



March 10, 2023

Mr. Michael Cain, Administrator  
Office of Conservation and Coastal Lands (OCCL)  
Department of Land and Natural Resources (DLNR)  
P.O. Box 621  
Honolulu, Hawai'i 96809

ATTN: Amy Wirts, Coastal Lands Program Coordinator

Subject: Small Scale Beach Nourishment (SSBN) Category II Application for Pāhonu Beach Restoration at 41-457 thru 41-479 Kalaniana'ole Highway, Waimānalo, O'ahu, 96795, Tax Map Keys (1) 4-1-001:002, (1) 4-1-001:003, (1) 4-1-001:004, (1) 4-1-001:006, (1) 4-1-001:007, (1) 4-1-001:008, (1) 4-1-001:009 and (1) 4-1-001:0012

Dear Mr. Cain,

Thank you for your comments dated November 16, 2022, regarding the Pāhonu Beach Restoration SSBN Category II Application. Your comments are reproduced in **bolded** font below with our responses directly following.

- 1. Provide a copy of a professional shoreline survey. Alternately, you can provide a current state certified shoreline map for the project location (item 5c of the SSBN application).**

Please refer to Appendix A of this letter (or newly added Attachment G of the SSBN application) for a recent professional shoreline survey of the project site. The permit drawings in Attachment C of the SSBN application have also been updated to incorporate the surveyed shoreline.

- 2. The application must address the removal of existing permitted and unpermitted erosion control structures, the remains of previous erosion control materials and other debris in the shoreline. Currently, the only mention of removal of existing items is on page C-2 of Attachment C, which references the currently permitted structures fronting TMK (1) 4-1-001:008 as follows: "Temporary sand-filled geotextile erosion-control structures to be removed as required for construction of new reef fingers." These geotextile structures are required to be removed upon expiration of their permit and regardless of their relation to the proposed reef fingers. OCCL recognizes that this SSBN application serves as the long-term plan for the subject properties to address ongoing erosion and sea level rise; however, the application cannot be processed if the removal of all unpermitted encroachments and temporarily permitted erosion control structures**

**is not addressed and included in the timeline for completion of the project (items 7d and 7j of the SSBN application).**

Responses to items 7d and 7j of the SSBN application are revised to address the removal of all unpermitted encroachments and temporarily permitted erosion control structures. We are incorporating the following information in the revised application:

*After placement of the project BMPs, we propose to remove the existing sand-filled geotextile erosion control structures in the project area. Geotextile fabric will be cut and the sand inside will be used as the core of the beach nourishment fill. All manmade materials, including fabric, soil anchors, and ties, will be hauled off-site for disposal in accordance with applicable rules and regulations. The equipment mobilized for the beach nourishment work may be used to assist in the removal process. The expected duration for removal activity is one (1) to two (2) weeks.*

*As part of this application, we are respectfully requesting authorization for the existing emergency shoreline structures to remain in-place until the start of construction to protect the safety and wellbeing of the public. Without such safeguard, coastal erosion will likely continue to advance mauka, thereby increasing the risks of coastal hazards on public safety and on natural resources.*

- 3. A final assessment of the sand recovery options must be presented, and a method proposed prior to approval of the SSBN permit. Although not required for formal acceptance and review of the application, the method of sand extraction must be determined prior to approval and cannot be left to the discretion of the contractor on-site (item 7f of the SSBN application).**

The information in item 7f of the SSBN application is revised to explain the reason we are requesting to leave the sand extraction method open ended at this time. Once a dredging contractor is selected, we will work collectively to determine the best option for sand extraction using their available equipment. We respectfully request that a final sand extraction plan be submitted later as a condition of the SSBN permit approval. Item 7f is revised as follows:

*Several potential offshore borrow areas are in the proximity of the project site. Two (2) sand borrow locations are proposed, which are shown as Locations 3 and 5 in Attachment A, Figure 3. Grab samples from these borrow areas were obtained and analyzed for grain size distribution and composition. The results show that the sand may meet DLNR requirements for beach quality sand.*

*Both mechanical dredging and hydraulic dredging methods may be suitable for sand recovery based on the oceanographic conditions, operational time frame, potential*

*impacts on spawning corals, impacts from the transportation route, dewatering needs, and potential nearshore water quality impacts.*

*Mechanical dredging involves using equipment staged on a barge to scoop and lift sand from the seafloor with an excavator bucket or a clamshell bucket. Bucket sizes can vary from 1 to 20 cubic yards (cu. yd.) and are left open to dewater as the bucket is lifted out of the water. Environmental buckets, attached to a crane or excavator, may also be used for scooping and lifting sand. Environmental buckets can be used to decrease the turbidity impact when compared to a typical clamshell bucket by allowing water to escape the bucket while it is lifted through the water column. Silt curtains will be installed within the boundary of the sand source(s) to isolate the water column in the dredging area from surface to the seafloor. A barge would be used to transport the dewatered sand to the shore along the most feasible route. Once the sand is delivered to the shore, it will be transported to the site for placement.*

*In hydraulic suction dredging, a pump is lowered from the barge and suspended on the seafloor. A crane or excavator arm are used to position the dredge pump. The barge can be positioned using mooring lines and spuds. The sand delivery pipeline and hydraulic lines must be maneuvered with each positioning. A water jet ring may be attached to the pump inlet to increase the proportion of sand in the pumped slurry. The sand slurry is delivered to the shore typically through a high-density polyethylene (HDPE) pipeline. The pipeline may be designed in a floating or submerged configuration depending on site characteristics. The sand slurry may be pumped directly to the nourishment beach area that is bounded by the proposed sandbag barrier BMP, where it will be allowed to dewater while the turbidity is contained. Alternatively, the sand slurry may be dewatered in a basin constructed along the shoreline. Once dewatered, sand would be stockpiled and transported along the beach to the placement site.*

*Each dredging option has unique technical, economic, environmental and regulatory aspects, and further evaluation is needed to finalize a sand recovery plan in consultation with the contractor that will do the work should this SSBN application obtain conditional approval. Once a marine contractor is selected, we will work with them to determine the most feasible option given their experience and available equipment. A final sand recovery plan will be submitted to OCCL for approval before the construction begins.*

- 4. Provide a timeline and monitoring plan for the impacts of the proposed temporary reef finger structures. SSBN permitting does not include environmental assessment of permanent sand retention structures, such as the proposed reef fingers. The application must include plans for long-term monitoring and removal of the temporary reef fingers. Long-term monitoring is required to determine the impacts of the structures on the surrounding environment and will be used if the applicant chooses to seek permanent**

**approval for sand retention structures from the Board of Land and Natural Resources at a later date (item 7j-3 of the SSBN application).**

As part of this application, we are respectfully requesting authorization for the proposed sand retention structures to remain in-place for three (3) years, during which time we will monitor the project to assess the efficacy and potential impacts of the proposed structures. The proposed monitoring plan includes:

- At least three (3) cameras will be installed to record beach changes during the 3-year monitoring period. Cameras will be installed at locations with vantage points that allow for observation of the majority of the project beach area along with the adjacent beach areas at each end of the project. Camera monitoring will begin prior to initiating construction of the beach nourishment project.
- The camera network will provide a high-resolution record of the beach area throughout the monitoring period. Software will be applied to the image dataset to quantify possible changes in beach area over time.
- In addition, periodic site visits will be conducted by coastal professionals to assess and document the conditions of the beach, structures, shoreline, and nearshore benthic environment since the completion of the construction.

A report that documents the monitoring effort and findings will be provided to DLNR OCCL at the end of the three (3) year monitoring period.

We anticipate that within three (3) years, the efficacy and any potential impacts of the structures (i.e., reef fingers) will be apparent. If these impacts prove to be effective, we plan to apply for permits to extend the approved timeline for the structures. If the findings from the monitoring work show negative impacts of the structures on the surrounding environment, the structures can be promptly removed or modified. The precast concrete units are designed with features that allow for relatively easy handling to minimize risk of potential disturbance to the marine environment.

**5. Please provide the applicant's (Pāhōnu Beach Community Restoration Foundation, Inc.) proof of general liability insurance (item 7j-4 of the SSBN application).**

Additional permitting requirements for the proposed project will take time before construction may begin. Given the expected timeline, we proposed to submit a copy of the applicant's Certificate of Insurance to OCCL prior to the start of construction, as a condition of the SSBN permit approval.

Please accept the revised Pāhonu Beach SSBN application as complete given the additional information provided herein. If you require any additional information, please contact me via telephone at (808) 531-3017 or email at [mfoley@oceanit.com](mailto:mfoley@oceanit.com).

Sincerely,

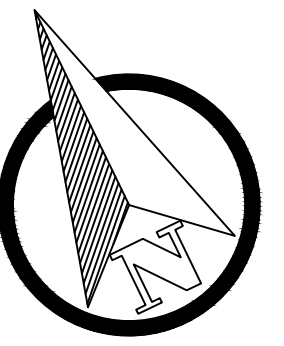
A handwritten signature in black ink, appearing to be 'M Foley', with a stylized flourish at the end.

Michael Foley, Ph.D., P.E.  
Sr. Coastal Engineer

Cc: John Dean, President, Pāhonu Beach Community Restoration Foundation, Inc.

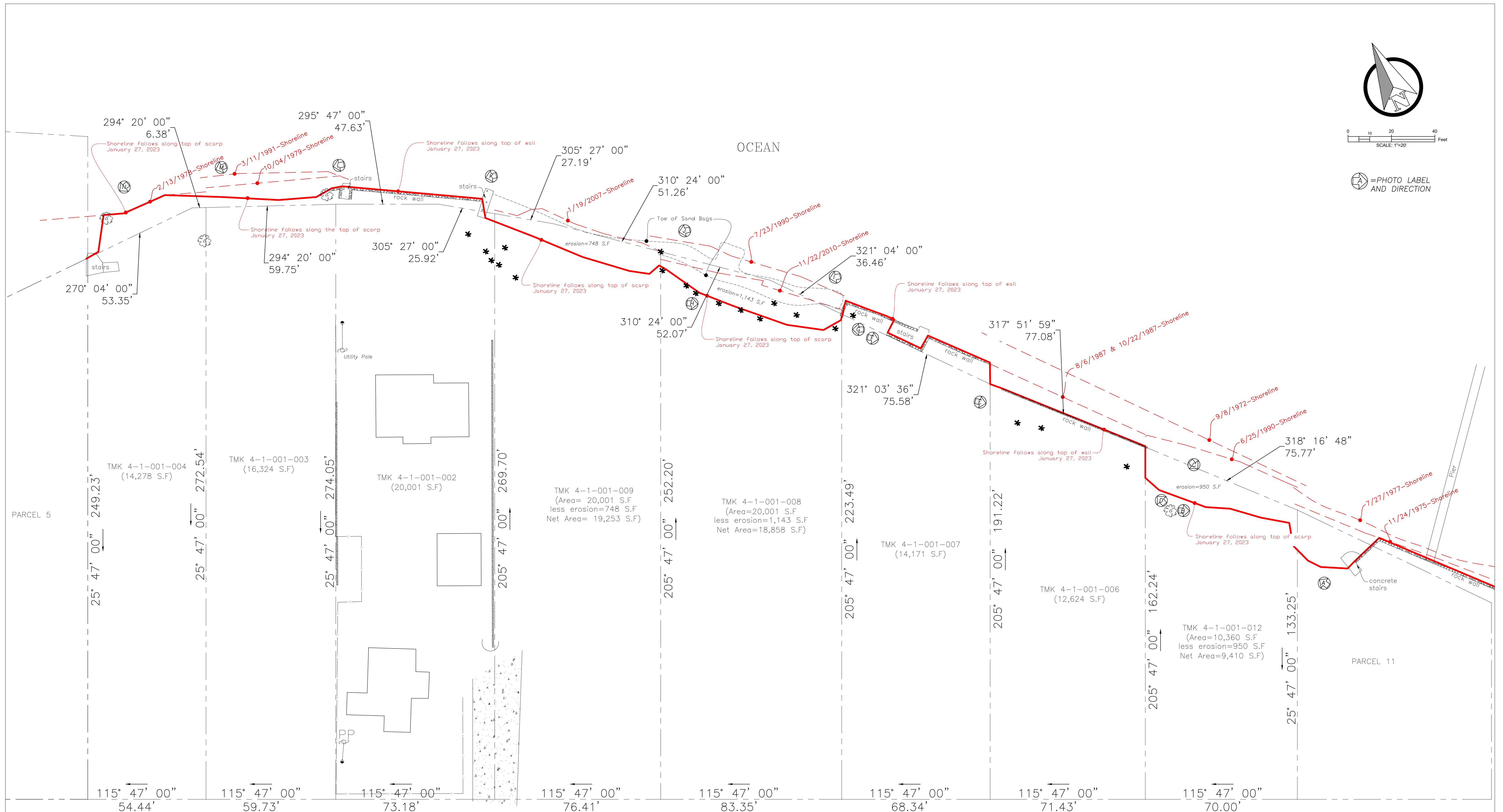
**APPENDIX A**  
**PROFESSIONAL SHORELINE SURVEY**





0 10 20 40  
Feet  
SCALE: 1"=20'

⊙ = PHOTO LABEL  
AND DIRECTION



KALANIANA'OLE HIGHWAY

AILANA SURVEYING & GEOMATICS LLC  
PHONE (808)346-1818  
INFO@AILANASURVEYING.COM

SHORELINE MAP  
TMK 4-1-001 PARCELS 002, 003, 004, 006,  
007, 008, 009, & 012  
AT WAIMANALO, CITY AND COUNTY OF HONOLULU,  
STATE OF HAWAII

ANTHONY D. CROOK  
LICENSED  
PROFESSIONAL  
LAND  
SURVEYOR  
No. 12094  
HAWAII U.S.A.  
THIS MAP WAS PREPARED BY ME OR  
UNDER MY SUPERVISION.  
ANTHONY D. CROOK  
LICENSED PROFESSIONAL LAND SURVEYOR  
CERTIFICATE No. 12094





PHOTO "A" - TAKEN 1/27/2023 AT 11AM



PHOTO "B" - TAKEN 1/27/2023 AT 11AM



PHOTO "C" - TAKEN 1/27/2023 AT 11AM



PHOTO "D" - TAKEN 1/27/2023 AT 11AM



PHOTO "E" - TAKEN 1/27/2023 AT 11AM



PHOTO "F" - TAKEN 1/27/2023 AT 11AM



PHOTO "G" - TAKEN 1/27/2023 AT 11AM



PHOTO "H" - TAKEN 1/27/2023 AT 11AM



PHOTO "I" - TAKEN 1/27/2023 AT 11AM



PHOTO "J" - TAKEN 1/27/2023 AT 11AM



PHOTO "K" - TAKEN 1/27/2023 AT 11AM



PHOTO "L" - TAKEN 1/27/2023 AT 11AM



PHOTO "M" - TAKEN 1/27/2023 AT 11AM



PHOTO "N" - TAKEN 1/27/2023 AT 11AM