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

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DEC 08 2015

KIRK CALDWELL
MAYOR

GEORGE I. ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2015/ELOG-2425(ST)
2015/ED-15

November 25, 2015

Mr. Scott Glen, Interim Director
Office of Environmental Quality Control
Department of Health, State of Hawaii
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813-2437

RECEIVED
'15 NOV 25 A11:23
OFC. OF ENVIRONMENTAL QUALITY CONTROL

Dear Director:

SUBJECT: Chapter 343, Hawaii Revised Statutes (HRS)
Draft Environmental Assessment (DEA)

Project: Grandview Apartments Grouted Boulder Revetment
Applicant: Grandview Apartments LLC
Agent: Hookuleana LLC (Peter Young)
Location: 68-667 and 68-669 Hoomana Place - Mokuleia, Waialua
Tax Map Key: 6-8-10: 11, 12, and 13
Request: After-the-fact Shoreline Setback Variance (SSV)
Chapter 23, Revised Ordinances of Honolulu
Proposal: To retain grouted boulder revetment reconstructed along two shoreline parcels and a 10-foot wide public shoreline access.

By this letter, we hereby transmit the DEA and anticipated finding of no significant impact (DEA-AFONSI) for the Grandview Apartments grouted boulder revetment at the above referenced site located in the Waialua District on the island of Oahu, for publication in the **December 8, 2015** edition of "*The Environmental Notice*."

Enclosed is the completed OEQC Publication Form, two hard copies of the DEA and a pdf file on a compact disk. Simultaneously with this letter, these documents including the publication form in MS Word, were also sent via electronic mail to your office.

If you have any questions, please contact Steve Tagawa of our staff at 768-8024.

Very truly yours,

for George I. Atta, FAICP
Director

Enclosures

July 2015 Revision

FILE COPY
DEC 08 2015

APPLICANT ACTION
SECTION 343-5(e), HRS
PUBLICATION FORM

Project Name:	Grandview Apartments Ground Boulder Revetment
HRS §343-5 Trigger(s):	Use within the shoreline setback
Island:	Oahu
District:	Waialua
TMK:	(1) 6-8-10: 11, 12, and 13
Permits:	After-the-fact Shoreline Setback Variance, building permits
Approving Agency:	City and County of Honolulu Department of Planning and Permitting
Address	650 South King Street, 7th Floor
City, State, Zip	Honolulu, Hawaii 96813
Contact and Phone	Steve Tagawa (808) 768-8024
Applicant:	Grandview Apartments, Inc. c/o Goodsill Anderson Quinn & Stifel
Address	999 Bishop Street, Suite 1600
City, State, Zip	Honolulu, Hawaii 96813
Contact and Phone	Ed Saffery (808) 547-5736
Consultant:	Hookuleana LLC
Address	1539 Kanapuu Drive
City, State, Zip	Kailua, Hawaii 96734
Contact and Phone	Peter T. Young (808) 226-3567

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OFC. OF ENVIRONMENTAL
QUALITY CONTROL

Status (check one only):

_X_ 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.
__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)

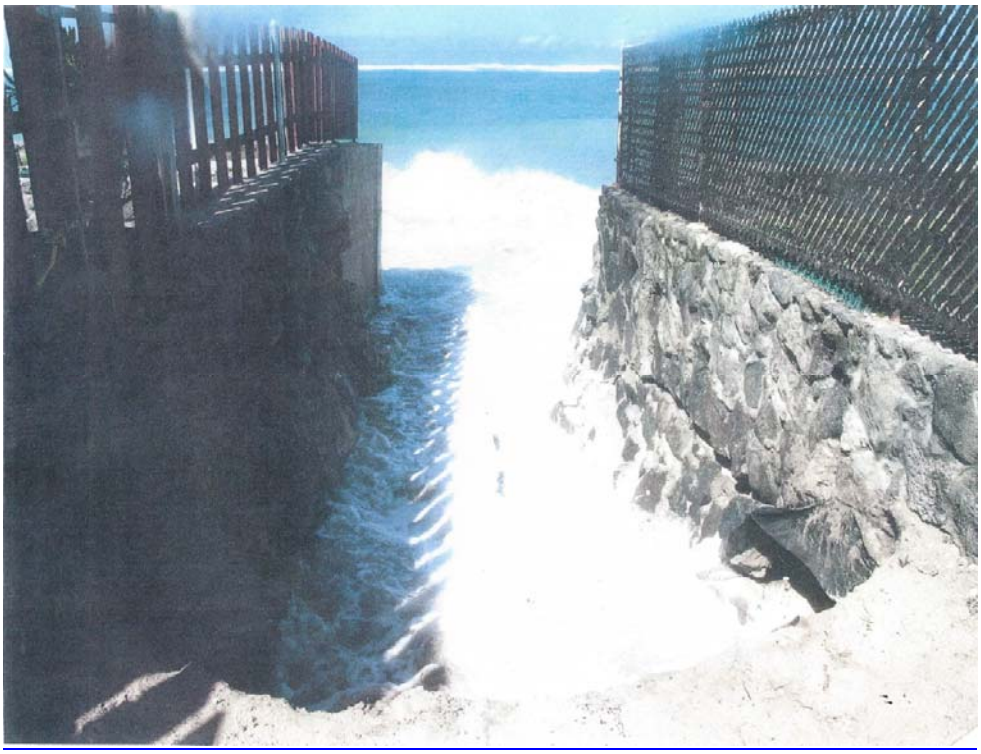
Summary: The Applicant seeks an after-the-fact Shoreline Setback Variance to retain (keep) an existing grounted boulder revetment constructed along two shoreline parcels and a 10-foot wide public shoreline access at Mokuleia Beach, on Oahu's North Shore. The revetment is partially grouted, about 130 feet long and varies in height. It was built by the Applicant in 2013, following high surf events which severally undermined a nonconforming seawall on Parcel 13 and rubble revetment on Parcel 11, that was previously authorized by a Shoreline Setback Variance (No. 90/SV-11) from the Department of Planning and Permitting (fka Department of Land Utlization) on December 24, 1990.

According to the Applicant, the previous concrete masonry (CMU) seawall (Parcel 13) had to be removed (partially) and the previous revetment (Parcel 11) reconstructed in order to protect the existing dwelings, and prevent the continued undermining of the site (sand) due, in part, to the unprotected 10-foot wide public access located between the two previous shoreline structures.

A Notice of Violation was issued by the Department of Planning and Permitting (No. 2014/NOV-01-100) on January 21, 2014, for the construction without an approved SV (Parcel 13). The State Department of Land and Natural Resources also issued notices of violations to the Applicant and the City and County of Honolulu, for unauthorized construction within the Conservation District in early 2014.

A shoreline setback variance is necessary to retain the portions of the protection structure which is located mauka (landward) of the certified shoreline, when established.

Grand View - Hoʻomana Place
Corrective Actions and Permits to Address Alleged Unauthorized Shoreline Encroachments
Draft Environmental Assessment



Prepared for:

Approving Agency
City & County of Honolulu
Department of Planning and Permitting
&
Applicant - Adjoining Property Owner
Grand View Apartments, Inc

Prepared by:

Ho`okuleana LLC

… to take responsibility …

1539 Kanapuʻu Drive
Kailua, Hawai`i 96734
(808) 226-3567
www.Hookuleana.com
Info@Hookuleana.com

November 2015

Project Name:	Grand View - Hoʻomana Place Corrective Actions and Permits to Address Alleged Unauthorized Shoreline Encroachments
Applicant: **(Adjoining Property Owner)**	Grand View Apartments, Inc 68-667 Hoʻomana Place & 68-669 Hoʻomana Place Waialua, HI 96791
Approving Agency:	City & County of Honolulu, Department of Planning and Permitting
Anticipated Determination:	Finding of No Significant Impact (FONSI)
Project Location:	Waialua, North Shore, Oʻahu, Hawaiʻi
TMK:	(1) 6-8-010:011, :012 & :013 (seaward of parcels)
Land Use Classification:	State Land Use Designation: Conservation (Resource)
Land Area:	Approximately 1,500-square feet
EA Trigger:	Property is within the Conservation District; State of Hawaiʻi property
Approvals Required:	After-the-fact Shoreline Setback Variance (SSV,) Conservation District Use Permit (CDUP) and/or other appropriate permits/actions to resolve enforcement of alleged unauthorized reconstruction of a shoreline erosion control

Summary:

The subject parcels are located on Hoʻomana Place, in Waialua, on the North Shore of the Island of Oʻahu. The parcels lie within a small subdivision which includes a number of shorefront single family residence (SFR) structures, associated landscaping and property development. Between the two residential properties, spanning from Hoʻomana Place to the ocean, is a ten-foot wide, public access right-of-way that is owned by the City & County of Honolulu.

The shoreline fronting this area is a narrow beach underlain with reef limestone that extends seaward as a variable depth reef platform. This area is exposed to winter North Pacific swell and the predominant tradewind waves. Shallow fringing reefs protect the shoreline from moderate tradewind wave energy.

However, during large winter swell conditions and high water levels, erosion of the narrow beach and wave run-up and overtopping of the beach cause erosion damage and flooding to unprotected backshore areas and dwellings. Numerous property owners along this coastal reach have constructed shore protection structures to prevent further storm wave run-up damage to their dwellings.

While the subject parcels are not located in the Conservation District, these parcels border the shoreline; lands situated seaward (makai) of the shoreline are considered to be within the State Land Use Conservation District Resource Subzone.

In April and May of 2013, the North Shore experienced unprecedented high surf conditions which caused major damage to many shoreline properties; the subject properties experienced exceptional damage. The landowner attempted to get guidance from the City and DLNR on means to protect his property; the owner was told the land issues were not within their jurisdiction.

In November of 2013, extremely high surf hit the area again. Water once again rushed up the right-of-way and within a matter of days the waves washed out an immense amount of sand and soil from the subject private properties and caused a twelve foot drop in the ground level of the right of way.

At the peak of the damage, the retaining wall facing the ocean on Parcel :013 began to lean towards the ocean at a 45 degree angle, which caused the property's back yard to literally split in half and fall towards the ocean, into the water.

Seeking guidance again (to no avail) and recognizing that further wave action could wash out his property and improvements, the landowner shored up the retaining wall by placing large boulders in front of the wall and solidifying their position with rip-rap and shotcrete cement in order to save his property and keep the wall and yard from completely cracking off and falling into the ocean.

Boulders were also placed in a straight line spanning across the right-of-way and Parcel :011 in order to break up the large surf and prevent the certain collapse of the City's right of way that was in turn causing the privately-owned properties to erode and fall into the sea.

Notices of violation were issued and the matter was heard and deferred by the Board of Land and Natural Resources on April 25, 2014 and November 14, 2014. The matter was deferred to allow the landowner to seek a cooperative resolution with appropriate governmental agencies on this matter (it was noted that several after-the-fact permits and encroachment easements have been issued to several nearby and neighboring properties.)

At its August 14, 2015 meeting, the BLNR found the landowner in violation of Hawaii Revised Statutes (HRS) § 183C-7, and Hawaii Administrative Rules (HAR) § 13-5-6 for the unauthorized reconstruction of a shoreline erosion control structure in the Conservation District Resource Subzone. (Letter is attached as Exhibit C.) Several conditions were imposed, including:

> The landowner is provided one (1) year from the date of the Boards decision to create a remediation plan (Plan) to re-open the beach Right-of-Way access and to obtain the necessary City and County of Honolulu permits and/or approvals for the Plan. If, after one (1) year, no permit is issued by the County for the Plan, the Board requests that significant evidence be provided showing that official correspondence, regarding this matter, has occurred between the landowner and the City and County of Honolulu.
>
> The landowner shall submit a Conservation District Use Application (CDUA) for all work proposed/conducted within the Conservation District.

The purpose of the EA is to inform the relevant county, state and federal agencies and the public of the likely environmental consequences of resolving the issues with the appropriate governmental agencies and applying/receiving after-the-fact permits from each.

Agencies and Organizations who were sent the Draft EA for comments:

Federal
U.S. Army Corps of Engineers
U.S. Department of the Interior, Fish & Wildlife Service

State of Hawai‘i
Department of Business, Economic Development & Tourism – Office of Planning
Department of Health
Department of Land & Natural Resources
Department of Transportation
Office of Hawaiian Affairs
Waialua Public Library

City & County of Honolulu
Department of Design and Construction
Department of Parks and Recreation
Department of Planning and Permitting

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Exhibit A - Engineering Observation and Recommendation; Howard Hanzawa, P.E.; March 26, 2015
Exhibit B - Grand View Apartment, Inc; DPP Land Use Permits Division Master Application and Request-Proposal
Exhibit C - DLNR Letter to Grand View Apartments (September 4, 2015) Noting Actions of BLNR at its August 14, 2015 Meeting
Exhibit D - Engineering Repair and Reconstruction of Damaged Revetment and Seawall; Howard Hanzawa, P.E.; November 5, 2015

Chapter 1 - Introduction

This Environmental Assessment (EA) represents Grand View Apartments, Inc's analysis in compliance with State environmental review statutes including Chapter 343, Hawaiʻi Revised Statues (HRS).

This Environmental Assessment (EA) evaluates the activities to resolve the issues with the appropriate governmental agencies and applying/receiving after-the-fact permits from each.

Notices of violation were issued and the matter was heard and deferred by the Board of Land and Natural Resources on April 25, 2014 and November 14, 2014. The matter was deferred to allow the landowner to seek a cooperative resolution with appropriate governmental agencies on this matter (it was noted that several after-the-fact permits and encroachment easements have been issued to several nearby and neighboring properties.)

The purpose of the EA is to inform the relevant county, state and federal agencies and the public of the likely environmental consequences of resolving the issues with the appropriate governmental agencies and applying/receiving after-the-fact permits from each.

1.1 Overview & Background

The subject parcels are located on Hoʻomana Place, in Waialua, on the north shore of the Island of Oahu. The parcels lie within a small subdivision which includes a number of shorefront single family residence (SFR) structures, associated landscaping and property development.

Two of the parcels are beach front, residential properties owned by Dean Hanzawa, a life-long Hawaii resident, through his company, Grand View Apartments, Inc. (Dean Hanzawa and Grand View will be collectively referred to herein as "Grand View").

One parcel is identified as Tax Map Key (TMK) (1) 6-8-010:011, located at 68-667 Hoʻomana Place; the other is identified as TMK (1) 6-8-010:13, located at 68-669 Hoʻomana Place, in Waialua, Oahu, along Kaiahulu Bay. The third parcel, which lies between the two properties owned by Grand View, is a public access right-of-way ("right-of-way") owned by the City &County of Honolulu (the "City").

With high waves eroding portions of the property and recognizing that further wave action could wash out his property and improvements, the landowner shored up the retaining wall by placing large boulders in front of the wall and solidifying their position with rip-rap and shotcrete cement in order to save his property and keep the wall and yard from completely cracking off and falling into the ocean.

Boulders were also placed in a straight line spanning across the right-of-way and Parcel :011 in order to break up the large surf and prevent the certain collapse of the City's right of way that was in turn causing the privately-owned properties to erode and fall into the sea.

Notices of violation were issued and the matter was heard and deferred by the Board of Land and Natural Resources on April 25, 2014 and November 14, 2014. The matter was deferred to allow the landowner to seek a cooperative resolution with appropriate governmental agencies on this matter.

Photo noting Subject Properties and Hoʻomana Place

1.2 Purpose & Need

Grand View purchased Parcel 11 in June 1989 and acquired Parcel 13 in February of 2008. Both Parcels 11 and 13 are beach front, residential lots, and both properties had erosion control structures that faced the ocean within their lot boundaries.

Between the two properties, spanning from Hoʻomana Place to the ocean, is a ten foot wide, approximately 785 square foot access right-of-way that is now owned by the City & County of Honolulu.

This right-of-way was previously owned by Grand View until 1993, when it was condemned by the City for the amount of fifty dollars ($50.00) for use as a public access easement. All three of the parcels lie within an extensive row of properties along the Kaiahulu Bay shoreline that is almost entirely hardened with seawalls. The right-of-way, which spans from Hoʻomana Place to the ocean, is virtually the only break in the shoreline seawalls in the bay.

Parcel 11 had an original land area of 7,836 square feet, but erosion has lessened the net area of Parcel 11 to 4,317 square feet. Parcel 11 originally had an unprotected slope in its back yard. In 1990, a shoreline variance (1990 SV-11) was issued and in 1999, a permitted sloped boulder revetment was constructed along the Makai side of Parcel 11, within the lot's property line, to protect the lot from the ocean without impact to the beach.

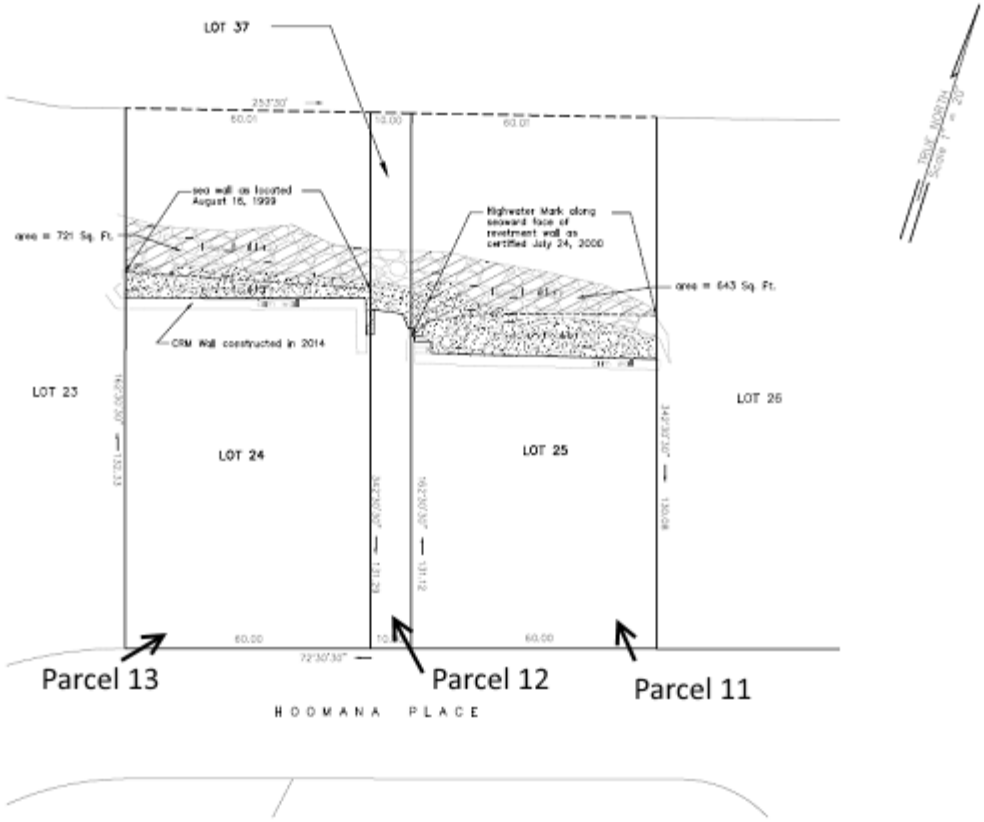
The plans were submitted for permit approval and the revetment was constructed in the year 2000. The boulder revetment effectively protected the southern parcel for 14 years from ocean wave activity without impact to the parcel or to the beach. Parcel 11 also had a perimeter wall that ran parallel and adjacent to the beach access right-of-way.

Parcel 13 -had an original land area of 7,909 square feet. However, over time erosion has caused the high water mark of the ocean to rise and has lessened the net area of Parcel 13 to 5,135 square feet. Parcel 13 had been protected by an approximately 12 foot high vertical retaining/sea wall facing the ocean that was built more than three decades ago with the exact date of construction unknown. The wall served its purpose by effectively protecting the yard and improvements from ocean wave action over that long period of time.

Both the northern parcel and the southern parcel boundaries also had perimeter walls along the beach access parcel. The ground of Parcel 12 was composed of sandy soil which was more or less level with the yards of Parcels 11 and 13. The beach end of Parcel 12 however was not protected from ocean wave activity like the two adjacent residential parcels and the exposed sand at the makai end of the access parcel sloped down to the beach.

As the Survey Map shows, the newly constructed walls that are the subject of the instant action are well within the original land areas of Parcels 11 and 13.

The ten-foot wide public access right-of-way runs between Parcels 11 and 13 from Hoʻomana Place to the ocean. Up to the time of the events in 2013, the ground in the right-of-way was composed of sand and soil and was more or less level with the makai facing yards of Parcels 11 and 13. The right-of-way was not protected from ocean wave activity like Parcels 11, 13 and the other properties along the bay, and the sand at the ocean side of the right-of-way sloped down to the beach and ocean.



DENNIS M. ESAKI
LICENSED PROFESSIONAL LAND SURVEYOR
No. 4383
HAWAII, U.S.A.

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION

Signature
ESAKI SURVEYING & MAPPING, INC.
DATED: APRIL 30, 2015

MAP SHOWING
LOTS 24 and 25
LAND COURT APPLICATION 1810
MOKULEIA BEACH HOMES, SECTION 1
MOKULEIA, WAIALUA, OAHU, HAWAI'I
TMK: (1) 6-8-10: 11, 12, and 13
Prepared For: Dean Hanzawa
Date: March 26, 2015

Job Number: 14w87 JH
Drawing File: 14w87 edpc 2w19x15.dwg

ESAKI SURVEYING & MAPPING, INC.
Civil Engineers • Land Surveyors • Planners

1610 Haleakala Street
Lihue, Kauai, Hawaii 96766

Prior to 2013, Grand View's properties, while subject to continuing erosion from wave action, had not faced structural damage. However, in April and May of 2013, the North Shore experienced unprecedented high surf conditions which caused major damage to many shoreline properties. Grand View's properties experienced exceptional damage. Around May 2013, massive surf collided with the shoreline properties in Kaiahulu Bay and washed into the right-of-way, undermining the adjacent retaining walls belonging to Parcels 11 and 13 and the existing sea wall belonging to Parcel 13.

Grand View contacted the State of Hawaii Department of Land and Natural Resources, and two individuals employed by the Department came out to inspect the properties. While these individuals recognized that the situation was dire, they informed Grand View that the land issues were not within their jurisdiction.

Grand View also contacted the City & County Parks and Recreation office to inform the City that its right away, was experiencing significant damage with catastrophic effects on his neighboring properties. No one from the City came out to address the situation with Grand View, but someone did tell him over the phone that the issue was not within the City's jurisdiction.

In November of 2013, extremely high surf hit the area again. Water once again rushed up the right-of-way and this time, within a matter of days, the waves washed out an immense amount of sand and soil, causing an enormous twelve foot drop in the ground level of the right of way.

The erosion within Parcel 12 subsequently undermined the side boundary walls along Parcels 11 and 13. Once the side wall footings were undermined, the soil within the back yards of the two adjoining parcels along the beach access began to wash out with the wave action.

The erosion within the two adjoining parcels became severe due to the action of the waves from the side. Once the soil from the yards of the two parcels were taken out, the flow of the water from each wave action started applying pressure to the vertical retaining wall of Parcel 13 and the sloped revetment of Parcel 11.

These structures were not designed to withstand the dynamic hydraulic pressures from the mauka side. Moreover the soil which provided lateral and vertical support for each structure became non-existent with the washout. The new dynamic hydraulic loads from the mauka side subsequently caused both structures to fail.

The vertical retaining wall that had protected Parcel 13 collapsed and severely leaned towards the ocean. The rock revetment for Parcel 11 also lost its structural integrity and the pressure from the water caused the boulders to tumble and fall towards the beach side. The failure of both structures was caused by the wave action and erosion in the beach access which allowed the sea water to enter the back yards of the adjacent parcels. This subsequently undermined their structural support and applied unanticipated dynamic loads in the opposite direction for which they were designed.

Sea water then started flowing into the backyards of Parcels 11 and 13, pushing Parcel 13's yard towards the ocean and creating a huge caving ditch within Parcel 13. This massive trench in the right-of-way created a grave safety hazard to anyone using the right-of-way and also to Parcels 11 and 13, as twelve vertical feet of sand and soil in the right-of-way which used to provide lateral and vertical support for the adjacent walls and the foundation of Parcels 11 and 13 had been washed out to the ocean.

Faced with this situation, Grand View once again contacted the City & County Department of Parks and Recreation about the situation. However, once again, no one from the City came out to the properties or addressed the situation with Grand View. Given the almost certain destruction of his properties, Grand View also called the City Department of Planning and Permitting, who informed him that the issue was not within their jurisdiction, but that he should "do what [he's] got to do."

Faced with the destruction and loss of the respective properties and homes and with nowhere to turn, Grand View was forced to take matters into his own hands, and reinforced the right of way himself with lumber in order to keep the adjacent walls from collapsing.

At the peak of the damage, the retaining wall facing the ocean on Parcel 13 began to lean towards the ocean at a 45 degree angle, which caused the property's back yard to literally split in half and fall towards the ocean, into the water.

At that point, Grand View had no choice but to shore up Parcel 13's retaining wall by placing large boulders in front of the wall and solidifying their position with cement in order to save his property and keep the wall and yard from completely cracking off and falling into the ocean.

Grand View also placed boulders in a straight line spanning across the right-of-way and Parcel 11 in order to break up the large surf and prevent the certain collapse of the City's right of way that was in turn causing his properties to fall into the sea.

In that process, Grand View subsequently cut off the top portion of the severely leaning wall of Parcel 13 since it was a safety hazard for anyone that might walk in that area at a later time. He also placed concrete between the boulders behind the original seawall of Parcel 13. The contractor also placed concrete between the boulders of the revetment and continued the revetment to protect Parcel 12.

The department and Board of Land and Natural Resources has jurisdiction over land lying makai of the shoreline as evidenced by the upper reaches of the wash of the waves other than storm and seismic waves, at high tide during the season of the year in which the highest wash of the waves occurs, usually evidenced by the edge of vegetation growth, or the upper limits of debris left by the wash of the waves, pursuant to §205A-1, Hawaii Revised Statutes (HRS).

In January 2014, staff from the Office of Conservation and Coastal Lands (OCCL) were conducting a routine site inspection of neighboring properties in the vicinity of the subject parcels. Staff observed major shoreline work being conducted on the makai portion of the subject parcels. A subsequent site visit in February 2014 revealed that rocks and shotcrete were placed in a continuous section, across parcels 11, 12 and 13.

Grand View received a notice of violation for unauthorized reconstruction of a shoreline erosion control structure in the Conservation District Resource Subzone from the Department of Land and Natural Resources, Office of Conservation and Coastal Lands.

The department however did note in their assessment of the situation that:

> "Staff would like to note that while the landowner allegedly reconstructed (without authorization) a failed erosion control device makai of the subject parcels, it was in direct response to the erosion trends in this area. A review of the site and surrounding parcels reveals that a number of properties west of the site have been protected by hard shoreline erosion

> control structures (i.e., revetments and rock seawalls) starting in the early 1970's and continuing into today. Current science suggests that high erosion rates may be accelerated at the periphery (i.e., flanking) and seaward of shoreline armoring thus compounding the loss of beach the structure was trying to protect. This area in particular was extensively studied in Romine and Fletcher, (2012) 1 who found an almost near complete beach loss in 2006 along this particular shoreline segment. While armoring is a typical response to shoreline erosion, it was discovered that increased flanking erosion can occur as a result of shoreline armoring." (April 25, 2014. BLNR Submittal)

On April 25, 2014, Conservation District Enforcement Case OA-14-62 was brought before the Board of Land and Natural Resources (BLNR) for review and determination. After hearing testimony the BLNR "unanimously moved to defer this enforcement case" to a later BLNR meeting. The alleged violator requested more time to confer with the City and County of Honolulu, this was confirmed by Chairman Aila. Additionally, a surveyor representing the alleged violator requested more time to conduct a survey of the property.

On November 14, 2014, Conservation District Enforcement Case OA-14-62 was brought before the Board of Land and Natural Resources (BLNR) for review and determination. After hearing testimony the BLNR again "unanimously moved to defer this enforcement case" to a later BLNR meeting. The alleged violator requested more time to confer with the City and County of Honolulu and DLNR staff.

At its August 14, 2015 meeting, the BLNR found the landowner in violation of Hawaii Revised Statutes (HRS) § 183C-7, and Hawaii Administrative Rules (HAR) § 13-5-6 for the unauthorized reconstruction of a shoreline erosion control structure in the Conservation District Resource Subzone. (Letter is attached as Exhibit C.) Several conditions were imposed, including:

> The landowner is provided one (1) year from the date of the Boards decision to create a remediation plan (Plan) to re-open the beach Right-of-Way access and to obtain the necessary City and County of Honolulu permits and/or approvals for the Plan. If, after one (1) year, no permit is issued by the County for the Plan, the Board requests that significant evidence be provided showing that official correspondence, regarding this matter, has occurred between the landowner and the City and County of Honolulu.
>
> The landowner shall submit a Conservation District Use Application (CDUA) for all work proposed/conducted within the Conservation District.

Typically a shoreline landowner who requires approval to conduct repairs and maintenance of an existing shoreline erosion control structure must go through a process between, in this case, the City and County of Honolulu Department of Planning & Permitting and the Department of Land and Natural Resources (DLNR.)

The landowner, typically, must first obtain a Shoreline Certification to determine the official location of the shoreline; from that the landowner can apply for, or determine, the Shoreline Setback Variance (SSV) which will assist in the siting of the shoreline erosion control structure. Additionally the location of the shoreline determines jurisdiction between the County and State which therefore dictates the specific regulatory requirements for each agency. This process is in place to provide transparency concerning project details, environmental impacts and projected outcomes or objectives, and to make sure that the work is conducted in manner conducive for the health of Hawaii's coastal areas.

1.3 Proposed Actions

In response to the actions by the Board of Land and Natural Resources (BLNR,) representatives of Grand View had conversation and meetings with representatives from the City & County of Honolulu and DLNR.

In addition, an updated survey of the properties was conducted to evaluate the extent of the alleged encroachment, as well as to identify the location of the prior seawall and revetment fronting the private properties.

Typically a shoreline' landowner who requires approval to conduct repairs and maintenance of an existing shoreline erosion control structure must go through a process between, in this case, the City and County of Honolulu Department of Planning & Permitting and the Department of Land and Natural Resources (DLNR.)

On March 26, 2015, Howard Hanzawa, P.E. prepared 'Engineering Observation and Recommendation' addressing the events that led to the property and subsequent repairs and improvements related to protecting the properties.

Howard Hanzawa P.E. notes: "It is this engineer's professional opinion that if the contractor had not taken the action that he did to mitigate the impact of the waves that entered Parcel 12, that the residences within Parcels 11 and 13 would have been severely damaged if not lost."

"Moreover, the failure of the sea wall for Parcel 13, and the failure of the sloped boulder revetment of Parcel 11, was initiated and caused by the erosion of the soil within Parcel 12 which ultimately washed out the support of the soil behind and beneath the two subject structures and which subsequently applied dynamic loads from flowing water from the mauka side for which the protective sea structures were not designed for."

In part, that report also notes:

> The Hawaii Department of Land and Natural Resources has cited the owner of the private properties for a violation of shoreline rules due to the migration of boulders from within the properties onto the shoreline due to the severe storm action that had taken place.
>
> It is this engineer's observation that the measures that were implemented have stabilized the properties at this time against the impacts of normal wave events. However it is recognized that there remain concerns of the boulders that migrated into the shoreline as well as the need to provide safe access onto the beach from Parcel 12, which is the beach access lot.
>
> **Protection For Parcel 12**
>
> Parcel 12 needs to be provided permanent protection from the impacts of wave action in the future or a similar damaging event will occur. Parcel 12 is currently temporarily protected from wave action by the continuation of the rock revetment from Parcel 11 by the contractor during

the November event. However it is recognized that pedestrian access onto the beach from the roadway needs to be provided other than over the boulders on the makai end.

Safe access from Parcel 12 onto the beach could be implemented by providing a concrete stairway that would lock into the protective boulder structures of Parcel 11 and Parcel 13. If a concrete stairway is provided, it will be critically important that the stairway be designed to not only provide safe access but to prevent future erosion from high wave events. The toe of the stairway must be deep enough to hit the sandstone layer below. Also, there cannot be any openings from the south end of Parcel 11 through the north end of Parcel 13 whereby water can enter the properties from the ocean side. In addition, the apron of the sidewalk that will lead to the stairway must extend far enough into Parcel 11 and be sloped back to the ocean so that the water from high waves will not be able to undermine the stairway or the properties on either side of Parcel 12. Also as the temporary revetment fronting Parcel 11 may be removed for the construction of the concrete stairway, the work on the stairway must be timed and management measures implemented so that the area will be protected from wave action during the construction phase.

There may be several scenarios to remedy the situation along the beach. However they all should incorporate the construction of a concrete stairway on Parcel 12. Possible scenarios are listed below:

1. **Leave All Boulders In Place Except Fronting Parcel 12 And Construct Concrete Stairway**

   Remove boulders in front of Parcel 12 and construct a concrete stairway to the beach from the beach right-of-way. The concrete stairway must be constructed as described above to not only provide safe pedestrian access but to also protect Parcel 12 from erosion.

2. **Remove Loose Boulders And Construct Concrete Stairway**

   Loose migrant boulders fronting the three parcels along the shoreline (refer to Dennis Esaki survey map), can be removed from a structural standpoint as they do not provide any true benefit of stability to the properties. However the removal of the boulders must again be carefully timed to occur during extremely low tide. As observed during a site visit by this engineer on December 18, 2014 at 10 a.m., the ocean waters were covering the boulders at the revetment and all the loose boulders were under water.

   Under this plan, loose boulders would be removed from the beach while leaving the boulders that is locked in by concrete along Parcel 11 and those behind the pre-existing wall along Parcel 13. The boulders that are temporarily locked in to protect Parcel 12 would be removed so that a concrete apron and stairway can be built to provide safer pedestrian access to the beach from the beach right-of-way.

3. **Remove Loose Boulders As Well As Boulders Locked In By Concrete To The Original Location Of The Seawall Of Parcel 13 And The High Water Mark On Parcel 11 As Shown On Esaki Survey Map. Build A Concrete Stairway**

The pre-existing wall as shown on the survey map is outside of its original location due to the lean of the wall from the pressures of the sea water which entered Parcel 13 from Parcel 12. The wall leaned over towards the beach, and a decision was made by Mr. Dean Hanzawa to cut the top of the wall off as it was a clear safety hazard for anyone which may walk on the beach in the future. If the wall was left in place in the condition that it was in, it could collapse and severely injure or kill any beachgoer which may have been walking for sitting in the area. The boulders which were behind the wall were then locked in by concrete so that they could not move again from continued pressure from water behind the wall.

This third scenario may encounter unanticipated problems as the remains of the wall are helping to hold back the boulders behind it. Removal of the wall down to the footing will be difficult as the boulders behind the wall will shift. The boulders may have to be reset with other boulders that will fit and more concrete poured. This scenario will take much longer than Scenarios 1 & 2, and thus be more prone to being impacted by weather and ocean conditions.

There is a bulge of the revetment on the north side of Parcel 11 which will also have to be removed. This bulge was created to match the new alignment of the remains of the wall on Parcel 13 and the revetment was continued across Parcel 12 to protect the entire area. Under this scenario, this bulge will also have to be removed. After the work along Parcels 11 and 13 is completed, the boulders now protecting Parcel 12 can be removed and the concrete stairway constructed. However, to reiterate this scenario will take much longer than Scenarios 1 & 2 and may be subject to the whims of weather and ocean conditions.

4. **Remove Loose Boulders As Well As Other Boulders That May Be Locked In By Concrete But Which May Not Be Structurally Significant. Build A Concrete Stairway**

   This scenario would remove the loose boulders similar to Scenario #2 as well as to remove any locked in boulders which are determined to be not structurally significant. A civil or structural engineer would make the determination that a locked in boulder may be removed. A concrete stairway at the end of Parcel 12 would be constructed similar to the other scenarios.

In order to achieve any of the above scenarios, equipment and material transport will need to be allowed through Parcel 12, as well as approval for the construction of the concrete stairway for access and protection purposes.

1.4 Responsible Agencies & Funding

Applicant - Adjoining Property Owner: Grand View Apartments, Inc

Approving Agency: City & County of Honolulu, Department of Planning and Permitting

1.5 Proposed Actions Status & Implementation Schedule

The proposed actions are being further evaluated by Howard Hanzawa (P.E.) (Appendix A)

1.6 Required Permits & Approvals

The proposed actions may require:

- Shoreline Setback Variance pursuant to Chapter 23, Revised Ordinances of Honolulu
- Conservation District Use Permit
- Shoreline Certification from the State of Hawaii Department of Land and Natural Resources
- After-the-fact Building Permit from the City and County of Honolulu
- Height waiver or height variance for the existing seawall
- Minor Shoreline Structures Permit for those minor structures not included in the
- Shoreline Setback Variance, and/or
- Other appropriate permits to resolve enforcement of alleged unauthorized reconstruction of a shoreline erosion control.

Chapter 2 - Project Description

This chapter gives a general description of the project, its location and proposed actions.

2.1 Conditions that Exist that Prompt the Proposed Actions

The North Shore area extends from Kaʻena Point in the west to Waialeʻe Gulch near Kawela Bay in the east, with Oʻahu's shoreline defining the northern edge and Helemano and the slopes of the Waiʻanae and Koʻolau Mountain Ranges to the south.

The region consists mostly of agricultural lands and open space, which surround the country towns of Haleʻiwa and Waialua and the rural residential communities of Mokuleʻia, Kawailoa, and Sunset/Pūpūkea.

In contrast to urban Honolulu's metropolitan setting, the North Shore is known for its colorful scenery and unspoiled natural beauty, including world-famous surf, scenic shoreline and white sand beaches, picturesque valleys and coastal pali, and vast, open expanses of agricultural lands set against dramatic mountain backdrops.

For many Oʻahu residents and visitors, the North Shore represents "the country," where people go to find a laidback island setting reminiscent of Oʻahu's plantation days and is reflected in its small rural communities.

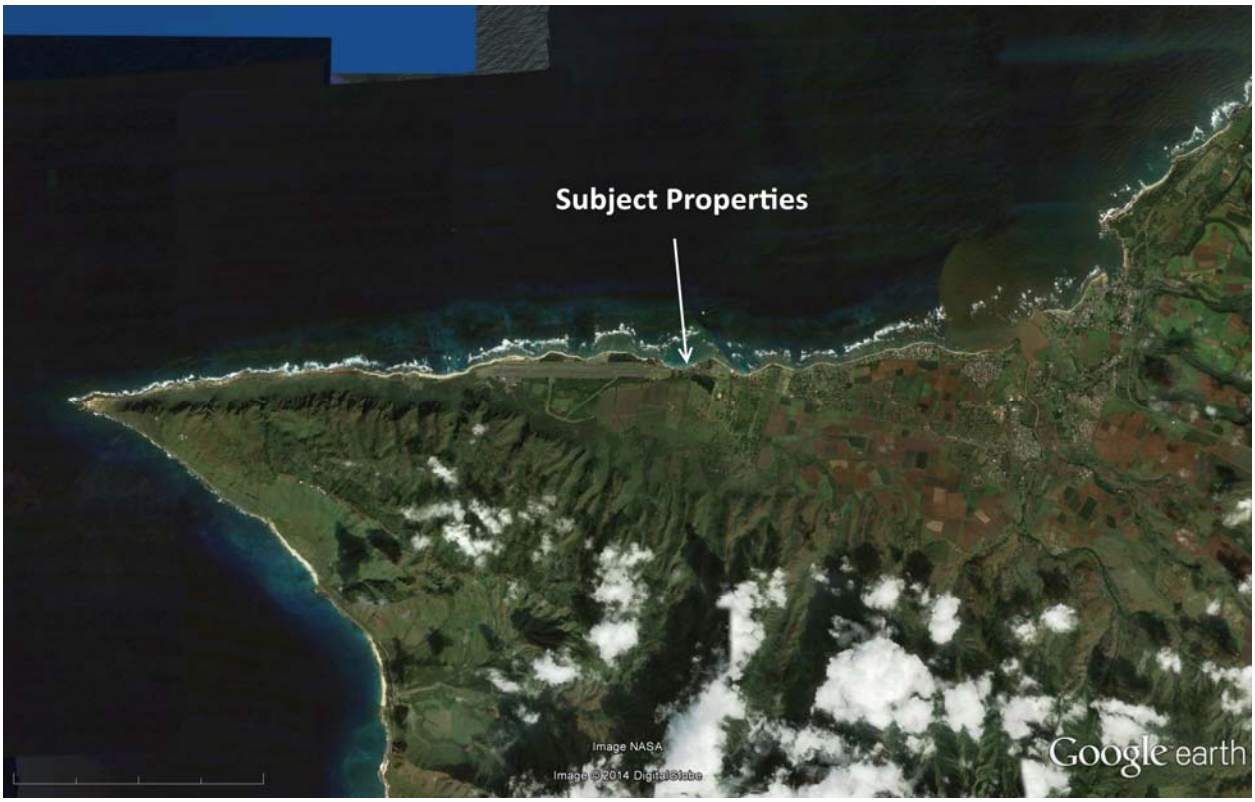
For many, the North Shore is a place for rest and recreation that offers opportunities to enjoy the country atmosphere, numerous white sand beaches, and mountain areas. As Honolulu and its suburban areas continue to grow and become increasingly urbanized, it has become more important to maintain the North Shore as an essential haven and respite from the urbanized areas of Oʻahu. (NSSCP)

The northern coast of Oahu from Kaʻena Point to Mokuleʻia is defined by broad wave-cut platforms etched into the coastline. The platforms in this area have been determined to be Waimanalo-age limestone. This area contains a fossil reef-rock platform which extends from Mokuleʻia to nearly Kaʻena Point and is elevated six feet above sea level. (Chee)

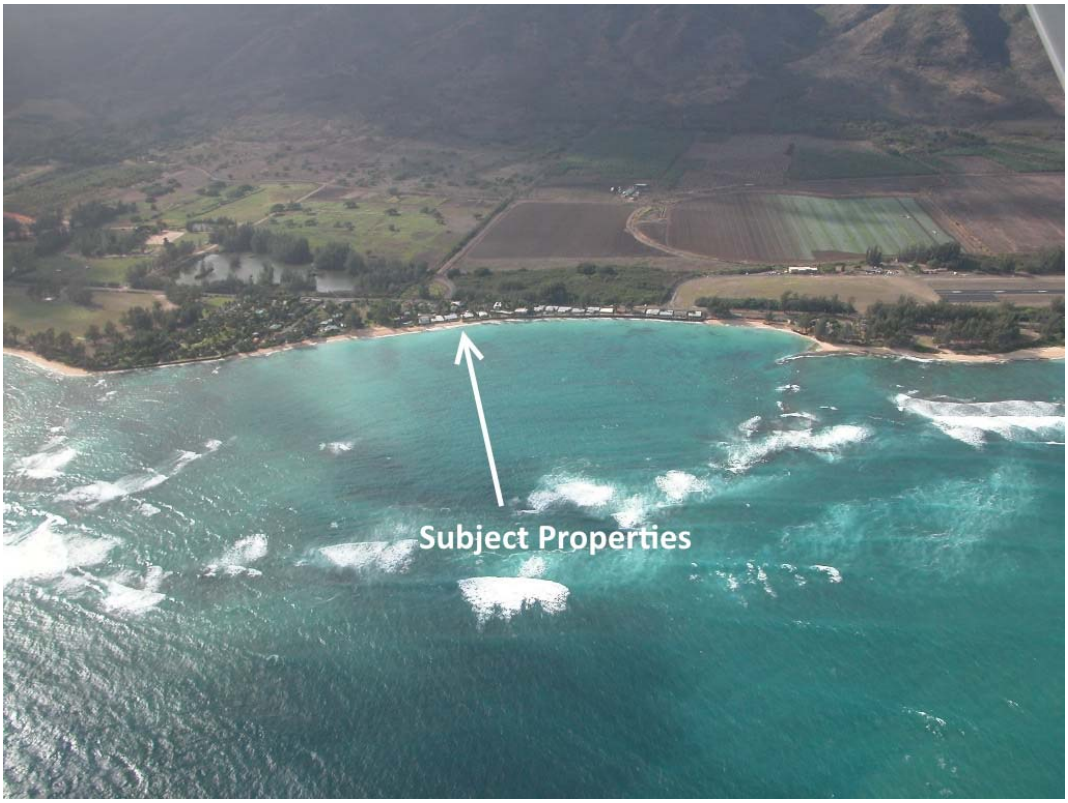
The Atlas of Natural Hazards in the Hawaiian Coastal Zone give a high hazard rating to most of the Mokuleʻia Beach area, where the coastal slope is low and continued erosion is rapidly removing the sand from the beaches. (Chee)

There are two wave-induced current systems in the nearshore area that dominate water movement in addition to the to–and-fro motions produced directly by the waves. These are 1) a cell circulation system of rip currents and associated longshore currents and 2) longshore currents produced by an oblique wave approach to the shoreline.

In cell circulation, water flows offshore in strong, narrow rip currents. To replace the water flowing seaward in the rip currents, there is a shoreward movement of water in the breaker zone that feeds the longshore currents and the rip currents. When the waves approach the shoreline at an angle, the longshore current is established and flows parallel to the shoreline. The velocity of both the longshore current and rip current decreases to zero outside of the breaker zone.



General Location of Property at Mokuleʻia



Subject Properties Location (Note: Dillingham Airfield is noted in the right side of the image)

Sediment is transported in the littoral currents. The longshore current transports sand along the beach in the nearshore zone, and the rip currents move the material offshore to deeper water. The velocity of these currents and the amount of sand they carry are directly related to the size of the incoming waves.

The large North Pacific swell approaches the coastline from the northwest. Swell from the northwest would normally produce east-flowing longshore currents. However, the shallow reefs offshore result in complex patterns of wave approach along the shoreline. As the waves hit the reef, they are dissipated and refracted.

These refracted waves have been observed to approach the shoreline from two different directions simultaneously. Water circulation, rather than being completely wave-driven, may also be affected by bathymetric contours in the area. (EKNA, Chee)

This North Shore coastal area is suffering from long-term erosion. The area is exposed to the winter North Pacific swell and the predominant trade wind waves. Shallow fringing reef flats protect the shoreline from moderate trade wind wave energy.

However, during the winter, large North Pacific swell conditions and high water levels contribute to wave run-up and overtopping of the beach, causing erosion damage and flooding to unprotected backshore areas and dwellings. (Chee)

The middle section of Mokuleʻia Beach has experienced long-term changes caused by erosion. Many of the homes from the Episcopal Church to the polo field and along Crozier Drive are now less than 20 feet from the edge of the vegetative line or seawall. Since the homes were constructed, erosion has been ongoing, and now these structures are much closer to the shoreline than they were when they were built.

For many of these structures, a storm that produces only 10 feet of erosion would reduce the natural barrier significantly, and property damage in these residential areas can be extensive and devastating to home owners. (Chee)

At the time that the individual lots were created in 1960, there was no publicly mandated requirement for lateral access along the shoreline and the property boundaries were formed at the high-water mark. Due to the natural process of erosion along this embayment, approximately 25% of the lot area has eroded and a portion of the properties are underwater.

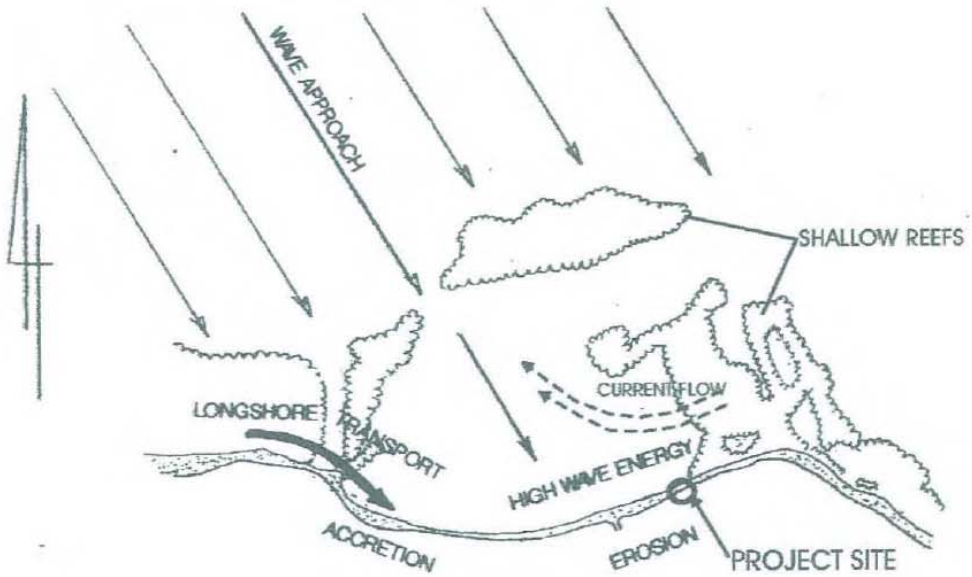
As such, any previously existing public lateral access, which would have been beyond the property boundaries, is no longer available. This natural process has limited the amount of sandy beach fronting the property and during high tide there is no beach area. Recreational resources are available depending on seasonal tides.

EKNA Services Inc Analysis in Immediate Vicinity of Subject Properties

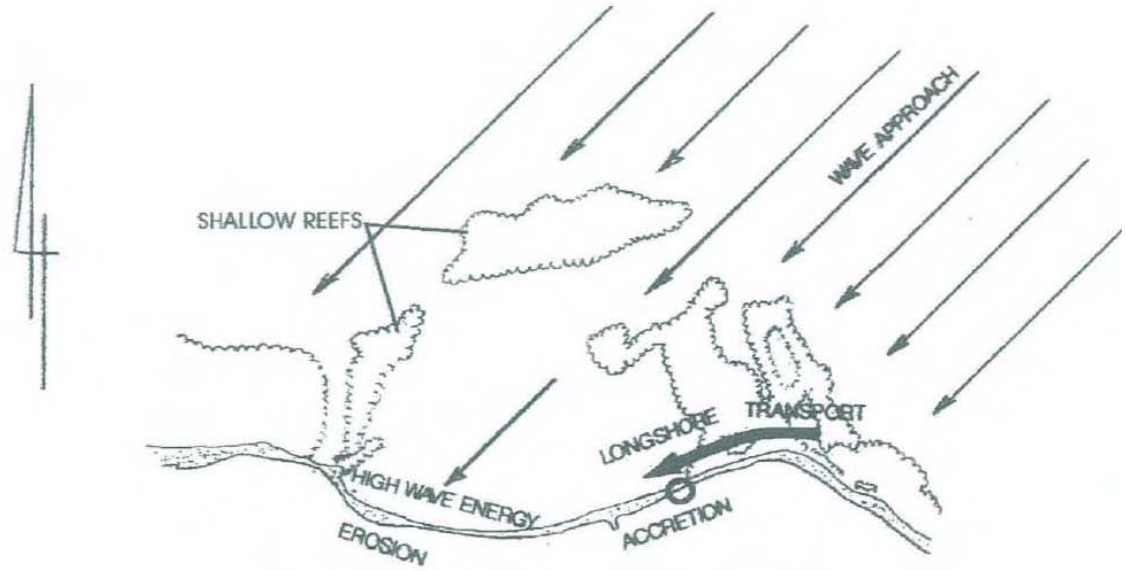
EKNA Services Inc prepared analysis for several properties in the vicinity. The following are excerpts from that analysis.

It is apparent that during high tide, wave uprush reaches the base of the existing seawalls. During storms and large winter swell conditions, wave runup and overtopping of the beach likely causes

flooding and sand transport into the properties that are not protected by seawalls. The beach profile is uniform along this entire shoreline reach.



WINTER NORTHWEST SWELL CONDITIONS



SUMMER NORTHEAST TRADEWIND CONDITIONS

Sand Transport (EKNA, Analytical Planning Consultants, Inc)

This coastal reach is exposed to winter North Pacific swell and predominant tradewind-generated waves. The shallow reefs which surround the embayment provide much sheltering the area from deepwater wave energy. These reefs dissipate nearly all wave energy during typical tradewind-generated wave conditions.

During large winter swell activity, waves initially break on the surrounding reefs where most of their energy is spent. What little energy remains propagates to shore as reformed waves which break on the shoreline. The wave energy that can reach the shoreline is limited by the water depths over the reefs and the channels through the reef. Deeper water depths over the reefs allow greater transmission of wave energy. During large swell activity, waves breaking over the reefs can cause a rise in water level known as wave setup. The increased water levels allow more wave energy to be transmitted over the reef.

Thus, wave activity at the shoreline is greatest during large swell or storm wave conditions and during high tides. The super-elevation in water level during large swell activity will allow waves to attack the shoreline at higher elevations on the beach. This is also aggravated during high tide conditions. Thus, the conditions which promote wave overtopping problems for unprotected parcels occur during large winter swell activity, as confirmed by residents.

Normally along an exposed coastal reach, wave energy is the primary factor which drives nearshore currents in the surf zone. Waves approaching the shore at an angle will induce longshore currents and transport of beach material alongshore in the direction of breaking.

The large winter North Pacific swell approaches this coastal reach from the northwesterly direction. Therefore, it may be expected that longshore currents and longshore transport during winter swell activity would be towards the easterly direction at the project site.

However, the shallow reefs surrounding the site considerably alter the deepwater wave characteristics within the embayment, resulting in possibly complex patterns of wave approach along the shoreline.

The water which accumulates within the embayment during large swell or storm wave activity seeks to flow towards areas of hydraulically least resistance. Thus, the water drains towards deeper areas within the embayment. Deeper water depths exist on the west side of the embayment.

The shallow reef structure offshore the eastern headland (fronting the location of the subject properties) is broader and extends further into the embayment than the shallow reef structure offshore the western headland. This reef structure offshore the eastern headland appears to gradually deepen towards the stream mouth, at which point the reef structure becomes less distinct and the reef bottom is mottled with sand cover throughout the western half of the embayment. There is an apparent "channel" through the offshore reef near the western end of the embayment.

Thus, it is postulated that during large winter swell activity, setup in water level due to breaking waves on the broad shallow reef areas on the eastern end of the embayment induces flows towards the deeper central and west portion of the embayment. The channel through the surrounding reef at the west end of the embayment then allows the water to escape seaward through the opening in the surf zone. This hydraulically-driven circulation is probably the basis for the westerly-flowing shoreline current that residents have noted.

If the shoreline flows are strong, they have the potential to carry wave-suspended shoreline sediments offshore into the deeper reaches of the embayment and seaward of the surrounding reef as the shore-parallel flows are diverted seaward through openings in the shallow reef. Such sediments may be deposited in water depths too deep for normal wave activity to return it to the beach. The history of long-term erosion of this coastline is evidence that such permanent loss of beach material occurs.

While net long-term erosion is evident, residents also indicated that seasonal fluctuation of beach width occurs. According to the residents, there is a pattern of erosion along the eastern part of the embayment during the winter, with restoration of the beach width during the summer. Conversely, for the shoreline reach towards the western part of the embayment, there is a pattern of erosion during the summer and restoration during the winter.

Because water depths in the central part of the embayment are too deep for transmitted wave energy to move sediments back to shore, the seasonal fluctuation of beach width is presumably due to longshore transport of sediments from the shoreline and shallow nearshore areas around the headlands.

During high winter northwest swell activity, a depression in the surrounding reef at the northwestern end of the embayment can permit substantial wave energy to enter the embayment and attack the eastern shoreline reach, while the shallow reefs fronting the western headland shelter the adjacent westerly shoreline reach within the embayment. The direction of wave breaking on the shallow westerly reef, however, can transport sediments from the shallow reef and shoreline areas around the point and into the embayment.

During strong northeasterly tradewind wave conditions which can occur during the summer months, a depression in the surrounding reef at the northeastern end of the embayment can permit substantial wave energy to enter the embayment and attack the western shoreline reach, while the shallow reefs fronting the eastern headland shelter the adjacent easterly shoreline reach within the embayment. The direction of wave breaking on the shallow easterly reef, however, can transport sediments from the shallow reef and shoreline areas around the point and into the embayment.

For this coastal area, and for most coastal areas in the state, the general trend is toward continued long-term erosion. There is no evidence that the long-term erosion trend along this coastal reach will reverse in the future.

O‘ahu Shoreline Study - Part 2 - Management Strategies (November 1989)

In 1989, Sea Engineering Inc. prepared for the City's Department of Land Utilization (DLU) the Oahu Shoreline Study - Data on Beach Changes. The report concluded that landward recession of the vegetation line since 1949 has continued.

Mokule‘ia Beach was divided into ten sectors, due to the wide variety of conditions encountered along the beach. Based strictly on the statistical data, the recommended setback line would range from 34 feet seaward of the present position to 188 feet shoreward.

Much of the erosion of the vegetation line appears to have been caused by either sand mining or recreational activities, so the statistical predictions are probably overly conservative. All of Mokuleʻia Beach is in a hazard zone, so a setback of at least 60 feet is recommended for most areas.

Episcopal Camp to Mokuleʻia Beach Colony (Mokuleʻia transect 11)

This is a small embayment, 3000 feet long, that is completely developed. Polipoli Stream discharges in the center of the embayment. The shoreline from the Episcopal Camp to the stream is lined with shore protection structures, except for the four lots just west of the stream. The unprotected houses have only a few feet of vegetation between them and the beach.

The structures are generally vertical seawalls, of varying heights and types. At the west end, particularly, the walls protrude varying distances out onto the beach. Most of the six lots east of the stream are also protected by vertical seawalls. The shoreline of the Mokuleʻia Beach Colony is protected by a temporary sandbag revetment, and the City has approved construction of a permanent shore protection structure for this property. The adjacent property to the east is protected by a basalt boulder revetment.

Given the extent of the existing seawalls and the proximity of the unprotected houses to the waterline, shore protection should be allowed throughout this area. The shore protection structure of choice will probably be a vertical seawall, since there is little room for sloping revetments. The DLU should ensure that the design is adequate and that the alignment matches the surrounding areas.

At present, there is lateral access along this beach, at least during some seasons, but if erosion continues, this will be lost.

View along the Shoreline in the Immediate Vicinity of the Subject Properties (November 2014, Hanzawa)

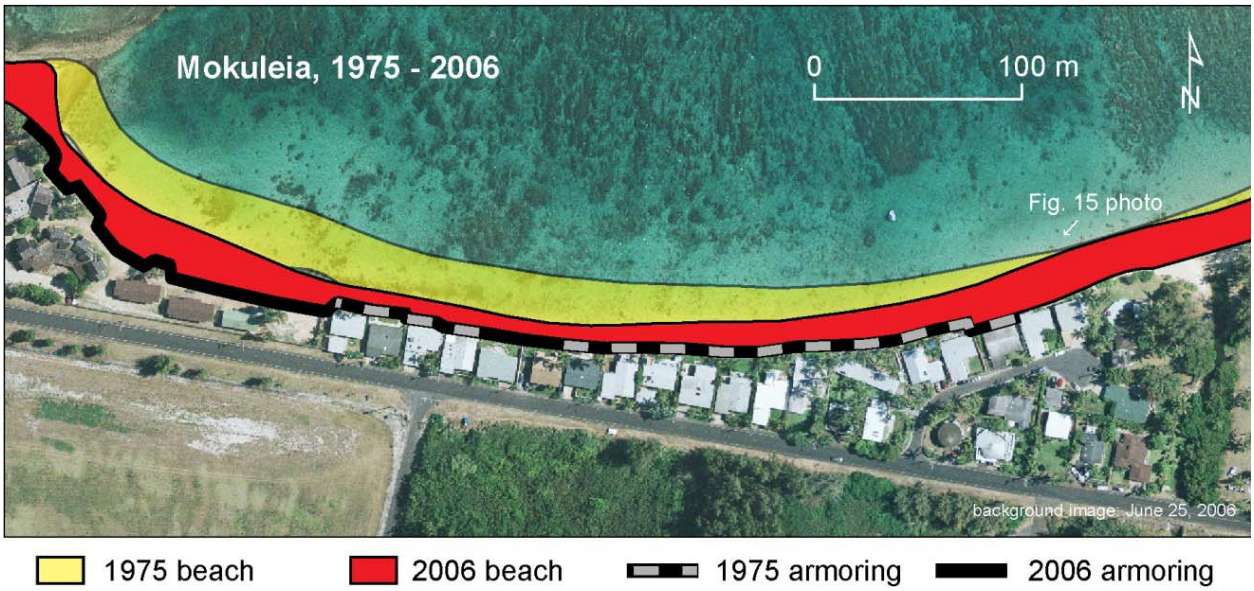
Armoring on Eroding Coasts Leads to Beach Narrowing and Loss on Oahu, Hawaii (2012)

In a 2012 paper, 'Armoring on Eroding Coasts Leads to Beach Narrowing and Loss on Oahu, Hawaii,' Bradley Romine and Chip Fletcher noted, in part, the following related to the area around the subject properties:

Coastal armoring (defined as any structure designed to prevent shoreline retreat that interacts with wave run-up at some point of the year) has, historically, been a typical response to managing the problem of beach erosion on the island of Oahu, Hawaii.

Significant narrowing is found on both armored and unarmored north Oahu beaches; though, narrowing was greater on armored beaches. Beaches are narrowed along most of a continuous beach between Mokuleia and Waialua, including armored and unarmored sections. Near-complete beach loss is observed in 2006 air photos of a small embayment at Mokuleia (image below.)

Armoring, constructed in the early 1970s, was extended in the 1980s and more recently to protect coastal properties threatened by flanking erosion. Continued narrowing has resulted in complete beach loss fronting armoring in the middle of the bay as observed in a site visit in March of 2011.

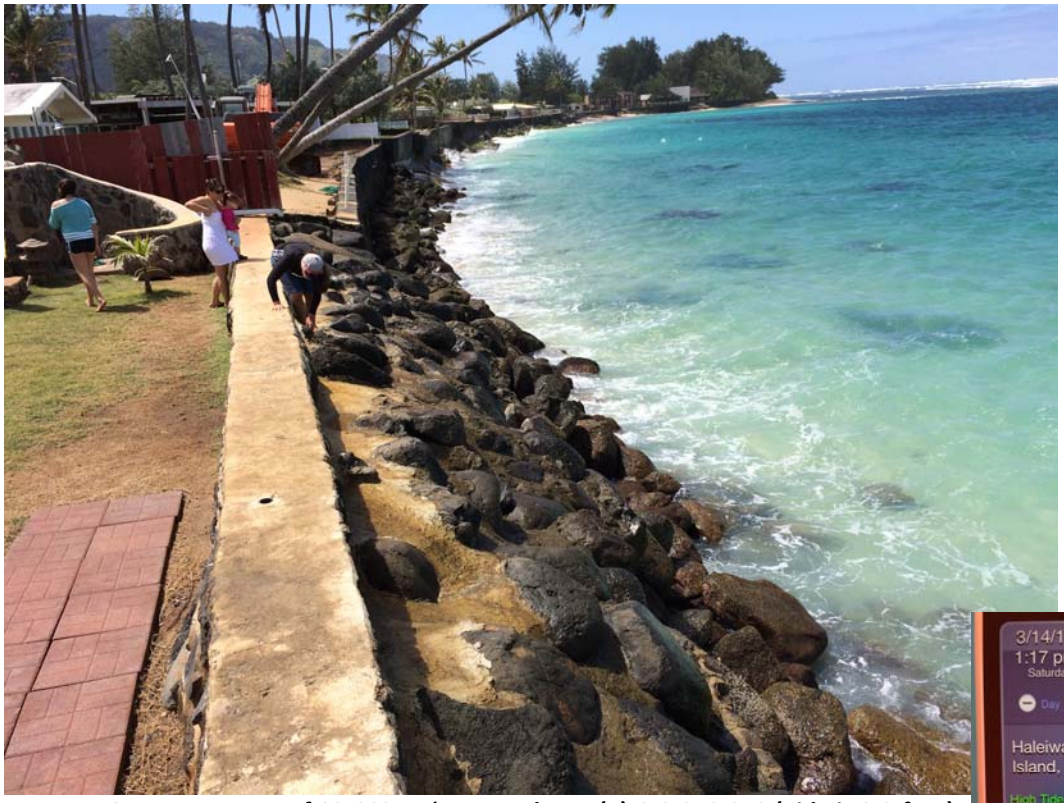


Beach erosion rates flanking the north side of the 1975 armoring at Mokuleia appear to have slowed following installation of the armoring.

Rates fronting the armoring and along roughly 100 m of the southern flanking beach suggest accelerating erosion following installation of the armoring. As with Lanikai, none of the rate changes are statistically significant.

In the immediate vicinity of the subject property, there is an apparent pattern of actions and issues related to hardening along the shoreline. The following image illustrates the gradual movement along the shoreline that the apparent problems were developing.

Actions (year noted) Related to Addressing Erosion Issues and Associated Violations/Permitting



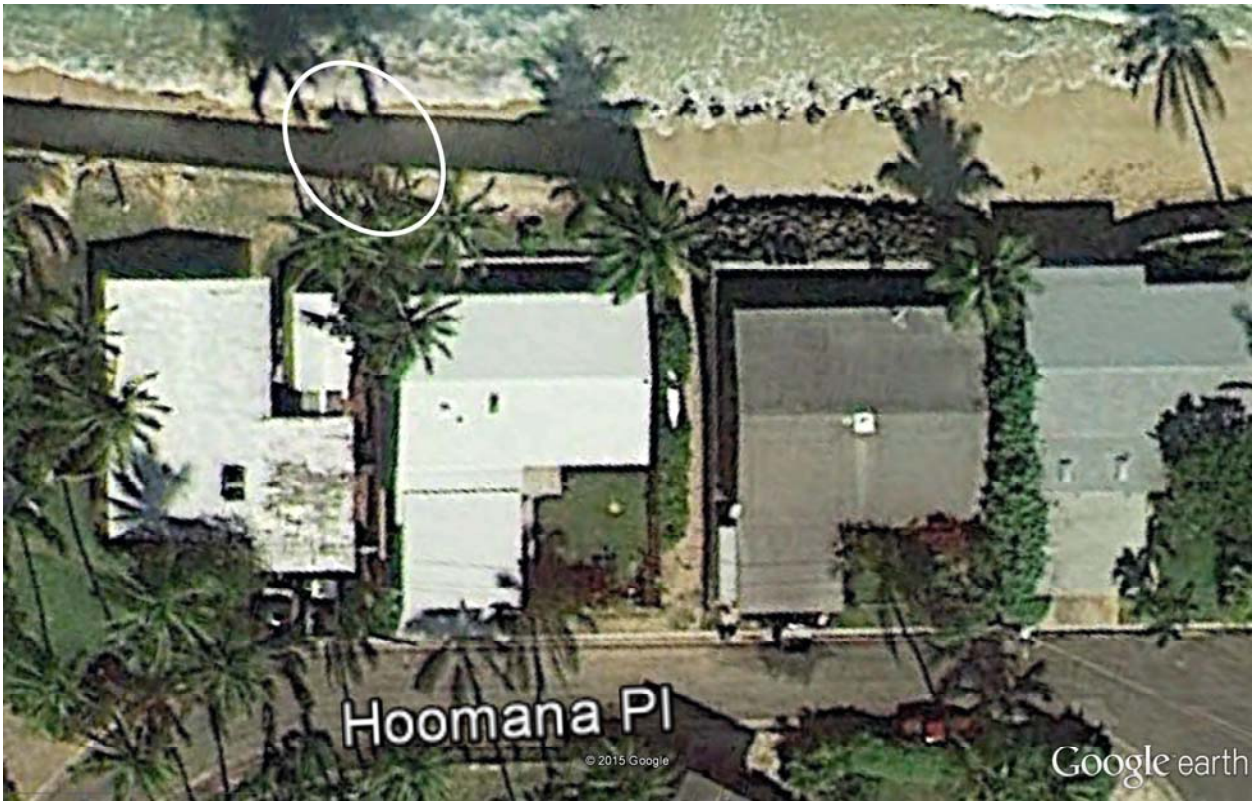
Ocean Frontage of 68-669 Hoʻomana Place - (1)-6-8-010:013 (Tide is 0.2-feet)

Ocean Frontage of 68-667 Hoʻomana Place - (1)-6-8-010:011 (Tide is 0.2-feet)

Ocean Frontage of 68-669 Hoʻomana Place - (1)-6-8-010-013 (Tide is 0.2-feet)-rebar evidence of former wall

Ocean Frontage of Public Access way (Between Wall and Wall Stub) (Tide is 0.2-feet)

New Wall Moved Back from Old - 68-669 Hoʻomana Place - (1)-6-8-010-013



Google Earth Image (01-29-13) Showing Old Wall farther seaward of adjoining - 68-669 Hoʻomana Place

Prior Alleged Violations and Corrections in the Vicinity

A pattern of alleged violations and subsequent correction via after-the-fact permitting has addressed most of the houses in the immediate vicinity of the subject properties.

Starting in the early 1980s, the camp property to the west received approval for shoreline protection; then a group of homes were given after-the-fact permits, then again in 1997, 2009 and the early 2000s.

The DLNR-Office of Conservation and Coastal Lands in its review and comment on the proposed easements, noted (Sam Lemmo, Administrator of OCCL signed the letter:)

> This is in response to your January 2013 request to resolve the shoreline encroachments at Tax Map Key (1) 6-8-010:021. According to information and maps contained with your request, you have identified approximately 264 square feet of encroachment (CRM seawall) makai of the subject property onto State land.
>
> The Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL) has determined that the subject seawall is an authorized land use based on the City and County of Honolulu's December 21, 2009 approval letter for Shoreline Setback Variance (No. 2009/SV -10) for the subject seawall. As a consequence, OCCL will not be asking for an after-the-fact Conservation District Use Application to cure this matter. OCCL may reconsider this finding should we find that the seawall was built without permits, within the Conservation District after 1964.
>
> The Board of Land and Natural Resource (BLNR) established a policy to allow the disposition of shoreline encroachments by either removal or issuance of an easement. In carrying-out this policy, OCCL established criteria to guide decision-making over specific cases. The criteria are as follows:
>
> 1. Protect/preserve/enhance public shoreline access;
> 2. Protect/preserve/enhance public beach areas;
> 3. Protect adjacent properties;
> 4. Protect property and important facilities/structures from erosion damages; and
> 5. Apply "no tolerance" policy for recent or new unauthorized shoreline structures
>
> In addition, OCCL developed a "Shoreline Encroachment Information Sheet" that is intended to provide the State with additional information to guide OCCL's decisions on the disposition of shoreline encroachments.
>
> Surrounding Land Uses:
> *The surrounding land uses are primarily residential. The adjacent properties are fronted by similar seawalls. Farrington Highway runs along the mauka side of the property.*
>
> Beach Resources:
> *Due to a trend of long-term beach erosion (shoreline recession), liltle or no dry beach remains fronting the seawalls at the subject property and adjacent properties.*

Public Access:
This section of coast has limited access along the beach fronting this property and adjacent properties with waves breaking against the base of the seawalls, except during low tides and low wave conditions. Beach access is available a few hundred feet to the east from Hoomana Road.

Effect of Removing the Encroachment on:

Beach Resources: *The encroaching seawall and seawalls on adjacent properties are fronted by a narrow beach that is submerged during all but the lowest tides. Therefore, removal of the encroachment would not result in a substantial improvement to beach resources fronting the property.*

Public Access: *OCCL staff has determined that no improvement would be gained by removing encroaching portion of the seawall because the adjacent properties are fronted by similar seawalls and narrow beach.*

Affect on Adjacent Properties: *Removal of the encroaching portion of the seawall may destabilize seawalls and lawns at the adjacent properties.*

It has been a general policy and practice of OCCL to support disposition requests that have no discernable effect on beach and recreational resources, and do not act as a detriment to public access. In cases where the encroachment serves as primary erosion control for potentially threatened structures, impacts to the adjacent and upland developments must also be considered.

Upon review and careful consideration of the information gathered on this case, OCCL has determined that the requirements stated in HRS § 205A, HRS § 183C, and in OCCL's evaluation criteria would support a disposition request being processed for the subject shoreline encroachment. OCCL suggests that any disposition require the land uses remain wrimproved.

There is historic evidence (shoreline surveys and City communications) that documents seawalls along this embayment since the early 1970s following a significant period of erosion in 1970.

The Property Tax Cards for the properties adjoining the subject properties to the west of the subject state that in 1970 the property “suffered wave damage: approximately 1,200 square feet of land washed away, water and debris damage to landscape” and the lot to the west similarly states, “suffered wave damage: approximately 450 square feet square feet of sand washed away, water and debris damage to landscape.” (Analytical Planning Consultants, Inc)

Around 1996-1997, four contiguous properties a few hundred feet farther west experienced undermining behind old seawalls, loss of backfill material, the creation of sinkholes and the near collapse of existing seawalls; TMK: 6-8-010:023, :024, :026; the seawall on parcel :025 fully collapsed. The four property owners of those parcels requested and were granted approval for a shoreline setback variance in 1997/1998 to construct a new seawall that would cover the seaward face of the four properties. That seawall is still in place today. (Analytical Planning Consultants, Inc)

The following image is a closer view of the area in the immediate vicinity of the subject property.

The tan colored highlight notes the properties that received after-the-fact approval for Shoreline Setback Variance for seawalls. The red colored highlight note recent active violation actions by the State. The subject private properties are noted in green and the City's public accessway is yellow. The years are noted when the respective actions were taken.

In addition, several properties also received long term easement from the state for encroachments that fronted the seawalls. The following illustrate three in the immediate vicinity of the subject properties (in blue with dates noted for the approvals.)

The Findings of Fact for the after-the-fact Shoreline Setback Variance for parcels 27-30 (93/SV-12), located north of the subject parcel, references an aerial photograpb of the area dated April 22, 1967 on file at the City which shows no shore protection slmctures and the vegetation line ranging fiom 0-20 feet away fiom the dwellings.

Seawalls appear to have been built along this embayment some time after 1967. Records reference damage to existing walls and dwellings along the embayment during high surf in 1970. It is speculated that the conslmction of seawalls along the shoreline took place after this damage.

The 1993 report also references Department slides and photographs of the area, taken from 1982 through 1991 which display walls in the sand area along the shoreline for 16 residential lots east of the Episcopal Church Camp.

No building permits are on file for construction of these seawalls; however, after-the-fact Shoreline Setback Variances and building permits have been issued for manyof the properties since 1990. The Mokuleia Beach Colony (TMK 6-8-009:001) has an approximately 350-foot long seawall, with an approved shoreline setback variance. (Analytical Planning Consultants, Inc)

Numerous property owners along this coastal reach have constructed shore protection to prevent further storm wave run-up damage to their dwellings. The subject property owner desires to retain the seawalls to prevent future erosion and wave run-up damage to their dwellings.

Proposed Legislation Relating To Special Shoreline Encroachment Easements

In successive legislative sessions, the Department of Land and Natural Resources (DLNR) has introduced proposed legislation to address dealing with subsequent encroachments on State property due to erosion of coastal properties. In the 2015 Hawaiʻi Legislative session SB1125 and HB956 were introduced by the department.

In part, the proposed legislation states:

> SECTION 1. In County of Hawaii v. Sotomura, 55 Haw. 176, 517 P.2d 57 (19731, the Hawaii supreme court held that "land below the high water mark, like flowing water, is a natural resource owned by the state subject to, but in some sense in trust for, the enjoyment of certain public rights." As a result of this ruling, any structures located seaward of the shoreline location as determined by the department of land and natural resources (department) would be considered encroachments upon public land.
>
> When an encroachment is discovered, it may be resolved by either removal or obtaining an easement from the department. Generally, an easement must be obtained from the department for a structure within the shoreline area even if the structure was located within the record boundary of the landward property at the time of construction.
>
> The department has been named as a party in claims regarding structures, improvements, and debris in the shoreline area that was once private property.
>
> Pursuant to sections 171-13 and 171-17(b), Hawaii Revised Statutes, easements granted by the board of land and natural resources (board) under the circumstances described above require compensation at fair market value.
>
> The purpose of this Act is to provide the board the discretion to grant easements for less than fair market value in regards to encroaching structures that were authorized by an appropriate regulatory agency and originally constructed landward of the shoreline and within the record boundary of an oceanfront property but are now located within the shoreline area, due to the dynamic nature of the location of the shoreline.

In testimony provided by DLNR on a legislative hearing addressing HB956, DLNR Interim Chair Carty Chang, on behalf of the Department, provided the following testimony:

> House Bill 956 proposes to provide the Board of Land and Natural Resources (Board) the discretion to grant easements for a value it determines for structures that were authorized by a governmental authority and legally constructed landward of the shoreline within the record boundary of the landward property at the time of construction, but are now located seaward of the shoreline on public land. The Department of Land and Natural Resources (Department) strongly supports this Administration measure.

> Many of these structures were constructed mauka of the shoreline by private landowners to benefit their property, i.e., as shoreline protection structures. Over the years, many of these structures are now situated within or seaward of the shoreline and are a liability concern. In exchange for the granting of an easement, the Department requires insurance and indemnity protection. The problem under current law is that the Board must charge fair market value as determined by an appraiser for the easement. This bill seeks to remedy that problem by allowing the Board the discretion to grant the easement at below fair market value if the structure was authorized by a governmental authority and originally constructed landward of the shoreline within the record boundary of the landward property at the time of construction, but are now located seaward of the shoreline on public land.
>
> Considering that the structures were originally built on private property, waiving the requirements for prior approval of the Governor and prior authorization from the Legislature pursuant to Section 171-53, Hawaii Revised Statutes (HRS), likely would not compromise the State's fiduciary obligations. In addition, given the volume of easements that are expected to be processed, this exemption would greatly expedite the disposition process. Allowing the easements to be granted at less than fair market value via a streamlined process would assist in encouraging compliance from littoral landowners entering into easements with the State. By resolving the liability and indemnity issues, taxpayers will have greater protection from potential legal and financial liability against the State with regard to these structures. By facilitating compliance from landowners, this bill will reduce the burden on staff resources from having to pursue enforcement actions.

Related to this, on several occasions DLNR has held enforcement and deferred payments on enforcement actions on alleged encroachments due to the anticipated passage of their proposed legislation.

In one instance, a BLNR submittal (and subsequent approval) noted (Amstutz; Amendment of Prior Board Action; BLNR meeting of August 10, 2012:)

> Considering that the primary purpose of seeking the easement is to resolve indemnity and insurance issues regarding the encroachments, the Department will attempt to remedy the situation by introducing proposed legislation for the 2013 Legislative Session. See draft legislation as Exhibit B. The proposed legislation will seek to grant the Board the authority to approve at a nominal rate, the issuance of easements for encroaching structures now located seaward of the shoreline but were authorized and built within the record boundary of the property and landward of the shoreline at the time of construction. The Department believes that passage of this proposed legislation would encourage compliance from other landowners in similar situations in obtaining easements.
>
> The Applicant was informed of the Department's proposed legislation, and now requests that the Board amend its approval of the easement to hold enforcement by allowing a temporary deferral of payment until the close of the 2013 Legislative Session, which would allow the proposed legislation to be enacted. A copy of the Applicant's testimony on this Item is attached as Exhibit C. The Board is respectfully requested to approve of the execution of the casement to the Applicant for the entire easement area, and the Applicant will compensate the Department only for the encroachments that arc located outside the record boundary of the property. The

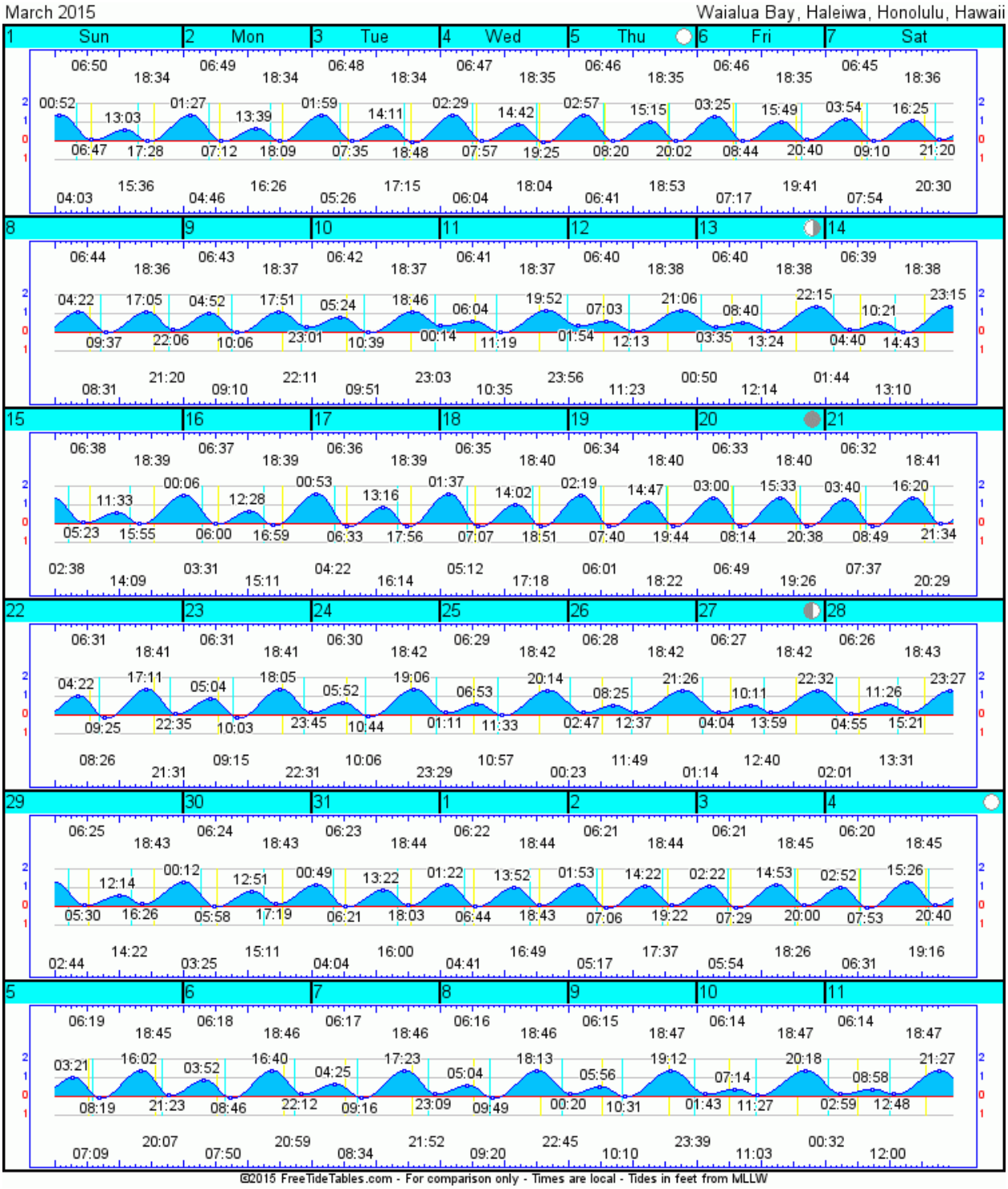
amount of the compensation will be calculated using the "per square foot" cost of the entire easement, approximately $48.35, and applying it to the area outside the record boundary. The easement area for the encroachments located outside the record boundary of the property total approximately 100 square feet, more or less, resulting in a cost of about $4835.00. Staff asks and recommends the Board set the value at $4835.00 for the encroachments situated outside the record boundary.

Applicant understands that payment for the remaining balance is only temporarily deferred, not waived. If the proposed legislation passes, then the Applicant would be excused from any further payment obligation. However, if the proposed legislation is not enacted, then Applicant shall be responsible for paying the remaining balance of the easement amount. In such an event, failure of the Applicant to pay may result in the termination of the easement and subsequent enforcement action.

As noted, the subject properties have lost to erosion approximately 30 percent of their total land area. The locations of the alleged encroachments were once part of the private property.

Ocean Frontage of 68-669 Hoʻomana and beyond (Westward) - Note the alignment of continuous hardening of the shoreline and rock protection ocean side of effectively all other residential properties fronting the Bay

The prior image shows the pre-existing shoreline hardening with seawalls and rock revetments and/or loose rocks fronting the respective seawalls. Also note the total loss of sandy frontage along the shoreline. This image was taken when the tide was 0.2-feet mean lower low water (MLLW.) The following is the tide chart for the Haleiwa station (closest to the subject properties.) Note that tides for this month (and effectively all other moths in the year do not have significant low tides (very few are less than zero MLLW.) High tides are almost always greater than 1-foot MLLW, and many times higher.



The image, chart and brief discussion help to illustrate the limited usability of the shoreline area, as well as evidence that support an action that DLNR and the City have taken with other resolutions of alleged unpermitted activities and eroachments:

Surrounding Land Uses:
The surrounding land uses are primarily residential. The adjacent properties are fronted by similar seawalls.

Beach Resources:
Due to a trend of long-term beach erosion (shoreline recession), liltle or no dry beach remains fronting the seawalls at the subject property and adjacent properties.

The allegedly encroaching seawall/revetment and seawalls on adjacent properties are fronted by a narrow beach that is submerged during all but the lowest tides. Therefore, removal of the encroachment would not result in a substantial improvement to beach resources fronting the property.

Public Access:
This section of coast has limited access along the beach fronting this property and adjacent properties with waves breaking against the base of the seawalls, except during low tides and low wave conditions.

No improvement would be gained by removing encroaching portion of the seawall because the adjacent properties are fronted by similar seawalls and narrow beach.

Affect on Adjacent Properties:
Removal of the allegedly encroaching portion of the seawall/revetment may destabilize seawalls and lawns at the adjacent properties.

Given these, it appears that the subject is consistent with the practice to allow after-the-fact permits and disposition requests, since there appears to be no discernable effect on beach and recreational resources, nor detriment to public access. Likewise, the seawall and revetment serve as primary erosion control for potentially threatened structures.

2.2 Proposed Actions

In late November, 2013, a large storm wave event started to impact and wash out the sand within Parcel 12 since its makai end was not protected.

Within a matter of days, the waves washed out the sandy soil within the beach access parcel. The subsequent erosion process was quick and severe and it created a trench that was approximately 12 feet deep.

The erosion within Parcel 12 subsequently undermined the side boundary walls along Parcels 11 and 13. Once the two feet deep side wall footings were undermined, the soil within the back yards of the two adjoining parcels along the beach access began to wash out with the wave action.

The following images show the wave action, erosion and impacts to the Subject Properties:

The erosion within the two adjoining parcels became severe due to the action of the waves from the side. Once the soil from the yards of the two parcels were taken out, the flow of the water from each wave action started applying pressure to the vertical retaining wall of Parcel 13 and the sloped revetment of Parcel 11.

These structures were not designed to withstand the dynamic hydraulic pressures from the mauka side. Moreover the soil which provided lateral and vertical support for each structure became non-existent with the washout. The new dynamic hydraulic loads from the mauka side subsequently caused both structures to fail.

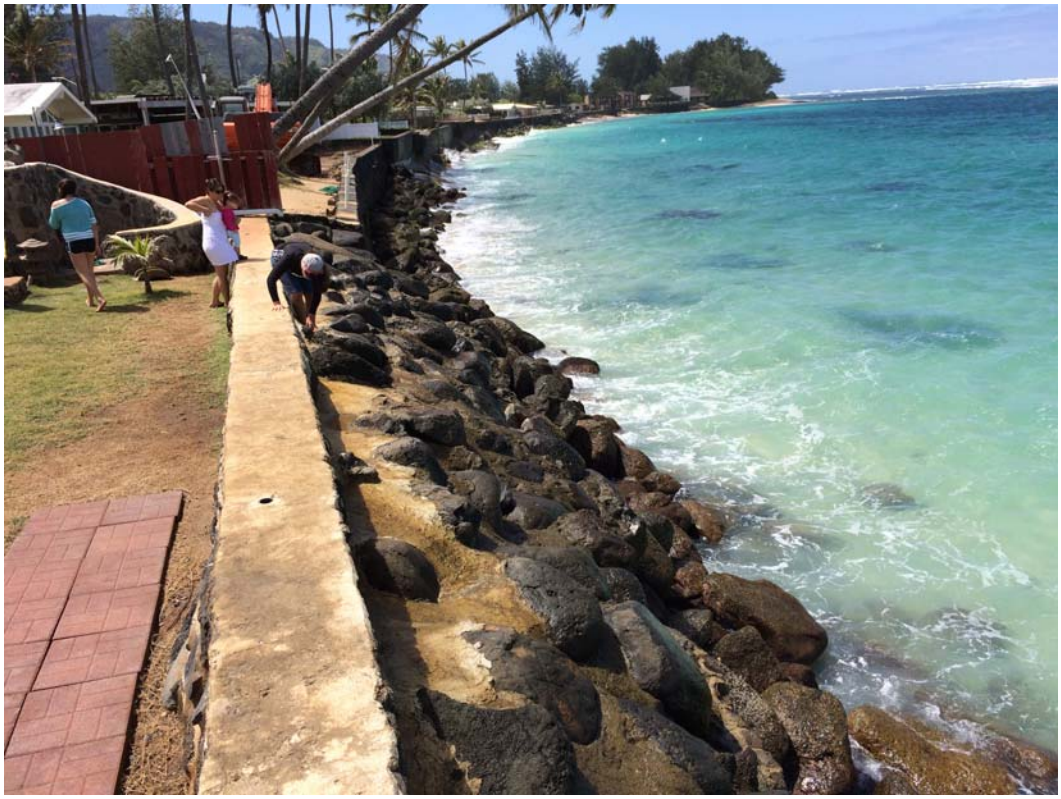
The vertical retaining wall that had protected Parcel 13 collapsed and severely leaned towards the ocean. The rock revetment for Parcel 11 also lost its structural integrity and the pressure from the water caused the boulders to tumble and fall towards the beach side.

The failure of both structures was caused by the wave action and erosion in the beach access which allowed the sea water to enter the back yards of the adjacent parcels. This subsequently undermined their structural support and applied unanticipated dynamic loads in the opposite direction for which they were designed.

Mr. Dean Hanzawa upon realizing the severity of the impact upon all three parcels enlisted the help of a contractor to help to save the homes on his properties. The erosion if left unabated would have eroded the supporting ground beneath the homes.

As it is, the open patio slab for the house on Parcel 13 was undermined and the slab cracked. The contractor started by shoring up the side boundary walls as they were leaning precipitously into the beach access and then placed boulders in the eroded trench and into the backyards of the properties in order to mitigate the impacts of the waves.

He also subsequently cut off the top portion of the severely leaning wall of Parcel 13 since it was a safety hazard for anyone that might walk in that area at a later time. He also placed concrete between the boulders behind the original seawall of Parcel 13. The contractor also restored boulders of the revetment and placed concrete to stabilize the structure and continued the revetment to protect Parcel 12 from having a re-occurrence of the problem which brought about the damages.



Ocean Frontage of 68-669 Hoʻomana Place - (1)-6-8-010:013 (Tide is 0.2-feet)

Ocean Frontage of 68-667 Hoʻomana Place - (1)-6-8-010:011 (Tide is 0.2-feet)

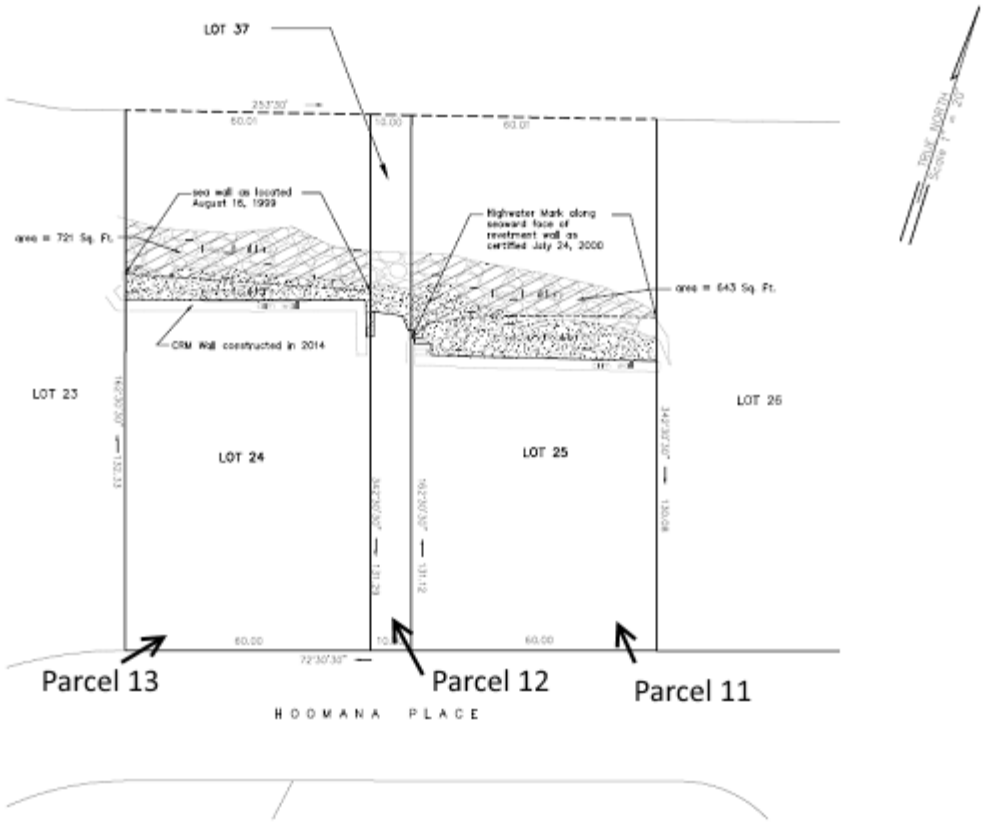
Ocean Frontage of County Public Access Way - (1)-6-8-010:012 (Tide is 0.2-feet)

Engineer's Recommendations:

On March 26, 2015, Howard Hanzawa, P.E. prepared 'Engineering Observation and Recommendation' addressing the events that led to the property and subsequent repairs and improvements related to protecting the properties. (Mr Hanzawa's report is included here as Exhibit A.)

Howard Hanzawa P.E. notes: "It is this engineer's professional opinion that if the contractor had not taken the action that he did to mitigate the impact of the waves that entered Parcel 12, that the residences within Parcels 11 and 13 would have been severely damaged if not lost."

"Moreover, the failure of the sea wall for Parcel 13, and the failure of the sloped boulder revetment of Parcel 11, was initiated and caused by the erosion of the soil within Parcel 12 which ultimately washed out the support of the soil behind and beneath the two subject structures and which subsequently applied dynamic loads from flowing water from the mauka side for which the protective sea structures were not designed for."



GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION

Signature
ESAKI SURVEYING & MAPPING, INC.
DATED: APRIL 30, 2015

MAP SHOWING
LOTS 24 and 25
LAND COURT APPLICATION 1810
MOKULEIA BEACH HOMES, SECTION 1
MOKULEIA, WAIALUA, OAHU, HAWAI'I
TMK: (1) 6-8-10: 11, 12, and 13
Prepared For: Dean Hanzawa
Date: March 26, 2015

Job Number: 14w87 JH
Drawing File: 14w87 adpc 2w19x15.dwg

ESAKI SURVEYING & MAPPING, INC.
Civil Engineers • Land Surveyors • Planners

1610 Hakuleana Street
Lihue, Kauai, Hawaii 96766

In part, the Howard Hanzawa P.E. report also notes:

> The Hawaii Department of Land and Natural Resources has cited the owner of the private properties for a violation of shoreline rules due to the migration of boulders from within the properties onto the shoreline due to the severe storm action that had taken place.
>
> It is this engineer's observation that the measures that were implemented have stabilized the properties at this time against the impacts of normal wave events. However it is recognized that there remain concerns of the boulders that migrated into the shoreline as well as the need to provide safe access onto the beach from Parcel 12, which is the beach access lot.
>
> **Protection For Parcel 12**
>
> Parcel 12 needs to be provided permanent protection from the impacts of wave action in the future or a similar damaging event will occur. Parcel 12 is currently temporarily protected from wave action by the continuation of the rock revetment from Parcel 11 by the contractor during the November event. However it is recognized that pedestrian access onto the beach from the roadway needs to be provided other than over the boulders on the makai end.
>
> Safe access from Parcel 12 onto the beach could be implemented by providing a concrete stairway that would lock into the protective boulder structures of Parcel 11 and Parcel 13. If a concrete stairway is provided, it will be critically important that the stairway be designed to not only provide safe access but to prevent future erosion from high wave events. The toe of the stairway must be deep enough to hit the sandstone layer below. Also, there cannot be any openings from the south end of Parcel 11 through the north end of Parcel 13 whereby water can enter the properties from the ocean side. In addition, the apron of the sidewalk that will lead to the stairway must extend far enough into Parcel 11 and be sloped back to the ocean so that the water from high waves will not be able to undermine the stairway or the properties on either side of Parcel 12. Also as the temporary revetment fronting Parcel 11 may be removed for the construction of the concrete stairway, the work on the stairway must be timed and management measures implemented so that the area will be protected from wave action during the construction phase.
>
> There may be several scenarios to remedy the situation along the beach. However they all should incorporate the construction of a concrete stairway on Parcel 12. Possible scenarios are listed below:
>
> 1. **Leave All Boulders In Place Except Fronting Parcel 12 And Construct Concrete Stairway**
>
> Remove boulders in front of Parcel 12 and construct a concrete stairway to the beach from the beach right-of-way. The concrete stairway must be constructed as described above to not only provide safe pedestrian access but to also protect Parcel 12 from erosion.
>
> 2. **Remove Loose Boulders And Construct Concrete Stairway**
>
> Loose migrant boulders fronting the three parcels along the shoreline (refer to Dennis Esaki survey map), can be removed from a structural standpoint as they do not provide

any true benefit of stability to the properties. However the removal of the boulders must again be carefully timed to occur during extremely low tide. As observed during a site visit by this engineer on December 18, 2014 at 10 a.m., the ocean waters were covering the boulders at the revetment and all the loose boulders were under water.

Under this plan, loose boulders would be removed from the beach while leaving the boulders that is locked in by concrete along Parcel 11 and those behind the pre-existing wall along Parcel 13. The boulders that are temporarily locked in to protect Parcel 12 would be removed so that a concrete apron and stairway can be built to provide safer pedestrian access to the beach from the beach right-of-way.

3. **Remove Loose Boulders As Well As Boulders Locked In By Concrete To The Original Location Of The Seawall Of Parcel 13 And The High Water Mark On Parcel 11 As Shown On Esaki Survey Map. Build A Concrete Stairway**

   The pre-existing wall as shown on the survey map is outside of its original location due to the lean of the wall from the pressures of the sea water which entered Parcel 13 from Parcel 12. The wall leaned over towards the beach, and a decision was made by Mr. Dean Hanzawa to cut the top of the wall off as it was a clear safety hazard for anyone which may walk on the beach in the future. If the wall was left in place in the condition that it was in, it could collapse and severely injure or kill any beachgoer which may have been walking for sitting in the area. The boulders which were behind the wall were then locked in by concrete so that they could not move again from continued pressure from water behind the wall.

   This third scenario may encounter unanticipated problems as the remains of the wall are helping to hold back the boulders behind it. Removal of the wall down to the footing will be difficult as the boulders behind the wall will shift. The boulders may have to be reset with other boulders that will fit and more concrete poured. This scenario will take much longer than Scenarios 1 & 2, and thus be more prone to being impacted by weather and ocean conditions.

   There is a bulge of the revetment on the north side of Parcel 11 which will also have to be removed. This bulge was created to match the new alignment of the remains of the wall on Parcel 13 and the revetment was continued across Parcel 12 to protect the entire area. Under this scenario, this bulge will also have to be removed. After the work along Parcels 11 and 13 is completed, the boulders now protecting Parcel 12 can be removed and the concrete stairway constructed. However, to reiterate this scenario will take much longer than Scenarios 1 & 2 and may be subject to the whims of weather and ocean conditions.

4. **Remove Loose Boulders As Well As Other Boulders That May Be Locked In By Concrete But Which May Not Be Structurally Significant. Build A Concrete Stairway**

   This scenario would remove the loose boulders similar to Scenario #2 as well as to remove any locked in boulders which are determined to be not structurally significant. A civil or structural engineer would make the determination that a locked in boulder may

be removed. A concrete stairway at the end of Parcel 12 would be constructed similar to the other scenarios.

In order to achieve any of the above scenarios, equipment and material transport will need to be allowed through Parcel 12, as well as approval for the construction of the concrete stairway for access and protection purposes.

Engineer's Description of Repair and Reconstruction of Damaged Revetment and Seawall

On November 5, 2015, Howard Hanzawa, P.E. prepared 'Engineering Repair and Reconstruction of Damaged Revetment and Seawall' that describe the method of construction and nature of the improvements protecting the properties. (Mr Hanzawa's report is included here as Exhibit D.)

Howard Hanzawa P.E. notes: "As described in the report for the subject property entitled ''Engineering Observation and Recommendations'', the large storm wave event of November, 2013 washed out the ground within Parcel 12 (beach access parcel), as it was unprotected on its makai end from ocean surges. The erosion process during the wave event was dynamic and the incoming and retreating waters quickly created a trench that was approximately 12 feet deep within the 10 foot wide parcel. The adjacent residential parcels were protected for many years from ocean surges and wave action by a revetment on Parcel 11 as well as a seawall on Parcel 13. However the washout of the ground within the beach access parcel became problematic for the adjoining residential parcels as further described below."

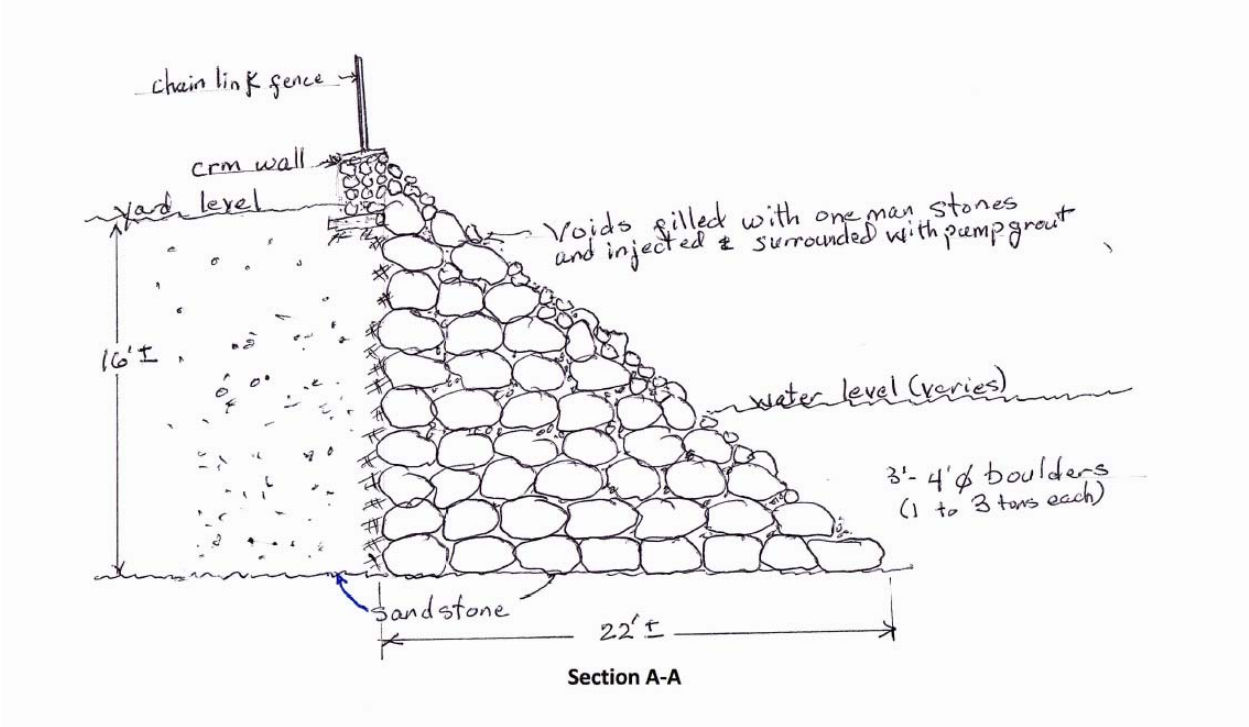
In part, the Howard Hanzawa P.E. report also notes:

RECONSTRUCTION OF REVETMENT FOR PARCEL 11

Parcel 11 originally had an unprotected slope in its backyard. In 1999, this engineer designed a sloped boulder revetment to protect the sandy soil slope. The plans were submitted for permit approval and the revetment was constructed in the year 2000. The boulder revetment effectively protected the southern parcel for 14 years from ocean wave activity without impact to the parcel or to the beach.

However in the November, 2013 wave event, the entry of the water from the side and back of the revetment caused the boulders to tumble towards the beachside. A revetment is engineered to resist hydraulic and impact forces from the ocean side but not from the rear. The contractor during the height of the wave event trucked in additional boulders to replace the ones that were displaced in order to protect the property.

The reconstructed revetment is less steep in slope than the pre-existing revetment due to the movement of many of the boulders towards the ocean. New boulders were placed on top of boulders that were moved by the surging waters to strengthen the structure. Later one man sized rocks were placed in the voids of the large boulders and concrete grout was pumped in to lock the rocks and boulders together. See Survey Map, Photo A, and Section A-A)

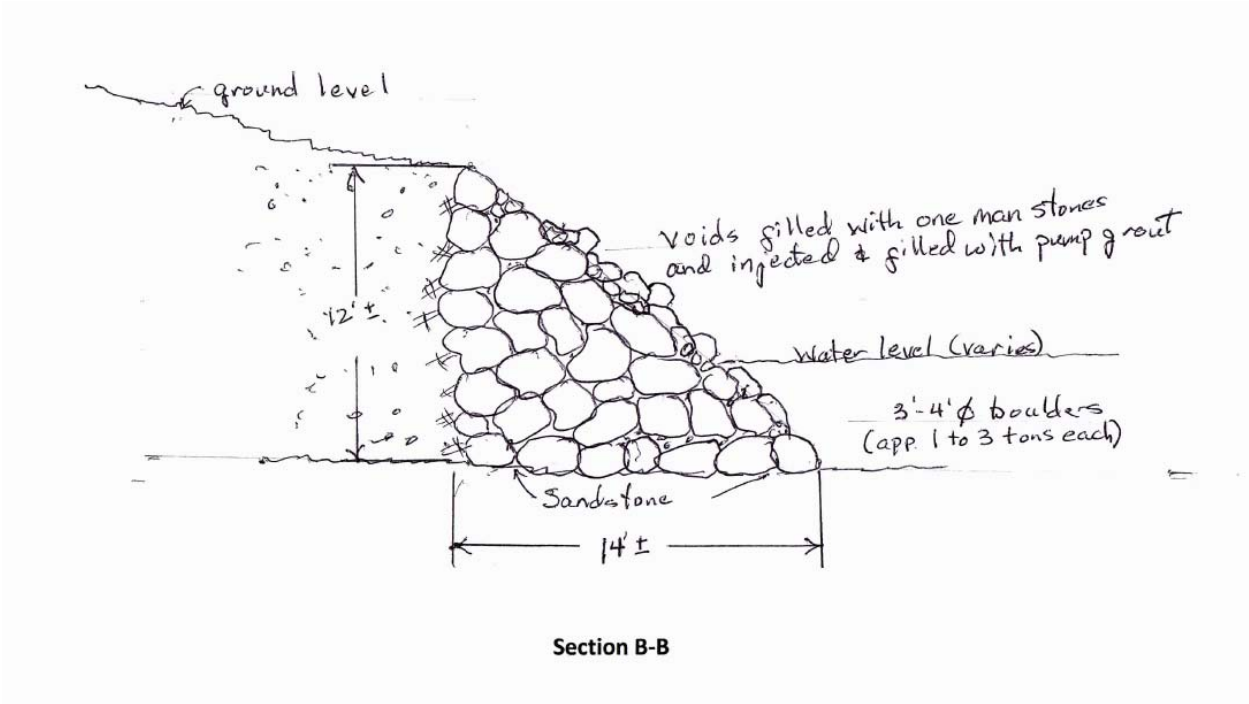


Engineer's Sketch of Revetment Fronting Parcel 11

CONSTRUCTION OF REVETMENT FOR PARCEL 12 (10' WIDE BEACH ACCESS)

Protection measures being implemented for Parcels 11 and 13 would have been futile if the surging waters in Parcel 12 were not mitigated somehow. The ground within Parcel 12 was severely eroded and the surging waters were then impacting the adjoining properties. The

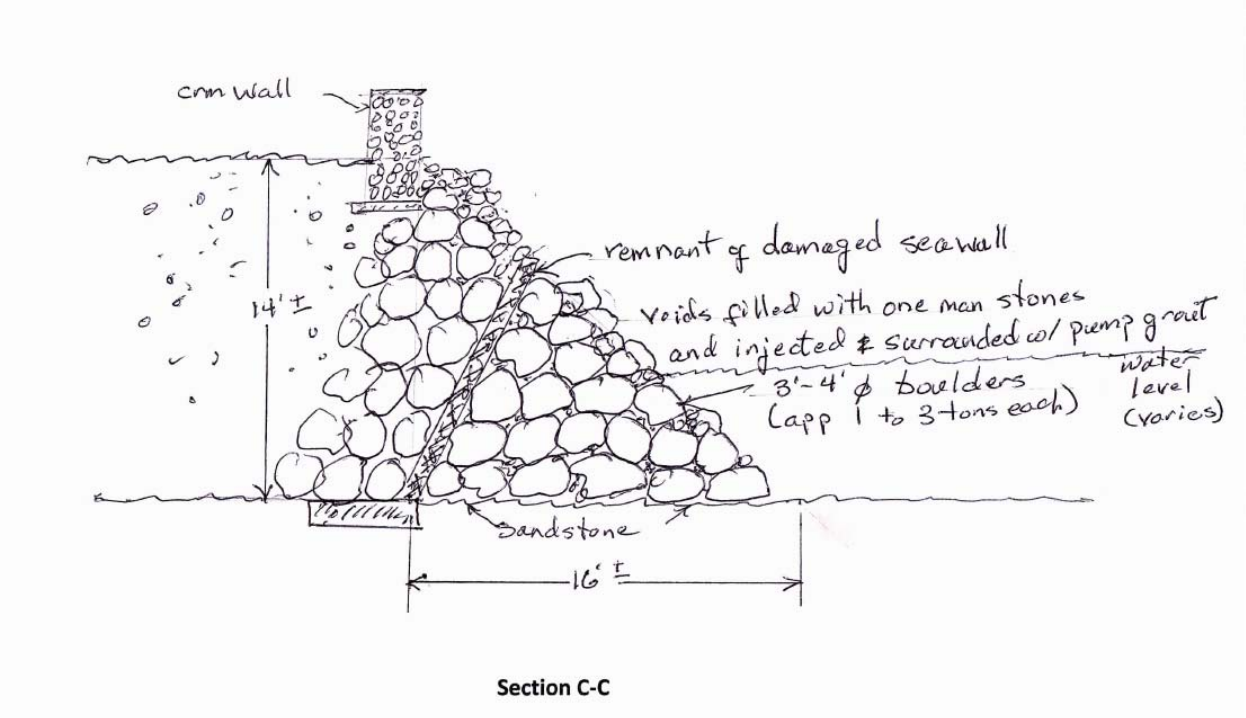
contractor thus built a boulder revetment on the seaward side of Parcel 12 to prevent the waves from further entering the beach access and causing additional damage. The revetment as currently constructed looks similar to the revetments for Parcels 11 and 13. (See Survey Map, Photo B, and Section B-B)



Engineer's Sketch of Revetment Fronting Parcel 12

CONSTRUCTION OF REVETMENT FOR PARCEL 13

Parcel 13 had a vertical 12 foot high seawall that was probably more than 40 years old. However it too could not withstand the hydraulic pressures from the backside for which it was not engineered for. The sea waters entered the backyard, washed out the soil and pushed the top of the wall out towards the ocean. The wall bent at the footing at a severe angle. Because of the precarious angle of the wall, the contractor cut off much of the top of the wall and placed boulders seaward of the remaining portion of the wall as well as in the back of the wall. The construction of the revetment for Lot 13 looks similar to the one constructed for Parcel 11 except that it is slightly steeper in slope. Another difference is that the top of the remaining portion of the old wall is visible along the revetment. (See Survey Map, Photo C, and Section CC)



Section C-C

Engineer's Sketch of Revetment Fronting Parcel 13

SUMMARY

The original revetment and seawall structures that were constructed for Lots 11 and 13 served to protect those properties for many years without problems. They only ultimately failed when exposed to forces that were applied in the opposite direction for which they were designed for.

The reconstructed revetments for Lots 11 and 13 are substantially greater in mass than that what was there originally for Lot 11. In addition, the boulders have been locked together with the injection of grout and smaller stones. The rebuilt structures will serve as permanent revetments to protect their respective properties.

However it is important to emphasize that Lot 12, the beach access must also be protected. It has been suggested that a concrete stairway be built. This would provide protection for Lot 12 to preclude another similar incident and to also allow public access to the ocean area.

Chapter 3 - Environmental Assessment Alternatives

Provisions of Title 11, Chapter 200, Hawaii Administrative Rules, Department of Health, outline specific requirements for an EA. One of the objectives delineated in Title 11, Chapter 200, is to evaluate alternatives to the proposed project, including the "no action" alternative.

This chapter lists and describes the various alternatives, including the preferred alternative (Alternative 3,) for the development of the Grand View - Hoʻomana Place project.

3.1 Alternative 1 - No Action

Under the “no action” alternative, no action would be taken and the project area would be left in its current state.

The ‘no action’ alternative is contrary to the pending recommendations of the Board of Land and Natural Resources (BLNR) that the adjoining property owner is required to remove alleged improvements associated with the alleged unauthorized reconstruction of a shoreline erosion control structure in the Conservation District Resource Subzone that are on State property.

If the Shoreline Setback Variance is not obtained and the seawall (in some form) is not retained, the property owner will not be able to clear the alleged violation of the Conservation District Rules relating to the alleged unauthorized repair and reconstruction of a boulder revetment within the Conservation District.

As such, the ‘no action’ alternative was not considered viable and the analysis is based on the preferred alternative, noted below.

3.2 Alternative 2 - Seek After-the-fact Permits/Easements for the Existing Improvements and Construct Concrete Stairs at Public Access Way

Under Alternative 2, the improvements as they exist today would remain in place, as well as hardening the right-of-way with concrete stairs. The property owner would seek appropriate after-the-fact permits and easements, as necessary, from the respective government agencies.

This alternative is noted in the Howard Hanzawa P.E. report (Appendix A,) as recommendation #1: “Leave All Boulders In Place Except Fronting Parcel 12 And Construct Concrete Stairway”

“Remove boulders in front of Parcel 12 and construct a concrete stairway to the beach from the beach right-of-way. The concrete stairway must be constructed as described above to not only provide safe pedestrian access but to also protect Parcel 12 from erosion.”

3.3 Alternative 3 - Remove Loose Boulders and Seek After-the-fact Permits/Easements for Scaled-Back Improvements and Construct Concrete Stairs at Public Access Way (Preferred)

Under Alternative 3, the permanent improvements as they exist today would stay in place.

However, obviously loose boulders in the immediate vicinity of the seawall and revetment structures would be removed. (Some boulders semi-buried in sand would not be removed.)

This alternative is noted in the Howard Hanzawa P.E. report (Appendix A,) as recommendation #2: "Remove Loose Boulders And Construct Concrete Stairway"

"Loose migrant boulders fronting the three parcels along the shoreline (refer to Dennis Esaki survey map), can be removed from a structural standpoint as they do not provide any true benefit of stability to the properties. However the removal of the boulders must again be carefully timed to occur during extremely low tide. As observed during a site visit by this engineer on December 18, 2014 at 10 a.m., the ocean waters were covering the boulders at the revetment and all the loose boulders were under water."

"Under this plan, loose boulders would be removed from the beach while leaving the boulders that is locked in by concrete along Parcel 11 and those behind the pre-existing wall along Parcel 13. The boulders that are temporarily locked in to protect Parcel 12 would be removed so that a concrete apron and stairway can be built to provide safer pedestrian access to the beach from the beach right-of-way."

3.4 Alternative 4 - Remove Loose Boulders and Hardened Improvements to the Prior Hardened Area and Seek After-the-fact Permits/Easements for Scaled-Back Improvements and Construct Concrete Stairs at Public Access Way

Under Alternative 4, the improvements as they exist today would be scaled back to the extent of the prior pre-existing seawall and revetment, as well as hardening the right-of-way with concrete stairs. The property owner would seek appropriate after-the-fact permits and easements, as necessary, from the respective government agencies.

This alternative is noted in the Howard Hanzawa P.E. report (Appendix A,) as recommendation #3:
"Remove Loose Boulders As Well As Boulders Locked In By Concrete To The Original Location Of The Seawall Of Parcel 13 And The High Water Mark On Parcel 11 As Shown On Esaki Survey Map. Build A Concrete Stairway"

"The pre-existing wall as shown on the survey map is outside of its original location due to the lean of the wall from the pressures of the sea water which entered Parcel 13 from Parcel 12. The wall leaned over towards the beach, and a decision was made by Mr. Dean Hanzawa to cut the top of the wall off as it was a clear safety hazard for anyone which may walk on the beach in the future. If the wall was left in place in the condition that it was in, it could collapse and severely injure or kill any beachgoer which may have been walking for sitting in the area. The boulders which were behind the wall were then locked in by concrete so that they could not move again from continued pressure from water behind the wall."

"This third scenario may encounter unanticipated problems as the remains of the wall are helping to hold back the boulders behind it. Removal of the wall down to the footing will be difficult as the boulders behind the wall will shift. The boulders may have to be reset with other boulders that will fit and more concrete poured. This scenario will take much longer than Scenarios 1 & 2, and thus be more prone to being impacted by weather and ocean conditions."

"There is a bulge of the revetment on the north side of Parcel 11 which will also have to be removed. This bulge was created to match the new alignment of the remains of the wall on Parcel 13 and the revetment was continued across Parcel 12 to protect the entire area. Under this scenario, this bulge will also have to be removed. After the work along Parcels 11 and 13 is completed, the boulders now protecting Parcel 12 can be removed and the concrete stairway constructed. However, to reiterate this scenario will take much longer than Scenarios 1 & 2 and may be subject to the whims of weather and ocean conditions."

3.4 Alternative 5 - Remove Loose Boulders and Hardened Improvements to the Extent Possible and Still Retain Benefit/Protection of the Adjoining Parcels and Seek After-the-fact Permits/Easements for Scaled-Back Improvements and Construct Concrete Stairs at Public Access Way

Under Alternative 5, the improvements as they exist today would be scaled back only as far as is feasible to retain the benefit/protection (but reduce the existing footprint beyond the previous alignment of the wall,) as well as hardening the right-of-way with concrete stairs. The property owner would seek appropriate after-the-fact permits and easements, as necessary, from the respective government agencies.

This alternative is noted in the Howard Hanzawa P.E. report (Appendix A,) as recommendation #4:
"Remove Loose Boulders As Well As Other Boulders That May Be Locked In By Concrete But Which May Not Be Structurally Significant. Build A Concrete Stairway"

"This scenario would remove the loose boulders similar to Scenario #2 as well as to remove any locked in boulders which are determined to be not structurally significant. A civil or structural engineer would make the determination that a locked in boulder may be removed. A concrete stairway at the end of Parcel 12 would be constructed similar to the other scenarios."

3.5 Other Actions Looked at but Not Considered Reasonable

In addition to the above, several other actions were looked at but not considered viable (for economic, or protection considerations.) These include:

Removal of the Existing Seawall and Revetment

This is not a viable alternative. Removing the existing wall and not replacing it with another shore protection structure will result in catastrophic damage to the existing dwelling on the property. Removal of the existing seawall with no retaining structure to support the foundation of the dwelling will lead to substantial structural damage to the dwelling as the shoreline embankment is eroded by winter storm waves and collapses.

Rock Revetment

To be consistent with revetment designs, a horizontal footprint of the revetment slope would be about 30 feet for a 1-Vertical to 2-Horizontal slope. There is not enough space on the property to construct a properly designed revetment. A revetment structure would extend far out into the water; or, if it is to

be constructed only as fall as the prior seawall alignment, it could not be constructed without removing or relocating the dwelling.

Sand Bags

Large geotextile sand bags have been used as temporary erosion control in several areas. They are prone to damage from storm wave attack and vandalism, require frequent and continual maintenance, and cannot be considered a permanent protection measure. With hard structures along the shoreline, it is not feasible to use temporary measures while the neighborhood has already been hardened with permanent seawalls.

Beach Nourishment

Beach nourishment is often looked on as a preferred alternative to hard structures. Beach nourishment or constructing protective sand dunes are not feasible for a single homeowner, especially when almost all properties in the immediate vicinity have seawalls. Beach nourishment would be required for a long stretch of shoreline, extending far beyond the subject parcel. Groins would be required to obstruct the longshore currents and to keep the sand in place, and a study would be required to determine the spacing and number of groins to be emplaced. This is prohibitively costly alternative, due to the large quantities of sand required (especially in the context of the extensive shoreline hardening in this area.)

Use of geotextile sand bags on property in the immediate vicinity of the subject properties (March 14, 2015) (Tide is 0.2-feet) (Note the failure of some of the bags.)

Chapter 4 - Environmental Setting, Impact & Mitigation

This chapter presents the current description of the environmental setting in the region and within the project area. Mitigation measures identified in this EA have been developed to avoid, minimize, rectify or reduce the project's potential adverse environmental impacts. Mitigation measures have been considered throughout the project's planning process and incorporated into the project's design and construction plans.

The information about existing conditions, potential project impacts and potential mitigation measures presented in this Chapter has been developed through the review and use of existing information related to the project area.

Since the subject property is State-owned land that is part of the Diamond Head State Monument and a Master Plan and EIS have been prepared for the Monument, much of the information in this environmental assessment is take from those two documents, including their associated environmental and other studies.

4.1 Introduction

Each section in this Chapter discusses:

(a) Environmental Setting - current conditions and/or management practices in the project area related to the specific environmental subject,
(b) Potential Environmental Impacts and Mitigation Measures - the project's potential long-term operation phase impacts related to the specific environmental subject, and the potential mitigation measures that could be implemented by the project to avoid, minimize, rectify, or reduce potential substantial adverse environmental impacts, and
(c) Level of Impact after Mitigation - the project's relative potential impact that will remain after the potential mitigation measures are implemented.

4.1.1 Environmental Setting

"Environmental Setting" describes the existing environmental conditions in the project area and the region as it currently exists, before the commencement of the project. This provides a baseline for comparing "before the project" and "after the project" environmental conditions.

4.1.2 Potential Environmental Impacts & Mitigation Measures

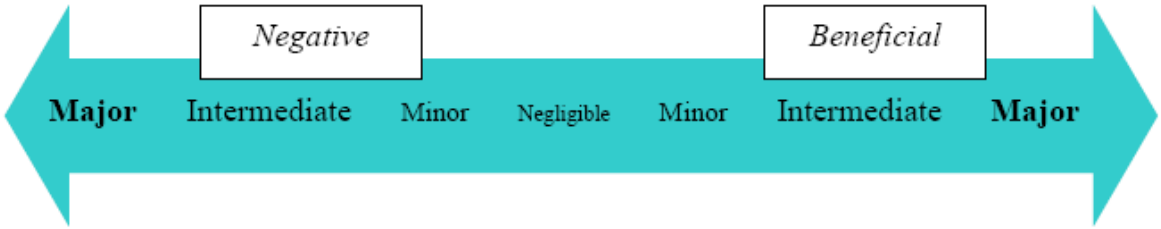
Potential environmental impacts are assessed through thresholds used to determine level of impact. "Thresholds Used to Determine Level of Impact" defines and lists specific criteria used to determine whether an impact is considered to be potentially significant.

Hawai'i Administrative Rules (HAR) Section 11-200-12 provides 13 "significance criteria" against which an action is to evaluate its potential impact. These criteria are:

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.
2. Curtails the range of beneficial uses of the environment.

3. Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.
4. Substantially affects the economic welfare, social welfare and cultural practices of the community or State.
5. Substantially affects public health.
6. Involves substantial secondary impacts, such as population changes or effects on public facilities.
7. Involves a substantial degradation of environmental quality.
8. Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.
9. Substantially affects a rare, threatened or endangered species, or its habitat.
10. Detrimentally affects air or water quality or ambient noise levels.
11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water or coastal waters.
12. Substantially affects scenic vistas and view planes identified in County or State plans or studies.
13. Requires substantial energy consumption.

Effects were assessed for scope, scale and intensity of impacts to resources. Effects may be identified further as beneficial or negative, as well as short-term and long-term. Scope, scale and intensity can be defined on a range from negligible to major.



(Graphic: Pacific Southwest Research Station-Institute of Pacific Islands Forestry, 2009)

- **Negligible:** Resources will not be affected, or the effects will be at or near the lowest level of detection. Resource conditions will not change or will be so slight there will not be any measurable or perceptible consequence to a population, wildlife or plant community, public use and access opportunity, visitor experience, or cultural resource;

- **Minor:** Effects will be detectable but localized, small, and of little consequence to a population, wildlife or plant community, public use and access opportunity, visitor experience, or cultural resource. Mitigation, if needed to offset negative effects, will be easily implemented and likely to be successful;

- **Intermediate:** Effects will be readily detectable and localized with consequences to a population, wildlife or plant community, public use and access opportunity, visitor experience, or cultural resource. Mitigation measures will be needed to offset negative effects and will be extensive, moderately complicated to implement, and probably successful;

- **Major:** Effects will be obvious and will result in substantial consequences to a local area or regional population, wildlife or plant community, public use and access opportunity, visitor experience, or cultural resource. Extensive mitigating measures may be needed to offset negative effects and will be large-scale, very complicated to implement and may not have any guarantee of success. In some instances, major effects will include the irretrievable loss of the resource.

Time scales are defined as either short-term or long-term:

- **Short-term or Temporary:** An effect that generally will last less than a year or season;
- **Long-term:** A change in a resource or its condition that will last longer than a single year or season.

The thresholds established correspond to the above criteria and other environmental laws. Each section of this EA presents a significance threshold for its specific environmental subject; should the project potentially cause an impact greater than the identified threshold then the potential impact will be considered to be significant.

"Mitigation Measures" identifies project-specific measures that may be needed that go beyond compliance with applicable existing rules, regulations and requirements, to reduce a potentially significant impact, as applicable. The compliance with existing applicable rules, regulations and requirements is considered a part of the existing regulatory environment, and is described above.

The mitigation measures identified in this EA have been developed to avoid, minimize, rectify or reduce the project's potential adverse environmental impacts. Mitigation measures have been considered throughout the project's planning process and will be incorporated into the project design and construction plans. Project mitigation measures are identified and detailed in subsection 4 of sections 4.2 through 4.18.

4.1.3 Level of Impact after Mitigation

"Level of Impact after Mitigation" indicates what effect remains after application of mitigation measures, and whether the remaining effect will be considered to be significant, or not.

4.1.4 Potential Project Impacts in Context with Applicable Requirements & Mitigation Measures

The potential impacts are evaluated within the framework of the project's compliance with all applicable rules, regulations and requirements for its action type and location. The existing rules, regulations, requirements and procedures applicable to the project are considered a part of the existing regulatory environment.

Rules, regulations and requirements which may be applicable include:

- Hawai'i Administrative Rules (HAR), including (but not limited to):
    - Title 11, Chapter 23, Underground Injection Control
    - Title 11, Chapter 45, Community Noise Control
    - Title 11, Chapter 54, Water Quality Standards
    - Title 11, Chapter 55, Water Pollution Control
    - Title 11, Chapter 60, Air Pollution Control

- Title 11, Chapter 62, Wastewater Systems
- Title 11, Chapter 68, Litter Control
- Title 11, Chapter 200, Environmental Impact Statement Rules
- Title 11, Chapter 260, Hazardous Waste Management General Provisions
- Title 11, Chapter 262, Standards Applicable to Generators of Hazardous Waste
- Title 13, Subtitle 5, Chapter 107, Threatened and Endangered Plants
- Title 13, Subtitle 5, Chapter 124, Indigenous Wildlife, Endangered and Threatened Wildlife and Introduced Wild Birds
- Title 13, Subtitle 13, Chapter 275-284, Historic Preservation Review Process
- Title 13, Subtitle 13, Chapter 300, Burial Sites and Human Remains

- Hawaiʻi Revised Statutes (HRS), including (but not limited to):
  - Chapter 6E, Historic Preservation
  - Chapter 195D, Conservation of Aquatic Life, Wildlife and Land Plants
  - Chapter 205, State Land Use Law
  - Chapter 205A, Coastal Zone Management Act
  - Chapter 226, Hawaiʻi State Planning Act
  - Chapter 342D, Water Pollution Law
  - Chapter 342J, Hawaiʻi Hazardous Waste Law
  - Chapter 343, Environmental Impact Statements
  - Chapter 344, Hawaiʻi State Environmental Policy

- City & County of Honolulu ordinances, rules and requirements, including (but not limited to):
  - Long range planning documents, including the General Plan
  - Building and Planning Codes

4.2 Archaeological, Historic and Cultural Resources

This section discusses the cultural, archaeological and historic resources in the region and specific project area, the potential impact of the project on those resources and mitigation measures the project will employ to minimize those potential impacts.

4.2.1 Environmental Setting

During ancient times, various land divisions were used to divide and identify areas of control. Islands were divided into moku (district;) moku were divided into ahupuaʻa. The Island of Oʻahu had six moku: Kona, Koʻolaupoko, Koʻolauloa, Waiʻanae, ʻEwa and Waialua.

The moku of Waialua is a large area of approximately 78-square miles and includes fourteen ahupuaʻa and stretches from Kaʻena Point to Kāpaeloa (just before Waimea.) With its extensive cultivated fields of kalo (taro,) it was considered the ʻpoi bowlʼ of the island. (Alameida)

When Captain Cook first spotted the Islands in January 1778, “The ship was first sighted from Waialua and Waiʻanae sailing for the north. It anchored at night at Waimea, Kauaʻi, that place being nearest at hand.” (Kamakau)

Later, after Cook's death at Kealakekua, on Hawaiʻi Island, the remaining crew of the ship Resolution, with Clerke in command, sailed toward Oʻahu during the afternoon of Wednesday, February 24, 1779. On Saturday, the northeastern end of the island of Oʻahu came into view.

Sailing around Kahuku, the ship entered Waimea Bay (adjoining Waialua,) Clerke remarked, "I stood into a Bay to the (Westward) of this point the Eastern Shore of which was far the most beautifull Country we have yet seen among these Isles, here was a fine expanse of Low Land bounteously cloath'd with Verdure, on which were situate many large Villages and extensive plantations; at the Water side it terminated in a fine sloping, sand Beach."

James King, later commander of the ship Discovery after August 1779, also wrote that this northernt end of Oʻahu "was by far the most beautiful country of any in the Group. ... the Valleys look'd exceedingly pleasant ... charmed with the narrow border full of villages, & the Moderate hills that rose behind them. ...." (Alameida)

In 1813, Waialua was described by John Whitman, an early visitor noted a similar description, "…a large district on the NE extremity of the island, embracing a large quantity of taro land, many excellent fishing grounds and several large fish ponds one of which deserves particular notice for its size and the labour bestowed in building the wall which encloses it." (Cultural Surveys)

He described the fishpond (ʻUkoʻa) as "about one mile in length and extends from the southern part of a small bay to a point of land jutting out about one mile into the sea." This certainly indicated that its size supported a large population. Whitman continued, "Walking over the wall we passed several gates of strong wicker work through which the water had free passage. Here we observed thousands of fish some of which were apparently three feet long."

Later (1826,) Levi Chamberlain noted, "The whole district of Waialua is spread out before the eye with its cluster of settlements, straggling houses, scattering trees, cultivated plats & growing in broad perspectives the wide extending ocean tossing its restless waves and throwing in its white foaming billows fringing the shores all along the whole extent of the district." (Cultural Surveys)

"The scenery on the other hand is no less beautiful and grand, the mountains are seen rising with various elevations, some piercing the clouds which envelope their summits, some covered with wood, others green with shrubs and grass, among the ridges are seen deep ravines, prominent fronts, inaccessible cliffs, weather beaten moss covered steeps." (Chamberlain, 1826)

In addition, Waialua was a favorite place for leisure by the aliʻi of Oʻahu. Kaʻahumanu visited Waialua with Hiram Bingham during the time that the conversion to Christianity was the primary mission of the American missionaries. Kamehameha III visited a number of times and Liliʻuokalani had a summer home in Haleʻiwa (the present Liliʻuokalani Church was named for her.)

In 1832, missionary Ephraim Walter Clark reported to the Reverend Rufus Anderson, secretary of the American Board of Commissioners for Foreign Missions (ABCFM), that, "Waialua on the eastern part of the island is a populous region. A mission can be located at a central point in this vicinity, (and) by preaching at different places that are within 5 or 6 miles of each other & of easy access, (we) would probably have 3,000 or 4,000 bearers (followers.)"

The central plateau of the island falls primarily within the Waianae district, with the northern area of Oʻahu in Waialua district and the southern area in Ewa district.

A significant portion of the central plateau is under Army jurisdiction: Schofield Barracks (headquarters and training areas), Wheeler Army Airfield, Helemano Military Reservation, Kipapa and Waikakalaua Ammunition Storage sites and Kunia Field Station.

Army use of land closer to the shore began in 1922 with the establishment of Camp Kawaihāpai as a communications station. In the 1920s and 1930s, the site was also used as a deployment site for mobile coast artillery, which was transported by railroad.

The US government acquired about 105-acres from Walter F. Dillingham, whose father, Benjamin F. Dillingham, had built Oʻahu Railway & Land Co.

The military was looking for a site for an airfield. The area was originally called Kawaihāpai Military Reservation in 1927. By December 7, 1941, a fighter airstrip had been established on additional leased land and Mokuleʻia Airstrip had been established.

P-40 aircraft were deployed at North Shore airstrips at Kahuku, Haleiwa and Mokuleʻia when the Pearl Harbor attack took place. At the outbreak of World War II, the area was re-designated Mokuleʻia Airfield and was expanded to accommodate bombers.

Mokuleʻia Airfield was improved to a 9,000-foot by 75-foot paved runway, a crosswind runway and many aircraft revetments from 1942-1945. By the end of World War II, Mokuleʻia Airfield could handle B-29 bombers.

In 1946, the U.S. Army acquired the additional 583 acres of leased land by condemnation. In late 1946, the US Army Air Force became the US Air Force by order of President Truman, so Mokuleʻia Airfield became an Air Force installation.

In 1948, the airfield was inactivated and the area was renamed Dillingham Air Force Base in memory of Captain Henry Gaylord Dillingham, a B-29 pilot who was killed in action in Kawasaki, Japan, July 25, 1945.

Captain Dillingham was the son of Walter F. Dillingham who was a noted pilot on Oʻahu in the 1930s. Henry was also the grandson of Benjamin F. Dillingham (who founded the OR&L, which evolved into Hawaiian Dredging Company and the Dillingham Corporation.)

In the 1970s the state had examined the airfield's potential as a reliever airport. The Defense Authorization Act of 1990 provided that the 67 acres of ceded land of old Camp Kawaihapai be transferred to the state after an agreement on future joint-use of the airfield was reached.

The 2001 Legislature passed Act 276 (effective in 2005) that changed the official name of the airfield located at Kawaihāpai, formerly known as Dillingham Airfield, to Kawaihāpai Airfield (although some still refer to it today as Dillingham.)

It serves as a public and military use airport, operated by the Hawaiʻi Department of Transportation. The airport is primarily used for gliding and sky diving operations. Military operations consist largely of night operations for night vision device training.

Over time, much of the coastal area became developed with residential improvements along and near the shoreline. The subject properties are part of that development (initiated in the 1960s.) The properties are residential lots that were built on over 50-years ago.

During the recent high wave events that undermined the seawall and removed large portions of the back yard of the property no historical or cultural features or human remains were exposed.

4.2.2 Potential Environmental Impacts & Mitigation Measures

The parcels were used for agriculture before being developed and landscaped in the mid 1960s, and over the decades of use, no human remains or artifacts have been found. The recent wall failure removed a significant portion of the back yard. Therefore it is very unlikely that any historic, archaeological, or cultural resources exist on the property or that any will be impacted by the proposed action.

If evidence of any archaeological or culturally significant sites is encountered, work will be terminated and DLNR-SHPD and OHA will be promptly notified.

4.2.3 Level of Impact after Mitigation

There are no known traditional resources or cultural practices associated with this area. The adjoining property owner will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites.

If in the unlikely event that any human remains or other significant subsurface deposits are encountered during the course of development activities, all work in the immediate area will stop and DLNR's State Historic Preservation Division and OHA will be promptly notified.

In consideration of the above, because the proposed actions do not affect any known historic property within the area, the actions will not result in the loss or destruction of any archaeological/historic resource. Therefore, the proposed actions will have a less than significant impact on Hawaiian archeological, historic sites or cultural practices, or its traditions.

4.3 Biological Resources

This section discusses the biological resources (flora and fauna) in the region and in project area, the potential impacts of the project on those resources and mitigation measures the project will take to mitigate those potential impacts.

4.3.1 Environmental Setting

The subject property was constructed on in the early-1960s with residential and related improvements. Over the years, shoreline erosion removed approximately 30% of the property. The footprint of the house and related improvements leaves little remaining room on the property.

The extent of vegetation is consistent throughout the small cluster of homes on Hoʻomana Place. Vegetation is limited to introduced grasses, shrubs and trees.

There are no known terrestrial or aquatic species currently proposed or listed as threatened or endangered under either the federal or state of Hawaiʻi endangered species statutes were documented on the subject property.

4.3.2 Potential Environmental Impacts & Mitigation Measures

There are no known species currently proposed or listed as threatened or endangered under either the federal or state of Hawaiʻi endangered species statutes were documented on the subject property.

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

4.3.3 Level of Impact after Mitigation

There are no known terrestrial or aquatic species currently proposed or listed as threatened or endangered under either the federal or state of Hawaiʻi endangered species statutes were documented on the subject property.

There is no federally delineated Critical Habitat for any species present on or adjacent to the project area. Thus, the proposed actions will not result in impacts to federally designated Critical Habitat. There is no equivalent statute under State law. The project will not have a significant impact on any botanical or biological resources.

4.4 Visual & Aesthetic Resources

This section describes the existing visual, vista and viewplane conditions on within the project area, discusses the visual impacts the project may have, and identifies how the project mitigates its potential visual impacts.

4.4.1 Environmental Setting

The subject property is part of a small cluster of homes on Hoʻomana Place. Due to vegetation and/or coastal construction, there are very few ocean views along Farrington Highway; however, there are mauka views of the Waianae range.

4.4.2 Potential Environmental Impact & Mitigation Measures

The seawall will result in no changes to the viewshed and no significant impacts to the visual resources of the area.

4.4.3 Level of Impact after Mitigation

The proposed actions and changes will have limited effect on the overall visual and aesthetic nature of the area. Therefore, the level of the visual impact will be less than significant.

4.5 Geology, Soils & Slope Stability

This section discusses the geology, soils and slope stability in the region and site area, the potential impact of the project on those characteristics, and mitigation measures project will employ to mitigate those potential impacts.

4.5.1 Environmental Setting

The soils for the subject property are of the Jaucas sand series. Slopes range from 0 to 25 percent and the permeability is moderate to rapid. Runoff is considered to be very slow to medium and the erosion hazard is slight to moderate. (Analytical)

4.5.2 Potential Environmental Impacts & Mitigation Measures

Applicable law will be followed to minimize soil movement, erosion and compaction during all project actions.

4.5.3 Level of Impact after Mitigation

The mitigation measures proposed will further reduce the level of impact to geologic resources, which is considered less than significant without any mitigation.

4.6 Water Resources & Wastewater

This section discusses the water resources and wastewater management practices in the region and in the subject property area and the potential impacts of the project on those resources, and mitigation measures the project will employ to mitigate those potential impacts.

4.6.1 Environmental Setting

The proposed actions will not include any additional water or wastewater demands or uses.

4.6.2 Potential Environmental Impact & Mitigation Measures

There are no water or wastewater facilities demands associated with the proposed actions.

4.6.3 Level of Impact after Mitigation

The proposed actions will have limited effect on the overall water and wastewater demands. Therefore, the level of the impact will be less than significant.

4.7 Solid Waste & Material Management

This section discusses the solid waste and materials management practices within the project area and potential impacts of the project on those practices.

4.7.1 Environmental Setting

The proposed actions will not include any additional solid waste or material management demands or uses.

4.7.2 Potential Environmental Impact & Mitigation Measures

Plant material will be put into the green-waste recycling stream operated by the City and County of Honolulu.

4.7.3 Level of Impact after Mitigation

Compliance with existing regulations and requirements and the implementation of the mitigation measures proposed above, will ensure that the project will have a less than significant impact in regards to solid waste management.

4.8 Socioeconomic Conditions & Public Service Facilities

This section discusses the socioeconomic conditions and public services and facilities in the region and in the project area, and the potential long-term socio-economic impacts of the proposed actions.

4.8.1 Environmental Setting

The proposed actions will not include any additional demands or uses for public services.

4.8.2 Potential Environmental Impact & Mitigation Measures

None of these actions, directly or indirectly relate to increased demands for public services or facilities.

4.8.3 Level of Impact after Mitigation

The proposed actions and changes will have limited effect on the overall public services or facilities demands. Therefore, the level of the impact will be less than significant.

4.9 Traffic

This section discusses the traffic in the region and the specific project area, the potential impacts of the project on traffic, and the mitigation measures Grand View - Hoʻomana Place will employ to mitigate potential impacts.

4.9.1 Environmental Setting

The property is served by Hoʻomana Place, a public road that connects with Farrington Highway.

4.9.2 Potential Environmental Impact & Mitigation Measures

During the reconstruction phase, there will be temporary, nominal increase in trips to and from the property on Hoʻomana Place and Farrington Highway. Work is expected to be conducted between the typical morning and early-evening 'go to work/school' travel times.

4.9.3 Level of Impact after Mitigation

The proposed actions and changes will have limited effect on the overall traffic conditions. Therefore, the level of the impact will be less than significant.

4.10 Power & Communication

This section discusses the electrical power and communications facilities in the region, the potential impact of the project on those facilities, and mitigation measures Grand View - Hoʻomana Place will employ to mitigate potential impacts.

4.10.1 Environmental Setting

There will be no increased electrical or communication demands or uses.

4.10.2 Potential Environmental Impact & Mitigation Measures

Due to the nature of the proposed actions, there is no anticipated increase in electrical and communication demands.

4.10.3 Level of Impact after Mitigation

The proposed actions and changes will have limited effect on the overall electrical and communications conditions. Therefore, the level of the impact will be less than significant.

4.11 Noise

This section discusses the noise conditions in the region and in the project area, the potential impacts of the project on those conditions, and the mitigation measures Grand View - Hoʻomana Place will employ to mitigate those potential impacts.

4.11.1 Environmental Setting

The reconstruction of the seawall will require heavy equipment operations, in order to move/remove rocks and other material.

4.11.2 Potential Environmental Impact & Mitigation Measures

In order to minimize local noise levels, the reconstruction of the seawall will be conducted during the day and will abide by all applicable noise regulations.

4.11.3 Level of Impact after Mitigation

The proposed actions and changes will have temporary, limited effect on the overall noise conditions. Therefore, the level of the impact will be less than significant.

4.12 Climate, Air Quality & Lighting

This section discusses the air quality, climatic, and lighting conditions in the region and specific subject area, the potential impact of the project on those resources, and mitigation measures Grand View - Hoʻomana Place will employ to mitigate potential impacts.

4.12.1 Environmental Setting

There will be no changes to climate or lighting. During the reconstruction phase and use of heavy equipment, there will be temporary changes in air quality due to the exhaust from the equipment.

4.12.2 Potential Environmental Impact & Mitigation Measures

Due to the nature of the proposed actions, there is no anticipated increase in climate or lighting demands. Applicable air quality regulations will be followed to minimize impacts due to the use of heavy equipment.

4.12.3 Level of Impact after Mitigation

The proposed actions and changes will have limited and limited effect on the overall climate, air quality or lighting demands. Therefore, the level of the impact will be less than significant.

4.13 Natural Hazards

This section discusses the natural hazards which may affect the subject property including flooding, hurricanes, volcanic activity, tsunami and earthquakes.

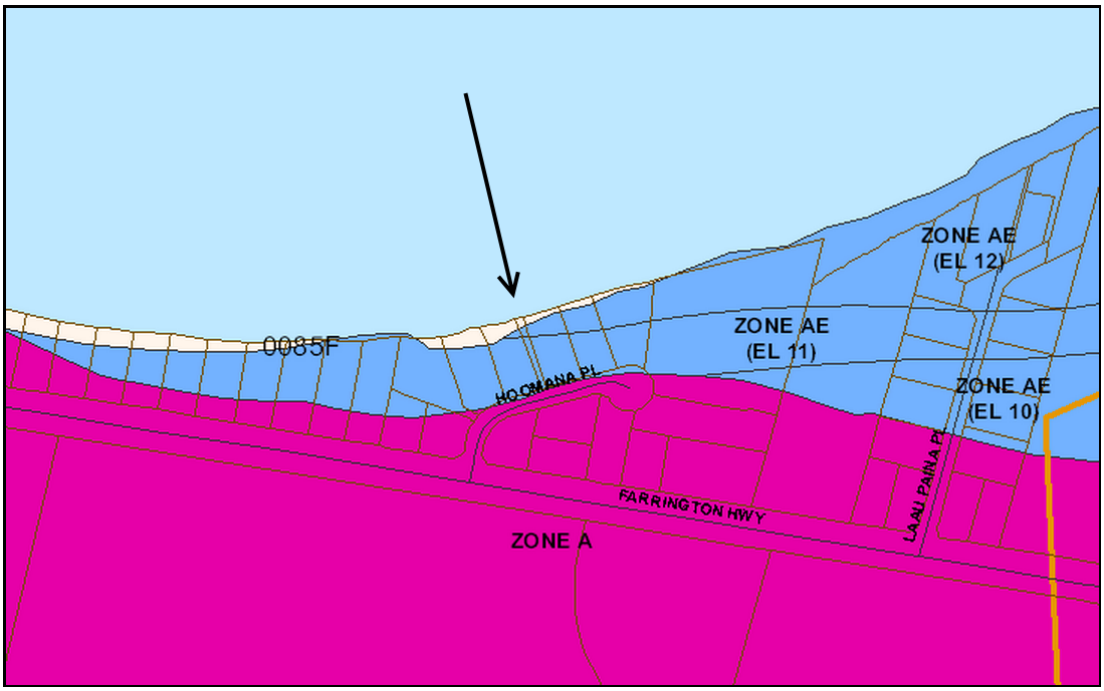
4.13.1 Environmental Setting

Natural hazards are events such as tsunami, earthquakes, floods, hurricanes, soil slippage, and volcanic hazards. The project may be subject to hurricanes and minor earthquakes in the future; however, the site is not unique to these potential hazards.

Earthquakes in the Hawaiian islands are associated with volcanic eruption or tectonic movement. The Diamond Head Crater is not uniquely susceptible to natural hazards, however, the relatively steep slopes and cliffs can pose a hazard to hikers (there are no trails nearby on the Monument.)

Flooding
According to the Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM) Community-Panel No. 15003C0085F and the Hawaiʻi - National Flood Insurance Program (Flood Hazard Assessment Tool,) the project site is mostly located in Zone AE.

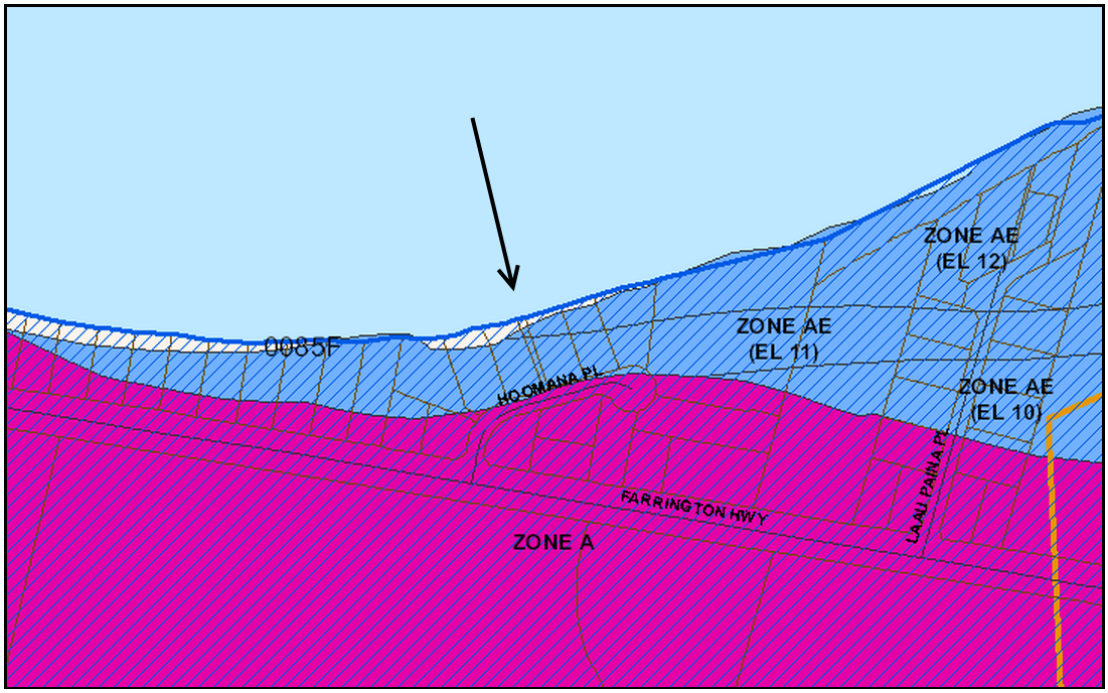
The following map indicates the location of the Subject Site (black arrow:)



FEMA No. 15003C0085F **(Flood Hazard Assessment Tool) - Property is in Zone AE**

Tsunami Evacuation

The subject site, as well as the adjoining private property, is in the tsunami evacuation area, as noted on the Hawai'i - National Flood Insurance Program (Flood Hazard Assessment Tool.)



FEMA No. 15003C0085F **(Flood Hazard Assessment Tool) - Property within the Tsunami Evacuation Zone**

4.13.2 Potential Environmental Impact & Mitigation Measures

Flooding - Tsunami

The project is in Zone AE (High flood risk) and is subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.

FEMA information on AE areas indicates that they are subject t oflooding as indicated above, but they are not subject to high velocity waters, including but not limited to hurricane wave wash or tsunamis.

Waialua-Haleiwa Area – Kiikii, Kaukonahua, Poamoho, Paukauila, Helemano, and Opaeula Streams and the Anahulu River (Regional View)

The Waialua-Haleiwa study area along the northwestern coast of the Island of Oahu contains an area of approximately 96.5 square miles. Mean annual precipitation ranges from 30 inches in the coastal area to over 250 inches in the Koolau Mountains. Waialua and Haleiwa are adjoining communities located 30 road miles northwest of downtown Honolulu. Waialua is primarily a sugar plantation town. Haleiwa evolved from an old Hawaiian settlement to its present-day status as a residential, agricultural, and business community. Business activity consists mainly of service and retail establishments which are located in the older section along Kamehameha Highway. Sugarcane fields and small truck farms predominate in the floodplain. Public beaches, beach parks, and a small boat harbor provide most of the residential activities in the area. Within the study area are located the three major streams—Anahulu River, Paukauila Stream, and Kiikii Stream. These three watercourses emerge at Kaiaka and Waialua Bays—Kiikii and Paukauila Streams discharge into Kaiaka Bay and Anahulu River discharges into Waialua Bay. Helemano and Opaeula Streams are tributaries to Paukauila Stream and Poamoho and Kaukonahua Streams are tributaries to Kiikii Stream. (FEMA)

The most recent flood in this area, which claimed three lives and caused considerable damage, occurred on April 19, 1974. At the Helemano Stream gaging station (Stream Gaging Station No. 3430) a record discharge of 18,200 cfs was estimated. Record discharges turned in for three other gaging stations in this area are as follows: 16,300 cfs for Anahulu River near Hakilua (Stream Gaging Station No. 3500), and 6,940 cfs for Poamoho Stream at Waialua (Stream Gaging Station No. 2112). Other large floods in this area occurred on February 28, 1932 (record rainfall flood), February 1935, March and October 1939, February 1956, February 1969 and July 1974. (FEMA)

There are presently no flood-control improvements in this area capable of containing the larger floods. A feasibility study for flood-control improvements is currently in progress for this area. The city also has completed dredging of Paukauila Stream to alleviate the flooding in this area. (FEMA)

4.13.3 Level of Impact after Mitigation

Like other coastal properties, there are inherent flood risks. Reconstruction of the seawall will help to mitigate impacts. It is anticipated that the reconstruction of the seawall will not change the flood potential. If a tsunami or storm surge should approach this part of Oahu's shoreline, flooding can be anticipated.

4.14 Site Preparation & Construction

This section discusses the potential site preparation and construction impacts related to the natural and built environment and the potential mitigation measures that could be employed. Site preparation and construction effects will be temporary.

4.14.1 Potential Environmental Impacts

No unusual site preparation or construction techniques or materials are anticipated.

4.14.2 Mitigation Measures

Removal of some of the material will require machines.

4.14.3 Level of Impact after Mitigation

The proposed actions and changes will be temporary and have limited effect on the overall site conditions. Therefore, the level of the impact will be less than significant.

4.15 Secondary & Cumulative Impacts

The proposed project does not appear to have the potential to involve any significant secondary or cumulative impacts.

4.15.1 Summary of Potential Contribution of the Preferred Alternative to Cumulative Effects

The following chart identifies possible resources that could be impacted individually or cumulatively by the proposed project. The analysis evaluates potential impacts in the context of the existing environment, anticipated uses, compliance with applicable rules, regulations and requirements, and mitigation measures previously identified.

Table 14.15.1 - Summary of Potential Contribution of the Preferred Alternative to Cumulative Effects

Resource Area	Effect	Cumulative Effect
Cultural, Archaeological & Historic	Less than Significant	There are no known Cultural, Archaeological or Historic resources on the site
Biological	Less than Significant	There is no habitat or endangered plants or animals, so the cumulative effect will be less than significant.
Visual & Aesthetic	Less than Significant	Due to the surrounding residential uses and vegetation, the proposed actions and changes will have limited effect on the overall visual and aesthetic nature of the area.
Geology, Soils & Slope Stability	Less than Significant	The proposed actions include the reconstruction of the seawall and removal of some rocks, etc.
Water Resources & Wastewater	Less than Significant	There are no water or wastewater facilities demands associated with the proposed actions.

Resource Area	Effect	Cumulative Effect
Solid Waste & Material Management	Less than Significant	There are no significant solid waste or material management demands associated with the proposed actions.
Socioeconomic Conditions & Public Service Facilities	Less than Significant & Beneficial	None of these actions, directly or indirectly relate to increased demands for public services or facilities.
Power & Communications	Less than Significant	The projects energy consumption and communication needs will have a less than significant cumulative impact.
Climate, Air Quality & Lighting	Less than Significant	Due to the nature of the proposed actions, there is no anticipated increase in climate, air quality or lighting demands.
Traffic	Less than Significant	Due to the limited size of the project area, the proposed actions and changes will have limited effect on the overall traffic conditions.
Noise	Less than Significant	Reconstruction will require machines. However, it is anticipated that the sound associated with the proposed actions will be temporary.
Natural Hazards	None	Like other coastal properties, there are inherent flood risks. Reconstruction of the seawall will help to mitigate impacts. It is anticipated that the reconstruction of the seawall will not change the flood potential. If a tsunami or storm surge should approach this part of Oahu's shoreline, flooding can be anticipated.
Site Preparation & Construction	Less than Significant	Due to the limited size of the project area, the proposed actions and changes will have limited effect on the overall site conditions.

4.15.2 Irreversible & Irretrievable Commitments of Resources

There were no major changes to the existing topographical and vegetation condition and no expansion or changes in use of the subject area beyond that previously existing.

The reconstruction of the seawall will be consistent with existing shoreline hardening in this area.

4.15.3 Conclusion

Implementation of the proposed action will not result in significant impacts that will not be able to be mitigated to any environmental resource area. Therefore, the proposed actions will not result in significant cumulative impacts.

Chapter 5 – Laws, Regulations, Land Use Plans & Policies

This chapter discusses laws, regulations, land use plans and policies on the County, State and Federal level in relation to the proposed actions.

In 2013, the North Shore of Oahu experienced extremely high, unprecedented surf conditions which caused severe damage to numerous shoreline properties, including the two parcels owned by Grand View. The surf conditions, which included waves that came in as far and as high as the rooftops of the homes on Dean's parcels, caused water to rush up the right-of-way between Grand View's properties and cause a drop in sand level in the easement by approximately twelve feet.

The destruction of the right-of-way occurred suddenly and without warning and severely undermined the walls on Dean's parcels which lie adjacent to the right-of-way, causing severe damage to those walls and ultimately, sinkholes and the collapse of Dean's property towards the Ocean.

Left with nowhere to turn, Grand View was forced to take matters into his own hands, and reinforced the right of way himself with lumber in order to keep the adjacent walls from collapsing. In order to protect anyone using the right of way from being injured by the steep drop caused by the wave action as well as the possibility of being buried by the collapsing adjacent walls.

At the peak of the damage, the retaining wall facing the ocean on Parcel 13 began to lean towards the ocean at a 45 degree angle, which caused the property's back yard to literally split in half and fall towards the ocean, into the water.

At that point, with no other choice but to shore up Parcel 13's retaining wall by placing large boulders in front of the wall and solidifying their position with cement in order to save his property and keep the wall and yard from completely cracking off and falling into the ocean. Boulders were also placed in a straight line spanning across the right-of-way and Parcel 11 in order to break up the large surf and prevent the certain collapse of the City's right of way that was in turn causing his properties to fall into the sea.

In January and February of 2014, Mr. Hanzawa was still in the process of repairing his properties and shoring up the wall at Parcel 13. At that time, DLNR's OCCL observed the work being conducted along the shoreline. In February of 2014, Mr. Sam Lemmo of the OCCL came out to the property when the reinforced wall at Parcel 13 was being constructed (and was about 80% finished).

Notices of violation were issued and the matter was heard and deferred by the Board of Land and Natural Resources on April 25, 2014 and November 14, 2014. The matter was deferred to allow the landowner to seek a cooperative resolution with appropriate governmental agencies on this matter (it was noted that several after-the-fact permits and encroachment easements have been issued to several nearby and neighboring properties.)

The purpose of the EA is to inform the relevant county, state and federal agencies and the public of the likely environmental consequences of resolving the issues with the appropriate governmental agencies and applying/receiving after-the-fact permits from each.

The following sections examine the projects, applicability with various land use plans and policies.

5.1 City & County of Honolulu

The land owner will be processing an application for an after-the-fact Shoreline Setback Variance. Several of the respective actions noted in this Environmental Assessment deal with different scales of what additional work will be conducted, as well as what ultimately will remain.

This EA covers all of these scenarios, and the application for the after-the-fact variance considers that the remaining structures be approved as 'minor structures' under Chapter 23, section 15-1(b)(8).

5.1.1 Shoreline Setback Variance

The property owner will suffer hardship if the Shoreline Setback Variance for the proposed seawall is not granted and if the seawall has to be removed. This application for such a variance fulfills the three criteria for hardship as set forth in ROH Sect. 23-1.8 (3).

(A) A variance may be granted for an activity or structure that is necessary or ancillary to the following private facilities or improvements, if hardship will result to the applicant if the facilities or improvements are not allowed within the shoreline area

ii. Private facilities or improvements that may artificially fix the shoreline, but only if hardship is likely to be caused by shoreline erosion and conditions are imposed prohibiting any such structure seaward of the existing shoreline unless it is clearly in the public interest.

Construction of the original seawalls in the late-1960 or early 1970 may have prevented the erosion of coastal land behind the shoreline structures. Allowing the applicant's seawall to remain in place prevents property losses due to erosion and wave damage; however, the structures may be impounding a substrate beach quality sand that would naturally nourish a healthy beach.

Removal of the existing seawall would not release enough sand to restore a beach in an area where the entire shoreline has been armored and would hasten erosion of the applicant's parcel Areas behind existing shoreline structures on adjacent properties may eventually erode if the applicant's seawalls are completely removed.

Maintaining status quo by allowing the applicant's existing shoreline protection structure to remain in place is not expected to create any new significant adverse impact on littoral processes along the shoreline.

(B) A structure or activity may be granted a variance upon grounds of Hardship if:

i. The applicant would be deprived of reasonable use of the land if required to comply with the shoreline setback ordinance and the shoreline setback rules.

It is obvious that removing the seawall at this time, without replacing it with another significant shore protection structure will result in catastrophic damage to the existing dwellings on the properties. Removal of the existing seawall with no retaining structure to support the foundation of the dwelling will lead to substantial structural damage to

the dwelling as the shoreline embankment collapses and is eroded by winter storm waves.

Almost all of the residential properties along this coastline are protected with similar structures to prevent the effects of shoreline erosion and wave damage that would otherwise occur due to North Pacific swell events.

Previous erosion from wave action had already substantially diminished the property area prior to construction of the shoreline protection structure. It is reasonable to assume that property losses will occur if the applicant is required to remove the illegal seawall structures.

Granting the Shoreline Setback Variance is the means for legalizing the existing seawall under ROH Chapter 23 and would provide a means for the owner to legally repair the wall should a severe storm event undermine and collapse an unconsolidated shoreline, thereby creating a public hazard on the beach. Any other action would deprive the applicant of reasonable use of ills property.

ii. The applicant's proposal is due to unique circumstances and does not draw into question the reasonableness of this chapter and the shoreline setback rules

Numerous studies indicate that the Mokuleʻia coastline has been undergoing coastal erosion for many years. This variance request is based up on the fact that significant long-term erosion is occurring at this section of Mokuleʻia Beach. Most of the property owners along this section of the coastline have erected seawalls to protect their property and houses from erosion. Many of those seawalls have received government permits and approvals. The reason for this request is the property's unique location along a well-documented eroding shoreline.

Chapter 23 allows shoreline protection structures that have received a shoreline setback variance on the basis that the structure does not adversely affect beach processes, public access along the shoreline or shoreline open space. Retreat of the shoreline along this stretch of coast has been in existence prior to the building of the first seawall; and, would most likely continue without the shoreline protection structure.

People can transit the area fronting the walls for recreational purposes at low tide and the open space and view planes are not impacted by the existence of the seawall. It is also a policy of Chapter 23 to reduce hazards to property from coastal flooding and retreat of the shoreline.

It is reasonable to allow the wall to remain and to allow it to be repaired as needed in accordance with government regulations.

iii. The proposal is the practicable alternative that conforms best to the purpose of the shoreline setback regulations

To demolish and reconstruct the wall would unduly impact beach processes and beach restoration is beyond the scope of a single landowner. Legalization of the existing

shoreline protection structure, so that it can be repaired as necessary, is the best alternative given the history of erosion and wave action for this portion of the north shore of O‘ahu.

(C) Before granting a hardship variance, the director must determine that the applicant’s proposal is a reasonable use of the land. Because of the dynamic nature of the shoreline environment, inappropriate development may easily pose a risk to individuals or to the public health and safety. For this reason, the determination of the reasonableness of the use of land should properly consider factors such as shoreline conditions, erosion, surf and flood conditions and the geography of the lot.

The seawall is functionally consistent with adjacent and nearby existing seawalls along this section of the Mokule‘ia Coastline.

Along the north coast, from Ka‘ena point to Mokule‘ia, broad intertidal and subtidal wave-abrasion platforms are carved into Waimanalo-age limestone, reflecting the long history of large wave activity along this shoreline. A low-lying platform of fossil reef rock is elevated 3 to 6 feet above msl and extends from Mokule‘ia to within 0.5 miles of Ka‘ena point. The Atlas of Natural Hazards in the Hawaiian Coastal Zone gave a high hazard rating to most of this area, where the coastal slope is low and continued erosion is rapidly removing the sand from the beaches.

This North Shore coast, particularly the Mokule‘ia Beach area, is suffering from long-term erosion. The area is exposed to winter North Pacific swell and the predominant trade wind waves. Shallow fringing reef flats protect the shoreline from moderate trade wind wave energy. During the winter, large North Pacific swell conditions and high water levels contribute to wave run-up and overtopping of the beach, causing erosion damage and flooding to unprotected backshore areas and dwellings

(D) Hardship shall not be determined as a result of a zone change, plan review use approval, subdivision approval, cluster housing approval, planned development housing approval, conditional use permit, or any other discretionary land use permit granted after June 16, 1989.

The subject property is not affected by any government approved change or any discretionary land use permit.

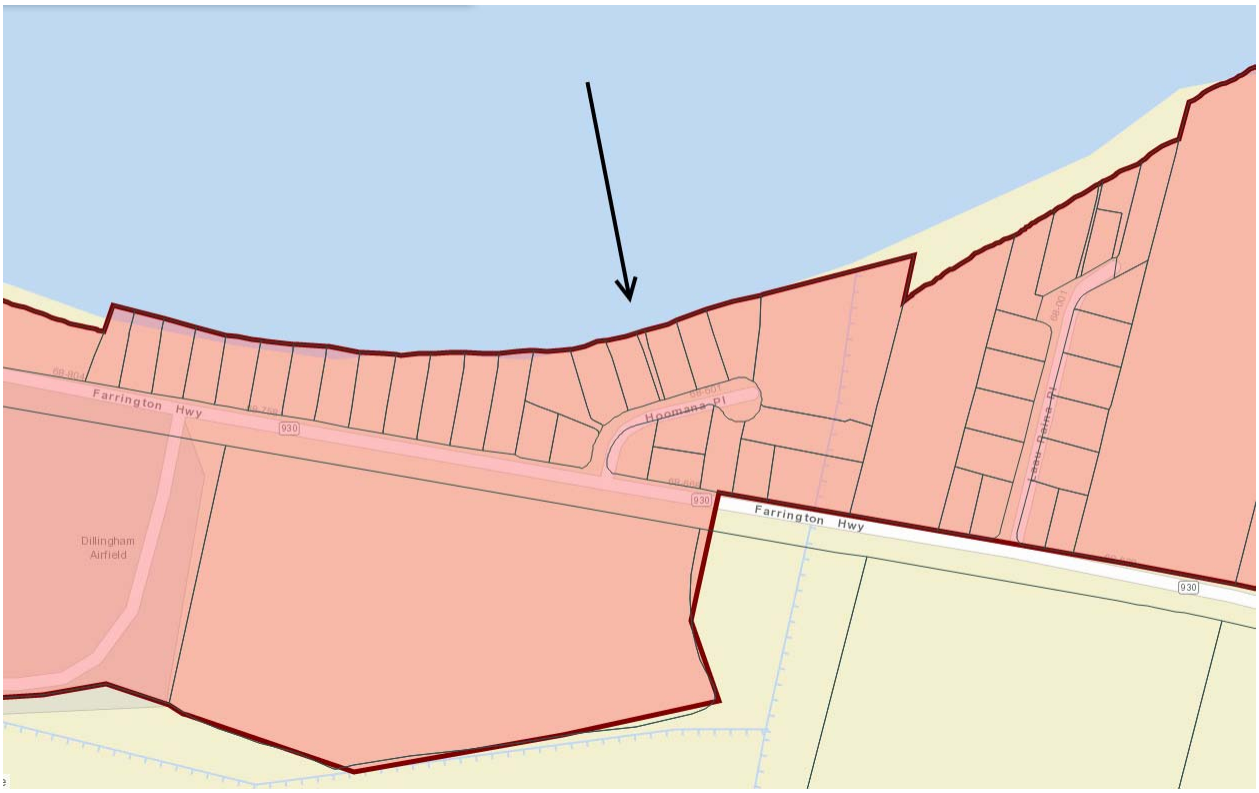
The following passage from the Hawaii Coastal Erosion Management Plan (COEMAP) aptly sums up the situation:

“Along residential shorelines, as in many neighborhoods around the nation, the focus is on day-to-day activities of families and hard-working individuals from all walks of life. Coastal lands are all the more valuable in light of the limited buildable land area and restricted resources of our island home. Not only residences, but roadways, sewage lines and treatment plants, harbors, airports, commercial facilities and all manner of public infrastructure may be found along our shores. To simply let our coastal investments and human efforts wash into the sea would not be a rational management decision”.

5.2 State of Hawai‘i

5.2.1 Coastal Zone Management Act, HRS Chapter 205A

The Office of Planning (OP) administers Hawai‘i Revised Statutes (HRS) Chapter 205A, the Coastal Zone Management (CZM) law. The purpose of HRS Chapter 205A is to “provide for the effective management, beneficial use, protection, and development of the Coastal Zone.” Special Management Area (SMA) permitting system is part of the CZM Program approved by Federal and State agencies.



Hawaii Special Management Area Locator Map - areas shaded in RED are within the SMA

The Coastal Zone Management Area as defined in Chapter 205A, HRS, includes all the lands of the State. As such, the proposed activities lie within the Coastal Zone Management Area. The City & County’s SMA extends from Farrington Highway to the ocean; as such the subject properties are within the SMA (as noted in the map above.)

The relevant objectives and policies of the Hawai‘i Coastal Zone Management (CZM) Program along with a detailed discussion of how the proposed actions do not conflict with these objectives and policies, is discussed below.

Since parcel :012 is City –owned, an SMA permit is required for actions on that property. Per discussions with City & County Department of Planning and Permitting, actions related to the other properties do not trigger the need for an SMA permit.

Land uses are required to comply with the provisions and guidelines contained in Chapter 205A, Hawaii Revised Statues (HRS), entitled “Coastal Zone Management,” as described below:

- **Recreational resources:** Provide coastal recreational opportunities accessible to the public.

  As noted, part of the proposed actions include restoration of the public access way from Hoʻomana Place to the ocean. In addition, the respective actions include protecting the access way from future high wave events by hardening the shoreline with concrete stairs.

  At the present time the access way is blocked off due to the substantial erosion that previously occurred. A result of the proposed actions will be to make the access way available for use. The remaining wall and revetment will not limit public access to the shoreline.

- **Historic resources:** Protect, preserve and, where desirable, restore those natural and manmade historic prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

  There are no known traditional resources or cultural practices associated with this area. The adjoining property owner will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites.

  If in the unlikely event that any human remains or other significant subsurface deposits are encountered during the course of development activities, all work in the immediate area will stop and DLNR's State Historic Preservation Division and OHA will be promptly notified.

- **Scenic and open space resources:** Protect, preserve and where desirable, restore or improve the quality of coastal scenic and open space resources.

  The subject property is part of a small cluster of homes on Hoʻomana Place. Due to vegetation and/or coastal construction, there are very few ocean views along Farrington Highway; however, there are mauka views of the Waianae range.

  The proposed actions will result in no changes to the viewshed and no significant impacts to the scenic resources of the area.

- **Coastal Ecosystem:** Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

  The seawall and revetment are functionally consistent with adjacent and nearby existing seawalls along this section of the Mokuleʻia Coastline.

  This North Shore coast, particularly the Mokuleʻia Beach area, is suffering from long-term erosion. The area is exposed to winter North Pacific swell and the predominant trade wind waves. Shallow fringing reef flats protect the shoreline from moderate trade wind wave energy.

  During the winter, large North Pacific swell conditions and high water levels contribute to wave run-up and overtopping of the beach, causing erosion damage and flooding to unprotected backshore areas and dwellings.

The project, as planned, does not result in the significant degradation of environmental quality or coastal ecosystems. It will not degrade water quality or impact marine or terrestrial flora and fauna. It will permit landscaping mauka of the wall, improving the visual and aesthetic nature from the shore, and it will remove existing rubble on the beach. The proposed wall will be consistent with all of the protected properties along that portion of the shoreline.

- **Economic Uses:** Provide public or private facilities and improvements important to the State's economy in suitable locations.

  The proposed actions are specifically designed to protect public and private property. Removal of the seawall would result in catastrophic loss of property and improvements. The existing seawall protects the property from further erosion and maintains the owner's beneficial use of the property. Likewise, as part of each of the action alternatives, protection of the City property is included.

- **Coastal Hazards:** Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.

  The proposed and existing seawalls are functionally consistent with adjacent, existing seawalls along this coastal reach. Island coastal areas are subject to tsunami and storm surge. If a tsunami or storm surge should approach this part of Oahu's shoreline, flooding can be anticipated.

  The seawall protects the properties from further erosion and protects both houses from wave energy, wave run-up and overtopping. The existing seawall is not expected to increase the flood hazard for the surrounding properties or the subject properties.

- **Managing development:** Improve the development review process, communication and public participation in the management of coastal resources and hazards.

  Project staff have worked with the Department of Land and Natural Resources and the City and County in developing the best alternatives for addressing reconstruction and management of this area.

- **Public participation:** Stimulate public awareness, education and participation in coastal management.

  The public has had several opportunities to participate through the Land Board meeting process. Additionally, as part of the after-the-fact Shoreline Setback Variance, SMA, CDUA and related processes, there is public notification and opportunity to participate.

- **Beach protection:** Protect beaches for public use and recreation.

  The seawall is functionally consistent with adjacent and nearby existing seawalls along this section of the Mokuleʻia Coastline.

  This North Shore coast, particularly the Mokuleʻia Beach area, is suffering from long-term erosion. The area is exposed to winter North Pacific swell and the predominant trade wind

waves. Shallow fringing reef flats protect the shoreline from moderate trade wind wave energy. During the winter, large North Pacific swell conditions and high water levels contribute to wave run-up and overtopping of the beach, causing erosion damage and flooding to unprotected backshore areas and dwellings.

Removal of the seawall would result in catastrophic loss of property and improvements. The existing seawall protects the property from further erosion and maintains the owner's beneficial use of the property.

Under the respective alternatives, proposed improvements to the City & County property include the after-the-fact seawall/revetment. In addition, stairs to allow the public access to the shoreline and coastal areas are proposed.

It is anticipated that

- **Marine resources:** Promote the protection, use and development of marine and coastal resources to assure their sustainability.

  The shoreline fronting this area is a narrow beach underlain with reef limestone that extends seaward as a variable depth reef platform. This area is exposed to winter North Pacific swell and the predominant tradewind waves. Shallow fringing reefs protect the shoreline from moderate tradewind wave energy.

  However, during large winter swell conditions and high water levels, erosion of the narrow beach and wave run-up and overtopping of the beach cause erosion damage and flooding to unprotected backshore areas and dwellings. Numerous property owners along this coastal reach have constructed shore protection structures to prevent further storm wave run-up damage to their dwellings.

  The seawall is functionally consistent with adjacent and nearby existing seawalls along this section of the Mokuleʻia Coastline and no adverse effects to marine resources is anticipated.

Hawaii laws and City & County of Honolulu (C&C) Ordinances and rules require a Special Management Area (SMA) permit for any "development." Among other things, C&C ordinances note "Development" includes but is not limited to "Construction, reconstruction, demolition or alteration of the size of any structure."

There are exceptions - one is "a single-family residence that is less than 7,500 square feet of floor area and is not part of a larger development". In addition, the ordinance has another way of looking at a use on the property and sets two levels of permitting - 'minor' permits may be issued by the Planning Director (typically for construction that has a value of less than $500,000.)

"Special management area use permit" (what many call a 'major permit') means an action by the authority authorizing development, the valuation of which exceeds $500,000.00 or which may have a substantial adverse environmental or ecological effect, taking into account potential cumulative effects.

The actions covered in this EA are after-the-fact, while minor changes may occur, such as the addition of stairs to allow public access to the shoreline and coastal area. Based on the evaluation of impacts, as

well as the scale of work proposed on the C&C property (the valuation of which is not in excess of $500,000.00 and which has no substantial adverse environmental or ecological effect, taking into account potential cumulative effects,) it appears that a Special Management Area (SMA) Minor permit is required.

5.2.2 Hawai‘i State Plan, HRS Chapter 226

Adopted in 1978 and last revised in 1991, the plan establishes a set of themes, goals, objectives, and policies meant to guide the long term growth and development within the state. The three themes are individual and family self-sufficiency, social and economic mobility, and community and social wellbeing.

The proposed actions do not conflict with the Hawai‘i State Plan objectives.

5.2.3 Environmental Review, HRS Chapter 343 and HAR Section 11-200

HRS Chapter 343, the State of Hawai‘i Environmental Review Law, requires that any proposed use within a conservation district, use of State land or use of State funds be subject to review. The statute and rules establish a system of environmental review and provide that environmental concerns are considered for all proposed actions on State and county lands.

As part of this review, this EA has been prepared to ensure that environmental concerns are given appropriate consideration in decision making, along with economic and technical considerations.

The proposed actions were compared to the criteria outlined in Chapter 343, HRS, as amended, and Title 11, Chapter 200, HAR 1996. Obtaining a Shoreline Setback Variance and the reconstruction of the seawall will have no significant environmental impacts.

5.2.4 State Environmental Policy, HRS Chapter 344

The broad goals of this policy are to conserve natural resources and enhance the quality of life in the State. It encourages productive and enjoyable harmony between people and their environment to promote efforts which will prevent or eliminate damage to the environment and biosphere, stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawai‘i.

Grand View - Ho‘omana Place will abide by the guidelines promulgated by HRS §344-4(1)–(10), including, but not limited to, encouraging management practices which conserve natural resources and encouraging the efficient use of energy resources.

Chapter 6 - Anticipated Determination, With Findings & Reasons Supporting

This environmental assessment has examined the environmental and socio-economic impact associated with Grand View - Hoʻomana Place. Pursuant to Section 11-200-12, HAR, an action shall be determined to have a significant impact on the environment if it meets any one of the following criteria listed below.

The expected determination of the project will be a Finding of No Significant Impact (FONSI).

Every phase of Grand View - Hoʻomana Place, including the expected primary and secondary consequences, short and long term and the cumulative effects were considered.

The analysis reports that Grand View - Hoʻomana Place (formerly known as Kapaʻa Highlands II) will not result in significant environmental impacts to natural and cultural resources on the site or in the immediate area. Public infrastructure including roadways are adequate to serve the project and will not be significantly impacted by Grand View - Hoʻomana Place. Grand View - Hoʻomana Place is in conformance with State and County land use plans and policies including chapter 205A, HRS.

A Finding of No Significant Impact (FONSI) is anticipated, based on Grand View - Hoʻomana Place meeting the following criteria (Chapter 11-200-12, Hawaiʻi Administrative Rules, outlines those factors agencies must consider when determining whether an action has significant effects).

In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action. In most instances, an action shall be determined to have a significant effect on the environment if it:

According to the Department of Health Rules (11-200-12), an applicant or agency must determine whether an action may have a significant impact on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long-term effects. In making the determination, the rules establish "Significant Criteria" to be used as a basis for indentifying whether significant environmental impact will occur.

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

The subject properties lie along an eroded sandy shoreline. The proposed work may include reconstruction of the existing wall and revetment, no additional construction is proposed. The subject properties do not contain any significant flora or fauna. No known cultural resources are located on the properties. No impacts to natural or cultural resources are anticipated due to the proposed action. The application is for an after-the-fact shoreline setback variance and other related approvals to resolve the alleged encroachment onto State property, which involves retention and/or removal of portions of the improvements recently added. There is no irrevocable commitment, loss or destruction of resources.

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

The project does not restrict the range of beneficial uses of the environment. There will be no impacts on fishing or ocean use due to the proposed action. There will be no change in mauka-makai public access, and public access to the shoreline and lateral access will be restored.

The existing seawall configuration and related improvements do not curtail the beneficial use of the environment. The properties are zoned residential and are committed to private residential use. There are numerous other properties with existing seawalls.

Removal of the seawall would result in catastrophic loss of property and improvements. The existing seawall protects the property from further erosion and maintains the owner's beneficial use of the property.

(3) Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 343, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders

Chapter 343, HRS requires environmental assessment for any use within a shoreline area as defined in section 205A-41. It is the policy of Chapter 205A to discourage all shoreline hardening that may affect access to, or the configuration of our island beaches. However, the existing seawall is consistent with the longstanding history of government decisions that approved shore protection structure along this stretch of the Mokuleʻia coastline in order to protect the rights of homeowners.

Numerous nearby and adjacent properties to the west of the applicant's property have all received shoreline setback variance approvals and building permits (1993, 1997 & 2009) for their respective seawalls.

(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. Seawalls in this area have prevented further erosion and loss of land and loss of housing to the community.

(5) Substantially affects public health

As proposed, the project does not impact public health.

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

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

(7) Involves a substantial degradation of environmental quality

The project, as planned, does not result in the significant degradation of environmental quality. It will not degrade water quality or impact marine or terrestrial flora and fauna. It will permit landscaping mauka of the wall, improving the visual and aesthetic nature from the shore, and it will remove existing rubble on the beach. The proposed wall will be consistent with all of the protected properties along that portion of the shoreline.

The existing seawall prevents further erosion of the applicant's properties and therefore minimizes the potential for runoff entering the ocean. The subject seawall ties into seawalls on one side and the proposed stairs on the access way will tie into the existing wall.

Photographs and studies depict the significant loss of shoreline along the Mokuleʻia coast since 1949. The subject properties have lost to erosion approximately 30 percent of their total area. The majority of house lots have vertical seawalls or some form of shore protection along this embayment.

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

As proposed, there are no cumulative adverse effects on the environment or the need for larger actions on the site.

All the residential properties along this embayment experienced loss of 25 - 30% of property lot area due to wave action and erosion prior to construction of the seawalls between 1967-70.

Almost all of the properties in the bay have undergone environmental review in order to obtain after-the-fact shoreline setback variances to legalize the existing seawalls. There has been no determination of significant cumulative impact by the approving government agency.

The process of obtaining the after-the-fact shoreline setback variance for the subject property will not result in any significant cumulative impact and does not involve a commitment for larger actions.

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

The subject properties have been previously disturbed and developed when the single family residences and improvements were constructed. As proposed, the project does not impact any rare, threatened, or endangered species or its habitat. There are no rare or endangered species or habitat for such species on the parcel or in the area.

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

As proposed, the project does not have any adverse impacts on air and water quality. There may, however, be a temporary rise in noise levels. All construction material will be free of contaminants and pollutants. Best Management Practices will be followed during construction, to minimize environmental pollution and damage.

(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 waters

The proposed and existing seawalls are functionally consistent with adjacent, existing seawalls along this coastal reach. Island coastal areas are subject to tsunami and storm surge. If a tsunami or storm surge should approach this part of Oahu's shoreline, flooding can be anticipated.

The seawall protects the properties from further erosion and protects both houses from wave energy, wave run-up and overtopping. The existing seawall is not expected to increase the flood hazard for the surrounding properties or the subject properties.

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

Presently, the shoreline is armored along the coast. These seawalls protect the properties from erosion and provide visual privacy from the beach. Some of the walls are more attractive than others, and there are no inland views from the shoreline.

There are very few ocean views from Farrington Highway, especially in the vicinity of the subject properties.

The replacement of a seawall will result in no changes to the viewshed and no significant impacts to the visual resources of the area. Removing the fallen rocks and the sandbags and constructing a permanent, seawall will improve the viewshed from the shoreline.

(13) Requires substantial energy consumption.

As planned, the proposed action does not require long-term additional consumption of energy.

Summary Conclusion

For the reasons above, Grand View - Hoʻomana Place will not have any significant effect in the context of Chapter 343, Hawaiʻi Revised Statues and section 11-200-12 of the State Administrative Rules.

Chapter 7 - Agency & Public Participation

The scoping process for the Grand View - Hoʻomana Place Environmental Assessment involved a variety of means for input and comments.

7.1 Meetings with Governmental Agencies & Other Entities

April 11, 2014 - Meeting of the Board lf Land and Natural Resources

November 14, 2014 - Meeting of the Board lf Land and Natural Resources

January 12, 2015 - Art Challacombe, Deputy Director of C&C DPP and others at City

February 6, 2015 - Representatives from C&C DPP, DDC, Parks and Corporation Counsel; DLNR OCCL

May 8, 2015 - DLNR-OCCL

June 9, 2015 - DLNR OCCL

August 14, 2015 - Meeting of the Board of Land and Natural Resources

September 24, 2015 - Meeting with C&C Department of Planning & Permitting staff

7.2 Draft EA Recipients

Copies of the Draft Environmental Assessment were sent to the following entities:

Federal
U.S. Army Corps of Engineers
U.S. Department of the Interior, Fish & Wildlife Service

State of Hawaiʻi
Department of Business, Economic Development & Tourism – Office of Planning
Department of Health
Department of Land & Natural Resources
Department of Transportation
Office of Hawaiian Affairs
Waialua Public Library

City & County of Honolulu
Department of Design and Construction
Department of Parks and Recreation
Department of Planning and Permitting

Chapter 8 - List of Preparers

Hoʻokuleana LLC
1539 Kanapuʻu Drive
Kailua, Hawaiʻi 96734
(808) 226-3567
Info@Hookuleana.com
www.Hookuleana.com

Name	Role	Degree/School	Years Experience
Peter T. Young	Project Manager	BBA, University of Hawaiʻi, Mānoa	41
Jennifer Barra	Deputy Project Manager	MURP, University of Hawaiʻi, Mānoa BS, Natural Resources Recreation & Tourism, Colorado State University	13

Chapter 9 – References

2009-06-23-OA-FEA-Sutton-Seawall

2010-02-23-OA-FEA-Dailey-Seawall

EKNA Services Inc Analysis in Immediate Vicinity of Subject Properties (associated with above)

Armoring on Eroding Coasts Leads to Beach Narrowing and Loss on Oahu, Hawaii (2012) (Bradley Romine and Chip Fletcher

Board of Land and Natural Resources Meeting Submittals and Minutes
Amstutz-D-Land-Submittals-D1-08-10-12
Grand_View_Apartments-OCCL-Submittals-K-1-11-14-14
Grand_View_Apartments-OCCL-Submittals-K-2-04-11-14

Engineering Observation and Recommendation, Howard Hanzawa, P.E., March 26, 2015

Engineering Repair and Reconstruction of Damaged Revetment and Seawall; Howard Hanzawa, P.E.; November 5, 2015

Hawaii SMA Locator

NRCS Web Soil Survey

O‘ahu Shoreline Study - Part 2 - Management Strategies (November 1989) (Sea Engineering Inc.)

HB956 Relating To Special Shoreline Encroachment Easements
Carty Chang, DLNR Interim Director, Testimony

SB1125 Relating To Special Shoreline Encroachment Easements

Appendix A

Engineering Observation and Recommendation

Howard Hanzawa, P.E.
March 26, 2015

HOWARD HANZAWA, P.E.
731 Ulaula Way, Wailuku, HI, 96793
(808) 264-9663
Howard.Hanzawa@gmail.com

March 26, 2015

Engineering Observation and Recommendation
Subject: Damaged Sloped Boulder Revetment at TMK 6-8-010:011, and Vertical Retaining/Sea Wall at TMK 6-8-010:013, adjacent to 10' wide Beach Access Parcel at TMK 6-8-010:012, Mokuleia, Oahu, Hawaii

BACKGROUND AND OBSERVATION

Parcels 11 and 13 are residential lots that are owned by Grand View Apartments Inc., which is managed by Mr. Dean Hanzawa, 1428 Clark Place. Wahiawa, Hawaii, 96786. Parcel 12 is a beach access lot that is owned by the City and County of Honolulu.

Parcel 11 had an original land area of 7,836 sf, and has a 1 story single family house on it that was built in 1960. Parcel 13 had an original land area of 7,909 sf and has a 1 story single family house on it that was also built in 1960. Parcels 11 and 13 are adjacent to and on either side of Parcel 12, a 10 foot wide beach access parcel that has an area of 1,312 sf. The neighborhood has lots similar in size to Parcels 11 and 13, with most of the homes built more than 50 years ago. The lots are serviced by a cul-de-sac roadway.

Parcel 13 to the north was protected by an approximately 12 foot high vertical retaining/sea wall facing the ocean that was built more than three decades ago with the exact date of construction unknown. The wall served its purpose by effectively protecting the yard and improvements from ocean wave action over that long period of time.

Parcel 11 to the south originally had an unprotected slope in its back yard. In 1999, this engineer designed a sloped boulder revetment to protect the sandy soil slope. The plans obtained permit approval and the revetment was constructed in the year 2000. The boulder revetment effectively protected the southern parcel for 14 years from ocean wave activity without impact to the parcel or to the beach.

Parcels 11 and 13 are separated by Parcel 12, the 10 foot wide beach access lot owned by the City and County of Honolulu. While Parcel 11 was protected by ocean waves by the 14 year old boulder revetment and Parcel 13 protected by the old seawall, Parcel 12 was not protected at all from the ocean. Parcel 12 had a sandy surface from the roadway all the way to the beach. Parcel 12 did not have any form of protection from wave activity and thus high ocean waves could and ultimately did wash out the ground of Parcel 12.

The owner/manager of adjoining Parcels 11 and 13 was concerned about the unprotected state of Parcel 12 and did call representatives of Hawaii State DLNR and the City and County of Honolulu to request that Parcel 12 be protected from scouring of ocean waves. However nothing was ever done by the governmental agencies.

Both the northern and the southern parcel boundaries had perimeter walls along each side of the beach access parcel. The ground of Parcel 12 was composed of sandy soil which was more or less level with the yards of Parcels 11 and 13.

The retaining/sea wall for Parcel 13 and the sloped boulder revetment for Parcel 11 were designed to protect each respective parcel from erosion of the yards due to ocean wave activity. Parcel 13's wall was designed to retain and counteract the static loads from the pressure of the soil within the yard as well as to protect the parcel from the dynamic loads from wave activity from the ocean. The sloped boulder revetment was designed to cover the existing bank along the back yard and to prevent its erosion by allowing waves to roll up the boulder slope and then to harmlessly flow back down towards the ocean.

Failure of Revetment and Sea Wall

However in late November, 2013, a large storm wave event started to impact and wash out the sand within Parcel 12 since its makai end was not protected. The high wave event was very dynamic and unprecedented in scope and within a matter of days, the waves washed out the sandy soil within the beach access parcel. The subsequent erosion process was quick and severe and it created a trench that was approximately 12 feet deep.

The erosion within Parcel 12 subsequently undermined the side boundary walls along Parcels 11 and 13. Once the two feet deep side wall footings were undermined, the soil within the back yards of the two adjoining parcels along the beach access began to wash out with the wave action. The erosion within the two adjoining parcels became severe due to the action of the waves from the side. Once the soil from the yards of the two parcels were taken out, the flow of the water from each wave action started applying pressure to the vertical retaining wall of Parcel 13 and the sloped revetment of Parcel 11.

These structures were not designed to withstand the dynamic hydraulic pressures from the mauka side. Moreover the soil which provided lateral and vertical support for each structure became non-existent with the washout. The new dynamic hydraulic loads from the mauka side subsequently caused both structures to fail. The vertical retaining wall that had protected Parcel 13 collapsed and severely leaned towards the ocean. The rock revetment for Parcel 11 also lost its structural integrity and the pressure from the water caused the boulders to tumble and fall towards the beach side. The failure of both structures was caused by the wave action and erosion in the beach access which allowed the sea water to enter the back yards of the adjacent parcels. This subsequently undermined their structural support and applied unanticipated dynamic loads in the opposite direction for which they were designed.

Mr. Dean Hanzawa upon realizing the severity of the impact upon all three parcels enlisted the help of a contractor to help to save the homes on his properties. The erosion if left unabated would have eroded the supporting ground beneath the homes. As it is, the open patio slab for the house on Parcel 13 was undermined and the slab cracked. The contractor started by shoring up the side boundary walls as they were leaning precipitously into the beach access and then placed boulders in the eroded trench and into the backyards of the properties in order to mitigate the impacts of the waves.

He also subsequently cut off the top portion of the severely leaning wall of Parcel 13 since it was a safety hazard for anyone that might walk in that area at a later time. He also placed concrete between the boulders behind the original seawall of Parcel 13. The contractor also restored boulders of the revetment and placed concrete to stabilize the structure and continued the revetment to protect Parcel 12 from having a re-occurrence of the problem which brought about the damages.

It is this engineer's professional opinion that if the contractor had not taken the action that he did to mitigate the impact of the waves that entered Parcel 12, that the residences within Parcels 11 and 13 would have been severely damaged if not lost.

Moreover, the failure of the sea wall for Parcel 13, and the failure of the sloped boulder revetment of Parcel 11, was initiated and caused by the erosion of the soil within Parcel 12 which ultimately washed out the support of the soil behind and beneath the two subject structures and which subsequently applied dynamic loads from flowing water from the mauka side for which the protective sea structures were not designed for.

RECOMMENDATIONS

The Hawaii Department of Land and Natural Resources has cited the owner of the private properties for a violation of shoreline rules due to the migration of boulders from within the properties onto the shoreline due to the severe storm action that had taken place.

It is this engineer's observation that the measures that were implemented have stabilized the properties at this time against the impacts of normal wave events. However it is recognized that there remain concerns of the boulders that migrated into the shoreline as well as the need to provide safe access onto the beach from Parcel 12, which is the beach access lot.

PROTECTION FOR PARCEL 12

Parcel 12 needs to be provided permanent protection from the impacts of wave action in the future or a similar damaging event will occur. Parcel 12 is currently temporarily protected from wave action by the continuation of the rock revetment from Parcel 11 by the contractor during the November event. However it is recognized that pedestrian access onto the beach from the roadway needs to be provided other than over the boulders on the makai end.

Safe access from Parcel 12 onto the beach could be implemented by providing a concrete stairway that would lock into the protective boulder structures of Parcel 11 and Parcel 13. If a concrete stairway is provided, it will be critically important that the stairway be designed to not only provide safe access but to prevent future erosion from high wave events. The toe of the stairway must be deep enough to hit the sandstone layer below. Also, there cannot be any openings from the south end of Parcel 11 through the north end of Parcel 13 whereby water can enter the properties from the ocean side. In addition, the apron of the sidewalk that will lead to the stairway must extend far enough into Parcel 11 and be sloped back to the ocean so that the water from high waves will not be able to undermine the stairway or the properties on either side of Parcel 12. Also as the temporary revetment fronting Parcel 11 may be removed for the construction of the concrete stairway, the work on the stairway must be timed and management measures implemented so that the area will be protected from wave action during the construction phase.

There may be several scenarios to remedy the situation along the beach. However they all should incorporate the construction of a concrete stairway on Parcel 12. Possible scenarios are listed below:

1. **LEAVE ALL BOULDERS IN PLACE EXCEPT FRONTING PARCEL 12 AND CONSTRUCT CONCRETE STAIRWAY**

Remove boulders in front of Parcel 12 and construct a concrete stairway to the beach from the beach right-of-way. The concrete stairway must be constructed as described above to not only provide safe pedestrian access but to also protect Parcel 12 from erosion.

2. **REMOVE LOOSE BOULDERS AND CONSTRUCT CONCRETE STAIRWAY**

Loose migrant boulders fronting the three parcels along the shoreline (refer to Dennis Esaki survey map), can be removed from a structural standpoint as they do not provide any true benefit of stability to the properties. However the removal of the boulders must again be carefully timed to occur during extremely low tide. As observed during a site visit by this engineer on December 18, 2014 at 10 a.m., the ocean waters were covering the boulders at the revetment and all the loose boulders were under water.

Under this plan, loose boulders would be removed from the beach while leaving the boulders that is locked in by concrete along Parcel 11 and those behind the pre-existing wall along Parcel 13. The boulders that are temporarily locked in to protect Parcel 12 would be removed so that a concrete apron and stairway can be built to provide safer pedestrian access to the beach from the beach right-of-way.

3. **REMOVE LOOSE BOULDERS AS WELL AS BOULDERS LOCKED IN BY CONCRETE TO THE ORIGINAL LOCATION OF THE SEAWALL OF PARCEL 13 AND THE HIGH WATER MARK ON PARCEL 11 AS SHOWN ON ESAKI SURVEY MAP. BUILD A CONCRETE STAIRWAY**

The pre-existing wall as shown on the survey map is outside of its original location due to the lean of the wall from the pressures of the sea water which entered Parcel 13 from Parcel 12. The wall leaned over towards the beach, and a decision was made by Mr. Dean Hanzawa to cut the top of the wall off as it was a clear safety hazard for anyone which may walk on the beach in the future. If the wall was left in place in the condition that it was in, it could collapse and severely injure or kill any beachgoer which may have been walking for sitting in the area. The boulders which were behind the wall were then locked in by concrete so that they could not move again from continued pressure from water behind the wall.

This third scenario may encounter unanticipated problems as the remains of the wall are helping to hold back the boulders behind it. Removal of the wall down to the footing will be difficult as the boulders behind the wall will shift. The boulders may have to be reset with other boulders that will fit and more concrete poured. This scenario will take much longer than Scenarios 1 & 2, and thus be more prone to being impacted by weather and ocean conditions.

There is a bulge of the revetment on the north side of Parcel 11 which will also have to be removed. This bulge was created to match the new alignment of the remains of the wall on Parcel 13 and the revetment was continued across Parcel 12 to protect the entire area. Under this scenario, this bulge will also have to be removed. After the work along Parcels 11 and 13 is completed, the boulders now protecting Parcel 12 can be removed and the concrete stairway constructed. However, to reiterate this scenario will take much longer than Scenarios 1 & 2 and may be subject to the whims of weather and ocean conditions.

4. **REMOVE LOOSE BOULDERS AS WELL AS OTHER BOULDERS THAT MAY BE LOCKED IN BY CONCRETE BUT WHICH MAY NOT BE STRUCTURALLY SIGNIFICANT. BUILD A CONCRETE STAIRWAY**

This scenario would remove the loose boulders similar to Scenario #2 as well as to remove any locked in boulders which are determined to be not structurally significant. A civil or structural engineer would make the determination that a locked in boulder may be removed. A concrete stairway at the end of Parcel 12 would be constructed similar to the other scenarios.

OPERATIONAL REQUIREMENTS

In order to achieve any of the above scenarios, equipment and material transport will need to be allowed through Parcel 12, as well as approval for the construction of the concrete stairway for access and protection purposes.

Respectfully submitted:

Howard Hanzawa

Howard Hanzawa, P.E.
State of Hawaii License #4569
Civil, Structural

HOWARD HANZAWA, P.E.
731 Ulaula Way, Wailuku, HI, 96793
(808) 264-9663
Howard.Hanzawa@gmail.com

BUDGETARY COST ESTIMATE

Date: May 28, 2015
Owner: Dean Hanzawa, dba Grand View Apartments, Inc.
Project at Parcels 11, 12, 13 at Mokuleia, Hawaii

Proposed budget for the construction and remedial work at the subject Mokuleia properties for the Scenarios as described within the Engineering Report dated March 26, 2015.

Note that the cost estimates as shown below are for budgetary purposes only. Actual costs will be determined by the extent of work necessary to complete each scenario which may be affected by site conditions that are not visibly apparent as well as dealing with adverse weather conditions.

SCENARIOS

Scenario 1:

Remove Boulders at Parcel 12	$10,000
Construct Concrete Stairs	$30,000
TOTAL	**$40,000**

Scenario 2:

a. Remove Loose Boulders	$70,000
b. Concrete Stairs (Scenario 1)	$40,000
TOTAL	**$110,000**

Scenario 3:

a. Remove Loose Boulders	$70,000
b. Remove & Reconstruct Revetment/ Seawall to their Original Locations	$480,000
c. Concrete Stairs (Scenario 1)	$40,000
TOTAL	**$590,000**

Scenario 4:

a. Remove Loose Boulders	$70,000
b. Remove Cemented in Boulders Deemed Non-Structural	$200,000
Concrete Stairs (Scenario 1)	$40,000
TOTAL	**$310,000**

The aforementioned scenarios with associated budgetary costs will be narrowed down as to time and costs and critical path with regards to restoration and stabilization of both

properties which were affected by the "right of way" erosion, after DLNR prescribes a course of action

Respectfully Submitted

Howard Hanzawa, P.E.
State of Hawaii License #4569
Civil, Structural

Appendix B

Grand View Apartment, Inc
DPP Land Use Permits Division
Master Application and Request-Proposal

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING & PERMITTING

650 South King Street, 7th Floor
Honolulu, Hawaii 96813

LAND USE PERMITS DIVISION MASTER APPLICATION FORM

Additional data, drawings/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing." ***PLEASE ASK FOR THESE INSTRUCTIONS.***

All specified materials described in the "Instructions for Filing" and required fees must accompany this form; incomplete applications will delay processing. You are encouraged to consult with Zoning Division staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filing."

Please print legibly or type the required information. **SUBMITTED FEE: $_____**

PERMIT/APPROVAL REQUESTED (Check one or more as appropriate):

Cluster:
- ☐ **Agricultural**
- ☐ **Country**
- ☐ **Housing**

Conditional Use Permit:
- ☐ **Minor** ☐ **Major**

- ☑ **Existing Use:** Seawall and revetment
  (Indicate Type of Use)

Environmental Document:
- ☐ **Environmental Impact Statement**
- ☑ **Environmental Assessment**
- ☐ **Supplemental**

- ☐ **Minor Shoreline Structure**

- ☐ **Modify Approved Permit:** _____
  (Indicate Reference File No.)

- ☐ **Plan Review Use**

Planned Development:
- ☐ **Housing**
- ☐ **Commercial (WSD Only)**
- ☐ **Resort (WSD Only)**

- ☐ **Shoreline Setback Variance**

Special District Permit:
- ☐ **Minor** ☐ **Major**

_____
(Indicate District)

- ☐ **Downtown Height >350 Feet**

Special Management Area Use Permit:
- ☐ **Minor** ☐ **Major**

- ☐ **Temporary Use Approval**

- ☑ **Variance from LUO Section(s):** ROH Sect. 23-1.8 (3)

- ☐ **Waiver from LUO Section(s):** _____

- ☐ **Zoning Adjustment, LUO Section(s):** _____

- ☐ **HRS Section 201H-38 Project**

TAX MAP KEY(S): (1) 6-8-010:011, :012 & :013
LOT AREA: _____
ZONING DISTRICT(S): _____ **STATE LAND USE DISTRICT:** _____
STREET ADDRESS/LOCATION OF PROPERTY: _____

RECORDED FEE OWNER:
Name (& title, if any) Grand View Apartments, Inc
Mailing Address 1428 Clark Place, Wahiawa, HI 96786
Phone Number _____
Signature _____

APPLICANT:
Name Grand View Apartments, Inc (Dean Hanzawa)
Mailing Address 1428 Clark Place, Wahiawa, HI 96786
Phone Number _____
Signature _____

PRESENT USE(S) OF PROPERTY/BUILDING:
Existing seawall and revetment; adjoining use is residential

AUTHORIZED AGENT/CONTACT PERSON:
Name Peter T Young
Mailing Address 1539 Kanapuu Drive, Kailua, HI 96734
Phone Number (808) 226-3567
Signature _____

PROJECT NAME (if any): _____

REQUEST/PROPOSAL (Briefly describe the nature of the request, proposed activity or project): After-the-fact Shoreline Setback Variance (SSV)
(See attached)

POSSE JOB NO. _____

REV. 10/27/2010

Shoreline Setback Variance - Request/Proposal

The subject parcels are located on Hoʻomana Place, in Waialua, on the North Shore of the Island of Oʻahu. The parcels lie within a small subdivision which includes a number of shorefront single family residence (SFR) structures, associated landscaping and property development. Between the two residential properties, spanning from Hoʻomana Place to the ocean, is a ten-foot wide, public access right-of-way that is owned by the City & County of Honolulu.

The shoreline fronting this area is a narrow beach underlain with reef limestone that extends seaward as a variable depth reef platform. This area is exposed to winter North Pacific swell and the predominant tradewind waves. Shallow fringing reefs protect the shoreline from moderate tradewind wave energy.

However, during large winter swell conditions and high water levels, erosion of the narrow beach and wave run-up and overtopping of the beach cause erosion damage and flooding to unprotected backshore areas and dwellings. Numerous property owners along this coastal reach have constructed shore protection structures to prevent further storm wave run-up damage to their dwellings.

While the subject parcels are not located in the Conservation District, these parcels border the shoreline; lands situated seaward (makai) of the shoreline are considered to be within the State Land Use Conservation District Resource Subzone.

In April and May of 2013, the North Shore experienced unprecedented high surf conditions which caused major damage to many shoreline properties; the subject properties experienced exceptional damage. The landowner attempted to get guidance from the City and DLNR on means to protect his property; the owner was told the land issues were not within their jurisdiction.

In November of 2013, extremely high surf hit the area again. Water once again rushed up the right-of-way and within a matter of days the waves washed out an immense amount of sand and soil from the subject private properties and caused a twelve foot drop in the ground level of the right of way.

At the peak of the damage, the retaining wall facing the ocean on Parcel :013 began to lean towards the ocean at a 45 degree angle, which caused the property's back yard to literally split in half and fall towards the ocean, into the water.

Seeking guidance again (to no avail) and recognizing that further wave action could wash out his property and improvements, the landowner shored up the retaining wall by placing large boulders in front of the wall and solidifying their position with rip-rap and shotcrete cement in order to save his property and keep the wall and yard from completely cracking off and falling into the ocean.

Boulders were also placed boulders in a straight line spanning across the right-of-way and Parcel :011 in order to break up the large surf and prevent the certain collapse of the City's right of way that was in turn causing the privately-owned properties to erode and fall into the sea.

This application is for an after-the-fact Shoreline Setback Variance.

With high waves eroding portions of the property and recognizing that further wave action could wash out his property and improvements, the landowner shored up the retaining wall by placing large

boulders in front of the wall and solidifying their position with rip-rap and shotcrete cement in order to save his property and keep the wall and yard from completely cracking off and falling into the ocean.

Boulders were also placed boulders in a straight line spanning across the right-of-way and Parcel :011 in order to break up the large surf and prevent the certain collapse of the City's right of way that was in turn causing the privately-owned properties to erode and fall into the sea.

Notices of violation were issued and the matter was heard and deferred by the Board of Land and Natural Resources on April 25, 2014 and November 14, 2014. The matter was deferred to allow the landowner to seek a cooperative resolution with appropriate governmental agencies on this matter.

Shoreline Setback Variance

The property owner will suffer hardship if the Shoreline Setback Variance for the proposed seawall is not granted and if the seawall has to be removed. This application for such a variance fulfills the three criteria for hardship as set forth in ROH Sect. 23-1.8 (3).

(A) A variance may be granted for an activity or structure that is necessary or ancillary to the following private facilities or improvements, if hardship will result to the applicant if the facilities or improvements are not allowed within the shoreline area

ii. Private facilities or improvements that may artificially fix the shoreline, but only if hardship is likely to be caused by shoreline erosion and conditions are imposed prohibiting any such structure seaward of the existing shoreline unless it is clearly in the public interest.

Construction of the original seawalls in the late-1960 or early 1970 may have prevented the erosion of coastal land behind the shoreline structures. Allowing the applicant's seawall to remain in place prevents property losses due to erosion and wave damage; however, the structures may be impounding a substrate beach quality sand that would naturally nourish a healthy beach.

Removal of the existing seawall would not release enough sand to restore a beach in an area where the entire shoreline has been armored and would hasten erosion of the applicant's parcel Areas behind existing shoreline structures on adjacent properties may eventually erode if the applicant's seawalls are completely removed.

Maintaining status quo by allowing the applicant's existing shoreline protection structure to remain in place is not expected to create any new significant adverse impact on littoral processes along the shoreline.

(B) A structure or activity may be granted a variance upon grounds of Hardship if:

i. The applicant would be deprived of reasonable use of the land if required to comply with the shoreline setback ordinance and the shoreline setback rules.

It is obvious that removing the seawall at this time, without replacing it with another significant shore protection structure will result in catastrophic damage to the existing dwellings on the properties. Removal of the existing seawall with no retaining structure to support the foundation of the dwelling will lead to substantial structural damage to

the dwelling as the shoreline embankment collapses and is eroded by winter storm waves.

Almost all of the residential properties along this coastline are protected with similar structures to prevent the effects of shoreline erosion and wave damage that would otherwise occur due to North Pacific swell events.

Previous erosion from wave action had already substantially diminished the property area prior to construction of the shoreline protection structure. It is reasonable to assume that property losses will occur if the applicant is required to remove the illegal seawall structures.

Granting the Shoreline Setback Variance is the means for legalizing the existing seawall under ROH Chapter 23 and would provide a means for the owner to legally repair the wall should a severe storm event undermine and collapse an unconsolidated shoreline, thereby creating a public hazard on the beach. Any other action would deprive the applicant of reasonable use of ills property.

ii. The applicant's proposal is due to unique circumstances and does not draw into question the reasonableness of this chapter and the shoreline setback rules

Numerous studies indicate that the Mokuleʻia coastline has been undergoing coastal erosion for many years. This variance request is based up on the fact that significant long-term erosion is occurring at this section of Mokuleʻia Beach. Most of the property owners along this section of the coastline have erected seawalls to protect their property and houses from erosion. Many of those seawalls have received government permits and approvals. The reason for this request is the property's unique location along a well-documented eroding shoreline.

Chapter 23 allows shoreline protection structures that have received a shoreline setback variance on the basis that the structure does not adversely affect beach processes, public access along the shoreline or shoreline open space. Retreat of the shoreline along this stretch of coast has been in existence prior to the building of the first seawall; and, would most likely continue without the shoreline protection structure.

People can transit the area fronting the walls for recreational purposes at low tide and the open space and view planes are not impacted by the existence of the seawall. It is also a policy of Chapter 23 to reduce hazards to property from coastal flooding and retreat of the shoreline.

It is reasonable to allow the wall to remain and to allow it to be repaired as needed in accordance with government regulations.

iii. The proposal is the practicable alternative that conforms best to the purpose of the shoreline setback regulations

To demolish and reconstruct the wall would unduly impact beach processes and beach restoration is beyond the scope of a single landowner. Legalization of the existing

shoreline protection structure, so that it can be repaired as necessary, is the best alternative given the history of erosion and wave action for this portion of the north shore of Oʻahu.

(C) Before granting a hardship variance, the director must determine that the applicant's proposal is a reasonable use of the land. Because of the dynamic nature of the shoreline environment, inappropriate development may easily pose a risk to individuals or to the public health and safety. For this reason, the determination of the reasonableness of the use of land should properly consider factors such as shoreline conditions, erosion, surf and flood conditions and the geography of the lot.

The seawall is functionally consistent with adjacent and nearby existing seawalls along this section of the Mokuleʻia Coastline.

Along the north coast, from Kaʻena point to Mokuleʻia, broad intertidal and subtidal wave-abrasion platforms are carved into Waimanalo-age limestone, reflecting the long history of large wave activity along this shoreline. A low-lying platform of fossil reef rock is elevated 3 to 6 feet above msl and extends from Mokuleʻia to within 0.5 miles of Kaʻena point. The Atlas of Natural Hazards in the Hawaiian Coastal Zone gave a high hazard rating to most of this area, where the coastal slope is low and continued erosion is rapidly removing the sand from the beaches.

This North Shore coast, particularly the Mokuleʻia Beach area, is suffering from long-term erosion. The area is exposed to winter North Pacific swell and the predominant trade wind waves. Shallow fringing reef flats protect the shoreline from moderate trade wind wave energy. During the winter, large North Pacific swell conditions and high water levels contribute to wave run-up and overtopping of the beach, causing erosion damage and flooding to unprotected backshore areas and dwellings

(D) Hardship shall not be determined as a result of a zone change, plan review use approval, subdivision approval, cluster housing approval, planned development housing approval, conditional use permit, or any other discretionary land use permit granted after June 16, 1989.

The subject property is not affected by any government approved change or any discretionary land use permit.

The following passage from the Hawaii Coastal Erosion Management Plan (COEMAP) aptly sums up the situation:

"Along residential shorelines, as in many neighborhoods around the nation, the focus is on day-to-day activities of families and hard-working individuals from all walks of life. Coastal lands are all the more valuable in light of the limited buildable land area and restricted resources of our island home. Not only residences, but roadways, sewage lines and treatment plants, harbors, airports, commercial facilities and all manner of public infrastructure may be found along our shores. To simply let our coastal investments and human efforts wash into the sea would not be a rational management decision".

The accompanying Environmental Assessment further describes the proposed actions.

Appendix C

DLNR Letter to Grand View Apartments (September 4, 2015) noting Actions of BLNR at its August 14, 2015 meeting

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF: OCCL: AJR

ENF: OA-14-62

SEP - 4 2015

Grand View Apartments, Inc.
1428 Clark Place
Wahiawa, HI 96786

SUBJECT: CONSERVATION DISTRICT ENFORCEMENT CASE NO. OA-14-62
Unauthorized Reconstruction of a Shoreline Erosion Control Structure in the Conservation District Resource Subzone
Waialua, North Shore, Island of Oahu
TMK(s): (1) 6-8-010:011, 6-8-010:012 & 6-8-010:013

This is to inform you that on **August 14, 2015** the Board of Land and Natural Resources (BLNR) found the landowner in violation of Hawaii Revised Statutes (HRS) §183C-7, and Hawaii Administrative Rules (HAR) §13-5-6 for the unauthorized reconstruction of a shoreline erosion control structure in the Conservation District Resource Subzone located at Waialua, North Shore, Island of Oahu, seaward of *TMK(s): (1) 6-8-010:011, 6-8-010:012 & 6-8-010:013*, subject to the following conditions:

1. The landowners are fined $15,000 in one instance for violating the provisions of §183C-7, HRS, and §13-5-6, HAR, for the unauthorized reconstruction of shoreline erosion control structures on TMKs: (1) 6-8-010:013 & 011 by failing to obtain the appropriate approvals within the Conservation District;

2. The landowners are fined $15,000 in one instance for violating the provisions of §183C-7, HRS, and §13-5-6, HAR, for the unauthorized construction of a shoreline erosion control structure on TMK: (1) 6-8-010:012 by failing to obtain the appropriate approvals within the Conservation District;

3. The landowner is fined an additional $1000.00 for administrative costs associated with the subject violations;

4. The landowner shall pay the designated administrative costs ($1,000) within sixty (60) days of the date of the Board's action;

5. The landowner shall use the penalty fine ($30,000) towards remediation efforts as prescribed by the Board;

6. The landowner is provided one (1) year from the date of the Boards decision to create a remediation plan (Plan) to re-open the beach Right-of-Way access and to obtain the necessary *City and County of Honolulu* permits and/or approvals for the Plan. If, after one (1) year, no permit is issued by the County for the Plan, the Board requests that significant evidence be provided showing that official correspondence, regarding this matter, has occurred between the landowner and the *City and County of Honolulu*;

7. The landowner shall submit a Conservation District Use Application (CDUA) for all work proposed/conducted within the Conservation District; and

8. That in the event of failure of the landowner to comply with any order herein, the matter shall be turned over to the Office of the Attorney General (OAG) for disposition, including all administrative costs.

Please acknowledge receipt of this letter, with the above noted conditions, in the space provided below. **Please sign two copies. Retain one and return the other within thirty (30) days.** Should you have any questions on any of these conditions, please feel free to contact Alex J. Roy, M.Sc. of the Office of Conservation and Coastal Lands at 808-587-0316 or 808-587-0377

Sincerely,

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

Receipt acknowledged:

_____
Name

_____
Date

CC: Chairperson
ODLO
City and County of Honolulu – DPP
Peter T. Young, 1539 Kanapu'u Dr., Kailua, HI 96734

Appendix D

Engineering Repair and Reconstruction of Damaged Revetment and Seawall

Howard Hanzawa, P.E.; November 5, 2015

HOWARD HANZAWA, P.E.
731 Ulaula Way, Wailuku, HI, 96793
(808) 264-9663
Howard.Hanzawa@gmail.com

November 5, 2015

Subject: Repair and Reconstruction of Damaged Sloped Boulder Revetment at TMK 6-8-010:011, and Vertical Retaining/Sea Wall at TMK 6-8-010:013, adjacent to 10' wide Beach Access Parcel at TMK 6-8-010:012, Mokuleia, Oahu, Hawaii

As described in the report for the subject property entitled "Engineering Observation and Recommendations", the large storm wave event of November, 2013 washed out the ground within Parcel 12 (beach access parcel), as it was unprotected on its makai end from ocean surges. The erosion process during the wave event was dynamic and the incoming and retreating waters quickly created a trench that was approximately 12 feet deep within the 10 foot wide parcel. The adjacent residential parcels were protected for many years from ocean surges and wave action by a revetment on Parcel 11 as well as a seawall on Parcel 13. However the the washout of the ground within the beach access parcel became problematic for the adjoining residential parcels as further described below.

CAUSE FOR REPAIR AND RECONSTRUCTION

The erosion within Parcel 12 subsequently undermined the side boundary walls along Parcels 11 and 13. Once the side wall footings were undermined, the soil within the back yards of the two adjoining parcels along the beach access began to wash out with the wave action. The erosion within the two adjoining parcels became severe due to the action of the waves from the side. Once the soil from the yards of the two parcels were taken out, the flow of the water from each wave action started applying pressure to the vertical retaining wall of Parcel 13 and to the the sloped revetment of Parcel 11.

These structures were not designed to withstand the dynamic hydraulic pressures from the mauka side. Moreover the soil which provided lateral and vertical support for each structure became non-existent with the washout. The new dynamic hydraulic loads from the mauka side subsequently caused both structures to fail. The vertical retaining wall that had protected Parcel 13 collapsed and severely leaned towards the ocean. The rock revetment for Parcel 11 also lost its structural integrity and the pressure from the water caused the boulders to tumble and fall towards the beach side. The failure of both structures was caused by the wave action and erosion in the beach access which allowed the sea water to enter the back yards of the adjacent parcels. This subsequently undermined their structural support and applied unanticipated dynamic loads in the opposite direction for which they were designed.

Mr. Dean Hanzawa upon realizing the severity of the impact upon all three parcels enlisted the help of a contractor to help to save the homes on his properties. The erosion if left unabated would have eroded the supporting ground beneath the homes on the residential properties.

The contractor started by shoring up the side walls as they were leaning precipitously into the beach access and then placed boulders in the eroded trench and into the backyards of the properties in order to mitigate the impacts of the waves.

He also subsequently cut off the top portion of the severely leaning wall of Parcel 13 since it was a safety hazard for anyone that might walk in that area at a later time. He also placed concrete between the boulders behind the original seawall of Parcel 13. The contractor also placed concrete between the boulders of the revetment and continued the revetment to protect Parcel 12 from having a re-occurrence of the problem which brought about the damages.

RECONSTRUCTION OF REVETMENT FOR PARCEL 11

Parcel 11 originally had an unprotected slope in its back yard. In 1999, this engineer designed a sloped boulder revetment to protect the sandy soil slope. The plans were submitted for permit approval and the revetment was constructed in the year 2000. The boulder revetment effectively protected the southern parcel for 14 years from ocean wave activity without impact to the parcel or to the beach.

However in the November, 2013 wave event, the entry of the water from the side and back of the revetment caused the boulders to tumble towards the beachside. A revetment is engineered to resist hydraulic and impact forces from the ocean side but not from the rear. The contractor during the height of the wave event trucked in additional boulders to replace the ones that were displaced in order to protect the property. The reconstructed revetment is less steep in slope than the pre-existing revetment due to the movement of many of the boulders towards the ocean. New boulders were placed on top of boulders that were moved by the surging waters to strengthen the structure. Later one man sized rocks were placed in the voids of the large boulders and concrete grout was pumped in to lock the rocks and boulders together. See Survey Map, Photo A, and Section A-A)

CONSTRUCTION OF REVETMENT FOR PARCEL 12 (10' WIDE BEACH ACCESS)

Protection measures being implemented for Parcels 11 and 13 would have been
Futile if the surging waters in Parcel 12 were not mitigated somehow. The ground within Parcel 12 was severely eroded and the surging waters were then impacting the adjoining properties. The contractor thus built a boulder revetment on the seaward side of Parcel 12 to prevent the waves from further entering the beach access and causing additional damage. The revetment as currently constructed looks similar to the revetments for Parcels 11 and 13. (See Survey Map, Photo B, and Section B-B)

CONSTRUCTION OF REVETMENT FOR PARCEL 13

Parcel 13 had a vertical 12 foot high seawall that was probably more than 40 years old. However it too could not withstand the hydraulic pressures from the backside for which it was not engineered for. The sea waters entered the backyard, washed out the soil and pushed the top of the wall out towards the ocean. The wall bent at the footing at a severe angle. Because

of the precarious angle of the wall, the contractor cut off much of the top of the wall and placed boulders seaward of the remaining portion of the wall as well as in the back of the wall. The construction of the revetment for Lot 13 looks similar to the one constructed for Parcel 11 except that it is slightly steeper in slope. Another difference is that the top of the remaining portion of the old wall is visible along the revetment. (See Survey Map, Photo C, and Section C-C)

SUMMARY

The original revetment and seawall structures that were constructed for Lots 11 and 13 served to protect those properties for many years without problems. They only ultimately failed when exposed to forces that were applied in the opposite direction for which they were designed for.

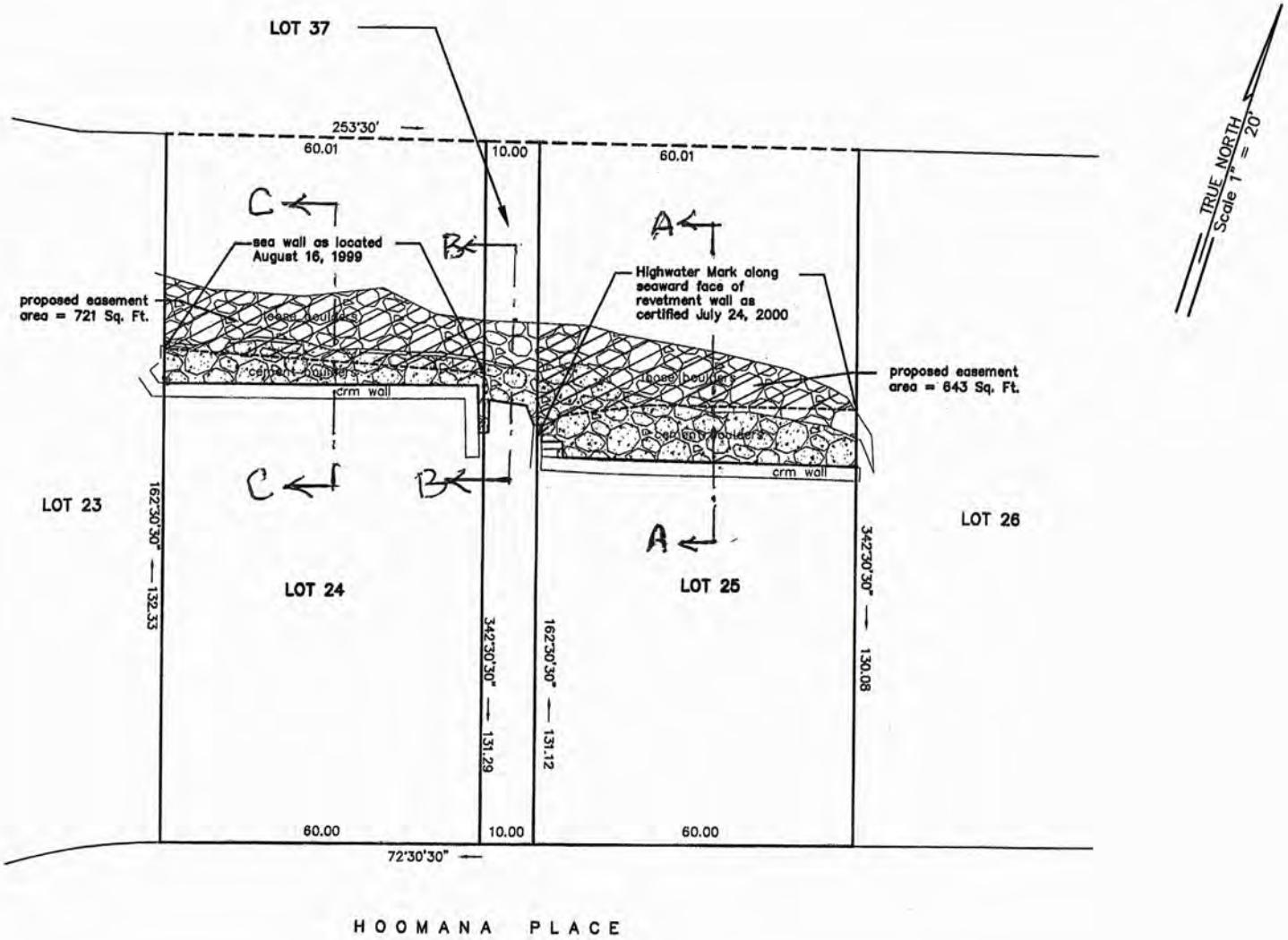
The reconstructed revetments for Lots 11 and 13 are substantially greater in mass than that what was there originally for Lot 11. In addition, the boulders have been locked together with the injection of grout and smaller stones. The rebuilt structures will serve as permanent revetments to protect their respective properties.

However it is important to emphasize that Lot 12, the beach access must also be protected. It has been suggested that a concrete stairway be built. This would provide protection for Lot 12 to preclude another similar incident and to also allow public access to the ocean area.

Respectfully submitted:

Howard Hanzawa

Howard Hanzawa, P.E.
State of Hawaii License #4569
Civil, Structural



GRAPHIC SCALE

0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DENNIS M. ESAKI
LICENSED PROFESSIONAL LAND SURVEYOR
No. 4383
HAWAII, U.S.A.

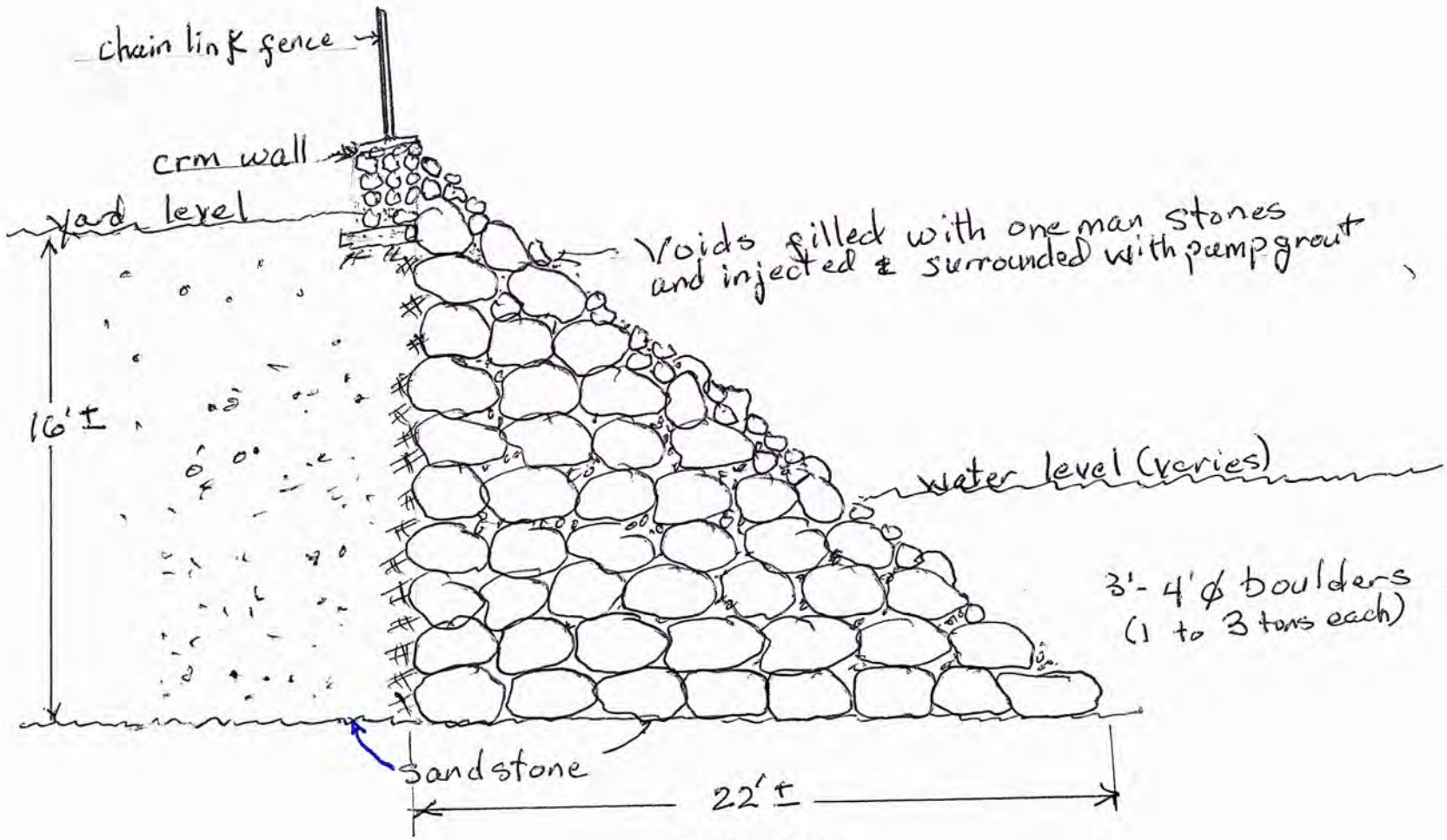
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Signature
ESAKI SURVEYING & MAPPING, INC.
EXPIRES: APRIL 30, 2016

MAP SHOWING PROPOSED EASEMENTS LOTS 24 and 25 LAND COURT APPLICATION 1810

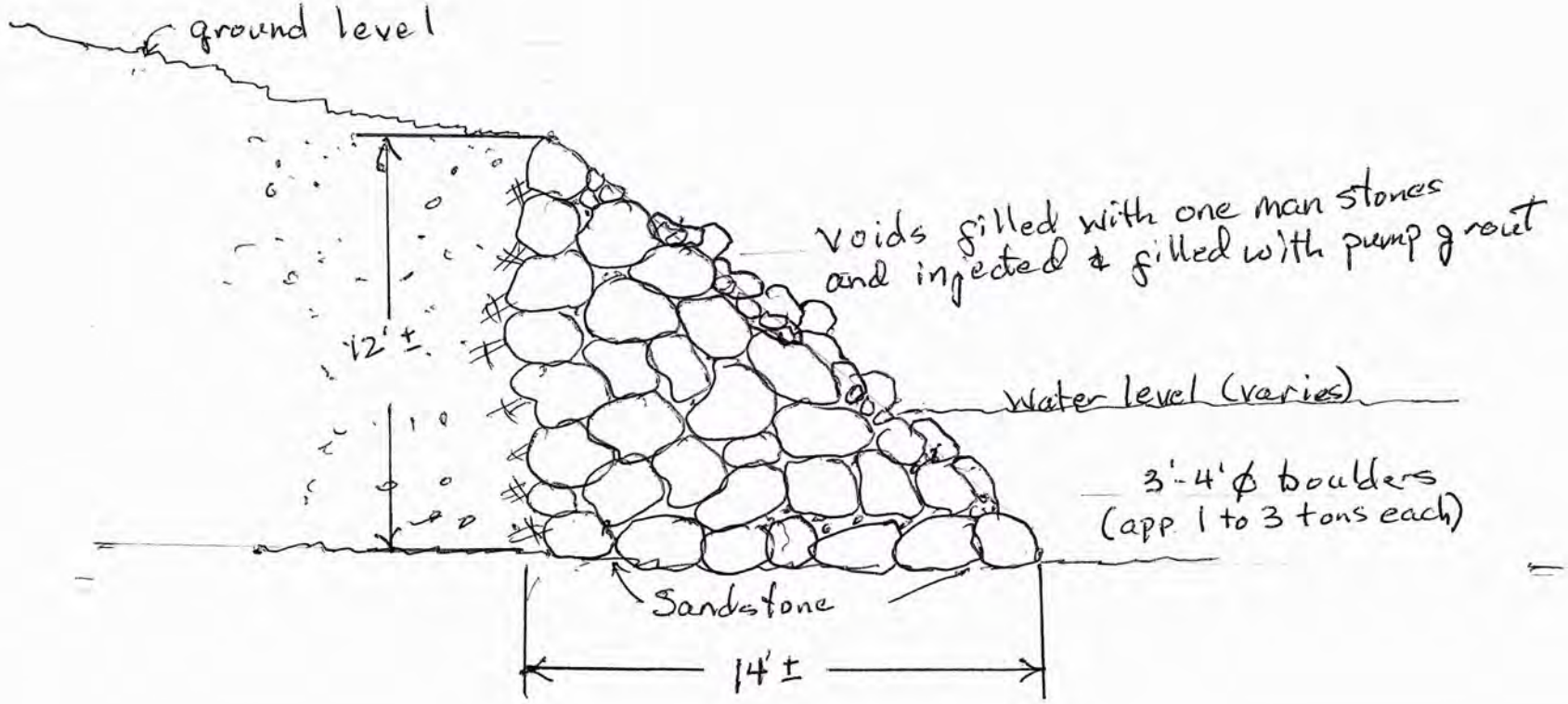
MOKULEIA BEACH HOMES, SECTION 1
MOKULEIA, WAIALUA, OAHU, HAWAI'I
TMK: (1) 6-8-10: 11, 12, and 13
Prepared For: Dean Hanzawa
Date: February 19, 2015

Photo A - Lot 11


chain link fence
crm wall
yard level
Voids filled with one man stones and injected & surrounded with pump grout
16'±
water level (varies)
3'- 4' ϕ boulders (1 to 3 tons each)
sandstone
22'±

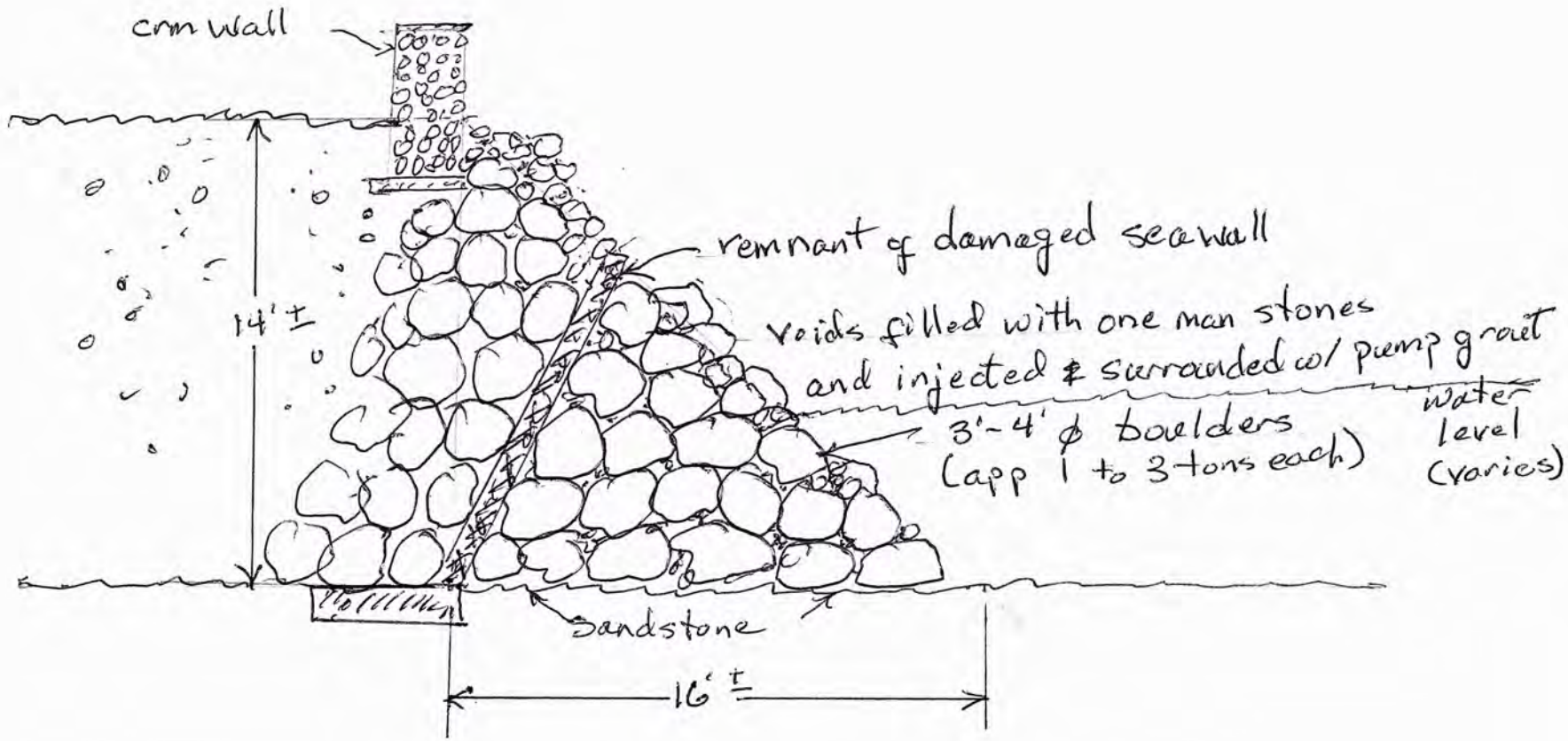
Section A-A

Photo B - Lot 12


ground level
voids filled with one man stones
and injected & filled with pump grout
12' ±
water level (varies)
3'-4' ϕ boulders
(app 1 to 3 tons each)
Sandstone
14' ±

Section B-B

Photo C - Lot 13


crm wall
remnant of damaged seawall
voids filled with one man stones
and injected & surrounded w/ pump grout
3'-4' ϕ boulders
(app 1 to 3 tons each)
water
level
(varies)
14' ±
sandstone
16' ±

Section C-C