

**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
Honolulu, Hawai`i**

180-Day Exp. Date: June 2, 2013

May 24, 2013

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

**REGARDING:** Conservation District Use Application (CDUA) KA-3649  
Moanakai Seawall/Revetment Repair and Reconstruction

**APPLICANT:** County of Kaua`i - Department of Public Works

**LANDOWNER:** State of Hawai`i

**LOCATION:** Kapa`a, Kaua`i, Submerged Land Ma kai of Tax Map Key: (4) 4-5-002:023 & Plat (4) 4-5-001:

**AREA:** Approximately ( $\approx$ ) 1-acre

**SUBZONE:** Resource

**BACKGROUND:**

The Moanakai seawall was constructed in 1992 in response to an accelerated coastal erosion threat resulting from Hurricane Iniki. The project was declared an emergency project and holds back earth and fill on which the Moanakai Road is built upon. According to a 2011 Coastal Assessment report by Sea Engineering, Inc. the existing rock revetment shore protection was not constructed to standard design practices. The southern half of the revetment is too steep; no filter or under layer of smaller stones was placed behind the armor stones causing the stones to shift and settle; and the structure was constructed around trees that affected the stability of the structure as tree roots spread or as trees die creating a void. As a result, erosion is occurring between Moanakai Road and the revetment in the form of sinkholes and the eastern shoulder of the road is being undermined. To resolve these issues, the revetment must be repaired and reconstructed to applicable standards.

**DESCRIPTION OF AREA (Exhibits 1, 2 & 3)**

The project site is located on the eastern side of the island of Kaua`i at the shoreline and submerged land of Kapa`a, Kaua`i, partially within the Resource subzone of the Conservation District. Surrounding the project area, there is the Pacific Ocean to the east; Keaka Road and Waipouli Beach Lots to the south; Moanakai Road and Kapa`a Town Lots to the west; and Waipouli Park and groins of Waikaea Drainage Canal to the north.

The Conservation District is defined by the shoreline. The May 3, 2013 certified shoreline indicates almost the entire existing structure and portions of the County Right of Way, Moanakai Road, appear to be within the Conservation District (**Exhibit 4**).

The 1050-ft project corridor runs parallel to Moanakai Road. The road once known as Beach Road has been in existence prior 1924. The Kapa'a Town Residential Lots Subdivision was developed by 1929 and since then, the road provides access to residential lots. The speed limit of the road is 20 mph. In conjunction with the building of the coastal bike-pedestrian path on Kaua'i, Moanikai Road will be converted to a one-lane road and shared-use path. This change will occur prior to the implementation of the seawall repair and reconstruction.

Regarding the existing revetment/seawall, Sea Engineering, Inc. has identified the project structure as a rock rubble mound revetment constructed with two profiles. The southern 570-ft of the structure has a steep seaward face, and a 2.5 to 3-ft wide concrete cap walkway that begins near the intersection of Moanakai Road and Keaka Road and extends northward.

The northern 480-ft of the structure has a gentler slope and no cap. This section of the seawall is constructed as a single layer of armor stone. The seawall is presently in poor condition with erosion occurring between the road and seawall in the form of sinkholes and undermining of the shoulder of the road (**Exhibit 5**).

The beach area consists of sand and coral gravel. The southern portion of the project area contains a higher percentage of coral gravel. The northern section beach is predominately sand that widens gradually to a width of about 40-feet towards Waipouli Park. A fossil rock bench extends the full length of the project site and acts as a natural shore protection by significantly limiting the wave heights and energy at the shoreline. The rock bench is 60-70 feet wide with elevations of up to +3 mean lower low water (mllw).

The project area is located in Flood Zone VE. Evaluations completed by the University of Hawaii's Coastal Geology Group indicated that the annual erosion rate in the project area may be up to 1-foot per year.

Flooding of the Kapa'a area in the 1940's led to the dredging and construction of the Waika'ea and Mō'ikeha canals. Subsequent dredging of the reef and installation of the canal's groins north of the project area may be responsible for accelerated erosion along the coast in the area.

At the north end of the project area, the rock bench is further offshore and provides a shallow, protected swimming area in its lee known as Baby Beach. It is a safe place for children to swim due to protection from the offshore bench. The beach is used daily, particularly by families with children. Beyond the reef bench, the ocean is a popular kite surfing spot due to the trade winds.

In several locations along the wall, trees or tree stumps were found protruding from the top of the wall. Vegetation is sparse with sporadic clumps of naupaka and a few ironwood trees. According to the applicant, the project area consists of mostly hard surfaces that include paved areas, road shoulders and rocky ground with loosely scattered pockets of soil.

The seawall and revetment basalt boulders host very little life and there are no sensitive biological resources occurring in the immediate project area. Terrestrial fauna consists of small mammals: cats, dogs, rats and mice; and common birds. The revetment may house barnacles, snails and crabs; no algae were observed on the basalt boulders. The lagoon waters have contained schools of juvenile manini, tilapia, wrasse, and mullet.

No historic properties have been previously identified within the immediate vicinity of the project area. Due to the presence of Mokuleia Fine Sandy Loam sediments, human burials or intact cultural material may be encountered during construction activities. The project site consists of a previously-disturbed area adjacent to the shoreline with unrestricted access. The project beach and ocean waters are extensively used by the public. Traditional and customary uses include recreation, fishing and reflection.

### **PROPOSED USE (Exhibits 6, 7, 8, 9, & 10)**

The total project area is approximately 1-acre and is divided into two phases, the Southern Reach and the Northern Reach. The design of the seawall improvements will be in accordance with the regulatory requirements and design guidelines of the US Army Corps of Engineers' Shore Protection Manual (1984) and Coastal Engineering Manual (2006).

#### *Southern Reach*

For the Southern Reach, the seawall/revetment will remain intact. Vegetation that interferes with the stability of the structure will be removed. Voids left by the removed vegetation and sinkholes will be lined with geotextile filter fabric prior to filling. Some voids will be replaced with armor stone and also filled as needed with appropriate material, e.g., gravel, base course, or crusher run.

#### *Northern Reach (Exhibit 8)*

This portion of the revetment will be replaced and rebuilt based on a hybrid seawall containing elements of both a revetment and a seawall.

**CRM Seawall.** The seawall would be constructed as a CRM or similar material wall prior to construction of the revetment. While the elevation of the road varies along the project reach, the crest elevation of the CRM wall should remain constant. If variability in the structure elevation is required to meet road requirements, then the variability should be made to the CRM wall, rather than the revetment. Imported granular fill will be used to fill in areas mauka of the CRM wall before replacing the road shoulder. The base of the wall should extend to below the armor layer. The top of the CRM wall is designed to have a typical elevation +9.5 feet mllw.

**Revetment.** The existing revetment will be removed and replaced. Removal work will be done from the shore to the road. As required the contractor will maintain the existing revetment. Loose sand and gravel will be excavated to place the revetment stone on hard, non-erodible, rock substrate. Smaller two- to four-hundred pound under layer stones will be placed on geotextile fabric. A single armor stone layer will be placed over the under layer stone and geotextile fabric. Existing armor stone will be reused as available to create the revetment. The stones will be carefully chosen and placed in a keyed and fitted manner to minimize gaps between stones and ensure maximum contact between adjacent stones.

In the event there is no hard substrate and sand is encountered, a toe scour apron will extend the revetment  $\approx$  3.3 feet. The scour apron design has additional armor stones and under layer placed at the toe of the revetment in order to reduce the potential for scour that would destabilize the revetment.

Construction of the revetment against non-erodible material is recommended to reduce the potential of undermining and flanking. The threat of flank erosion can be reduced by wrapping the proposed revetment in a radial manner, maintain the 1V: 1.5 H slope, until it intersects the existing revetment on the south. This would reduce the discontinuity in the two revetments and

reduces the potential for flanking of either portion of the revetment. maintaining the 1V:1.5H slope.

The area of disturbance on the Northern Reach could extend about 23-feet outward from the end of CRM wall. The estimated amount of fill to be placed below the Mean High High Water is 290 cubic yards of fill material for 450 linear feet. Materials excavated from the site that are intended to be reused will either be stockpiled on-site at a designated location or hauled off-site for reuse by the County.

Currently, the northern end does not appear to terminate against non-erodible material. Sand may be excavated from this area and the revetment will wrap 90° to the shoulder of the road. To reduce exposure, the revetment should be buried using native material to existing lines and grades. This termination should be inspected and maintained at a minimum annually and following large wave events.

By reconstructing the seawall, the DPW's objectives are to:

- Provide improved shoreline protection to address the immediate need for vehicular and pedestrian safety for users of Moanakai Road;
- Maintain safe public access to the shoreline;
- Minimize the possibility of adverse future effects to the surrounding shoreline from the dilapidation of the Moanakai seawall; and
- Preserve the existing property along both makai and mauka ends of the project site.

The anticipated project duration is 6 to 12 months. Monitoring requirements will be developed as needed accordingly. The revetment aids in preventing shoreline erosion and protects the public right-of-way that provides ingress and egress to residential lots that have been present since the mid-1920's. The improvements will benefit the public that utilizes Moanakai Road.

#### *Mitigation*

An assessment done by AECOS, Inc. determined that direct impacts to the marine environment from the proposed project will be minimal. BMPs will be used to ensure that marine biota of the lagoon and adjacent reef flat are protected from sedimentation and project-related runoff. Construction may cause a temporary increase in turbidity, but this will be minimized with the use of silt curtains. Guidelines recommended by the National Marine Fisheries Services will be observed to minimize the potential for adverse effects to threatened and endangered species.

In addition, to protect the surrounding area and surface waters, sandbags or Flexibel Intermediate Bulk Containers (FIBC) will be deployed to isolate the project area and prevent turbidity resulting from construction activities. The applicant has also identified a number of mitigative measures within the Final Environmental Assessment to be utilized to protect the land and to ensure that marine biota and the adjacent reef flat are protected from sedimentation and project related runoff.

Major construction activities will be done when fair weather conditions are expected and at low tide. Construction related noise is expected to be temporary, of limited duration, and restricted to daytime hours.

An on-site archaeological monitor will serve as a mitigation measure to insure proper documentation and actions should historic properties be encountered during construction.

*Alternatives Considered*

No Action-This action would fail to maintain or provide an alternative to the existing public facility for the safety and benefit of the general public.

Delayed Action-This alternative would result in further deterioration of the wall, road and environment.

Alternative Design-This alternative is similar to the proposed action but was eliminated as it presented a much larger footprint. The applicant prefers to minimize the footprint of the structure to facilitate public use of the shoreline.

**SUMMARY OF COMMENTS**

The Office of Conservation and Coastal Lands referred this application to the following agencies for review and comment: the Federal-Department of the Army and the National Oceanic Atmospheric Administration; the State-Department of Health Environmental Planning Office; the Office of Hawaiian Affairs; the Office of Environmental Quality Control; the Department of Land and Natural Resources Divisions of: Aquatic Resources, Conservation and Resource Enforcement, Historic Preservation and the Kaua'i District Land Office; the County of Kauai-Department of Planning and the Kapa`a State Library.

Comments were received by the following agencies and summarized by Staff as follows:

FEDERAL

*Department of the Army-U.S. Army Corps of Engineers*

In December 2012, this office issued a Public Notice for Permit based on our determination that the proposed project is not eligible for exemption under Section 404 of the Clean Water Act as the work would involve discharge of fill material in the Pacific Ocean. Accordingly, a Department of the Army permit is required and is being processed for this project.

*Applicant's response*

We concur and acknowledge this statement. The Department of Public Works is currently going through the DA application process.

STATE

Department of Land and Natural Resources

*Historic Preservation*

Our office's comments on the CIA mention that there are cultural practices in the general area which include, but are not limited to, access to the ocean for gathering, for ceremonial and for recreational uses; and concern that ground disturbing work may uncover burials or burial sites. Our review of the archaeological monitoring plan and previous work in the vicinity indicates that (1) multiple burial features have been identified and states that (2) a high potential exists for further discovery of human skeletal remains and cultural deposits. However, our office believes

the monitoring provisions and research questions outlined in the archaeological monitoring plan will adequately serve to (1) identify and protect any inadvertently discovered human skeletal remains and to (2) document and mitigate the disturbance of any cultural layers. SHPD approved the archaeological monitoring plan on June 7, 2010.

We concur with the determination that no historic properties will be adversely affected by this undertaking with implementation of the precautionary archaeological monitoring program.

*Applicant's response*

We acknowledge SHPD's determination that no historic properties will be adversely affected by this undertaking with implementation of the precautionary archaeological monitoring program.

*Kaua'i District Land Office*

As the scope of work is upon State property, the applicant is required to apply for a land disposition with the Land Division.

*Applicant's response*

We are working with the Kauai District Land Office to initiate action toward a Governor's Executive Order that will contain the Moanakai Seawall and Lihi Park (Waipouli Park) for use by the County of Kaua'i.

*Office of Conservation and Coastal Lands*

A certified shoreline is required for this project.

**Staff notes:** The shoreline has been certified, dated May 3, 2013.

**ANALYSIS**

After reviewing the application, by correspondence dated December 5, 2012, the Department has found that:

1. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to §13-5-22, Hawaii Administrative Rules (HAR), P-15 SHORELINE EROSION CONTROL 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. Please be advised, however, that this finding does not constitute approval of the proposal;
2. Pursuant to §13-5-40(a) (4), HAR, a Public Hearing is not required;
3. In conformance with Chapter 343, Hawaii Revised Statutes (HRS), as amended, and Chapter 11-200, HAR, the Final Environmental Assessment has been reviewed and

accepted by the County of Kaua'i, Department of Public Works. The FONSI was published in the January 8, 2012 issue of the Environmental Notice; and

4. The Conservation District portion of this project does not lie within the Special Management Area.

Notice of the application was published in the December 8, 2012 issue of the Environmental Notice.

## CONSERVATION CRITERIA

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

- 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 use is to repair and replace a seawall/revetment that was created under an emergency authorization after Hurricane Iniki. The revetment aids in preventing shoreline erosion and protects the public right-of-way that provides ingress and egress to residential lots that have been present since the mid-1920's.

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

The objective of the Resource Subzone is to ensure with proper management, the sustainable use of the natural resources of those areas. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to §13-5-22, Hawaii Administrative Rules (HAR), P-15 SHORELINE EROSION CONTROL 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).

Regarding demonstrating the need of the erosion control structure based upon the noted criteria, if the CDUP is not granted: 1) The County Right of Way would continue to be damaged and access to and along the shoreline could be compromised and unsafe; 2) It is expected that the beach fronting the revetment will continue to erode. With the proposed project, once the beach erodes completely, sand may continue to be removed by waves and currents and buried portions of the revetment will become exposed resulting in a loss of sandy bottom in an area heavily used for recreation. However, the proposed

improvements will improve access along the shoreline. 3) The proposed use would protect the public road that is also the only access way to nineteen lots of the adjacent subdivision.

During construction, Staff believes through the implementation of best management practices, marine waters will be protected.

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

Staff believes the project complies with the provisions and guidelines of 205A, HRS in regards to the following criteria:

*Recreational resources:* Shoreline access will be maintained during construction, for safety reasons, recreation at the construction site, may be limited;

*Historic resources:* No archaeological or cultural resources are expected in the project site, however an archaeological monitor shall be present during construction;

*Scenic and open space resource:* There should be no change to visual resources;

*Marine and Coastal ecosystems:* BMPs will be deployed to prevent potential pollutant discharges in storm water runoff and will be in place and functional before project activities begin and maintained throughout the construction period;

*Coastal hazards:* The improvement reconstruction will be constructed in accordance with the regulatory requirements and design guidelines of the US Army Corps of Engineers' Shore Protection Manual (1984) and Coastal Engineering Manual (2006); and

*Beach protection:* The project is intended to improve shoreline protection, the aesthetics of the shorefront, and minimized the effects of erosion. This area has an erosion rate of up to 1-foot a year. It has been well documented that seawalls and shoreline structures on a chronically eroding shoreline can lead to beach loss or narrowing by restricting the natural movement of the shoreline landward. In this particular case, the wall was put up as an emergency response to stop erosion. The repair and replacement of the existing wall will continue to stop erosion of the land but will continue to degrade the beach resource.

Under the Coastal Zone Management Act, the applicant is required to obtain a Federal Consistency Concurrence from the State Office of Planning. Through obtaining this Concurrence, staff further believes the proposal will comply with the provisions and guidelines of Chapter 205A, HRS.

Staff notes, although the project site is situated within the Special Management Area (SMA), the proposal is not regarded as development and is exempt from the SMA rules and regulations of the County of Kaua'i.

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

Given the existing dilapidated wall was constructed under emergency authorization immediately after a Hurricane and existing shoreline structures to the north (Waikaea canal groins) and south (a steep-faced undermined seawall on the neighboring property),



it does not appear that the proposed land use will cause substantial adverse impacts to existing natural resources within the surrounding area, community or region.

The immediate area is expected to be sustained by ensuring that the seawall remains. Temporary effects of construction will be mitigated by following best management practices.

- 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 proposed land use is repair and replacement of an existing seawall. The improved seawall/revetment structure will be approximately the same height, scale and mass.

- 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 improved seawall will not change view planes, open space or access to the shoreline. The reach of the revetment may reduce the seaward extent of the structure. Open space will be preserved.

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

No subdivision of land is proposed.

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

The proposed land use is to protect a public road that provides access to private property. The project will be implemented to comply with Federal, State, and County of Kaua'i rules and regulations governing public safety and health. Potential sources of adverse impacts have been identified and appropriate mitigative measures have been developed. Anticipated short term concerns are associated with construction activities that may involve air, water, noise and traffic impacts. Staff is of the opinion that the proposed improvements will not be materially detrimental to the public health, safety and welfare.

#### Traditional Uses

According to the applicant, no historic properties have been previously identified within the immediate vicinity of the project area. A cultural impact assessment was completed by Cultural Surveys Hawai'i, Inc in 2010. The report included efforts to contact and consult with Hawaiian cultural organizations, government agencies and individuals with knowledge regarding traditional cultural practices, resources and beliefs related to the project area. Limu gathering and fishing were identified.

However the abundance of these resources has greatly declined. The participants attributed the depletion of ocean resources near the project area to the Hawaiian monk seal, sharks, and turtles

and windsurfing activities and the introduction of invasive species such as ta'ape and roi. No impacts directed from the seawall or proposed improvements were implied.

Public access to the shoreline may be decreased or detoured around the active construction site but will not limit access to the shoreline as access will remain open along either side of the work area. Unrestricted access will be fully restored upon completion. An archaeological monitoring program will serve as a mitigation measure to ensure proper documentation of any historic or cultural finds encountered during construction. If cultural finds are discovered, all work will cease and SHPD will be notified.

During the processing of this application, no comments were received from native practitioners or the Office of Hawaiian Affairs. The State Historic Preservation Division identified some traditional uses as access to the ocean for gathering, for ceremonial and for recreational uses; and burials or burial sites. Their review of the archaeological monitoring plan and previous work in the vicinity indicates that (1) multiple burial features have been identified and states that (2) a high potential exists for further discovery of human skeletal remains and cultural deposits. However, by following the approved archaeological monitoring plan, it is believed inadvertent finds will be properly treated.

## **DISCUSSION**

The proposed use is to repair and replace a seawall/revetment that was created under an emergency authorization after Hurricane Iniki. The revetment aids in preventing shoreline erosion and protects the public right-of-way that provides ingress and egress to residential lots that have been present since the mid-1920's.

The project is located in an erosion prone area due to the dilapidated condition of an existing seawall. The proposed project is intended to repair and restore the condition and function of the seawall to reduce erosion and provide some protection from strong waves and storm surge impacts. Current condition of the existing Moanakai seawall poses a risk of shoreline erosion, damage to property and the safety of vehicles, passengers and user that traverse along Moanakai Road such as pedestrians, joggers, bicyclists, fishermen and sight seekers. Prior to the implementation of the seawall repair and reconstruction, Moanikai Road will be converted to a one-lane road and shared-use path.

The design of the seawall improvements will be in accordance with the regulatory requirements and design guidelines of the US Army Corps of Engineers' Shore Protection Manual (1984) and Coastal Engineering Manual (2006). The project will be implemented to comply with Federal, State, and County of Kaua'i rules and regulations governing public safety and health. Potential sources of adverse impacts have been identified and appropriate mitigative measures have been developed.

The project area has an erosion rate of up to 1-foot per year. It is expected that the beach fronting the revetment will continue to erode. With the proposed project, once the beach erodes completely, sand may continue to be removed by waves and currents and buried portions of the revetment will become exposed resulting in a loss of sandy bottom in an area heavily used for recreation.

County of Kaua`i should consider utilizing clean sand from any nearby maintenance canal dredging projects or seek and identify a clean sand source to nourish the beach in this area to maintain the recreational resource identified as 'Baby Beach.'

### **RECOMMENDATION**


Based on the preceding analysis, Staff recommends that the Board of Land and Natural Resources APPROVE this application for the Moanakai Seawall/Revetment Repair and Reconstruction located at Kapa`a, Kaua`i, upon submerged land ma kai of Tax Map Key: (4) 4-5-002:023 & Plat (4) 4-5-001:xxx 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 a land disposition from the department for the occupancy of state lands;
4. The permittee shall comply with all applicable department of health administrative rules;
5. 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;
6. Unless otherwise authorized, any work or construction to be done on the land shall be initiated within two years 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;
7. 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;
8. The permittee understands and agrees that the permit does not convey any vested right(s) or exclusive privilege;
9. 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;

10. 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;
11. 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;
12. During construction, appropriate mitigation measures shall be implemented to minimize impacts to off-site roadways, utilities, and public facilities;
13. The permittee shall obtain a county building or grading permit or both for the use prior to final construction plan approval by the department;
14. Where applicable, provisions for protection of beaches shall be established by the permittee, to the satisfaction of the department, including but not limited to avoidance, relocation, or other best management practices;
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 Historic Preservation Division shall be contacted (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;
17. The approved Archeological Monitoring Plan shall be implemented during the duration of ground disturbance activities;
18. Work shall be conducted during calm weather periods to the most practical extent possible and no work shall occur if there is high surf or ocean conditions that will create unsafe work or beach conditions;
19. The permittee shall identify potential sand sources that may be utilize for beach nourishment;
20. The permittee shall implement the proposed Best Management Practices (BMPs);
21. The permittee shall ensure that excessive siltation and turbidity is contained or otherwise minimized to the satisfaction of all appropriate agencies, through silt containment devices or barriers, or other requirements as necessary;
22. Appropriate safety and notification procedures shall be implemented. This shall include high visibility safety fencing, tape or barriers to keep people away from the active construction site and a notification to the public informing them of the project;

23. All placed material shall be free of contaminants of any kind including: excessive silt, sludge, anoxic or decaying organic matter, turbidity, temperature or abnormal water chemistry, clay, dirt, organic material, oil, floating debris, grease or foam or any other pollutant that would produce an undesirable condition to the beach or water quality;
24. The activity shall not adversely affect a federally listed threatened or endangered species or a species proposed for such designation, or destroy or adversely modify its designated critical habitat;
25. When the Department is notified that an individual activity deviates from the scope of work approved by this authorization or activities are adversely affecting fish or wildlife resources or their harvest, the Chairperson will direct the permittee to undertake corrective measures to address the condition affecting these resources. The permittee must suspend or modify the activity to the extent necessary to mitigate or eliminate the adverse effect;
26. No contamination of the marine or coastal environment (trash or debris) shall result from project-related activities authorized under this permit;
27. The Office of Conservation and Coastal Lands shall be notified (587-0377) in advance of the anticipated construction dates and shall be notified immediately if any changes to the scope or schedule are anticipated;
28. The permittee shall maintain safe lateral beach access for the life time of the revetment;
29. Other terms and conditions as may be prescribed by the Chairperson; and
30. Failure to comply with any of these conditions shall render this Conservation District Use Permit null and void.

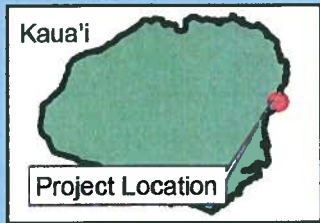
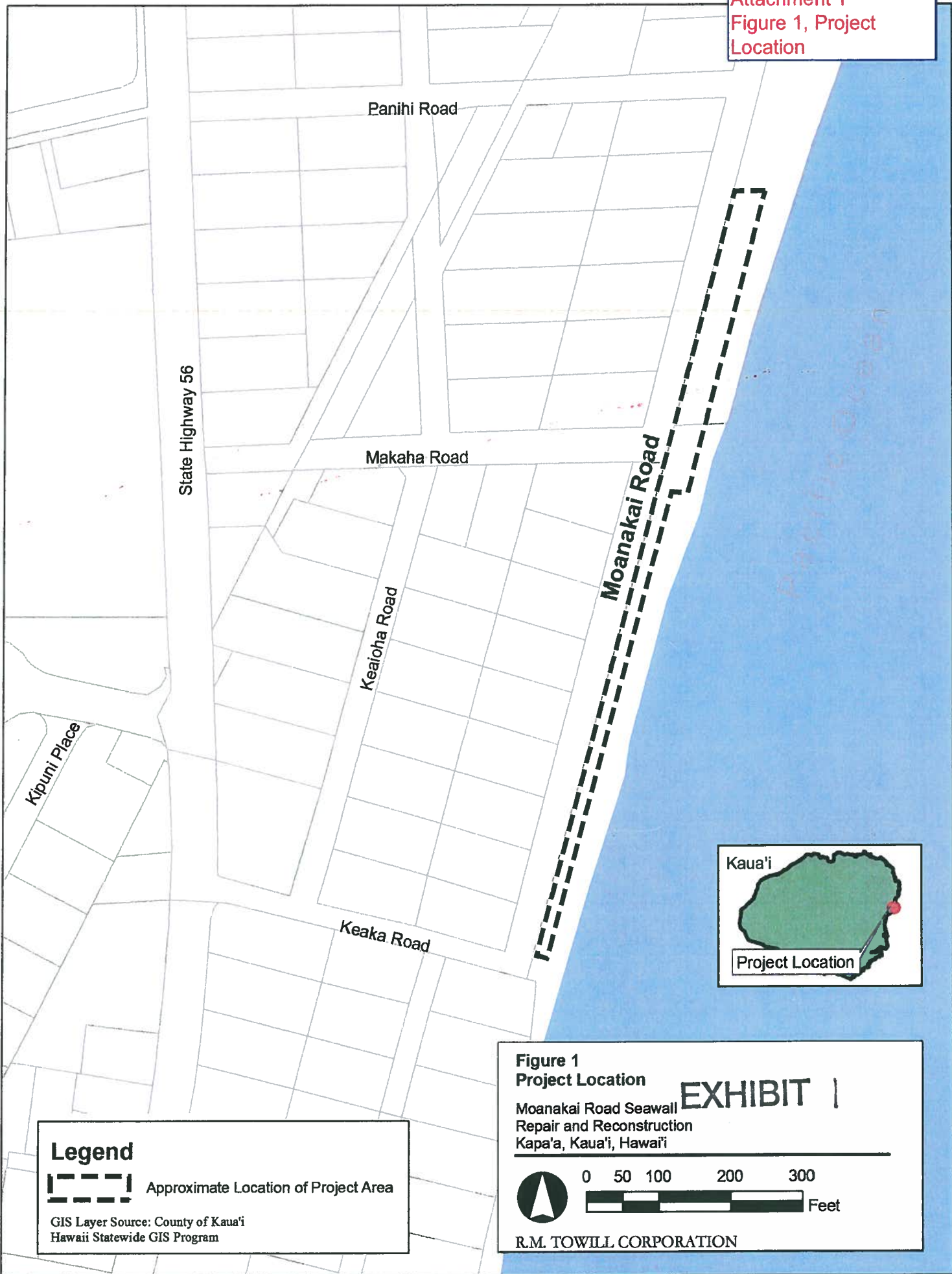
Respectfully submitted,




K. Tiger Mills, Staff Planner  
Office of Conservation and Coastal Lands



William J. Aila, Jr., Chairperson  
Board of Land and Natural Resources



**Legend**


 Approximate Location of Project Area

GIS Layer Source: County of Kaua'i  
Hawaii Statewide GIS Program

**Figure 1**  
**Project Location**

**EXHIBIT 1**

Moanakai Road Seawall  
Repair and Reconstruction  
Kapa'a, Kaua'i, Hawaii

 0 50 100 200 300 Feet

R.M. TOWILL CORPORATION

Two Profiles of Moanakai Seawall

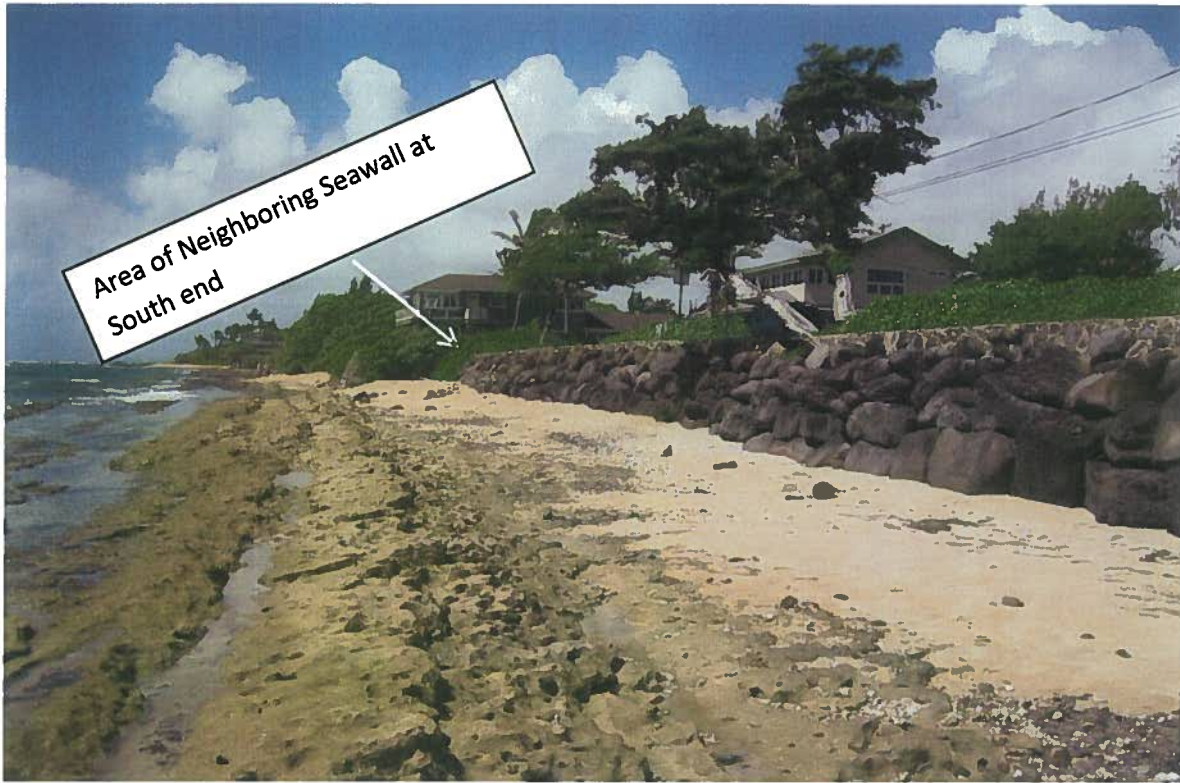


Sea Engineering, Inc. 2011

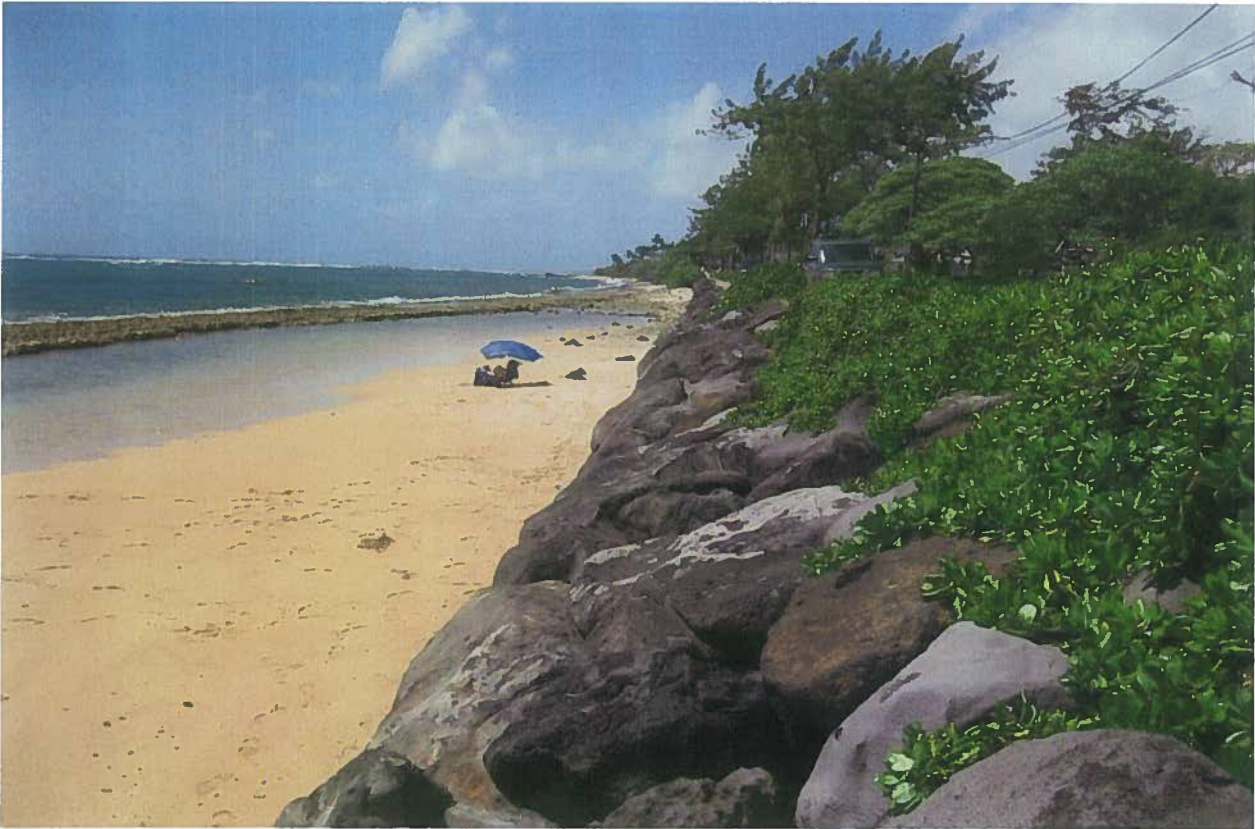


Topside- Southern reach with cap walkway in background; and Northern reach rubble rock mound in foreground

EXHIBIT 2



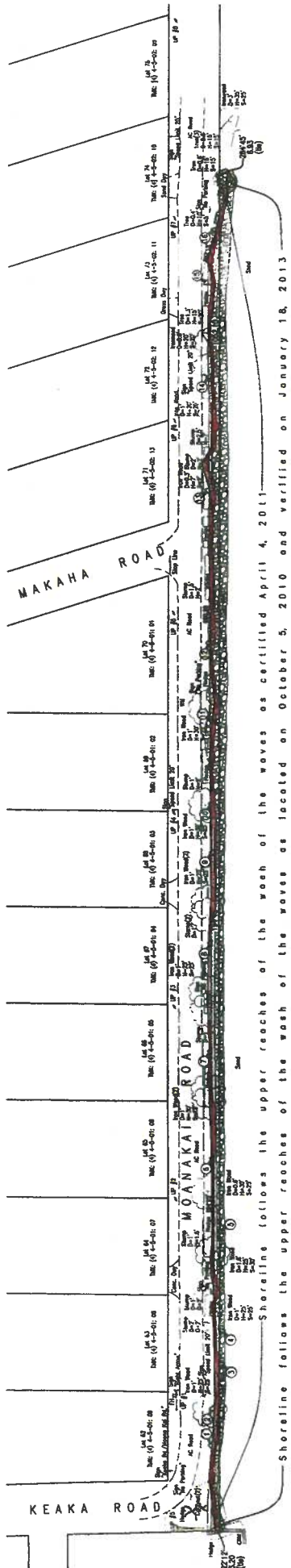
Fossil Rock Bench extends the full length of the project site



Protected swimming area, beach, revetment in Northern section

# EXHIBIT 3





# EXHIBIT 4

The shoreline as delineated in red is hereby certified as the shoreline as of  
 DATE: 1/18/2013  
 CLERK: [Signature]  
 CLERK: [Signature]



This work was prepared by me or under my direct supervision  
 [Signature]  
 License Professional Land Surveyor  
 Certificate Number: 10050

Shoreline Survey  
 Portion of Moanakai Road  
 At Kapaoo, Kawaihau, Kauai, Hawaii  
 Tax Map Key: (4) 4-5-01

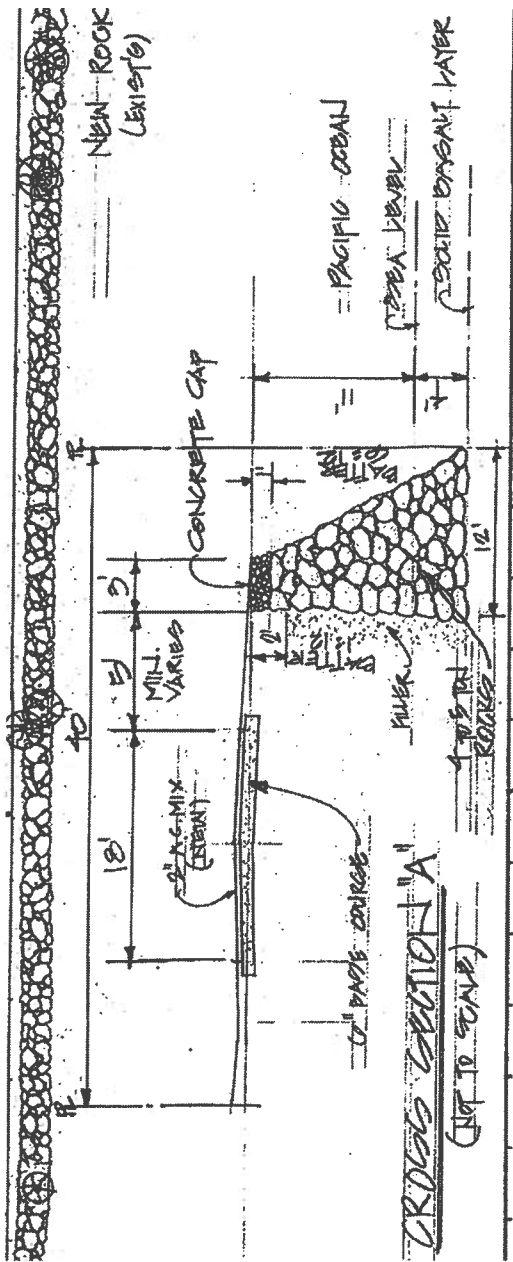


Owner: [Name]  
 Address: [Address]  
 License: [License]  
 Photo Number and Direction: [Info]

R. M. TOWILL CORPORATION

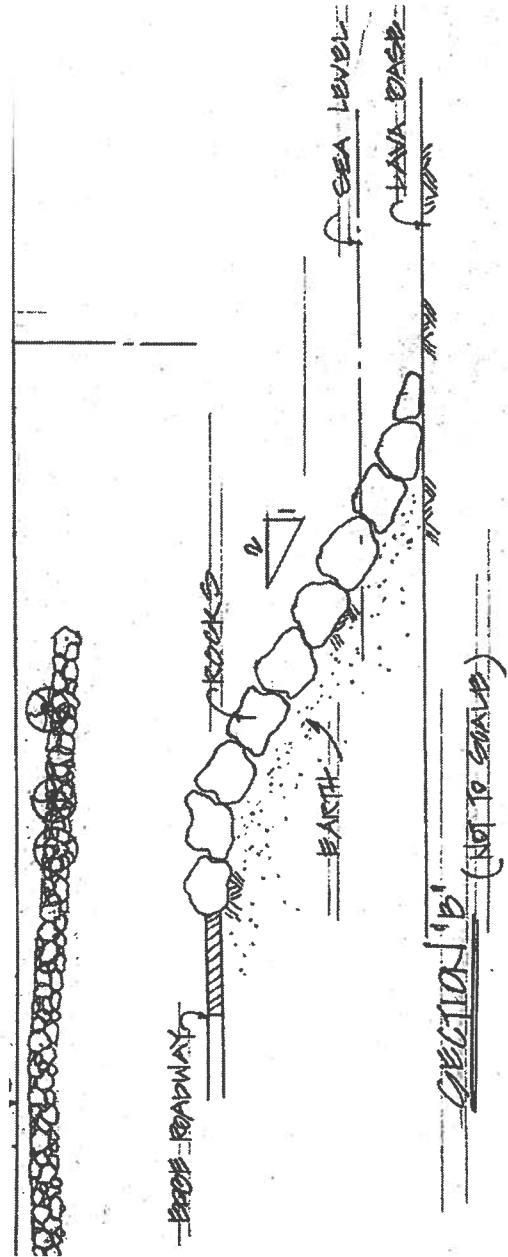
11" x 17" = 40' x 56' PL

As-built cross section of southern reach of revetment

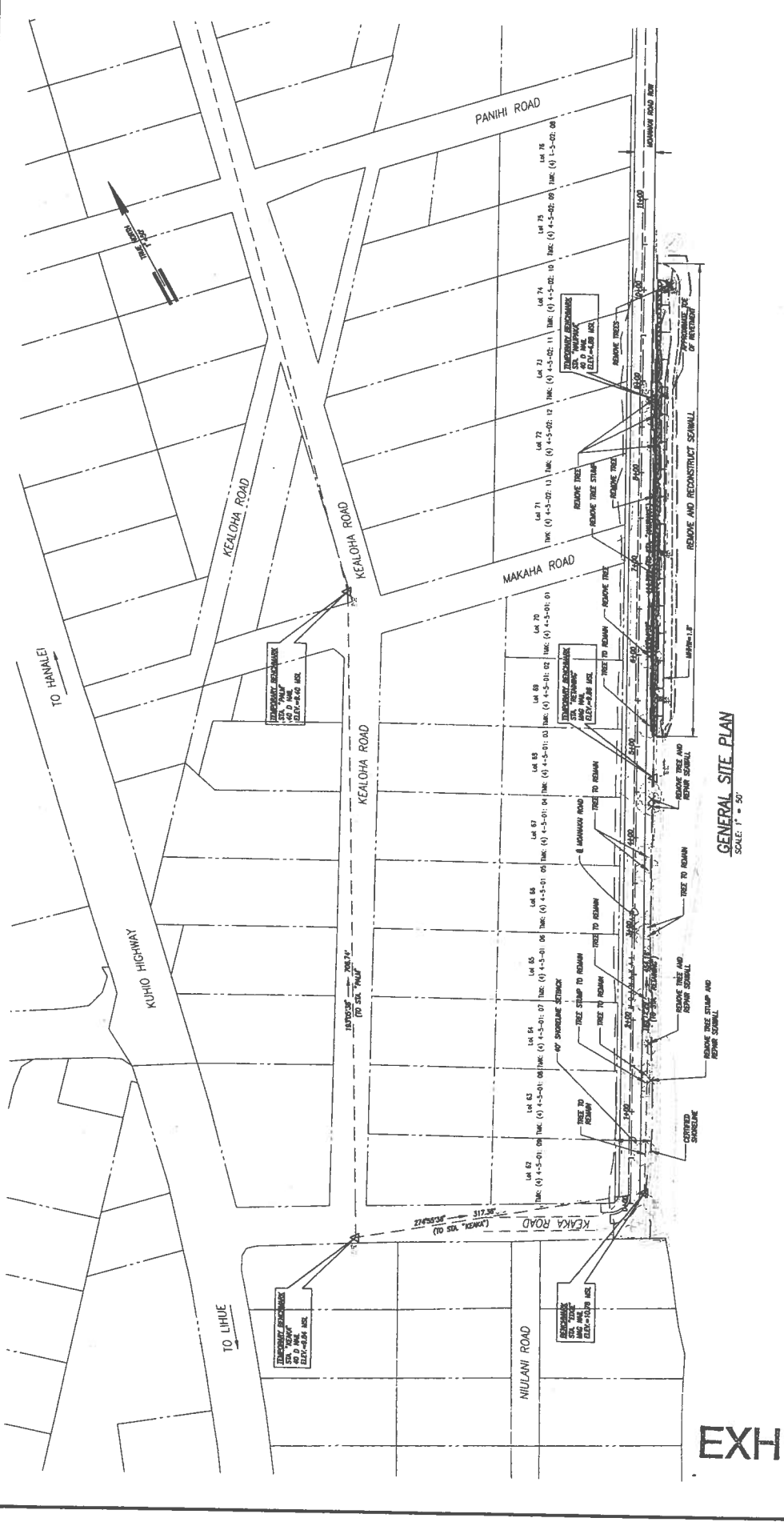


Sea Engineering, Inc.

As-built cross section of northern reach of revetment



Sea Engineering, Inc.



GENERAL SITE PLAN  
SCALE: 1" = 50'

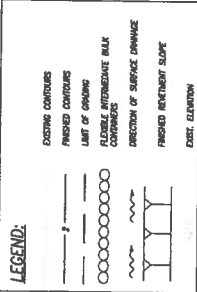
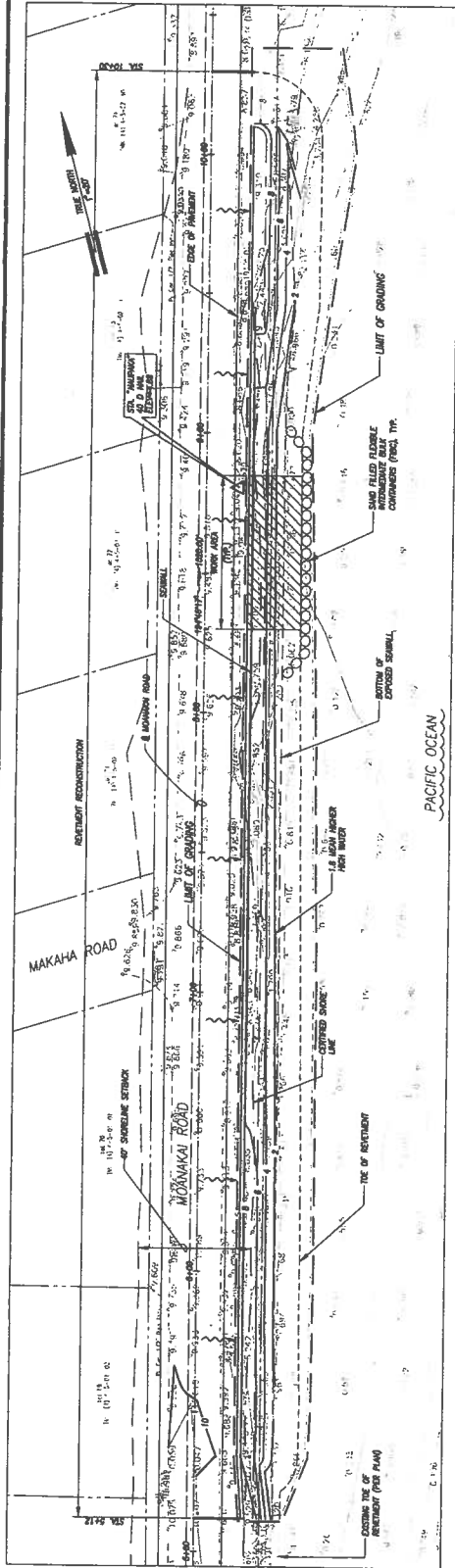
**ESTIMATED SUMMARY**  
(FOR PERMITS PURPOSES ONLY)  
ESTIMATED TOTAL FILL: 2400 CY  
ESTIMATED TOTAL EXCAVATION: 1000 CY  
ESTIMATED TOTAL CONCRETE: 1000 CY



THIS PLAN IS THE PROPERTY OF R.M. TOWILL CORPORATION AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF R.M. TOWILL CORPORATION.

<b>R. M. TOWILL CORPORATION</b> DEPARTMENT OF PUBLIC WORKS 1000 KANOA ROAD, HAWAII HONOLULU, HAWAII 96813	
PROJECT: REPAIR/RECONSTRUCTION OF ROAD FROM MAKAHA ROAD SEAWALL	DATE: MAY 2012
SCALE: GENERAL SITE PLAN	SHEET NO.: C-2
DRAWN BY: J.P.	CHECKED BY: J.M.D.
APPROVED:	COUNTY: HAWAII

EXHIBIT 6



**GRADING AND EROSION CONTROL PLAN**  
SCALE: 1" = 20'

- EROSION CONTROL NOTES AND BEST MANAGEMENT PRACTICES (BMPs):**
1. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY WORK BEGINS.
  2. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE PROMPTLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
  3. EROSION CONTROL MEASURES SHALL BE DESIGNED AND CONSTRUCTED AS NECESSARY TO PREVENT EROSION AND POLLUTION.
  4. EROSION CONTROL MEASURES SHALL BE APPLIED AS SOON AS PRACTICAL WITH FINAL CONSTRUCTION.

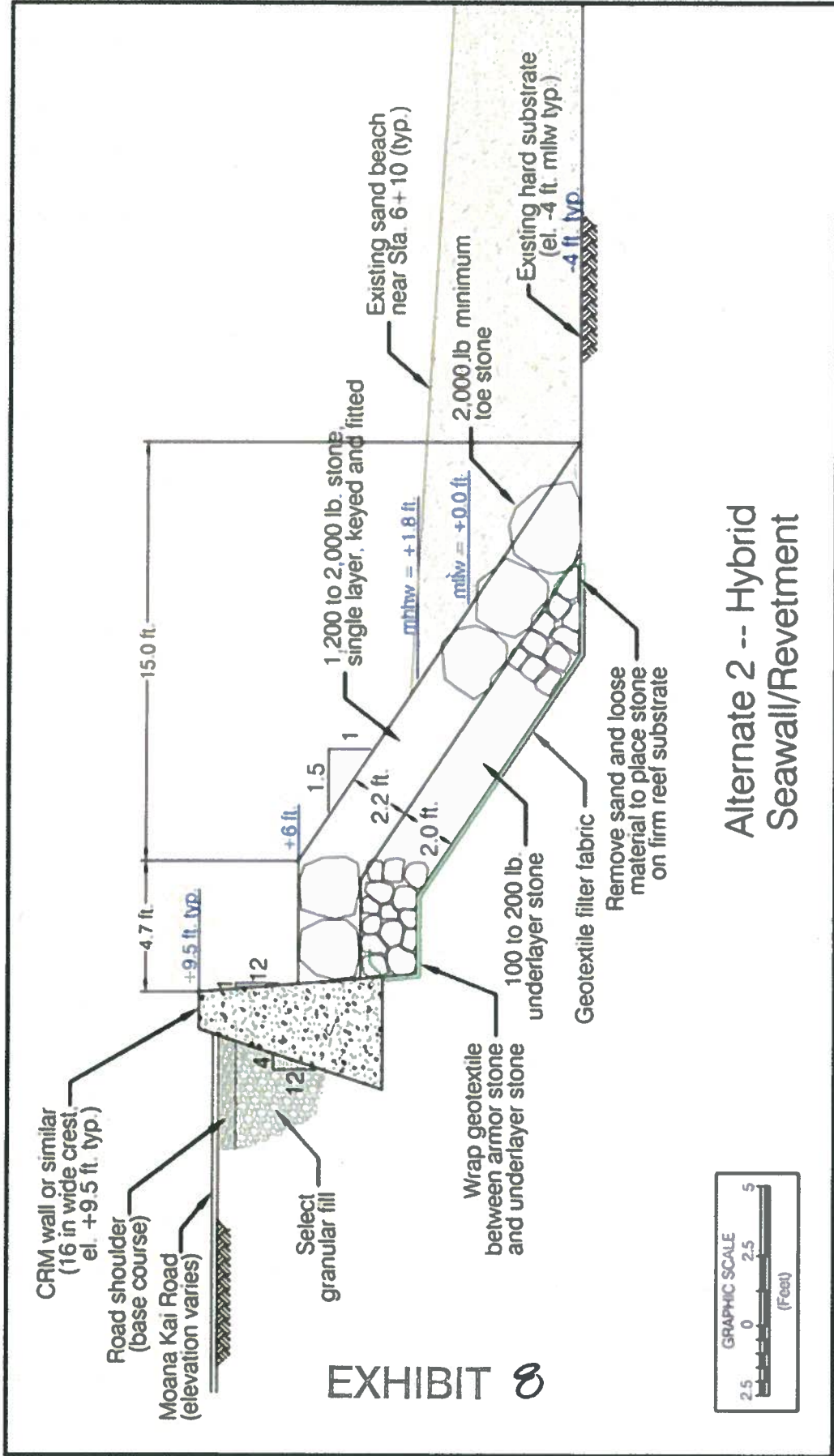


PROJECT: REPAIR/RECONSTRUCTION OF MOKUAUIA ROAD SEAWALL  
 COUNTY OF MAUI  
 SCALE: AS SHOWN  
 DATE: JAN. 2012  
 DRAWN BY: R.M. TOMELLI  
 CHECKED BY: R.M. TOMELLI  
 APPROVED: R.M. TOMELLI



**R.M. TOMELLI CORPORATION**  
 DEPARTMENT OF PUBLIC WORKS  
 COUNTY OF MAUI  
 REPAIR/RECONSTRUCTION OF MOKUAUIA ROAD SEAWALL  
 SCALE: AS SHOWN  
 DATE: JAN. 2012  
 DRAWN BY: R.M. TOMELLI  
 CHECKED BY: R.M. TOMELLI  
 APPROVED: R.M. TOMELLI

SHEET **C-4** OF 9 SHEETS



# EXHIBIT 8

## Alternate 2 -- Hybrid Seawall/Revetment

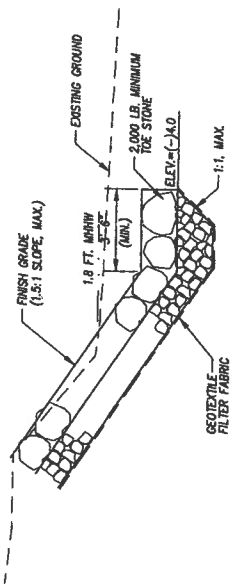


(Source: Sea Engineering, Inc., 2011)

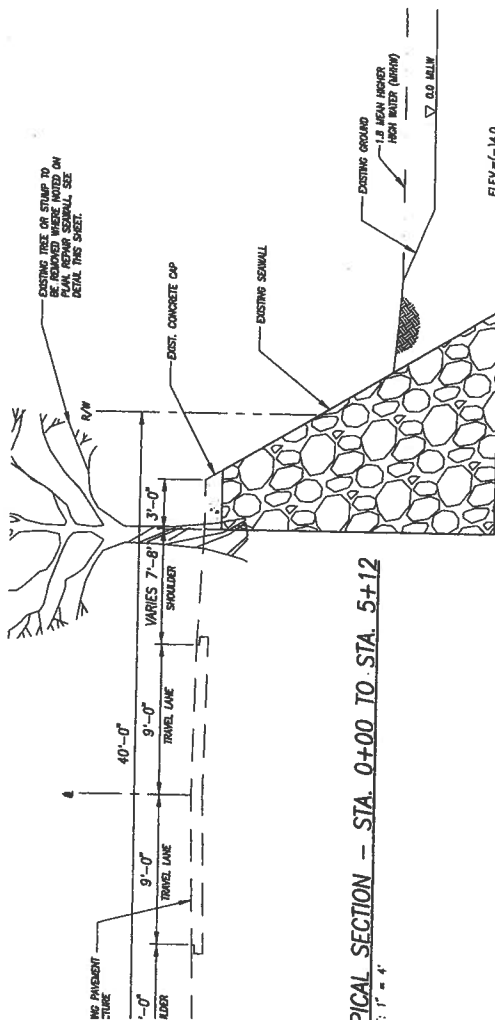
Hybrid Seawall/Revetment-Moanakai Seawall Repair and Reconstruction

**#NOTES:**

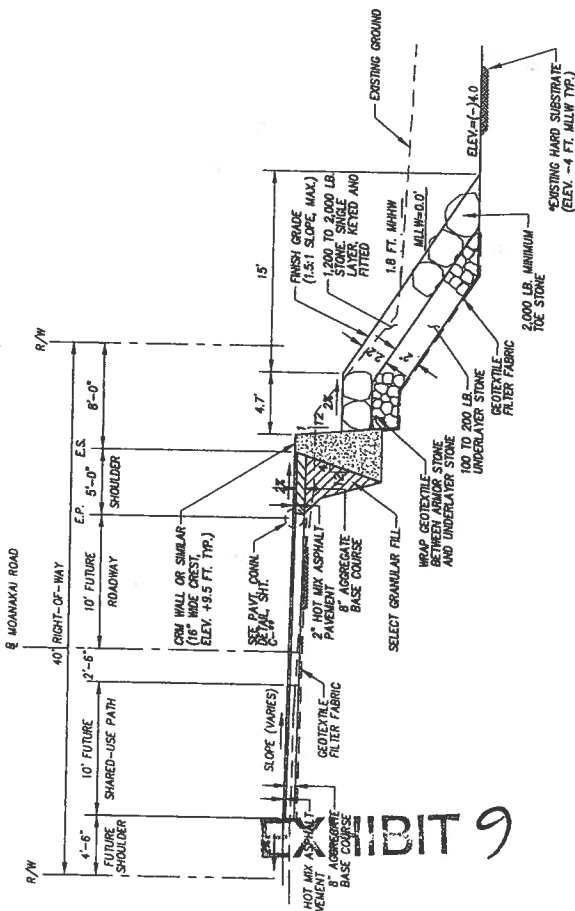
1. REMOVE SAND AND LOOSE MATERIAL TO PLACE RETENTION STONE ON HARD SUBSTRATE.
2. EXTEND OR SHORTEN PROJECTIONS AND RETENGA BASED ON FIELD LOCATION OF HARD SUBSTRATE IN THE EVENT HARD SUBSTRATE IS NOT ENCOUNTERED, CONSTRUCT THE SCOUR APRON PER DETAIL SHOWN ON THIS SHEET.



**TYPICAL DETAIL - TOE SCOUR APRON**  
SCALE: 1"=5'



**TYPICAL SECTION - STA. 0+00 TO STA. 5+12**  
SCALE: 1"=4'



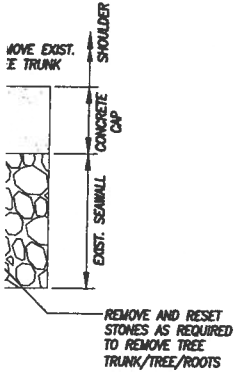
**MOANAKAI ROAD SEAWALL**  
SCALE: 1"=5'



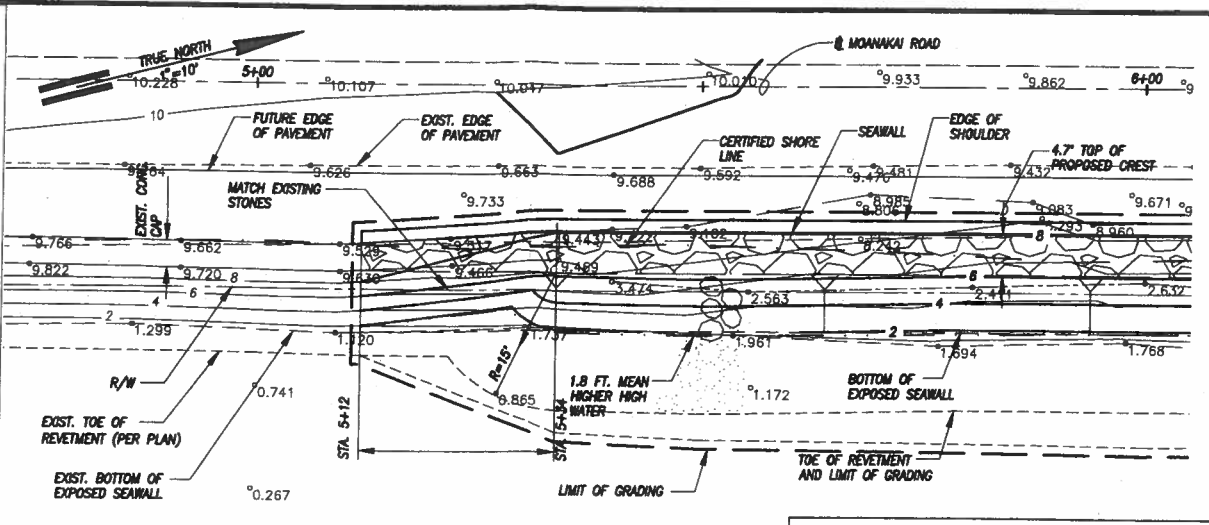
STATE OF HAWAII  
PROFESSIONAL ENGINEER  
No. 9019-C  
R. M. TOWILL



DATE: JAN. 2012  
DRAWN BY: J.P.  
CHECKED BY: M.H.O.  
APPROVED: COUNTY ENGINEER



E/TREE STUMP

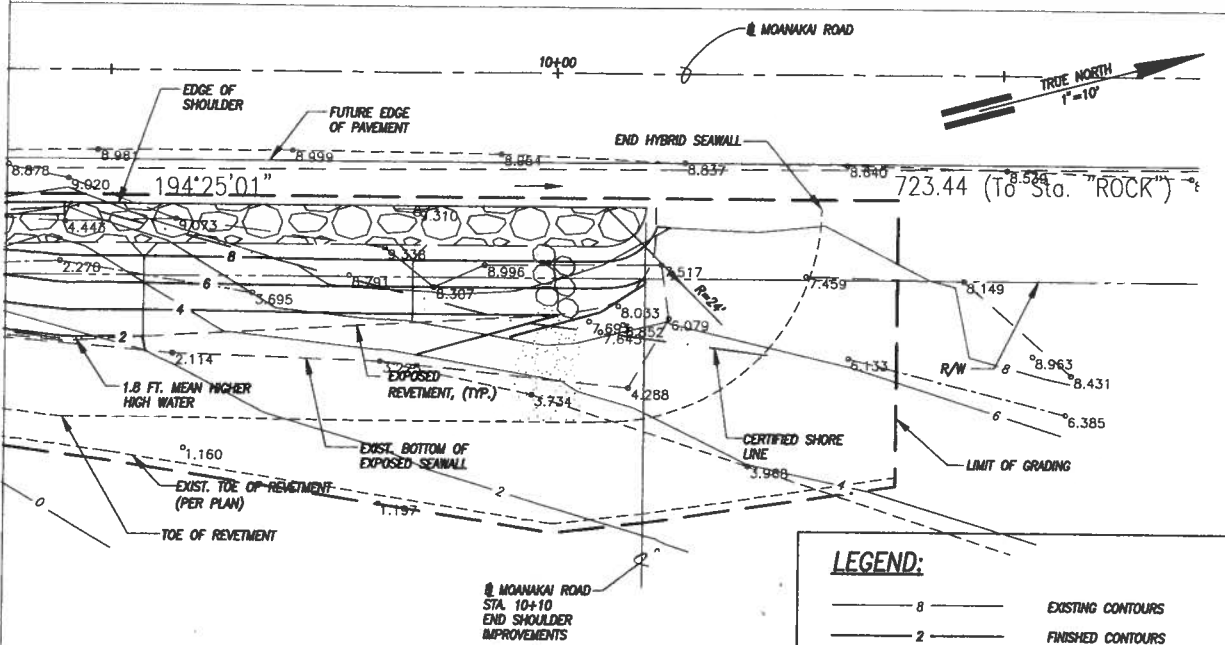


**DETAIL - REVETMENT TRANSITION (STA. 5+12)**

SCALE: 1" = 10'

**LEGEND:**

- 8 EXISTING CONTOURS
- 2 FINISHED CONTOURS
- LIMITS OF GRADING
- EXPOSED REVETMENT
- REVETMENT BENEATH SAND

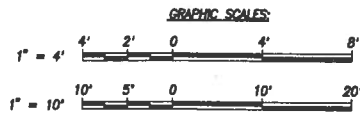


**DETAIL - REVETMENT TRANSITION (STA. 10+06)**

SCALE: 1" = 10'

**LEGEND:**

- 8 EXISTING CONTOURS
- 2 FINISHED CONTOURS
- LIMITS OF GRADING
- EXPOSED REVETMENT
- REVETMENT BENEATH SAND



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED BY CHAPTER 10-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS".

Michael H. Okamoto  
SIGNATURE

1/30/10  
LICENSE EXP. DATE

**R. M. TOWILL CORPORATION**  
 Planning - Engineering - Environmental Services - Polynesian - Surveying - Construction Management  
 808 242 1133 400 Waianda Road Suite 411 Honolulu, Hawaii 96817-0941

DEPARTMENT OF PUBLIC WORKS  
 COUNTY OF KAUAI  
 REPAIR/RECONSTRUCTION OF MOANAKAI ROAD SEAWALL  
 Kapaa, Kauai, Hawai'i

SCALE: AS NOTED  
 DRAWN BY: JP  
 TRACED BY: MHO  
 CHECKED BY: MHO  
 APPROVED: \_\_\_\_\_ COUNTY ENGINEER

DATE: JAN. 2012  
 DETAILS  
 F.B. C.B. MAP NO. SHEET C-7 OF 9 SHEETS