

**STATE OF HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCE  
OFFICE OF CONSERVATION AND COASTAL LANDS  
Honolulu, Hawai'i**

180-Day Exp. Date: November 9, 2015

October 23, 2015

**Board of Land and  
Natural Resources  
State of Hawai'i  
Honolulu, Hawai'i**

REGARDING:	Conservation District Use Application (CDUA) MA-3745: Agyropolous Shoreline Erosion Control
APPLICANT:	James P. Argyropolous
AGENT:	Michael Summers, Planning Consultants Hawai'i LLC
LOCATION:	Kū'au Bay, Hamakuapoko ahupua'a, Makawao District, Maui
TMK:	(2) 2-6-009:005 and offshore submerged lands
LANDOWNER:	Residential parcel: James P. Argyropolous Submerged lands: State of Hawai'i
AREA OF USE:	432 square feet
SUBZONE:	Resource

**SUMMARY**

The applicant proposes to construct a hybrid revetment-retaining wall to control erosion from a clay embankment fronting his property. The majority of the structure will be mauka of the certified shoreline and thus outside the Conservation District. Approximately 432 square feet of the proposed structure lies makai of the shoreline.

The project also involves the removal of a remnant seawall and related debris from the shoreline.

**DESCRIPTION OF AREA**

The project area lies on Maui's north shore, approximately seven miles northeast of the center of Wailuku. The residential parcel is part of the Kū'au Tract Subdivision, which received subdivision approval in 1947. The parcel contains one residence and one `ohana unit, both of which are set back from the shoreline and not at immediate risk from shoreline erosion.

Kalauhao Beach lies approximately 150 feet to the west of the project area. Large boulders set in place by neighboring property owners fortify the shoreline to the east, and an existing seawall fortifies the adjacent property to the west. The seawall fronting the subject property has failed, and approximately 28 feet of the applicant's property has eroded under the force of the high northeast swells that impact the area since the failure of the old seawall.

Currently an 18-foot high concave clay embankment fronts the property. There are large concrete and rock remnants of a seawall strewn along approximately 50 feet of the shoreline fronting the project site.

A reef shelf is located immediately offshore of Kalauhao Beach and the adjoining residential properties, creating a small, protected channel running parallel to the shoreline. This is used as a swimming area by keiki and adults, and provides surfers access to the nearby breaks.

According to the applicant, the potential collapse of the embankment poses a threat to the safety of the public who use the shoreline. They note that beach walkers currently pass over an overhand composed of concrete seawall rubble. In addition, the clay runoff has a negative impact on the health of coastal waters.

## **PROPOSED USE**

The scope of the project is to remove the existing seawall debris strewn along the shoreline and then immediately construct a hybrid revetment-retaining wall.

The hybrid design will harden the shoreline, and prevent further erosion of the clay bank. The revetment portion will consist of an armor stone layer resting on top of geotextile fabric. The retaining wall portion will consist of a short concrete wall sitting on top of the revetment. The applicant states that this hybrid design will have a lower footprint than a regular revetment. The concrete wall will connect with structures on neighboring properties, and allow for lateral access of the shoreline.

The proposed structure may also incorporate a stairwell to provide convenient and safe access for the property owner to access the shoreline.

It is estimated that there is 41 cubic yards of concrete and rock debris to be removed. Heavy equipment, including excavators and dump trucks, will be required. Because the edge of the approximate 18 foot high embankment is unstable, it will be necessary to use an excavator to cut a down-ramp to the shoreline. Prior to and during both the debris removal and construction phases of the project, Best Management Practices (BMPs) will be implemented to protect coastal waters from non-point source pollution. These include:

- Installation of a Type III Turbidity Curtain around the perimeter of the debris field;
- Construction of 12-inch high temporary berms along the construction access; and
- Installation of approximate 2-feet high silt fences on each side of the berm.

In addition, any excavated debris or soils removed and stored on-site will be stabilized and covered to prevent runoff into the ocean. It is anticipated that most of the excavated material

will be quickly removed from the site. The debris removal will also be scheduled to occur during the late summer through early fall season when rainfall is generally low.

The applicant consulted with the Office of Conservation and Coastal Lands and the Maui County Department of Planning during the design process. They have modified the design of the hybrid structure in response to suggestions that they should minimize the footprint of the structure, keep it as far mauka as possible, and provide improved lateral shoreline public access.

## EXHIBITS

The following exhibits can be found at the end of this report:

Exhibit 1	Google Earth aerial view
Exhibit 2	Photographs
Exhibit 3	Limits of excavation
Exhibit 4	Site Plan
Exhibit 5	Wall section

OCCL conducted a site visit with the applicant's representative on July 22, 2015. The bluff had experienced additional erosion since the application was submitted. The large tree seen in the right of the photo in Exhibit 2 has since fallen onto the shoreline, and the tree on the left is now severely undercut.

## ANALYSIS

On May 12, 2015 the Department notified the applicant that:

1. The proposed use was an Identified Land Uses in the Conservation District pursuant to Hawai'i Administrative Rules (HAR) §13-5-22, Identified Land Uses in the Protective Subzone, P-15 SHORELINE EROSION CONTROL, (D-1) *Seawall, revetment, groin, or other coastal erosion control structure or device, including sand placement, to control erosion of land or inland area by coastal waters, provided that the applicant shows that (1) the applicant would be deprived of all reasonable use of the land or building without the permit; (2) the use would not adversely affect beach processes or lateral public access along the shoreline, without adequately compensating the State for its loss; or (3) public facilities (e.g., public roads) critical to public health, safety, and welfare would be severely damaged or destroyed without a shoreline erosion control structure, and there are no reasonable alternatives (e.g., relocation). Requires a shoreline certification, and that this use would require a permit from the Board of Land and Natural Resources, who have the final authority to modify, grant, or deny the permit.*
2. Pursuant to HAR §13-5-40 *Hearings*, a public hearing was not required.

3. Pursuant to HAR §13-5-31 *Permit applications*, the permit required that an environmental assessment be carried out. The Maui County Planning Commission acted as the accepting authority for the proposed action; the Final Environmental Assessment was published in the February 8, 2015 *Environmental Notice*; the Planning Commission issued a Finding of No Significant Impact (FONSI) for the project.
4. It is the applicant's responsibility to comply with the provisions of Hawaii's Coastal Zone Management law (HRS Chapter 205A) pertaining to the Special Management Area (SMA) requirements administered by the various counties.

## SUMMARY OF COMMENTS

The Office of Conservation and Coastal Lands referred the application to the following agencies for review and comment: Maui Board Member; Office of Hawaiian Affairs; County Planning; DLNR- Land Division, DOCARE, Historic Preservation, Division of Aquatic Resources; Maui County Department of Public Works; Maui County Department of Planning; US Army Corps of Engineers; and the Department of Health Environmental Planning Office.

A notice of the application was placed in the May 23, 2015 edition of the Office of Environmental Quality Control's *Environmental Notice*.

Copies of the application were available for review at the Kahului Public Library, and were hosted online at OCCL's website at [dlnr.hawaii.gov/occl/current-applications](http://dlnr.hawaii.gov/occl/current-applications). The Final EA was available on the State Department of Health's on-line EIS library at [oeqc.doh.hawaii.gov](http://oeqc.doh.hawaii.gov) (2015-02-08-MA-5E-FEA-Argyropoulos-Shoreline-Hazard-Mitigation-Project), and linked to on OCCL's website.

Written comments were received from the following individuals and agencies:

### DLNR – Engineering

No comments

### DLNR – Historic Preservation Division

The Division has accepted an archaeological monitoring plan for the project (Hazlett and Dega, 2015), and has determined that no historical properties will be affected so long as monitoring occurs pursuant to the approved plan.

### DLNR – Division of Aquatic Resources

The Division concurs that some sort of shoreline stabilization is needed at this location. and the proposed hybrid-revetment wall appears to be the best solution.

The excavation required for the work could result in significant sedimentary impacts to the near shore marine ecosystem. The use of a Type III turbidity curtain is a good step, but might not be enough to stop solids from entering the marine environment. The Division recommends that a gravel dam or temporary barrier wall be used to prevent wave splash from entering the excavation area.

*Applicant's response*

The plans now include the construction of approximate 12-inch high temporary berms along the construction access; and the installation of approximate 2-feet high silt fences on each side of the berm. In addition, any excavated debris or soils removed and stored on-site will be stabilized and covered to prevent runoff into the ocean. It is anticipated that most of the excavated material will be quickly removed from the site. The debris removal will also be scheduled to occur during the late summer through early fall season when rainfall is generally low.

The applicant designed the mitigation measures to be in line with US Corps of Engineers standards, and chose a design that the Corps would not consider "fill" and thus require additional permitting.

Office of Hawaiian Affairs (OHA)

OHA recommends that an archeological monitor be present during removal of debris and the construction of the hybrid seawall, as digging will occur within sand dunes, which carry a high likelihood of encountering iwi kūpuna. Should iwi kūpuna or Native Hawaiian cultural deposits be identified during any ground altering activities, all work should cease and the appropriate agencies, including OHA, should be contacted.

Maui County Department of Planning

The Department has conducted multiple site visits to the property. The project is along a bluff shoreline that is armored on both sides by its neighbors and the shoreline is fixed. There is no beach fronting the parcel. No beach process will be affected. No views to and along the shoreline will be impacted.

The Department recommends approval of the CDUA. The project will be reviewed by the Maui Planning Commission as a Special Management Area Major Use Permit and a Shoreline Setback Variance. While the Department generally discourages hardening of the shoreline where other alternatives are possible, in this case the proposal is the best possible alternative to control erosion.

Maui County Department of Public Works

The project will need to comply with Maui County Code Chapter 20.08, Soil Erosion and Sedimentation Control.

### U.S. Army Corps of Engineers

After reviewing the original plans and the letter dated June 30, 2015, the Corps has determined that a Section 10 permit will be required for the proposed work. The Mean High Water (MHW) level is the Corps jurisdiction line for any work in, over, or under a navigable waterway. The removal of the fallen and broken concrete is right at the MWH line and the silt curtain shown on sheet C1 is located below the MHW line. The installation of BMPs such as silt curtains requires a permit from the Corps if located within our limits of jurisdiction.

### **HAR §13-5-30 CRITERIA**

The following discussion evaluates the merits of the proposed land use by applying the criteria established in HAR §13-5-30.

- 1) *The proposed use is consistent with the purpose of the Conservation District.*

The objective of the Conservation District is to conserve, protect and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety and welfare.

The proposed action will substantially reduce sediment and clay inputs into near shore waters.

- 2) *The proposed land use is consistent with the objectives of the Subzone of the land on which the use will occur.*

Pursuant to HAR §13-5-14, the objective of the Resource Subzone *is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas*. The proposed use is an identified land use in this subzone pursuant to HAR §13-5, P-8 STRUCTURES AND LAND USES, EXISTING.

For this land use the applicant needs to show that:

- (1) The applicant would be deprived of all reasonable use of the land or building without the permit;
- (2) The use would not adversely affect beach processes or lateral public access along the shoreline, without adequately compensating the State for its loss; or
- (3) Public facilities (e.g., public roads) critical to public health, safety, and welfare would be severely damaged or destroyed without a shoreline erosion control structure, and there are no reasonable alternatives (e.g., relocation).

The project area is not along a sandy shoreline, and will not affect beach processes. The eroding bluff poses a potential danger to those walking along the shoreline; the removal

of debris and the installation of a well-engineered revetment will improve lateral access for the public.

- 3) *The proposed land use complies with the provisions and guidelines contained in Chapter 205A, HRS entitled "Coastal Zone Management", where applicable.*

The application is consistent with the following objectives of Chapter 205A:

**Recreational resources.** The proposed use should have a positive effect on lateral shoreline access, and improve access to fishing areas on the eastern side of the Bay.

**Historical resources.** No historic resources have been identified at the site.

**Scenic and open space resources.** The project will not impact open space or scenic view plains.

**Coastal ecosystems.** The project is designed to reduce runoff into the nearshore marine environment.

**Coastal hazards.** The proposed use is designed to remove a coastal hazard.

**Beach protection.** There are no sandy beaches adjacent to the project area.

It is a Coastal Zone Management policy to “prohibit construction of private erosion-protection structures seaward of the shoreline, except where they result in improved aesthetic and engineering solutions to erosion and do not interfere with existing recreational and waterline activities.”

In this case, only a small portion of the built structure will be makai of the shoreline. Lateral shoreline access, and use of the adjacent channel, will not be possible during construction. Afterwards, with the removal of the debris and the hardening of the shoreline, the area should see an improvement in the quality of recreational and waterline activities.

OCCL does not believe that the project conflicts with the State’s general policy of discouraging the hardening of the shoreline. This is a unique case where the aesthetic and ecological value of the structure will be an improvement over existing conditions and a “no action” alternative.

- 4) *The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.*

Staff does not believe that the proposal will cause any substantial adverse impact to the state’s natural resources, provided that best management practices are stringently followed to mitigate the potential for additional erosion during excavation work and debris removal.

- 5) *The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels.*

The neighboring properties all contain either piled boulders or stone and concrete sea walls. The hybrid revetment- retaining wall was designed to absorb wave energy and to minimize splash back.

- 6) *The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable.*

The removal of the debris will improve the physical aspects of the shoreline fronting the parcel. Staff is of the opinion that the revetment-wall will be an improvement over an eroding clay embankment.

- 7) *Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District.*

The proposed project does not involve subdivision of Conservation District land.

- 8) *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

The proposal is designed to improve the public health, safety, and welfare by removing shoreline hazards and by reducing the amount of erosion entering the near shore waters.

#### **KA PA‘AKAI ANALYSIS**

The coast in this area consists of a sheer clay embankment and a boulder-strewn shoreline. There are no known traditional or cultural activities on the project site.

The clay soils are unlikely to yield buried cultural artifacts. Human remains are prevalent in the sandy soil on the headland across from the public beach; these areas are protected by a conservation easement and will not be impacted by the proposed project.

Archaeological monitoring will be implemented during all ground altering activities. In the event that historic remnants or cultural remains are encountered, all work will cease and the State Historic Preservation Division and the Office of Hawaiian Affairs will be contacted immediately.

Near shore gathering of limu or marine resources is not prevalent on the property, and is more common along the sandy beach two properties away. There are small fishing areas to the east of the property, and improving lateral shoreline access should benefit local fishermen.



There are many cultural and recreational activities that take place in and around Kahului Harbor and on the Breakwater. However, the proposal will not impede shoreline access, gathering activities, or the free exercise of customary activities of Native Hawaiians or any other ethnic group.

Should cultural artifacts or remnants be encountered during ground altering activities work will be stopped and the State Historic Preservation Division will be contacted immediately.

The original proposal had the potential to limit access to the public boat ramp, which would have had a negative impact on ocean-based cultural activities. The modified plan has addressed these issues so that the project accommodates other users of the breakwater.

Based upon the above analysis, OCCL does not believe that the proposal will hinder cultural practices in the area.

## **DISCUSSION**

In order to address the serious threats to our beaches and coastal communities, the Board of Land and Natural Resources (BLNR) adopted the Hawai'i Coastal Erosion Management Plan (COEMAP) in 1999/2000. COEMAP provides for five alternatives to protect land from erosion: abandonment, beach restoration, erosion control, adaptation, and hardening.

### Abandonment / No Action

Without the revetment one can expect the clay bluff to continue to erode, and for the debris to continue to present a hazard to the public walking along the shoreline.

### Beach Restoration

The immediate project area is not along a sandy shoreline.

### Erosion Control

Coastal erosion control techniques use structures that are designed to reduce sediment losses and thus slow the rate of erosion. Breakwaters or groins could be installed offshore to reduce currents and waves that cause erosion. Other approaches can be considered to reduce shoreline erosion rates such as artificial reefs. These measures involve substantial costs with little assurance that they will be effective. In some cases they have been shown to backfire and exacerbate erosion. This approach may also be impractical given concerns over the impacts to the reef environment, marine mammals, surfing, fishing, and other water based activities.

### Adaptation

Adaptation requires that development patterns change in order to allow natural erosion/accretion cycles to continue without interference. Adaptation could be interpreted to mean that some structures that are currently threatened by erosion could be relocated landward as an alternative to the hardened shoreline structure. OCCL notes that no actual structures are threatened by the erosion on this parcel, and that development of this parcel does not appear to be the cause of the erosion. It is possible that the hardened shorelines on either side of the parcel are focusing the erosion on the subject parcel. Adaptive solutions would require re-engineering the entire shoreline, which would be cost-prohibitive.

### Hardening

In some cases, shoreline hardening may be considered as “an option of last resort,” where adaptation and softer erosion control methods are not viable on a long-term basis, and where the existing beach is of limited quality.

OCCL notes that other resource agencies, including DLNR’s Division of Aquatic Resources and the Maui County Planning Department, have concurred that hardening of the shoreline is the best option for this parcel.

The use of a sloped hybrid revetment-retaining wall, rather than a vertical seawall, was chosen by the applicant to be a more environmentally sustainable approach to addressing the shoreline erosion issue than a traditional seawall. A vertical seawall would occupy less of the owner's property and would likely be less to construct, but would also generate turbulence in the near shore waters during high storm events. The vertical seawall would also be less compatible with the existing visual character of the shoreline. Another concern with the vertical seawall is the longevity of the structure compared to a hybrid revetment-retaining wall. While each structure would be very durable, the hybrid revetment-retaining wall would likely have a longer lifespan than a vertical seawall, which would be more directly impacted by strong wave energy.

OCCL concurs that the hybrid revetment is the best option available for mitigating the erosion at the site. We also note that the applicant worked with both the County Planning Department and OCCL in designing a proposal that would minimize potential impacts on the environment.

Given the possible risk of increased erosion during the construction phase, OCCL stresses that best management practices must be followed.

The Historic Preservation Division has accepted an archaeological monitoring plan for the project, and has determined that no historical properties will be affected so long as monitoring occurs pursuant to the approved plan.

OCCL’s Ka Pa‘akai analysis has concluded that traditional and customary activities will not be negatively impacted by the project.

OCCL also believes that the removal of the failed seawall and associated debris, including a recently fallen tree, from the shoreline will benefit the public by providing safer access along the shoreline.

If the Board grants this permit, the applicant will need to work with DLNR's Land Division on any necessary Rights of Entry and easement agreements.

## **CONCLUSION**

OCCL notes that there are unique characteristics to this proposal that would allow us to support the issuance of a permit despite our generally strong stance against hardening the shoreline. In this instance, the driving issue is not to protect private property at the expense of a public resource, but rather to stabilize a slope in order to create a safer beach transit corridor, to reduce the amount of sediment washing onto the reef and near shore waters, and to prevent the scarp from enlarging onto neighboring properties and triggering additional seawall failures.

## **RECOMMENDATION**

Based on the preceding analysis, Staff recommends that the Board of Land and Natural Resources APPROVE this application for a hybrid revetment/wall at Kū'au Bay, Hamakuapoko ahupua'a, Makawao District, Maui, TMK (2) 2-6-009:005, and the removal of the failed seawall and associated debris makai of the subject property, subject to the following conditions:

1. The permittee shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of this chapter;
2. The permittee, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit;
3. The permittee shall obtain appropriate authorization from the department for the occupancy of state lands, if applicable;
4. The permittee shall comply with all applicable department of health administrative rules;
5. The permittee shall provide documentation (e.g., book and page or document number) that the permit approval has been placed in recordable form as a part of the deed instrument, prior to submission for approval of subsequent construction plans;

6. Before proceeding with any work authorized by the department or the board, the permittee shall submit four copies of the construction plans and specifications to the chairperson or an authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to the permittee. Plan approval by the chairperson does not constitute approval required from other agencies;
7. Unless otherwise authorized, any work or construction to be done on the land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the chairperson, and shall be completed within three years of the approval of such use. The permittee shall notify the department in writing when construction activity is initiated and when it is completed;
8. All representations relative to mitigation set forth in the accepted environmental assessment or impact statement for the proposed use are incorporated as conditions of the permit;
9. The permittee understands and agrees that the permit does not convey any vested right(s) or exclusive privilege;
10. In issuing the permit, the department and board have relied on the information and data that the permittee has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the department may, in addition, institute appropriate legal proceedings;
11. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the permittee shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;
12. Obstruction of public roads, trails, lateral shoreline access, and pathways shall be avoided or minimized. If obstruction is unavoidable, the permittee shall provide alternative roads, trails, lateral beach access, or pathways acceptable to the department;
13. During construction, appropriate mitigation measures shall be implemented to minimize impacts to off-site roadways, utilities, and public facilities;
14. The permittee shall obtain a county building or grading permit or both for the use prior to final construction plan approval by the department;
15. The permittee acknowledges that the approved work shall not hamper, impede, or otherwise limit the exercise of traditional, customary, or religious practices of native Hawaiians in the immediate area, to the extent the practices are provided for by the Constitution of the State of Hawaii, and by Hawaii statutory and case law;
16. Should historic remains such as artifacts, burials or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The

contractor shall immediately contact HPD (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;

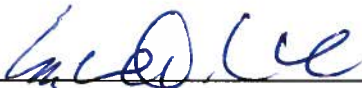
17. All best management practices described in the application and the environmental assessment will be considered conditions of the permit;
18. Other terms and conditions as prescribed by the chairperson.
19. Failure to comply with any of these conditions shall render a permit void under the chapter, as determined by the chairperson or board.

Respectfully submitted,



Michael Cain, Staff Planner  
Office of Conservation and Coastal Lands

Approved for submittal:



Suzanne D. Case, Chairperson  
Board of Land and Natural Resources





Exhibit 1: Google Earth aerial



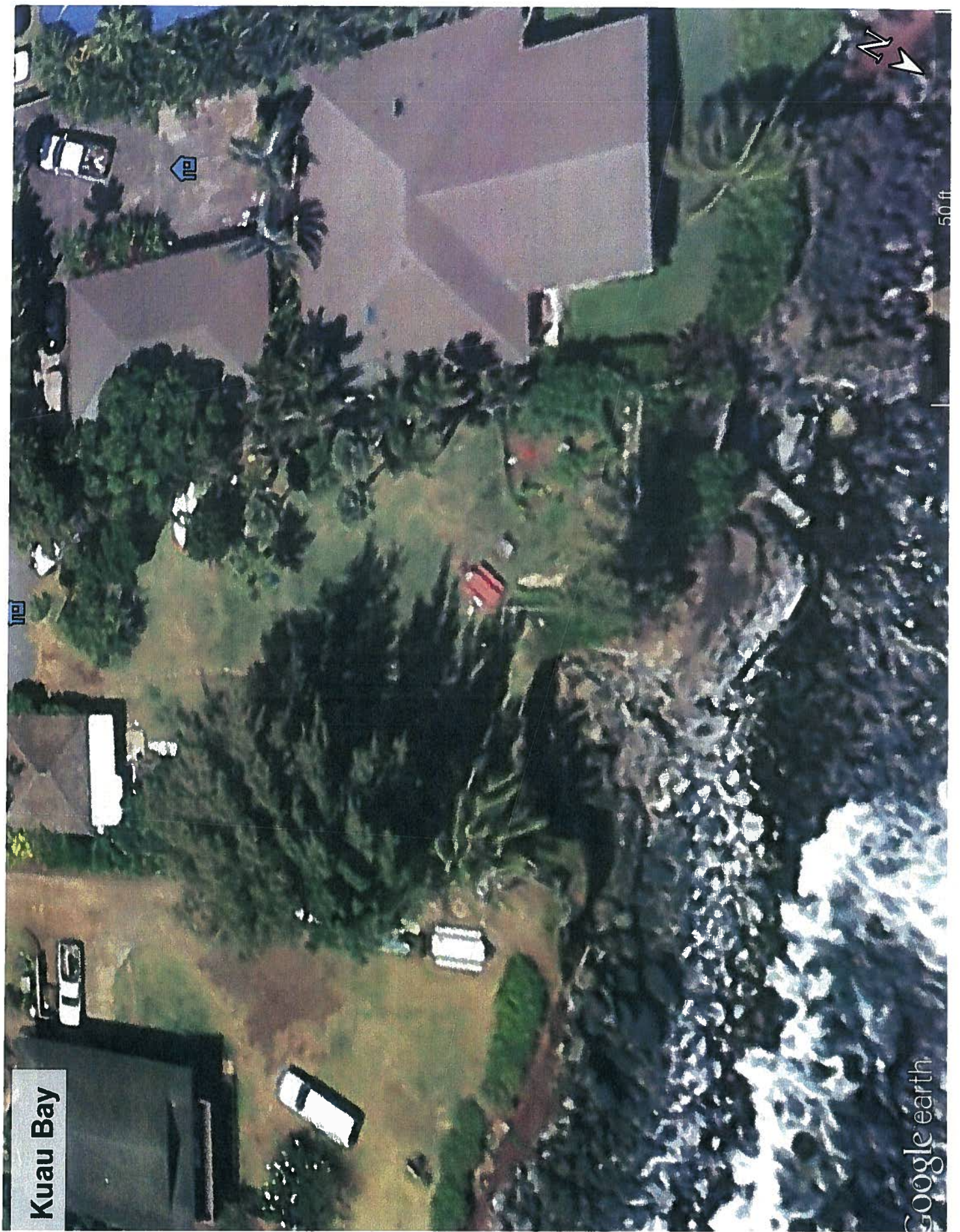


Exhibit 1: Google Earth aerial (detail)





1. Looking west at the embankment and remnant seawall debris.



2. Looking east at the existing shoreline access.



3. Looking west at the remnant wall to be removed.



4. Looking north (mauka) at the approximate 18-foot high concave embankment



5. Looking east at existing remnant debris fronting the property.

**Figure 5a**

Site Photographs

**Argyropoulos Shoreline  
Hazard Mitigation**





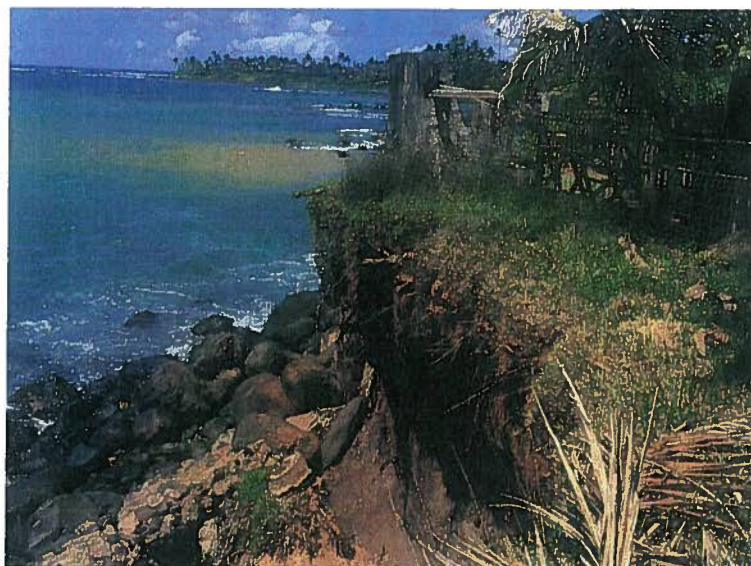
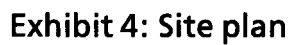


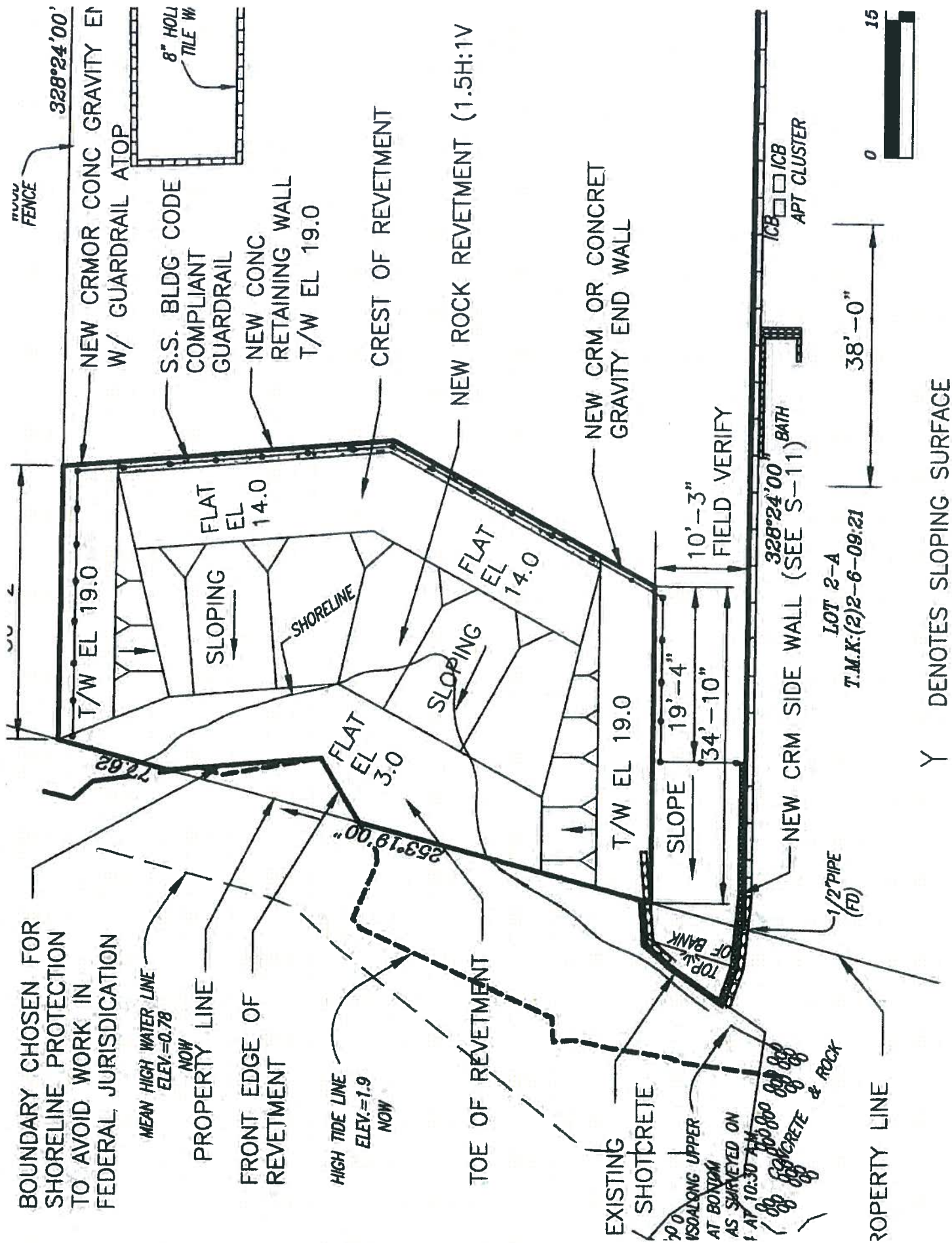
Exhibit 2: Site photographs (staff; July 22, 2015)











Y DENOTES SLOPING SURFACE

Exhibit 4: Site plan (detail)



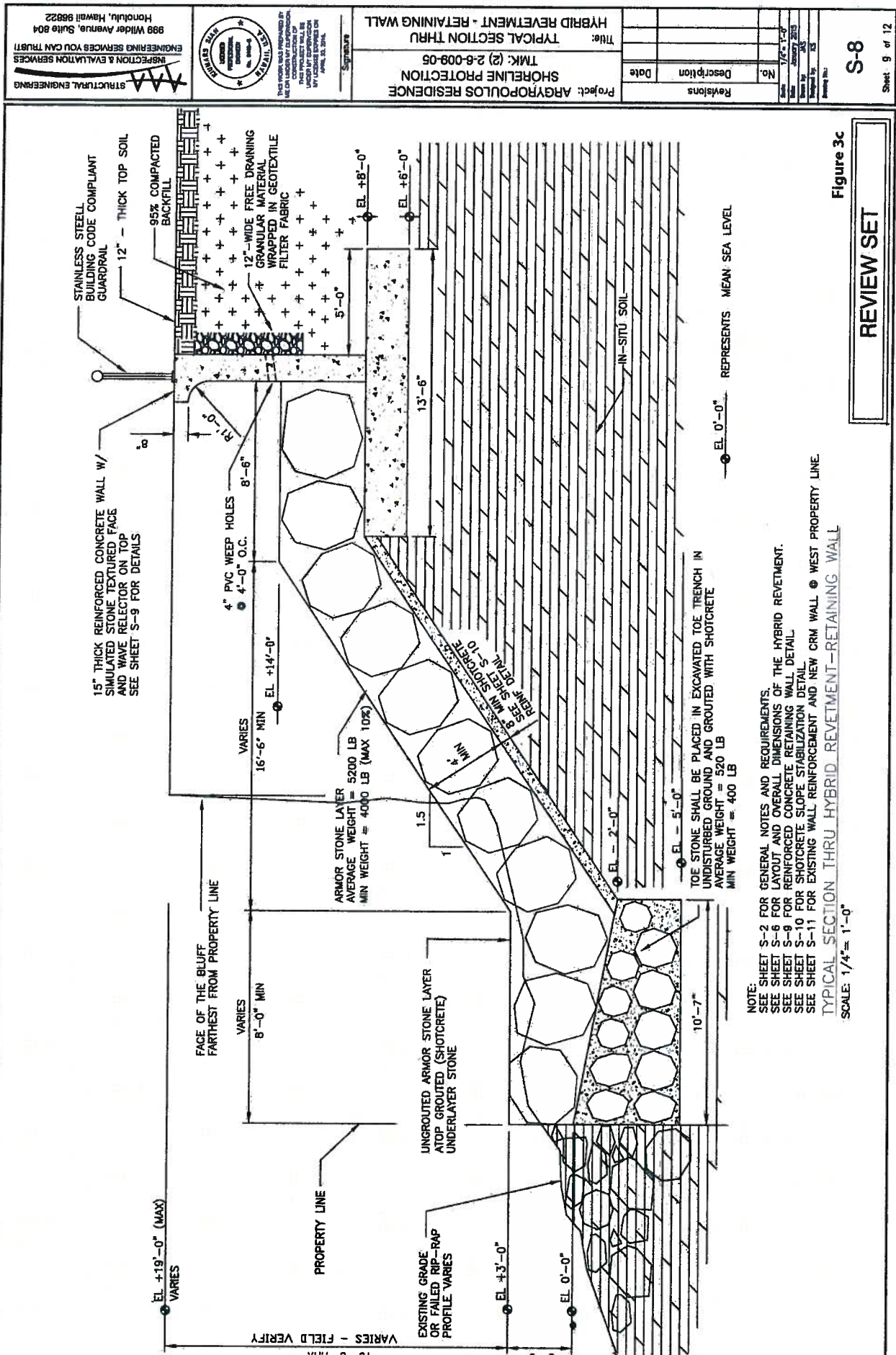


Exhibit 5: Wall section