



Honolulu District
US Army Corps
of Engineers

Public Notice of Application for Permit

Regulatory Office
Building 230
Fort Shafter, Hawaii 96858-5440

Public Notice Date: February 5, 2014
Expiration Date: March 5, 2014
File Number: **POH-2010-00244**

Interested parties are hereby notified that an application has been received by the U.S. Army Corps of Engineers (Corps) for a Department of the Army (DA) permit for certain work in waters of the United States as described below and shown on the attached drawings.

APPLICANT: Mr. Edward Underwood, Department of Land & Natural Resources, Division of Boating & Ocean Recreation (DOBOR), 333 Queen Street, Suite 300, Honolulu, Hawaii 96813

AGENT: Cris Takushi, Oceanit, 828 Fort Street Mall, Suite 600, Honolulu, Hawaii 96813

LOCATION: Kikiaola Small Boat Harbor, Kikiaola, Waimea District, Island of Kauai, Hawaii, TMK (4) 1-2-006:003, :017, (4) 1-2-013:001, :031 - :034, :039 - :041, (4) 1-3-005:050
Coordinate location: 21.96056°N, -159.69806°W

PURPOSE: Reduce siltation at harbor entrance and erosion damage repair.

AUTHORITY: This permit application will be reviewed under the following authorities:

(X) Perform work in or affecting navigable waters of the United States – Section 10 Rivers and Harbors Act 1899 (33 U.S.C. 403).

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). The Corps' public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

PROPOSED ACTIVITY: DOBOR proposes a three-phase approach to addressing the impacts of erosion along the shoreline to the west of the Kikiaola Small Boat Harbor (harbor) and at the harbor's west breakwater.

A total of 80,000 cubic yards of sand would be excavated using heavy machinery such as bulldozers and excavators from a 9.53-acre borrow site located along the upper beach, landward of the Mean Higher High Water Mark (MHHWM), immediately east of the harbor.

The excavated sand would be transported using dump trucks to an adjacent parcel, TMK (4) 1-2-006:003, Lot 5, for processing (removal of unsuitable materials e.g., trash, large rocks, rubble) prior to placement at three locations along the beach west of the harbor.

Phase I involves the placement of 10,000 cubic yards of excavated sand to a site located landward of the MHHWM (outside of the Corps' regulatory jurisdiction) of the shoreline west of the harbor. Phase II includes two receiving sites: one located 1,600-feet west of the harbor at the intersection of the shoreline with Mamo Road and the other located immediately west of the harbor's breakwater. Phase II would result in the discharge of 14,000 cubic yards of sand into a water of the U.S. at the Mamo Road receiving site and 36,120 cubic yards of sand into a water of the U.S. at the breakwater receiving site. The two receiving sites would provide sources of sand for natural transport in a westerly direction along the eroded shoreline west of the breakwater. Phase III involves the repair of the west breakwater structure to the originally-constructed dimensions. DOBOR would re-use existing armor stones where appropriate and excavated sand for backfill. The breakwater repair work would result in the discharge of 275 cubic yards of fill material (stone, sand backfill and aggregate). The breakwater work area would be isolated and surrounded using a temporary sandbag/stone barrier. Construction of the temporary sandbag/stone barrier would result in the discharge of 188 cubic yards of fill material into a water of the U.S.

DOBOR has proposed a maintenance plan for the routine bypass of sand from the borrow site east of the harbor to the breakwater receiving site at an estimated 6,000 cubic yards yearly.

The DOBOR work plan is attached to this notice (Enclosure 1).

BACKGROUND INFORMATION: The harbor was constructed in 1959 by the State of Hawaii, and improvements were made in 1961, 1964 and 2009. The shoreline at this location is subject to a strong westward littoral drift. The construction of the harbor interrupted the natural sand transport in this region, thereby affecting the shorelines adjacent to the harbor. Since 1959, the beach east of the harbor has accreted at an average rate of 2.4-feet per year, while the beach west of the harbor eroded at an average rate of 2.1-feet per year. Such erosive forces west of the harbor place inland properties at risk and increase discharges of upland sediments into the marine environment. Wave diffraction along the west breakwater combined with high surge has eroded the root of the breakwater and structural upland backfill approximately 75-feet inland from the 1959 shoreline. Additionally, sand accumulates within the harbor entrance creating a navigational hazard and increasing the need for maintenance dredging.

MITIGATION: DOBOR has stated in its application that compensatory mitigation is not required for the proposed action. However, in accordance with the Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Part 332), and after a full evaluation of the probable impacts of the proposed activity, the Corps will determine whether compensatory mitigation is required to offset any unavoidable impacts to waters of the U.S.

To minimize project-generated increased turbidity/sedimentation of waters adjacent to the fill areas, DOBOR has proposed to excavate a minimum of 5 test pits within the borrow area to verify the quality and suitability of subsurface sands in each test pit. DOBOR would not place any sand containing greater than 6% silt content waterward of the MHHWM, instead placing finer grain sands in the upper reaches of the placement sites to prevent introduction of silty sands into marine waters. To avoid project-generated increased turbidity/sedimentation of

waters adjacent to the breakwater, DOBOR has proposed use of a temporary sandbag barrier surrounding the breakwater root repair work to isolate the active work area and minimize introduction of construction-generated sediments into marine waters.

The proposed action would provide temporary relief to the eroded shoreline, thereby reducing discharge of upland sediments into marine waters.

WATER QUALITY CERTIFICATION: The Corps has determined the proposed action would result in the initial discharge of approximately 50,000 cubic yards of sand (fill material) and a maximum of 60,000 cubic yards over a period of ten years (6,000 cubic yards per year) into a water of the U.S. and would require authorization under Section 404. Under Section 401 of the Clean Water Act, the Corps may not issue a DA permit for the proposed activity until the applicant obtains a certification or waiver of certification from the State of Hawaii, Department of Health-Clean Water Branch (DOH-CWB).

COASTAL ZONE MANAGEMENT ACT CERTIFICATION: The proposed action would affect land or water uses in the Coastal Zone. Under Section 307(c)(3) of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1456(c)(3)) (CZMA), the Corps may not issue a permit for the described work until the applicant obtains an individual CZM Consistency Concurrence from the State of Hawaii, Department of Business, Economic Development, and Tourism, Office of Planning.

CULTURAL AND HISTORIC RESOURCES: In accordance with the requirements set forth in Section 106 of the National Historic Preservation Act (NHPA), the proposed work is being evaluated for possible effects on historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places.

Ground-disturbing activities will only occur at the borrow site located on the upper beach fronting TMK (4) 1-2-006:003 and TMK (4) 1-2-006:041 and within the existing footprint of the west breakwater root of harbor parcel TMK (4) 1-2-006:017. In its application, DOBOR stated that there are no known cultural or historic resources within the project area. The Corps has reviewed the National and State Registers of Historic Places for the Island of Kauai for the presence of historic properties within the subject parcels listed above and none were identified. An adjacent parcel, TMK (4) 1-2-006:004 (1.7-acres) features a cemetery, however, DOBOR has not proposed any modification to this parcel.

ENDANGERED SPECIES: Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1536) (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) on any action that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat.

Based on the project location, the Corps has determined the following ESA-listed species have the potential to occur within the project area: Hawksbill sea turtle (*Eretmochelys imbricate*), Green sea turtle (*Chelonia mydas*), endangered, and Hawaiian monk seals (*Monachus schauinslandi*), endangered. In addition, based on the project location, the Corps has determined the following ESA-listed terrestrial species have the potential to occur within the project area: Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), endangered, Hawaiian Coot (*Fulica alai*), endangered, Hawaiian Stilt (*Himantopus mexicanus knudseni*), endangered, Hawaiian Duck (*Anas wyvilliana*), endangered, Hawaiian Moorhen (*Gallinula chloropus sandvicensis*), endangered, Hawaiian Goose (*Branta sandvicensis*), endangered,

Newells' Shearwater (*Puffinus auricularis newelli*), threatened, Hawaiian Petrel (*Pterodroma sandwichensis*), endangered. Concurrently with the issuance of this notice, the Corps will evaluate the potential project-related impacts to protected terrestrial and marine species and their designated critical habitat and, if required, initiate consultation with the local USFWS and NMFS office and appropriate state agency(s).

ESSENTIAL FISH HABITAT: The proposed work is being evaluated for possible effects to Essential Fish Habitat (EFH) pursuant to Section 305(b) the Magnuson Stevens Fishery Conservation and Management Act of 1996 (16 U.S.C. 1855(b)) (MSFCMA) and associated federal regulations found at 50 CFR Part 600 Subpart K. The Honolulu District area of responsibility includes areas of EFH as Fishery Management Plans. We have reviewed the January 20, 1999, Western Pacific Fishery Management Council's Environmental Assessment to locate EFH areas as identified by NMFS.

Kikiaola Harbor and surrounding coastal areas experience poor water quality primarily due to fluvial deposition of silt and organic matter carried to the ocean from the Waimea River located approximately 2 miles to the east. These fluvial deposits contribute to the dark coloration of marine sediments and waters and may also be a primary factor in the apparent lack of significant coral growth in the area. A diatomaceous film (pelagic siliceous algae) covers much of the algae reef and contributes to poor water quality. A dense algal mat covers most available substrate. DOBOR surveyed the in-water fill areas in February 2013 and observed two individual coral heads (one small encrusting lobe coral and one cauliflower or rose coral no larger than a fist) within the proposed footprint. DOBOR has not proposed relocation of these corals prior to placement of sand within the fill areas.

DOBOR would process all excavated sand to determine suitability of sand for placement at the receiving sites. To minimize siltation of marine waters, sand of smaller grain size would be placed in areas landward of the MHHWM while sand of a larger grain size would be placed in areas subject to wave action.

Based on the location of the project at the shoreline, the Corps has determined that the project area contains EFH identified for the following Management Unit Species: Bottomfish (all life stages), Pelagics (all life stages), Coral Reef Ecosystem, and Crustaceans (lobster and crab, all life stages). Concurrently with the issuance of this notice, the Corps will evaluate the potential project-related impacts to EFH and, if required, initiate consultation with the local NMFS office.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The Corps is soliciting comments from the public; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to

issue, modify, condition, or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings must state clearly and concisely, the reasons and rationale for holding a public hearing.

COMMENT AND REVIEW PERIOD: Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether it would be in the public interest to authorize this proposed work. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and the Corps file number **POH-2010-00244**.

All e-mail comments should be sent to:

jessie.k.paahana@usace.army.mil

Conventional mail comments should be sent to:

U.S. Army Corps of Engineers, Honolulu District
Regulatory Office, Building 230
Attention: Jessie Paahana
Fort Shafter, Hawaii 96858-5440

Both conventional mail or e-mail comments must reach this office no later than the expiration date of this public notice to become part of the record and be considered in the decision. Please contact Ms. Jessie Paahana at (808) 835-4107 if further information is desired concerning this notice. This public notice is issued by the Chief, Regulatory Office.

Attachments

Enclosure 1: Scope of Work

**Application for Department
of the Army Permit
(33 CFR 325)
Kikiaola Small Boat Harbor
Sand By-pass System and
Breakwater Root Repair
Kikiaola, Waimea District, Kauai, Hawaii
TMK: (4) 1-2-6:3, 17, 1-2-13:1, 31-34, 39-41,
1-3-5-50
Job No. B95NK75A
Reference No. POH-2010-00244**

Prepared for:



**U.S. Army Corps of Engineers
Honolulu District**
Honolulu, HI 96813 Bldg. 230, CEPOH-PP-C
Fort Shafter, Hawaii 96858-5440

Prepared by:



828 Fort Street Mall
Suite 600
Honolulu, HI 96813

November 2013

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| 3 – DOBOR Response Department of Army comment letter dated to October 9, 2013 Incomplete Application - Reference No. POH-2010-00244 | |
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| 2 – General Site Plan – Sand By-passing | |
| 3 – General Site Plan – Breakwater Root Repair | |

U.S. ARMY CORPS OF ENGINEERS
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
 33 CFR 325. The proponent agency is CECW-CO-R.

OMB APPROVAL NO. 0710-0003
 EXPIRES: 28 FEBRUARY 2013

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

| | | | |
|--------------------|----------------------|------------------|------------------------------|
| 1. APPLICATION NO. | 2. FIELD OFFICE CODE | 3. DATE RECEIVED | 4. DATE APPLICATION COMPLETE |
|--------------------|----------------------|------------------|------------------------------|

(ITEMS BELOW TO BE FILLED BY APPLICANT)

| | | | | | |
|---|--|--|--|--|--|
| 5. APPLICANT'S NAME First - Edward Middle - R. Last - Underwood Company - DLNR - Division of Boating & Ocean Recreation E-mail Address - Ed.R.Underwood@hawaii.gov | | | 8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Eric Middle - T. Last - Yuasa Company - DLNR - Division of Boating & Ocean Recreation E-mail Address - Eric.T.Yuasa@hawaii.gov | | |
| 6. APPLICANT'S ADDRESS: Address- 333 Queen Street, Suite 300 City - Honolulu State - Hawaii Zip - 96813 Country - USA | | | 9. AGENT'S ADDRESS: Address- 333 Queen Street, Suite 300 City - Honolulu State - Hawaii Zip - 96813 Country - USA | | |
| 7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax (808) 587-1966 (808) 587-1977 | | | 10. AGENTS PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax (808) 587-0122 (808) 587-1977 | | |

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Eric T. Yuasa to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.


 SIGNATURE OF APPLICANT 11/14/13
 DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

| | | | |
|---|--|--|--|
| 12. PROJECT NAME OR TITLE (see instructions) Kikiaola Small Boat Harbor Sand By-pass System, Kauai, Hawaii Job No. B95NK75A | | | |
| 13. NAME OF WATERBODY, IF KNOWN (if applicable) Pacific Ocean | | 14. PROJECT STREET ADDRESS (if applicable) Address 9000 Kaumualii Highway | |
| 15. LOCATION OF PROJECT Latitude: °N [See Figure 1] Longitude: °W | | City - Kekaha State- Hawaii Zip- 96752 | |
| 16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID 1-2-006 and 1-2-013 Municipality Waimea Section - Township - Kekaha Range - | | | |

17. DIRECTIONS TO THE SITE of Work

From Lihue Airport go northeast on Mokulele Road and turn left on Ahukini Road. Stay on Ahukini Road for 1.2 miles. Turn left (south) on Kuhio Highway, HI-56 for 0.4 miles. Kuhio Highway turns into Kaunaulii Highway after Lihue Shopping Center and Rice Street. Head west on Kaunaulii Highway, HI-50 for about 29 miles. The trip will take approximately 50 minutes.

18. Nature of Activity (Description of project, include all features)

The project is a long-term sand by-passing program to reduce the rate of siltation at the Kīkīāola Harbor entrance and the severe erosion of the down drift beach. The program involves an initial transport of about 80,000 cubic yards of sand from the beach east (up drift) of Kīkīāola Harbor to nourish the beach west (down drift) of the harbor. The project also involves erosion damage repair to the west breakwater root and a wave penetration study over a twelve month period to investigate the wave conditions at the wooden dock within the harbor.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The harbor was constructed in 1959 by the State of Hawai'i and improvements were made in 1961, 1964 and 2009. After 1959 severe erosion problems were noticed west of the harbor, as the strong westward littoral drift that moved sands westward along the beach in shallow water was disrupted. Since 1959, the beach east of the harbor has accreted at an average rate of 2.4' / year, while the beach west of the harbor eroded at an average rate of 2.1' / year. Interruption of the natural sand transport from east to west has resulted in beach modifications and contributed to the shoaling of the harbor entrance and basin. Currently on the east side of the harbor, the waterline has advanced seaward and excess accumulated sand moves westward along the east breakwater and creates a shoal in the entrance channel of the harbor. This sand creates a hazardous condition for harbor users, and adds to frequency and volume of maintenance dredging for the harbor.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

The Phase 1 sand by-passing portion of the project does not initially involve any direct discharge into State Waters because sand will be placed above the water edge. During the Phase 2 and 3 portions of the project, some of the sand will be placed below the Mean Higher High Water (MHHW) level and localized turbidity may increase temporarily during sand placement.

The repair of the root section of the west breakwater will not involve any direct discharge into State Waters. The breakwater root section that will be repaired will be enclosed by sandbag barriers preventing any construction-related discharge from entering State waters.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

| Type Amount in Cubic Yards | Type Amount in Cubic Yards | Type Amount in Cubic Yards |
|------------------------------------|-------------------------------|-------------------------------|
| Sand by-passing: native beach sand | 80,000 | |

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres See Attachment 3, para. 4 for types, areas and volumes of permanent and temporary fill for Breakwater Root Repair.
or
Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

Compensatory mitigation is not required. All 96 sand samples from the proposed borrow site contained less than 6% silt material and satisfied DLNR's beach nourishment requirement. Prior to removing any sand from the borrow site the Contractor will be required to excavate a minimum of 5 test pits, as shown on the plans in order to verify the quality of the subsurface sand. During the first phase of construction, sand from the upper, landward side of the borrow site east of the harbor which generally has higher silt content will be placed as dunes in the fill site above the MHHW level. During the second phase, sand placed at the fill site will come from the lower silt area of the borrow site, therefore preventing contact of silty sands with water.

24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK
Enclosure 1: Scope of Work

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- P.O. BOX 367, TMK: 1-2-006:003, Lot 5, Owner: Makai Marina LLC

City - Waimea State - Hawaii Zip - 96796

b. Address- P.O. BOX 367, TMK: 1-2-006:041, Portion of Lot 1, Owner: Waimea Plantation Makai LLC

City - Waimea State - Hawaii Zip - 96796

c. Address- 1000 Bishop St., Ste. 807, TMK: 1-2-013:041, Lot 66, Owner: KVH, LLC

City - Honolulu State - Hawaii Zip - 96813

d. Address- P.O. BOX 808, TMK: 1-2-013:033, Lot 60-C, Owner: LaBedz Family Trust

City - Waimea State - Hawaii Zip - 96796

e. Address- P.O. BOX 808, TMK: 1-2-013:032, Lot 60-B, Owner: LaBedz Family Trust [See Attachment 1 for more properties]

City - Waimea State - Hawaii Zip - 96796

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

| AGENCY | TYPE APPROVAL* | IDENTIFICATION NUMBER | DATE APPLIED | DATE APPROVED | DATE DENIED |
|----------------|------------------|-----------------------|--------------|---------------|-------------|
| DLNR-OCCL | CDUA / Extension | KA-3240/KA-13-04 | 2013-04-08 | 2013-04-26 | |
| DOH-CWB | NPDES | 1P6-T0K3-SQ92 | 2013-07-26 | | |
| Kauai DPW | Grading Permit | PW.05.13.086 | 2013-05-14 | | |
| Kauai Planning | SMA | | 2013-05-07 | | |

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.


 SIGNATURE OF APPLICANT

11/14/13
 DATE


 SIGNATURE OF AGENT

11/14/13
 DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

15. LOCATION OF PROJECT

Fill Site Latitude: 21° 57' 38" N, Longitude: 159° 41' 53" W

Borrow Site Latitude: 21° 57' 35" N, Longitude: 159° 41' 36" W

16. OTHER LOCATION DESCRIPTION, IF KNOWN (See ATTACHMENT 2)

State Tax Parcel ID: TMKs: 1-2-006: 3, 17, 41, 1-2-013: 1, 31, 32, 33, 34, 35, 39, 40, 41
Section - Waimea Beach and Kikiaola Beach

25. ADDRESSES OF ADJOINING PROPERTY OWNERS, LESSEES, ETC., WHOSE PROPERTY ADJOINS THE WATERBODY

f. Address – 1151 Punchbowl St., Room 220, TMK: 1-2-006:017, Lot 3-A-1-B,

Owner: State of Hawaii

City – Honolulu State – Hawaii Zip - 96813

g. Address – P.O. Box 414, TMK: 1-2-013:031, Lot 60-A,

Owner: Graham and Marisa Chelius

City – Waimea State – Hawaii Zip - 96796

h. Address – 4510 South Boyle Ave., TMK: 1-2-013:034, Lot 61-B,

Owner: Ronald M. Beckenfeld

City – Vernon State – California Zip - 90058

i. Address – 4510 South Boyle Ave., TMK: 1-2-013:035, Lot 61-C,

Owner: Republic Bank California

City – Los Angeles State – California Zip - 90058

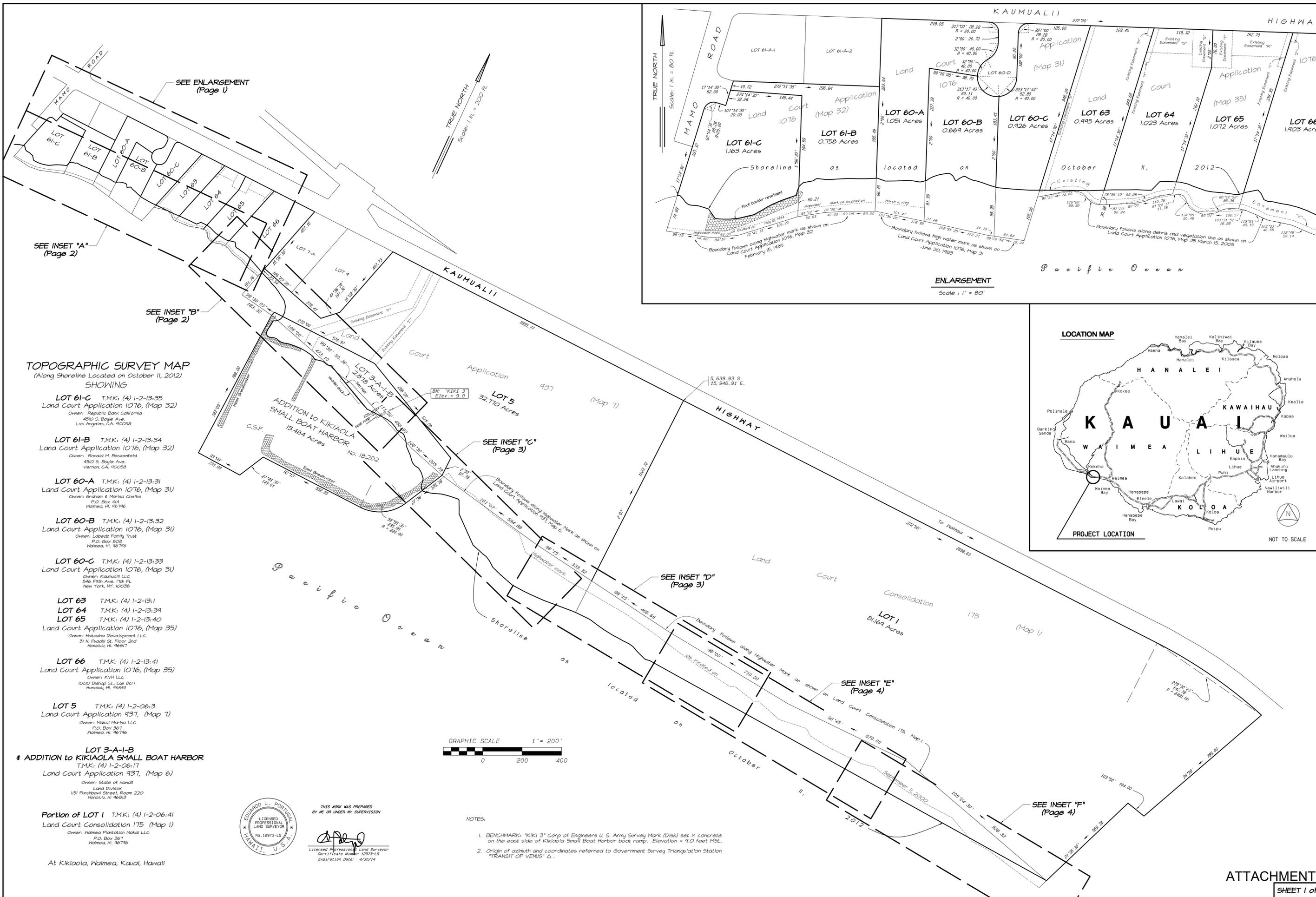
j. Address – 31 N. Pauahi St., 2nd floor, TMK: 1-2-013:001, Lot 63,

TMK: 1-2-013:039, Lot 64,

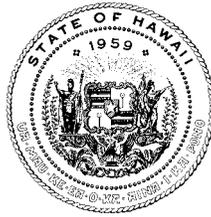
TMK: 1-2-013:040, Lot 65

Owner: Hokuaina Development LLC

City – Honolulu State – Hawaii Zip - 96817



NEIL ABERCROMBIE
GOVERNOR OF HAWAII



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

ESTHER KIA'AINA
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

EDWARD R. UNDERWOOD
ADMINISTRATOR
DIVISION OF BOATING AND OCEAN RECREATION

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF BOATING AND OCEAN RECREATION
333 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813

BOR-E

November 8, 2013

Mr. George Young, P.E.
Chief, Regulatory Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Building 252, CEPOH-EC-R
Fort Shafter, Hawai'i 96858-5440

Subject: Department of the Army Section 404 Permit Application for Kikiaola Small Boat Harbor Sand By-pass System and Breakwater Root Repair
TMK: (4) 1-2-6:3, 17, 1-2-13:1, 31-34, 39-41, 1-3-5:50
Kikiaola, Waimea District, Hawai'i
1-2-13:1, 31-34, 39-41, 1-3-5-50
Job No. B95NK75A
Reference No. POH-2010-00244

Dear Mr. Young:

In response to your comment letter dated October 9, 2013, the Department of Land and Natural Resources, Division of Boating and Ocean Recreation (DLNR-DOBOR) is resubmitting an updated Department of the Army (DA) Section 404 Permit application for the above project. In addition to the updated application, we are providing detailed responses to each comment below.

1. Signed copy of DA Permit Application, Designation of Authorized Agent.

A signed application is provided.

2. Means and methods required to excavate, transport and place sand from the area east of the harbor to the area west of the harbor.

How will sand be excavated from the eastern shoreline?

It is anticipated that contractor will use heavy equipment like bulldozers and excavators to excavate and load borrow sand onto trucks for transport. The exact number and type of equipment will be the contractor's decision.

Will excavation be incremental? What incremental quantities?

The fill plan for the area west of the harbor will be done in three phases within a designated area about 2,800 feet in length and varying in width between 80 and 200 feet. Excavation of sand at the borrow site east of the harbor will be scheduled to provide the sand for the three designated fill locations. Phase I of the fill plan calls for 10,000 cubic yards of sand placed as a berm along the upper reaches of the beach, above the MHHW level. Excavated sand for this phase will come from the upper parts of the borrow area on the east side. Phase II of the fill plan calls for 28,000 cubic yards of sand to be placed near Mamo Road. Phase III of the fill plan calls for the remaining 42,000 cubic yards of sand to be placed near the root section of the west breakwater. See Attachment A, Sheet 6.

Where will you stage the excavation machinery?

The State has reached a verbal agreement with the landowner of a large parcel adjacent to the harbor, Makai Marina LLC to use a portion of this 32.8 acre property for a construction field office, sand processing area and contractor equipment staging area. The parcel, TMK: (4) 1-2-06:003, Lot 5 is shown in Attachment A, Sheet 6 along with the proposed contractor work area. The plan also shows several routes available to the contractor. The more direct route that avoids Kaumualii Highway requires the contractor to construct a temporary bridge over the existing irrigation ditch. The bridge will be used for the construction of the breakwater root repairs and sand by-pass operations, and will be removed at the completion of the project.

Will dewatering be required?

The entire borrow site is above the Mean Higher High Water (MHHW) elevation with no in-water excavation or placement of sand. No dewatering of the sand will be required prior to hauling. The excavated sand will be taken to a designated processing area on the property owned by Makai Marina LLC before being transported by trucks to the fill areas.

Interim steps between excavation and transport of sand prior to placement.

The Contractor will excavate five test pits for each cell of sand in the borrow area, as shown in Attachment A, Sheets 8 and 9. The purpose of the test pits is to verify the quality of subsurface sand prior to removal from the borrow site. The Engineer will determine whether the subsurface sand in each of the test pits is acceptable to be used as sand fill at the proposed fill areas.

The eastern borrow area and the western sand fill areas will not require any site preparation other than the excavation of test pits at the borrow site and the set up of dust fences at the designated areas adjacent to the fill sites as shown in Attachment A, Sheet 6. Excavation of sand in the borrow sections will be done in thin sections, not to exceed 1 feet in depth. By limiting the depth of excavation, undesirable and hazardous conditions for workers and beach users will be minimized. Natural restoration of the beach profile by accretion of sand through the westward littoral drift and tidal and wave action will be aided by construction practices that restrict drastic cuts into the beach borrow areas. The section of breakwater root to be repaired will also be temporarily closed off during construction.

Phase I of the sand fill plan involves removal of suitable sand from the upper landward side of the borrow area to the Contractor's designated processing area where undesirable objects (large

rocks, rubble, rubbish) will be separated from the sand. The undesirable materials shall be hauled away to an approved stockpile or disposal site.

The remaining sand will be hauled by truck and placed at the fill area above the water's edge in a berm or dune, typically no higher than 5 feet.

Phase II of the sand fill plan involves removal of suitable sand from the lower side of the borrow area to a designated processing area where undesirable objects (large rocks, rubble, rubbish) will be separated from the sand. The undesirable materials shall be hauled away to an approved stockpile or disposal site.

The remaining sand will be hauled by truck and placed at the fill area from the seaward edge of the berm on the beach slope to a point below the Mean Higher High Water (MHHW) elevation.

3. Maintenance Sand By-pass Plan (Future Work)

After the 80,000 cubic yard sand by-pass, follow-up beach profile monitoring on both the borrow and fill sites is recommended to estimate an appropriate maintenance sand by-pass interval. The maintenance interval and sand borrow site used for future maintenance sand by-passing will depend on how the beach restores itself over time. Sea Engineering and the U.S. Army Corp of Engineers recommended a bypass amount on the order of 6,000 cubic yards per year for maintenance purposes ("Kikiaola Light Draft Harbor West Breakwater Root Extension and Sand Bypass Study" September 2008). The eroded area near the existing west breakwater root should be the primary location for future beach nourishment sand by-passing.

4. Description of Root Repair Work on West Breakwater

Existing Kikiaola West Breakwater Root Condition

The root section of the existing west breakwater is severely eroded. Wave diffraction at the breakwater root causes the formation of a curved shoreline west of the breakwater. Since the original construction of Kikiaola Harbor the landward end of the breakwater is extensively flanked, with the water line eroded approximately 75 landward of the breakwater root. The existing breakwater is comprised of armor stones 3 feet in nominal diameter. Settlement of the stones has occurred at the root section of the breakwater, while little damage has been observed on other parts. High surge combined with wave diffraction around the breakwater root has exacerbated the scouring and undermined the backfill land.

Construction Means and Methods

The Contractor shall demolish the damaged sections of the existing breakwater only as necessary to accommodate his method of constructing the new breakwater root. The stones removed shall be salvaged for breakwater root repair construction. The contractor shall avoid encroaching into the adjacent cemetery lot and protect other sections of the existing breakwater during construction. The contractor shall use native beach sand from the sand by-pass borrow site east of Kikiaola Harbor, as necessary for construction and shall deposit the sand over the breakwater root toe to restore the area to pre-construction slopes. The Sub-Contractor of the breakwater root repair will need to coordinate his construction operations with the sand by-pass contractor who will be placing approximately 42,000 cubic yards of sand landward of the west breakwater.

Site Preparation. Prior to replacement or resetting of stones, displaced stones shall be removed to facilitate placement of stones as shown on the drawings and specified in the contract specifications. Prior to placement of geotextile fabric, depressions in the existing ground shall be filled with crushed rock 1-inch to 3-inches in size to level sharp irregularities.

Staging, Stockpiling and Access. The landowner of a 32.8 acre parcel adjacent to the harbor, Makai Marina LLC has informally agreed to allow DLNR-DOBOR's contractor to use a portion of this property for a construction field office and contractor equipment staging area for the root repair project. This is the same parcel, TMK: (4) 1-2-06:003, Lot 5 that will be used for the sand by-pass project. Attachment A, Sheet 6 shows the proposed contractor area and two possible truck sand haul routes; one that goes on Kaunualii Highway then to Mamo Road and the other a more direct route from the east borrow area to the west fill area. This direct route requires the contractor to construct a temporary bridge over the existing irrigation ditch. The bridge shall be removed at the completion of the project.

Permanent and Temporary Fill Areas and Volumes

The following tables show the types of permanent and temporary fill by area and volume of materials that will be used to construct the breakwater root structure. The quantities of the columns headed by "Army" are for construction material installed Makai (waterward) of the MHHW mark. Attachment B, Sheet 9 shows the area of the breakwater root structure relative to the MHHL mark. The area of the proposed structure Makai (waterward) of the MHHW mark is under the jurisdiction of the Department of the Army.

Permanent Fill Areas

| Material | Total (s.f.) | (acres) | Army (s.f.) | (acres) | Other (s.f.) | (acres) |
|--------------------|--------------|---------|-------------|---------|--------------|---------|
| Splash Apron Stone | 734 | 0.02 | 26 | 0.001 | 708 | 0.02 |
| Underlayer Stone | 3,905 | 0.09 | 1,000 | 0.02 | 2,905 | 0.07 |
| Armor Stone | 2,016 | 0.05 | 355 | 0.01 | 1,661 | 0.040 |
| Sand Backfill | 2,212 | 0.05 | 0 | 0 | 1,070 | 0.02 |
| Geotextile Fabric | 3,905 | 0.09 | 1,318 | 0.030 | 2,587 | 0.06 |
| Crushed Rock | 2,000 | 0.05 | 500 | 0.01 | 1,500 | 0.03 |

Temporary Fill Areas

| Material | Total (s.f.) | (acres) | Army (s.f.) | (acres) | Other (s.f.) | (acres) |
|------------------|--------------|---------|-------------|---------|--------------|---------|
| Bulk Bags w/Sand | 1,003 | 0.02 | 712 | 0.02 | 292 | 0.01 |
| Threshold Stones | 1,032 | 0.02 | 366 | 0.01 | 150 | 0.003 |

Enclosure 1: Scope of Work
 Mr. George Young, P.E.
 Chief, Regulatory Branch
 Re: Kikiaola SBH Sand By-pass System
 November 8, 2013
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Permanent Fill Volumes (c.y.)

| Material | Total | Army | Other |
|--------------------|-------|------|-------|
| Splash Apron Stone | 160 | 6 | 154 |
| Underlayer Stone | 450 | 115 | 335 |
| Armor Stone | 800 | 141 | 659 |
| Sand Backfill | 1,070 | 0 | 1,070 |
| Geotextile Fabric | 24 | 8 | 16 |
| Crushed Rock | 19 | 5 | 14 |

Temporary Fill Volumes (c.y.)

| Material | Total | Army | Other |
|------------------|-------|------|-------|
| Bulk Bags w/Sand | 193 | 138 | 55 |
| Threshold Stones | 64 | 45 | 19 |

Department of Army (Army) jurisdiction is Makai (waterward) of the MHHW mark,
 Other jurisdiction (State, County) is shoreward of the MHHW mark.

5. Best Management Practices (BMP) Plans for the Sand By-pass and West Breakwater Root Repair Projects

The BMP plans for both projects are part of the contract specifications and are contained in Attachments C and D.

Please advise whether additional information is needed to process the permit application. If you have any questions, please call Eric Yuasa at (808) 587-1861.

Very truly yours,

Edward R. Underwood, Administrator
 Division of Boating and Ocean Recreation

Attachments

- A – Sand By-pass Construction Plans (1/2 size, bound separately)
- B – Breakwater Root Repair Construction Plans (1/2 size, bound separately)
- C – Section 01568 – Environmental Permits and Pollution Control - Sand By-pass
- D - Section 01568 – Environmental Permits and Pollution Control - Breakwater Root Repair

SECTION 01568

ENVIRONMENTAL PERMITS AND POLLUTION CONTROL

PART 1 – GENERAL

1.1 GENERAL

- A. With the exception of those measures set forth elsewhere in these specifications, environmental protection shall consist of the prevention of environmental pollution as the result of construction operations under this contract. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare, unfavorably alter ecological balances of importance to human life, affect other species of importance to man, or degrade the utilization of the environment for aesthetic and recreational purposes.
- B. The work under this section shall include the following:
1. Ensure that all permits required are obtained and valid for the construction period.
 2. Provide all air and water quality testing and monitoring work required by the permits during construction.
 3. Provide all facilities, equipment and structural controls for minimizing adverse impacts upon the environment during the construction period.

1.2 GENERAL REQUIREMENTS

A. Applicable Regulations

In order to provide for abatement and control of environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, the work performed shall comply with the intent of the applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement, including, but not limited to the following regulations:

1. State of Hawaii, Department of Health, Administrative Rules, Chapter 55, WATER POLLUTION CONTROL: Chapter 54, WATER QUALITY STANDARDS.
2. State of Hawaii, Department of Health, Administrative Rules, Chapter 59, AMBIENT AIR QUALITY: Chapter 60, AIR POLLUTION CONTROL LAW.
3. State of Hawaii, Department of Health, Administrative Rules, Chapter 44A, VEHICULAR NOISE CONTROL.
4. State of Hawaii, Occupational Safety and Health Standards, Title 12, Department of Labor and Industrial Relations, Subtitle 8, Division of Occupational Safety and Health, Subparagraph 12-202-13, ASBESTOS DUST: Environmental Protection

Agency, Code of Federal Regulation Title 40, Part 61, Subpart B, NATIONAL EMISSION STANDARDS FOR ASBESTOS; and U.S. Department of Labor Occupational Safety and Health Administration (OSHA) Asbestos Regulations, Code of Federal Regulations Title 29, Part 1910.

B. Permits

1. The Contractor shall comply with the requirements and conditions of all regulatory agency permits, including the following:
 - a. Department of Army Permit
 - b. National Pollutant Discharge Elimination System (NPDES) Individual permit
 - c. Conservation District Use Permit KA-3240
 - d. Coastal Zone Management (CZM) Certification
 - e. Special Management Area
 - f. Grading Permit
 - g. Any other required permits

2. All permit applications and/or forms shall be submitted to the State for concurrence prior to submission to the accepting agencies.

C. Rubbish Disposal

1. No burning of debris and/or waste materials shall be permitted on the project site.
2. No burying of debris and/or waste material except for materials which are specifically indicated elsewhere in these specifications as suitable for backfill shall be permitted on the project site.
3. Prior to loading on the trucks, undesirable debris and waste materials shall be separated from the borrow sand. All unusable debris and waste material shall be hauled away to an appropriate stockpiling site or off-site dump area.
4. Cleanup shall include the collection of all waste paper and wrapping materials, cans, bottles, construction waste materials and other objectionable materials, and removal as required. Frequency of cleanup shall coincide with rubbish producing events.

D. Dust

1. The Contractor shall prevent dust from becoming airborne at all times including non-working hours, weekends and holidays in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 60 - Air Pollution Control.
2. The Contractor shall properly control fugitive dust from entering harbor waters or the neighborhood surrounding the project site. This includes controlling fugitive dust generated during sand processing operations; where unusable debris and waste material is removed from acceptable borrow sand. The method of dust control shall be the responsibility of the Contractor and should be specified in his site-specific BMP plan.
3. The Contractor shall be responsible for all damage claims in accordance with Section 7.16 – “Responsibility for Damage Claims” of the GENERAL CONDITIONS.

E. Noise

1. Noise shall be kept within acceptable levels at all times in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 46 – Community Noise Control. The Contractor shall obtain and pay for the Community Noise Permit from the State Department of Health when the construction equipment or other devices emit noise at levels exceeding the allowable limits.
2. All internal combustion engine-powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.
3. Construction equipment meeting allowable noise limits shall not be started prior to 6:45 a.m. without prior approval of the Engineer. Equipment exceeding allowable noise levels shall not be started-up prior to 7:00 a.m.

F. Historical, Archaeological and Cultural Resources

There are no known historical, archaeological or cultural resources within the project site. In the unlikely event that historical sites, including human burials are uncovered during the course of any construction activities, all work in the vicinity must stop and the State Historic Preservation Division must be contacted at 692-8015.

G. Protection of Water Resources

1. Contractor’s Site-specific BMP Plan. The Contractor shall submit a site-specific BMP Plan to the State of Hawaii Department of Health (DOH) for their review, comment, and acceptance, prior to the start of construction. The BMP plan shall include the Contractor’s plans to take care of any turbidity which may occur during the sand by-passing operations. BMPs shall include, but are not limited to the following:
 - Use of native beach sand, or sand with low silt content for the sand by-pass. Since native beach sand will be used silt containment devices will not be necessary or practical for the sand nourishment elements of this project.

- Surveys for Green Sea Turtles will be conducted prior to the start of construction. Additional surveys will be conducted during and after construction as necessary. A turtle survey protocol shall be reviewed and approved by the DLNR Land Division, Planning Branch prior to approval of construction plans for the project.
- Sand by-passing activities have been scheduled during the calmer wave months of February and August. Because those months overlap with the Humpback Whale breeding season, the Contractor shall make all practicable efforts to reduce noise or turbidity.
- Perform regular cleanup of areas exposed to storm water.
- Store material under shelter or covering to avoid contact with storm water.
- All storage of construction-related materials shall be above the influence of the tides and shall be stored in such a manner to preclude any contaminants, or runoff containing such contaminants from entering State waters.
- The Contractor shall not deposit at the site or in the storm drainage system any solid waste or discharge liquid waste, such as fuels, lubricants, bituminous waste, untreated sewage, and other pollutants, which may contaminate the existing surface or ground waters and harbor waters. No excavated material shall be stockpiled in harbor waters.
- Care shall be taken to ensure that no petroleum products, bituminous materials, or other deleterious substances, including debris, allowed to fall, flow, leach, or otherwise enter existing surface or ground waters and harbor waters.
- The Contractor shall not allow any debris or construction waste material to be blown or dropped into the harbor or ocean. Any debris or waste blown or dropped into the harbor or ocean shall be immediately retrieved by the Contractor's personnel.

H. Other

1. Whenever trucks and/or other construction equipment leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Trucks hauling sand, debris or other material shall be covered as required by Public Utilities Commission (PUC) regulations.
2. Wastewater shall not be discharged into existing streams, waterways, or drainage systems such as gutters and catch basins unless treated to comply with the State Department of Health water pollution regulations.

3. Except in an emergency, such as a mechanical breakdown, all vehicle fueling and maintenance shall be done in a designated area isolated from State waters. A temporary berm shall be constructed around the area when runoff can cause a problem.
4. If any oil or petroleum spills occur, or if a visual sheen is noted on the water, work shall be suspended and the spill shall be cleaned up. Sorbent materials shall be kept on site to be used in the event of such spills. Spills shall be reported to the Engineer, to the Hawaii Department of Health – Clean Water Branch (telephone 808-586-4309 on Oahu 808-241-3322 on Kauai) and the U.S. Coast Guard shall be notified (telephone 808-842-2600).
5. In the event of a petroleum spill on the sand, the operator shall promptly remove the contaminated sand from the beach.
6. All stockpiled material shall be stabilized in accordance with the approved Site-specific BMPs plan as required to prevent erosion from heavy rains.
7. During sand placement the Contractor shall take special care to protect existing dune vegetation and any other existing vegetation.

I. Suspension of Work

1. Violations of any of the above requirements or any other pollution control requirements which may be specified in the Detailed Specifications herein shall be cause for suspension of the work creating such violation. No additional compensation shall be due to the Contractor for remedial measures to correct the offense. Also, no time extension will be granted for delays caused by such suspensions.
2. If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered by the Engineer, the State reserves the right to take whatever action is necessary to correct the situation and to deduct all costs incurred by the State in taking such action from monies due to the Contractor.
3. The Engineer may also suspend any operations which he feels are creating pollution problems although they may not be in violation of the above-mentioned requirements. In this instance, the work shall be done and paid for in accordance by force account as described in Subsection 4.2b – “Additional Work” of the GENERAL CONDITIONS and paid for in accordance with Subsection 8.4b – “Force – Account Work” therein. The count of elapsed working days to be charged against the contract in this situation shall be computed in accordance with Subsection 7.18 – “Contract Time” of the GENERAL CONDITIONS.

1.3 ENVIRONMENTAL PROTECTION REQUIREMENTS

A. In Water and around Water Work

1. All work in and around water, including water monitoring, and other waterfront activities shall conform to the Best Management Practices Plan.
2. During performance of the work, the Contractor shall institute and enforce procedures to prevent spills and floating debris from fouling the waters. If such procedures fail, the Contractor shall promptly clean up all spills and floating debris at no cost to the State. The Contractor shall evaluate failed procedures and take corrective measures to fix any deficiencies immediately. For all spills in State waters occurring after normal duty hours, notify the Engineer. The Contractor shall notify the National Response Center (800-424-8802), as required by 40 CFR 302.6, if the quantity of the released substance exceeds the reportable quantities. The Contractor shall also be responsible for notifying the State Hazard Evaluation and Emergency Response (HEER) (586-4249) if the release has the potential to migrate off-site and affect adjacent communities as required by the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 304.
3. Monitoring shall be in accordance with requirements of the site-specific BMP plan that has been accepted by the State DOH prior to construction.

PART 3 – EXECUTION

3.1 BEST MANAGEMENT PRACTICES (BMP) PLAN

Typical Best Management Practices (BMPs) shall be implemented to ensure that water quality and marine resources are protected and preserved. Mitigation measures involve the use of sand that is free of contaminants with negligible silt content. Silt and dust containment shall be practiced for the duration of construction activities. Visual monitoring of near-shore water quality should be conducted during sand placement; and if excessive turbidity occurs, sand placement shall stop and more effective silt containment measures shall be taken.

The Contractor shall implement his site-specific BMP plan including measures to minimize silt in near-shore waters. These BMPs shall include but not be limited to:

The Contractor shall ensure excessive siltation and turbidity is contained or otherwise minimized to the satisfaction of appropriate agencies. This can be attained using compatible, native beach sand with less than 6% fines, and selective sand placement.

All placed material shall be free of contaminants such as excessive silt, sludge, anoxic or decaying organic material, temperature, turbidity, abnormal water chemistry, clay, dirt, organic material, oil, floating debris, grease or foam or any other pollutant that would cause an undesirable condition on the beach or water.

Where any interference, nuisance, harm or hazard may be caused by construction activities, the Contractor shall take measures to minimize or eliminate the interference, nuisance, harm or hazard.

The activity shall not adversely affect a federally listed threatened or endangered species or a species proposed for designation, or destroy or adversely modify its designated critical habitat.

The activity shall not substantially disrupt the movement of those species of aquatic life indigenous to the area, including those species, which normally migrate through the area.

No contamination of the marine or coastal environment (trash or debris) shall result from project-related activities authorized under this letter.

No motorized construction equipment is to be operated in the water at any time.

3.1 AIR POLLUTION CONTROL

A. Emission

The Contractor shall not be allowed to operate equipment and vehicles that show excessive emissions of exhaust gases until corrective repairs or adjustments are made to the satisfaction of the Engineer.

B. Dust

For the duration of the contract, the contractor shall maintain all embankments, haul roads, access roads, vegetation sites, waste disposal areas, borrow areas, sand processing areas and other work areas within the project limits free from dust which would cause a hazard to the work, or the operations of other contractors, or to persons or property. Industry accepted methods of stabilization suitable for the area involved, such as sprinkling or similar methods will be permitted. Chemical or oil treating shall not be used.

C. Burning shall not be permitted.

3.2 WATER POLLUTION CONTROL

A. Wastes

The Contractor shall not deposit at the site or in the storm drainage system any solid waste or discharge liquid waste, such as fuels, lubricants, bituminous waste, untreated sewage, and other pollutants, which may contaminate the existing surface or ground waters. Excavated material shall not be stockpiled in the marine environment.

B. Spillage

Care shall be taken to ensure that no petroleum products, bituminous materials, or other deleterious substances, including debris, are allowed to fall, flow, leach, or otherwise enter existing surface or ground waters.

C. The work areas and haul roads, including roadways leading to the project site, shall be continuously watered to prevent the generation of dust and shall be cleaned daily to remove all mud and droppings from construction vehicles. Mud shall be removed from the tires of all vehicles before entering the construction site.

3.3 NOISE CONTROL

A. Construction equipment shall be equipped with suitable mufflers to maintain noise within levels complying with applicable regulations.

3.4 SOLID WASTES

A. Construction waste, such as crates, boxes, building materials, and other rubbish shall be reduced to a size approved by the County of Kauai. Large size objects shall be reduced to a size acceptable by the County of Kauai Specifications for disposal in their landfills. Other areas or methods proposed by the Contractor will be approved only if the Engineer determines that their effect on the environment is equal to or less than those described herein.

B. Removal of waste shall be a continuous on-going operation. Wastes and debris shall not be allowed to accumulate in large open piles.

C. Wind-blown wastes and debris and wastes left by workers shall be collected by the Contractor and disposed of as described above.

D. Conduct the fueling and lubricating of equipment and motor vehicles to protect against spills and evaporation. Dispose of lubricants to be discarded and all excess oil in accordance with Federal, State, and local regulations.

- E. Dispose of electrolyte solution from lead-acid batteries in accordance with hazardous regulations. Do not dump electrolyte onto the ground or into storm drains or sanitary sewers. Transport the electrolyte to a State-approved hazardous waste disposal site. The method of transportation and equipment shall comply with applicable Federal and State regulations.

3.5 CONSTRUCTION REQUIREMENTS

- A. Do not begin work until the Contractor's site-specific BMP plan has been completed and accepted in writing by the State DOH.
- B. Install, maintain, monitor, repair, and replace site-specific BMPs.
- C. Address all comments received from the Engineer.
- D. Modify and resubmit plans and construction schedules to correct conditions that develop during construction which were unforeseen during the design and pre-construction stages.
- E. Coordinate temporary control provisions with permanent control features throughout the construction and maintenance period.
- F. Install and maintain either or both stabilized construction entrances and wheel washes to minimize tracking of dirt and mud onto roadways. Restrict traffic to stabilized construction areas only. Clean dirt, mud, or other material tracked onto the road immediately. Modify stabilized construction entrances to prevent mud from being tracked onto roadways. Stabilize entire access roads if necessary.
- G. Provide for controlled discharge of waters impounded, directed, or controlled by project activities.
- H. Cover exposed surface of materials completely with tarpaulin or similar device when transporting aggregate, soil, excavated material, or material that may be a source of fugitive dust.
- I. Clean up and remove any pollutant that can be attributed to the Contractor's activities.
- J. Install or modify BMPs due to a change in the Contractor's means and methods, omitted condition that should have been allowed in the accepted site-specific BMP plan, or a BMP that replaces an accepted site-specific BMP that is not satisfactorily performing.
- K. Remove, destroy, replace, or relocate any BMP that must be removed, destroyed, replaced, or relocated due to potential or actual flooding or potential danger or damage to the Project or public.
- L. Maintain records of inspections and maintenance of BMPs. Keep records for duration of the project. Submit weekly copy of records to the Engineer.

- M. The Contractor's designated representative shall address any BMP concerns brought up by the Engineer within 24 hours of notification, including weekends and holidays. If the Contractor fails to satisfactorily address these concerns, the Engineer reserves the right to employ outside assistance or use the Engineer's own labor forces to provide necessary corrective measures. The Engineer will charge the Contractor such incurred costs plus any associated project engineering costs. The Engineer will make appropriate deductions from the Contractor's monthly progress estimate. Failure to apply BMPs shall result in either or both the establishment and increase in the amount of retainage due to unsatisfactory progress or withholding of monthly progress payment. Continued failure to apply BMPs may result in one or more of the following: assessment of liquidated damages, suspension, or cancellation of contract with the Contractor being fully responsible for all additional costs incurred by State.

PART 4 – PAYMENT

- 4.1 Payment for the environmental permits and pollution controls will not be made separately but shall be included in the unit prices bid for the various applicable contract items in the Proposal.
- 4.2 No progress payment will be authorized if the Contractor fails to maintain the project site in accordance with the accepted site-specific BMP Plan.

END OF SECTION

SECTION 01568

ENVIRONMENTAL PERMITS AND POLLUTION CONTROL

PART 1 – GENERAL

1.1 GENERAL

- A. With the exception of those measures set forth elsewhere in these specifications, environmental protection shall consist of the prevention of environmental pollution as the result of construction operations under this contract. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare, unfavorably alter ecological balances of importance to human life, affect other species of importance to man, or degrade the utilization of the environment for aesthetic and recreational purposes.
- B. The work under this section shall include the following:
1. Ensure that all permits required are obtained and valid for the construction period.
 2. Provide all air and water quality testing and monitoring work required by the permits during construction.
 3. Provide all facilities, equipment and structural controls for minimizing adverse impacts upon the environment during the construction period.

1.2 GENERAL REQUIREMENTS

A. Applicable Regulations

In order to provide for abatement and control of environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, the work performed shall comply with the intent of the applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement, including, but not limited to the following regulations:

1. State of Hawaii, Department of Health, Administrative Rules, Chapter 55, WATER POLLUTION CONTROL: Chapter 54, WATER QUALITY STANDARDS.
2. State of Hawaii, Department of Health, Administrative Rules, Chapter 59, AMBIENT AIR QUALITY: Chapter 60, AIR POLLUTION CONTROL LAW.
3. State of Hawaii, Department of Health, Administrative Rules, Chapter 44A, VEHICULAR NOISE CONTROL.
4. State of Hawaii, Occupational Safety and Health Standards, Title 12, Department of Labor and Industrial Relations, Subtitle 8, Division of Occupational Safety and Health, Subparagraph 12-202-13, ASBESTOS DUST: Environmental Protection

Agency, Code of Federal Regulation Title 40, Part 61, Subpart B, NATIONAL EMISSION STANDARDS FOR ASBESTOS; and U.S. Department of Labor Occupational Safety and Health Administration (OSHA) Asbestos Regulations, Code of Federal Regulations Title 29, Part 1910.

B. Permits and Project Cooperation Agreement (PCA)

1. The Contractor shall comply with the requirements and conditions of all regulatory agency permits, including the following:
 - a. Department of Army Permit
 - b. National Pollutant Discharge Elimination System (NPDES) Individual Permit
 - c. Any other required permits
2. All permit applications and/or forms shall be submitted to the State for concurrence prior to submission to the accepting agencies.
3. The project shall be in accordance with the terms of a “Project Cooperation Agreement between the Department of the Army and the State of Hawaii for Construction of the Kikiaola Light Draft Harbor Navigation Improvements Island of Kauai, Hawaii” dated August 8, 2005.

C. Rubbish Disposal

1. No burning of debris and/or waste materials shall be permitted on the project site.
2. No burying of debris and/or waste material except for materials which are specifically indicated elsewhere in these specifications as suitable for backfill shall be permitted on the project site.
3. All unusable debris and waste material shall be hauled away to an appropriate off-site dump area. During loading operations, debris and waste materials shall be watered down to reduce dust.
4. No dry sweeping shall be permitted in cleaning rubbish and fines which can become airborne from ground or other paved areas. Vacuuming, wet mopping, or wet or damp sweeping is permissible.
5. Cleanup shall include the collection of all waste paper and wrapping materials, cans, bottles, construction waste materials and other objectionable materials, and removal as required. Frequency of cleanup shall coincide with rubbish producing events.

D. Dust

1. The Contractor shall prevent dust from becoming airborne at all times including non-working hours, weekends and holidays in conformance with the State of Hawaii,

Department of Health, Administrative Rules, Chapter 60, AIR POLLUTION CONTROL LAW.

2. The method of dust control and costs shall be the responsibility of the Contractor. Methods of dust control include using water to prevent airborne dust.
3. The Contractor shall be responsible for all damage claims in accordance with Section 7.16 – “Responsibility for Damage Claims” of the GENERAL CONDITIONS.

E. Noise

1. Noise shall be kept within acceptable levels at all times in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 43 – Community Noise Control for Oahu. The Contractor shall obtain and pay for the Community Noise Permit from the State Department of Health when his construction equipment or other devices emit noise at levels exceeding the allowable limits.
2. All internal combustion engine-powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.
3. Construction equipment meeting allowable noise limits shall not be started prior to 6:45 a.m. without prior approval of the Engineer. Equipment exceeding allowable noise levels shall not be started-up prior to 7:00 a.m.

F. Historical, Archaeological and Cultural Resources

There are no known historical, archaeological or cultural resources within the project site. In the unlikely event that historical sites, including human burials are uncovered during the course of any construction activities, all work in the vicinity must stop and the State Historic Preservation Division must be contacted at 692-8015.

G. Protection of Water Resources

1. Contractor’s Site-specific BMP Plan. The Contractor shall submit a Site-specific BMP Plan to the State of Hawaii Department of Health (DOH) for their review, comment, and acceptance, prior to the start of construction. The BMP plan shall include the Contractor’s plans to take care of any turbidity which may occur during the demolition and removal of existing breakwater rocks and structures and repair of the root. BMPs shall include, but are not limited to the following:

Perform regular cleanup of areas exposed to storm water.

Store material under shelter or covering to avoid contact with storm water.

All storage of construction-related materials shall be above the influence of the tides and shall be stored in such a manner to preclude any contaminants, or runoff containing such contaminants from entering State waters.

Provide a temporary sandbag barrier around root repair work area as shown on the plans.

The Contractor shall not deposit at the site or in the storm drainage system any solid waste or discharge liquid waste, such as fuels, lubricants, bituminous waste, untreated sewage, and other pollutants, which may contaminate the existing surface or ground waters and harbor waters. No excavated material shall be stockpiled in harbor waters.

Care shall be taken to ensure that no petroleum products, bituminous materials, or other deleterious substances, including debris, allowed to fall, flow, leach, or otherwise enter existing surface or ground waters and harbor waters.

The Contractor shall properly control fugitive dust from entering the harbor waters or the neighborhood surrounding the project site.

The Contractor shall not allow any debris or construction waste material to be blown or dropped into the harbor or ocean. Any debris or waste blown or dropped into the harbor or ocean shall be immediately retrieved by the Contractor's personnel.

H. Others

1. Whenever trucks and/or other construction equipment leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Trucks hauling sand, debris or other material shall be covered as required by Public Utilities Commission (PUC) regulations.
2. Wastewater shall not be discharged into existing streams, waterways, or drainage systems such as gutters and catch basins unless treated to comply with the State Department of Health water pollution regulations.
3. Except in an emergency, such as a mechanical breakdown, all vehicle fueling and maintenance shall be done in a designated area isolated from State waters. A temporary berm shall be constructed around the area when runoff can cause a problem.
4. If any oil or petroleum spills occur, or if a visual sheen is noted on the water, work shall be suspended and the spill shall be cleaned up. Sorbent materials shall be kept on site to be used in the event of such spills. Spills shall be reported to the Engineer, to the Hawaii Department of Health – Clean Water Branch (telephone 808-586-4309) and the U.S. Coast Guard shall be notified (telephone 808-424-8802).
5. In the event there is a petroleum spill on the sand, the operator shall promptly remove the contaminated sand from the beach.

I. Suspension of Work

1. Violations of any of the above requirements or any other pollution control requirements which may be specified in the Detailed Specifications herein shall be

cause for suspension of the work creating such violation. No additional compensation shall be due to the Contractor for remedial measures to correct the offense. Also, no time extension will be granted for delays caused by such suspensions.

2. If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered by the Engineer, the State reserves the right to take whatever action is necessary to correct the situation and to deduct all costs incurred by the State in taking such action from monies due to the Contractor.
3. The Engineer may also suspend any operations which he feels are creating pollution problems although they may not be in violation of the above-mentioned requirements. In this instance, the work shall be done and paid for in accordance by force account as described in Subsection 4.2b – “Additional Work” of the GENERAL CONDITIONS and paid for in accordance with Subsection 8.4b – “Force – Account Work” therein. The count of elapsed working days to be charged against the contract in this situation shall be computed in accordance with Subsection 7.18 – “Contract Time” of the GENERAL CONDITIONS.

1.3 ENVIRONMENTAL PROTECTION REQUIREMENTS

A. Work in and around Water

1. All work in and around water, including sandbag barriers, water monitoring, and other waterfront activities shall conform to the Contractors Site-specific Best Management Practices Plan.
2. During performance of the work, the Contractor shall institute and enforce procedures to prevent spills and floating debris from fouling the waters. If such procedures fail, the Contractor shall promptly clean up all spills and floating debris at no cost to the State. The Contractor shall evaluate failed procedures and take corrective measures to fix any deficiencies immediately. For all spills in State waters occurring after normal duty hours, notify the Engineer. The Contractor shall notify the National Response Center (800-424-8802), as required by 40 CFR 302.6, if the quantity of the released substance exceeds the reportable quantities. The Contractor shall also be responsible for notifying the State Emergency Response Commission (586-4249) if the release has the potential to migrate off-site and affect adjacent communities as required by the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 304.
3. Monitoring

Monitoring shall be in accordance with requirements of the site-specific BMP plan that has been accepted by the State DOH prior to construction.

1.4 SANDBAG BARRIERS

- A. Temporary sandbag barriers shall be used to confine the breakwater root repair work area and prevent discharges of construction waste or debris into State waters, as shown on the plans and specified herein.
- B. Submittals
 - 1. Product data
 - Sandbag barrier bag material
 - 2. Installation instructions
 - 3. Operation and maintenance data

PART 2 – PRODUCTS

1.1 SANDBAG BARRIER

- A. The bulk bag material for the sandbags shall meet the following minimum physical requirements.
 - 1. 2,200 pound safe working load.
 - 2. Fabric 5.0 ounces uncoated woven polypropylene.
 - 3. Ultraviolet (UV) stabilized.
 - 4. One metric ton capacity.

PART 3 – EXECUTION

3.1 BEST MANAGEMENT PRACTICES (BMP) PLAN

Best Management Practices (BMPs) shall be implemented to ensure that water quality and marine resources are protected and preserved. Mitigation measures involve the use of good quality sand for backfill. The sand for the sandbags shall be material that is free of contaminants with negligible (less than 6% fines). Silt and dust containment shall be practiced for the duration of construction activities.

The contractor's Site-specific BMP Plan shall include a temporary erosion control and sediment control plan approved by the Engineer prior to commencement of grading.

Breakwater root repair construction activities below the Mean Higher High Water (MHHW) elevation shall be conducted during low tide periods.

Measures to control erosion and other pollutants shall be in place before any earth moving work is initiated. These measures shall be properly constructed and maintained throughout the construction period.

All sand backfill material shall be free of contaminants of any kind including: excessive silt, sludge, anoxic or decaying organic material, temperature, turbidity, abnormal water chemistry, clay, dirt, organic material, oil, floating debris, grease or foam or any other pollutant that would cause an undesirable condition on the beach or water.

Where any interference, nuisance, or harm may be caused by construction activities, the Contractor shall take measures to minimize or eliminate the interference, nuisance, or harm.

Contractor shall inspect sandbag barriers daily and repair as necessary.

No motorized construction equipment is to be operated in the water at any time.

3.1 AIR POLLUTION CONTROL

A. Emission

The Contractor shall not be allowed to operate equipment and vehicles that show excessive emissions of exhaust gases until corrective repairs or adjustments are made to the satisfaction of the Engineer.

B. Dust

1. For the duration of the contract, the Contractor shall maintain all embankments, haul roads, access roads, vegetation sites, waste disposal areas, borrow areas, and all other work areas within the project limits. He shall control the dust from these areas to minimize hazardous work conditions and negative impacts on persons or property. Industry accepted methods of stabilization suitable for the area involved, such as sprinkling or similar methods will be permitted. Chemical or oil treating shall not be permitted.

C. Burning shall not be permitted.

3.2 WATER POLLUTION CONTROL

A. Wastes

The Contractor shall not deposit at the site or in the storm drainage system any solid waste or discharge liquid waste, such as fuels, lubricants, bituminous waste, untreated sewage, and other pollutants, which may contaminate the existing surface or ground waters. Excavated material shall not be stockpiled in the marine environment.

B. Spillage

Care shall be taken to ensure that no petroleum products, bituminous materials, or other deleterious substances, including debris, are allowed to fall, flow, leach, or otherwise enter existing surface or ground waters.

- C. The work areas and haul roads, including roadways leading to the project site, shall be continuously watered to prevent the generation of dust and shall be cleaned daily to remove all mud and droppings from construction vehicles. Mud shall be removed from the tires of all vehicles before entering the construction site.

3.3 NOISE CONTROL

- A. Construction equipment shall be equipped with suitable mufflers to maintain noise within levels complying with applicable regulations.

3.4 SOLID WASTES

- A. Construction waste, such as crates, boxes, building materials, and other rubbish shall be reduced to a size approved by the Engineer. Large size objects shall be reduced to a size acceptable by the County of Kauai specifications for disposal in their landfills. Other areas or methods proposed by the Contractor will be approved only if the Engineer determines that their effect on the environment is equal to or less than those described herein.
- B. Removal of waste shall be a continuous ongoing operation. Wastes and debris shall not be allowed to accumulate in large open piles.
- C. Wind-blown waste and debris and wastes left by workers shall be collected by the Contractor and disposed of as described above.
- D. Conduct the fueling and lubricating of equipment and motor vehicles to protect against spills and evaporation. Dispose of lubricants to be discarded and all excess oil in accordance with Federal, State, and local regulations.
- E. Dispose of electrolyte solution from lead-acid batteries in accordance with hazardous regulations. Do not dump electrolyte onto the ground or into storm drains or sanitary sewers. Transport the electrolyte to a State-approved hazardous waste disposal site. The method of transportation and equipment shall comply with applicable Federal and State regulations.

3.5 CONSTRUCTION REQUIREMENTS

- A. Do not begin work until the site-specific BMP plan has been completed and accepted in writing by the State DOH and the Environmental Protection Plan has been completed and accepted in writing by the Engineer.
- B. Install, maintain, monitor, repair, and replace site-specific BMPs.
- C. Address all comments received from the Engineer.

- D. Modify and resubmit plans and construction schedules to correct conditions that develop during construction which were unforeseen during the design and pre-construction stages.
- E. Coordinate temporary control provisions with permanent control features throughout the construction and maintenance period.
- F. Install and maintain either or both stabilized construction entrances and wheel washes to minimize tracking of dirt and mud onto roadways. Restrict traffic to stabilized construction areas only. Clean dirt, mud, or other material tracked onto the road immediately. Modify stabilized construction entrances to prevent mud from being tracked onto roadways. Stabilize entire access roads if necessary.
- G. Provide for controlled discharge of waters impounded, directed, or controlled by project activities.
- H. Cover exposed surface of materials completely with tarpaulin or similar device when transporting aggregate, soil, excavated material, or material that may be a source of fugitive dust.
- I. Clean up and remove any pollutant that can be attributed to the Contractor's activities.
- J. Install or modify BMPs due to a change in the Contractor's means and methods, omitted condition that should have been allowed in the accepted site-specific BMP plan, or a BMP that replaces an accepted site-specific BMP that is not satisfactorily performing.
- K. Remove, destroy, replace, or relocate any BMP that must be removed, destroyed, replaced, or relocated due to potential or actual flooding or potential danger or damage to the Project or public.
- L. Maintain records of inspections and maintenance of BMPs. Keep records for duration of the project. Submit weekly copy of records to the Engineer.
- M. The Contractor's designated representative shall address any BMP concerns brought up by the Engineer within 24 hours of notification, including weekends and holidays. If the Contractor fails to satisfactorily address these concerns, the Engineer reserves the right to employ outside assistance or use the Engineer's own labor forces to provide necessary corrective measures. The Engineer will charge the Contractor such incurred costs plus any associated project engineering costs. The Engineer will make appropriate deductions from the Contractor's monthly progress estimate. Failure to apply BMPs shall result in either or both the establishment and increase in the amount of retainage due to unsatisfactory progress or withholding of monthly progress payment. Continued failure to apply BMPs may result in one or more of the following: assessment of liquidated damages, suspension, or cancellation of contract with the Contractor being fully responsible for all additional costs incurred by State.

PART 4 – MEASUREMENT

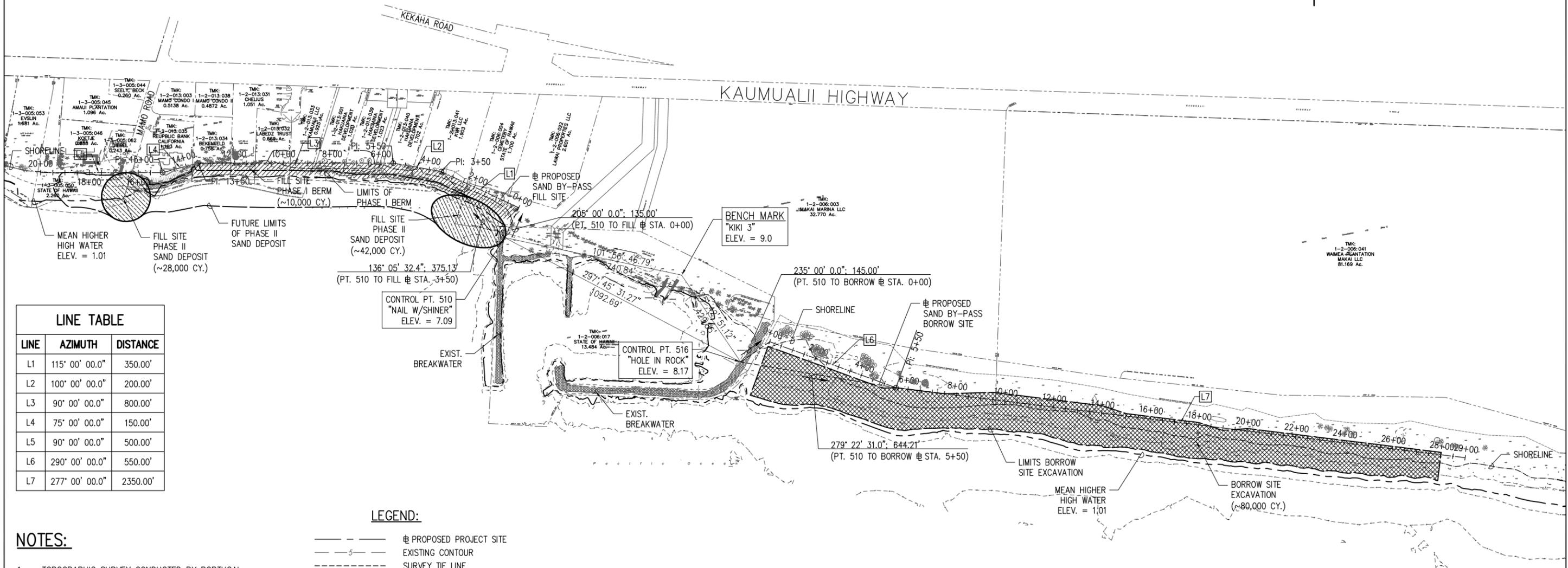
Measure the Sandbag Barriers, in place complete as listed in the proposal by linear feet.

PART 5 – PAYMENT

- 4.1 Payment for the environmental permits will not be made separately but shall be included in the unit prices bid for the various applicable contract items in the Proposal.
- 4.2 No progress payment will be authorized until the Engineer accepts in writing the Environmental Protection Plan or when the Contractor fails to maintain the project site in accordance with the accepted Site-specific BMP Plan and the accepted Environmental Protection Plan.
- 4.3 The accepted quantities will be paid at the contract price per unit of measurement for Sandbag Barriers, in place complete.

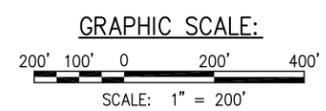
END OF SECTION

TRUE NORTH
SCALE: 1 in. = 200 FT



| LINE | AZIMUTH | DISTANCE |
|------|----------------|----------|
| L1 | 115° 00' 00.0" | 350.00' |
| L2 | 100° 00' 00.0" | 200.00' |
| L3 | 90° 00' 00.0" | 800.00' |
| L4 | 75° 00' 00.0" | 150.00' |
| L5 | 90° 00' 00.0" | 500.00' |
| L6 | 290° 00' 00.0" | 550.00' |
| L7 | 277° 00' 00.0" | 2350.00' |

- LEGEND:**
- ⊕ PROPOSED PROJECT SITE
 - EXISTING CONTOUR
 - - - SURVEY TIE LINE
 - SHORELINE
 - LIMITS OF GRADING
 - LIMITS OF DISTURBANCE
 - - - MEAN HIGHER HIGH WATER
 - [Cross-hatched] SAND EXCAVATION
 - [Diagonal lines] PHASE I SAND BERM
 - [Stippled] FILL SITE PHASE II SAND DEPOSIT



- NOTES:**
- TOPOGRAPHIC SURVEY CONDUCTED BY PORTUGAL SURVEYING LLC. ON NOVEMBER 7, 2012 AND REVISED APRIL 11, 2013.
 - SHORELINE LOCATED OCTOBER 11, 2012 & APRIL 11, 2013 BY PORTUGAL SURVEYING LLC.
 - OFFSHORE BATHYMETRIC SURVEY AND KIKIAOLA HARBOR STRUCTURAL SURVEY DATA WERE OBTAINED FROM THE UNITED STATES ARMY CORPS OF ENGINEERS. SURVEYS CONDUCTED OCTOBER 13, 2012.
 - ORIGIN OF COORDINATES: COORDINATES ARE REFERRED GOVERNMENT SURVEY TRIANGULATION STATION "TRANSIT OF VENUS" Δ
 - BENCH MARKS: "KIKI 3" CORPS OF ENGINEERS U.S. ARMY SURVEY MARK (DISK) SET IN CONCRETE ON THE EAST SIDE OF KIKIAOLA SMALL BOAT HARBOR BOAT RAMP. ELEVATION = 9.0 FEET MSL.

EARTHWORK SUMMARY:
(FOR PERMIT PURPOSES ONLY)

| | |
|----------------------------------|-------------|
| TOTAL AREA TO BE DISTURBED: | 17.14 ACRES |
| AREA OF BORROW SITE: | 9.51 ACRES |
| AREA OF PHASE I BERM: | 1.75 ACRES |
| AREA OF PHASE II DEPOSIT (EST.): | 5.88 ACRES |

SAND BY-PASS QUANTITIES

| | |
|-------------------------|-----------|
| BORROW SITE EXCAVATION: | 80,000 CY |
| PHASE I BERM: | 10,000 CY |
| PHASE II SAND DEPOSIT: | 70,000 CY |

THE CONTRACTOR SHALL CONDUCT HIS OWN QUANTITY SUMMARY

IF THIS SHEET IS LESS THAN 22"x34", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|--------------|------|-------------|---------|------|----------|
| | | | | | |

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

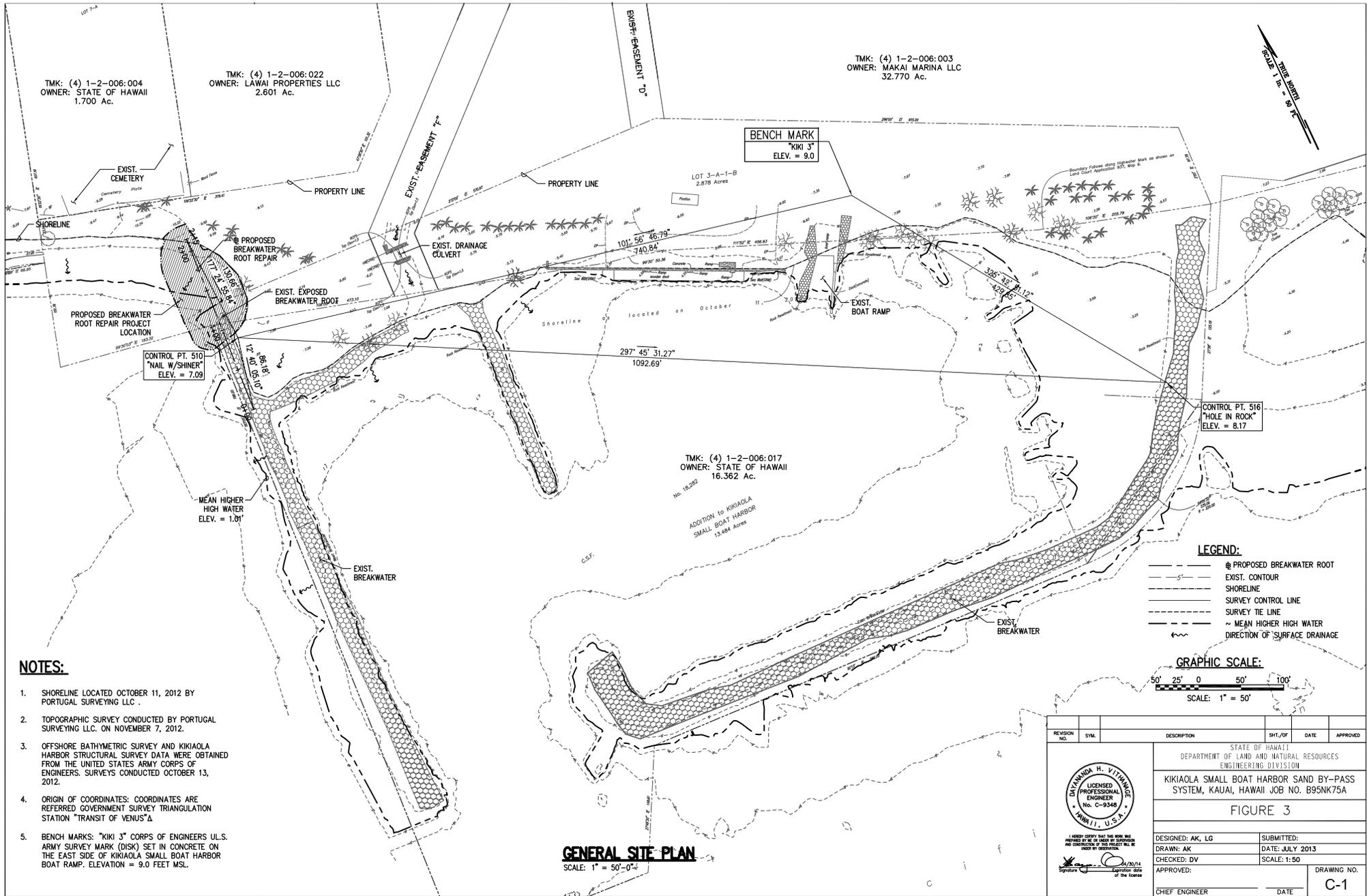
KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A

Figure 2

| | |
|------------------|-----------------|
| DESIGNED: AK, LG | SUBMITTED: |
| DRAWN: AK | DATE: JULY 2013 |
| CHECKED: DV | SCALE: 1:200 |
| APPROVED: | DRAWING NO. |
| CHIEF ENGINEER | DATE: Feb 2014 |

GENERAL SITE PLAN – SAND BY-PASSING PROJECT
SCALE: 1" = 200'-0"

Enclosure 1: Scope of Work



DRAWING NAME: I:\201238-KIKIAOLA_SAND_BYPASS\DRAWINGS\CONTRACT DOCUMENTS\DESIGN\PRE-FINAL DESIGN\BREAKWATER_ROOT\05_GEN_SITE_C-1.DWG EDIT TIME: 10-31-13, 3:01 PM EDITED BY: CTAKUSHI

| REVISION NO. | SYMBOL | DESCRIPTION | SHT./OF | DATE | APPROVED |
|--------------|--------|-------------|---------|------|----------|
| | | | | | |

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A

FIGURE 3

DESIGNED: AK, LG
DRAWN: AK
CHECKED: DV
APPROVED: _____
CHIEF ENGINEER

DATE: _____

DATE: JULY 2013
SCALE: 1:50

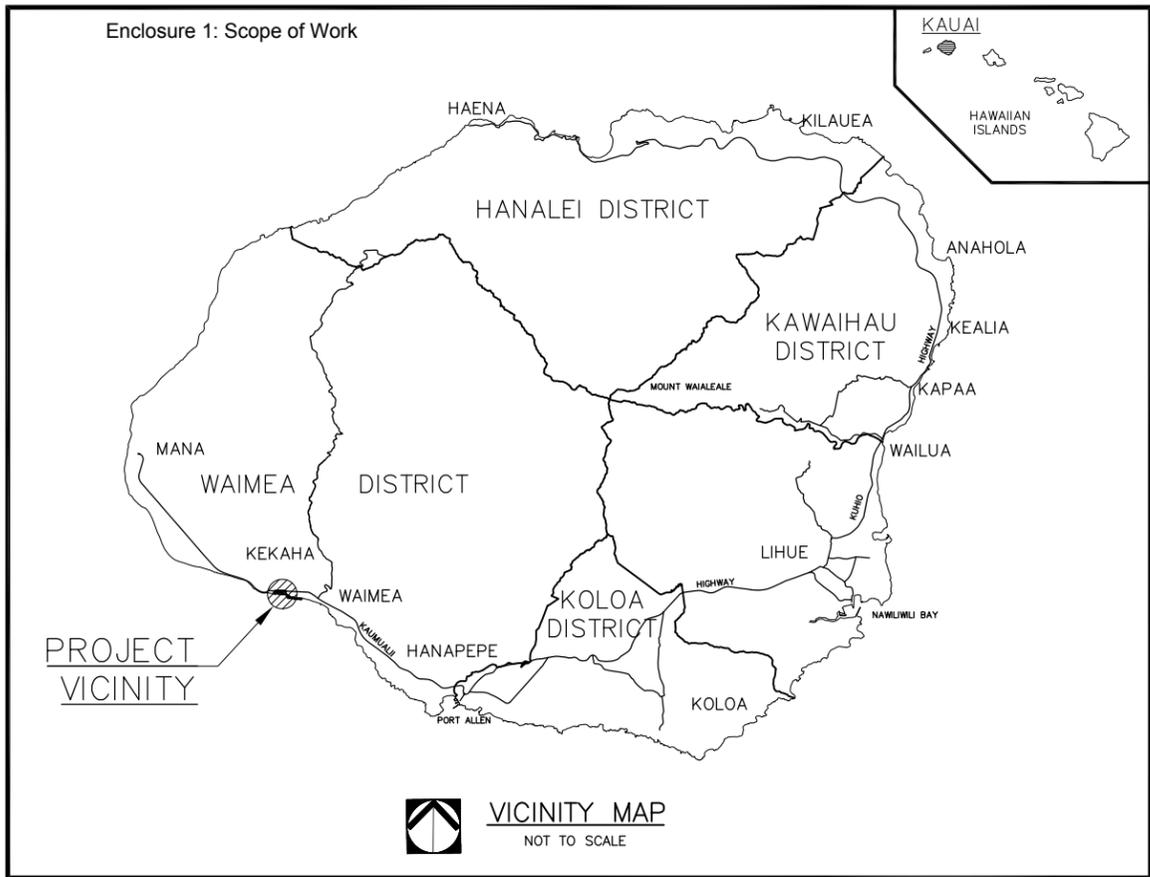
DRAWING NO. **C-1**

DIANANDA H. VITAMINE
LICENSED PROFESSIONAL ENGINEER
No. C-9348
HAWAII, U.S.A.

I HEREBY CERTIFY THAT THE WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND ORIGINALLY TO THE BEST OF MY KNOWLEDGE AND BELIEF ALL INFORMATION IS TRUE AND CORRECT.

10/29/14
Signature of the Licensee

JOB NO. B95NK75A SHEET 05 OF 10 SHEETS



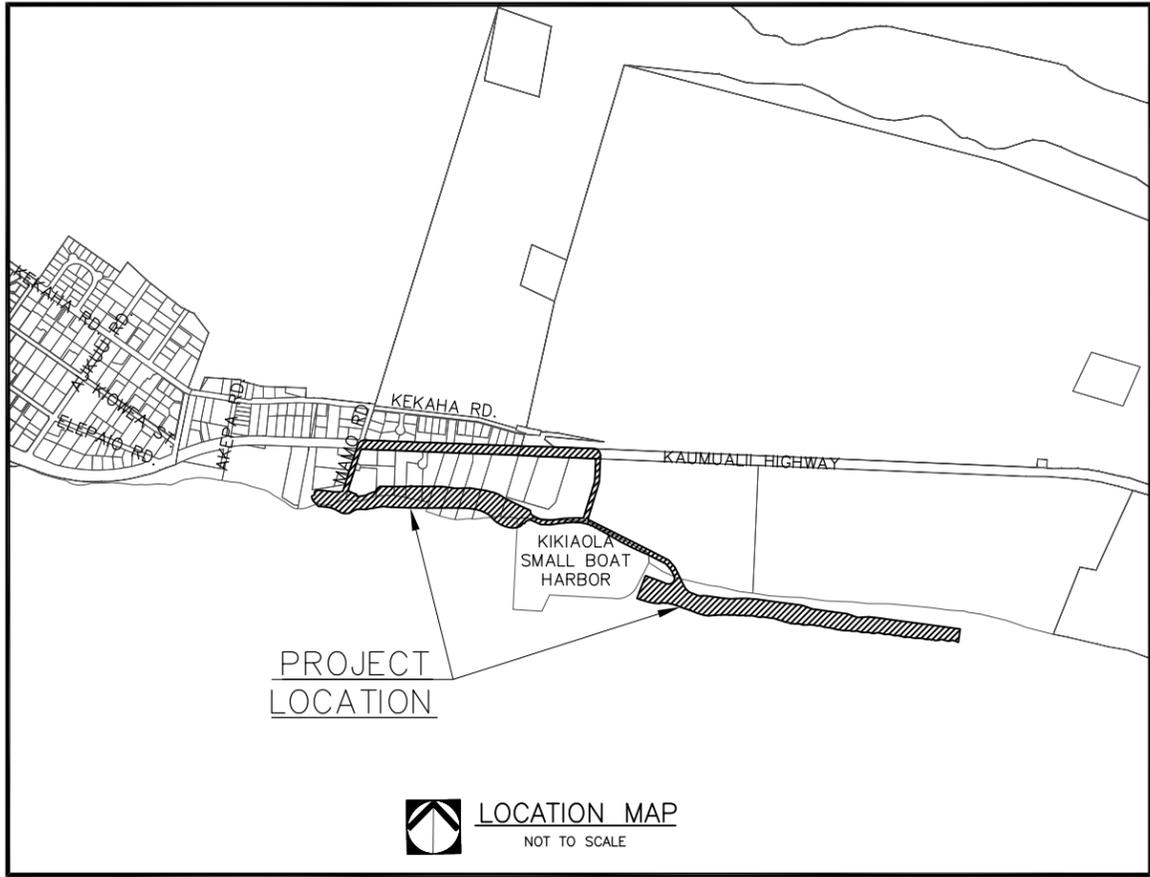
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION

FOR
DIVISION OF BOATING AND OCEAN RECREATION
JOB NO. B95NK75A

KIKIAOLA SMALL BOAT HARBOR
SAND BY-PASS SYSTEM
FINAL PLANS
WAIMEA, KAUAI, HAWAII

TAX MAP KEY: 1-2-06:03
1-2-13:01, 31, 32, 33, 34, 39, 40 & 41
1-3-05:50

PREPARED BY:



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|------------------------------------|----------|
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| LIST OF ABBREVIATIONS | T-4 |
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APPROVED:

EDWARD R. UNDERWOOD, ADMINISTRATOR
DIVISION OF BOATING AND OCEAN RECREATION
DEPARTMENT OF LAND AND NATURAL RESOURCES

DATE

CARTY CHANG, P.E., CHIEF ENGINEER
ENGINEERING DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

DATE

JOB NO. B95NK75A KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII

Enclosure **NOTES FOR GENERAL CONSTRUCTION**

- ALL CONSTRUCTION WORK IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE PUBLICATIONS "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", CITY AND COUNTY OF HONOLULU, AND THE COUNTIES OF KAUA'I, MAUI AND HAWAII". THE STANDARD DETAILS ARE AVAILABLE AT THE COUNTY OF KAUA'I CLERK'S OFFICE.
- NO GRADING BETWEEN 7 P.M. TO 7 A.M. ON ANY GIVEN DAY OR ON SATURDAYS, SUNDAYS AND HOLIDAYS WITHOUT WRITTEN PERMISSION FROM THE COUNTY ENGINEER AND THE STATE DEPARTMENT OF HEALTH.
- CONTRACTOR TO NOTIFY PUBLIC WORKS DEPARTMENT FIVE (5) BUSINESS DAYS PRIOR TO COMMENCING ANY GRADING WORK. WHEN COMPLETED AND READY FOR FINAL INSPECTION; NOTIFY PUBLIC WORKS DEPARTMENT INSPECTION SECTION.
- CONSTRUCTION PLANS ARE VALID FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL. IF CONSTRUCTION DOES NOT COMMENCE WITHIN THE ONE-YEAR TIME FROM THE DATE OF APPROVAL, THE CONSTRUCTION PLANS SHALL BE RESUBMITTED TO ALL REVIEWING AND APPROVING AGENCIES FOR REVIEW, APPROVAL, AND RECERTIFICATION OF THE PLAN.
- ALL GRADING, CRUBBING AND STOCKPILING WORK SHALL BE PERFORMED IN ACCORDANCE WITH COUNTY OF KAUA'I ORDINANCE NO. 808.
- AFTER EACH RAINFALL EVENT, THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
- DURING CLEANING OPERATIONS, THE CONTRACTOR SHALL SUPPLY A WATER TRUCK FOR DUST CONTROL PURPOSES UNTIL THE VEGETATION HAS RE-ESTABLISHED ITSELF EXCESS WATER, INCLUDING SILT AND DIRT SHALL NOT BE ALLOWED TO RUN-OFF THE PROPERTY.
- BENCHMARKS THAT ARE DISTURBED OR DESTROYED SHALL BE RESTORED UNDER A LICENSED SURVEYOR'S DIRECTION. COPIES OF FIELD NOTES, DESCRIPTIONS AND NEW VALUES OF THE NEW BENCHMARK SHALL BE SENT TO THE DEPARTMENT OF PUBLIC WORKS SURVEY SECTION FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OVERTIME AND/OR NIGHT WORK PAYMENTS FOR COUNTY'S STAFF AND INSPECTION PERSONNEL INCLUDING CONSULTANTS, WHEN THE CONTRACT REQUIRES OVERTIME OR NIGHT WORK TO BE PERFORMED, OR DIRECTS THE CONTRACTOR TO WORK ADDITIONAL SHIFTS OR OVERTIME FOR COUNTY'S CONVENIENCE.
- BEST MANAGEMENT PRACTICES (BMPS) SHALL BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION, EROSION OR DUST TO STREAMS, WATERCOURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.
- SURVEYS SHALL BE DONE UNDER THE SUPERVISION OF A LAND SURVEYOR LICENSED IN THE STATE OF HAWAII.
- IF SYSTEM CONDITIONS REQUIRE NON-EMERGENCY NIGHT TIME WORK DURING THE AUTUMN SEABIRD FALL SEASON (SEPTEMBER 15 THROUGH DECEMBER 15), USE OF LIGHTING SHALL BE RESTRICTED BETWEEN 9:00 P.M. TO 4:30 A.M. IF LIGHTING OF THE WORK AREA IS REQUIRED IN SUCH A SITUATION, ALL LIGHTS SHALL BE SHIELDED (MINIMUM LIGHT SPILL TOWARDS THE SKY) AND DIRECTED DOWNWARDS TO THE MAXIMUM EXTENT PRACTICABLE. MINIMUM REQUIREMENTS FOR LIGHTING BY HIOSH AND OSHA SHALL BE PROVIDED AND ASSURED BY THE CONTRACTOR. THE CONTRACTOR SHALL TRAIN ALL EMPLOYEES WORKING AT NIGHT (RECORDS RETAINED BY THE CONTRACTOR) ON HOW TO HANDLE ANY RETRIEVED DOWNED BIRDS AND SHALL HAVE APPROPRIATE EQUIPMENT AS APPROVED BY SAVE OUR SHEARWATERS (SOS) ON SITE TO HOLD AND TRANSPORT ANY RETRIEVED BIRDS TO AN SOS FACILITY. THIS REQUIREMENT DOES NOT ALLOW LIGHTING AS MAY BE RESTRICTED BY OTHER GOVERNMENT AGENCIES.
- PRIOR TO STARTING ANY EXCAVATION ACTIVITIES, THE CONTRACTOR SHALL CONTACT THE HAWAII ONE CALL CENTER AT 1-866-423-7287.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY

- ALL DAMAGED PAVEMENT SHALL BE RESTORED TO ITS ORIGINAL CONDITION IN ACCORDANCE WITH COUNTY OF KAUA'I, "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)" AND ITS AMENDMENTS AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984", AS AMENDED BY THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, AND THE COUNTIES OF KAUA'I, MAUI AND HAWAII", WITH 2" MINIMUM HOT MIX MIXED ASPHALT CONCRETE PAVEMENT (STATE MIX V) AND 8" MINIMUM BASE COURSE.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION AND FOR THE CONVENIENCE AND SAFETY OF THE PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH THE RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND U.S. FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS DATED 2009 AND ITS AMENDMENTS.
- THE CONTRACTOR SHALL, WHENEVER NECESSARY, PROPERLY SHEET AND BRACE ALL EXCAVATIONS TO RENDER IT SECURE AND SHALL REMOVE ALL SUCH SHEETING AND BRACING BEFORE COMPLETION OF THE BACKFILL FOR WATER MAINS. THE MINIMUM COVER REQUIREMENTS (FROM TOP OF PIPE TO FINISHED GRADE OVER PIPE) IS THREE (3) FEET.
- PERMIT SHALL BE OBTAINED BY THE CONTRACTOR FROM THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUA'I BEFORE ANY WORK ON A PUBLIC STREET OR HIGHWAY MAY BEGIN. PERMIT FEES SHALL BE AT THE CONTRACTOR'S EXPENSE.
 - DRIVEWAYS SHALL BE KEPT OPEN UNLESS OWNERS OF THE ABUTTING LOTS USING THESE RIGHT-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
 - ALL WORK INCLUDING REPAIR OF DAMAGED PAVEMENT AND SHOULDERS SHALL BE INSPECTED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS. ALL UNAPPROVED WORK SHALL BE CONSIDERED UNACCEPTABLE AND SHALL BE REWORKED AND CORRECTED AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS, AT THE CONTRACTOR'S EXPENSE.
 - DAMAGED SHOULDERS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
 - WORK ON A PUBLIC STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:00 A.M. TO 3:30 P.M. MONDAY THROUGH FRIDAY, EXCEPT ON HOLIDAYS RECOGNIZED BY THE COUNTY OF KAUA'I, UNLESS OTHERWISE PERMITTED IN WRITING BY THE COUNTY ENGINEER.
 - DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPENED TO PUBLIC VEHICULAR AND PEDESTRIAN TRAFFIC.
 - NO MATERIAL, AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN COUNTY RIGHT-OF-WAYS EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE COUNTY ENGINEER.
 - THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO OFFER THE LEAST POSSIBLE OBSTRUCTIONS AND INCONVENIENCE TO THE PUBLIC AND HE SHALL HAVE UNDER CONSTRUCTION NO GREATER LENGTH OR AMOUNT OF WORK THAT HE CAN EXECUTE PROPERLY WITH DUE REGARDS TO THE RIGHTS OF THE PUBLIC.
 - ALL EXISTING DRAINAGE FLOW CONDITIONS SHALL BE MAINTAINED.
- THE CONTRACTOR SHALL RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER FOR QUALITY CONTROL. CERTIFICATION FROM THE GEOTECHNICAL ENGINEER SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS AT THE COMPLETION OF THE CONSTRUCTION WORK. THE GEOTECHNICAL ENGINEER SHALL CERTIFY THAT THE CONSTRUCTION WORK MEETS "STANDARD SPECIFICATIONS". THE GEOTECHNICAL ENGINEER SHALL ALSO SUBMIT TEST RESULTS AS REQUESTED BY THE DEPARTMENT OF PUBLIC WORKS.

- THE CONTRACTOR SHALL HOLD A PRECONSTRUCTION MEETING WITH THE CONSTRUCTION-DESIGN SECTIONS OF THE DEPARTMENT OF PUBLIC WORKS BEFORE COMMENCING ANY WORK.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO PRESERVE BENCHMARKS (SURVEY MONUMENTS) WHENEVER THE CENTER OF A SURVEY MONUMENT IS LESS THAN (3) FEET FROM THE EDGE OF CONSTRUCTION. THE CONTRACTOR SHALL RETAIN A LICENSED SURVEYOR TO REFERENCE THE LOCATION OF SAID SURVEY MONUMENT.
- BENCHMARKS THAT ARE DISTURBED OR DESTROYED SHALL BE RESTORED UNDER A LICENSED LAND SURVEYOR'S DIRECTION. COPIES OF FIELD NOTES, DESCRIPTIONS AND NEW VALUES OF THE NEW BENCHMARKS SHALL BE SENT TO THE DEPARTMENT OF PUBLIC WORKS SURVEY SECTION FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OVERTIME OR NIGHT WORK PAYMENTS FOR COUNTY'S STAFF AND INSPECTION PERSONNEL INCLUDING CONSULTANTS WHEN THE CONTRACT REQUIRES OVERTIME OR NIGHT WORK TO BE PERFORMED, OR DIRECTS THE CONTRACTOR TO WORK ADDITIONAL SHIFTS OR OVERTIME FOR COUNTY'S CONVENIENCE.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY (CONT'D)

- IF SYSTEM CONDITIONS REQUIRE NON-EMERGENCY NIGHT TIME WORK DURING THE AUTUMN SEABIRD FALL SEASON (SEPTEMBER 15 THROUGH DECEMBER 15), USE OF LIGHTING SHALL BE RESTRICTED BETWEEN 9:00 P.M. TO 4:30 A.M. IF LIGHTING OF THE WORK AREA IS REQUIRED IN SUCH SITUATION, ALL LIGHTS SHALL BE SHIELDED (MINIMUM LIGHT SPILL TOWARDS THE SKY) AND DIRECTED DOWNWARDS TO THE MAXIMUM EXTENT PRACTICABLE. MINIMUM REQUIREMENTS FOR LIGHTING BY HIOSH AND OSHA SHALL BE PROVIDED AND ASSURED BY THE CONTRACTOR. THE CONTRACTOR SHALL TRAIN ALL EMPLOYEES WORKING AT NIGHT (RECORDS RETAINED BY THE CONTRACTOR) ON HOW TO HANDLE ANY RETRIEVED DOWNED BIRDS AND SHALL HAVE APPROPRIATE EQUIPMENT AS APPROVED BY SAVE OUR SHEARWATERS (SOS) ON SITE TO HOLD AND TRANSPORT ANY RETRIEVED BIRDS TO AN SOS FACILITY. THIS REQUIREMENT DOES NOT ALLOW LIGHTING AS MAY BE RESTRICTED BY OTHER GOVERNMENT AGENCIES.

CONSTRUCTION NOTES FOR TRAFFIC CONTROL PLAN

- THE PERMITTEE SHALL MAKE ADJUSTMENTS AT INTERSECTIONS. DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
- CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
- TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST, THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
- REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
- FLAGGERS AND/OR POLICE OFFICERS, SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
- WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITTEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
- SIGN SPACING (D), TAPER LENGTHS (T) AND SPACING OF CONES OR DELINEATORS SHALL BE AS SHOWN IN TABLE I. UNLESS OTHERWISE NOTED ON THE TRAFFIC CONTROL PLANS.
- ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
- ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
- THE BACKS OF ALL SIGNS SHALL BE PROMPTLY REMOVED OR COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E.; WHEN SIGNS HAVE MESSAGES ON BOTH FACES), WHENEVER THE MESSAGES ARE NOT APPLICABLE OR NOT IN USE.
- AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
- REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.
- POLICE OFFICERS/FLAGGERS SHALL BE PRESENT AT ALL TIMES.
- WHEN REQUIRED BY THE COUNTY OF KAUA'I AN ADVERTISEMENT SHALL BE PLACED IN THE NEWSPAPER BY THE CONTRACTOR FOR ANY LANE CLOSURE. THE ADVERTISEMENT SHALL BE MADE ONE (1) WEEK BEFORE ANY LANE CLOSURE AND SHALL CONTAIN THE FOLLOWING INFORMATION:

- MAP OF THE TRAFFIC CHANGE LIMITS;
- NOTICE OF STARTING AND ENDING DATES, TIMES AND DURATION;
- MAP TO SHOW LANE CLOSURE;
- EXPLANATION OF THE LANE CLOSURE. "NOTICE TO MOTORISTS & PEDESTRIANS"

THE CONTRACTOR SHALL BE REQUIRED TO HAVE ANY LANE CLOSURE ANNOUNCED DAILY OVER THE RADIO TWO (2) DAYS BEFORE STARTING DATE UNTIL THE WORK IS COMPLETED. BOTH ADVERTISEMENTS IN THE NEWSPAPER AND OVER THE RADIO SHALL BE PAID FOR BY THE CONTRACTOR. THE CONTRACTOR SHALL ALSO NOTIFY THE HOSPITALS, POLICE, FIRE, AND AMBULATORY SERVICES OF THE LANE CLOSURES.

- ALL WORKERS WITHIN THE COUNTY R/W WHO ARE EXPOSED TO EITHER VEHICLES USING THE ROADWAY OR TO CONSTRUCTION EQUIPMENT SHALL WEAR HIGH VISIBILITY SAFETY APPAREL THAT MEETS THE PERFORMANCE CLASS 2 OR 3 REQUIREMENTS OF ANSI/ISEA 107-2004. "WORKERS" ARE DEFINED AS PEOPLE ON FOOT WHOSE DUTIES PLACE THEM WITHIN THE ROAD RIGHT OF WAY, SUCH AS, BUT NOT LIMITED TO CONSTRUCTION AND MAINTENANCE FORCES, EQUIPMENT OPERATORS, SURVEY CREW, UTILITY CREW, RESPONDERS TO INCIDENTS (E.G.; EMT AND FIREMEN), AND LAW ENFORCEMENT PERSONNEL DIRECTING TRAFFIC, INVESTIGATING ACCIDENTS, HANDLING LANE CLOSURES AND ROADWAY CONSTRUCTION.

CONSTRUCTION NOTES FOR TRAFFIC CONTROL PLAN (CONT'D)

- ALL TRAFFIC CONTROL DEVICES SHALL BE REFLECTORIZED WHEN USED AT NIGHT. CONES SHALL BE EQUIPPED WITH A REFLECTORIZED COLLARS WHEN USED AT NIGHT. FLASHING LIGHTS SHALL BE USED WITH BARRICADES AND STEADY BURN LIGHTS WHEN USED IN A SERIES FOR CHANNELIZATION. FLAGGER STATIONS SHALL BE ADEQUATELY ILLUMINATED AT NIGHT.
- CONTRACTOR TO PROVIDE ACCESS AND/OR DIRECTION SIGNS TO REROUTE PEDESTRIAN TRAFFIC.
- THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE THE USE AND DURATION OF STEEL PLATES. ALL STEEL PLATES SHALL HAVE A NON-SKID SURFACING. THE COUNTY MAY REQUIRE THE BACKFILLING AND PATCHING OF THE TRENCH DUE TO THE EXCESSIVE USE OF STEEL PLATES.
- THE CONTRACTOR SHALL PROVIDE AN ADEQUATE NON-SLIP BRIDGING MATERIAL, INCLUDING SHORING OVER TRENCHES IN PAVEMENT AREAS. THE BRIDGING SHALL BE ABLE TO SUPPORT ALL TYPES OF VEHICULAR AND PEDESTRIAN TRAFFIC.
- WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN A SAFE AND PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGES BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
- ALL TRAFFIC CONTROL DEVICES SHALL BE RETRO REFLECTORIZED WHEN USED AT NIGHT. CONES SHALL BE EQUIPPED WITH A REFLECTIVE COLLAR WHEN USED AT NIGHT. FLASHING LIGHTS SHALL BE USED WITH ALL BARRICADES AND STEADY BURN LIGHTS WHEN USED IN A SERIES FOR CHANNELIZATION. FLAGGER STATIONS SHALL BE ADEQUATELY ILLUMINATED.

PAVEMENT AND TRENCH RESTORATION NOTES

- TRENCH REPAVING SHALL BE A MINIMUM 8-INCHES THICK BASE COURSE AND 2-INCHES ASPHALT CONCRETE (STATE MIX V). IF THE EXISTING PAVEMENT STRUCTURE IS GREATER IN THICKNESS AND QUALITY, THE REPAVING SHALL MATCH THE EXISTING PAVEMENT STRUCTURE.
- PAVEMENT RESURFACING WORK SHALL INCLUDE 2-INCH THICKNESS OF EXISTING A.C. TO BE COLD PLANED AND CONSTRUCTION OF A MINIMUM OF 2-INCHES OF NEW A.C. (STATE MIX V) LAYER.
- ROAD RESTORATION FOR TRENCHES ALIGNED ALONG THE LONGITUDINAL DIRECTION SHALL INCLUDE PAVEMENT RESURFACING AS FOLLOWS:
 - ROADS WITH PAVEMENT WIDTHS OF LESS THAN 12 FEET WIDE SHALL BE REPAVED THE ENTIRE WIDTH.
 - ROADWAYS BETWEEN 12 FEET AND 28 FEET WIDE WITH NO STRIPING SHALL BE PAVED FOR HALF THE ROADWAY.
 - ROADWAYS WITH NO STRIPING AND PAVEMENT WIDTHS GREATER THAN 28 FEET WIDE SHALL HAVE A 12-FOOT WIDE TRAVEL WAY RESURFACED.
- ROAD RESTORATION FOR TRENCHES ALIGNED PERPENDICULAR TO THE ROADWAY SHALL INCLUDE ROAD RESURFACING FOR A MINIMUM OF 6 FEET BEYOND THE TRENCH EDGES.
- THE ENTIRE ROAD INTERSECTION SHALL BE RESURFACED WHENEVER TRENCH REPAVING IS REQUIRED WITHIN ANY PORTION OF AN INTERSECTION. THE LIMITS OF RESURFACING SHALL BE THE CURVE RETURNS OF THE ROADWAYS OF THE INTERSECTIONS.
- ALL EXISTING PAVEMENT STRIPING DISTURBED BY THIS PROJECT SHALL BE RESTORED. THE STRIPING MATERIALS SHALL BE THERMOPLASTIC TAPE OR THERMOPLASTIC EXTRUSION. PAINTING IS NOT ACCEPTABLE.
- THE LIMITS OF ROAD RESTORATION WORK MAY NE REVISED BY THE ENGINEERING DIVISION OF THE COUNTY DEPARTMENT OF PUBLIC WORKS DURING PROCESSING OF ROAD PERMITS FOR THIS PROJECT.

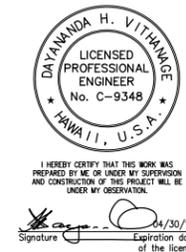
HISTORIC PRESERVATION NOTES

- SHOULD HISTORIC REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATIONS OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND, AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL CORDON OFF THE AREA AND IMMEDIATELY NOTIFY THE PLANNING DEPARTMENT AT (808) 241-4050 AND THE STATE HISTORIC PRESERVATION DIVISION AT (808) 692-8015, WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND THE APPROPRIATE MITIGATION MEASURES, IF NECESSARY. IN ADDITION, IF HUMAN BURIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY OF KAUA'I POLICE DEPARTMENT.

| POSTED SPEED LIMIT (M.P.H.) | SIGN SPACING (FT) (D) | TAPER LENGTH (T) (FT) W = 12' W = greater or less* than 12'* | LONGITUDINAL BUFFER SPACE (B) (FT) | SPACING OF CONES OR DELINEATORS (FT) | | | |
|-----------------------------|-----------------------|--|------------------------------------|--------------------------------------|---------|-----------|----|
| | | | | TAPER | TANGENT | WORK AREA | |
| 20 | 250 | 200 | W X 17 | 35 | 20 | 20 | 10 |
| 25 | 250 | 200 | W X 17 | 55 | 25 | 25 | 10 |
| 30 | 250 | 250 | W X 20 | 85 | 30 | 30 | 10 |
| 35 | 250 | 250 | W X 20 | 120 | 35 | 35 | 10 |
| 40 | 500 | 350 | W X 30 | 170 | 40 | 40 | 10 |
| 45 | 500 | 550 | W X 45 | 220 | 45 | 45 | 10 |
| 50 | 1000 | 600 | W X 50 | 280 | 50 | 50 | 10 |
| 55 | 1000 | 700 | W X 55 | 335 | 55 | 55 | 10 |

* W = WIDTH OF LANE, SHOULDER, OR OFFSET.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUA'I, HAWAII JOB NO. B95NK75A | | | | | |
| NOTES | | | | | |
| DESIGNED: AK,CT | | | SUBMITTED: | | |
| DRAWN: AK,CT | | | DATE: NOV 2013 | | |
| CHECKED: DV,DE | | | SCALE: NONE | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | DATE: Feb 2014 | | |



WATER POLLUTION AND EROSION CONTROL NOTES (COUNTY)

1. GENERAL:
 - A. THE CONTRACTOR IS REMINDED OF THE REQUIREMENTS OF SECTION 209-WATER POLLUTION AND EROSION CONTROL AND SECTION 620-DUST CONTROL IN THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2005", AS AMENDED. SECTION 209 DESCRIBES BUT IS NOT LIMITED TO: SUBMITTAL REQUIREMENTS; SCHEDULING OF A WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE COUNTY ENGINEER; CONSTRUCTION REQUIREMENTS; METHOD OF MEASUREMENT; AND BASIS OF PAYMENT. NO WORK SHALL COMMENCE WITHOUT A BMP PLAN APPROVED BY THE DEPARTMENT OF HEALTH.
 - B. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE "INTERIM BEST MANAGEMENT PRACTICES MANUAL FOR CONSTRUCTION SITES FOR COUNTY OF KAUAI" APRIL 2004 IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP'S) FOR THE PROJECT. THE CONTRACTOR MAY SUBMIT ALTERNATE METHODS TO THE ENGINEER FOR ACCEPTANCE.
 - C. THE CONTRACTOR SHALL KEEP A COPY OF THE APPROVED BMP, NOI, ETC. ON THE PROJECT SITE. THE BMP SHALL BE UPDATED TO REFLECT ANY CHANGES MADE DURING THE COURSE OF CONSTRUCTION FOR THE DURATION OF THE PROJECT.
 - D. THE COUNTY ENGINEER MAY ASSESS LIQUIDATED DAMAGES OF UP TO \$27,500 FOR NON-COMPLIANCE OF EACH BMP REQUIREMENT AND EACH REQUIREMENT STATED IN SECTION 209, FOR EVERYDAY OF NONCOMPLIANCE. THERE IS NO MAXIMUM LIMIT ON THE AMOUNT ASSESSED PER DAY.
 - E. THE COUNTY ENGINEER MAY DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATIONS RECEIVED BY THE DEPARTMENT FOR NON-COMPLIANCE, OR THE CONTRACTOR/OWNER SHALL REIMBURSE THE STATE, AND/OR COUNTY FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY THE STATE AND/OR COUNTY.
2. WASTE DISPOSAL:
 - A. WASTE MATERIALS: ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER THAT DOES NOT LEAK. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER SHALL BE EMPTIED A MINIMUM OF TWICE PER WEEK OR AS OFTEN AS IS DEEMED NECESSARY. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ONSITE. THE CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES SHALL BE POSTED IN THE OFFICE TRAILER AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.
 - B. HAZARDOUS WASTE: ALL HAZARDOUS WASTE MATERIAL SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS OR BY THE MANUFACTURER. THE CONTRACTOR'S SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES AND SHALL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.
 - C. SANITARY WASTE: ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED.
3. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:
 - A. ALL CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT OF 0.5 INCHES OR GREATER.
 - B. ALL MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER. IF REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS AFTER THE INSPECTION.
 - C. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE FENCE.
 - D. SILT SCREEN OR FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT AND TEARS, TO VERIFY THAT THE FABRIC FENCE IS SECURELY ATTACHED TO THE FENCE POST OR CONCRETE SLAB AND TO VERIFY THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND.
 - E. TEMPORARY OR PERMANENT SEEDING AND PLANTING SHALL BE INSPECTED FOR BARE SPOTS, WASH OUTS AND HEALTHY GROWTH.
 - F. THE CONTRACTOR SHALL SUBMIT TO THE COUNTY ENGINEER A MAINTENANCE INSPECTION REPORT PROMPTLY AFTER EACH WEEKLY INSPECTION.
 - G. THE CONTRACTOR SHALL SELECT A MINIMUM OF THREE PERSONNEL WHO SHALL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.
 - H. PERSONNEL SELECTED FOR THE INSPECTION AND MAINTENANCE RESPONSIBILITIES SHALL RECEIVE TRAINING FROM THE CONTRACTOR. THEY SHALL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER.
 - I. ALL SLOPES AND EXPOSED AREAS SHALL BE GRASSED AS FINAL GRADES HAVE BEEN ESTABLISHED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA IN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED OR EXPOSED FOR MORE THAN 15 DAYS SHALL BE GRASSED IN ORDER TO PREVENT DUST EMISSION, EROSION AND SILT RUNOFF. AREAS WITH IMPORTED SOILS SHALL BE GRASSED NOT THAN 5 WORKING DAYS AFTER THE FINAL GRADES HAVE BEEN ESTABLISHED.
 - J. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.

WATER POLLUTION AND EROSION CONTROL NOTES (CONT'D) (COUNTY)

4. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES
 - A. MATERIALS POLLUTION PREVENTION PLAN:
 - a. APPLICABLE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION. OTHER MATERIALS AND SUBSTANCES NOT LISTED BELOW SHALL BE ADDED TO THE INVENTORY OF THE CONSTRUCTION CONTRACTOR'S SITE-SPECIFIC BMP PLAN.

| | |
|-------------------------|--------------------------|
| CONCRETE | FERTILIZERS |
| DETERGENTS | PETROLEUM BASED PRODUCTS |
| PAINTS (ENAMEL & LATEX) | CLEANING SOLVENTS |
| METAL STUDS | WOOD |
| TAR | MASONRY BLOCK |
 - b. MATERIAL MANAGEMENT PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCTS AS IS REQUIRED TO DO THE JOB.
 - c. ALL MATERIALS STORED ONSITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE UNDER A ROOF OR OTHER ENCLOSURE.
 - d. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
 - e. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
 - f. A PRODUCT SHALL BE USED UP COMPLETELY BEFORE DISPOSING OF THE CONTAINER.
 - g. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
 - h. THE CONTRACTOR SHALL CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.
 - B. HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN:
 - a. PRODUCTS SHALL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
 - b. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS (MSDS) SHALL BE RETAINED AND MADE AVAILABLE TO THE COUNTY ENGINEER UPON REQUEST.
 - c. SURPLUS PRODUCTS SHALL BE DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR LOCAL AND STATE RECOMMENDED REGULATIONS.
 - C. ONSITE AND OFFSITE PRODUCTS SPECIFIC PLANS:

THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ONSITE:

 - a. PETROLEUM BASED PRODUCTS: ALL ONSITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.
 - b. FERTILIZERS: APPLY FERTILIZER USED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, WORK FERTILIZER INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE SHALL BE IN A COVERED SHED.
 - c. PAINTS: SEAL AND STORE ALL CONTAINERS WHEN NOT REQUIRED FOR USE. DO NOT DISCHARGE EXCESS PAINT TO THE ROADWAY DRAINAGE SYSTEM. DISPOSE PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
 - d. CONCRETE TRUCKS: WASH OUT OR DISCHARGE CONCRETE TRUCK DRUM WASH ONLY AT A DESIGNATED SITE. DO NOT DISCHARGE WATER IN THE ROADWAY DRAINAGE SYSTEM OR WATERS OF THE UNITED STATES. CONTACT DRINKING WATER BRANCH, DEPARTMENT OF HEALTH (808) 586-4258 TO RECEIVE PERMISSION TO DESIGNATE A DISPOSAL SITE. CLEAN DISPOSAL SITE AS REQUESTED BY THE OWNER'S REPRESENTATIVE.
 - D. SPILL CONTROL PLAN:
 - a. POST A SPILL PREVENTION PLAN TO INCLUDE MEASURES TO PREVENT AND CLEAN UP EACH SPILL.
 - b. THE CONTRACTOR SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. DESIGNATE AT LEAST THREE SITE PERSONNEL WHO SHALL RECEIVE SPILL PREVENTION AND CLEAN UP TRAINING. THESE INDIVIDUALS SHALL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. POST THE NAMES OF RESPONSIBLE SPILL PERSONNEL IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.
 - c. CLEARLY POST MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP. MAKE SITE PERSONNEL AWARE OF THE PROCEDURES AND THE LOCATION OF INFORMATION AND CLEANUP SUPPLIES.
 - d. KEEP MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP IN THE MATERIAL STORAGE AREA ONSITE.
 - e. CLEAN UP ALL SPILLS IMMEDIATELY AFTER DISCOVERY.
 - f. KEEP THE AREA WELL VENTILATED. PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH HAZARDOUS SUBSTANCES.
 - g. REPORT SPILLS OF TOXIC HAZARDOUS MATERIAL TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
5. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS:
 - A. THE CONTRACTOR SHALL APPLY FOR, OBTAIN AND COMPLY WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS FOR KAUAI DISTRICT PERMIT PROJECTS. THIS IS AVAILABLE AT THE KAUAI DISTRICT OFFICE AT 3040 UMI STREET, SUITE 205. DUE TO POTENTIAL COST IMPACTS, THE CONTRACTOR NEEDS TO BE AWARE OF THE REQUIREMENTS.
 - B. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS FOR ALL PROJECTS WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM.

WATER POLLUTION AND EROSION CONTROL NOTES (CONT'D) (COUNTY)

- C. THE CONTRACTOR SHALL COMPLETE AND SUBMIT A CONTRACTOR'S CERTIFICATION OF NPDES COMPLIANCE, INCLUDING COMPLETION OF THE BEST MANAGEMENT PRACTICE (BMP) CHECKLIST AND SUBMITTAL OF A WRITTEN BMP PLAN AND DRAWINGS, PRIOR TO ISSUANCE OF THE PERMIT TO PERFORM WORK UPON COUNTY ROADWAYS.

GRADING NOTES

- TEMPORARY DUST CONTROL MEASURES FOR GRADING
1. THE GRADED OR PROJECT SITE THAT IS CLEARED OF VEGETATION SHALL BE KEPT DAMP WITH WATER CONTINUOUSLY FOR SEVEN (7) DAYS A WEEK. AT THE END OF EACH DAY, THE SITE SHALL BE SUFFICIENTLY DAMPENED WITH WATER ON A CONTINUAL BASIS SO THAT THE SITE WILL REMAIN MOISTENED DURING THE NIGHT. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO THAT EXCAVATIONS, EMBANKMENTS, AND IMPORTED MATERIALS SHALL BE DAMPENED WITH WATER ON A CONTINUAL BASIS TO PREVENT DUST PROBLEMS.
 2. IN APPLYING FOR A GRADING PERMIT, THE CONTRACTOR SHALL SUBMIT PLANS, SCHEDULES AND/OR WRITTEN MEASURES WHICH PROVIDES FOR DUST CONTROL. THE DUST CONTROL MEASURES SHALL CONTAIN POSITIVE STATEMENTS WHICH REQUIRE ACTIONS OR WORK THAT PREVENT DUST PROBLEMS. NO PERMITS WILL BE ISSUED UNLESS THE COUNTY IS ASSURED THAT DUST PROBLEMS WILL BE MINIMIZED.
- TEMPORARY EROSION CONTROL MEASURES FOR GRADING
1. TEMPORARY VEGETATIVE COVER SHALL BE PLANTED WITHIN A PERIOD OF 30 CALENDAR DAYS AFTER THE SITE HAS BEEN GRADED OR BARED OF VEGETATION OR IF THE SITE WILL BE SUSPENDED FOR MORE THAN 30 CALENDAR DAYS.
 2. TEMPORARY VEGETATIVE COVER SHALL CONSIST OF 40 LBS. COMMON RYE GRASS SEED PER ACRE, 400 LBS. PER ACRE 10-10-10 OR EQUIVALENT FERTILIZER WORKED INTO THE SEED BED BEFORE PLANTING. TEMPORARY SPRINKLER SYSTEM IS TO BE INSTALLED CONCURRENTLY WITH ALL PLANTINGS AND MAINTENANCE OF GRASS SHALL CONFORM TO THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS.
- PERMANENT EROSION CONTROL MEASURES FOR GRADING
1. THE CONTRACTOR SHALL GRASS THE ENTIRE PROJECT SITE, EXCEPT PAVED AREAS WITH BERMUDA GRASS SPRIGS. THE GRASS SHALL BE PLANTED, FERTILIZED, AND MAINTAINED IN ACCORDANCE WITH THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS.
 2. THE CONTRACTOR SHALL GRASS ALL EXPOSED AREAS THAT HAVE BEEN CONSTRUCTED TO FINAL GRADES WITHIN A PERIOD OF 30 CALENDAR DAYS.
 3. IN LIEU OF GRASS SPRIGS (NOTE 1). THE CONTRACTOR MAY USE HYDROMULCH WITH SEEDINGS AND AN IRRIGATION SPRINKLER SYSTEM.
- GRADING PHASES
1. WHEN GRADING WORK IS DONE IN PHASES, THE ENGINEER MUST ACCEPT THE COMPLETED PHASE PRIOR TO THE START OF WORK ON THE NEXT PHASE. EVEN AFTER A COMPLETED PHASE HAS BEEN ACCEPTED, THE GRASSING OR OTHER MEANS OF STABILIZATION MUST BE MAINTAINED UNTIL PROJECT COMPLETION.

ENVIRONMENTAL CONTROL NOTES FOR GRADING

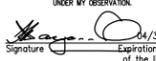
1. IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING AREAS INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIT THE PROJECT. THESE MEASURES INCLUDE BUT ARE NOT LIMITED TO THE USE OF WATER WAGONS, SPRINKLER SYSTEMS, DUST FENCES, ETC.
2. IN ACCORDANCE WITH CHAPTER 11-55, WATER POLLUTION CONTROL AND CHAPTER 11-54, WATER QUALITY STANDARDS, TITLE 11 HAWAII ADMINISTRATIVE RULES, THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ENSURING THAT THE BEST MANAGEMENT PRACTICES (BMP) TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENTS, DEBRIS AND OTHER WATER POLLUTANTS INTO STATE WATERS IS PROVIDED AT ALL TIMES.
3. IN ACCORDANCE WITH CHAPTER 11-58, SOLID WASTE MANAGEMENT CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ENSURING THAT GRUB MATERIAL, DEMOLITION WASTE AND CONSTRUCTION WASTE GENERATED BY THE PROJECT ARE DISPOSED OF IN A MANNER OR AT A SITE APPROVED BY THE STATE DEPARTMENT OF HEALTH. DISPOSAL OF ANY OF THESE WASTES BY BURNING IS PROHIBITED.
4. THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL APPLICABLE PERMITS FROM THE DEPARTMENT OF HEALTH INCLUDING BUT NOT LIMITED TO NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), NOTICE OF INTENT AND GENERAL PERMIT FOR STORM WATER, HYDROSTATIC TEST AND DEWATERING DISCHARGE PRIOR TO COMMENCING CONSTRUCTION. NPDES PERMIT SHALL BE REQUIRED PRIOR TO GRADING OR GRUBBING WORK OVER AN AREA OF ONE ACRE OR MORE.
5. AFTER EACH RAINFALL EVENT, THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM THIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
6. BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION, EROSION OR DUST TO STREAMS, WATER COURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.
7. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS FOR ALL PROJECTS WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND HAS SATISFIED ANY OTHER PERMITTING REQUIREMENTS OF THE NPDES PERMIT PROGRAM.

ENVIRONMENTAL CONTROL NOTES FOR GRADING (CONT'D)

8. IN ACCORDANCE WITH CHAPTER 11-46, COMMUNITY NOISE, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR AND THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR PROVIDING EFFECTIVE CONTROL MEASURES TO MINIMIZE OR PREVENT CONSTRUCTION RELATED NOISE FROM IMPACTING THE RESIDENTS IN THE IMMEDIATE AREA. IF REQUIRED, NOISE REDUCTION MEASURES SHALL BE IMPLEMENTED BY THE CONTRACTOR DURING THE CONSTRUCTION WORK.
9. THE PROPERTY MAY HARBOR RODENTS WHICH WILL BE DISPERSED TO THE SURROUNDING AREAS WHEN THE SITE IS CLEARED. IN ACCORDANCE WITH CHAPTER 11-26, ENTITLED VECTOR CONTROL OF TITLE 11, HAR, THE APPLICANT SHALL ASCERTAIN THE PRESENCE OR ABSENCE OF RODENTS ON THE PROPERTY. SHOULD THE PRESENCE OF RODENTS BE DETERMINED, THE APPLICANT SHALL ERADICATE THE RODENTS PRIOR TO CLEARING THE SITE.
10. A COPY OF THE PLANS, CONSTRUCTION SCHEDULE AND/OR WRITTEN MEASURES THAT IS REQUIRED TO BE SUBMITTED BY THE CONTRACTOR (DUST CONTROL MEASURES/PLANS) SHOULD ALSO BE SENT TO THE DEPARTMENT OF HEALTH FOR MONITORING PURPOSES.

ENVIRONMENTAL NOTES

1. IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING AREAS INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIT THE PROJECT. THESE MEASURES INCLUDE BUT ARE NOT LIMITED TO THE USE OF WATER WAGONS, SPRINKLER SYSTEMS, DUST FENCES, ETC.
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| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|----------------|------|-------------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| NOTES | | | | | |
| DESIGNED: AK,CT | | | SUBMITTED: | | |
| DRAWN: AK,CT | | | DATE: NOV 2013 | | |
| CHECKED: DV,DE | | | SCALE: NONE | | |
| APPROVED: | | | | | DRAWING NO. |
|  | | | | | T-3 |
| I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. Signature:  Date: 04/30/14 Expiration date of the license | | | | | Feb 2014 |

Enclosure 1: Scope of Work

ABBREVIATIONS:

AC ASPHALT CONCRETE
 ACP ASBESTOS CONCRETE PIPE
 AD AMERICANS WITH DISABILITIES ACT
 AL ALUMINUM
 & AND
 APPROX APPROXIMATE
 ARV AIR RELEASE VALVE
 @ AT
 AWWA AMERICAN WATERWORKS ASSOCIATION

BAS BOTTOM ARMOR STONE
 BC AGGREGATE BASE COURSE
 ☉ BASELINE
 BB BOTTOM BANK
 BLDG BUILDING
 BLK BLOCK
 BM BENCH MARK
 BMP BEST MANAGEMENT PRACTICES
 BOT BOTTOM
 BSA BOTTOM SPLASH APRON
 BV BOTTOM VERTICAL
 BVC BEGIN VERTICAL CURVE
 BW BOTTOM WALL

Ch CHORD
 Ⓞ CENTERLINE
 CA CENTRAL ANGLE
 CB CATCH BASIN
 CF CUBIC FEET
 CFS CUBIC FEET PER SECOND
 CH CHORD LENGTH (CURVE)
 CMP CORRUGATED METAL PIPE
 CMU CONCRETE MASONRY UNIT
 CNO "CANNOT OPEN"
 CONC CONCRETE
 CONN CONNECT
 CONSTR CONSTRUCTION
 CONT CONTINUOUS, CONTINUATION
 CONT'D CONTINUED
 CP CONTROL POINT
 CRM CONCRETE RUBBLE MASONRY
 CSP CORRUGATED STEEL PIPE
 CU COPPER
 CY CUBIC YARD

D= APPROXIMATE DIAMETER
 ∅, DIA DIAMETER
 DET DETAIL
 DI DUCTILE IRON
 DIP DUCTILE IRON PIPE
 DL DRAINLINE
 DMH DRAIN MANHOLE
 DPW DEPARTMENT OF PUBLIC WORKS
 DWG(S) DRAWING(S)
 D/W DRIVEWAY

E EAST, EASTING
 EA EACH
 EC END CURVE
 ECP EDGE OF CONCRETE PAVEMENT
 EF EACH FACE
 EG EXISTING GROUND
 ELEC ELECTRIC, ELECTRICAL
 ELEV, EL ELEVATION
 EMB EMBANKMENT
 EMH ELECTRIC MANHOLE
 EOW EDGE OF WATER
 EP EDGE OF PAVEMENT, ELECTRIC POLE
 EPB ELECTRIC PULLBOX
 ER EDGE OF ROAD
 EVC END VERTICAL CURVE
 EW EACH WAY
 EXC EXCAVATION
 EXIST, EX EXISTING
 EXP JT EXPANSION JOINT
 EQ EQUAL

FB FIELD BOOK
 FE FLANGE END
 FG FINISH GROUND
 FH FIRE HYDRANT
 FIN FINISH
 FL FLOW LINE
 FS FINISHED SURFACE
 FT FEET

G,GR,GRD GRADE, GROUND
 GI GALVANIZED IRON
 GALV GALVANIZED
 GB GRADE BREAK
 GMH GAS MANHOLE
 GP GATE POST
 GRND GROUND
 GRP GROUDED RUBBLE PAVING
 GRVL GRAVEL
 GS GALVANIZED STEEL
 GUY GUY WIRE, ANCHOR

POH-2010-00244 Sand Bypass and Breakwater Repair at Kikiaola Small Boat Harbor, Kauai Island, Hawaii

ABBREVIATIONS (CONT'D)

H HEIGHT, HIGH, HORIZONTAL
 H= APPROXIMATE HEIGHT
 HBV HORIZONTAL BOTTOM VERTICAL
 HDWL HEADWALL
 HDPE HIGH DENSITY POLYETHYLENE
 HOR, HORIZ HORIZONTAL
 HP HIGH POINT
 HR HOUR
 HTV HORIZONTAL TOP VERTICAL

ID INSIDE DIAMETER
 IE THAT IS
 IN INCH (ES)
 INV INVERT
 IP IRON PIPE
 K RATE OF CURVATURE
 KV KILO-VOLT
 L LEFT, LENGTH
 LB POUND
 Lc LENGTH OF CURVE (CURVE LENGTH)
 LF LINEAR FEET
 LP LOW POINT
 Lt LEFT

M&O MAINTENANCE AND OPERATION
 MAX MAXIMUM
 MHHW MEAN HIGHER HIGH WATER
 MIN MINIMUM
 MJ MECHANICAL JOINT
 MLLW MEAN LOWER LOW WATER
 MON MONUMENT
 MRP MORTARED RUBBLE PAVING
 MSL MEAN SEA LEVEL
 N NORTHING
 NIC NOT IN CONTRACT
 NTS NOT TO SCALE

OC ON CENTER
 OD OUTSIDE DIAMETER
 OH OVERHEAD
 OS, O/S OFFSET
 PAVT PAVEMENT
 PC, POC POINT OF CURVATURE
 PCC POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
 PFC POUNDS PER CUBIC FOOT
 % PERCENT
 PH PHONE
 PI POINT OF INTERSECTION
 PK PARKER-KALON FASTENER
 PL PLATE
 PM POST MERIDIAN
 PNE PINE
 PNRS PROJECT NOTIFICATION & REVIEW SYSTEM
 PP POWER POLE
 PRC POINT OF REVERSE CURVE
 PRVC POINT OF REVERSE VERTICAL CURVE
 PT POINT OF TANGENCY, POINT
 PVI POINT OF VERTICAL INTERSECTION
 PVC POLYVINYL CHLORIDE, POINT ON VERTICAL CURVE
 PSF POUNDS PER SQUARE FOOT
 PSI POUNDS PER SQUARE INCH

R RADIUS
 RC REINFORCED CONCRETE
 RCJ REINFORCED CONCRETE JACKET
 RCP REINFORCED CONCRETE PIPE
 RD ROAD
 REINF REINFORCEMENT
 REF REFERENCE
 REQD REQUIRED
 RP ROYAL PALM
 RPM RAISED PAVEMENT MARKER
 Rt RIGHT
 ROW RIGHT-OF-WAY

S= APPROXIMATE SIZE, SLOPE
 SCHD SCHEDULE
 SF SQUARE FEET (FOOT)
 SHLDR SHOULDER
 SHT(S) SHEET(S)
 SLP, S SLOPE
 SIM SIMILAR
 SMH SEWER MANHOLE
 STD STANDARD
 STA STATION
 SWL SWALE
 SW SIDEWALK
 SY SQUARE YARD
 SYMM SYMMETRICAL

ABBREVIATIONS (CONT'D)

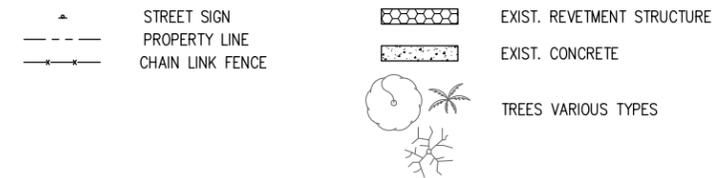
TAS TOP ARMOR STONE
 T TANGENT, TELEPHONE
 TB TOP BANK
 TC TOP CONCRETE
 TCP TRAFFIC CONTROL PLAN
 TEL TELEPHONE
 THK THICK
 THRD,THD THREAD
 TMH TELEPHONE MANHOLE
 TP TOP PAVEMENT
 TR TOP RIPRAP
 TS= TOP STEM=
 TSA TOP SPLASH APRON
 TUS TOP UNDERLAYER STONE
 TV= TOP VALVE=
 TV TOP VERTICAL
 TW TOP WALL
 TYP TYPICAL

UON UNLESS OTHERWISE NOTED
 US UNITED STATES

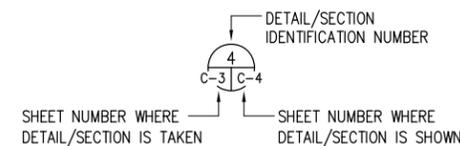
VAR. VARIABLE, VARIOUS
 VIF VERIFY IN FIELD
 V,VER,VERT VERTICAL
 VC VERTICAL CURVE
 VPC,VPI,VPT VERTICAL POINT OF CURVATURE, INTERSECTION, TANGENCY

W WIDTH
 W/ WITH
 WL WATERLINE
 WMH WATER MANHOLE
 WP WORK POINT
 WV WATER VALVE
 W/W WALKWAY

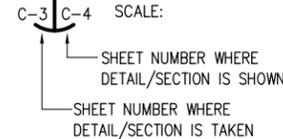
LEGEND



DETAIL/SECTION TITLE



TITLE OF SECTION OR DETAIL



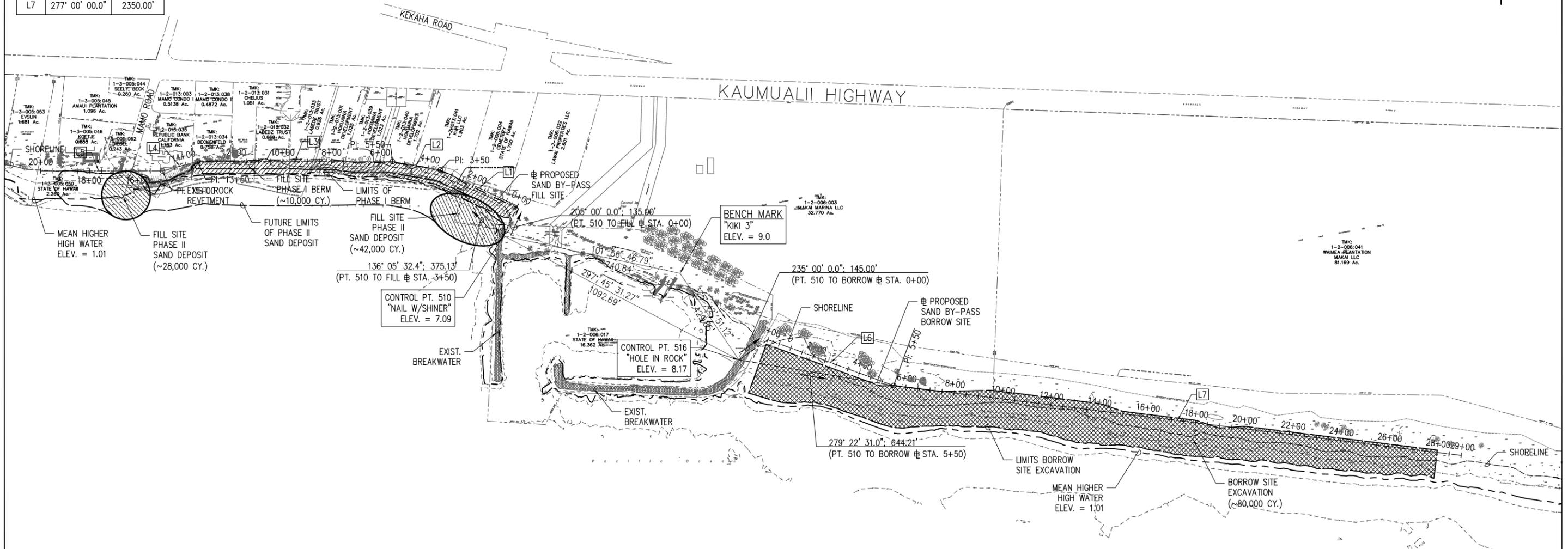
| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|----------------|------|-------------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| LIST OF ABBREVIATIONS | | | | | |
| DESIGNED: AK | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: NOV 2013 | | |
| CHECKED: DV | | | SCALE: NONE | | |
| APPROVED: _____ | | | | | DRAWING NO. |
| CHIEF ENGINEER | | | | | T-4 |

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 Signature: [Signature] 04/30/14 Expiration date of the license

Enclosure 1: Scope of Work

| LINE TABLE | | |
|------------|----------------|----------|
| LINE | AZIMUTH | DISTANCE |
| L1 | 115° 00' 00.0" | 350.00' |
| L2 | 100° 00' 00.0" | 200.00' |
| L3 | 90° 00' 00.0" | 800.00' |
| L4 | 75° 00' 00.0" | 150.00' |
| L5 | 90° 00' 00.0" | 500.00' |
| L6 | 290° 00' 00.0" | 550.00' |
| L7 | 277° 00' 00.0" | 2350.00' |

TRUE NORTH
SCALE: 1 in. = 800 FT.

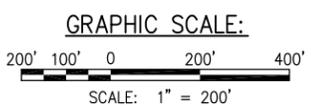


NOTES:

- TOPOGRAPHIC SURVEY CONDUCTED BY PORTUGAL SURVEYING LLC. ON NOVEMBER 7, 2012 AND REVISED APRIL 11, 2013.
- SHORELINE LOCATED OCTOBER 11, 2012 & APRIL 11, 2013 BY PORTUGAL SURVEYING LLC.
- OFFSHORE BATHYMETRIC SURVEY AND KIKIAOLA HARBOR STRUCTURAL SURVEY DATA WERE OBTAINED FROM THE UNITED STATES ARMY CORPS OF ENGINEERS. SURVEYS CONDUCTED OCTOBER 13, 2012.
- ORIGIN OF COORDINATES: COORDINATES ARE REFERRED GOVERNMENT SURVEY TRIANGULATION STATION "TRANSIT OF VENUS" Δ
- BENCH MARKS: "KIKI 3" CORPS OF ENGINEERS ULS. ARMY SURVEY MARK (DISK) SET IN CONCRETE ON THE EAST SIDE OF KIKIAOLA SMALL BOAT HARBOR BOAT RAMP. ELEVATION = 9.0 FEET MSL.

LEGEND:

| | |
|--|---------------------------------|
| | ⊕ PROPOSED PROJECT SITE |
| | EXISTING CONTOUR |
| | SURVEY TIE LINE |
| | SHORELINE |
| | LIMITS OF GRADING |
| | LIMITS OF DISTURBANCE |
| | ~ MEAN HIGHER HIGH WATER |
| | SAND EXCAVATION |
| | PHASE I SAND BERM |
| | FILL SITE PHASE II SAND DEPOSIT |



GENERAL SITE PLAN
SCALE: 1" = 200'-0"

EARTHWORK SUMMARY:
(FOR PERMIT PURPOSES ONLY)

| | |
|---|------------|
| TOTAL BORROW AREA (EAST OF HARBOR): | 9.53 ACRES |
| BORROW AREA (COUNTY): | 2.95 ACRES |
| BORROW AREA (STATE): | 6.58 ACRES |
| BORROW EXCAVATION QUANTITIES | |
| COUNTY: | 30,147 CY |
| STATE: | 49,853 CY |
| AREA OF PHASE 1 BERM (COUNTY): | |
| AREA OF PHASE 1 BERM (STATE): | 1.33 ACRES |
| EST. AREA OF PHASE II DEPOSIT SITE (STATE): | 5.88 ACRES |
| EMBANKMENT (FILL) QUANTITIES: | |
| PHASE I BERM (COUNTY): | 1,426 CY |
| PHASE I BERM (STATE): | 8,574 CY |
| PHASE II (STATE): | 70,000 CY |

THE CONTRACTOR SHALL CONDUCT HIS OWN QUANTITY SUMMARY

IF THIS SHEET IS LESS THAN 22"x34", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|--------------|------|-------------|---------|------|----------|
| | | | | | |

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *[Signature]* Date: 04/30/14
Expiration date of the license

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

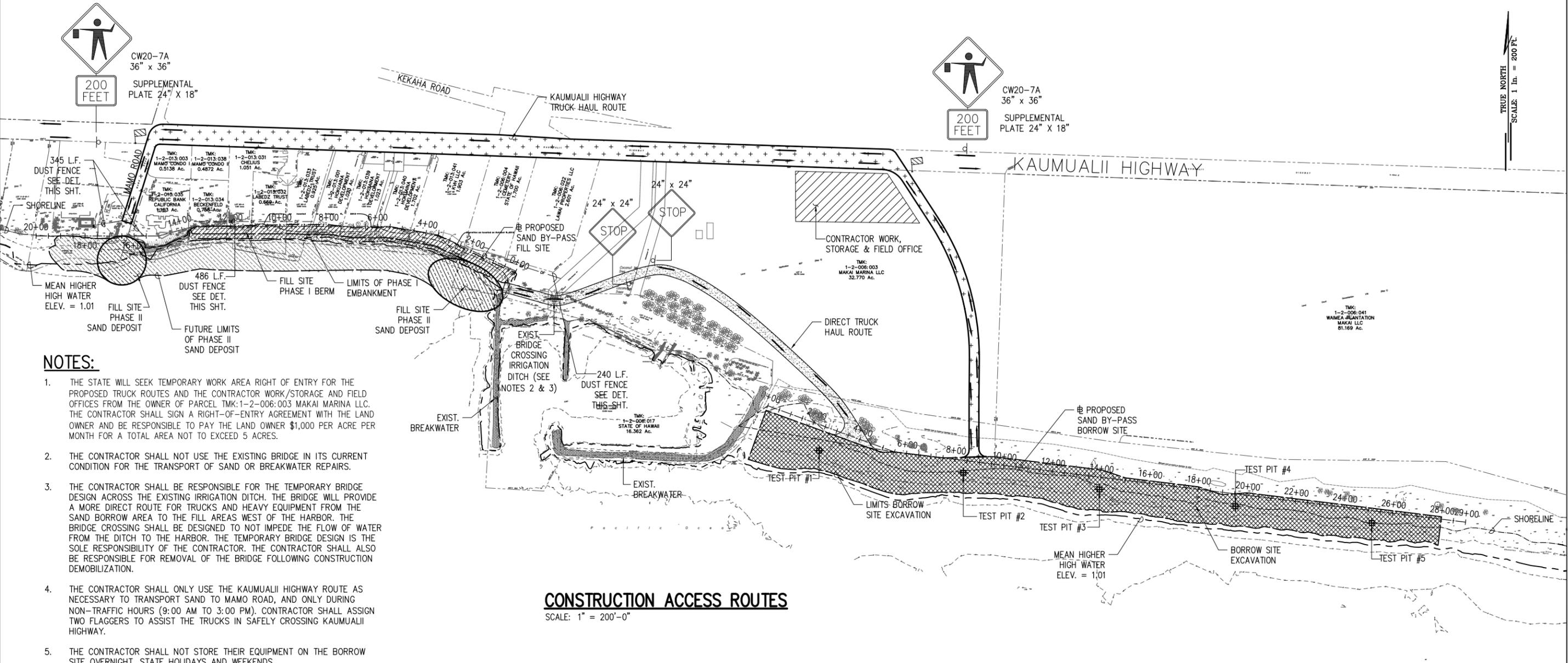
KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A

GENERAL SITE PLAN

DESIGNED: AK, LG
DRAWN: AK, CT
CHECKED: DV, DE
APPROVED: _____
CHIEF ENGINEER

SUBMITTED: _____
DATE: NOV 2013
SCALE: 1"=200'
DRAWING NO. **C-1**

Enclosure 1: Scope of Work



NOTES:

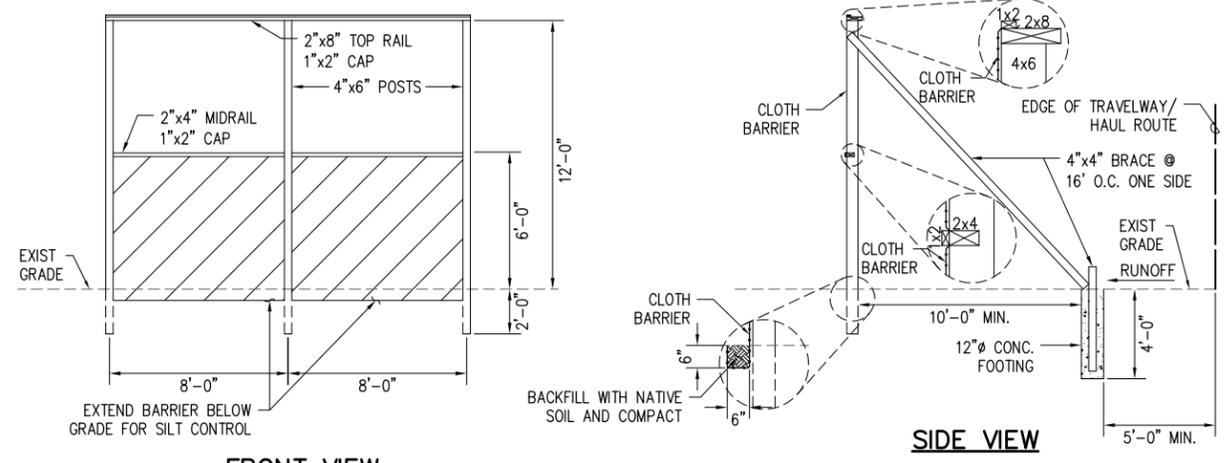
1. THE STATE WILL SEEK TEMPORARY WORK AREA RIGHT OF ENTRY FOR THE PROPOSED TRUCK ROUTES AND THE CONTRACTOR WORK/STORAGE AND FIELD OFFICES FROM THE OWNER OF PARCEL TMK:1-2-006:003 MAKAI MARINA LLC. THE CONTRACTOR SHALL SIGN A RIGHT-OF-ENTRY AGREEMENT WITH THE LAND OWNER AND BE RESPONSIBLE TO PAY THE LAND OWNER \$1,000 PER ACRE PER MONTH FOR A TOTAL AREA NOT TO EXCEED 5 ACRES.
2. THE CONTRACTOR SHALL NOT USE THE EXISTING BRIDGE IN ITS CURRENT CONDITION FOR THE TRANSPORT OF SAND OR BREAKWATER REPAIRS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY BRIDGE DESIGN ACROSS THE EXISTING IRRIGATION DITCH. THE BRIDGE WILL PROVIDE A MORE DIRECT ROUTE FOR TRUCKS AND HEAVY EQUIPMENT FROM THE SAND BORROW AREA TO THE FILL AREAS WEST OF THE HARBOR. THE BRIDGE CROSSING SHALL BE DESIGNED TO NOT IMPEDE THE FLOW OF WATER FROM THE DITCH TO THE HARBOR. THE TEMPORARY BRIDGE DESIGN IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL OF THE BRIDGE FOLLOWING CONSTRUCTION DEMOBILIZATION.
4. THE CONTRACTOR SHALL ONLY USE THE KAUMUALII HIGHWAY ROUTE AS NECESSARY TO TRANSPORT SAND TO MAMO ROAD, AND ONLY DURING NON-TRAFFIC HOURS (9:00 AM TO 3:00 PM). CONTRACTOR SHALL ASSIGN TWO FLAGGERS TO ASSIST THE TRUCKS IN SAFELY CROSSING KAUMUALII HIGHWAY.
5. THE CONTRACTOR SHALL NOT STORE THEIR EQUIPMENT ON THE BORROW SITE OVERNIGHT. STATE HOLIDAYS AND WEEKENDS.

LEGEND:

- PROPOSED PROJECT SITE
- EXISTING CONTOUR
- SURVEY TIE LINE
- SHORELINE
- LIMITS OF GRADING
- LIMITS OF DISTURBANCE
- MEAN HIGHER HIGH WATER
- DUST FENCE
- SAND EXCAVATION
- PHASE I SAND BERM
- PHASE II SAND DEPOSIT
- DIRECT TRUCK HAUL ROUTE
- KAUMUALII HIGHWAY TRUCK HAUL ROUTE
- CONSTRUCTION SIGN
- FLAGMAN

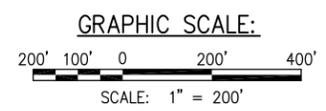
CONSTRUCTION ACCESS ROUTES

SCALE: 1" = 200'-0"



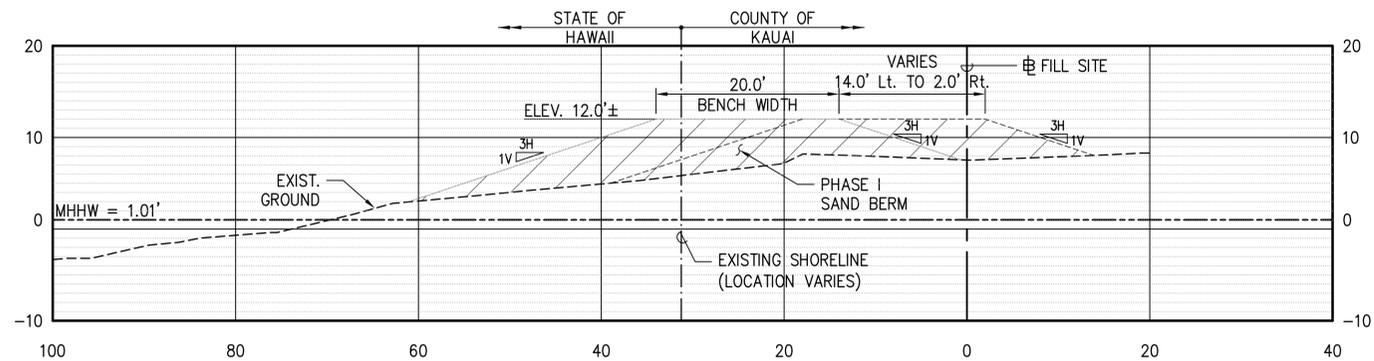
DUST FENCE DETAIL

NOT TO SCALE

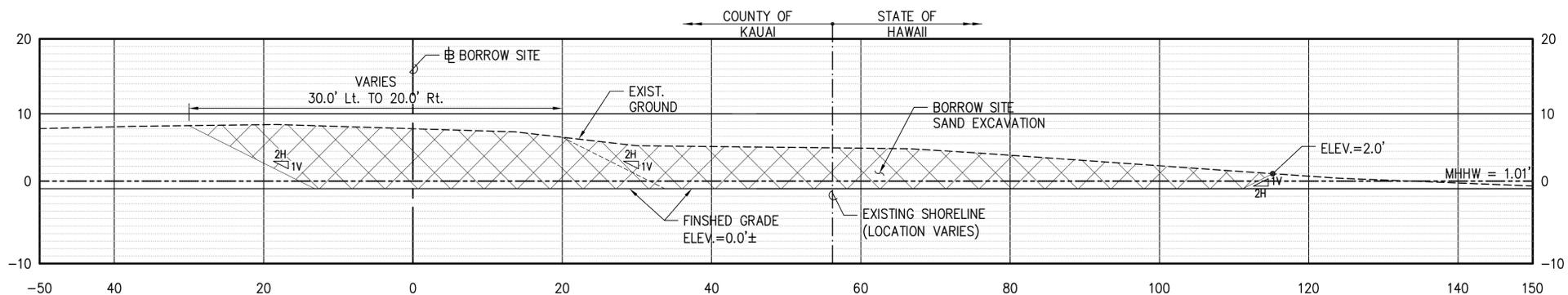


| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|--------------|------|--|---------|---------|----------|
| | | Truck routes, contractor work area, dust fence changes | | 8/21/13 | |

| | |
|---|------------------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | |
| CONSTRUCTION ACCESS ROUTES | |
| DESIGNED: AK, AF, CT | SUBMITTED: |
| DRAWN: AK, AF, CT | DATE: NOV 2013 |
| CHECKED: DV, DE | SCALE: 1" = 200' |
| APPROVED: | DRAWING NO. |
| CHIEF ENGINEER | C-2 |



PHASE I BERM TYPICAL SECTION
FILL SITE BASELINE STA. 0+00 TO STA. 13+50
 SCALE: HOR.: 1" = 10'-0"
 VER.: 1" = 10'-0"

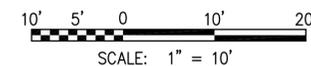


SAND EXCAVATION TYPICAL SECTION
BORROW SITE BASELINE STA. 0+00 TO STA. 28+00
 SCALE: HOR.: 1" = 10'-0"
 VER.: 1" = 10'-0"

LEGEND:

- BASELINE
- - - EXISTING GROUND
- FINISHED GROUND
- - - - MEAN HIGHER HIGH WATER
- · · · SHORELINE

GRAPHIC SCALE:



IF THIS SHEET IS LESS THAN 22"x34", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

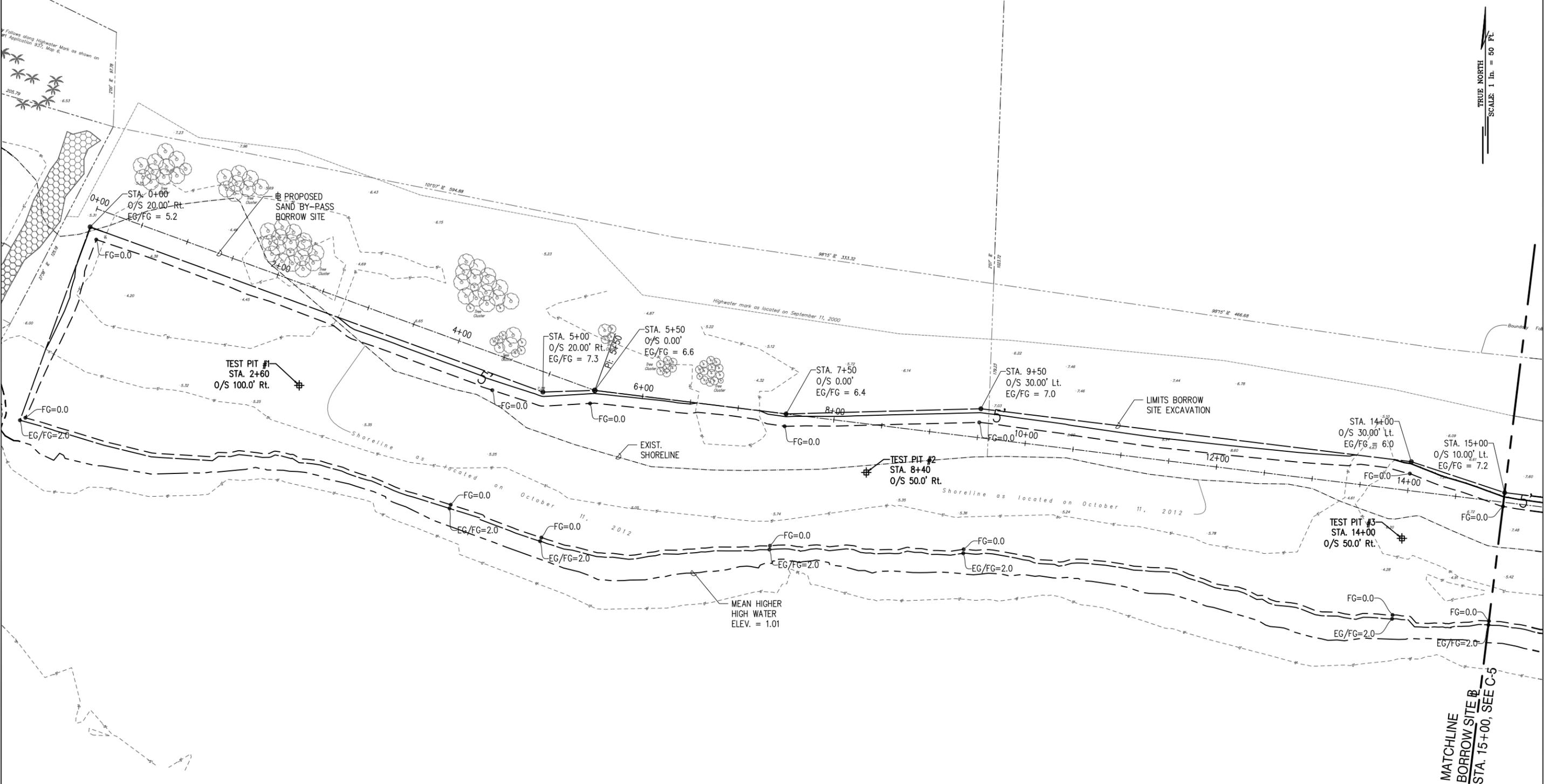
| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|-----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| SAND BY-PASS TYPICAL SECTIONS | | | | | |
| DESIGNED: LG | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: 1:10 | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | DATE | | |
| | | | C-3 | | |



I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *[Signature]* Expiration date: 04/30/14 of the license

Enclosure 1: Scope of Work

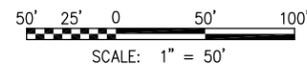


TRUE NORTH
SCALE: 1 in. = 80 Ft.

LEGEND:

- PROPOSED BORROW SITE
- - - EXISTING CONTOUR
- FINISHED CONTOUR
- - - SHORELINE
- GRADING DAYLIGHT
- GRADE BREAK
- ~ MEAN HIGHER HIGH WATER

GRAPHIC SCALE:



**SAND BY-PASS BORROW SITE
BASELINE STA. 0+00 TO 15+00**

SCALE: 1" = 50'-0"

IF THIS SHEET IS LESS THAN 22"x34", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|--------------|------|-------------|---------|------|----------|
| | | | | | |

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *[Signature]* Expiration date of license: 04/30/14

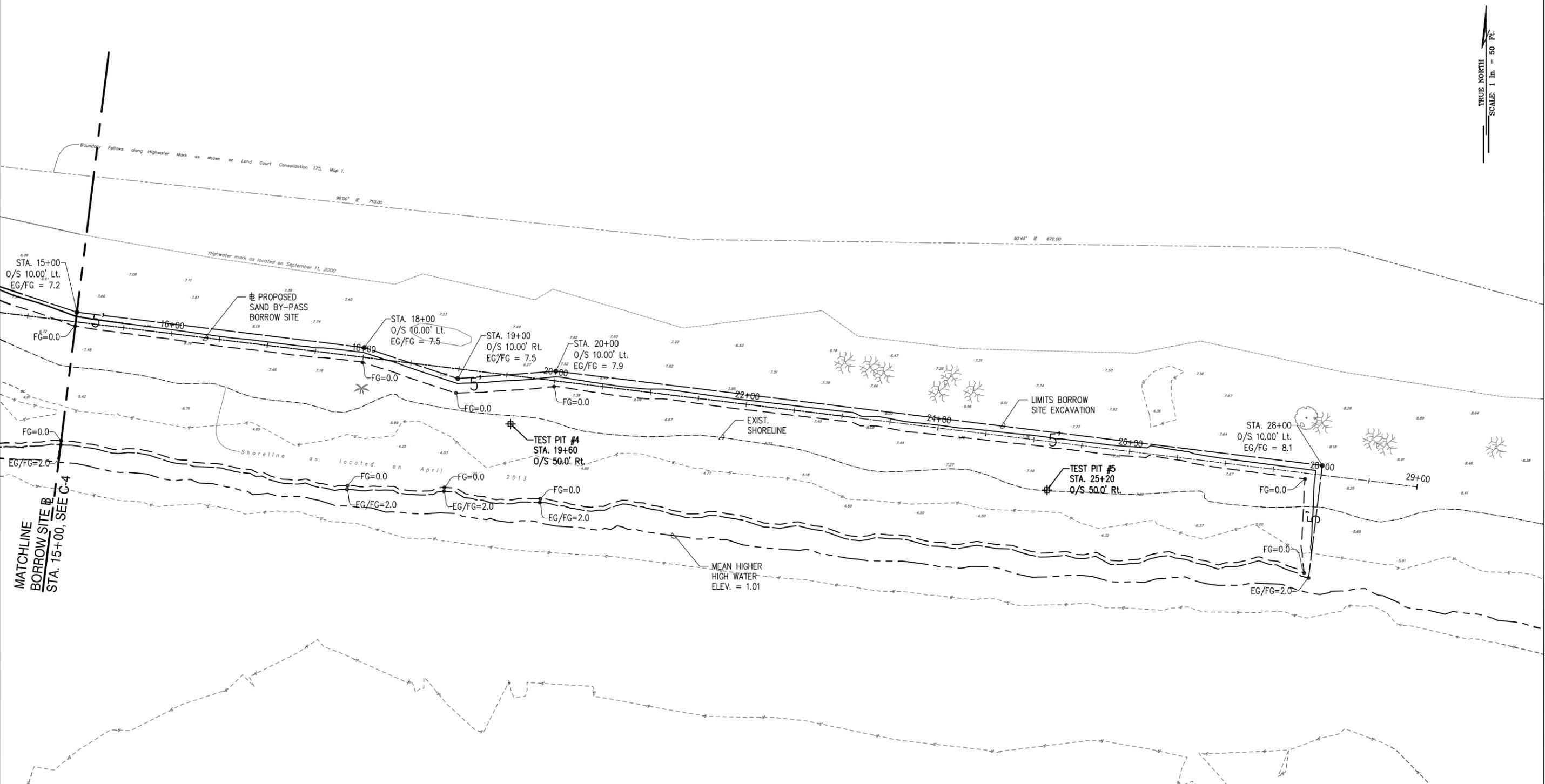
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A

SAND BY-PASS BORROW SITE, 1 OF 2

| | |
|-----------------|-----------------|
| DESIGNED: LG,AK | SUBMITTED: |
| DRAWN: AK | DATE: NOV 2013 |
| CHECKED: DV,DC | SCALE: 1"=50' |
| APPROVED: | DRAWING NO. C-4 |
| CHIEF ENGINEER | Feb 2014 |

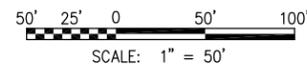
TRUE NORTH
SCALE: 1 in. = 50 FT



LEGEND:

- PROPOSED BORROW SITE
- 5'- EXISTING CONTOUR
- 0'- FINISHED CONTOUR
- - - SHORELINE
- - - GRADING DAYLIGHT
- - - GRADE BREAK
- - - MEAN HIGHER HIGH WATER

GRAPHIC SCALE:



**SAND BY-PASS BORROW SITE
BASELINE STA. 15+00 TO 28+00**

SCALE: 1" = 50'-0"

IF THIS SHEET IS LESS THAN 22"x34", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|--------------|------|-------------|---------|------|----------|
| | | | | | |

DAYANANDA H. VITRAMBER
LICENSED PROFESSIONAL ENGINEER
No. C-9348
HAWAII, U.S.A.

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *[Signature]* Expiration date of license: 04/30/14

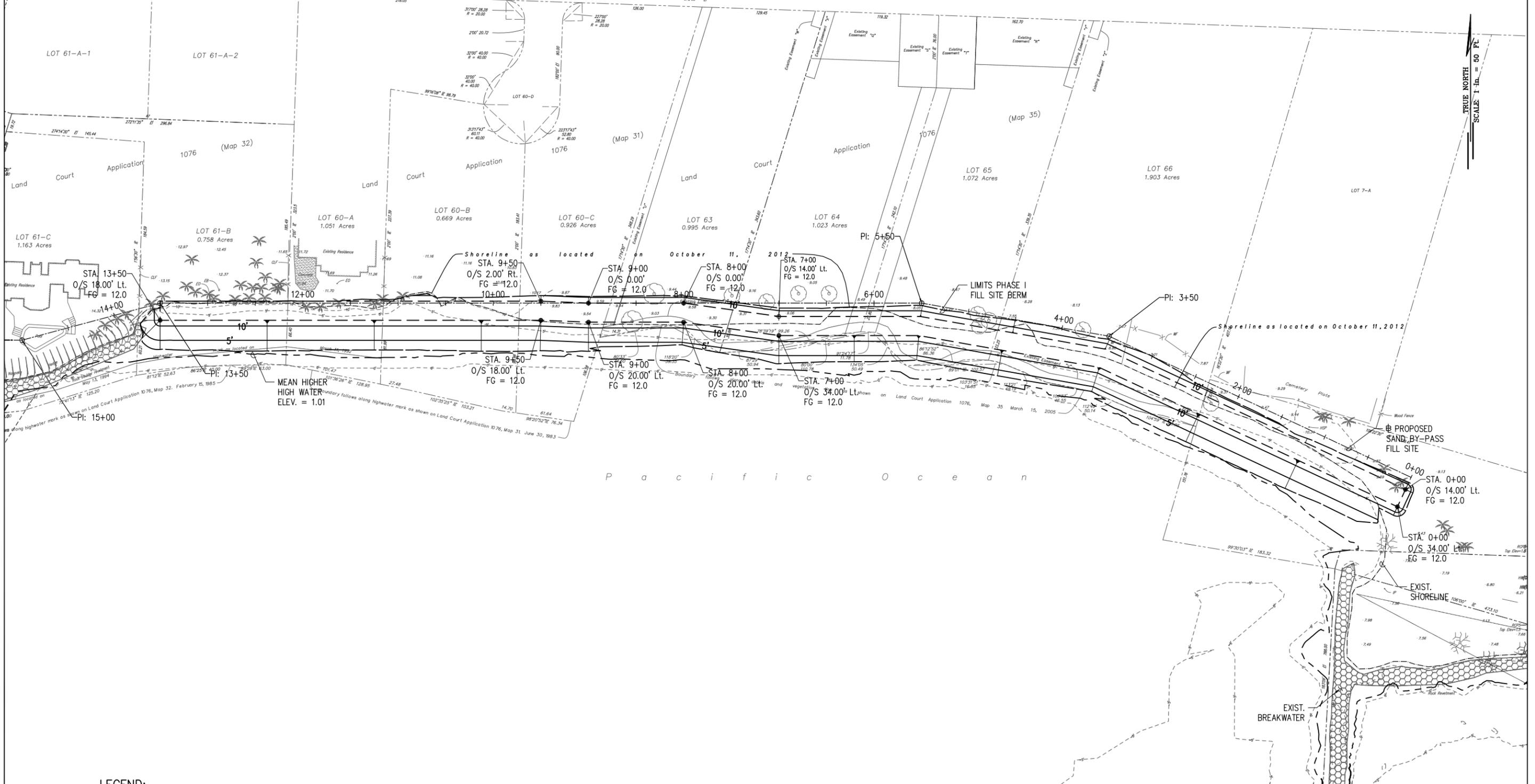
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A

SAND BY-PASS BORROW SITE, 2 OF 2

| | |
|-----------------|-----------------|
| DESIGNED: LG,AK | SUBMITTED: |
| DRAWN: AK | DATE: NOV 2013 |
| CHECKED: DW,DE | SCALE: 1"=50' |
| APPROVED: | DRAWING NO. C-5 |
| CHIEF ENGINEER | Feb 2014 |

Enclosure 1: Scope of Work

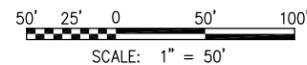


TRUE NORTH
SCALE: 1" = 50' FT

LEGEND:

- PROPOSED BORROW SITE
- - - EXISTING CONTOUR
- - - FINISHED CONTOUR
- - - SHORELINE
- - - GRADING DAYLIGHT
- - - GRADE BREAK
- ~ MEAN HIGHER HIGH WATER
- ▲ FILL SLOPE

GRAPHIC SCALE:



SAND BY-PASS PHASE I FILL SITE
BASELINE STA. 0+00 TO 13+50

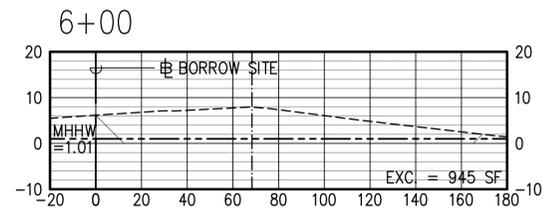
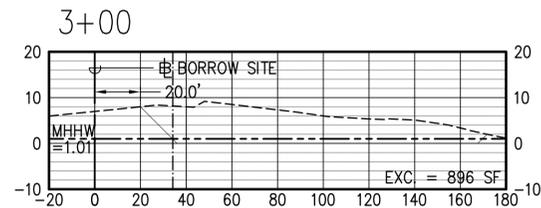
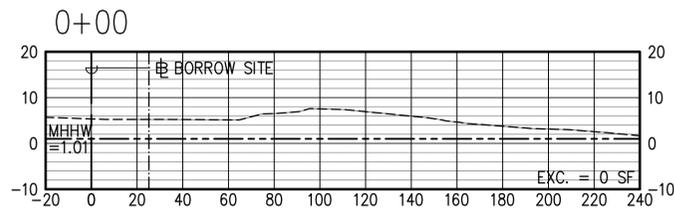
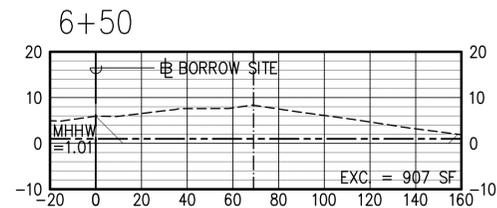
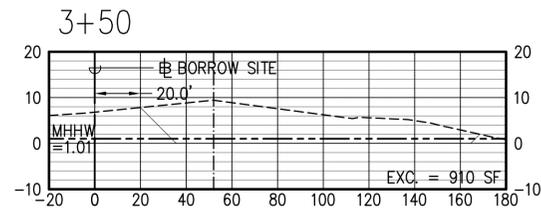
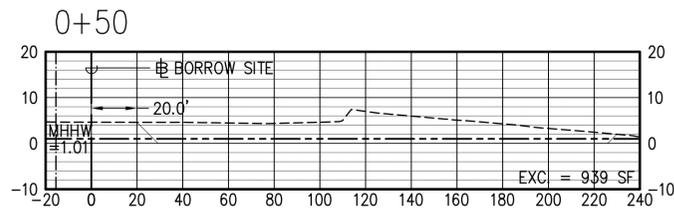
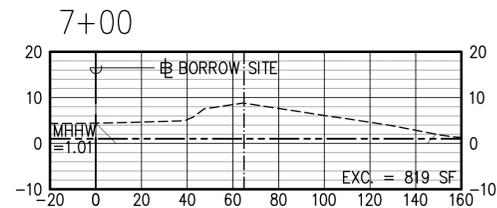
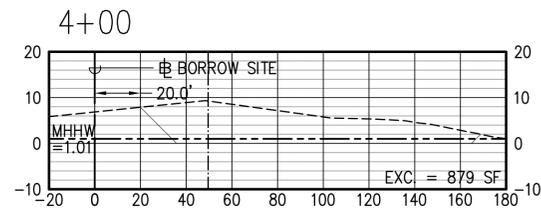
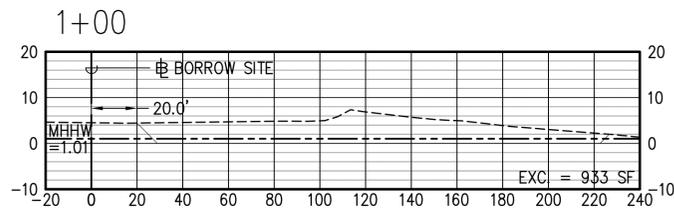
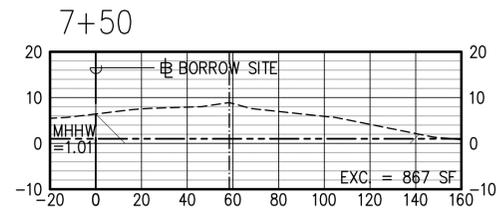
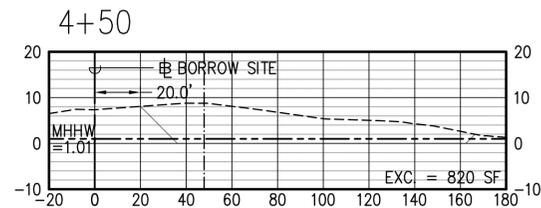
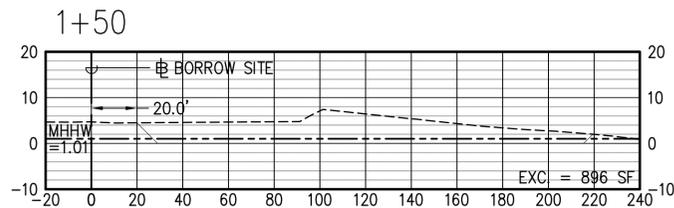
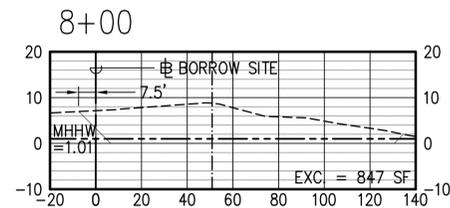
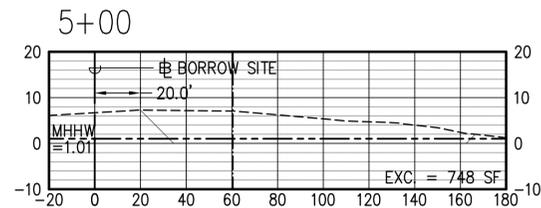
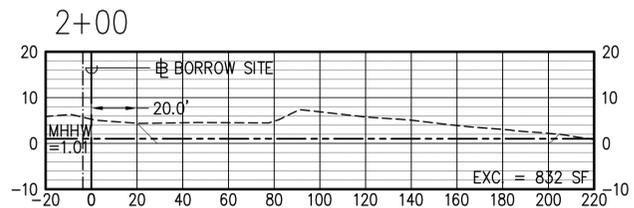
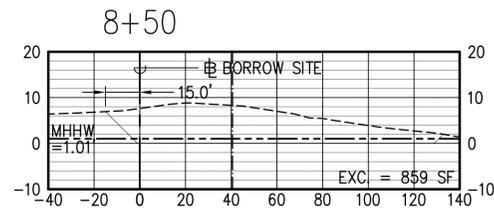
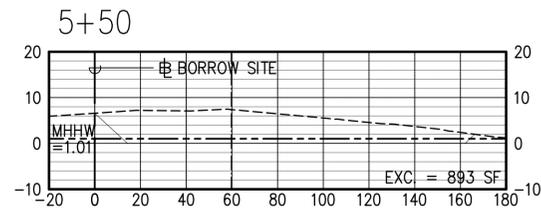
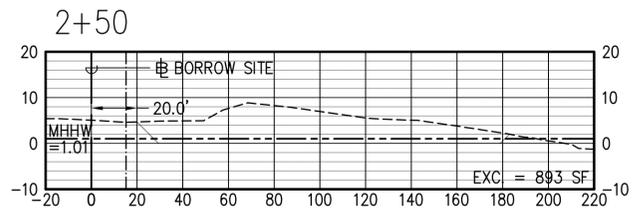
SCALE: 1" = 50'-0"

IF THIS SHEET IS LESS THAN 22"x34", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| SAND BY-PASS PHASE I FILL SITE | | | | | |
| DESIGNED: LG,AK | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: NOV 2013 | | |
| CHECKED: DV,DE | | | SCALE: 1"=50' | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | C-6 | | |



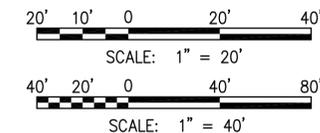
I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: [Signature] Date: 04/30/14 Expiration date of the license



LEGEND:

- PROPOSED BORROW SITE
- - - - - EXISTING GROUND
- FINISHED GROUND
- · - · - · MEAN HIGHER HIGH WATER
- · - · - · SHORELINE

GRAPHIC SCALE:



**BORROW SITE CROSS SECTIONS
BASELINE STA. 0+00 TO 8+50**

SCALE: HOR. 1" = 40'-0"
VERT. 1" = 20'-0"

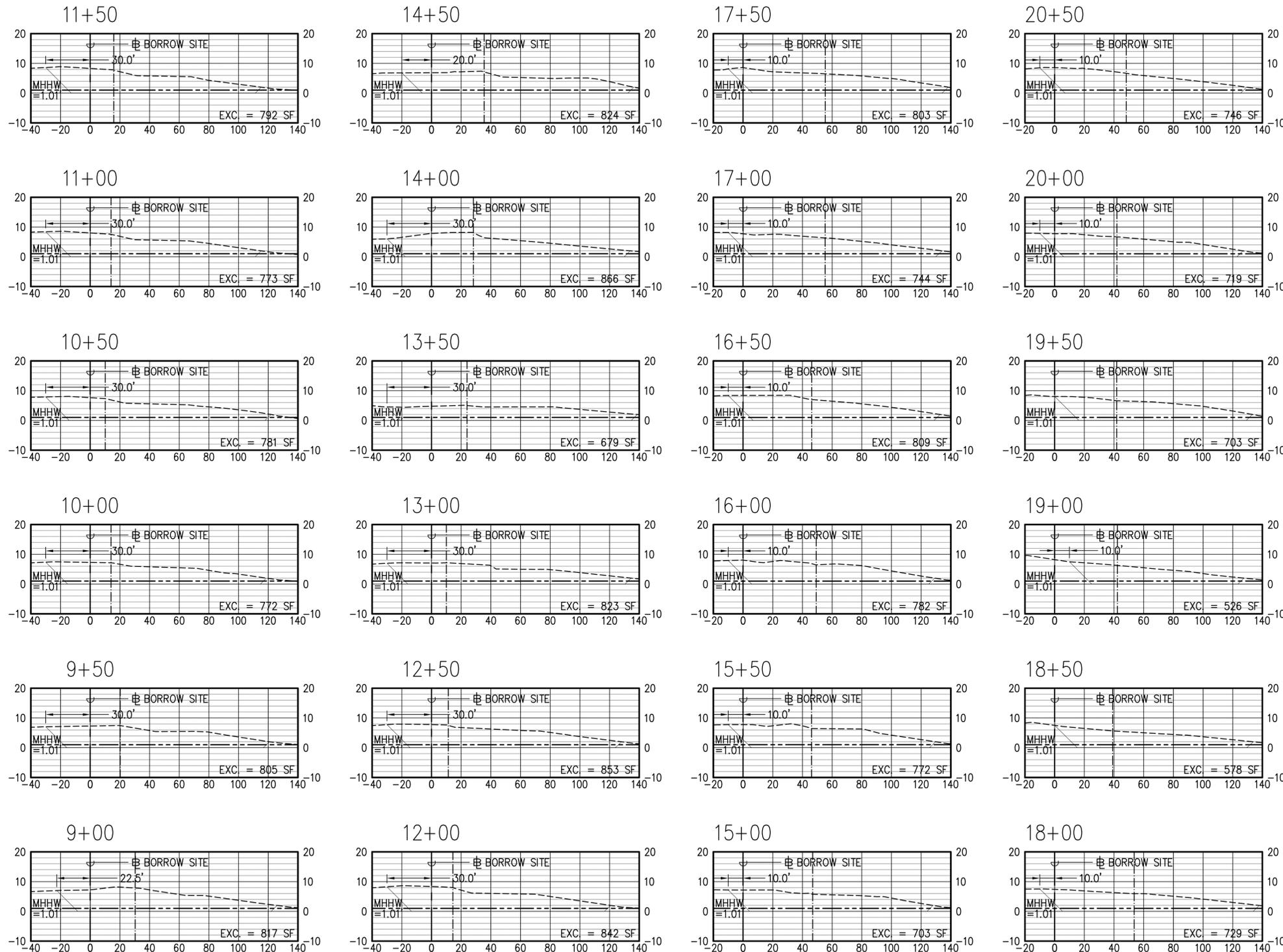
IF THIS SHEET IS LESS THAN
22"x34", IT IS A REDUCED PRINT.
SCALE REDUCED ACCORDINGLY.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|-----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| BORROW SITE CROSS SECTIONS, 1 OF 3 | | | | | |
| DESIGNED: LG, AK | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: AS NOTED | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | C-7 | | |



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PREPARED BY ME OR UNDER MY SUPERVISION
AND CONSTRUCTION OF THIS PROJECT WILL BE
UNDER MY OBSERVATION.

Signature: *[Signature]* 04/30/14
Expiration date
of the license



LEGEND:

- PROPOSED BORROW SITE
- - - EXISTING GROUND
- FINISHED GROUND
- ~ MEAN HIGHER HIGH WATER
- - - SHORELINE

GRAPHIC SCALE:

20' 10' 0 20' 40'

SCALE: 1" = 20'

40' 20' 0 40' 80'

SCALE: 1" = 40'

**BORROW SITE CROSS SECTIONS
BASELINE STA. 9+00 TO 20+50**

SCALE: HOR. 1" = 40'-0"
VERT. 1" = 20'-0"

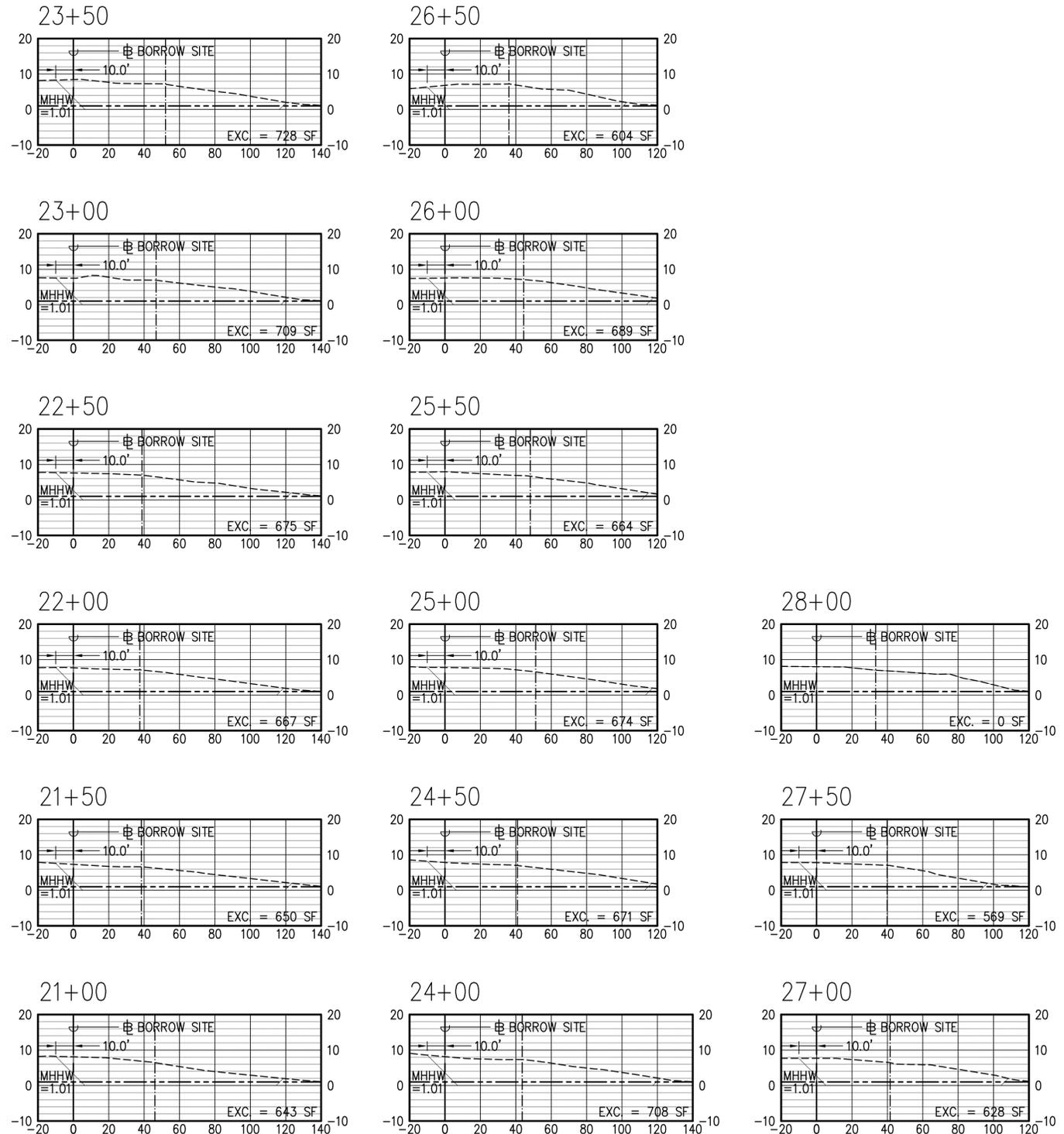
IF THIS SHEET IS LESS THAN 22"x34", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|-----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| BORROW SITE CROSS SECTIONS, 2 OF 3 | | | | | |
| DESIGNED: LG, AK | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: AS NOTED | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | C-8 | | |



I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *[Signature]* 04/30/14
Expiration date of the license



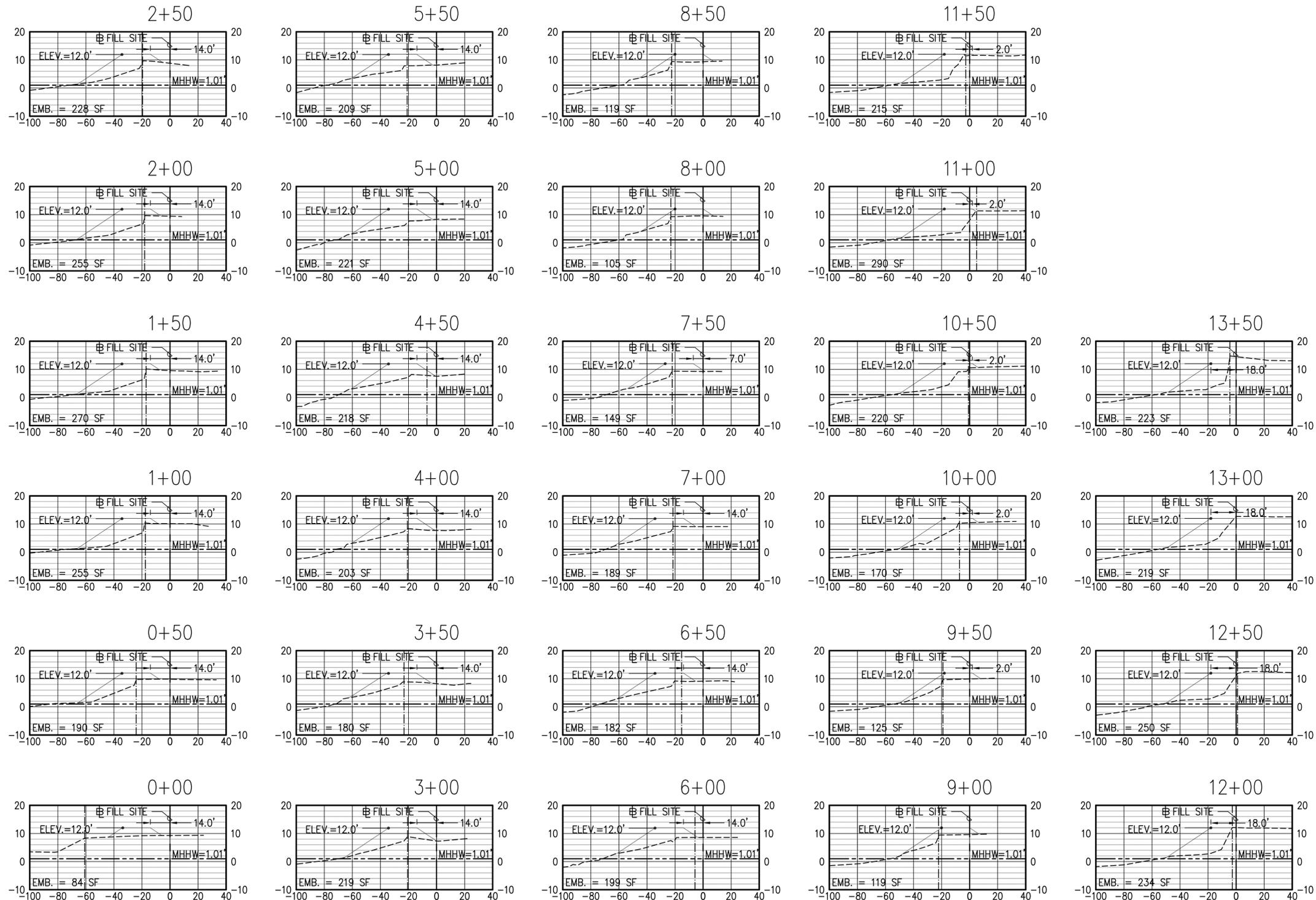
**BORROW SITE CROSS SECTIONS
BASELINE STA. 21+00 TO 28+00**
SCALE: HOR. 1" = 40'-0"
VERT. 1" = 20'-0"

IF THIS SHEET IS LESS THAN 22"x34", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|-----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| BORROW SITE CROSS SECTIONS, 3 OF 3 | | | | | |
| DESIGNED: LG, AK | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: AS NOTED | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | C-9 | | |

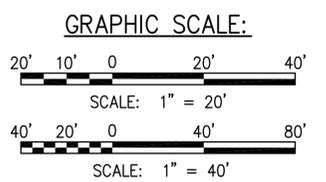


I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: [Signature] 04/30/14
Expiration date of the license



LEGEND:

- PROPOSED BORROW SITE
- - - - - EXISTING GROUND
- FINISHED GROUND
- ~ MEAN HIGHER HIGH WATER
- SHORELINE



**PHASE I FILL SITE CROSS SECTIONS
BASELINE STA. 0+00 TO 13+50**

SCALE: HOR. 1" = 40'-0"
VERT. 1" = 20'-0"

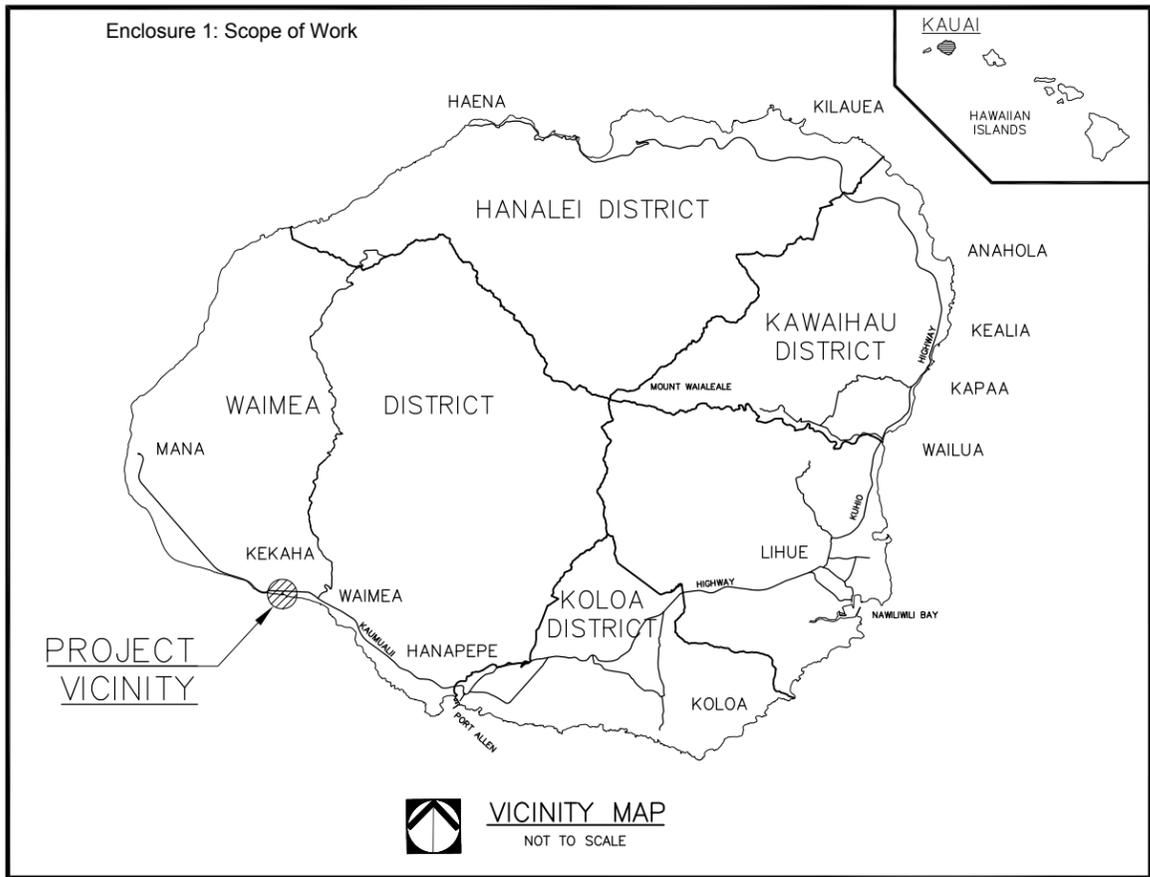
IF THIS SHEET IS LESS THAN 22"x34", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|-----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| PHASE I FILL SITE CROSS SECTIONS | | | | | |
| DESIGNED: LG, AK | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: AS NOTED | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | C-10 | | |



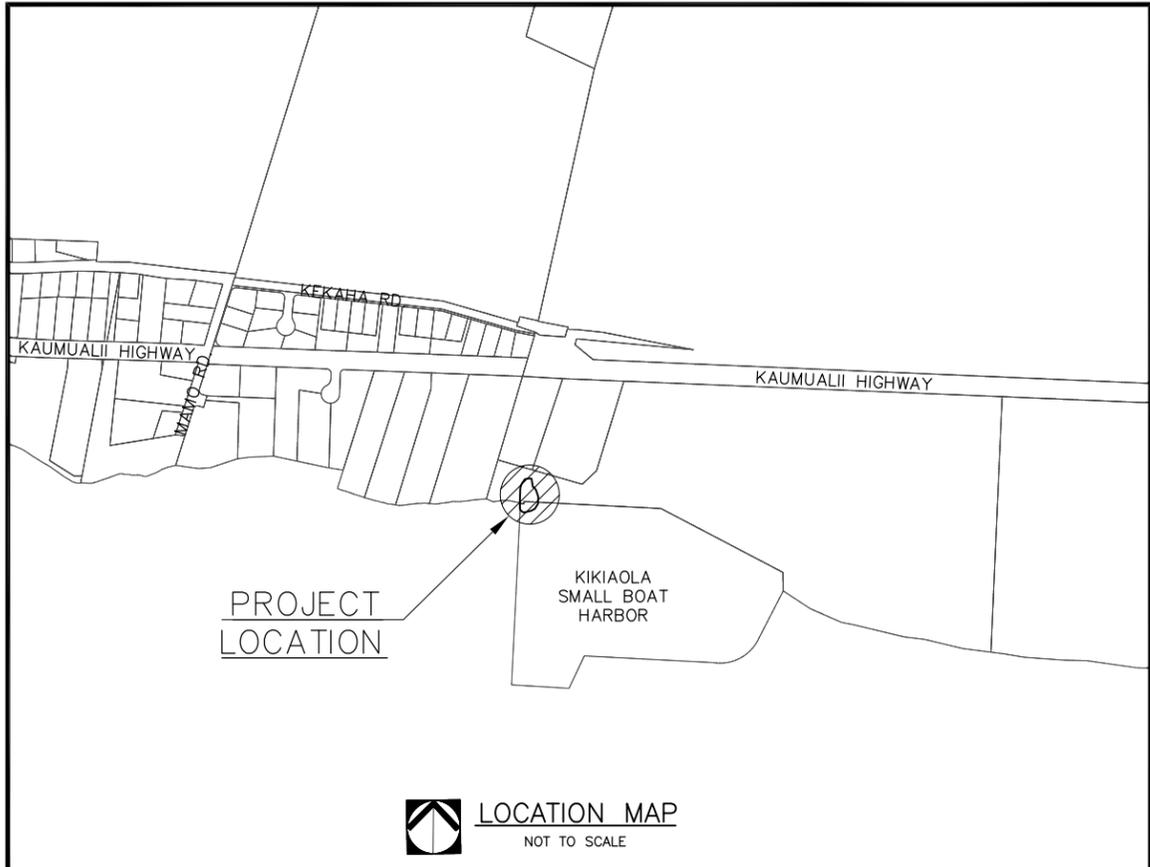
I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *Dayakanda H. Vithanage* 04/30/14
Expiration date of the license



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION
FOR
DIVISION OF BOATING AND OCEAN RECREATION
JOB NO. B95NK75A
KIKIAOLA SMALL BOAT HARBOR WEST
BREAKWATER ROOT REPAIR
FINAL PLANS
WAIMEA, KAUAI, HAWAII
TMK: (4) 1-2-006:003 & 017

PREPARED BY:



INDEX OF DRAWINGS

| DESCRIPTION | DWG. NO. |
|-----------------------------|----------|
| TITLE SHEET | T-1 |
| NOTES | T-2 |
| NOTES | T-3 |
| LIST OF ABBREVIATIONS | T-4 |
| GENERAL SITE PLAN | C-1 |
| EROSION CONTROL PLAN | C-2 |
| TYPICAL SECTIONS | C-3 |
| TYPICAL SECTIONS | C-4 |
| BREAKWATER ROOT REPAIR PLAN | C-5 |
| CROSS SECTIONS | C-6 |

APPROVED:

EDWARD R. UNDERWOOD, ADMINISTRATOR
 DIVISION OF BOATING AND OCEAN RECREATION
 DEPARTMENT OF LAND AND NATURAL RESOURCES

DATE

CARTY CHANG, P.E., CHIEF ENGINEER
 ENGINEERING DIVISION
 DEPARTMENT OF LAND AND NATURAL RESOURCES

DATE

JOB NO. B95NK75A KIKIAOLA SMALL BOAT HARBOR WEST BREAKWATER ROOT REPAIR, KAUAI, HAWAII

Enclosure 1: Scope of Work

NOTES FOR GENERAL CONSTRUCTION

- ALL CONSTRUCTION WORK IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE PUBLICATIONS "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", CITY AND COUNTY OF HONOLULU, AND THE COUNTIES OF KAUAI, MAUI AND HAWAII. THE STANDARD DETAILS ARE AVAILABLE AT THE COUNTY OF KAUAI CLERK'S OFFICE.
- NO GRADING BETWEEN 7 P.M. TO 7 A.M. ON ANY GIVEN DAY OR ON SATURDAYS, SUNDAYS AND HOLIDAYS WITHOUT WRITTEN PERMISSION FROM THE COUNTY ENGINEER AND THE STATE DEPARTMENT OF HEALTH.
- CONTRACTOR TO NOTIFY PUBLIC WORKS DEPARTMENT FIVE (5) BUSINESS DAYS PRIOR TO COMMENCING ANY GRADING WORK. WHEN COMPLETED AND READY FOR FINAL INSPECTION; NOTIFY PUBLIC WORKS DEPARTMENT INSPECTION SECTION.
- CONSTRUCTION PLANS ARE VALID FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL. IF CONSTRUCTION DOES NOT COMMENCE WITHIN THE ONE-YEAR TIME FROM THE DATE OF APPROVAL, THE CONSTRUCTION PLANS SHALL BE RESUBMITTED TO ALL REVIEWING AND APPROVING AGENCIES FOR REVIEW, APPROVAL, AND RECERTIFICATION OF THE PLAN.
- ALL GRADING, GRUBBING AND STOCKPILING WORK SHALL BE PERFORMED IN ACCORDANCE WITH COUNTY OF KAUAI ORDINANCE NO. 808.
- AFTER EACH RAINFALL EVENT, THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
- DURING CLEANING OPERATIONS, THE CONTRACTOR SHALL SUPPLY A WATER TRUCK FOR DUST CONTROL PURPOSES UNTIL THE VEGETATION HAS RE-ESTABLISHED ITSELF EXCESS WATER, INCLUDING SILT AND DIRT SHALL NOT BE ALLOWED TO RUN-OFF THE PROPERTY.
- BENCHMARKS THAT ARE DISTURBED OR DESTROYED SHALL BE RESTORED UNDER A LICENSED SURVEYOR'S DIRECTION. COPIES OF FIELD NOTES, DESCRIPTIONS AND NEW VALUES OF THE NEW BENCHMARK SHALL BE SENT TO THE DEPARTMENT OF PUBLIC WORKS SURVEY SECTION FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OVERTIME AND/OR NIGHT WORK PAYMENTS FOR COUNTY'S STAFF AND INSPECTION PERSONNEL INCLUDING CONSULTANTS, WHEN THE CONTRACT REQUIRES OVERTIME OR NIGHT WORK TO BE PERFORMED, OR DIRECTS THE CONTRACTOR TO WORK ADDITIONAL SHIFTS OR OVERTIME FOR COUNTY'S CONVENIENCE.
- BEST MANAGEMENT PRACTICES (BMPS) SHALL BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION, EROSION OR DUST TO STREAMS, WATERCOURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.
- SURVEYS SHALL BE DONE UNDER THE SUPERVISION OF A LAND SURVEYOR LICENSED IN THE STATE OF HAWAII.
- IF SYSTEM CONDITIONS REQUIRE NON-EMERGENCY NIGHT TIME WORK DURING THE AUTUMN SEABIRD FALL SEASON (SEPTEMBER 15 THROUGH DECEMBER 15), USE OF LIGHTING SHALL BE RESTRICTED BETWEEN 9:00 P.M. TO 4:30 A.M. IF LIGHTING OF THE WORK AREA IS REQUIRED IN SUCH A SITUATION, ALL LIGHTS SHALL BE SHIELDED (MINIMUM LIGHT SPILL TOWARDS THE SKY) AND DIRECTED DOWNWARDS TO THE MAXIMUM EXTENT PRACTICABLE. MINIMUM REQUIREMENTS FOR LIGHTING BY HIOSH AND OSHA SHALL BE PROVIDED AND ASSURED BY THE CONTRACTOR. THE CONTRACTOR SHALL TRAIN ALL EMPLOYEES WORKING AT NIGHT (RECORDS RETAINED BY THE CONTRACTOR) ON HOW TO HANDLE ANY RETRIEVED DOWNED BIRDS AND SHALL HAVE APPROPRIATE EQUIPMENT AS APPROVED BY SAVE OUR SHEARWATERS (SOS) ON SITE TO HOLD AND TRANSPORT ANY RETRIEVED BIRDS TO AN SOS FACILITY. THIS REQUIREMENT DOES NOT ALLOW LIGHTING AS MAY BE RESTRICTED BY OTHER GOVERNMENT AGENCIES.
- PRIOR TO STARTING ANY EXCAVATION ACTIVITIES, THE CONTRACTOR SHALL CONTACT THE HAWAII ONE CALL CENTER AT 1-866-423-7287.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY

- ALL DAMAGED PAVEMENT SHALL BE RESTORED TO ITS ORIGINAL CONDITION IN ACCORDANCE WITH COUNTY OF KAUAI, "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)" AND ITS AMENDMENTS AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984", AS AMENDED BY THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, AND THE COUNTIES OF KAUAI, MAUI AND HAWAII, WITH 2" MINIMUM HOT MIX MIXED ASPHALT CONCRETE PAVEMENT (STATE MIX V) AND 8" MINIMUM BASE COURSE.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION AND FOR THE CONVENIENCE AND SAFETY OF THE PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH THE RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND U.S. FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS DATED 2009 AND ITS AMENDMENTS.
- THE CONTRACTOR SHALL, WHENEVER NECESSARY, PROPERLY SHEET AND BRACE ALL EXCAVATIONS TO RENDER IT SECURE AND SHALL REMOVE ALL SUCH SHEETING AND BRACING BEFORE COMPLETION OF THE BACKFILL FOR WATER MAINS. THE MINIMUM COVER REQUIREMENTS (FROM TOP OF PIPE TO FINISHED GRADE OVER PIPE) IS THREE (3) FEET.
- PERMIT SHALL BE OBTAINED BY THE CONTRACTOR FROM THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUAI BEFORE ANY WORK ON A PUBLIC STREET OR HIGHWAY MAY BEGIN. PERMIT FEES SHALL BE AT THE CONTRACTOR'S EXPENSE.
 - DRIVEWAYS SHALL BE KEPT OPEN UNLESS OWNERS OF THE ABUTTING LOTS USING THESE RIGHT-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
 - ALL WORK INCLUDING REPAIR OF DAMAGED PAVEMENT AND SHOULDERS SHALL BE INSPECTED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS. ALL UNAPPROVED WORK SHALL BE CONSIDERED UNACCEPTABLE AND SHALL BE REWORKED AND CORRECTED AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS, AT THE CONTRACTOR'S EXPENSE.
 - DAMAGED SHOULDERS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
 - WORK ON A PUBLIC STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:00 A.M. TO 3:30 P.M. MONDAY THROUGH FRIDAY, EXCEPT ON HOLIDAYS RECOGNIZED BY THE COUNTY OF KAUAI, UNLESS OTHERWISE PERMITTED IN WRITING BY THE COUNTY ENGINEER.
 - DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPENED TO PUBLIC VEHICULAR AND PEDESTRIAN TRAFFIC.
 - NO MATERIAL, AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN COUNTY RIGHT-OF-WAYS EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE COUNTY ENGINEER.
 - THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO OFFER THE LEAST POSSIBLE OBSTRUCTIONS AND INCONVENIENCE TO THE PUBLIC AND HE SHALL HAVE UNDER CONSTRUCTION NO GREATER LENGTH OR AMOUNT OF WORK THAT HE CAN EXECUTE PROPERLY WITH DUE REGARDS TO THE RIGHTS OF THE PUBLIC.
 - ALL EXISTING DRAINAGE FLOW CONDITIONS SHALL BE MAINTAINED.
- THE CONTRACTOR SHALL RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER FOR QUALITY CONTROL. CERTIFICATION FROM THE GEOTECHNICAL ENGINEER SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS AT THE COMPLETION OF THE CONSTRUCTION WORK. THE GEOTECHNICAL ENGINEER SHALL CERTIFY THAT THE CONSTRUCTION WORK MEETS "STANDARD SPECIFICATIONS". THE GEOTECHNICAL ENGINEER SHALL ALSO SUBMIT TEST RESULTS AS REQUESTED BY THE DEPARTMENT OF PUBLIC WORKS.
- THE CONTRACTOR SHALL HOLD A PRECONSTRUCTION MEETING WITH THE CONSTRUCTION-DESIGN SECTIONS OF THE DEPARTMENT OF PUBLIC WORKS BEFORE COMMENCING ANY WORK.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO PRESERVE BENCHMARKS (SURVEY MONUMENTS) WHENEVER THE CENTER OF A SURVEY MONUMENT IS LESS THAN (3) FEET FROM THE EDGE OF CONSTRUCTION. THE CONTRACTOR SHALL RETAIN A LICENSED SURVEYOR TO REFERENCE THE LOCATION OF SAID SURVEY MONUMENT.
- BENCHMARKS THAT ARE DISTURBED OR DESTROYED SHALL BE RESTORED UNDER A LICENSED LAND SURVEYOR'S DIRECTION. COPIES OF FIELD NOTES, DESCRIPTIONS AND NEW VALUES OF THE NEW BENCHMARKS SHALL BE SENT TO THE DEPARTMENT OF PUBLIC WORKS SURVEY SECTION FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OVERTIME OR NIGHT WORK PAYMENTS FOR COUNTY'S STAFF AND INSPECTION PERSONNEL INCLUDING CONSULTANTS WHEN THE CONTRACT REQUIRES OVERTIME OR NIGHT WORK TO BE PERFORMED, OR DIRECTS THE CONTRACTOR TO WORK ADDITIONAL SHIFTS OR OVERTIME FOR COUNTY'S CONVENIENCE.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY (CONT'D)

- IF SYSTEM CONDITIONS REQUIRE NON-EMERGENCY NIGHT TIME WORK DURING THE AUTUMN SEABIRD FALL SEASON (SEPTEMBER 15 THROUGH DECEMBER 15), USE OF LIGHTING SHALL BE RESTRICTED BETWEEN 9:00 P.M. TO 4:30 A.M. IF LIGHTING OF THE WORK AREA IS REQUIRED IN SUCH SITUATION, ALL LIGHTS SHALL BE SHIELDED (MINIMUM LIGHT SPILL TOWARDS THE SKY) AND DIRECTED DOWNWARDS TO THE MAXIMUM EXTENT PRACTICABLE. MINIMUM REQUIREMENTS FOR LIGHTING BY HIOSH AND OSHA SHALL BE PROVIDED AND ASSURED BY THE CONTRACTOR. THE CONTRACTOR SHALL TRAIN ALL EMPLOYEES WORKING AT NIGHT (RECORDS RETAINED BY THE CONTRACTOR) ON HOW TO HANDLE ANY RETRIEVED DOWNED BIRDS AND SHALL HAVE APPROPRIATE EQUIPMENT AS APPROVED BY SAVE OUR SHEARWATERS (SOS) ON SITE TO HOLD AND TRANSPORT ANY RETRIEVED BIRDS TO AN SOS FACILITY. THIS REQUIREMENT DOES NOT ALLOW LIGHTING AS MAY BE RESTRICTED BY OTHER GOVERNMENT AGENCIES.

CONSTRUCTION NOTES FOR TRAFFIC CONTROL PLAN

- THE PERMITTEE SHALL MAKE ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
- CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
- TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST, THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
- REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
- FLAGGERS AND/OR POLICE OFFICERS, SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
- WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITTEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
- SIGN SPACING (D), TAPER LENGTHS (T) AND SPACING OF CONES OR DELINEATORS SHALL BE AS SHOWN IN TABLE I. UNLESS OTHERWISE NOTED ON THE TRAFFIC CONTROL PLANS.
- ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
- ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
- THE BACKS OF ALL SIGNS SHALL BE PROMPTLY REMOVED OR COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E.; WHEN SIGNS HAVE MESSAGES ON BOTH FACES), WHENEVER THE MESSAGES ARE NOT APPLICABLE OR NOT IN USE.
- AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
- REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.
- POLICE OFFICERS/FLAGGERS SHALL BE PRESENT AT ALL TIMES.
- WHEN REQUIRED BY THE COUNTY OF KAUAI AN ADVERTISEMENT SHALL BE PLACED IN THE NEWSPAPER BY THE CONTRACTOR FOR ANY LANE CLOSURE. THE ADVERTISEMENT SHALL BE MADE ONE (1) WEEK BEFORE ANY LANE CLOSURE AND SHALL CONTAIN THE FOLLOWING INFORMATION:
 - MAP OF THE TRAFFIC CHANGE LIMITS;
 - NOTICE OF STARTING AND ENDING DATES, TIMES AND DURATION;
 - MAP TO SHOW LANE CLOSURE;
 - EXPLANATION OF THE LANE CLOSURE. "NOTICE TO MOTORISTS & PEDESTRIANS"

THE CONTRACTOR SHALL BE REQUIRED TO HAVE ANY LANE CLOSURE ANNOUNCED DAILY OVER THE RADIO TWO (2) DAYS BEFORE STARTING DATE UNTIL THE WORK IS COMPLETED. BOTH ADVERTISEMENTS IN THE NEWSPAPER AND OVER THE RADIO SHALL BE PAID FOR BY THE CONTRACTOR. THE CONTRACTOR SHALL ALSO NOTIFY THE HOSPITALS, POLICE, FIRE, AND AMBULATORY SERVICES OF THE LANE CLOSURES.
- ALL WORKERS WITHIN THE COUNTY R/W WHO ARE EXPOSED TO EITHER VEHICLES USING THE ROADWAY OR TO CONSTRUCTION EQUIPMENT SHALL WEAR HIGH VISIBILITY SAFETY APPAREL THAT MEETS THE PERFORMANCE CLASS 2 OR 3 REQUIREMENTS OF ANSI/ISEA 107-2004. "WORKERS" ARE DEFINED AS PEOPLE ON FOOT WHOSE DUTIES PLACE THEM WITHIN THE ROAD RIGHT OF WAY, SUCH AS, BUT NOT LIMITED TO CONSTRUCTION AND MAINTENANCE FORCES, EQUIPMENT OPERATORS, SURVEY CREW, UTILITY CREW, RESPONDERS TO INCIDENTS (E.G.; EMT AND FIREMEN), AND LAW ENFORCEMENT PERSONNEL DIRECTING TRAFFIC, INVESTIGATING ACCIDENTS, HANDLING LANE CLOSURES AND ROADWAY CONSTRUCTION.

CONSTRUCTION NOTES FOR TRAFFIC CONTROL PLAN (CONT'D)

- ALL TRAFFIC CONTROL DEVICES SHALL BE REFLECTORIZED WHEN USED AT NIGHT. CONES SHALL BE EQUIPPED WITH A REFLECTORIZED COLLARS WHEN USED AT NIGHT. FLASHING LIGHTS SHALL BE USED WITH BARRICADES AND STEADY BURN LIGHTS WHEN USED IN A SERIES FOR CHANNELIZATION. FLAGGER STATIONS SHALL BE ADEQUATELY ILLUMINATED AT NIGHT.
- CONTRACTOR TO PROVIDE ACCESS AND/OR DIRECTION SIGNS TO REROUTE PEDESTRIAN TRAFFIC.
- THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE THE USE AND DURATION OF STEEL PLATES. ALL STEEL PLATES SHALL HAVE A NON-SKID SURFACING. THE COUNTY MAY REQUIRE THE BACKFILLING AND PATCHING OF THE TRENCH DUE TO THE EXCESSIVE USE OF STEEL PLATES.
- THE CONTRACTOR SHALL PROVIDE AN ADEQUATE NON-SLIP BRIDGING MATERIAL, INCLUDING SHORING OVER TRENCHES IN PAVEMENT AREAS. THE BRIDGING SHALL BE ABLE TO SUPPORT ALL TYPES OF VEHICULAR AND PEDESTRIAN TRAFFIC.
- WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN A SAFE AND PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGES BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
- ALL TRAFFIC CONTROL DEVICES SHALL BE RETRO REFLECTORIZED WHEN USED AT NIGHT. CONES SHALL BE EQUIPPED WITH A REFLECTIVE COLLAR WHEN USED AT NIGHT. FLASHING LIGHTS SHALL BE USED WITH ALL BARRICADES AND STEADY BURN LIGHTS WHEN USED IN A SERIES FOR CHANNELIZATION. FLAGGER STATIONS SHALL BE ADEQUATELY ILLUMINATED.

PAVEMENT AND TRENCH RESTORATION NOTES

- TRENCH REPAVING SHALL BE A MINIMUM 8-INCHES THICK BASE COURSE AND 2-INCHES ASPHALT CONCRETE (STATE MIX V). IF THE EXISTING PAVEMENT STRUCTURE IS GREATER IN THICKNESS AND QUALITY, THE REPAVING SHALL MATCH THE EXISTING PAVEMENT STRUCTURE.
- PAVEMENT RESURFACING WORK SHALL INCLUDE 2-INCH THICKNESS OF EXISTING A.C. TO BE COLD PLANED AND CONSTRUCTION OF A MINIMUM OF 2-INCHES OF NEW A.C. (STATE MIX V) LAYER.
- ROAD RESTORATION FOR TRENCHES ALIGNED ALONG THE LONGITUDINAL DIRECTION SHALL INCLUDE PAVEMENT RESURFACING AS FOLLOWS:
 - ROADS WITH PAVEMENT WIDTHS OF LESS THAN 12 FEET WIDE SHALL BE REPAVED THE ENTIRE WIDTH.
 - ROADWAYS BETWEEN 12 FEET AND 28 FEET WIDE WITH NO STRIPING SHALL BE PAVED FOR HALF THE ROADWAY.
 - ROADWAYS WITH NO STRIPING AND PAVEMENT WIDTHS GREATER THAN 28 FEET WIDE SHALL HAVE A 12-FOOT WIDE TRAVEL WAY RESURFACED.
- ROAD RESTORATION FOR TRENCHES ALIGNED PERPENDICULAR TO THE ROADWAY SHALL INCLUDE ROAD RESURFACING FOR A MINIMUM OF 6 FEET BEYOND THE TRENCH EDGES.
- THE ENTIRE ROAD INTERSECTION SHALL BE RESURFACED WHENEVER TRENCH REPAVING IS REQUIRED WITHIN ANY PORTION OF AN INTERSECTION. THE LIMITS OF RESURFACING SHALL BE THE CURVE RETURNS OF THE ROADWAYS OF THE INTERSECTIONS.
- ALL EXISTING PAVEMENT STRIPING DISTURBED BY THIS PROJECT SHALL BE RESTORED. THE STRIPING MATERIALS SHALL BE THERMOPLASTIC TAPE OR THERMOPLASTIC EXTRUSION. PAINTING IS NOT ACCEPTABLE.
- THE LIMITS OF ROAD RESTORATION WORK MAY BE REVISED BY THE ENGINEERING DIVISION OF THE COUNTY DEPARTMENT OF PUBLIC WORKS DURING PROCESSING OF ROAD PERMITS FOR THIS PROJECT.

HISTORIC PRESERVATION NOTES

- SHOULD HISTORIC REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATIONS OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND, AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL CORDON OFF THE AREA AND IMMEDIATELY NOTIFY THE PLANNING DEPARTMENT AT (808) 241-4050 AND THE STATE HISTORIC PRESERVATION DIVISION AT (808) 692-8015, WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND THE APPROPRIATE MITIGATION MEASURES, IF NECESSARY. IN ADDITION, IF HUMAN BURIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY OF KAUAI POLICE DEPARTMENT.

| POSTED SPEED LIMIT (M.P.H.) | SIGN SPACING (FT) (D) | TAPER LENGTH (T) (FT) | W = 12" W = greater or less* than 12" | LONGITUDINAL SPACING OF CONES OR DELINEATORS (FT) | | WORK AREA |
|-----------------------------|-----------------------|-----------------------|--|---|---------------|-----------|
| | | | | SPACE (B) | TAPER/TANGENT | |
| 20 | 250 | 200 | W X 17 | 35 | 20 20 | 10 |
| 25 | 250 | 200 | W X 17 | 55 | 25 25 | 10 |
| 30 | 250 | 250 | W X 20 | 85 | 30 30 | 10 |
| 35 | 250 | 250 | W X 20 | 120 | 35 35 | 10 |
| 40 | 500 | 350 | W X 30 | 170 | 40 40 | 10 |
| 45 | 500 | 550 | W X 45 | 220 | 45 45 | 10 |
| 50 | 1000 | 600 | W X 50 | 280 | 50 50 | 10 |
| 55 | 1000 | 700 | W X 55 | 335 | 55 55 | 10 |

* W = WIDTH OF LANE, SHOULDER, OR OFFSET.

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|----------------|---------|------|-------------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| NOTES | | | | | |
| DESIGNED: AK,CT | | SUBMITTED: | | | |
| DRAWN: AK,CT | | DATE: NOV 2013 | | | |
| CHECKED: DW,DE | | SCALE: NONE | | | |
| APPROVED: | | | | | DRAWING NO. |
| CHIEF ENGINEER | | | | | T-2 |



I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: [Signature] Expiration date of the license: 04/30/14

Enclosure 1: Scope of Work

WATER POLLUTION AND EROSION CONTROL NOTES (COUNTY)

1. GENERAL:
 - A. THE CONTRACTOR IS REMINDED OF THE REQUIREMENTS OF SECTION 209—WATER POLLUTION AND EROSION CONTROL AND SECTION 620—DUST CONTROL IN THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2005", AS AMENDED. SECTION 209 DESCRIBES BUT IS NOT LIMITED TO: SUBMITTAL REQUIREMENTS; SCHEDULING OF A WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE COUNTY ENGINEER; CONSTRUCTION REQUIREMENTS; METHOD OF MEASUREMENT; AND BASIS OF PAYMENT. NO WORK SHALL COMMENCE WITHOUT A BMP PLAN APPROVED BY THE DEPARTMENT OF HEALTH.
 - B. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE "INTERIM BEST MANAGEMENT PRACTICES MANUAL FOR CONSTRUCTION SITES FOR COUNTY OF KAUAI" APRIL 2004 IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP'S) FOR THE PROJECT. THE CONTRACTOR MAY SUBMIT ALTERNATE METHODS TO THE ENGINEER FOR ACCEPTANCE.
 - C. THE CONTRACTOR SHALL KEEP A COPY OF THE APPROVED BMP, NOI, ETC. ON THE PROJECT SITE. THE BMP SHALL BE UPDATED TO REFLECT ANY CHANGES MADE DURING THE COURSE OF CONSTRUCTION FOR THE DURATION OF THE PROJECT.
 - D. THE COUNTY ENGINEER MAY ASSESS LIQUIDATED DAMAGES OF UP TO \$27,500 FOR NON-COMPLIANCE OF EACH BMP REQUIREMENT AND EACH REQUIREMENT STATED IN SECTION 209, FOR EVERYDAY OF NONCOMPLIANCE. THERE IS NO MAXIMUM LIMIT ON THE AMOUNT ASSESSED PER DAY.
 - E. THE COUNTY ENGINEER MAY DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATIONS RECEIVED BY THE DEPARTMENT FOR NON-COMPLIANCE, OR THE CONTRACTOR/OWNER SHALL REIMBURSE THE STATE, AND/OR COUNTY FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY THE STATE AND/OR COUNTY.
2. WASTE DISPOSAL:
 - A. WASTE MATERIALS: ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER THAT DOES NOT LEAK. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER SHALL BE EMPTIED A MINIMUM OF TWICE PER WEEK OR AS OFTEN AS IS DEEMED NECESSARY. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ONSITE. THE CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES SHALL BE POSTED IN THE OFFICE TRAILER AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.
 - B. HAZARDOUS WASTE: ALL HAZARDOUS WASTE MATERIAL SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS OR BY THE MANUFACTURER. THE CONTRACTOR'S SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES AND SHALL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.
 - C. SANITARY WASTE: ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED.
3. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:
 - A. ALL CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT OF 0.5 INCHES OR GREATER.
 - B. ALL MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER. IF REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS AFTER THE INSPECTION.
 - C. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE FENCE.
 - D. SILT SCREEN OR FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT AND TEARS, TO VERIFY THAT THE FABRIC FENCE IS SECURELY ATTACHED TO THE FENCE POST OR CONCRETE SLAB AND TO VERIFY THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND.
 - E. TEMPORARY OR PERMANENT SEEDING AND PLANTING SHALL BE INSPECTED FOR BARE SPOTS, WASH OUTS AND HEALTHY GROWTH.
 - F. THE CONTRACTOR SHALL SUBMIT TO THE COUNTY ENGINEER A MAINTENANCE INSPECTION REPORT PROMPTLY AFTER EACH WEEKLY INSPECTION.
 - G. THE CONTRACTOR SHALL SELECT A MINIMUM OF THREE PERSONNEL WHO SHALL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.
 - H. PERSONNEL SELECTED FOR THE INSPECTION AND MAINTENANCE RESPONSIBILITIES SHALL RECEIVE TRAINING FROM THE CONTRACTOR. THEY SHALL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER.
 - I. ALL SLOPES AND EXPOSED AREAS SHALL BE GRASSED AS FINAL GRADES HAVE BEEN ESTABLISHED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA IN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED OR EXPOSED FOR MORE THAN 15 DAYS SHALL BE GRASSED IN ORDER TO PREVENT DUST EMISSION, EROSION AND SILT RUNOFF. AREAS WITH IMPORTED SOILS SHALL BE GRASSED NOT THAN 5 WORKING DAYS AFTER THE FINAL GRADES HAVE BEEN ESTABLISHED.
 - J. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.

WATER POLLUTION AND EROSION CONTROL NOTES (CONT'D) (COUNTY)

4. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES
 - A. MATERIALS POLLUTION PREVENTION PLAN:
 - a. APPLICABLE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION. OTHER MATERIALS AND SUBSTANCES NOT LISTED BELOW SHALL BE ADDED TO THE INVENTORY OF THE CONSTRUCTION CONTRACTOR'S SITE-SPECIFIC BMP PLAN.

| | |
|-------------------------|--------------------------|
| CONCRETE | FERTILIZERS |
| DETERGENTS | PETROLEUM BASED PRODUCTS |
| PAINTS (ENAMEL & LATEX) | CLEANING SOLVENTS |
| METAL STUDS | WOOD |
| TAR | MASONRY BLOCK |
 - b. MATERIAL MANAGEMENT PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCTS AS IS REQUIRED TO DO THE JOB.
 - c. ALL MATERIALS STORED ONSITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE UNDER A ROOF OR OTHER ENCLOSURE.
 - d. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
 - e. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
 - f. A PRODUCT SHALL BE USED UP COMPLETELY BEFORE DISPOSING OF THE CONTAINER.
 - g. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
 - h. THE CONTRACTOR SHALL CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.
 - B. HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN:
 - a. PRODUCTS SHALL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
 - b. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS (MSDS) SHALL BE RETAINED AND MADE AVAILABLE TO THE COUNTY ENGINEER UPON REQUEST.
 - c. SURPLUS PRODUCTS SHALL BE DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR LOCAL AND STATE RECOMMENDED REGULATIONS.
 - C. ONSITE AND OFFSITE PRODUCTS SPECIFIC PLANS:

THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ONSITE:

 - a. PETROLEUM BASED PRODUCTS: ALL ONSITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.
 - b. FERTILIZERS: APPLY FERTILIZER USED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, WORK FERTILIZER INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE SHALL BE IN A COVERED SHED.
 - c. PAINTS: SEAL AND STORE ALL CONTAINERS WHEN NOT REQUIRED FOR USE. DO NOT DISCHARGE EXCESS PAINT TO THE ROADWAY DRAINAGE SYSTEM. DISPOSE PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
 - d. CONCRETE TRUCKS: WASH OUT OR DISCHARGE CONCRETE TRUCK DRUM WASH ONLY AT A DESIGNATED SITE. DO NOT DISCHARGE WATER IN THE ROADWAY DRAINAGE SYSTEM OR WATERS OF THE UNITED STATES. CONTACT DRINKING WATER BRANCH, DEPARTMENT OF HEALTH (808) 586-4258 TO RECEIVE PERMISSION TO DESIGNATE A DISPOSAL SITE. CLEAN DISPOSAL SITE AS REQUESTED BY THE OWNER'S REPRESENTATIVE.
 - D. SPILL CONTROL PLAN:
 - a. POST A SPILL PREVENTION PLAN TO INCLUDE MEASURES TO PREVENT AND CLEAN UP EACH SPILL.
 - b. THE CONTRACTOR SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. DESIGNATE AT LEAST THREE SITE PERSONNEL WHO SHALL RECEIVE SPILL PREVENTION AND CLEAN UP TRAINING. THESE INDIVIDUALS SHALL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. POST THE NAMES OF RESPONSIBLE SPILL PERSONNEL IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.
 - c. CLEARLY POST MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP. MAKE SITE PERSONNEL AWARE OF THE PROCEDURES AND THE LOCATION OF INFORMATION AND CLEANUP SUPPLIES.
 - d. KEEP MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP IN THE MATERIAL STORAGE AREA ONSITE.
 - e. CLEAN UP ALL SPILLS IMMEDIATELY AFTER DISCOVERY.
 - f. KEEP THE AREA WELL VENTILATED. PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH HAZARDOUS SUBSTANCES.
 - g. REPORT SPILLS OF TOXIC HAZARDOUS MATERIAL TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
5. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS:
 - A. THE CONTRACTOR SHALL APPLY FOR, OBTAIN AND COMPLY WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS FOR KAUAI DISTRICT PERMIT PROJECTS. THIS IS AVAILABLE AT THE KAUAI DISTRICT OFFICE AT 3040 UMI STREET, SUITE 205. DUE TO POTENTIAL COST IMPACTS, THE CONTRACTOR NEEDS TO BE AWARE OF THE REQUIREMENTS.
 - B. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS FOR ALL PROJECTS WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM.

WATER POLLUTION AND EROSION CONTROL NOTES (CONT'D) (COUNTY)

- C. THE CONTRACTOR SHALL COMPLETE AND SUBMIT A CONTRACTOR'S CERTIFICATION OF NPDES COMPLIANCE, INCLUDING COMPLETION OF THE BEST MANAGEMENT PRACTICE (BMP) CHECKLIST AND SUBMITTAL OF A WRITTEN BMP PLAN AND DRAWINGS, PRIOR TO ISSUANCE OF THE PERMIT TO PERFORM WORK UPON COUNTY ROADWAYS.

GRADING NOTES

- TEMPORARY DUST CONTROL MEASURES FOR GRADING
1. THE GRADED OR PROJECT SITE THAT IS CLEARED OF VEGETATION SHALL BE KEPT DAMP WITH WATER CONTINUOUSLY FOR SEVEN (7) DAYS A WEEK. AT THE END OF EACH DAY, THE SITE SHALL BE SUFFICIENTLY DAMPENED WITH WATER ON A CONTINUAL BASIS SO THAT THE SITE WILL REMAIN MOISTENED DURING THE NIGHT.
 2. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO THAT EXCAVATIONS, EMBANKMENTS, AND IMPORTED MATERIALS SHALL BE DAMPENED WITH WATER ON A CONTINUAL BASIS TO PREVENT DUST PROBLEMS.
 3. IN APPLYING FOR A GRADING PERMIT, THE CONTRACTOR SHALL SUBMIT PLANS, SCHEDULES AND/OR WRITTEN MEASURES WHICH PROVIDES FOR DUST CONTROL. THE DUST CONTROL MEASURES SHALL CONTAIN POSITIVE STATEMENTS WHICH REQUIRE ACTIONS OR WORK THAT PREVENT DUST PROBLEMS. NO PERMITS WILL BE ISSUED UNLESS THE COUNTY IS ASSURED THAT DUST PROBLEMS WILL BE MINIMIZED.
- TEMPORARY EROSION CONTROL MEASURES FOR GRADING
1. TEMPORARY VEGETATIVE COVER SHALL BE PLANTED WITHIN A PERIOD OF 30 CALENDAR DAYS AFTER THE SITE HAS BEEN GRADED OR BARED OF VEGETATION OR IF THE SITE WILL BE SUSPENDED FOR MORE THAN 30 CALENDAR DAYS.
 2. TEMPORARY VEGETATIVE COVER SHALL CONSIST OF 40 LBS. COMMON RYE GRASS SEED PER ACRE, 400 LBS. PER ACRE 10-10-10 OR EQUIVALENT FERTILIZER WORKED INTO THE SEED BED BEFORE PLANTING. TEMPORARY SPRINKLER SYSTEM IS TO BE INSTALLED CONCURRENTLY WITH ALL PLANTINGS AND MAINTENANCE OF GRASS SHALL CONFORM TO THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS.
- PERMANENT EROSION CONTROL MEASURES FOR GRADING
1. THE CONTRACTOR SHALL GRASS THE ENTIRE PROJECT SITE, EXCEPT PAVED AREAS WITH BERMUDA GRASS SPRIGS. THE GRASS SHALL BE PLANTED, FERTILIZED, AND MAINTAINED IN ACCORDANCE WITH THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS.
 2. THE CONTRACTOR SHALL GRASS ALL EXPOSED AREAS THAT HAVE BEEN CONSTRUCTED TO FINAL GRADES WITHIN A PERIOD OF 30 CALENDAR DAYS.
 3. IN LIEU OF GRASS SPRIGS (NOTE 1), THE CONTRACTOR MAY USE HYDROMULCH WITH SEEDINGS AND AN IRRIGATION SPRINKLER SYSTEM.
- GRADING PHASES
1. WHEN GRADING WORK IS DONE IN PHASES, THE ENGINEER MUST ACCEPT THE COMPLETED PHASE PRIOR TO THE START OF WORK ON THE NEXT PHASE. EVEN AFTER A COMPLETED PHASE HAS BEEN ACCEPTED, THE GRASSING OR OTHER MEANS OF STABILIZATION MUST BE MAINTAINED UNTIL PROJECT COMPLETION.

ENVIRONMENTAL CONTROL NOTES FOR GRADING

1. IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING AREAS INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIT THE PROJECT. THESE MEASURES INCLUDE BUT ARE NOT LIMITED TO THE USE OF WATER WAGONS, SPRINKLER SYSTEMS, DUST FENCES, ETC.
2. IN ACCORDANCE WITH CHAPTER 11-55, WATER POLLUTION CONTROL AND CHAPTER 11-54, WATER QUALITY STANDARDS, TITLE 11 HAWAII ADMINISTRATIVE RULES, THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ENSURING THAT THE BEST MANAGEMENT PRACTICES (BMP) TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENTS, DEBRIS AND OTHER WATER POLLUTANTS INTO STATE WATERS IS PROVIDED AT ALL TIMES.
3. IN ACCORDANCE WITH CHAPTER 11-58, SOLID WASTE MANAGEMENT CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ENSURING THAT GRUB MATERIAL, DEMOLITION WASTE AND CONSTRUCTION WASTE GENERATED BY THE PROJECT ARE DISPOSED OF IN A MANNER OR AT A SITE APPROVED BY THE STATE DEPARTMENT OF HEALTH. DISPOSAL OF ANY OF THESE WASTES BY BURNING IS PROHIBITED.
4. THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL APPLICABLE PERMITS FROM THE DEPARTMENT OF HEALTH INCLUDING BUT NOT LIMITED TO NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), NOTICE OF INTENT AND GENERAL PERMIT FOR STORM WATER, HYDROSTATIC TEST AND DEWATERING DISCHARGE PRIOR TO COMMENCING CONSTRUCTION. NPDES PERMIT SHALL BE REQUIRED PRIOR TO GRADING OR GRUBBING WORK OVER AN AREA OF ONE ACRE OR MORE.
5. AFTER EACH RAINFALL EVENT, THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM THIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
6. BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION, EROSION OR DUST TO STREAMS, WATER COURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.
7. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS FOR ALL PROJECTS WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND HAS SATISFIED ANY OTHER PERMITTING REQUIREMENTS OF THE NPDES PERMIT PROGRAM.

ENVIRONMENTAL CONTROL NOTES FOR GRADING (CONT'D)

8. IN ACCORDANCE WITH CHAPTER 11-46, COMMUNITY NOISE, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR AND THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR PROVIDING EFFECTIVE CONTROL MEASURES TO MINIMIZE OR PREVENT CONSTRUCTION RELATED NOISE FROM IMPACTING THE RESIDENTS IN THE IMMEDIATE AREA. IF REQUIRED, NOISE REDUCTION MEASURES SHALL BE IMPLEMENTED BY THE CONTRACTOR DURING THE CONSTRUCTION WORK.
9. THE PROPERTY MAY HARBOR RODENTS WHICH WILL BE DISPERSED TO THE SURROUNDING AREAS WHEN THE SITE IS CLEARED. IN ACCORDANCE WITH CHAPTER 11-26, ENTITLED VECTOR CONTROL OF TITLE 11, HAR, THE APPLICANT SHALL ASCERTAIN THE PRESENCE OR ABSENCE OF RODENTS ON THE PROPERTY. SHOULD THE PRESENCE OF RODENTS BE DETERMINED, THE APPLICANT SHALL ERADICATE THE RODENTS PRIOR TO CLEARING THE SITE.
10. A COPY OF THE PLANS, CONSTRUCTION SCHEDULE AND/OR WRITTEN MEASURES THAT IS REQUIRED TO BE SUBMITTED BY THE CONTRACTOR (DUST CONTROL MEASURES/PLANS) SHOULD ALSO BE SENT TO THE DEPARTMENT OF HEALTH FOR MONITORING PURPOSES.

ENVIRONMENTAL NOTES

1. IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING AREAS INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIT THE PROJECT. THESE MEASURES INCLUDE BUT ARE NOT LIMITED TO THE USE OF WATER WAGONS, SPRINKLER SYSTEMS, DUST FENCES, ETC.
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| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|----------------|------|-------------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| NOTES | | | | | |
| DESIGNED: AK,CT | | | SUBMITTED: | | |
| DRAWN: AK,CT | | | DATE: NOV 2013 | | |
| CHECKED: DV,DE | | | SCALE: NONE | | |
| APPROVED: | | | | | DRAWING NO. |
| CHIEF ENGINEER | | | | | T-3 |

ABBREVIATIONS:

AC ASPHALT CONCRETE
 ACP ASBESTOS CONCRETE PIPE
 AD AMERICANS WITH DISABILITIES ACT
 AL ALUMINUM
 & AND
 APPROX APPROXIMATE
 ARV AIR RELEASE VALVE
 @ AT
 AWWA AMERICAN WATERWORKS ASSOCIATION

BAS BOTTOM ARMOR STONE
 BC AGGREGATE BASE COURSE
 ☉ BASELINE
 BB BOTTOM BANK
 BLDG BUILDING
 BLK BLOCK
 BM BENCH MARK
 BMP BEST MANAGEMENT PRACTICES
 BOT BOTTOM
 BSA BOTTOM SPLASH APRON
 BV BOTTOM VERTICAL
 BVC BEGIN VERTICAL CURVE
 BW BOTTOM WALL

Ch CHORD
 ☉ CENTERLINE
 CA CENTRAL ANGLE
 CB CATCH BASIN
 CF CUBIC FEET
 CFS CUBIC FEET PER SECOND
 CH CHORD LENGTH (CURVE)
 CMP CORRUGATED METAL PIPE
 CMU CONCRETE MASONRY UNIT
 CNO "CANNOT OPEN"
 CONC CONCRETE
 CONN CONNECT
 CONSTR CONSTRUCTION
 CONT CONTINUOUS, CONTINUATION
 CONT'D CONTINUED
 CP CONTROL POINT
 CRM CONCRETE RUBBLE MASONRY
 CSP CORRUGATED STEEL PIPE
 CU COPPER
 CY CUBIC YARD

D= APPROXIMATE DIAMETER
 Ø, DIA DIAMETER
 DET DETAIL
 DI DUCTILE IRON
 DIP DUCTILE IRON PIPE
 DL DRAINLINE
 DMH DRAIN MANHOLE
 DPW DEPARTMENT OF PUBLIC WORKS
 DWG(S) DRAWING(S)
 D/W DRIVEWAY

E EAST, EASTING
 EA EACH
 EC END CURVE
 ECP EDGE OF CONCRETE PAVEMENT
 EF EACH FACE
 EG EXISTING GROUND
 ELEC ELECTRIC, ELECTRICAL
 ELEV, EL ELEVATION
 EMB EMBANKMENT
 EMH ELECTRIC MANHOLE
 EOW EDGE OF WATER
 EP EDGE OF PAVEMENT, ELECTRIC POLE
 EPB ELECTRIC PULLBOX
 ER EDGE OF ROAD
 EVC END VERTICAL CURVE
 EW EACH WAY
 EXC EXCAVATION
 EXIST, EX EXISTING
 EXP JT EXPANSION JOINT
 EQ EQUAL

FB FIELD BOOK
 FE FLANGE END
 FG FINISH GROUND
 FH FIRE HYDRANT
 FIN FINISH
 FL FLOW LINE
 FS FINISHED SURFACE
 FT FEET

G,GR,GRD GRADE, GROUND
 GI GALVANIZED IRON
 GALV GALVANIZED
 GB GRADE BREAK
 GMH GAS MANHOLE
 GP GATE POST
 GRND GROUND
 GRP GROUDED RUBBLE PAVING
 GRVL GRAVEL
 GS GALVANIZED STEEL
 GUY GUY WIRE ANCHOR

ABBREVIATIONS (CONT'D)

H HEIGHT, HIGH, HORIZONTAL
 H= APPROXIMATE HEIGHT
 HBV HORIZONTAL BOTTOM VERTICAL
 HDWL HEADWALL
 HDPE HIGH DENSITY POLYETHYLENE
 HOR, HORIZ HORIZONTAL
 HP HIGH POINT
 HR HOUR
 HTV HORIZONTAL TOP VERTICAL

ID INSIDE DIAMETER
 IE THAT IS
 IN INCH (ES)
 INV INVERT
 IP IRON PIPE
 K RATE OF CURVATURE
 KV KILO-VOLT

L LEFT, LENGTH
 LB POUND
 Lc LENGTH OF CURVE (CURVE LENGTH)
 LF LINEAR FEET
 LP LOW POINT
 Lt LEFT

M&O MAINTENANCE AND OPERATION
 MAX MAXIMUM
 MHHW MEAN HIGHER HIGH WATER
 MIN MINIMUM
 MJ MECHANICAL JOINT
 MLLW MEAN LOWER LOW WATER
 MON MONUMENT
 MRP MORTARED RUBBLE PAVING
 MSL MEAN SEA LEVEL

N NORTHING
 NIC NOT IN CONTRACT
 NTS NOT TO SCALE

OC ON CENTER
 OD OUTSIDE DIAMETER
 OH OVERHEAD
 OS, O/S OFFSET

PAV'T PAVEMENT
 PC, POC POINT OF CURVATURE
 PCC POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
 PFC POUNDS PER CUBIC FOOT
 % PERCENT
 PH PHONE
 PI POINT OF INTERSECTION
 PK PARKER-KALON FASTENER
 PL PLATE
 PM POST MERIDIAN
 PNE PINE
 PNRS PROJECT NOTIFICATION & REVIEW SYSTEM
 PP POWER POLE
 PRC POINT OF REVERSE CURVE
 PRVC POINT OF REVERSE VERTICAL CURVE
 PT POINT OF TANGENCY, POINT
 PVI POINT OF VERTICAL INTERSECTION
 PVC POLYVINYL CHLORIDE, POINT ON VERTICAL CURVE
 PSF POUNDS PER SQUARE FOOT
 PSI POUNDS PER SQUARE INCH

R RADIUS
 RC REINFORCED CONCRETE
 RCJ REINFORCED CONCRETE JACKET
 RCP REINFORCED CONCRETE PIPE
 RD ROAD
 REINF REINFORCEMENT
 REF REFERENCE
 REQD REQUIRED
 RP ROYAL PALM
 RPM RAISED PAVEMENT MARKER
 Rt RIGHT
 ROW RIGHT-OF-WAY

S= APPROXIMATE SIZE, SLOPE
 SCHED SCHEDULE
 SF SQUARE FEET (FOOT)
 SHLDR SHOULDER
 SHT(S) SHEET(S)
 SLP, S SLOPE
 SIM SIMILAR
 SMH SEWER MANHOLE
 STD STANDARD
 STA STATION
 SWL SWALE
 SW SIDEWALK
 SY SQUARE YARD
 SYMM SYMMETRICAL

ABBREVIATIONS (CONT'D)

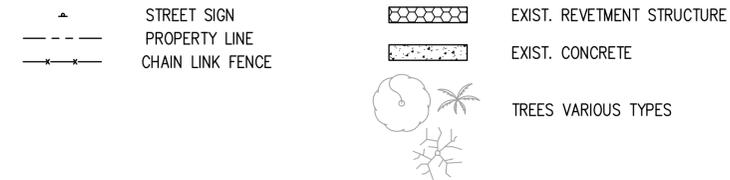
TAS TOP ARMOR STONE
 T TANGENT, TELEPHONE
 TB TOP BANK
 TC TOP CONCRETE
 TCP TRAFFIC CONTROL PLAN
 TEL TELEPHONE
 THK THICK
 THRD,THD THREAD
 TMH TELEPHONE MANHOLE
 TP TOP PAVEMENT
 TR TOP RIPRAP
 TS= TOP STEM=
 TSA TOP SPLASH APRON
 TUS TOP UNDERLAYER STONE
 TV= TOP VALVE=
 TV TOP VERTICAL
 TW TOP WALL
 TYP TYPICAL

UON UNLESS OTHERWISE NOTED
 US UNITED STATES

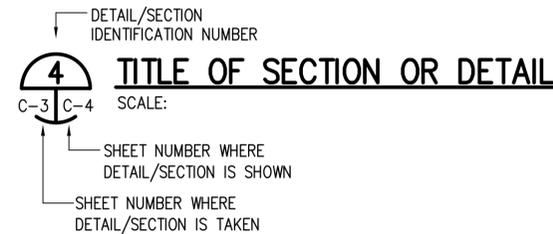
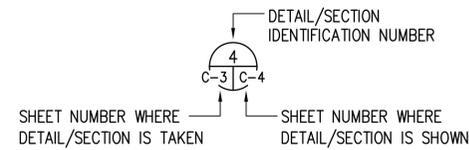
VAR. VARIABLE, VARIOUS
 VIF VERIFY IN FIELD
 V,VER,VERT VERTICAL
 VC VERTICAL CURVE
 VPC,VPI,VPT VERTICAL POINT OF CURVATURE, INTERSECTION, TANGENCY

W WIDTH
 W/ WITH
 WL WATERLINE
 WMH WATER MANHOLE
 WP WORK POINT
 WV WATER VALVE
 W/W WALKWAY

LEGEND



DETAIL/SECTION TITLE



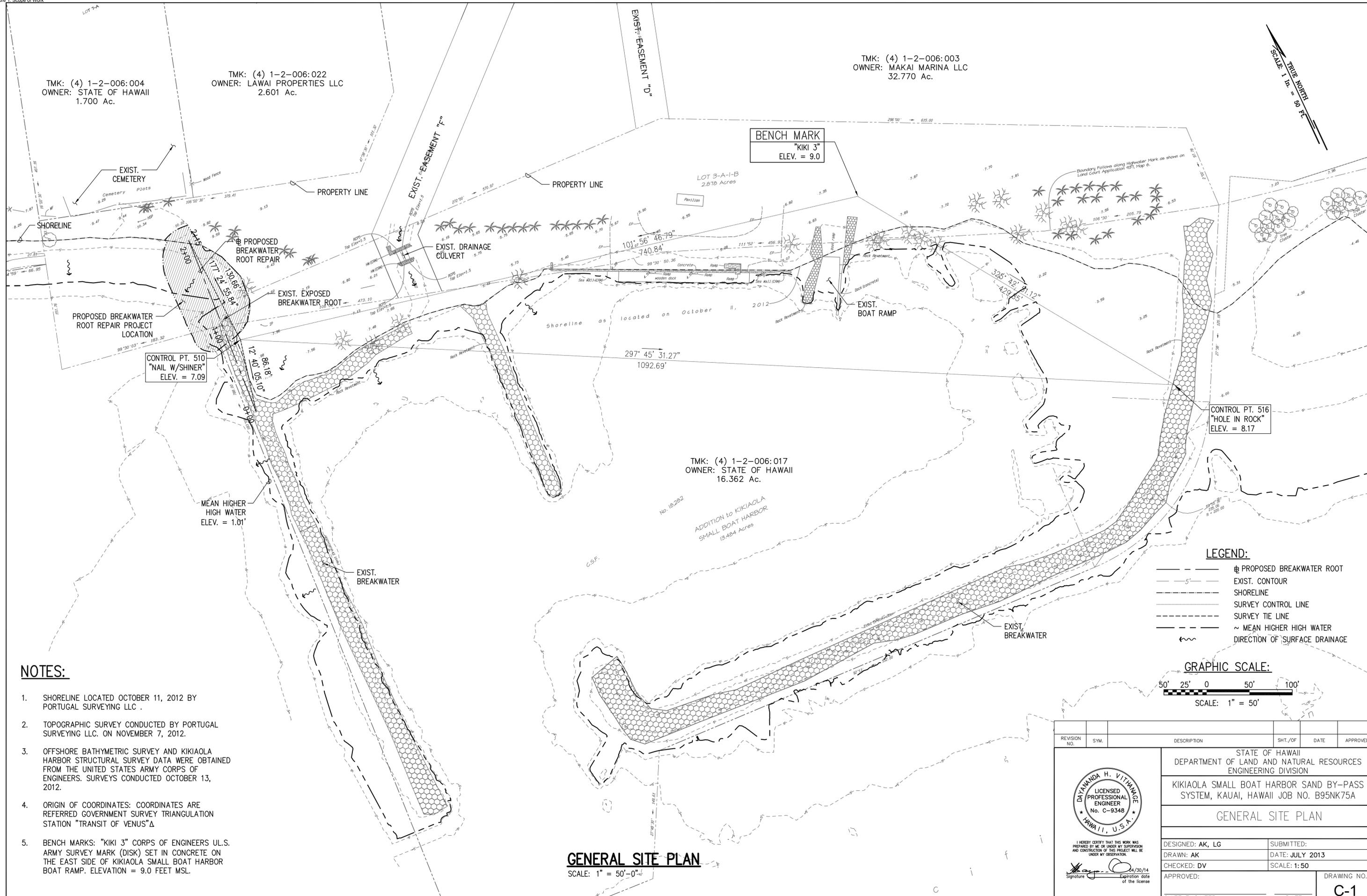
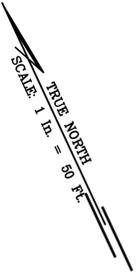
| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|-----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| LIST OF ABBREVIATIONS | | | | | |
| DESIGNED: | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: NONE | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | T-4 | | |
| | | | DATE | | |

TMK: (4) 1-2-006:004
OWNER: STATE OF HAWAII
1.700 Ac.

TMK: (4) 1-2-006:022
OWNER: LAWAI PROPERTIES LLC
2.601 Ac.

TMK: (4) 1-2-006:003
OWNER: MAKAI MARINA LLC
32.770 Ac.

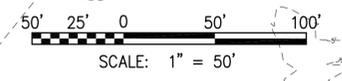
BENCH MARK
"KIKI 3"
ELEV. = 9.0



LEGEND:

- PROPOSED BREAKWATER ROOT
- - - EXIST. CONTOUR
- SHORELINE
- SURVEY CONTROL LINE
- SURVEY TIE LINE
- ~ MEAN HIGHER HIGH WATER
- ~ DIRECTION OF SURFACE DRAINAGE

GRAPHIC SCALE:



NOTES:

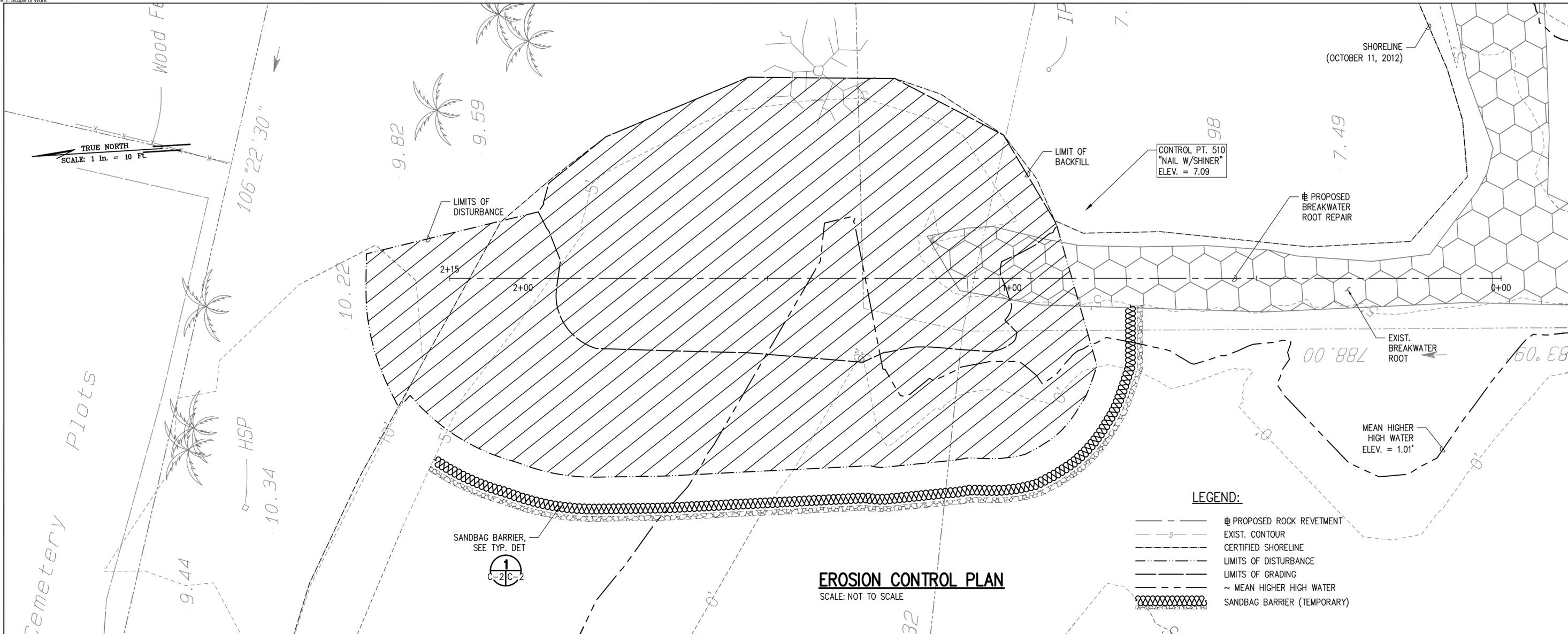
1. SHORELINE LOCATED OCTOBER 11, 2012 BY PORTUGAL SURVEYING LLC .
2. TOPOGRAPHIC SURVEY CONDUCTED BY PORTUGAL SURVEYING LLC. ON NOVEMBER 7, 2012.
3. OFFSHORE BATHYMETRIC SURVEY AND KIKIAOLA HARBOR STRUCTURAL SURVEY DATA WERE OBTAINED FROM THE UNITED STATES ARMY CORPS OF ENGINEERS. SURVEYS CONDUCTED OCTOBER 13, 2012.
4. ORIGIN OF COORDINATES: COORDINATES ARE REFERRED GOVERNMENT SURVEY TRIANGULATION STATION "TRANSIT OF VENUS" Δ
5. BENCH MARKS: "KIKI 3" CORPS OF ENGINEERS U.S. ARMY SURVEY MARK (DISK) SET IN CONCRETE ON THE EAST SIDE OF KIKIAOLA SMALL BOAT HARBOR BOAT RAMP. ELEVATION = 9.0 FEET MSL.

GENERAL SITE PLAN
SCALE: 1" = 50'-0"

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| GENERAL SITE PLAN | | | | | |
| DESIGNED: AK, LG | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: 1:50 | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | DATE | | |
| | | | C-1 | | |



I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: [Signature] 04/30/14
Expiration date of the license



EROSION CONTROL PLAN

SCALE: NOT TO SCALE

LEGEND:

- PROPOSED ROCK REVETMENT
- EXIST. CONTOUR
- CERTIFIED SHORELINE
- LIMITS OF DISTURBANCE
- LIMITS OF GRADING
- MEAN HIGHER HIGH WATER
- SANDBAG BARRIER (TEMPORARY)

EROSION CONTROL NOTES AND BEST MANAGEMENT PRACTICES (BMPs):

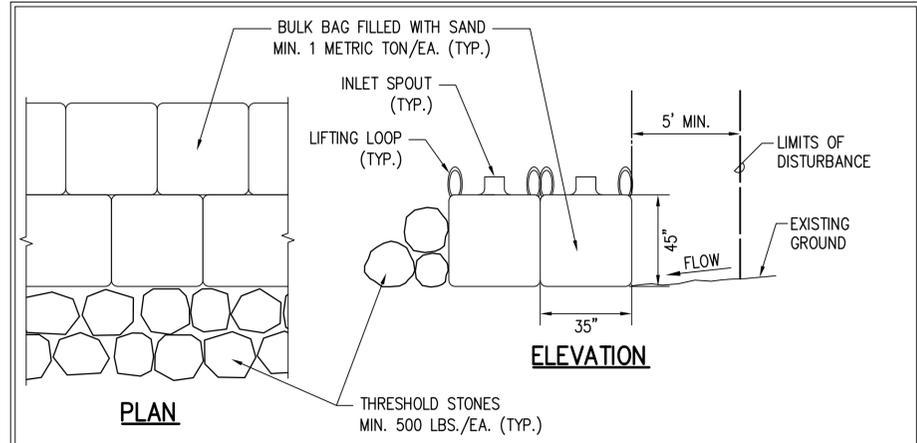
1. REVETMENT CONSTRUCTION ACTIVITIES BELOW THE MEAN HIGHER HIGH WATER ELEVATION SHALL BE CONDUCTED ONLY DURING PERIODS OF LOW TIDE.
2. THE CONTRACTOR SHALL PREPARE AND SUBMIT TEMPORARY EROSION AND SEDIMENT CONTROL PROCEDURES TO THE OFFICER-IN-CHARGE FOR APPROVAL PRIOR TO COMMENCEMENT OF GRADING.
3. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
4. CONSTRUCTION SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF CLEARED SURFACE AREA. SANDBAG BARRIER PROTECTION SHALL COMPLY WITH CONSTRUCTION SEQUENCING.
5. INSPECT SANDBAG BARRIER DAILY AND REPAIR AS NECESSARY.
6. TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN THIRTY (30) CALENDAR DAYS.
7. PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION SHALL BE APPLIED AS SOON AS PRACTICAL AFTER FINAL GRADING.
8. STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING APPROPRIATE CONTROL MEASURES AS PRACTICAL.
9. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS WITHIN 24 HOURS.

SANDBAG BARRIER NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN TEMPORARY SANDBAG BARRIER AS INDICATED. SEE DETAIL SANDBAG BARRIER ALIGNMENT SHOWN IS APPROXIMATE. CONTRACTOR SHALL ADJUST ACTUAL LOCATIONS TO ACCOMMODATE HIS/HER CONSTRUCTION METHODS OR STAGING AND RETAIN SILT ON-SITE.
2. SANDBAG BARRIER SHALL CONSIST OF TWO ROWS OF SANDBAGS WITH LARGE STONES PLACED ALONG THE SEAWARD EDGE. THE HEIGHT OF THE BARRIER SHALL NOT EXCEED 48 INCHES.
3. EACH SAND BAG SHALL BE WOVEN POLYPROPYLENE BULK BAGS MEASURING 35" X 35" X 45" FILLED WITH A MINIMUM ONE METRIC TON OF APPROVED COMPATIBLE BEACH SAND (< 6% FINES). THE BAGS MAY BE FILLED AT THE SAND SOURCE IF APPROVED BY THE OFFICER-IN-CHARGE AND LAND OWNER.
4. STONES SHALL BE PLACED ALONG THE OUTSIDE OF THE BULK BAGS TO FORM A THRESHOLD TO HELP TO MITIGATE WAVE ACTION. STONES SHALL BE 1 1/2' TO 2' EQUIVALENT DIAMETER OF WEIGHT 500 LBS (MIN.). THE CONTRACTOR MAY USE STONES FROM THE PROJECT SITE IF APPROVED BY THE CONTRACTING OFFICER.
5. SANDBAG BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UP-SLOPE AREA HAS BEEN PERMANENTLY STABILIZED. DURING REMOVAL, BULK BAGS SHALL BE CUT OPEN AND COMPATIBLE FILLER SAND SHALL BE DEPOSITED IN PLACE.
6. BMP PROVIDED HEREIN ARE MINIMUM REQUIREMENTS, DURING BIDDING AND CONSTRUCTION, THE CONTRACTOR SHALL RETAIN A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) TO ESTABLISH THE BMPs NECESSARY TO MEET FEDERAL AND LOCAL LAWS AND REGULATIONS REGARDING WATER QUALITY AND WATER POLLUTION CONTROL.

MAINTENANCE:

1. SANDBAG BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER SIGNIFICANT WAVE EVENTS WHERE RUNUP OVERTOPS THE SANDBAGS. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC ON A BULK BAG DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE SANDBAGS SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT. SEDIMENT SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SANDBAG BARRIER IS NO LONGER REQUIRED SHALL BE REMOVED BY THE CONTRACTOR.

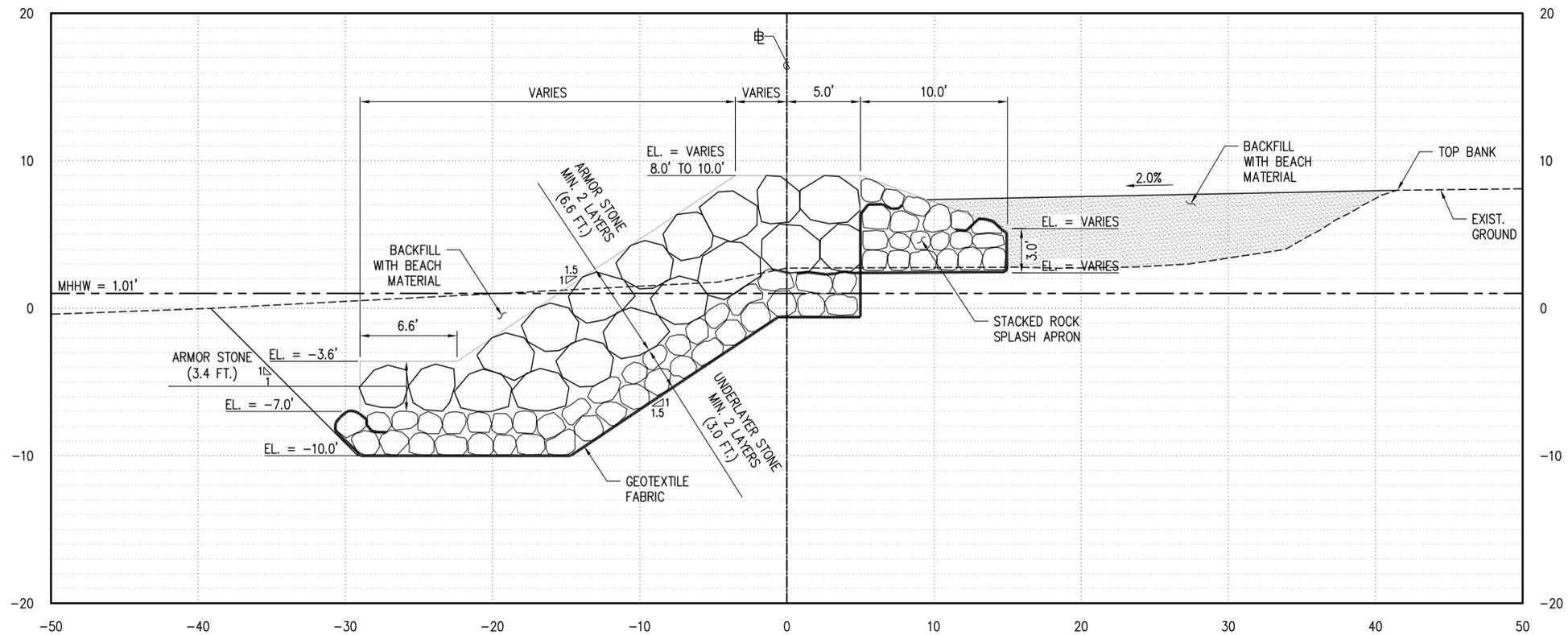


PLAN

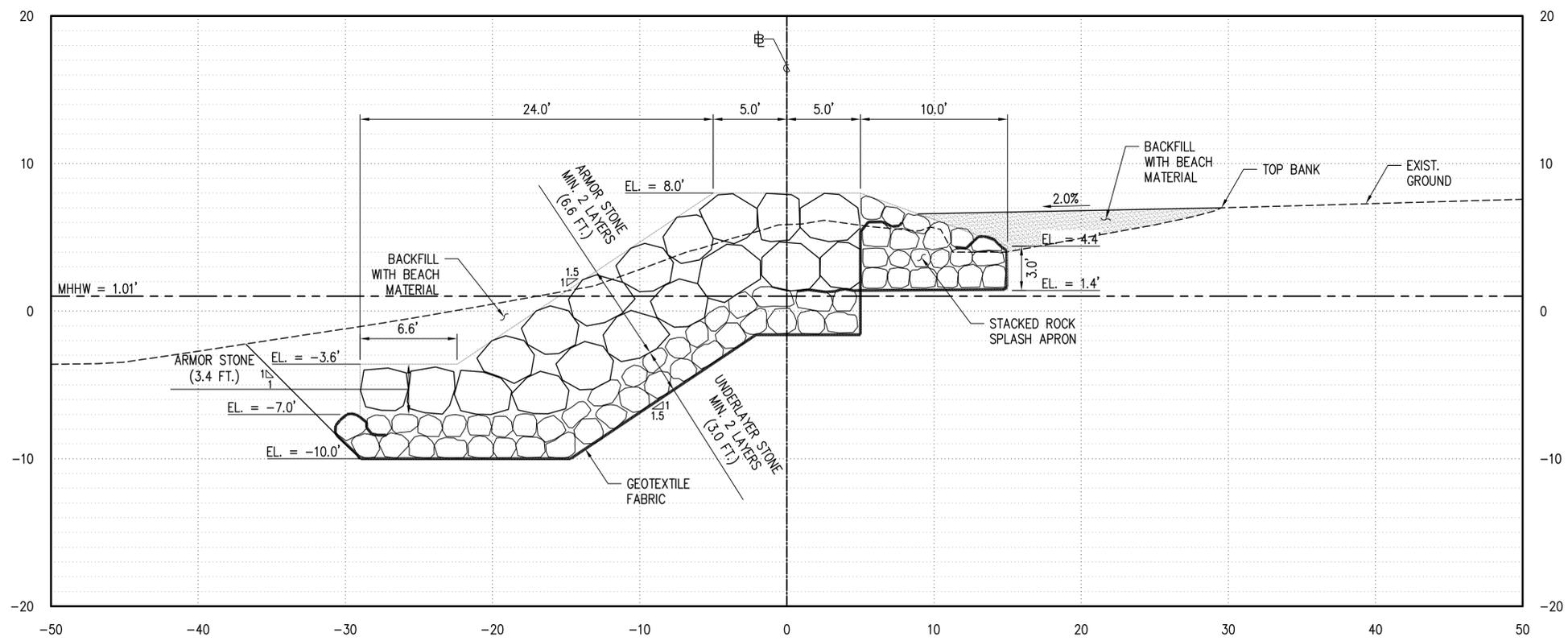
SANDBAG BARRIER DETAIL

NOT TO SCALE

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|------------------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| EROSION CONTROL PLAN | | | | | |
| DESIGNED: LG, AK | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: NOT TO SCALE | | |
| APPROVED: | | | DRAWING NO. C-2 | | |
| CHIEF ENGINEER | | | DATE | | |



2 **BREAKWATER ROOT TYPICAL SECTION: STA. 1+45 TO STA. 1+85 (TRANSITION)**
 SCALE: HOR.: 1" = 5'-0"
 VER.: 1" = 5'-0"



1 **ROCK BREAKWATER ROOT SECTION: STA. 1+05 TO STA. 1+45**
 SCALE: HOR.: 1" = 5'-0"
 VER.: 1" = 5'-0"

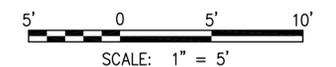
NOTES:

1. BEACH SAND SHALL BE EXCAVATED AS NECESSARY FOR CONSTRUCTION AND REDEPOSITED OVER BREAKWATER ROOT TOE TO RESTORE PRE-CONSTRUCTION BEACH SLOPE.
2. ARMOR STONES SHALL HAVE A NOMINAL DIAMETER BETWEEN 3.0' TO 3.5' AND WEIGH BETWEEN 2.0 TO 3.5 TONS.
3. UNDERLAYER STONES SHALL HAVE A NOMINAL DIAMETER OF 1.4' TO 1.7' AND WEIGH BETWEEN 400 TO 700 LBS.
4. STACK ROCK SPLASH APRON SHALL HAVE A NOMINAL DIAMETER OF 1.0' TO 1.5'.

LEGEND:

- BASELINE
- - - - - EXISTING GROUND
- FINISHED GROUND
- · - · - MEAN HIGHER HIGH WATER
- GEOTEXTILE FABRIC

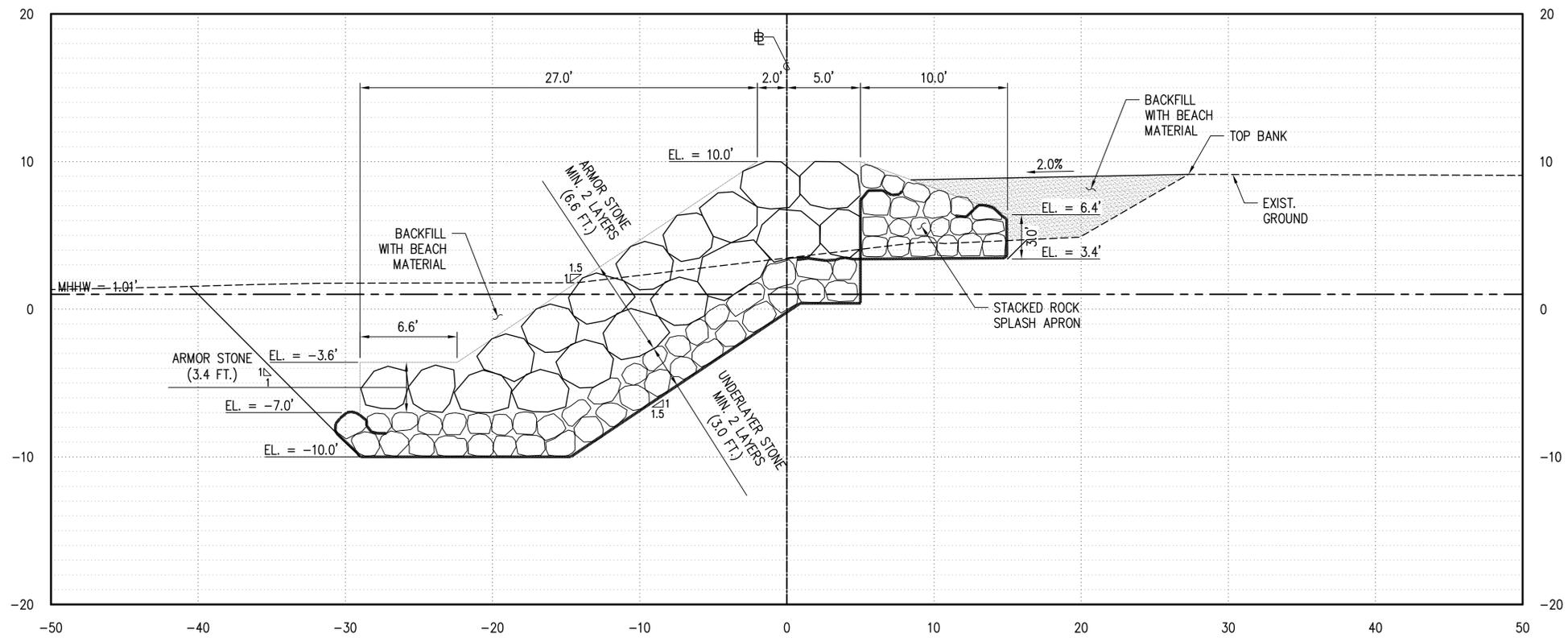
GRAPHIC SCALE:



| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|-----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| BREAKWATER ROOT TYPICAL SECTIONS | | | | | |
| DESIGNED: LG | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: 1:5 | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | C-3 | | |

NOTES:

1. BEACH SAND SHALL BE EXCAVATED AS NECESSARY FOR CONSTRUCTION AND REDEPOSITED OVER BREAKWATER ROOT TOE TO RESTORE PRE-CONSTRUCTION BEACH SLOPE.
2. ARMOR STONES SHALL HAVE A NOMINAL DIAMETER BETWEEN 3.0' TO 3.5' AND WEIGH BETWEEN 2.0 TO 3.5 TONS.
3. UNDERLAYER STONES SHALL HAVE A NOMINAL DIAMETER OF 1.4' TO 1.7' AND WEIGH BETWEEN 400 TO 700 LBS.
4. STACK ROCK SPLASH APRON SHALL HAVE A NOMINAL DIAMETER OF 1.0' TO 1.5'.



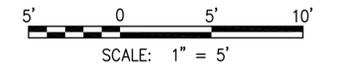
BREAKWATER ROOT TYPICAL SECTION: STA. 1+85 (RETURN)

SCALE: HOR.: 1" = 5'-0"
VER.: 1" = 5'-0"

LEGEND:

- — — — — BASELINE
- - - - - EXISTING GROUND
- FINISHED GROUND
- · - · - · - MEAN HIGHER HIGH WATER
- GEOTEXTILE FABRIC

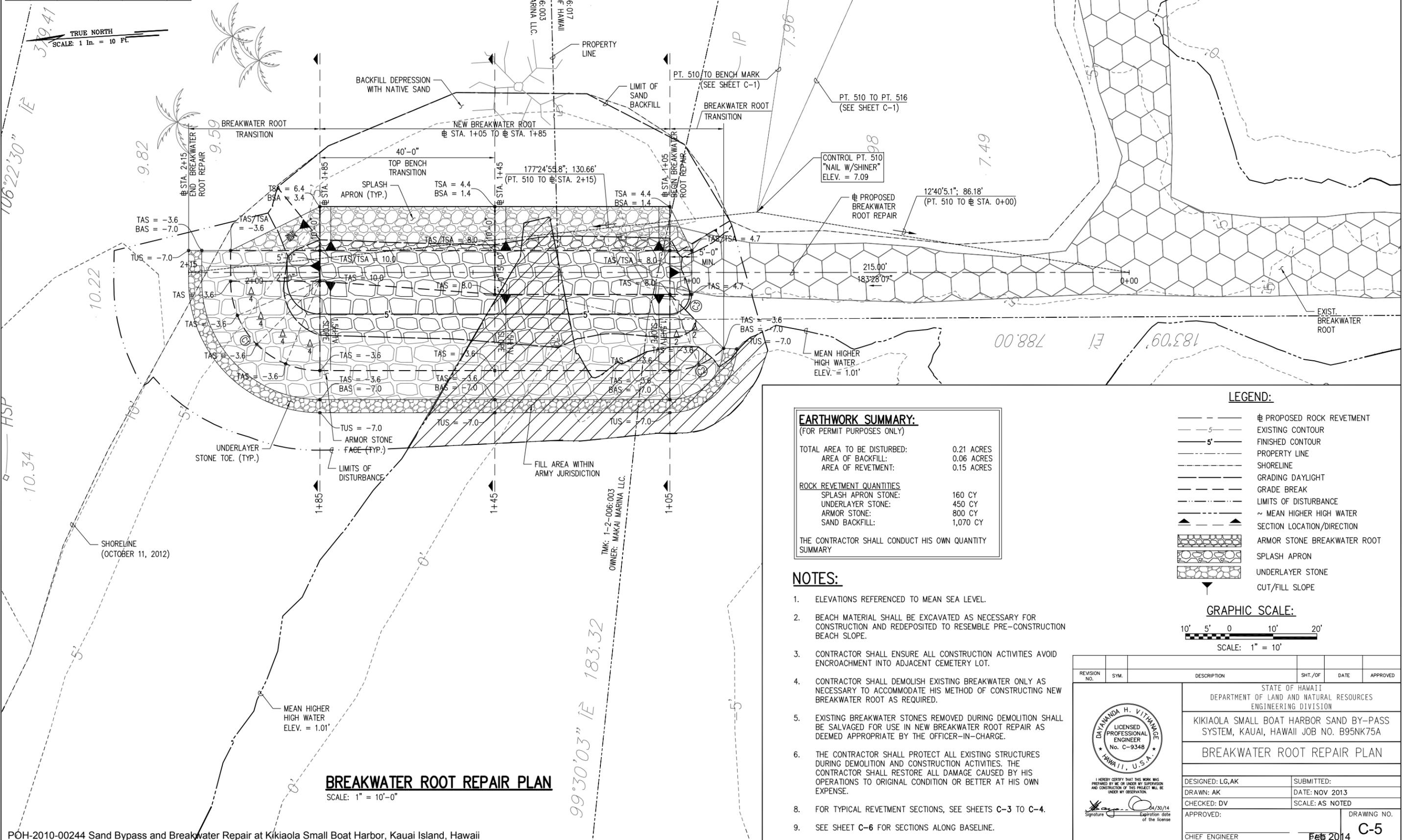
GRAPHIC SCALE:



| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|---|------|-------------|-----------------|------|----------|
| STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION | | | | | |
| KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A | | | | | |
| BREAKWATER ROOT TYPICAL SECTIONS | | | | | |
| DESIGNED: LG | | | SUBMITTED: | | |
| DRAWN: AK | | | DATE: JULY 2013 | | |
| CHECKED: DV | | | SCALE: 1:5 | | |
| APPROVED: | | | DRAWING NO. | | |
| CHIEF ENGINEER | | | C-4 | | |

Enclosure 1: Scope of Work
CURVE TABLE

| CURVE | RADIUS | Δ | T | Ch | Lc |
|-------|--------|--------------|--------|---------------|--------|
| C1 | 20.40' | 90°00'00.00" | 20.40' | 228°28'06.64" | 32.04' |
| C2 | 17.40' | 45°00'00.00" | 7.21' | 160°58'06.64" | 13.67' |
| C3 | 5.00' | 45°00'00.00" | 2.07' | 295°58'06.64" | 3.93' |



BREAKWATER ROOT REPAIR PLAN
SCALE: 1" = 10'-0"

EARTHWORK SUMMARY:
(FOR PERMIT PURPOSES ONLY)

| | |
|-----------------------------|------------|
| TOTAL AREA TO BE DISTURBED: | 0.21 ACRES |
| AREA OF BACKFILL: | 0.06 ACRES |
| AREA OF REVETMENT: | 0.15 ACRES |

ROCK REVETMENT QUANTITIES

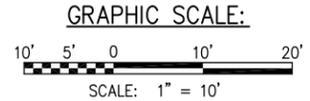
| | |
|---------------------|----------|
| SPLASH APRON STONE: | 160 CY |
| UNDERLAYER STONE: | 450 CY |
| ARMOR STONE: | 800 CY |
| SAND BACKFILL: | 1,070 CY |

THE CONTRACTOR SHALL CONDUCT HIS OWN QUANTITY SUMMARY

- NOTES:**
- ELEVATIONS REFERENCED TO MEAN SEA LEVEL.
 - BEACH MATERIAL SHALL BE EXCAVATED AS NECESSARY FOR CONSTRUCTION AND REDEPOSITED TO RESEMBLE PRE-CONSTRUCTION BEACH SLOPE.
 - CONTRACTOR SHALL ENSURE ALL CONSTRUCTION ACTIVITIES AVOID ENCROACHMENT INTO ADJACENT CEMETERY LOT.
 - CONTRACTOR SHALL DEMOLISH EXISTING BREAKWATER ONLY AS NECESSARY TO ACCOMMODATE HIS METHOD OF CONSTRUCTING NEW BREAKWATER ROOT AS REQUIRED.
 - EXISTING BREAKWATER STONES REMOVED DURING DEMOLITION SHALL BE SALVAGED FOR USE IN NEW BREAKWATER ROOT REPAIR AS DEEMED APPROPRIATE BY THE OFFICER-IN-CHARGE.
 - THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES DURING DEMOLITION AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL RESTORE ALL DAMAGE CAUSED BY HIS OPERATIONS TO ORIGINAL CONDITION OR BETTER AT HIS OWN EXPENSE.
 - FOR TYPICAL REVETMENT SECTIONS, SEE SHEETS C-3 TO C-4.
 - SEE SHEET C-6 FOR SECTIONS ALONG BASELINE.

LEGEND:

| | |
|--|-----------------------------|
| | PROPOSED ROCK REVETMENT |
| | EXISTING CONTOUR |
| | FINISHED CONTOUR |
| | PROPERTY LINE |
| | SHORELINE |
| | GRADING DAYLIGHT |
| | GRADE BREAK |
| | LIMITS OF DISTURBANCE |
| | MEAN HIGHER HIGH WATER |
| | SECTION LOCATION/DIRECTION |
| | ARMOR STONE BREAKWATER ROOT |
| | SPLASH APRON |
| | UNDERLAYER STONE |
| | CUT/FILL SLOPE |



| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
|--------------|------|-------------|---------|------|----------|
| | | | | | |

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

KIKIAOLA SMALL BOAT HARBOR SAND BY-PASS SYSTEM, KAUAI, HAWAII JOB NO. B95NK75A

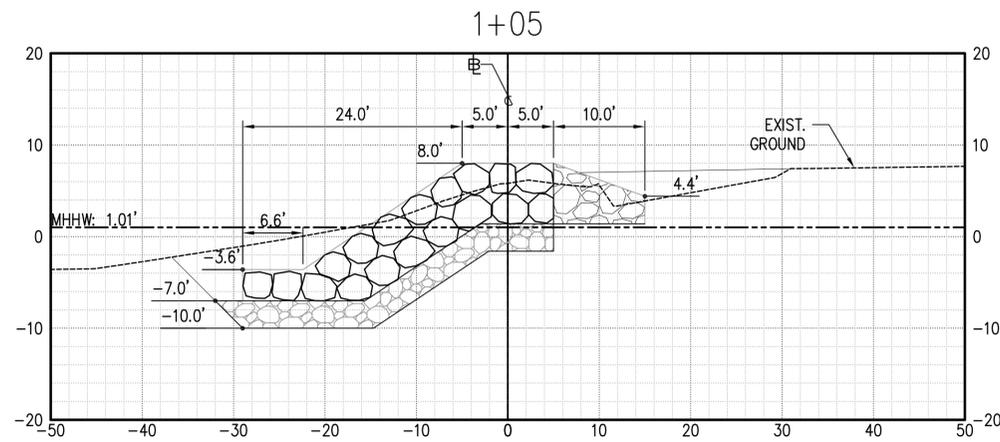
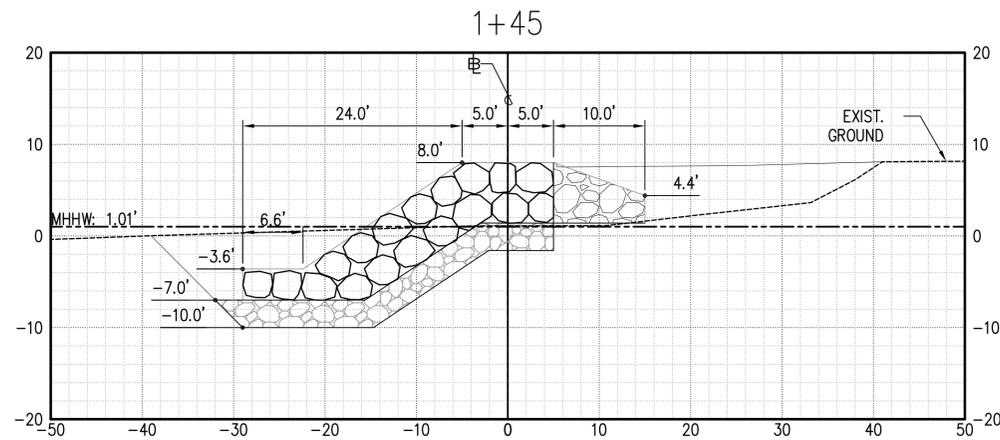
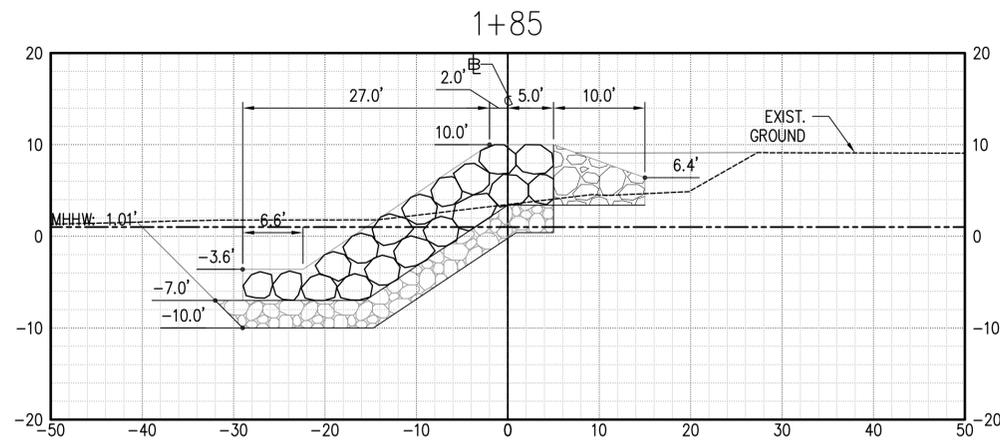
BREAKWATER ROOT REPAIR PLAN

DESIGNED: LG,AK
DRAWN: AK
CHECKED: DV
APPROVED: _____
CHIEF ENGINEER

SUBMITTED: DATE: NOV 2013
SCALE: AS NOTED

DRAWING NO. **C-5**

Signature: _____
Expiration date of license: 04/30/14



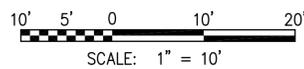
NOTES:

1. PRIOR TO PLACEMENT OF GEOTEXTILE FABRIC, FILL DEPRESSIONS OF EXIST. GROUND WITH 1" TO 3" CRUSHED ROCK TO LEVEL SHARP IRREGULARITIES.
2. FOR TYPICAL ROCK REVETMENT SECTIONS, SEE SHEETS C-3 TO C-4.

LEGEND:

| | | | |
|---------|------------------------|--|------------------|
| --- | BASELINE | | ARMOR STONE |
| - - - - | EXISTING GROUND | | SPLASH APRON |
| --- | FINISHED GROUND | | UNDERLAYER STONE |
| - - - - | MEAN HIGHER HIGH WATER | | |

GRAPHIC SCALE:



**CROSS SECTIONS:
STA 1+05 TO 1+85**

SCALE: HOR.: 1" = 10'-0"
VER.: 1" = 10'-0"

| REVISION NO. | SYM. | DESCRIPTION | SHT./OF | DATE | APPROVED |
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| BREAKWATER ROOT SECTIONS | | | | | |
| DESIGNED: AK,LG | | SUBMITTED: | | | |
| DRAWN: AK | | DATE: NOV 2013 | | | |
| CHECKED: DV | | SCALE: AS NOTED | | | |
| APPROVED: | | DATE: | | DRAWING NO. | |
| CHIEF ENGINEER | | | | C-6 | |



I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *[Signature]* 04/30/14
Expiration date of the license