

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Boating and Ocean Recreation  
Honolulu, Hawaii 96819

May 26, 2017

Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

Hawai'i

**Installation and Modification of Existing Offshore Mooring and  
Declare Project Exempt From Requirements of Chapter 343, HRS, and Title 11,  
Chapter 200, Hawaii Administrative Rules for  
Sea Paradise Scuba, Inc. (Vessel: Sea Paradise)  
Keauhou Bay, Island of Hawaii, Hawaii**

The Division of Boating and Ocean Recreation (DOBOR) is requesting that the Board of Land and Natural Resources (Board) approve the installation and modification an existing permanent offshore mooring to the subject permittee and declare installation and modification of the mooring exempt from the requirements of Hawaii Revised Statutes, Chapter 343 to prepare an Environmental Assessment (EA), due to the use of submerged State land and the proposed offshore mooring being located within the basin of Keauhou Bay Small Boat Harbor.

The applicant, Richard Kersten, is the owner of the subject company and vessel and is requesting approval for the installation and modification of an existing offshore mooring within the basin of Keauhou Bay Small Boat Harbor. The modification of the existing mooring involves the installation of a Manta Ray type mooring anchors to strengthen the existing mooring anchor system for the vessel. See Exhibit B attached for details on the mooring installation and modification.

In accordance with Hawaii Administrative Rule (HAR) Section 11-200-8(A) and the Exemption List for the Department of Land and Natural Resources (DLNR), approved by the Environmental Council, on June 5, 2015, it has been determined that the installation and modification of the existing mooring is exempt from the preparation of an EA pursuant to the following exemptions:

Item No. 13 of Exemption Class 6: "Placement or construction of accessory structures such as...mooring buoys, blocks, and piles, and other similar structures accessory to existing facilities on state land and waters."

Pursuant to Chapter 343, HRS, and Chapter 11-200, HAR, the attached Exemption Notification labeled Exhibit A was prepared. Also attached is the applicant's request for installation of the mooring and EA Exemption approval, approved Mooring Installation Plan, and the U.S. Army Corps of Engineers Nationwide Permit No. 3 (Maintenance) Verification Letter authorizing installation of the mooring in navigable waters of the U.S., labeled Exhibit B.

**RECOMMENDATION:**

Approve the installation and modification of the existing offshore mooring within Keauhou Bay and declare that, after considering the potential effects of the installed mooring as provided by Chapter 343, HRS, and Chapter 11-200, HAR, this project will probably have minimal or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment.

Respectfully Submitted,



EDWARD R. UNDERWOOD  
Administrator

Approved for Submittal:



SUZANNE D. CASE  
Chairperson

Attachments: Exhibit A – Exemption Notification  
Exhibit B – Applicant's request for approval of mooring  
installation and modification, EA Exemption, approved Mooring  
Installation Plans, and Nationwide Permit Verification Letter from  
Army Corps of Engineers

DAVID Y. IGE  
GOVERNOR OF HAWAII



**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

May 12, 2017

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

KEKOA KALUHIWA  
FIRST DEPUTY


JEFFREY T. PEARSON  
DEPUTY DIRECTOR - WATER

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

**EXEMPTION NOTIFICATION**

Regarding the preparation of an environmental assessment pursuant to Chapter 343, Hawaii Revised Statutes (HRS), and Chapter 11-200, Hawaii Administrative Rules (HAR).

Project Title:	Installation and modification of an existing offshore mooring for Sea Paradise Scuba, Inc. (Vessel Name: Sea Paradise), Keauhou Bay, Island of Hawaii, Hawaii
Project Number:	None
Project Description:	Installation and modification of an existing offshore mooring.
Chapter 343 Trigger(s)	Use of State Lands (submerged)
Exemption Class & Description:	Exemption Authority: Exemption List for the Department of Land and Natural Resources approved by the Environmental Council on June 5, 2015. Scope of Work: Installation of offshore mooring. Exemption Class 6: Construction or placement of minor structures accessory to existing facilities.
Exemption Item Number and Description:	Item No. 13 of Class 6: Placement or construction of accessory structures such as utility sheds, storage or maintenance sheds, office trailers, trash enclosures, comfort stations or sanitation facilities and related individual wastewater disposal systems, bus shelters, pavilions or picnic shelters, parking and fee collection facilities, checking stations, interpretive kiosks and displays, dock boxes, mooring cleats, bumpers, and mooring buoys, blocks and piles, and other similar structures accessory to existing facilities on state lands or waters.
Consultation:	The following agencies/entities were consulted, see attached records of consultation. <ul style="list-style-type: none"><li>• U.S. Army Corps of Engineers, Honolulu District</li><li>• Keauhou Canoe Club</li><li>• State of Hawaii, Office of Planning, Coastal Zone Management Program Office</li></ul>
Recommendation:	It is anticipated this project will have minimal or no significant effect on the environment and is presumed to be exempt from the preparation of an environmental assessment

  
Suzanne D. Case, Chairperson

  
Date

**EXHIBIT A**

From: Nakagawa, John D john.d.nakagawa@hawaii.gov  
Subject: RE: POH-2017-00029 Final NWP 3 for Sea Paradise Keauhou Bay Mooring  
Date: March 20, 2017 at 8:42 AM  
To: Richard Kersten rich@seaparadise.com  
Cc: Lum, Darryl C darryl.lum@doh.hawaii.gov, McCall, Finn D finn.d.mccall@hawaii.gov,  
Frager, Rebecca M CIV USARMY CEPOH (US) Rebecca M.Frager@usace.army.mil, Chen, Edward edward.chen@doh.hawaii.gov



Mr. Frager:

With the Corps of Engineers authorization of your existing mooring maintenance/replacement at Keauhou Bay under Nationwide Permit No. 3, you do NOT have to submit an application for CZM federal consistency review. Previously, the Corps had not yet determined that your mooring would be authorized under NWP3, and that is why we were in discussion about CZM federal consistency requirements. The Hawaii CZM Program previously issued concurrence for NWP3 on March 16, 2012.

John Nakagawa  
Hawaii Coastal Zone Management (CZM) Program  
Email: [john.d.nakagawa@hawaii.gov](mailto:john.d.nakagawa@hawaii.gov)  
Phone: (808) 587-2878

-----Original Message-----

From: Frager, Rebecca M CIV USARMY CEPOH (US) [\[mailto:Rebecca.M.Frager@usace.army.mil\]](mailto:Rebecca.M.Frager@usace.army.mil)  
Sent: Monday, March 20, 2017 8:18 AM  
To: Richard Kersten <[rich@seaparadise.com](mailto:rich@seaparadise.com)>  
Cc: [nicolas.A.Jarboe@uscg.mil](mailto:nicolas.A.Jarboe@uscg.mil); [Jason.R.Olney@uscg.mil](mailto:Jason.R.Olney@uscg.mil); Lum, Darryl C <[darryl.lum@doh.hawaii.gov](mailto:darryl.lum@doh.hawaii.gov)>; [jnakagaw@dbedt.hawaii.gov](mailto:jnakagaw@dbedt.hawaii.gov); McCall, Finn D <[finn.d.mccall@hawaii.gov](mailto:finn.d.mccall@hawaii.gov)>  
Subject: RE: POH-2017-00029 Final NWP 3 for Sea Paradise Keauhou Bay Mooring

I just realized that the final verification did not get attached to the last email, only the enclosures. I suppose you will want a record of that too! Happy Monday.

Becca Frager  
Biologist  
U.S. Army Corps of Engineers  
Honolulu District Regulatory Office  
Building 230  
Fort Shafter, HI 96858-5440  
808-835-4307

-----Original Message-----

From: Frager, Rebecca M CIV USARMY CEPOH (US)  
Sent: Friday, March 17, 2017 4:05 PM  
To: 'Richard Kersten' <[rich@seaparadise.com](mailto:rich@seaparadise.com)>  
Cc: [nicolas.A.Jarboe@uscg.mil](mailto:nicolas.A.Jarboe@uscg.mil); [nicolas.A.Jarboe@uscg.mil](mailto:nicolas.A.Jarboe@uscg.mil); [Jason.R.Olney@uscg.mil](mailto:Jason.R.Olney@uscg.mil); [Jason.R.Olney@uscg.mil](mailto:Jason.R.Olney@uscg.mil); Lum, Darryl C <[darryl.lum@doh.hawaii.gov](mailto:darryl.lum@doh.hawaii.gov)>; [jnakagaw@dbedt.hawaii.gov](mailto:jnakagaw@dbedt.hawaii.gov); [jnakagaw@dbedt.hawaii.gov](mailto:jnakagaw@dbedt.hawaii.gov); [finn.d.mccall@hawaii.gov](mailto:finn.d.mccall@hawaii.gov)  
Subject: POH-2017-00029 Final NWP 3 for Sea Paradise Keauhou Bay Mooring

Dear Mr. Kersten,

The U.S. Army Corps of Engineers, Honolulu District, has completed its review of your request for authorization dated January 3, 2017 for the proposed maintenance of the Sea Paradise Keauhou Bay Mooring, Kailua Kona, Hawaii (center coordinates: Latitude: 19.5619, Longitude: -155.9633). This office has verified that your proposed activity complies with the terms and conditions of Nationwide Permit 3 (NWP-3), Maintenance, and the overall NWP Program issued on March 17, 2012.

Please read the enclosed documents carefully. You will see that this verification expires on March 18, 2017. This is because all of the existing NWPs are scheduled to be modified, reissued, or revoked on this date and I cannot authorize any activity beyond this date. However, with this permit verification, you will have twelve (12) months from the date of the modification or revocation of the NWPs to complete the activity under the present terms and condition of these nationwide permits.

The Honolulu District Regulatory Office is digitally transmitting the attached document for your convenience. Please retain the document for your records. If you require a hard copy mailed to you, please notify me at your earliest convenience.

The Regulatory Office is committed to providing the highest level of customer service. I value your comments and appreciate you contacting me if you have any comments/ concerns regarding this permit verification and/or my customer service.

Sincerely,

Secretary,

Becca Frager  
Biologist  
U.S. Army Corps of Engineers  
Honolulu District Regulatory Office  
Building 230  
Fort Shafter, HI 96858-5440  
808-835-4307



*Sailing & Snorkeling Tours  
Manta Night Snorkeling  
Private Charters*

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Request for Exemption from Requirement for Preparation of Environmental Assessment for and Approval for the Installation and Modification of an Existing Offshore Mooring within Keauhou Bay, Kailua Kona on the Island of Hawaii

Submitted in compliance with Hawaii Revised Statutes Chapter 343 and HAR §§11-200-8; 11-200-8(b)

**Submitted to:**

Board of Land & Natural Resources, State of Hawaii, Department of Land & Natural Resources (DLNR) Division of Boating and Ocean Recreation, 4 Sand Island Access Road, Honolulu, HI 96819  
Email: [finn.d.mccall@hawaii.gov](mailto:finn.d.mccall@hawaii.gov) Phone: (808) 587-3520

**Submitted by:**

Richard Kersten, President Sea Paradise Scuba Inc. Email [rich@seaparadise.com](mailto:rich@seaparadise.com) Ph. 808-895-0003

**Request:**

Richard Kersten (hereinafter referred to as "Petitioner") requests approval for installation and modification of an existing offshore mooring within Keauhou Bay and exemption from requirement for environmental assessment report associated with the proposed mooring installation, as the proposed mooring will have little to no environmental impact, as discussed herein below:

**Reasoning and Justification for Request**

**Environmental Assessment Exemption**

- 1) The reason for the Environmental Assessment is due to the use of State submerged lands
- 2) Petitioner requests exemption from requirement for environmental assessment report associated with the proposed mooring installation, as the proposed installation will have little or no impact on the environment in the proposed location.
- 3) The current exemption list for the Department of Land and Natural Resources dated June 5, 2015 provides as follows under Exemption Class 6:

"13. Placement or construction of accessory structures such as...mooring, cleats, bumpers, and mooring buoys, blocks and piles, and other similar structures accessory to existing facilities on state land and waters."

**Project Description -**

Installation of a private offshore mooring buoy in the Keauhou Bay, Kailua Kona HI.





*Sailing & Snorkeling Tours  
Manta Night Snorkeling  
Private Charters*

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Technical Description of Proposed Installation –

The modification of the mooring will be the installation of an additional anchor immediately adjacent the existing mooring anchor. MANTA RAY anchor, a patented labor and time saving device, will be driven into the ground with no holes, no digging, and no concrete. Unlike other anchoring systems, the MANTA RAY actually compacts the soil around itself providing a safe and environmentally sensitive installation. MANTA RAY anchors are driven with conventional hydraulic/pneumatic equipment that is readily available worldwide. Once driven to the proper depth, an upward pull on the anchor tendon rotates the MANTA RAY into a perpendicular "anchor lock" position in undisturbed soil. The mooring anchor will be installed by "Malama Kai Foundation", in accordance with the attached Army Corps of Engineers permit.

Location of Proposed Installation –

The proposed mooring buoy would be located at center coordinates: Latitude: 19 degrees 33.7017'N & 155 degrees 57.79933'W. The location is approximately 440 feet from the nearest shore.

Purpose of Proposed Installation –

The proposed mooring will be used by the Petitioner solely for the purpose of mooring a sailboat for commercial purposes.

Impact on Coastal Ecosystems –

NEGLIGIBLE The proposed mooring site is 440ft from the nearest shore and is not within the Special Management Area or Shoreline Setback Area, nor is the site within a State Conservation District. This site does not provide habitat for any known endangered species of plants, birds, or mammals. The site is not within, and does not boarder any National Area Reserve, Marine Conservation District, or estuary. The site is not on or close to any reef or coral colonies. No material will be places or discharged in the project area. A MANTA RAY anchor will be utilized in order to protect the natural resources in the area. The MANTA RAY anchor is an environmentally friendly anchor system that installs easily under water with conventional equipment. No dredge or fill activities will be involved in the installation of the MANTA RAY mooring anchor. The mooring will be placed within an existing designated DLNR "Offshore" mooring area.

Impact on Marine Resources –

NONE The proposed mooring does not involve or affect the use or development of any marine or coastal resources.

Impact on Historic Resources –

NONE The project site is not within a designated historic or cultural district and has not been listed or nominated for the Hawaii or National Register of Historic Places. The proposed project site contains no known historic or archeological resources and is not within or adjacent to any Hawaiian fishpond or historic settlement area.

Impact on Scenic and Open Space Resources –

NEGLIGIBLE A , a sailboat will be located at the proposed mooring location and will be visible. The mooring ball will be visible floating on the surface of the water.

Enclosure: As Stated.



DEPARTMENT OF THE ARMY  
HONOLULU DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
FORT SHAFTER, HAWAII 96858-5440

March 17, 2017

SUBJECT: Nationwide Permit Verification for Sea Paradise Keauhou Bay Mooring,  
Kailua Kona, Hawaii; DA File No. POH-2017-00029

Richard Kersten  
Sea Paradise Scuba, Inc.  
PO Box 390159  
Keauhou, HI 96739

Dear Mr. Kersten:

The U.S. Army Corps of Engineers, Honolulu District, has completed its review of your request for authorization dated February 1, 2017 for the proposed maintenance/replacement of the Sea Paradise Mooring located in Keauhou Bay, Kailua Kona, Hawaii (Center Coordinates: Latitude: 19.5619; Longitude: -155.9633). This office has verified that your proposed activity complies with the terms and conditions of Nationwide Permit 3 (NWP-3), *Maintenance*, and the overall NWP Program issued on March 17, 2012. Please reference Department of the Army (DA) file number POH-2017-00029 in any future correspondence relating to this permit.

This NWP verification is being issued pursuant to Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and authorizes the following work as described below and as depicted on the enclosed drawings (Enclosure 1):

This project will involve the maintenance/replacement of the existing Sea Paradise commercial mooring. The proposed work includes using a hydraulic hammer to install a manta anchor, which is a "spade" type of anchor, 7-8 feet into the sea floor, 14 feet below the ocean surface, in an area with a sandy bottom. The mooring consists of a float connected to an anchor with a 20-foot long section of 3/4-inch galvanized "Campbell" dock fender chain. The anchor attaches to the chain with a 3/4-inch galvanized bolt anchor shackle with seizing wire. One 21-inch diameter midline buoy is attached to the chain. Below the top float are two 3/4-inch galvanized bolt anchor shackles attached by a 7/8-inch forged eye-eye swivel, which also has a 20-foot long section of 1 1/4-inch double braided nylon rope with two eye splices attached.

After the installation of the manta anchor, the old chain will be removed from around the boulder it is currently attached to.

In order for this NWP authorization to be valid, you must ensure that the work is performed in accordance with the *Nationwide Permit General Conditions* and the *Honolulu District Regional Conditions* (Enclosure 2), and the following project-specific special conditions:



a. Incidents where any individuals of Green Sea Turtle (*Chelonia mydas*), Hawksbill Turtle (*Eretmochelys imbricata*), Humpback Whale, (*Megaptera novaeangliae*), Loggerhead Sea Turtle (*Caretta caretta*), Hawaiian Monk Seal, (*Monachus schauinslandi*) listed by NOAA Fisheries under the Endangered Species Act appear to be injured or killed as a result of discharges of dredged or fill material into waters of the United States or structures or work in navigable waters of the United States authorized by this NWP shall be reported to NOAA Fisheries, Office of Protected Resources at (301) 713-1401 and the Regulatory Office of the Honolulu District of the U.S. Army Corps of Engineers at (808) 835-4303. The finder should leave the animal alone, make note of any circumstances likely causing the death or injury, note the location and number of individuals involved and, if possible take photographs. Adult animals should not be disturbed unless circumstances arise where they are obviously injured or killed discharge exposure or some unnatural cause. The finder may be asked to carry out instructions provided by NOAA Fisheries, Office of Protected Resources, to collect specimens or take other measurements to ensure that evidence intrinsic to the specimen is preserved.

b. For compliance with Section 7 of the Endangered Species Act: You must comply with the attached Pacific Standard Local Operating Procedure for Endangered Species (Pac-SLOPES) general conditions, special conditions, and activity-specific best management practices (BMPs) to avoid effects to threatened or endangered marine species (Enclosure 3).

c. For compliance with Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and to ensure adverse effects to essential fish habitat (EFH) are minimal, you must implement the following conservation measures:

(1) You should anchor all support vessels and install the manta anchors only in sandy areas devoid of corals, seagrass and Halimeda algae, with enough buffer to avoid indirect impacts from installation activities (i.e. increased turbidity), and to ensure sufficient mooring chain travel.

(2) You should remove existing chains without adverse effects to sensitive and hard-to-replace EFH resources, especially corals that have attached to the chains.

(3) You should have a long term maintenance plan for each mooring and buoy to ensure its integrity. Once it is no longer needed, you are responsible for removing all components of the mooring buoy to ensure that it does not become marine debris. This will avoid impacts to nearby resources from broken and derelict buoys and vessels.

(4) You should avoid discharge of pollutants from moored vessels into the marine environment. This will avoid a contribution to reduced water quality of the water column EFH in the area.

d. You may conduct maintenance, repair and/or replacement of the existing mooring gear (i.e. chains, ropes, floats, shackles, etc.), as deemed necessary, without obtaining any additional written authorization from this office. Although written authorization is not required from this office for maintenance activities associated with

this existing mooring, we recommend use of best management practices (BMPs) to avoid and minimize adverse impacts to aquatic resources.

The State of Hawaii Department of Business, Economic Development and Tourism, Office of Planning issued a Coastal Zone Management consistency general concurrence for the 2012 NWP's on March 16, 2012, so no additional authorization is required.

This verification is valid until the NWP's are modified, reissued, or revoked. All of the existing NWP's are scheduled to be modified, reissued, or revoked prior to March 18, 2017. It is incumbent upon you to remain informed of changes to the NWP's. We will issue a public notice when the NWP's are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permits are modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the NWP's to complete the activity under the present terms and conditions of these nationwide permits. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 10 and subsequent enforcement action. This authorization does not relieve you of the responsibility to obtain any other Federal, State, and/or local authorizations required by law.

Finally, General Condition #30 requires a signed certification be submitted to this office upon completion of work. Therefore, please sign, date and return the enclosed *Compliance Certification* form (Enclosure 4) within seven (7) days of completion of work to [CEPOH-RO@usace.army.mil](mailto:CEPOH-RO@usace.army.mil) or to [Rebecca.M.Frager@usace.army.mil](mailto:Rebecca.M.Frager@usace.army.mil).

Thank you for your cooperation with the Honolulu District Regulatory Program. Should you have any questions related to this determination, please contact Becca Frager of my staff via telephone at (808) 835-4307 or via e-mail at [Rebecca.M.Frager@usace.army.mil](mailto:Rebecca.M.Frager@usace.army.mil). You are encouraged to provide comments on your experience with the Honolulu District Regulatory Office by accessing our web-based customer survey form at [http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0).

Sincerely,

Tunis W. McElwain  
Chief, Regulatory Branch

Enclosure(s)

cc:

Mr. Nicolas Jarboe, USCG  
Mr. Jason Olney, USCG

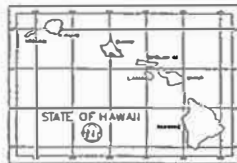
Mr. Darryl Lum, State of Hawaii Department of Health, Clean Water Branch (DOH-CWB)

Mr. John Nakagawa, State of Hawaii DBEDT Office of Planning

Mr. Finn McCall, State of Hawaii, DLNR-DOBOR

# OFFSHORE MOORING - KEAUHOU BAY FOR RICHARD KERSTEN - SEA PARADISE

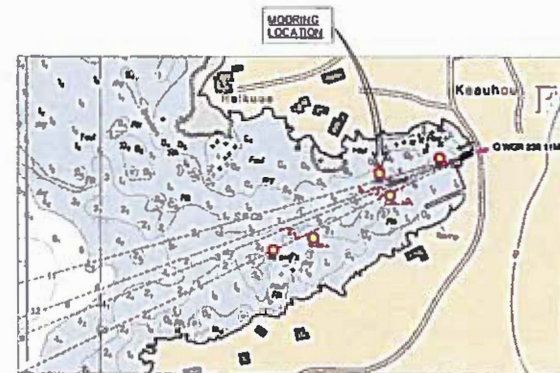
GPS COORDINATES OF MOORING : 19°33.7017'N. 155°57.7933'W  
APPROXIMATE WATER DEPTH : 14'



Department of Land and Natural Resources  
Division of Boating and Ocean Recreation  
PLAN REVIEW:

☒ Approved ☐ Approved, as noted  
☐ Rejected ☐ Revise & Resubmit

By: 1-10 Date: 1/9/17  
Corrections, comments or approval of plans shall not relieve the contractor from other local, state, federal or other agency regulations or permit conditions. This review is for general conformance with engineering design guidelines. The contractor is responsible for confirming all dimensions, quantities, fabrication requirements, and coordination with all other trades.



## INDEX TO DRAWINGS

SHEET NUMBER	DRAWING NUMBER	DESCRIPTION
1	T-1	TITLE, INDEX TO DRAWINGS, AND VICINITY MAP
2	S-1	MOORING NOTES AND ELEVATION
3	S-2	MOORING ELEVATION AND PLAN

PHREE  
CREATIONS, LLC.  
61-655 KAMEHAMEHA HIGHWAY  
HALEKUA, HAWAII 96712 • (808) 319-4990



Professional Engineer  
No. 13759-1  
HAWAII, U.S.A.

GENERAL NOTES  
Contractor shall be responsible for all permits and fees required for the project. The contractor shall be responsible for all permits and fees required for the project. The contractor shall be responsible for all permits and fees required for the project.

REVISIONS: DATE: DESCRIPTION:

PROPOSED  
OFFSHORE MOORING  
KEAUHOU BAY  
FOR  
RICHARD KERSTEN  
SEA PARADISE  
78-6831 ALO DRIVE STE 144  
HALEKUA, HAWAII 96740  
PHONE (808) 895-0003  
GPS COORDINATES 19°33.7017'N  
155°57.7933'W

## TITLE SHEET

JOB NO. 2015-0007.28 DRAWING NO.  
DESIGNED BY T-1  
CHECKED BY  
DATE DEC. 29, 2016 SHEET 1 OF 3

A. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE BUILDING CODE AS STATED BELOW. HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE CONFORMING TO OTHER STANDARDS THE MORE STRINGENT SHALL APPLY

- B. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY.
- D. DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.
- E. PRODUCT DATA REQUIRED BY THESE NOTES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

## A. MINIMUM DESIGN CRITERIA FOR MOORING IN ACCORDANCE WITH UFC 4-159-03

- MOORINGS
- B. WIND DESIGN DATA
1. BASIC WIND SPEED: 105 MPH
- C. CURRENT
1. MAX. CURRENT: 2 KNOTS
- D. WAVES AND TIDAL VARIATIONS
1. PEAK WAVE HEIGHT: 6 FEET
- DESIGN VESSEL: SEA PARADISE
1. LOA: 55'-0"
2. BEAM: 26'-0"
3. DRAFT: 6'-0" MAX
4. WEIGHT: 26 TONS
- \*MOORING IS DESIGNED FOR DESIGN VESSEL ONLY, ANY CHANGE IN MOORED VESSEL  
REQUIRES RE-ANALYSIS.

A SELECTION OF ANCHOR TYPE SHALL BE BASED UPON SURVEY SITE AND SOIL PROBING TO MINIMUM DEPTH OF 10' AT PROPOSED ANCHOR LOCATION. CONTRACTOR SHALL PROVIDE RESULTS OF SURVEY, SOIL PROBING, AND PROPOSED ANCHOR TYPE TO ENGINEER FOR APPROVAL PRIOR TO INSTALLATION

- B. INSTALL ANCHORS PER MANUFACTURERS INSTRUCTIONS. PROOF TEST TO MAXIMUM UPLIFT CAPACITY STATED ON DESIGN DRAWINGS. SUBMIT DOCUMENTATION OF PROOF LOAD TESTING TO ENGINEER FOLLOWING INSTALLATION.
- C. MAINTAIN ANCHORS SHALL NOT BE INSTALLED IN LOCATIONS WHERE SHIFTING SAND MAY RESULT IN REDUCED SOIL COVER OVER ANCHOR HEAD.

A ALL CHAIN AND HARDWARE SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH

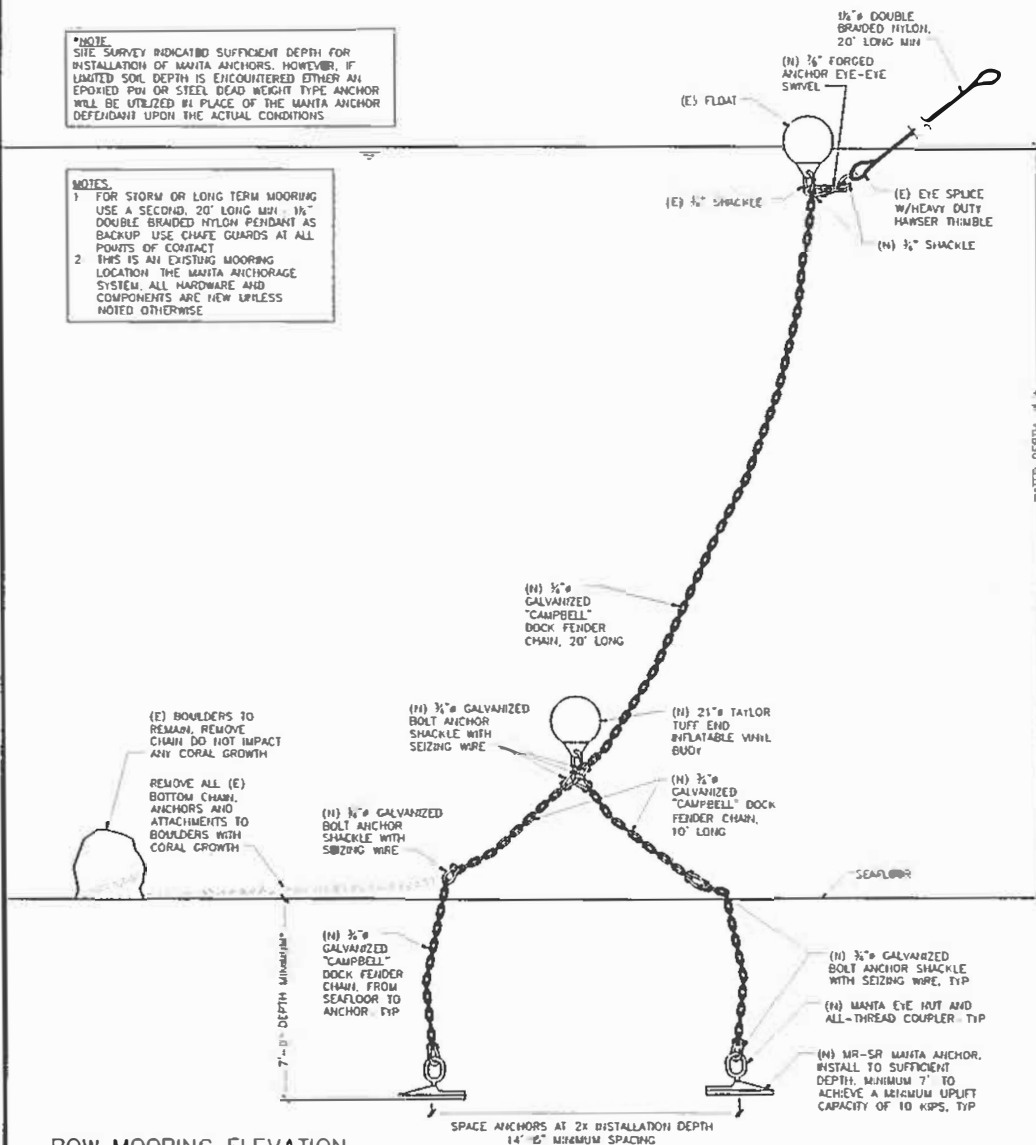
- B. THIMBLES OR CHAFE GUARDS SHALL BE USED WITH ROPES AT ALL POINTS OF CONTACT
- C. SUBMIT PRODUCT DATA OF ALL CHAINS, HARDWARE, ROPE, AND MOORING COMPONENTS TO ENGINEER FOR APPROVAL, PRIOR TO FABRICATION

A. THE VESSEL OWNER SHALL BE RESPONSIBLE FOR MAINTAINING THE VESSEL'S MOORING HARDWARE. ANY FAILURE RESULTING FROM NON MAINTAINED COMPONENTS OR UNREPAIRED DAMAGE OF THE MOORING RESULTING FROM NORMAL USE SHALL BE THE RESPONSIBILITY OF THE VESSEL OWNER.

- B. THE VESSEL OWNER SHALL INSPECT ALL MOORING HARDWARE, ROPES, AND CHAINS FROM SEA FLOOR TO PENDANT FOR SAFETY AND SECURITY NO LESS THAN TWO TIMES PER YEAR. INSPECTION REPORT/RECORDS SHALL BE KEPT BY VESSEL OWNER.
- C. THE VESSEL OWNER IS RESPONSIBLE FOR INSTALLING AND MAINTAINING CHADING GEAR ON ALL MOORING LINES.

\*NOTE  
SITE SURVEY INDICATED SUFFICIENT DEPTH FOR  
INSTALLATION OF WANTA ANCHORS. HOWEVER, IF  
LIMITED SOIL DEPTH IS ENCOUNTERED EITHER AN  
EPOXYED PUL OR STEEL DEAD WEIGHT TYPE ANCHOR  
WILL BE UTILIZED IN PLACE OF THE WANTA ANCHOR  
DEPENDANT UPON THE ACTUAL CONDITIONS

- 1) FOR STORM OR LONG TERM MOORING  
USE A SECOND, 20' LONG MWL - 1/2  
DOUBLE BRAIDED NYLON PENDANT AS  
BACKUP USE CHAFE GUARDS AT ALL  
POINTS OF CONTACT
- 2) THIS IS AN EXISTING MOORING  
LOCATION THE MANITA ANCHORAGE  
SYSTEM. ALL HARDWARE AND  
COMPONENTS ARE NEW UNLESS  
NOTED OTHERWISE



BOW MOORING ELEVATION  
NOT TO SCALE

61-855 KAMAHANE HIGHWAY  
MALENA HARAS 96712 • (808) 349-4290

[illegible]

REVISION	DATE	DESCRIPTION
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PROPOSED  
OFFSHORE MOORING  
KEAUHOU BAY  
FOR

RICHARD KERSTEN

SEA PARADISE  
78-6831 ALI DRIVE STE. 144  
KAILUA KONA, HI 96740  
PHONE (808) 895-0003

GPS COORDINATES 19°33'70.17"N  
155°57'79.33"W

SHEET TITLE

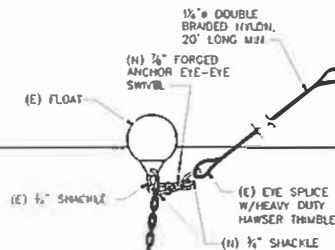
MOORING NOTES  
AND ELEVATION

JOB NO 2015-000728 DRAWING NO  
DRAWN BY S-1  
CHECKED BY  
DATE DEC 29 2016 SHEET 2 OF 3

**\*NOTE:**  
SITE SURVEY INDICATED SUFFICIENT DEPTH FOR  
INSTALLATION OF MANTA ANCHORS. HOWEVER, IF  
LIMITED SOIL DEPTH IS ENCOUNTERED EITHER AN  
EPOXYED PIN OR STEEL DEAD WEIGHT TYPE ANCHOR  
WILL BE UTILIZED IN PLACE OF THE MANTA ANCHOR  
DEFERRED UPON THE ACTUAL CONDITIONS

- NOTES:**
1. FOR STORM OR LONG TERM MOORING  
USE A SECOND, 20' LONG MNT, 1/2"  
DOUBLE BRAIDED NYLON PENDANT AS  
BACKUP. USE CHAFE GUARDS AT ALL  
POINTS OF CONTACT.
  2. THIS IS AN EXISTING MOORING  
LOCATION. THE MANTA ANCHORAGE  
SYSTEM, ALL HARDWARE AND  
COMPONENTS ARE NEW UNLESS  
NOTED OTHERWISE.

WATER DEPTH 14' ±



(N) 3/4" GALVANIZED  
"CAMPBELL"  
DOCK FENDER  
CHAIN, 25' LONG

(E) BOULDERS TO  
REMAIN. REMOVE  
CHAIN DO NOT IMPACT  
ANY CORAL GROWTH

REMOVE ALL (E)  
BOTTOM CHAIN,  
ANCHORS AND  
ATTACHMENTS TO  
BOULDERS WITH  
CORAL GROWTH

(N) 3/4" GALVANIZED  
BOLT ANCHOR  
SHACKLE WITH  
SEIZING WIRE

SEAFLOOR

(N) 1/2" GALVANIZED  
"CAMPBELL"  
DOCK FENDER  
CHAIN FROM  
SEAFLOOR TO  
ANCHOR, TYP

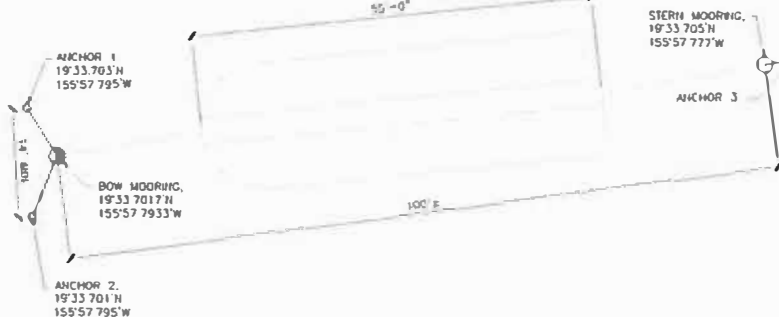
7'-0" DEPTH MINIMUM

(N) 3/4" GALVANIZED BOLT ANCHOR  
SHACKLE WITH SEIZING WIRE, TYP

(N) MANTA EYE NUT AND  
ALL-THREAD COUPLER, TYP

(N) MR-SR MANTA ANCHOR.  
INSTALL TO SUFFICIENT DEPTH.  
MINIMUM 7' TO ACHIEVE A MINIMUM  
LIFT CAPACITY OF 10 KIPS, TYP

**STERN MOORING ELEVATION**  
NOT TO SCALE



**MOORING PLAN**  
NOT TO SCALE

**PHREE  
CREATIONS, LLC.**  
61-655 KAMEHAMEHA HIGHWAY  
HALEIWA, HAWAII 96712 • (808) 349-4990



**PHREE**  
CREATIONS, LLC.  
61-655 KAMEHAMEHA HIGHWAY  
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**GENERAL NOTES**

CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION  
AND MAINTENANCE OF THE MOORING SYSTEM. THE DESIGNER  
HAS NOT CONDUCTED A VISUAL INSPECTION OF THE SITE.  
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE  
HAWAIIAN ENGINEERING CODES AND STANDARDS. THE  
DESIGNER HAS NOT CONDUCTED A VISUAL INSPECTION OF THE  
SITE. THE DESIGNER HAS NOT CONDUCTED A VISUAL INSPECTION  
OF THE SITE. THE DESIGNER HAS NOT CONDUCTED A VISUAL  
INSPECTION OF THE SITE.

REVISIONS: DATE DESCRIPTION

PROPOSED  
OFFSHORE MOORING  
KEAUHOU BAY  
FOR

**RICHARD KERSTEN**  
SEA PARADISE  
78-6831 ALB DRIVE STE 144  
KAILUA KONA, HI 96740  
PHONE (808) 895-0003  
GPS COORDINATES 19°33'70.17"N  
155°57'79.33"W

**MOORING ELEVATION  
AND PLAN**

JOB NO. 2015-000770 DRAWING NO.  
DRAWN: JAM  
CHECKED: JAM  
DATE: DEC 29, 2016 SHEET 1 OF 1