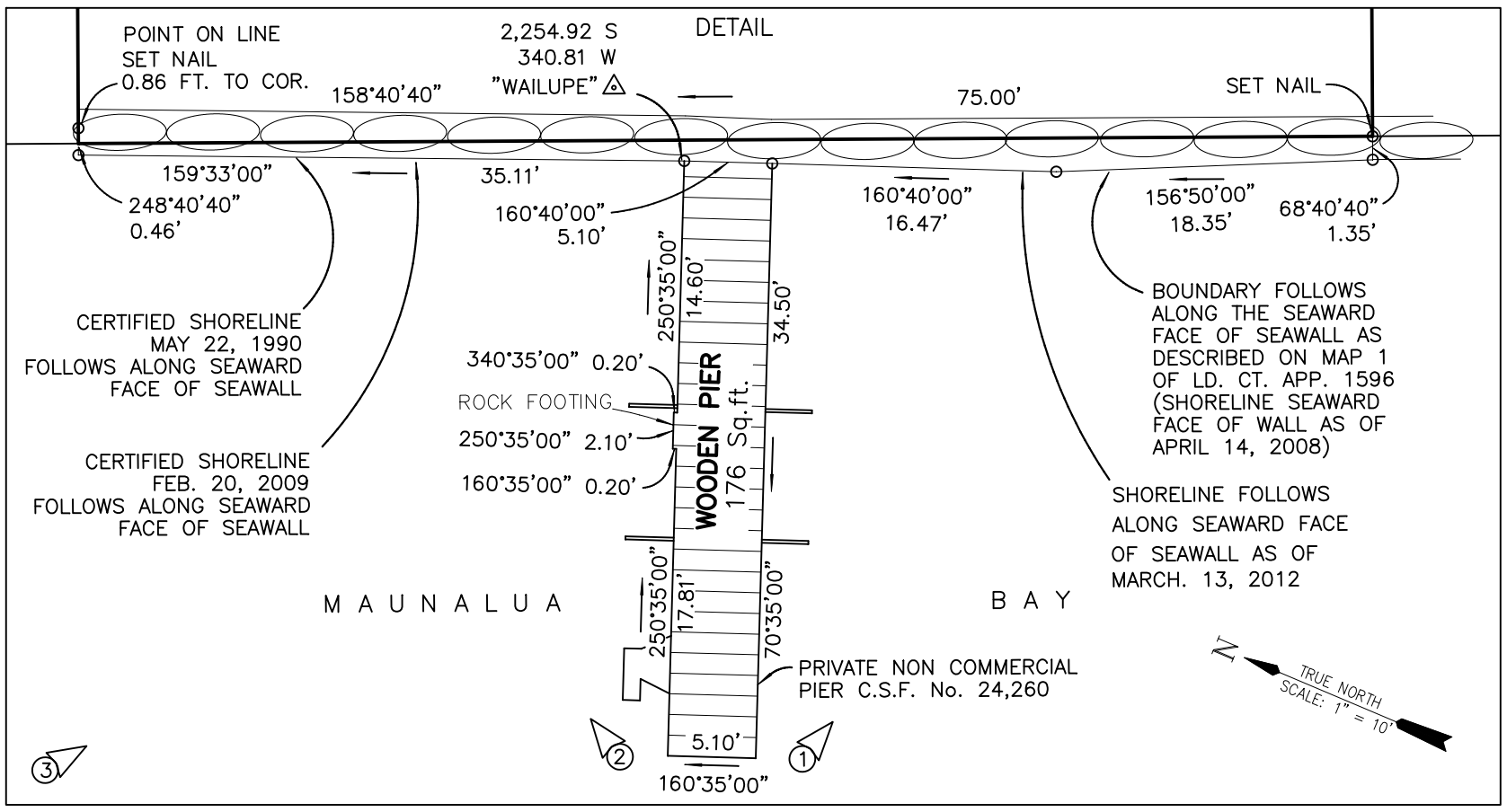
Existing Sea Wall Sections

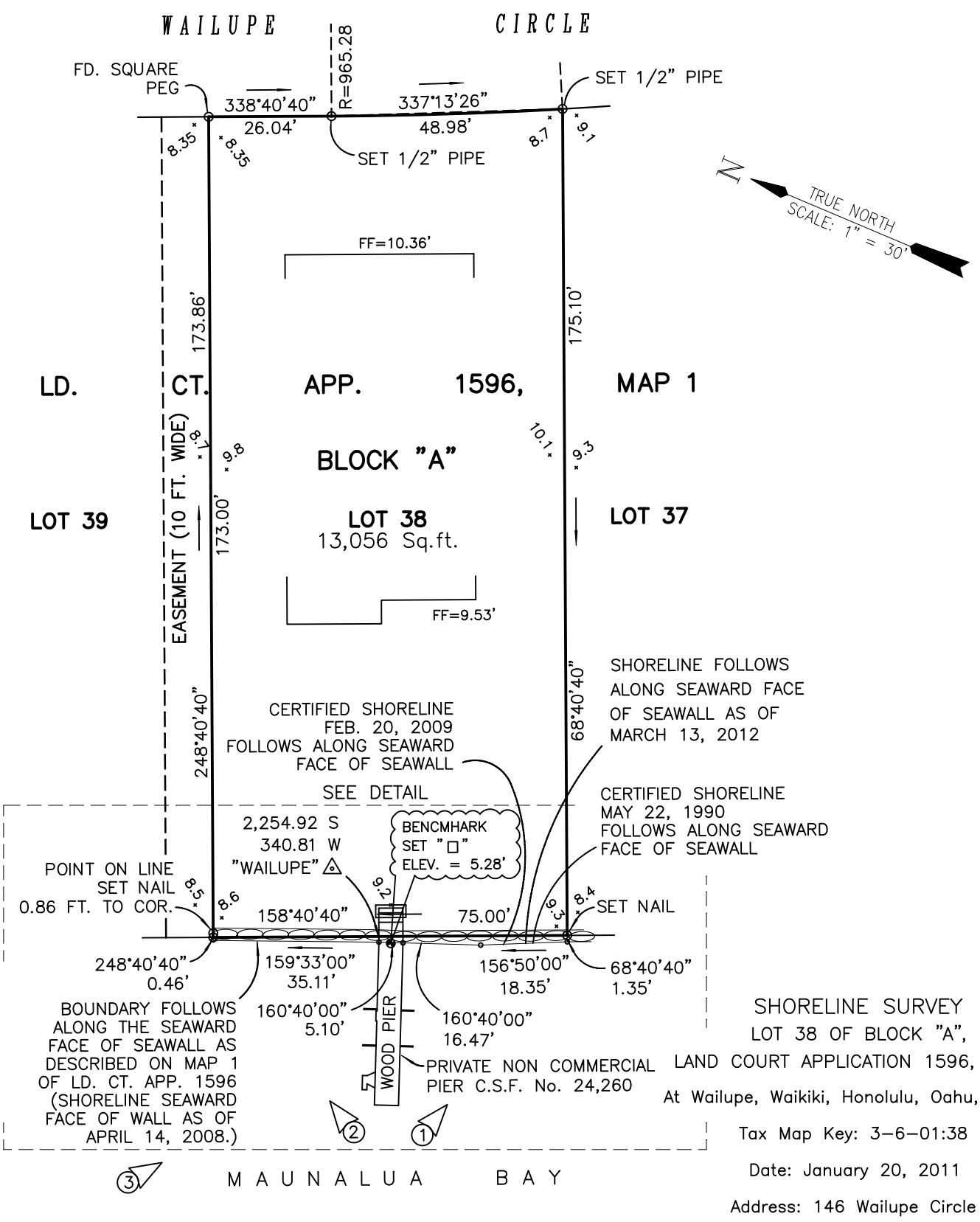
Issue Date: 05 MAY 13

Job #: 07-KWC

Sheet Number:

A-2.2





SHORELINE SURVEY

LOT 38 OF BLOCK "A",

LAND COURT APPLICATION 1596, MAP 1

At Wailupe, Waikiki, Honolulu, Oahu, Hawaii

Tax Map Key: 3–6–01:38

Date: January 20, 2011

Address: 146 Wailupe Circle

Owner: Kahn, Family Trust

NOTE:

1) ELEV. DATUM: MEAN SEA LEVEL

FIELD BOOK 231:17

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JOB #95366

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AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

HISTORIC PRESERVATION DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

601 Kamokila Boulevard, Suite 555
Kapolei, HI 96806

April 17, 2013

Archaeological Consultants of the Pacific, Inc.
C/O Dr. Michael Dega
725 Kapiolani Blvd. #1205
Honolulu, Hawaii 96813
mike@scshawaii.com

LOG NO: 2013.2435, 2013.2762
DOC NO: 1304SL13
Archaeology

Dear Dr. Dega:

SUBJECT: Chapter 6E-42 Historic Preservation Review–
An Archaeological Monitoring Plan for a Property Located at TMK: 003-006-001:038 in Wailupe Circle in Wailupe Ahupua'a, Kona District Island of O'ahu
TMK: (1) 3-6-001:038

Thank you for the opportunity to review this draft report titled *An Archaeological Monitoring Plan for a Property Located at TMK: 003-006-001:038 in Wailupe Circle in Wailupe Ahupua'a, Kona District Island of O'ahu* (Dega, March 2013). We received this submittal on March 25, 2013 (Log No. 2013.2345) and revisions via email on April 17, 2013 (Log No. 2013.2762).

In 2011, SHPD requested an archaeological inventory survey (AIS) be conducted in advance of a proposed project to reconstruct the existing seawall at 146 Wailupe Circle in order to identify if any remnants of Wailupe Fishpond (SIHP 50-80-15-0056) remain and to select a proper course of mitigation because the project has potential to adversely affect this historic property (April 28, 2011; Log No. 2011.0847, Doc. No. 1104MV14).

The archaeology inventory survey report describes the subject property as consisting of 13,056 ft^2 and including a single family detached dwelling, a seawall, and a recreational use pier. The subject seawall extends the entire length of the property line, a total of 75 feet, and adjoins parcel 39 to the north and parcel 37 to the south. The seawall is unstable and is in poor condition, with some portions of the original stone masonry having fallen into Maunalua Bay.

The archaeological inventory survey (AIS) identified two wall sections, a lower portion believed to be the traditional fishpond wall and an overlying section representing a 1940s addition. SIHP 0056 was evaluated as being significant under Criterion "d" for its information potential. Archaeological monitoring is recommended to further document the seawall during ground-altering activities associated with the proposed restoration project. The AIS report was accepted by SHPD on April 12, 2013 (Log No. 2013.2436, Doc. No. 1304SL07).

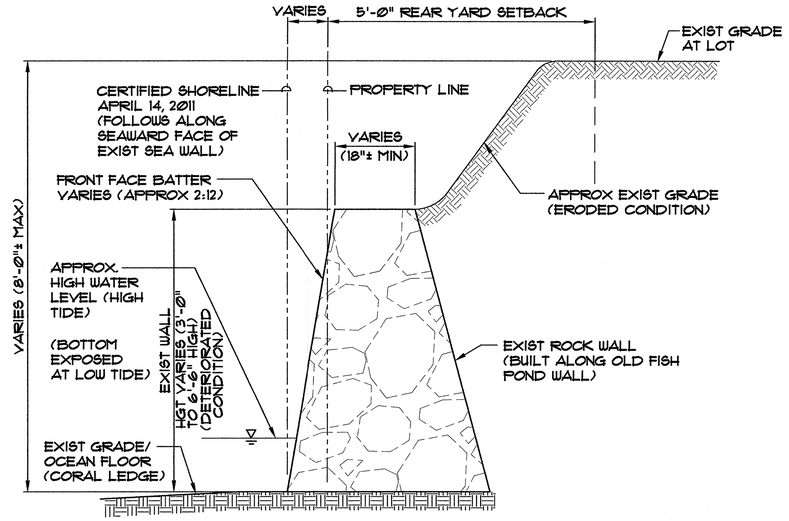
This archaeological monitoring plan meets the requirements of Hawaii Administrative Rule (HAR) §13-279-4. It is accepted by SHPD. Please send one hardcopy of the document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library.

Please contact me at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Susan A. Lebo

Susan A. Lebo, PhD
O'ahu Lead Archaeologist



A / S-1 TYP EXISTING WALL SECTION
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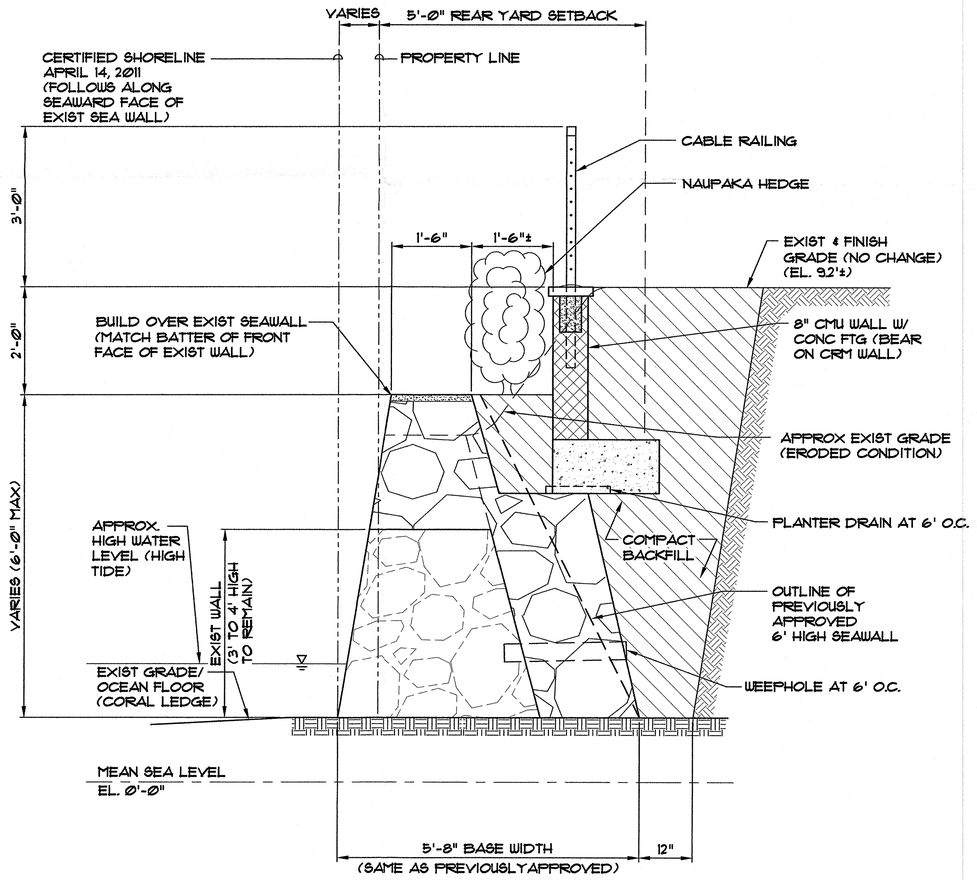
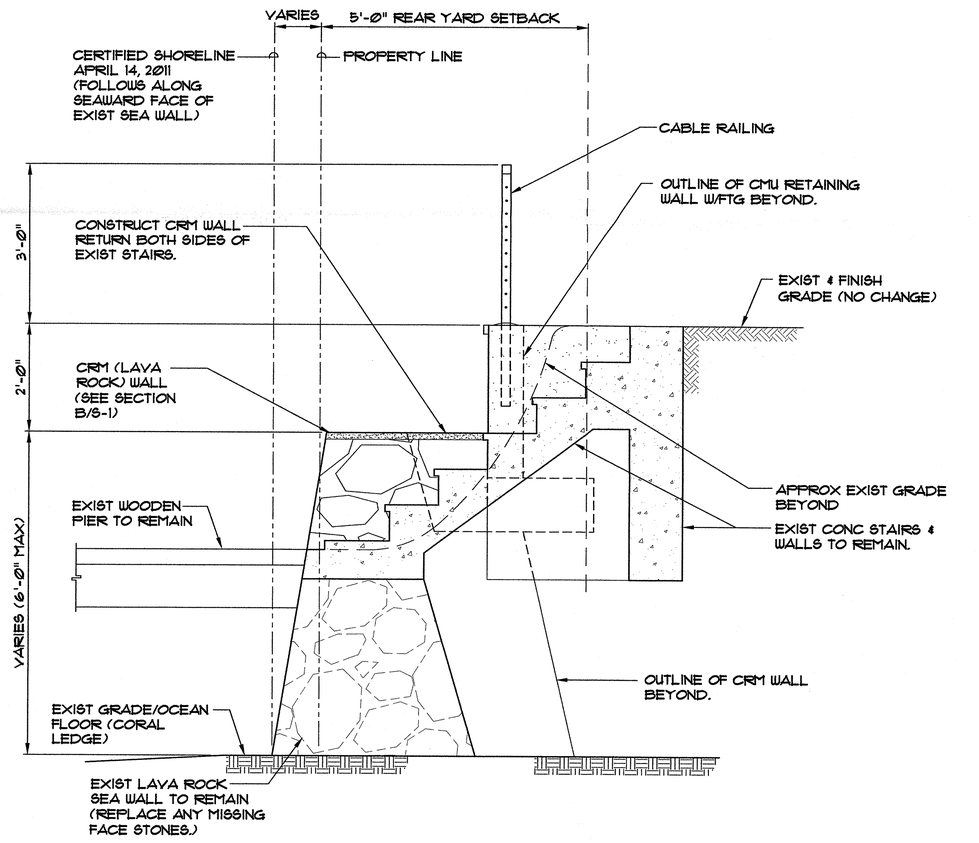


B / S-1 TYPICAL NEW WALL SECTION
SCALE: 3/4"=1'-Ø"



C / S-1 SECTION THRU STAIRS
SCALE: 3/4"=1'-Ø"

GRAPHIC SCALE
1 Ø 1 2 3 4 5
3/4"=1'-Ø"

No.	Date	Revision

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1188 Bishop Street, Suite 1411
Honolulu, Hawaii 96813-3306
Tel: 808.545.4000
Fax: 808.545.4024
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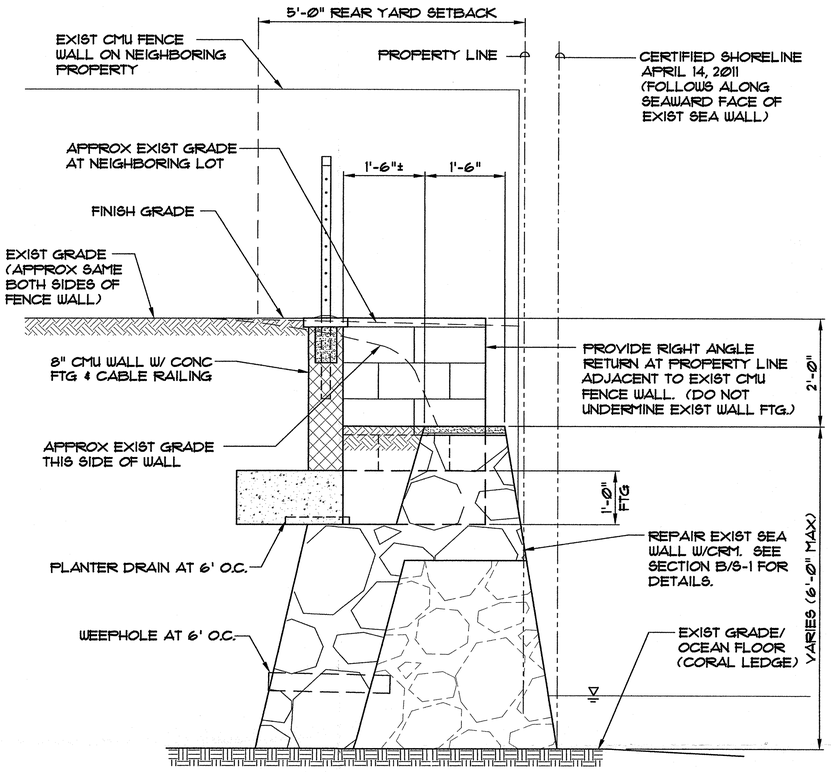
146 Wailupe Circle, Honolulu, Hawaii
TMK: 3-6-001-038

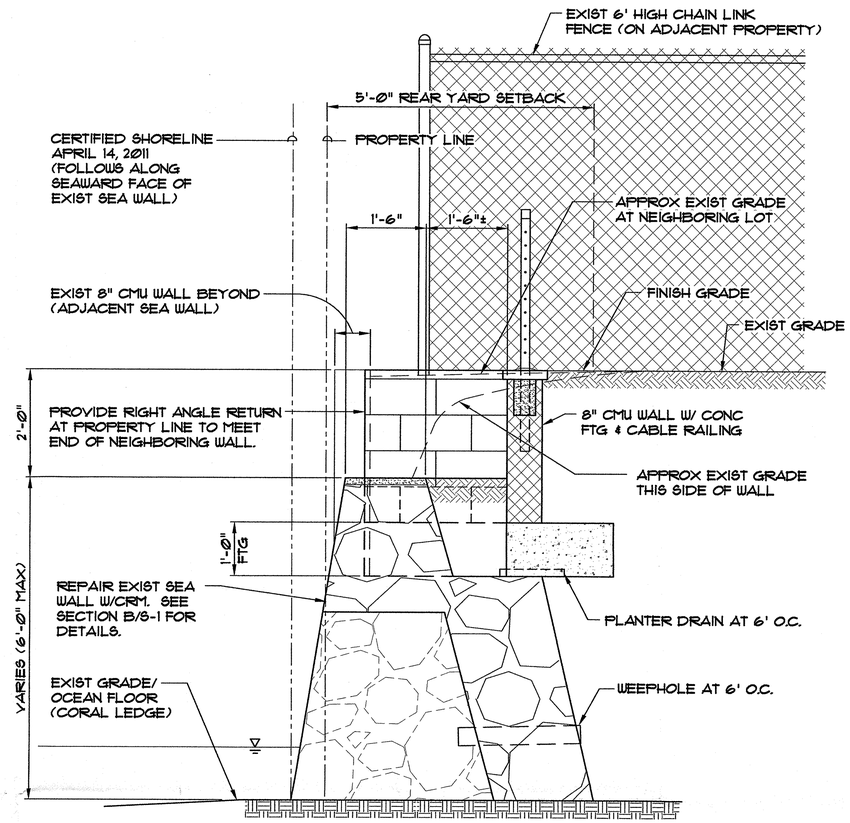
Wall Sections

S-1 Wall Sections Revised 8/14/12

Issue Date: 6 MAY 13
Job #: 07-KWC
Sheet Number: **S-1**
Total Sheets:



A S-2 ELEVATION AT NORTH END
SCALE: 3/4"=1'-Ø" (LOOKING NORTH)



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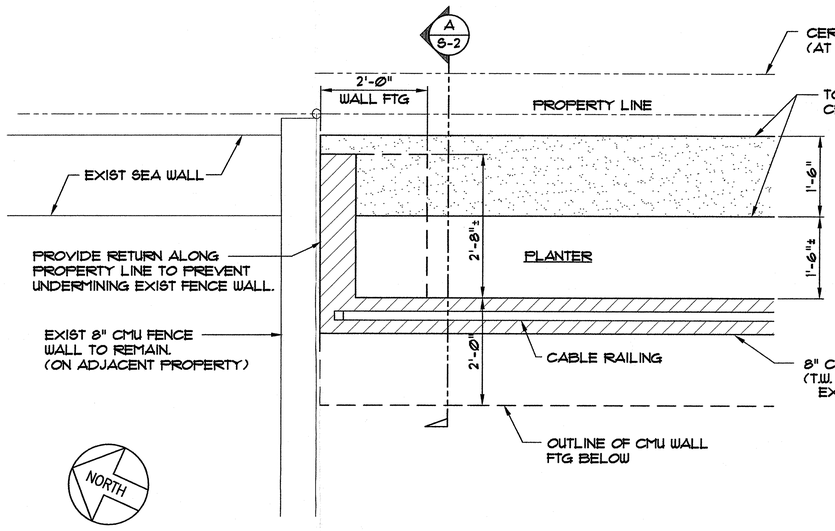
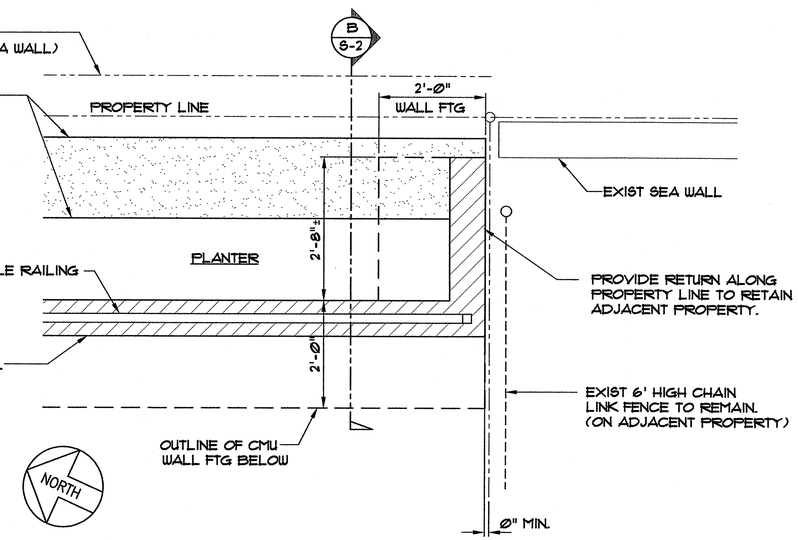


1 S-2 DETAIL-PLAN AT NORTH END
SCALE: 3/4"=1'-Ø"



2 S-2 DETAIL-PLAN AT SOUTH END
SCALE: 3/4"=1'-Ø"

GRAPHIC SCALE
1 Ø 1 2 3 4 5
¾"=1'-Ø"

No.	Date	Revision

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RANDAL S. FUROMOTO
LICENSED PROFESSIONAL ENGINEER
No.6130-S
HAWAII, U.S.A.

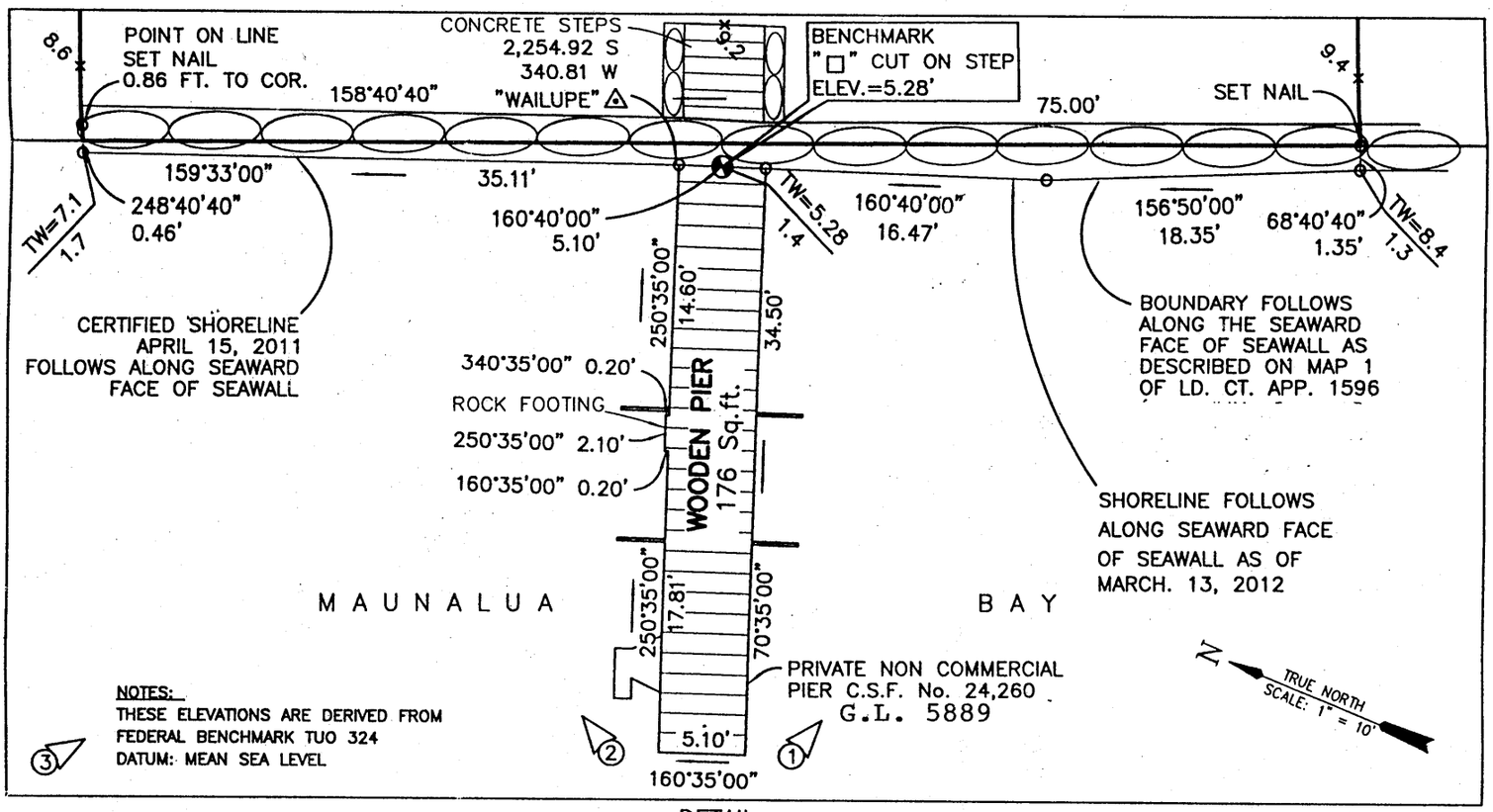
LAPIS DESIGN PARTNERS
Residential Architecture & Interior Design
1188 Bishop Street, Suite 1411
Honolulu, Hawaii 96813-3306
Tel: 808.545.4000
Fax: 808.545.4024
www.lapishawaii.com

Kahn Residence
Sea Wall Repair
146 Wailupe Circle, Honolulu, Hawaii
TMK: 3-6-001-038

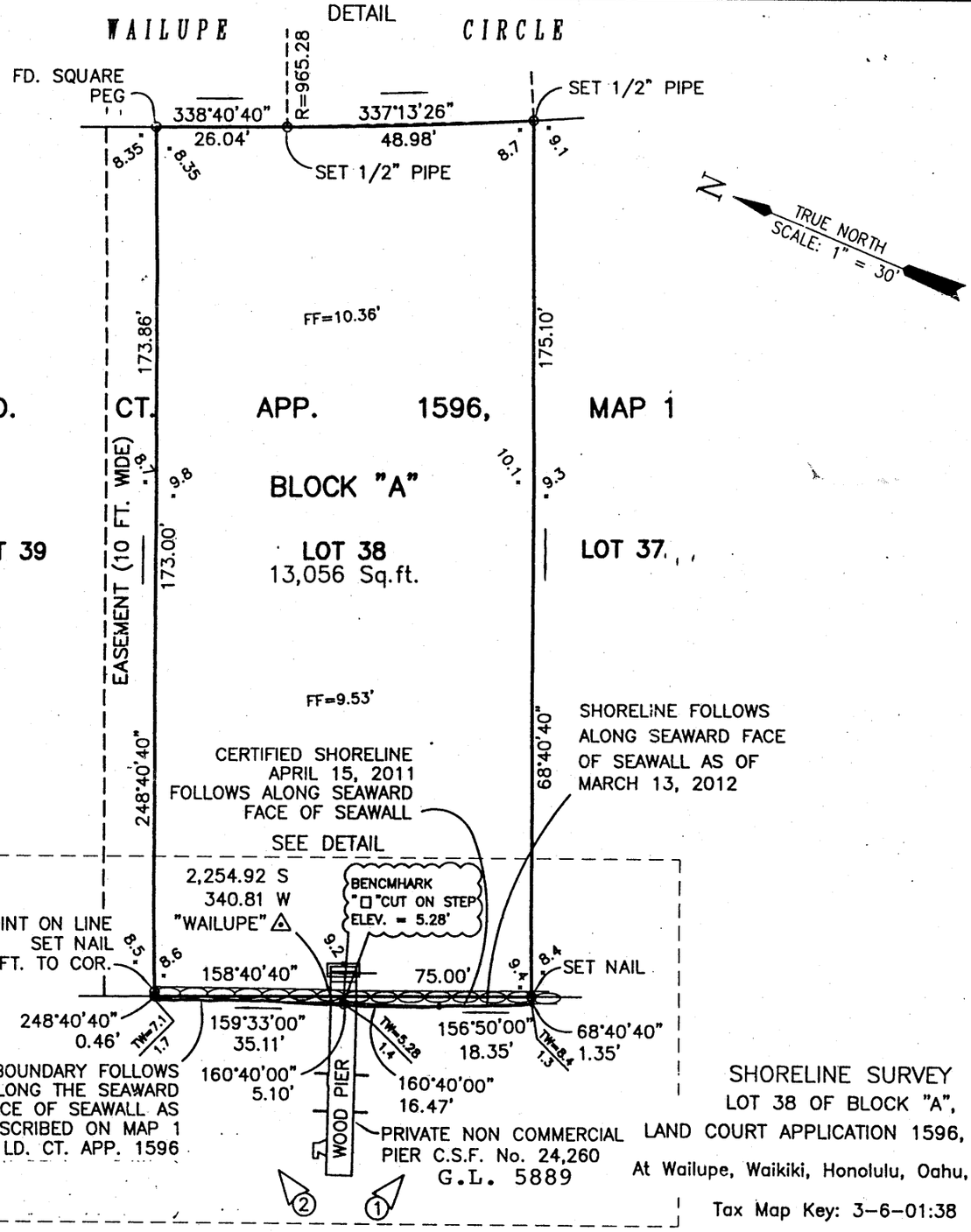
Wall Elevations

S-2 Revised 8/31/12

Issue Date: 6 MAY 13
Job #: 07-KWC
Sheet Number: S-2
Total Sheets:



DETAIL



The shoreline as delineated in red is hereby certified as the shoreline as of

OCT 17 2012

Paul J. Conry

Chairperson, Board of Land and Natural Resources

DENNIS K. HASHIMOTO
LICENSED PROFESSIONAL LAND SURVEYOR
No. 5688
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Dennis K. Hashimoto

DENNIS K. HASHIMOTO

EXPIRATION DATE: 4/30/12

NOTE:

1) ELEV. DATUM: MEAN SEA LEVEL

SHORELINE SURVEY

LOT 38 OF BLOCK "A",
LAND COURT APPLICATION 1596, MAP 1

At Wailupe, Waikiki, Honolulu, Oahu, Hawaii

Tax Map Key: 3-6-01:38

Date: March 13, 2012

Address: 146 Wailupe Circle

Owner: Kahn, Family Trust

FIELD BOOK 231:17

DJNS SURVEYING & MAPPING, INC.
P.O. BOX 25636, Honolulu, Hawaii 96825

JOB #95366