

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

October 26, 2018

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

Land Board Members:

SUBJECT: APPROVE INSTALLATION OF TWO NEW OFFSHORE MOORINGS OUTSIDE OF A DESIGNATED OFFSHORE MOORING AREA, KAUNOLU BAY AND HUAWAI BAY, ISLAND OF LANAI, FOR LANAI RESORTS, LLC (dba PULAMA LANAI). CONCUR THAT THE ISSUANCE OF A REVOCABLE PERMIT FOR THIS PROJECT WILL PROBABLY HAVE MINIMAL OR NO SIGNIFICANT EFFECT ON THE ENVIRONMENT AND ACCEPT THE FINDING OF NO SIGNIFICANT IMPACT.

REQUEST

The Division of Boating and Ocean Recreation (“DOBOR”) is requesting that the Board of Land and Natural Resources (“Board”) approve the installation of two (2) new offshore moorings off the south shore of the Island of Lanai. One mooring is proposed to be installed within Kaunolu Bay and the other is proposed within Huawai Bay, both of which are not established offshore mooring areas as defined in HAR 13-235. As required by HAR 13-235-9, any applicant requesting to moor a vessel outside of an established offshore mooring area must obtain approval from the Board.

The applicant, Lanai Resorts, LLC dba Pulama Lanai (“Applicant”) is requesting to install the two (2) new offshore moorings along the south shore of the island of Lanai for use as day-use moorings.

PERMITS AND COMPLIANCE WITH STATE AND FEDERAL LAW:

In order to comply with Federal Law (Section 10 of the Rivers and Harbors act of 1899), DOBOR is requiring that all offshore moorings under their jurisdiction obtain a permit from the U.S. Army Corps of Engineers (“ACOE”). In addition, to ensure that the mooring system is structurally sound, DOBOR is requiring that all offshore mooring permittees submit an Offshore Mooring Installation Plan, prepared by a licensed structural engineer, for approval.

The Applicant has obtained a Nationwide Permit Verification from the ACOE authorizing the installation and use of the proposed moorings. The applicant has also obtained a Section 401 Water Quality Certification from the Department of Health, Clean Water Branch, which is required for all new offshore moorings. A Mooring Installation Plan, prepared by a licensed structural engineer, has also been submitted to and approved by DOBOR Engineering Branch. The ACOE Permit and approved Mooring Installation Plan are also attached with **Exhibit A**.

In accordance with HAR 13-235-6, the National Marine Fisheries Service (NMFS) and DLNR,

Item J-2

Division of Aquatic Resources (DAR) must determine whether an offshore mooring is detrimental to the habitat or spawning ground of marine life. Through the ACOE permitting process, NMFS has been consulted and determined the offshore mooring has no detrimental effect to the habitat or spawning ground of marine life. DAR has also been consulted and concurred that the offshore mooring has no detrimental effect to the habitat or spawning ground of marine life.

ENVIRONMENTAL ASSESSMENT:

The Applicant has prepared a Final Environmental Assessment (FEA) and issued a Finding of No Significant Impact (FONSI) in accordance with HRS Chapter 343 and HAR Chapter 11-200. A copy of the FEA and FONSI are available on the Office Environmental Quality Control's website at the following link:

http://oeqc2.doh.hawaii.gov/EA_EIS_Library/2017-10-08-LA-FEA-Lanai-Exclusive-Moorings.pdf#search=Pulama%20Lanai

RECOMMENDATION:

That the Board:


1. ^{Declare} ~~Concur~~ that the issuance of a revocable permit for this project will probably have minimal or no significant effect on the environment and accept the finding of no significant impact.
2. Approve the installation of two (2) proposed offshore moorings located in Kaunolu Bay and Huawai Bay off the south shore of the Island of Lanai, which are located outside of an established offshore mooring area.

Respectfully Submitted,



EDWARD R. UNDERWOOD, Administrator
Division of Boating & Ocean Recreation

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE, Chairperson
Board of Land and Natural Resources

Attachment:

- A. Applicant's request for approval of mooring, approved Mooring Installation Plans, Nationwide Permit Verification Letter from Army Corps of Engineers

EXHIBIT A



July 31, 2018

Mr. Finn McCall
DLNR-DOBOR
4 Sand Island Access Road
Honolulu, HI 96819
By Federal Express

Re: Two Offshore Private Moorings South of the Island of Lānaʻi

Dear Finn:

This letter is our request for your submission to the Board of Land & Natural Resources (BLNR) for approval for installation of two private submerged moorings that we would like to place south of the island of Lānaʻi that are outside of a designated offshore DOBOR mooring area. The two mooring locations are near Moku Naio (referred to as 'Coral Garden') and near Poʻopoʻo (referred to as 'Ridgeline').

The following documents are included to show compliance with the applicable federal and state laws focusing on safety and impact to natural resources according to Section 10 of the Federal Rivers and Harbors Act of 1899 and Hawaiʻi Administrative Rule, Section 13-231-2:

- The Environmental Assessment (EA) was completed, with DOBOR issuing a FONSI, see attached September 21, 2017 letter from Edward Underwood;
- The "Mooring Installation Plan & Underwater Photos" completed by Sea Engineering, see attached July, 2018 report;
- The U.S. Army Corps of Engineers Provisional Nationwide Permit Verification was obtained, see March 15, 2018 letter from Tunis W. McElwain;
- The Department of Health, Clean Water Branch Section 401 WQC certification, see July 12, 2018 letter from Alec Wong, which was a condition of the Army Corps verification.
- The Hawaiʻi Coastal Zone Management Permit was obtained, see February 14, 2018 letter from Leo R. Asuncion; and

We are requesting a BLNR hearing with a DOBOR recommendation for approval. Would you let us know if this is possible or if you need any additional information? Mahalo!

Me ke aloha pumehana
With warm aloha,

Lynn P. McCrory
Senior Vice President of Government Affairs

C: Kurt Matsumoto (w/enclosures)
Peter Young (w/enclosures)
Ed Underwood (w/oenclosures)

EXHIBIT A

Enclosures (5)

DAVID Y. IGE
GOVERNOR OF HAWAII



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

ROBERT K. MASUDA
FIRST DEPUTY

JEFFREY T. PEARSON
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

4 Sand Island Access Road
HONOLULU, HAWAII 96819

September 21, 2017

BOR 037.18

Director Scott Glenn
Office of Environmental Quality Control, Department of Health
State of Hawai'i
235 S. Beretania Street, Room 702
Honolulu, Hawai'i 96813

Re: Final Environmental Assessment for Exclusive Permanent Moorings off Mānele Harbor and Exclusive Day Use Dive Site Moorings Lāna'i South Shore

Dear Director Glenn:

With this letter, the Division of Boating and Ocean Recreation of the Hawai'i Department of Land and Natural Resources (DLNR-DOBOR) hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the Exclusive Permanent Moorings off Mānele Harbor and Exclusive Day Use Dive Site Moorings Lāna'i South Shore situated seaward of Mānele Boat Harbor and Lāna'i South Shore, on the island of Lāna'i for publication in the next available edition of the Environmental Notice.

The Applicant has included copies of public comments and the corresponding responses from the applicant that were received during the 30-day public comment period on the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI).

Enclosed is a completed OEQC Publication Form, two copies of the FEA-FONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in Word format.

If there are any questions, please contact me at (808) 587-1966.

Sincerely,

A handwritten signature in black ink, appearing to read "Edward Underwood".

Edward Underwood, Administrator

Enclosures



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

June 11, 2018

SUBJECT: Nationwide Permit Verification for Mooring Station Installations in Kaunolu Bay, Island of Lanai, Hawaii, Department of the Army File No. POH-2018-00038

Mr. Kurt Matsumoto
Lanai Resorts, LLC
733 Bishop Street, Suite 2000
Honolulu, Hawaii 96813

Dear Mr. Matsumoto:

The Honolulu District, U.S. Army Corps of Engineers (Corps) has completed its review of your Pre-Construction Notification dated January 31, 2018, requesting authorization for the proposed construction/placement of two mooring buoys of which one buoy would be placed in Kaunolu Bay (20.7362 N, 156.9675 W.) and the other would be placed in Huawai Bay (20.7348 N., 156.9154 W.). Both are located in the vicinity of Lanai, Hawaii. Please reference Department of the Army (DA) file number POH-2018-00038, in any future correspondence related to this permit.

This letter verifies your activity complies with the terms and conditions of Nationwide Permit (NWP) #9, (Structures in Fleeting and Anchorage Areas) issued on March 19, 2017 (82 FR 1860, January 6, 2017). This NWP verification letter is being issued pursuant to Section 10 of the Rivers and Harbors Act of 1899 for work or structures in, over, under or affecting navigable waters of the U.S. You are authorized to conduct the following work as described below and as depicted on the enclosed drawings (Enclosure 1):

Install two single-point mooring stations. Each designed for one (1) 41-foot mono-hull vessel and one (1) 46-foot catamaran vessel. The mooring stations will consist of a 4,000-lb pre-cast concrete anchor block attached to a 24-inch subsurface float. The mooring station at Kaunolu Bay will have a 15-foot storm pendant via 36-feet of ½-inch galvanized chain. The mooring station at Huawai Bay will have a 15-foot storm pendant via 53 feet of ½-inch galvanized chain. The subsurface floats will be located approximately 10 feet below the water surface. Mooring placement will take approximately one (1) day. Materials will be loaded onto a work vessel in Honolulu and transported to the project site.

The mooring anchors will be located at a depth of -46 feet (MLLW) and -63 feet (MLLW) at the Coral Garden and Ridgeline locations, respectively. The mooring stations will have a deadweight anchor consisting of a rectangular block of pre-cast concrete with an approximate weight of 4,000 pounds. The anchors will be 4'x4'x20" with a total footprint of 16-square feet on the

seafloor, which consists of un-colonized rocky marine substrate and sandy seafloor.

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*, the *Honolulu District Regional Conditions* (Enclosure 2), and the following project-specific Special Conditions:

1. **Pre-Construction Meeting.** You must extend an invitation to the Corps to attend a pre-construction meeting to discuss the terms and conditions of this permit. The pre-construction meeting must be scheduled a minimum of 7-days prior to commencement of the authorized work. The pre-construction meeting must be attended by the following individuals, the permittee or duly authorized agent (as identified on your PCN) and your construction contractor. The Corps may attend the pre-construction meeting in person or via teleconference. The intent of the pre-construction meeting is to ensure all parties are aware of the permit terms and conditions and so the Corps may obtain verbal confirmation from the permittee and construction contractor of the ability to comply with the permit terms and conditions. Any modifications to the scope of work must be identified at this meeting so the Corps may determine if the proposed modification requires modification of your permit. To arrange this meeting, contact the reviewing project manager Mr. Tunis McElwain at 808-835-4310 or by email Tunis.W.McElwain@usace.army.mil, and copy the Regulatory Branch email CEPOH-RO@usace.army.mil. If you need additional assistance, contact this office at 808-835-4303 and request a preconstruction conference for the project's U.S. Army Corps of Engineers permit number POH-2018-00038.
2. At least one week prior to the commencement of any work authorized by this permit, the permittee must advise the project manager, Mr. Tunis McElwain, in writing at:

U.S. Army Corps of Engineers - Honolulu District
Building 230, CEPOH-RO
Attn: Mr. Tunis McElwain
Fort Shafter, HI 96858-5440

or via email at CEPOH-RO@usace.army.mil, addressed to Mr. Tunis McElwain, of the date the authorized activity will commence and the name and telephone number of all contractors or other persons performing the work. A copy of this permit and drawings must be provided to the contractor and made available to any regulatory representative during an inspection of the project site. The subject line of the message must contain the U.S. Army Corps of Engineers permit number.

3. The permittee must comply with the attached USFWS Pac-SLOPES Activity Best Management Practices to avoid effects to threatened or endangered species (Enclosure 4).
4. Special Condition: Incidents where any individuals of Green Sea Turtle (*Chelonia mydas*), Hawksbill Turtle (*Eretmochelys imbricata*), 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 structures 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.
5. The applicant must install the anchor only in sandy/silty areas devoid of corals, sea grass, and Halimeda algae and arrange for the prevention of the possibility of the mooring line dragging.
6. The applicant must have a plan for the long term maintenance of the mooring and buoy, including complete removal of the mooring and buoy in their entirety upon the end of the applicant's use of the mooring.
7. The applicant will provide USACE and the Division of Boating and Ocean Recreation with an as-built report, including positioning, material consistency, and photographs of the mooring station and its components.
8. The applicant must comply with the project BMP plan.
9. The Permittee and/or their designated contractor(s) must immediately stop work and notify the Corps' District Engineer at (808) 835-4303, and State Historic Preservation Division at (808) 692-8015 within 24 hours if, during the course of conducting authorized work, human burials, cultural resources, or historic properties, as identified by the National Historic Preservation Act, are discovered and may be affected by the work. Failure to stop work in the area of discovery until the Corps can comply with the provisions of 33 CFR 325 Appendix C, the National Historic Preservation Act, and other pertinent laws and regulations could result in a violation of state and federal laws. Violators are subject to civil and criminal penalties.
10. Turbidity and siltation from project-related work shall be minimized and contained to within the vicinity of the site through appropriate use of effective silt containment devices and curtailment of work during adverse tidal and weather conditions.
11. The authorized work must occur only during low tide.

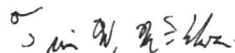
Verification of your project under this NWP is valid until **March 19, 2022** unless this NWP is modified, reissued, or revoked prior to that date. It is incumbent upon you to remain informed of changes to the NWPs. If the Corps modifies, reissues, or revokes any NWP at an earlier date, we will issue a public notice announcing the changes. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of the Clean Water Act and/or Rivers and Harbors Act 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.

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 3) within 7 days of completion of work to the email address specified below or to the mailing address indicated on the letterhead above.

This letter of authorization does not obviate the necessity to obtain any other Federal, State, or local permits, which may be required. Prior to the initiation of any construction, projects qualifying for this NWP must receive a Section 401 Water Quality Certification (WQC) (or waiver), issued by the State of Hawaii, Department of Health, Clean Water Branch (DOH-CWB).

Thank you for your cooperation with the Honolulu District Regulatory Program. Should you have any questions related to this authorization, please contact me at (808) 835-4300 or via e-mail at Tunis.W.McElwain@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.

Sincerely,



Digitally signed by
MCELWAIN.TUNIS.W.1239553008
DN: c=US, o=U.S. Government, ou=DoD,
ou=PKI, ou=USA,
cn=MCELWAIN.TUNIS.W.1239553008
Date: 2018.06.13 08:43:08 -10'00'

Tunis W. McElwain
Chief, Regulatory Branch

Enclosures

CC:

USCG (John Bannon, Jason Olney)
State of Hawaii Department of Health, Clean Water Branch (DOH-CWB)
State of Hawaii Office of Planning, Coastal Zone Management Program (Hawaii CZM Program)
Hookuleana, LLC (Peter Young, Agent)

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



Lynn McCrory
Lynn McCrory
Professional Engineer
No. 13768-S
State of Hawaii

GENERAL NOTES
CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES BEFORE COMMENCING WORK.
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HAWAIIAN CONSTRUCTION CODE AND THE LATEST EDITION OF INTERNATIONAL BUILDING CODE AND THE LATEST EDITION OF INTERNATIONAL PLUMBING CODE.
THE PROJECT IS LOCATED AND TO BE CONSTRUCTED IN ACCORDANCE WITH THE HAWAIIAN CONSTRUCTION CODE AND THE LATEST EDITION OF INTERNATIONAL BUILDING CODE AND THE LATEST EDITION OF INTERNATIONAL PLUMBING CODE.

REVISION MARK • DATE • DESCRIPTION
PROPOSED PROJECT
DAY-USE MOORING
HUAWAI BAY, LANAI
FOR:

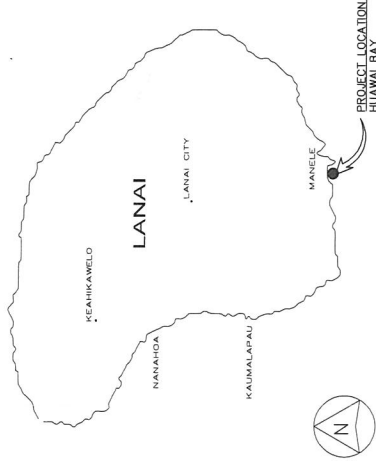
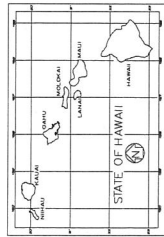
LYNN MCCRORY
733 BEKOP ST. SUITE 2000
HONOLULU, HI 96813
PHONE: (808) 237-2213
GPS COORDINATES: 20.73482N
156.91544W

JOB NO. 2015-000734 DRAWING NO.
DESIGN: JMM CHECKED: JMM
DATE: FEB. 1, 2017 SHEET 1 OF 2
T-1

TITLE SHEET

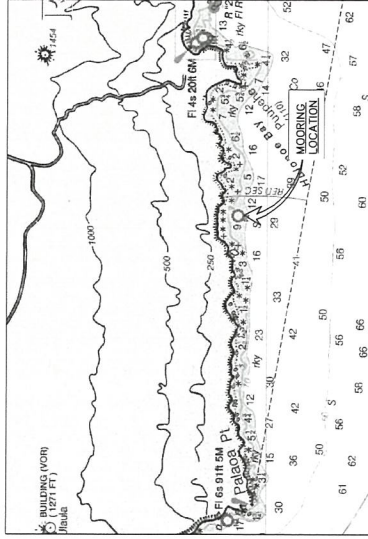
DAY-USE MOORING - HUAWAI BAY, LANAI

POINT OF CONTACT : LYNN MCCRORY
GPS COORDINATES OF MOORING : 20.73482°N, 156.91544°W
APPROXIMATE WATER DEPTH : 63'
SITE : P1



VICINITY MAP

9/26/18



LOCATION MAP

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

**PHREE
CREATIONS, LLC.**

61-655 KAMEHAMEHA HIGHWAY
HALEIWA, HAWAII 96712 • (808) 348-4990



Lynn McCrory
Professional Engineer
State of Hawaii
License No. 15128P-5
This seal is a reproduction of the original seal and is not valid for use in any other jurisdiction.
This seal is valid only for the project and the contribution of this project as indicated on the drawing.
It shall be used only by observation.

GENERAL NOTES
CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES AS APPLICABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES AS APPLICABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES AS APPLICABLE.

REVISION MARK • **DATE** • **DESCRIPTION**
PROPOSED
DAY-USE MOORING
HUAWAI BAY, LANAI
FOR:

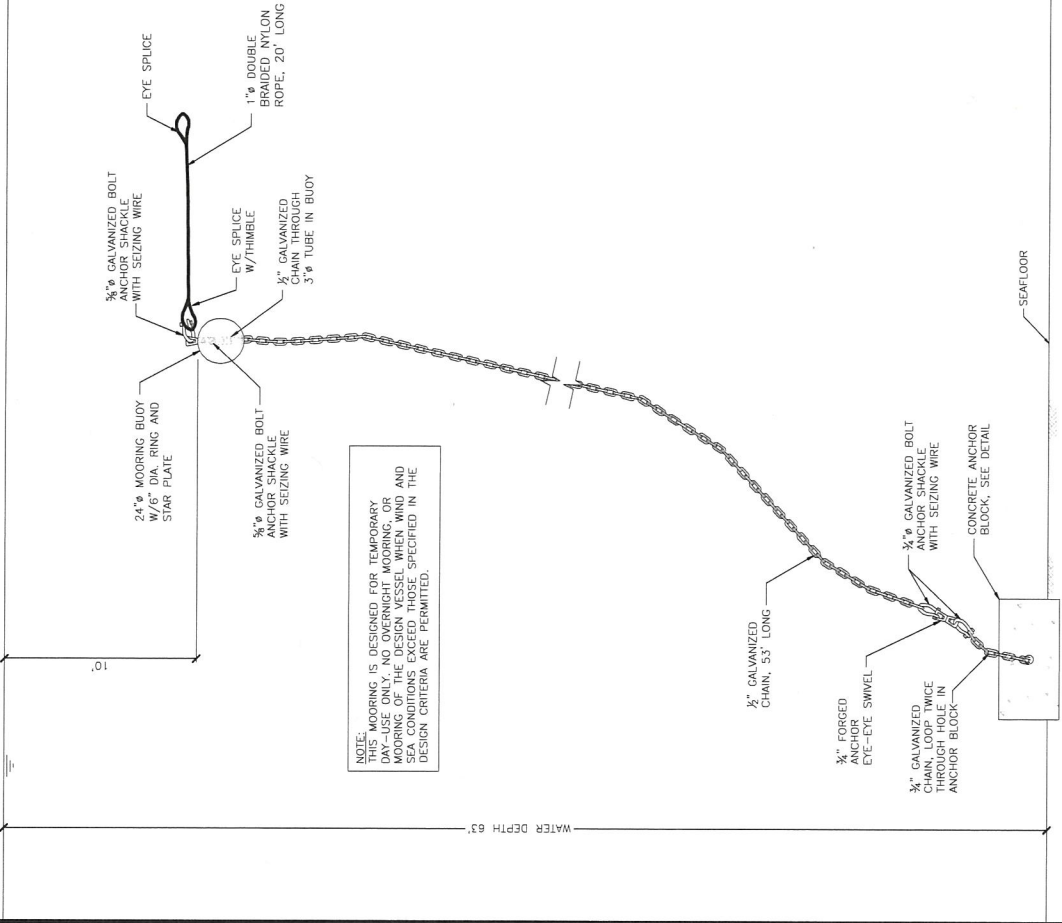
LYNN MCCORRY

733 BISHOP ST. SUITE 2000
HONOLULU, HI 96813
PHONE: (808) 237-2213

GPS COORDINATES: 20.73482°N
156.91544°W

MOORING PLAN
SHEET TITLE

JOB NO. 2015-00073A DRAWING NO. S-1
DRAWN: JMM CHECKED: JMM
DATE: FEB. 1, 2017 SHEET 2 OF 2



NOTE:
THIS MOORING IS DESIGNED FOR TEMPORARY DAY-USE ONLY. NO OVERNIGHT MOORING, OR MOORING UNDER ANY UNUSUAL WINDS AND SEA CONDITIONS EXCEED THOSE SPECIFIED IN THE DESIGN CRITERIA ARE PERMITTED.

MOORING ELEVATION
NOT TO SCALE

- GENERAL:**
- 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.
 - 1. COUNTY OF MAUI: AMENDED IBC, 2006
 - 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.

- DESIGN CRITERIA:**
- A. MINIMUM DESIGN CRITERIA FOR MOORING IN ACCORDANCE WITH UFC 4-159-03:
 - 1. TYPE I, MID-WEATHER MOORING
 - B. WIND DESIGN DATA:
 - 1. BASIC WIND SPEED: 40 MPH
 - C. CURRENT:
 - 1. MAX CURRENT: 1.0 KNOTS
 - D. WAVES AND TIDAL VARIATIONS:
 - 1. PEAK WAVE HEIGHT: 2 FEET OR LESS
 - 1. LENGTH: 46'-0"
 - 2. WIDTH: 14'-0"
 - 3. DRAFT: 4'-0"
 - 4. WEIGHT: 6.5 NET TONS
 - E. **8 1/2" x 25 1/2" NO. OVERNIGHT MOORING OR MOORING UNDER UNUSUAL WINDS AND SEA CONDITIONS EXCEED THOSE SPECIFIED IN THE DESIGN CRITERIA ARE PERMITTED. THE MOORING IS DESIGNED FOR DESIGN VESSEL ONLY. ANY CHANGE IN MOORED VESSEL REQUIRES RE-ANALYSIS.**

- CHAIN, HARDWARE, ROPE, AND MOORING COMPONENTS**
- A. ALL CHAIN AND HARDWARE SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.
 - B. THIMBLES OR CHAIN GUARDS SHALL BE USED WITH ROPES AT ALL POINTS OF CONTACT.
 - C. APPROVAL PRIOR TO FABRICATION.

- MOORING HARDWARE, MAINTENANCE AND INSPECTION**
- A. THE VESSEL OWNER SHALL BE RESPONSIBLE FOR MAINTAINING THE VESSEL'S MOORING HARDWARE. ANY FAILURE RESULTING FROM WEAR OR COMPONENTS OF 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 AND REPORTED TO HARBORMASTER/DNR AS REQUIRED.
 - C. THE VESSEL OWNER IS RESPONSIBLE FOR INSTALLING AND MAINTAINING CHAFING GEAR ON ALL MOORING LINES.



NOTE:

1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4,000 PSI.
2. REINFORCING BARS SHALL BE ASTM A615, GRADE 60, $F_y=60,000$ PSI.
3. APPROXIMATE WEIGHT OF BLOCK 4000 LBS.
4. ACCEPTABLE ANCHOR ALTERNATIVES INCLUDE:
 - a. TYPE "A" PRECAST MOORING BLOCK (3860 LB.) PROVIDED BY WALKER INDUSTRIES LTD. MAUI.
 - b. MANTA EARTH ANCHOR (32" DIA. BASE, 42" SHANK)
 - c. MANTA EARTH ANCHOR WITH 7" MINIMUM EMBEDMENT

ANCHOR BLOCK DETAILS
SCALE: 3/4" = 1'-0"

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

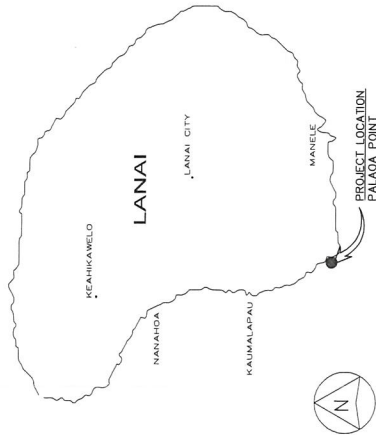
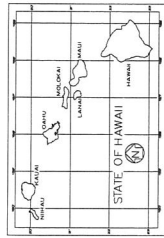


Lynn McCrory
PROFESSIONAL ENGINEER
THESE WORKS WERE PREPARED BY
ME OR UNDER MY CLOSE PERSONAL
SUPERVISION AND CONTRIBUTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.

GENERAL NOTES
1. PROPOSED MOORING SHALL BE INSTALLED IN ACCORDANCE WITH THE HAWAIIAN BOAT MOORING ACT AND REGULATIONS AND THE HAWAIIAN BOAT MOORING ACT REGULATIONS AND THE HAWAIIAN BOAT MOORING ACT REGULATIONS.
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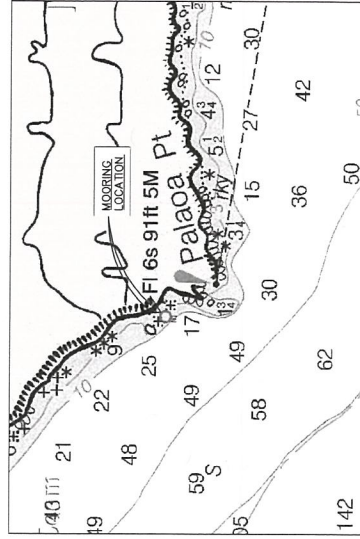
DAY-USE MOORING - PALAOA POINT, LANAI

POINT OF CONTACT : LYNN MCCRORY
GPS COORDINATES OF MOORING : 20.73627°N, 156.96758°W
APPROXIMATE WATER DEPTH : 46'
SITE : N1



VICINITY MAP

9/26/18



LOCATION MAP

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2	S-1 MOORING PLAN

REVISION MARK • DATE • DESCRIPTION

PROPOSED
DAY-USE MOORING
PALAOA POINT, LANAI
FOR:

LYNN MCCRORY
732 8080'S ST. SUITE 2000
HONOLULU, HI 96813
PHONE: (808) 237-2213
GPS COORDINATES: 20.73627°N
156.96758°W

SHEET TITLE

TITLE SHEET

DRAWING NO. 2015-000734
DRAWN: JMM
CHECKED: JMM
DATE: FEB. 1, 2017
SHEET 1 OF 2



Lynn McCrory
 PROFESSIONAL ENGINEER
 STATE OF HAWAII
 LICENSE NO. 15179B-5
 THIS SEAL IS THE PROPERTY OF THE ENGINEER AND SHALL BE USED ONLY FOR THE PROJECT AND CONSTRUCTION OF THIS PROJECT. IT WILL BE FORFEIT IF REPRODUCED OR USED FOR ANY OTHER PROJECT.

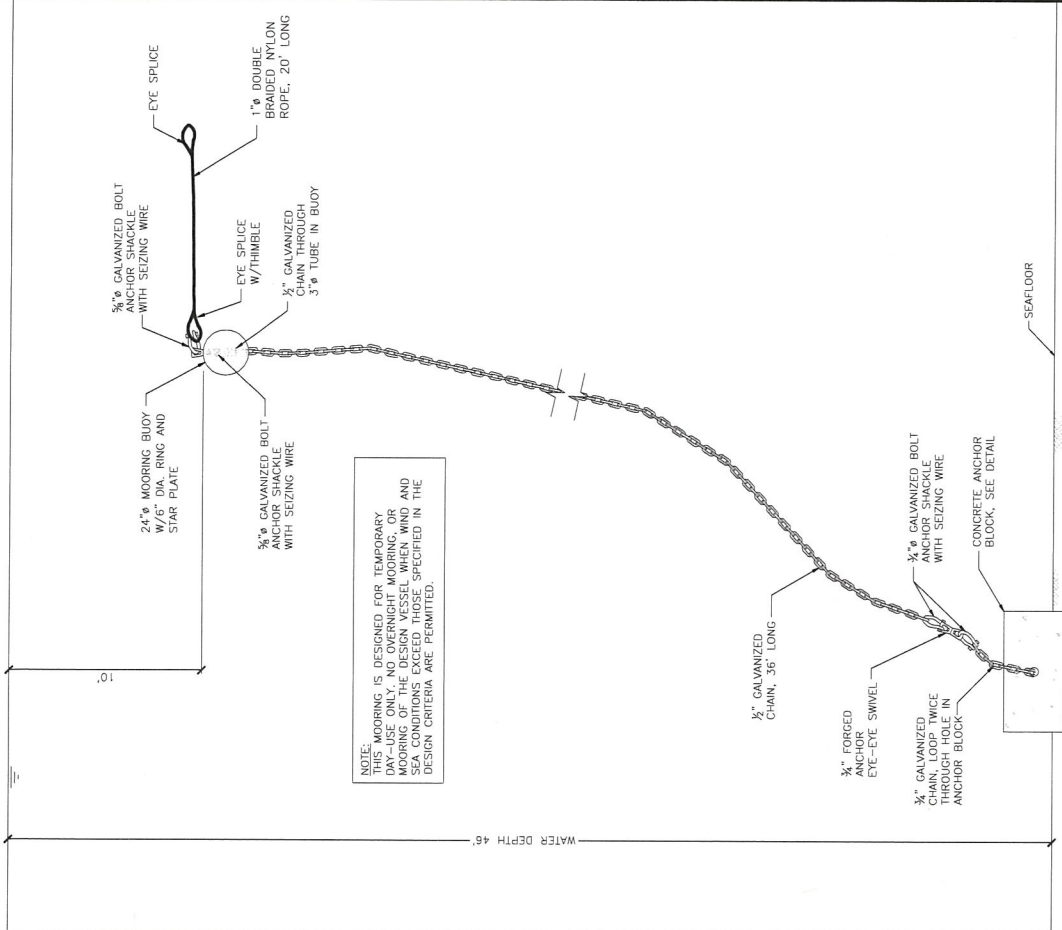
GENERAL NOTES
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES.

REVISION MARK • DATE • DESCRIPTION
 PROPOSED PROJECT
 DAY-USE MOORING
 PALAÇA POINT, LANAI
 FOR:

LYNN MCCRORY
 739 BISHOP ST. SUITE 2000
 HONOLULU, HAWAII 96813
 PHONE: (808) 237-2213
 GPS COORDINATES: 20.736277N
 156.967587W

SHEET TITLE
MOORING PLAN

DBS NO. 2015-000734 DRAWING NO. S-1
 DRAWN: JMM CHECKED: JMM
 DATE: FEB. 1, 2017 SHEET 2 OF 2



- GENERAL:**
- 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.
 - COUNTY OF MAUI: AMENDED IBC, 2006
 - 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.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY.
 - DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.
 - PRODUCT DATA REQUIRED BY THESE NOTES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

- DESIGN CRITERIA:**
- MINIMUM DESIGN CRITERIA FOR MOORING IN ACCORDANCE WITH UFC 4-159-03.
 - WIND DESIGN DATA:
 - TYPE I MILD-WEATHER MOORING
 - BASIC WIND SPEED: 40 MPH
 - CURRENT:
 - MAX CURRENT: 1.0 KNOTS
 - WAVES AND TIDAL VARIATIONS:
 - PEAK WAVE HEIGHT: 2 FEET OR LESS
 - DESIGN VESSEL:
 - LENGTH: 46'-0"
 - WIDTH: 14'-0"
 - DRAFT: 4'-0"
 - WEIGHT: 6.5 NET TONS
- THIS MOORING SHALL BE USED IN ACCORDANCE WITH THE HAWAII ADMINISTRATIVE RULES SET FORTH IN §§13-257. NO OVERNIGHT MOORING OR MOORING OF THE DESIGN VESSEL IS PERMITTED. CONDITIONS EXCEED THOSE SPECIFIED IN THE DESIGN CRITERIA ARE PERMITTED. THE MOORING IS DESIGNED FOR DESIGN VESSEL ONLY. ANY CHANGE IN MOORED VESSEL REQUIRES RE-ANALYSIS.

- CHAIN, HARDWARE, ROPE, AND MOORING COMPONENTS**
- ALL CHAIN AND HARDWARE SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.
 - THIMBLES OR CHAFE GUARDS SHALL BE USED WITH ROPES AT ALL POINTS OF CONTACT.
 - SUBMIT PRODUCT DATA OF ALL CHAINS, HARDWARE, ROPE, AND MOORING COMPONENTS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

- MOORING HARDWARE, MAINTENANCE AND INSPECTION**
- THE VESSEL OWNER SHALL BE RESPONSIBLE FOR MAINTAINING THE VESSEL'S MOORING HARDWARE. ANY FAILURE RESULTING FROM MAINTENANCE OR INSPECTION SHALL BE THE RESPONSIBILITY OF THE VESSEL OWNER.
 - 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 AND REPORTED TO HARBORMASTER/DLNR AS REQUIRED.
 - THE VESSEL OWNER IS RESPONSIBLE FOR INSTALLING AND MAINTAINING CHAFING GEAR ON ALL MOORING LINES.

