

# NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

LEGAL AD DATE: day August 9, 2019

## MULTI-STEP INVITATION FOR BIDS No. IFB-20-01-NELHA

### SEALED TECHNICAL PROPOSALS FOR

## UNDERWATER PIPELINE SURVEY

WILL BE RECEIVED UP TO 2:00 P.M. (HST) ON OCTOBER 25, 2019

AT THE ADMINISTRATIVE OFFICES OF THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

IF DELIVERING THE PROPOSAL IN PERSON OR VIA FEDERAL EXPRESS OR UNITED PARCEL SERVICE THE ADDRESS IS 73-987 MAKAKO BAY DRIVE, KAILUA-KONA, HAWAII 96740.

IF DELIVERING THE PROPOSAL VIA THE U.S. POSTAL SERVICE THE ADDRESS IS 73-4460 QUEEN KAAHUMANU HIGHWAY, #101, KAILUA-KONA, HAWAII 96740.

DIRECT QUESTIONS RELATING TO THIS SOLICITATION TO ALEXANDER LEONARD

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This solicitation is provided to you for information purposes and is not an official document unless you register your company.

If interested in responding to this solicitation, you may choose to submit your offer on the downloaded document provided you register your company by fax or email for this specific solicitation.

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FAX No.: (808) 327-9586  
E-Mail Address: [bids@nelha.org](mailto:bids@nelha.org)

Provide the following information:

⊕ Name of Company	⊕ Mailing Address
⊕ Name of Contact Person	⊕ Telephone Number
⊕ Facsimile Number	⊕ Solicitation Number

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⊕ Name of Company	⊕ Mailing Address
⊕ Name of Contact Person	⊕ Telephone Number
⊕ Facsimile Number	⊕ Solicitation Number
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**2. Download this solicitation from the following pages provided you register your company as stated above.**

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**NOTICE TO BIDDERS:  
INVITATION FOR BIDS**

**NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY (NELHA)**

**Solicitation No. IFB-20-01-NELHA**

**UNDERWATER PIPELINE SURVEY**

Pursuant to the Hawaii Public Procurement Code, Chapter 103D, Hawaii Revised Statutes, the Natural Energy Laboratory of Hawaii Authority is soliciting technical proposals and bids to provide survey and mapping services to map the current extents and precise locations of six seawater pipelines, as well as to record detailed, GPS-coordinated imagery of the state of the pipes and their associated hold-downs, deployment bridles and other associated appurtenances and features in Kona, Hawaii. Bids shall include all vehicles, vessels, equipment, materials and personnel required to launch, operate and recover the survey instrument platform used to perform the field-work, as well as for the data recording, processing, mapping and reporting required to provide the project deliverables.

**Project Description**

The Natural Energy Laboratory of Hawaii Authority also referred to as NELHA or STATE herein, is soliciting technical proposals and bids for underwater pipeline survey and mapping services. Please read the Invitation for Bids package carefully for the specific services required and deadlines for completion of services.

**Bid Documents**

Invitation for Bids (IFB) documents may be obtained in person from the Administrative Offices of the Natural Energy Laboratory of Hawaii Authority located at 73-987 Makako Bay Drive, Kailua-Kona, Hawai'i between the hours of 7:30 a.m. to 4:30 p.m., Monday through Friday, except for State and Federal holidays, or they may be downloaded from <http://spo3.hawaii.gov/notices/notices>. All interested parties must register with said office at the time the IFB documents are requested. PLEASE NOTE: REGISTRATION IS MANDATORY.

**Bid Requirements**

This procurement solicitation is structured as a "multi-step invitation for bids". A complete proposal under this IFB is comprised of two separate submissions: 1) a Technical Proposal and

2) a Price Bid. Price Bids will only be accepted from Offerors whose Technical Proposals have been found to meet the criteria of the IFB.

All written questions must be submitted to NELHA by 2:00 p.m., Hawaii Standard Time (HST) on September 9, 2019.

Unpriced Technical Proposals shall be received up to 2:00 p.m., HST, on October 25, 2019 at the Administrative Offices of the Natural Energy Laboratory of Hawaii Authority 73-987 Makako Bay Drive, Kailua-Kona, HI 96740. Proposals can also be mailed to the Natural Energy Laboratory of Hawaii Authority, 73-4460 Queen Kaahumanu Highway, Kailua-Kona, HI 96740.

All proposals must comply with the GENERAL CONDITIONS, Exhibit G and NELHA SPECIAL CONDITIONS, EXHIBIT H. Offerors are encouraged to carefully read the entire IFB document. Price Bids must be submitted on enclosed proposal forms with an original signature.

All proposals must comply with Section 3-122-112, Hawaii Administrative Rules (HAR). Offeror is advised that if awarded a contract under this solicitation, upon award of the contract Offeror shall furnish proof of compliance with the requirements of Section 103D-310(c), HRS:

- 1) Chapter 237, tax clearance;
- 2) Chapter 383, unemployment insurance;
- 3) Chapter 386, workers' compensation;
- 4) Chapter 392, temporary disability insurance;
- 5) Chapter 393, prepaid health care; and
- 6) One of the following:
  - a. Be registered and incorporated or organized under the laws of the State, hereinafter referred to as a "Hawaii business"; or
  - b. Be registered to do business in the State, hereinafter referred to as a "compliant non-Hawaii business."

Price Bids will be accepted only from Offerors whose Technical Proposals have been found acceptable based on the criteria set forth in the IFB. Qualified Offerors will be contacted and invited in writing to submit a Price Bid. Delivery address for Price Bids is the same as given above for the Technical Proposals. The date and time Price Bids are due is given in Section 1.03 of this IFB. At that time, bids will be publicly opened in the presence of two (2) or more procurement officials at the Administrative Offices of the Natural Energy Laboratory of Hawaii Authority. Late bids will not be accepted.

CRITICAL TECHNICAL PROPOSAL AND BID SUBMISSION INFORMATION

1. ALL PROPOSALS AND BIDS MUST BE SUBMITTED ON FORMS INCLUDED IN THE INVITATION FOR BIDS (IFB) DOCUMENTS. FAILURE TO SUBMIT ON SUCH FORMS MAY RESULT IN DISQUALIFICATION.
2. ALL INTERESTED PARTIES MUST REGISTER WITH NELHA. REGISTRATION SHALL CONSIST OF CONTACTING NELHA TO REQUEST A COPY OF THIS SOLICITATION VIA MAIL, DOCUMENT DELIVERY SERVICE, OR DOWNLOADING FROM THE INTERNET.
3. A NON-MANDATORY PRE-BID MEETING WILL BE HELD TO DISCUSS THIS INVITATION FOR BIDS – SEE THE “SIGNIFICANT DATES” SECTION FOR DETAILS.
3. ALL WRITTEN QUESTIONS MUST BE RECEIVED BY NELHA BY THE DATE AND TIME INDICATED IN THE “SIGNIFICANT DATES” SECTION.
4. ALL TECHNICAL PROPOSALS AND BIDS MUST BE RECEIVED BY NELHA BY THE DATE AND TIME INDICATED FOR EACH IN THE “SIGNIFICANT DATES” SECTION.
5. PROPOSAL SUBMISSIONS MUST INCLUDE AN ORIGINAL WITH ONE (1) ELECTRONIC COPY ON COMPACT DISK (CD). FAILURE TO SUBMIT PROPOSALS AS PRESCRIBED MAY RESULT IN DISQUALIFICATION.
6. OFFERORS ARE CAUTIONED TO MAKE PRIOR ARRANGEMENTS TO ENSURE DELIVERY BY THE PROPOSAL DUE DATE.
7. AN OFFER GUARANTY (BID BOND) IS NOT REQUIRED FOR SUBMISSION OF A TECHNICAL PROPOSAL – THE FIRST SUBMISSION REQUIRED BY THIS MULTI-STEP IFB.
8. AN OFFER GUARANTY IS REQUIRED FOR SUBMISSION OF A COMPLETE PRICE BID – THE SECOND SUBMISSION REQUIRED BY THIS MULTI-STEP IFB.

**SECTION ONE:  
GENERAL INFORMATION**

**1.01 TERMS AND ACRONYMS USED**

Contact Person	=	Identified in Section Four, Special Provisions, of this IFB
Contractor	=	The Offeror awarded a contract under this IFB
CPO	=	Chief Procurement Officer
DBEDT	=	Department of Business, Economic Development & Tourism
GC	=	General Conditions
GET	=	General Excise Tax
HAR	=	Hawaii Administrative Rules
HRS	=	Hawaii Revised Statutes
HST	=	Hawaiian Standard Time
IFB	=	Invitation for Bids
NELHA	=	Natural Energy Laboratory of Hawaii Authority
Officer in charge	=	Principal liaison between the Contractor and the STATE as designated by the NELHA Executive Director
Offeror	=	Any individual, partnership, firm, corporation, joint venture, or representative or agent, submitting an offer in response to this solicitation
Procurement Officer	=	NELHA Executive Director
Qualified Offeror	=	An Offeror whose Technical Proposal has been found to meet the requirements of this IFB
Special Conditions	=	NELHA Special Conditions
STATE	=	Natural Energy Laboratory of Hawaii Authority or NELHA

## **1.02 OVERVIEW OF THE MULTI-STEP IFB PROCESS**

1. The IFB is issued pursuant to Subchapter 6.5 of HAR Chapter 3-122, implementing HRS Section 103D-302.
2. The procurement process begins with the issuance of the IFB and the formal response to any written questions or inquiries regarding the IFB. Changes to the IFB will be made only by Addendum.
3. Two Part Submission – phase 1
  - 3.1. In the first phase of bidding, interested and qualified offerors may submit an unpriced Technical Proposal and required sample(s); the unpriced Technical Proposal and sample(s) shall be placed in a sealed envelope or other appropriate package labeled with the IFB title and number, name and address of the Offeror, and the closing date and time for receipt of the bids. This package is not to include a bid price or any pricing information.
  - 3.2. Requirements for the Technical Proposal are given in Section 3; proposals must include all attachments listed in Section 3.06.
  - 3.3. Offerors must submit one (1) hardcopy original of the Technical Proposal and samples(s) and one (1) electronic copy of each.
  - 3.4. Technical Proposals shall not be opened publicly but shall be opened in the presence of two (2) or more procurement officials. Technical Proposals will be shown only to State employees and to members of the Review Committee with a legitimate interest in them. The register of Offerors' proposals shall be available for public inspection after posting of the award.
  - 3.5. The Procurement Officer, or an evaluation committee selected by the Procurement Officer, shall evaluate the Technical Proposals in accordance with the evaluation criteria. The proposals shall be classified initially as acceptable, potentially acceptable, or unacceptable, and a "priority list" of responsible Offerors submitting acceptable and potentially acceptable proposals shall be generated.
  - 3.6. Proposals may be accepted on evaluation without discussion. However, if deemed necessary, The State may enter into discussion with one or more of the priority listed Offerors. The objective of these discussions is to clarify issues regarding the Offeror's proposal before the Price Proposal is tendered.

- 3.7. If during discussion there is a need for any substantial clarification or change in the IFB, the IFB shall be amended by an addendum to incorporate such clarification or change. Addenda to the IFB shall be distributed only to priority listed Offerors who submit acceptable or potentially acceptable proposals.
4. Two Part Submission – phase 2
  - 4.1. After Technical Proposals have been reviewed, those offerors whose Technical Proposals have been found to meet the criteria of this solicitation shall be contacted in writing by STATE and invited to submit a Price Bid.
  - 4.2. The Price Bid shall be submitted in accordance with Section 4 on the Offer forms included with this IFB (Exhibits B1 and B-2); the completed Offer Forms and required attachments shall be placed in a sealed envelope labeled with the IFB title and number, name and address of the Offeror, and the closing date and time for receipt of the bids. This envelope shall contain only the items listed in Section 4.02.
  - 4.3. Price Bids from only those Offerors whose Technical Proposals have been found acceptable as set forth in Section 3.04 “Technical Proposal Evaluation Criteria” shall be publicly opened at the date, time specified in section 1.03 “Price Bids Due”.
  - 4.4. At the time of Price Bid opening, a register of bids will be prepared that identifies each qualifying Offeror. The register of bids shall be open to inspection.
5. The Procurement Officer will award the contract to the lowest responsive and responsible Offeror.
6. The contents of any Technical Proposal shall not be disclosed during the review, evaluation or discussion process. Once an award notice is posted, all proposals, successful and unsuccessful, become available for public inspection. Those sections that the Offeror and the State agree are confidential and/or proprietary should be identified by the Offerors and shall be excluded from access.
7. The Procurement Officer or an evaluation committee reserves the right to determine what is in the best interest of the State for purposes of reviewing and evaluating Technical Proposals submitted in response to the IFB. The Procurement Officer or an evaluation committee will conduct a comprehensive, fair and impartial evaluation of Technical Proposals received in response to the IFB.

### 1.03 IFB SCHEDULE AND SIGNIFICANT DATES

The schedule set out herein represents the State’s best estimate of the schedule that will be followed. All times indicated are Hawai’i Standard Time (HST). If a component of this schedule, such as “Proposal Due” date is delayed, the rest of the schedule will likely be shifted by the same number of days. Any changes in dates will be in writing and approved by the STATE. The approximate schedule is as follows:

Advertising of Invitation for Bids	August 9, 2019
Pre-bid Meeting	September 4, 2019, 10:00am HST
Deadline to Submit Written Questions	No later than September 9, 2019 at 2:00pm HST
State’s Response to Written Questions	September 26, 2019
Unpriced Technical Proposals Due	No later than October 25, 2019 at 2:00pm HST
Proposal Evaluations Completed	November 8, 2019
Discussion with Priority Listed Offerors (if necessary)	To be scheduled
Price Bids Due and Public Bid Opening	November 20, 2019 at 2:00pm HST
Contract Start Date	No Later than January 6, 2020
Contract execution period (from Notice to Proceed)	90 Days

### 1.04 OFFICIAL CONTACT PERSON

The official contact person for all communication regarding the IFB is:

Alexander B. Leonard, Ph.D., Chief Projects Officer  
Natural Energy Laboratory of Hawaii Authority  
73-4460 Queen Kaahumanu Highway, #101  
Kailua-Kona, Hawaii 96740  
Telephone: (808) 327-9585 extension 262  
Email: alexander.leonard@hawaii.gov

Official responses to questions shall be made through written addenda issued to all prospective offerors. Offerors’ attention is directed to the deadlines for questions and addenda stated above.

**SECTION TWO:  
SCOPE OF WORK**

**2.01 INTRODUCTION**

The Natural Energy Laboratory of Hawaii Authority facility at Keahole Point, North Kona on the island of Hawaii, includes 11 seawater intake pipelines that lie on or near the seafloor. Six of these, known as the “Ocean Farms of Hawaii (OFH) pipelines” are no longer in operation and pose potential risk to human safety and to the environment should they break free of the seafloor in the future. In order to plan for their removal or abandonment, NELHA seeks to map the current extents and precise locations of these six pipelines, as well as to record detailed, GPS-coordinated imagery of the state of the pipes and their associated hold-downs, deployment bridles and other associated appurtenances and features.

Known conditions:

The attached maps (Attachment-C) show the extents and approximate pipeline locations as documented from deployment records, a prior inspection survey (see Appendix-A in Attachment-A; Seatech report, 1991) and various previous manned submersible reconnaissance missions.

Attachment-B (Ocean Farms Hawaii Deep Seawater Pipeline Features) provides a listing of some previously recorded pipe locations and known features – this list is not exhaustive and may not include all features to be surveyed under the current effort. Furthermore, it is important to note that locations in this list may not be current: some portions of the OFH pipelines are known to have moved and some continue to do so. Currents and tides can shift pipe sections in one or more directions (sometimes back and forth), and gravity appears to be pulling some pipe sections downslope. It is generally believed however that the deeper (inlet) pipe locations do not move significantly, and that the inlet location data in Attachment-B should provide an adequate starting place for locating the seaward end of each of the six pipelines.

**2.02 SCOPE OF WORK**

The successful offeror shall provide all vehicles, vessels, equipment, materials and personnel required to launch, operate and recover the survey instrument platform used to perform the work described in this Invitation for Bids. NELHA is open to receiving proposals that rely on survey instrument platforms that are launched and/or controlled from land or sea. The platform itself may be manned or unmanned, tethered to the surface or not. It shall include all instrumentation necessary to collect the required data (see section 2.3), and to either relay that information to the surface or store it onboard for download following platform recovery.

#### A. Basic work

Perform an in-situ survey of the full extents of the 6 OFH pipelines, some up to 1,800 Meters long, which are anchored on or near the seafloor - some partially buried in sand, but most fully exposed, within an area of approximately 0.25 Sq. Miles and ranging in depth from 5 Meters to 700 Meters. The survey shall record the detailed location, depth and condition of the pipelines and their features - from the deployment anchor attached to the seaward intake to the shoreward end of the pipe. It is intended that the “Basic Work” portion of the project shall survey each pipeline one at a time, in one or more continuous passes without deviating from that pipeline - pausing only at the features given in Attachment-B to collect detailed information as described in Section 2.1. During the performance of this “Basic Work”, if features or conditions not shown in Attachment-B are encountered, the location of these are to be logged without pausing the fly-over. The State’s OIC will later determine if any of these new features warrant further investigation as part of the “Additional Work” portion of the project scope.

Some of the OFH pipelines are discontinuous - i.e. have sections that are missing or that have been removed. For example, it is known that portions of pipelines 16A, 16B and 18A are missing. The “Basic Work” for such a pipeline will stop at the seaward point of the break. However, the State’s OIC may later determine need or value in searching for possible shoreward remnants of the pipe and would include this in the “Additional Work” portion of the project scope.

#### B. Additional Work

As the survey proceeds, it may become of interest to the State to perform additional survey work not described in the “Basic Work” section above. In that event, the Additional Work shall be requested by the State OIC in writing and said work shall be performed to the satisfaction of the State OIC on a force-account basis according to pre-established unit rates (hourly and daily) for the functions and operations of the types described herein.

#### C. Stand-by time

If at any time the State instructs Contractor to suspend work through no fault of Contractor, the State will pay for the time elapsed during the suspension of work (“stand-by time”) at the same hourly and daily unit rates given in the contract for hourly and/or daily Additional work as applicable. This payment will be the only compensation due to contractor for stand-by charges. The State will not be liable for any costs due to suspension of work by contractor for any reason other than for stand-by-time requested by the State – all such costs shall be at contractor’s sole expense.

## **2.03 DATA TO BE COLLECTED**

### **A. Survey precision, accuracy and resolution**

Pipe locations shall be recorded as Latitude and Longitude in decimal-degrees format with 8 digits precision after the decimal and shall be geo-referenced to the NAD83 survey datum (Hawaii State Plane Zone 1).

Depth measurements, including seafloor depth and altitude of the instrument platform and pipeline features shall be recorded in Meters with 1 place decimal precision referenced to mean local sea-level.

Survey accuracy shall be +/- 3 Meters for horizontal position, and +/- 1 Meter for depth.

Pipe location and depth shall be extracted from the continuous data stream every 20 Meters (“pipe stations”) along the entire extent of each OFH pipeline.

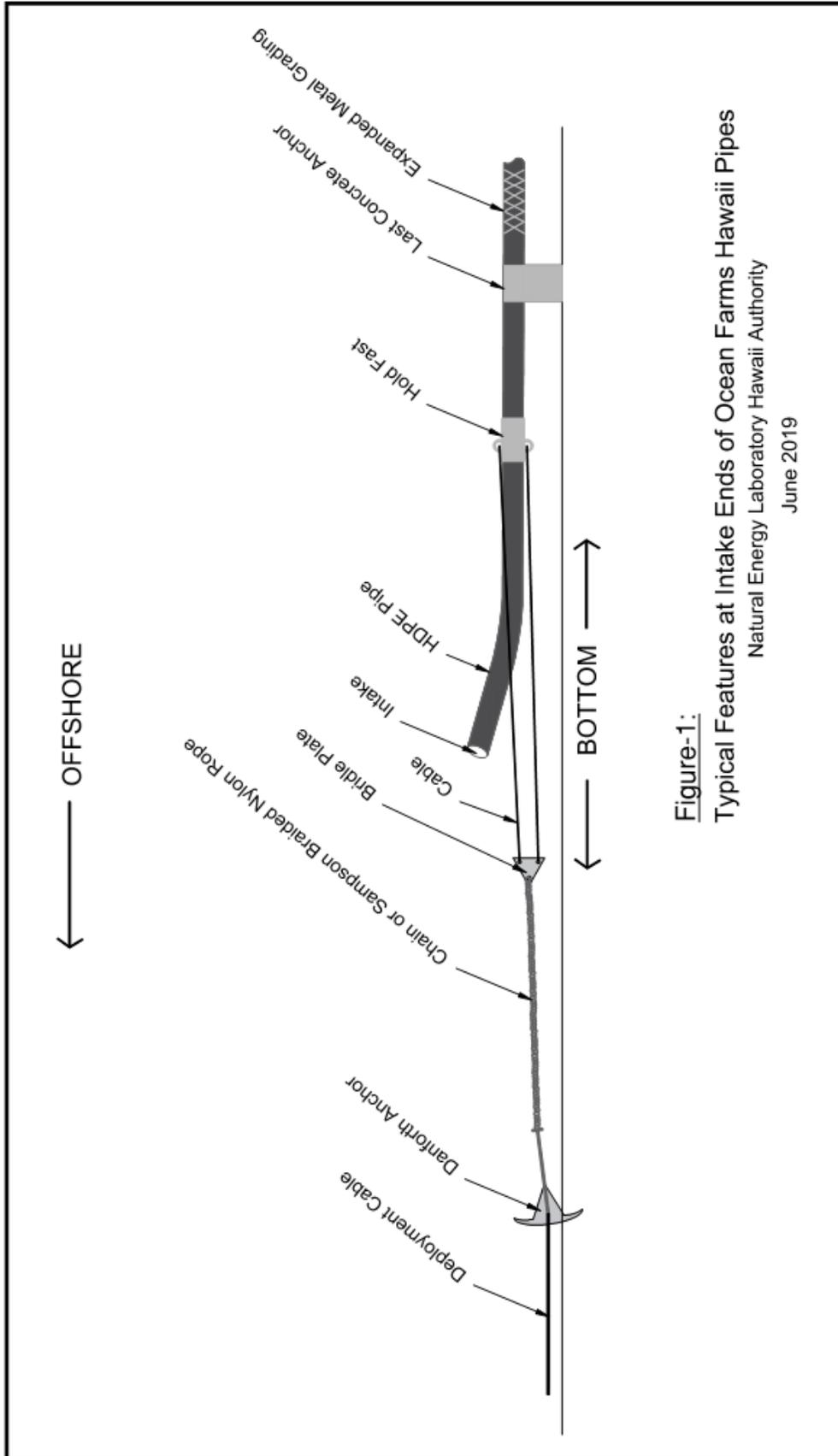
In addition, the location shall be confirmed for all previously documented and/or known pipeline features called in Attachment-B – such as kinks, bends, overlaps, missing sections, attachments, hold-downs, anchors, floats, deployment hardware. Feature position shall be recorded in the same spatial reference and with the same precision and accuracy given above.

### **B. Video data collection, storage and processing**

Continuous video data shall be collected from the instrument platform during all survey activities. Video recordings shall incorporate continuous real-time telemetry meta-data interlaced onto the image – including (at a minimum) date, time, and raw positional information, water depth, orientation, heading and speed of the of the instrument platform, and laser-rangefinder measurement of the distance of the instrument platform from the pipe/feature in the image. Geospatial data may optionally be encoded in companion data files.

All video shall be recorded in color at a frame rate of 60 fps. Video resolution shall be 1080 horizontal lines or better. Un-processed raw video shall be recorded and provided to NELHA on portable hard-drives and also archived on DVD.

While surveying “featureless” portions of a pipeline, the distance from the instrument platform’s video camera lens to the pipe being surveyed shall typically be on the order of 2 Meters or less – lighting and image quality should allow for resolution at this distance of features 5 cm or smaller.



**Figure-1:**  
 Typical Features at Intake Ends of Ocean Farms Hawaii Pipes  
 Natural Energy Laboratory Hawaii Authority  
 June 2019

When recording imagery of pipe features, the feature shall be imaged from multiple orientations, including underneath the pipeline if possible, and from viewpoint locations sufficient to describe the size and characteristics of the feature.

C. Features to be imaged

Detailed close-up video imagery suitable for freeze-frame visualization shall be collected for the following four sets of pipe features:

1. Deployment hardware - for each of the 6 pipes the following typical features (Figure-1) attached to the intake (seaward) end of each pipe shall be fully documented to determine their possible use or interference in a future pipe recovery operation:
  - a) Deployment Anchor
  - b) Anchor Chain or Sampson Line to Bridle Plate
  - c) Bridle Plate
  - d) Bridle Lines to Holdfast
  - e) Holdfast
  - f) Last Concrete Weight
  - g) Shackles and/or other hardware interconnecting the features above

There is no need to survey the deployment cable beyond the deployment anchors.

2. Previously documented and/or known features - all of the features listed in Attachment-B (Ocean Farms Hawaii Deep Seawater Pipeline Features). Specific details that should be included in the recorded survey footage of these features shall include
  - For holes in the pipe closely survey each hole or serious abrasion – including (where possible), imaging the underside of the affected pipe.
  - For pipe kinks, note the extents of the kink and investigate for possible holes in the pipe.
  - For sections where pipes overlap one or more other pipes, it is of crucial importance to determine which pipeline is overlain on which (i.e. the order of stacking of the pipelines). In addition, pipe crossings can create conditions for abrasion and perforation of the polyethylene pipes. As such, pipe sections within 5 Meters of existing pipe crossings shall be systematically investigated for such damage – including (where possible), imaging the underside of the affected pipes.
  - There are 6 steel buoys known to be attached to the seaward end of pipe 18D. The means of attachment (cable, chain, shackles) should be imaged adequately to allow for planning their possible future removal (by others).

3. Images of each pipe at 20 Meter intervals (“pipe stations”) shall be extracted from the continuous video stream.
4. The shoreward end of each pipe, along with any associated anchors or hold-downs.

D. Data extraction, processing and storage

A searchable “Feature Database” shall be compiled from the survey data, with records for each pipe station and feature. Multiple isolated “freeze-frame” still images of all pipe features listed above and single images of all 20 Meter pipe stations shall be extracted from the raw video stream and stored in this database. Each still image is to be labelled with a unique identifier comprised of the pipeline designation, pipe station and date/time the image was captured. Metadata to be recorded in the database shall include the telemetry recorded in the image.

Data fields for each record in the database shall include at least the following:

- unique record identifier
- pipeline designation
- calculated pipe station
- date/time of the observation
- information for the instrument platform at the time of the observation including raw (instrument) position, altitude, water depth, orientation, tilt, heading and travel speed
- processed data for the position and depth of the feature
- image of the pipe at that station and/or of the feature recorded (multiple images if of a feature)

Each pipeline feature shall be documented in the database with multiple still images, taken from different orientations, perspectives and distance to fully document the extent, geometry and condition of the feature.

An interactive geo-referenced digital Survey map of the six pipelines shall be generated from the positional data collected in the survey. All pipeline stations and pipeline features shall be shown on the map, along with hyperlinks to the feature database to allow viewing the underlying survey data and imagery associated with each mapped point.

## **2.04 SUBMITTALS**

The means and methods to perform the pipeline survey described in this IFB are to be determined by the Contractor and are the sole responsibility of the Contractor. Contractor

shall submit for State approval within thirty (30) days of the execution of a contract to perform the work, the following submittals detailing those means and methods:

- (A) Work Plan;
- (B) Safety Plan;
- (C) Project Technical Data; and
- (D) Project Schedule.

A. Work Plan

The work plan submittal shall detail all operations to be performed as part of the project including a complete sequence of work. This Work Plan shall be updated as necessary and shall, at a minimum, include sections for the following information:

- a. The organization- Identify each person involved, their responsibility, and the chain of command. This section shall explicitly identify the Contractor's team-leader, who shall be the individual responsible for making all operational decisions during the performance of fieldwork, as well as how that responsibility will be delegated in the absence of the team-leader. Identify work shifts and how shift changes will accommodate the chain of command and communication.
- b. Equipment needed- Identify each piece of major equipment to be used in the survey operation and its role. If the role is critical, identify suitable backup equipment.
- c. Identify any special tools, jigs or engineered devices to be used in completion of the required survey operations.
- d. Identify and schedule any required training and coordinating sessions.
- e. Environmental conditions- Identify suitable environmental conditions (sea states, deep and surface currents, wind) for conducting the survey operations, and identify methods of minimizing weather-related risks. Identify methods of obtaining suitable forecasts of these conditions. The Contractor is encouraged to engage a competent sea state and eddy current forecaster well in advance of the site work to establish his credibility and use these forecasts to help determine his work schedule.
- f. Demonstrate that all aspects of the survey process include adequate margins of safety for the personnel involved, the protection of the environment, of adjacent pipelines and of the Contractor's equipment, and allows for difficulties and contingencies to be encountered.

- g. A detailed task-by-task description of the entire sequence of work.

## B. Safety Plan

The safety plan shall demonstrate the steps and procedures Contractor will employ to ensure the safety of the public, their own staff and the environment. This Safety Plan shall be updated as necessary and shall include, but not be limited to sections for the following information:

- a. Emergency Safety Response Plan - including
  - i. a listing of all emergency center, addresses, and phone numbers (hospitals, etc.); and
  - ii. a hazard analysis listing possible hazards and emergency situations with a detailed plan of action to minimize damage.
- b. Public safety plan - Identify how the Contractor plans to keep the public informed of marine operations in order to smoothly and safely coordinate at-sea operations with commercial and public use of the operational zone around the six abandoned pipelines.
- c. Boating Safety plan shall detail contractor's on-site safety monitoring and response to approaching vessels.
- d. Permit requirements: The Contractor shall summarize all pertinent permit and Coast Guard requirements and identify how the plan shall satisfy those requirements.
- e. Environmental protection plan shall detail
  - i. waste management procedures;
  - ii. spill response procedures; and
  - iii. measures taken to protect the reef (including corals) and endangered species (including whales, Hawaiian monk seals, turtles, birds).

## C. Project Technical Data

The project technical data submittal shall list the types and names of all vessels involved in the survey, along with their operational range and crew requirements. This submittal shall include:

- a. brochures, photographs, specification sheets, catalog cuts, operational logs, testing results and manufacturer's certifications to document the technical specifications and capabilities of the survey instrument platform(s) (ROV, AUV, manned submersibles, etc.) that will be used by the Contractor, including:

- i. manufacturer's details on range, dive time (surface to surface), working depth capability, positional accuracy as function of depth (or distance from support vessel), propulsive capacity and duty cycle;
  - ii. Typical/expected work time between service periods and breakdowns;
  - iii. Routine maintenance requirements and periodic maintenance records or certifications; and
  - iv. The technical specifications - including precision and accuracy - for the instrumentation that will be used for
    - Positioning the survey support vessel(s);
    - Positioning and locating the survey instrumentation platform;
    - Depth Recording;
    - Altitude Recording;
    - Range measurement (from observed target); and
    - Video recording and lighting.
- b. Navigation measurement plan: Identify the methodology and required equipment for aligning and positioning the survey equipment over pipelines to be surveyed. Present calculations showing the combined error associated with positional fixes obtained using contractors' proposed methodology.

#### D. Project Schedule

The project schedule shall indicate optimum and alternate timeframes for executing the work from the standpoint of environmental conditions (expected weather and sea-state) and shall provide reasoning behind the selection of those date ranges. The schedule must allow for difficulties and contingencies that might reasonably be expected. Tasks detail shall be presented in Gantt chart format for:

- a. preparation of the required submittals (allow 2 weeks for NELHA review);
- b. premobilization preparations (outfitting);
- c. Mobilization;
- d. a breakdown for all operations required for the field work;
- e. demobilization;
- f. expected down-time for routine repair and maintenance;
- g. data extraction and analysis; and
- h. preparation and submittal of the project deliverables.

## **2.05 PROJECT DELIVERABLES: RESULTS, REPORTS AND DATA**

The deliverables for this project shall consist of the following:

- The searchable “Feature Database” described in Section 2.03.C.;
- The interactive geo-referenced digital map described in Section 2.03.C.;
- A static map of the pipe survey results showing all pipeline stations and pipeline features (Basic and Additional) in AutoCAD-2014 and PDF formats; and
- All raw (unprocessed) video data and any image-enhanced video recordings created during the project – these shall be provided on labelled/indexed portable hard drives as well as on similarly labelled/indexed DVDs.

## **2.06 EXECUTION OF THE WORK**

### **A. State Access and Responsibility**

During all survey activities, the State Officer-In-Charge (OIC) and/or his designate shall be present at-sea to observe the survey work and to answer questions as the work progresses. For the duration of the survey field activities, the Contractor shall provide the OIC transportation to and from the offshore survey support vessel. This transportation can be set up to occur with the Contractor’s crew changes. The Contractor shall permit the OIC access to instrument control rooms and/or shipboard communication rooms to monitor work progress in real-time, and to determine if the work meets the state’s objectives as described in this IFB. The OIC may, where necessary, direct re-work or performance of additional work. If a control-room is not part of the Contractor’s set-up, Contractor shall report to the State OIC at least daily of the survey activities and results, and shall provide upon request, samples of the video and survey telemetry data collected.

### **B. Contractor’s Responsibility**

Notwithstanding the presence of the NELHA OIC during the survey work, Contractor shall be solely responsible for all operational decisions during the performance of fieldwork. Contractor’s designated team-leader shall have the ultimate and final authority for all activities at sea, including the decision of when to proceed with or to halt field operations. Contractor shall be responsible for the safety of the public, their own staff and any and all individuals present in the field during work undertaken in conjunction with the scope of work detailed in this Request for Proposals.

The Contractor shall perform all services in a safe and efficient manner. The Contractor shall employ the best methods to provide services as specified herein. The Contractor shall further assure that the performance of work specified herein shall be in complete compliance with any

applicable rules and regulations of all Federal, State, and County government agencies. The Contractor shall be solely responsible for the satisfactory completion of all work performed as determined by NELHA.

### C. Quality Control

NELHA's designated representative or Office-In-Charge (OIC) reserves the right to inspect Contractor's job performance at any time. The OIC may require Contractor to present underwater video records documenting the amount and the quality of the work completed. Supervisory personnel from the Contractor may be required to present such video records to the OIC.

The State of Hawaii will hold the Contractor liable for all the acts of Subcontractors and shall deal only with the primary Contractor in matters pertaining to other trades employed on the job. The Contractor shall be responsible for coordinating the work of all trades on the job.

Should Contractor discover any discrepancy in the specifications or inconsistency in the Contract Scope of Work, the Contractor shall immediately notify the OIC before proceeding any further with the work, otherwise, he will be held responsible for any cost involved in correction or re-work due to such discrepancy or inconsistency.

If any work is not in full compliance with the project specifications, Contractor shall make all necessary corrections to the full satisfaction of the NELHA and at no additional cost to the NELHA and within the period allowed by the NELHA's designated representative or OIC.

## **2.07 SITE INFORMATION AND EXISTING CONDITIONS**

### A. Waves and Currents at the Site

The survey area ranging from 5 meter to 700 meter depth off of Keahole Point, Hawaii, is subjected at times to large sea swells and locally generated wind waves. The ocean current conditions can be extreme at times. Currents are made up of background circulation currents, tidal currents and eddy currents. Eddy currents, which are caused by sustained trade winds, are the most important of these components, and their magnitude and frequency is a subject of study by the oceanographic community. Offerors are instructed to inform themselves of all risks due to wind and sea conditions, and to plan and schedule the underwater survey so as to minimize the potential for weather or sea-state to disrupt the sequence of work.

### B. Existing NELHA Pipelines Adjacent to Survey Area

NELHA relies on an active 40-inch cold seawater intake pipeline which is approximately 307 meters north of the intake of OFH pipeline 16A (see plan Attachment-C). This pipeline consists

of two primary sections – a concrete anchor, bottom mounted section from the shoreline to a depth of 150 meters and a free-floating reverse catenary section from 150 meter depth to the intake opening at 670 meters depth. The Contractor shall take all necessary precautions not to cross over or contact this pipeline with any survey vehicle. The video survey of this pipeline performed by the manned submersible PICES V on September 10, 2016 will be a good reference to the characteristics of this pipeline and its proximity to the OFH pipelines.

The NELHA 18-inch cold seawater intake pipeline shown on the plans is approximately 84 meters south the intake of OFH pipeline 16B. Although the NELHA 18” pipeline is not in operation at this time, it is to be considered a functional pipeline and should be avoided. Like the NELHA 40-inch pipeline, this pipeline consists of two primary sections – a concrete anchor, bottom mounted section from the shoreline to a depth of 150 meters and a pendant anchored section from 150-meter depth to the intake opening at 621 meters depth. Due to the close proximity of this pipeline to the OFH pipelines and in consideration that there are evenly spaced pendant lines suspended from the pipeline to bottom anchors, the Contractor shall take extra precaution not to cross over, under, or come in contact with this pipeline with any survey vehicle.

#### C. Entanglement Hazard

The Contractor is cautioned that potential entanglement hazards may exist along the length each of six OFH pipelines to be surveyed. The potential entanglement may consist of floating lines and rope, cables, crushed floats attached and/or adjacent to the pipelines, floating sections of pipelines, pipelines crossing over other pipelines, etc. The Contractor shall be aware of these potential hazards and take all necessary precautions to avoid them.

#### D. Protection Needed Endangered Species and Sensitive Habitat

Several endangered species are known to inhabit or frequent the survey site and surrounding areas –these include Humpback whales, Hawaiian monk seals, several species of sea turtles, several species of birds and reef organisms. Contractor must take the steps necessary to protect these organisms and their habitat.

The water off Keahole Point – including the survey area – is designated Class-AA and must be protected according to State law from all human waste and pollution.

While surveying at shallow depths, especially while working on the reef, the Contractor shall take all necessary precautions not to damage marine life. The shoreward ends of OFH pipelines 18B, 18C and 18D are located at depths between 7-9 meters and lay directly on the bottom. Coral formations extend above the ends of these pipelines on both sides.

#### E. Harbors

Kawaihae Harbor - the state commercial harbor facilities at Kawaihae, on the northwestern coast of Hawaii, have been traditionally used by contractors as mobilization and staging areas to support for deep water pipeline work at NELHA. This site is roughly 26 nautical miles from the work site off Keahole Point. No exclusive or pre-set arrangements for use of harbor facilities have been made for this work. However, the contractor is urged to contact the State Harbors Division for information on using these facilities if doing so might facilitate mobilization, staging or demobilization activities.

Honokohau Harbor - the closest boat landing to the project site is Honokohau boat harbor. This is suitable for small watercraft only but is convenient for transferring crew for shift-changes.

#### F. NELHA Temporary Workspace and Access

If requested, outdoor uncovered or covered space can be furnished by the State for Contractor material storage at NELHA. This space will be within the confines of the NELHA research compound which has a security guard on duty during non-office hours. No office space will be provided to support the project.

#### G. Permits

Numerous permits relating to the existing intake pipeline infrastructure at NELHA are in place. Copies of the permits themselves are available upon request. Contractor shall obtain any new permits and approvals from Federal, State and County authorities required to conduct the scope of work described in this IFB.

NELHA have received concurrence from both the Army Corps of Engineers as well as the State Office of Conservation and Coastal Lands (DLNR-OCCL) that no permits from either of those agencies will be required for the work specified under this IFB.

### **2.08 SUPPORTING DOCUMENTATION**

Attachment-A: Ocean Farms Hawaii Corporation Deep Seawater Pipeline History (2/20/2019) with Appendices A & B.

Attachment-B: Ocean Farms Hawaii Deep Seawater Pipeline Features (3/6/2019).

Attachment-C: Maps of Ocean Farms Hawaii Deep Seawater Pipelines (3/6/2019) – includes mapped locations of features in Attachment-B and Tracking map for HURL Survey video clips referenced below.

Video clips from 2016 HURL Survey (Pisces V Dives 864 & 865): URL

<https://drive.google.com/drive/folders/1I7ORWb3j9kLPmmnuxcqb2Hh--auF4RUE?usp=sharing>

## **2.09 SPECIAL CONDITIONS FOR THE WORK**

1. All work shall comply with all applicable Federal, State, and County of Hawaii laws, rules, codes, ordinances, and regulations.
2. Contractor shall apply for and secure all permits and permissions required to perform the work described in this Request for Quotes – including (but not limited to) obtaining US Coast Guard approval(s) and posting Notice(s) to Mariners.
3. All vessels and working platforms must meet safety and seaworthiness standards equivalent of those applied by the American Bureau of Shipping (ABS) in their inspection of vessels, or standards adhered to by those nations signatory to the SOLAS (Safety of Life at Sea) Convention.
4. Environmental controls and protections (e.g. oil spill contingency plan) shall be in place at all times while Contractor is working in the field.
5. Barring equipment failure or weather delays, the survey effort will be undertaken as a continuous work effort in one mobilization, without pause or delay.
6. While working on site, at Contractor’s option, work may proceed 24 hours per day, 7 days per week.
7. Following the Notice to Proceed, up to 3 months will be allowed for completing all work – including preparation and review of submittals, mobilization of equipment and personnel to the project-site, all required survey work, data collection, processing and submission of the project deliverables.
8. The Contractor shall be required to protect the occupants and the general public from any unsafe conditions during the performance of services and/or as a result of the services.
9. The Hawaii Occupational Safety and Health Law, Chapter 396, Hawaii Revised Statutes, effective May 16, 1972, as amended, is applicable and Contractor shall carefully read and strictly comply with its requirements.
10. Contractor shall fully familiarize themselves with all available information regarding the NELHA seawater pipelines – including all installation records, and reports, videos, dive logs, maps and photos from past surveys.
11. Contractor shall familiarize themselves of the local ocean conditions, including bathymetry and currents, as well as the typical weather patterns and sea-state conditions prevalent during the planned survey fieldwork.
12. Liquidated damages are fixed at the sum of ONE HUNDRED AND NO DOLLARS (\$100.00) for each and every calendar day the Contractor fails to perform in whole or in part, any

of his/her obligations specified hereunder. Liquidated damages may be deducted from any payments due or to become due to the Contractor.

13. Except for additional work and stand-by time, the work shall be paid for on a lump sum basis. Such payment shall constitute full compensation for all labor, materials, equipment, shipping and transportation and all other costs necessary for and incidental to the completion of the work, including (but not limited to) all fees for travel costs, coordination and attendance at meetings and inspections.
14. In their bid, Contractor shall provide unit prices per hour and per day for the performance of Additional Work (as defined in Section 2.02.B). Stand-by time (as defined in section 2.02.C) shall be paid at the same unit rates. The amount of Additional Work that may be requested by the State is an unknown "Variable Quantity".
15. Unit price is an amount proposed by the Offeror, stated on the Bid Form, as a price per unit of measurement for services included in the Total Lump Sum Bid Price. All computations of the Variable Quantities Unit Prices shall use the unit prices noted in the Bid Form. Payment will be made for quantities actually completed and accepted by the Contracting Officer at the applicable price.
16. State reserves the option, at no cost to the State, to not request Additional Work. Bid price for the Basic Work shall assume the State will request no Additional Work.
17. Additional Work hours and/or stand-by time up to and including 6 Hours total in a single working day shall be charged at the given unit rate per hour for Additional Work as shown in the Contract. If the total hours are more than 6, the unit rate per day shall apply for up to 8 hours of work in a single 24-hour period.
18. For bidding on the Additional Work unit prices, Contractor will assume two days (16 working hours) over a continuous 48 hour period on site, plus 4 hours of Additional Work in the following 8-hour period – for a total of twenty (20) hours over a continuous 56-hour period.
19. The Variable Quantities of two days and 4 hours respectively for the daily and hourly rates for Additional Work (and/or stand-by time) are estimated quantities. Where the sum of actual Additional Work completed plus Stand-by time varies by more than 15 percent above or below the estimate total of 20 hours, an adjustment in the contract price may be made upon demand by either the State or Contractor. The adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity.
20. Do not proceed with work exceeding the estimated quantity written in the Contract until receipt of written approval by the Contracting Officer.
21. Additional work and the amounts paid for it shall be subject to all the terms and conditions applicable to the Basic Work.

22. The State shall own and have exclusive rights to all data - including all video footage - and reports generated from the survey work solicited under this Request for Proposals.

**SECTION THREE:**  
**TECHNICAL PROPOSAL REQUIREMENTS**  
**EVALUATION CRITERIA AND SUBMISSION REQUIREMENTS**

**3.01 PROPOSED PROJECT TEAM**

The Offeror's Technical Proposal shall include:

1. The names and affiliations of the members of the Project Team, be they employees of the Offeror or of a subcontractor or other service provider, and shall detail the qualifications, relevant experience and roles of the individual team-members who will work on the project;
2. Resumes of key personnel and of all personnel who will be dedicated to this project from all project team members; and
3. Letters of commitment from all proposed subcontractors and outside resources to perform on the project. These letters shall specify that entity's understanding and willingness to abide by the terms and conditions of this solicitation.

**3.02 PROPOSED WORK PLAN AND SCHEDULE**

Offeror's Technical Proposal shall demonstrate their understanding of the scope of work described in this solicitation by developing preliminary versions of both

1. the Work Plan submittal; and
2. the Project Schedule submittal.

These are described in Sections 2.04.A and 2.04.B respectively. Provide sufficient detail so as to demonstrate Offeror's understanding of the project requirements, and of the difficulties likely to be encountered. Note: a simple restatement of the Scope of Work given in this Solicitation shall not be sufficient to meet this requirement.

**3.03 OFFEROR EXPERIENCE AND CAPABILITIES**

In order to not be disqualified from consideration, Offeror must also demonstrate in their Technical Proposal that they (or their proposed team) have:

- the equipment needed to perform the survey work;
- the means and knowledge needed to produce the deliverable work products;
- prior experience and success; and
- the commitment to allocate the resources required to meet the project objectives in a timely fashion.

In their Technical Proposal, Offeror shall

1. Document their technical capabilities with respect to:
  - a) their proposed underwater survey platform and its associated support platform (such as boat, ship, land-based control room) and various key sub-systems including GPS positioning, underwater telemetry and geotagged video data collection system. Specifically, by reference to published specifications and performance metrics, offeror must document how and why the tools they propose to use meet the minimum project specifications given in the IFB; and
  - b) data extraction, analytics and mapping – specifically addressing how the survey telemetry data will be stored, extracted and processed to generate the deliverable work products described in Sections 2.03 and 2.05.
2. Document past experience on projects of a similar nature and scale. Including contact information for references who may be contacted for corroboration.
3. Provide an affidavit that the equipment proposed for the work delineated in this IFB is owned, leased or subcontracted by Offeror, and, in the event of a contract award, is guaranteed by Offeror to be made available for exclusive use for the awarded contract scope of work from the time of mobilization until such time as the work is complete to the satisfaction of STATE.

In addition to previous experience and demonstrated capability in performing underwater surveys, Offeror shall also provide the following:

4. A complete, related and current client listing;
5. Indicate the number of years Offeror has been in business and the number of years Offeror has performed the types of services specified by this IFB;
6. Include a list of at least three (3) references from the Offeror's client listing that may be contacted by the State as to the Offeror's past and current job performance. Offeror shall provide names, titles, organizations, telephone numbers, email and postal addresses; and
7. Provide a summary listing of judgments or pending lawsuits or actions against; adverse contract actions, including termination(s), suspension, imposition of penalties, or other actions relating to failure to perform or deficiencies in fulfilling contractual obligations against your firm. If none, so state.

**3.04 MINIMUM CRITERIA FOR TECHNICAL PROPOSAL RESPONSIVENESS**

1. Unfavorable references may be justification for rejection of a proposal. The STATE reserves the right to use whatever resources are available to the STATE to seek additional references in addition to those submitted in the proposal.
2. Submitting incomplete proposal documents or failure to sign the proposal documents may be justification for rejection of a proposal.
3. Failure to respond or comply with the specifications provided in the Solicitation or the requirements provided by statutes or law maybe justification for rejection of a proposal.

**3.05 TECHNICAL PROPOSAL EVALUATION CRITERIA**

An evaluation committee shall be appointed by the NELHA Executive Director. The committee shall evaluate responsive Technical Proposals in accordance with this Section and based on the evaluation criteria therein.

Evaluation criteria for the Technical Proposal and the associated percentages are listed below. Each criterion will be rated on a scale of one (1) to four (4), according to the table below.

1 point	2 points	3 points	4 points
Unsatisfactory proposal; negative or missing elements	Proposal partially addresses criteria; many areas deficient or weak	Good proposal; criteria clearly evident, but a few areas deficient	Strong proposal, with elaboration that exceeds expectations for criteria

Each **rating** will then be multiplied by the **percent value** that particular criterion is worth, in order to calculate the **points earned**. The total sum of points earned for each proposal will then be calculated. The evaluation criteria and the percent values are listed in the table below.

<b>Evaluation Criteria</b>	<b>Rating (1-4)</b>	<b>Percent value (%)</b>	<b>Total Points Earned</b>
<b>1. Qualifications/Experience</b>			
a. Demonstration of Offeror’s successful prior experience in performing underwater surveys.		15%	
b. Demonstration that Offeror’s management team and proposed project personnel have the qualifications and experience necessary to perform the work.		15%	
c. Demonstration that Offeror can provide the equipment and tools needed to perform the work.		15%	
d. Demonstration that Offeror has the technical capabilities and means to deliver the work products.		15%	
<b>2. Work Plan</b>			
a. Completeness of preliminary Work Plan – adequately covers all the elements in the Scope of Work, including proposed methodologies and approaches.		15%	
b. Effectiveness of Work Plan to fulfill project objectives.		10%	
<b>3. Schedule</b>			
a. Project schedule provides sufficient detail as to adequately reflect the demands of the project, and the level of effort for individual tasks appears appropriate.		10%	
<b>4. References</b>			
a. References are satisfied with Offeror’s (or proposed project team’s) skill sets, deliverables, and overall attitudes and responsiveness to clients’ needs.		5%	
<b>TOTALS</b>		100%	

**3.06 TECHNICAL PROPOSAL SUBMISSION REQUIREMENTS— Failure to comply with any of these requirements may be grounds for rejection of the proposal.**

1. Offeror's Proposal submission shall be comprised of the following:
  - a. Proposal Transmittal Letter – Exhibit A1;
  - b. Offeror's Business Information Form – Exhibit A2;
  - c. Proposal Qualifications Questionnaire – Exhibit A3,  
This form to be filled out by each entity that comprises the project team (Offeror, subcontractors, outside service providers);
  - d. Offeror's Corporate Resolution – Exhibit C; and
  - e. Offeror's Technical Proposal with attachments  
This proposal to meet the requirements given in this Section.
2. The Technical Proposal shall be submitted using Offeror's exact legal name as registered with the Hawaii Department of Commerce and Consumer Affairs (DCCA), if applicable. The name of the offeror's organization must match the name which is either legally registered with the DCCA for Hawaii corporations, partnerships, or trade names, or the DOTAX for sole proprietors who do not have registered trade names with the DCCA. An out-of-state organization must be legally registered with its appropriate state.
3. The authorized signature on the first page of the Transmittal Letter shall be an original signature. If unsigned or the affixed signature is a facsimile or a photocopy, the offer shall automatically be rejected unless accompanied by other material, containing an original signature, indicating the Offeror's intent to be bound.
4. The Transmittal Letter must be signed by an authorized representative, and the corporate resolution or evidence of authorization to bind must be attached.
5. The original plus one (1) electronic copy of the Technical Proposal submission shall be submitted in a sealed envelope or box. **Neither facsimiles nor e-mailed submissions shall be accepted.**
6. "Solicitation No. IFB-20-01-NELHA" shall be referenced on the outside of the sealed proposal submission packet.

7. The address for delivering a Technical Proposal in person or via Federal Express or the United Parcel Service the address is:

Natural Energy Laboratory of Hawaii Authority  
73-987 Makako Bay Drive  
Kailua-Kona, Hawaii 96740

Attn. Alexander B. Leonard, Ph.D., Chief Projects Officer

- The address for delivering a Technical Proposal via the US Postal Service the address is:

Natural Energy Laboratory of Hawaii Authority  
73-4460 Queen Kaahumanu Highway, #101  
Kailua-Kona, Hawaii 96740

Attn. Alexander B. Leonard, Ph.D., Chief Projects Officer

8. NELHA must receive sealed Technical Proposals no later than the date and time indicated in Section 1.03 "IFB Schedule and Significant Dates". Proposals shall be marked with the date and time upon receipt. Late proposals shall not be accepted. The NELHA clock shall serve as the official time.
9. Offerors are cautioned to make prior arrangements to ensure delivery by the proposal due date. Offers received after the deadline shall be returned unopened.
10. The State will not provide any reimbursement for the cost of developing, submitting, or evaluating any proposals or Price Bids in response to the IFB.

**SECTION FOUR:  
PRICE BID REQUIREMENTS**

**4.01 QUALIFIED OFFERORS**

Price Bids will only be accepted from those Offerors whose Technical Proposals have been found acceptable based on the criteria set forth in this IFB. Those “Qualified Offerors” shall be notified in writing that they may submit Price Bids pursuant to the terms and Conditions set forth in this IFB.

If a Price Bid is received from other than a Qualified Offeror, said offer shall be returned to the sender unopened.

**4.02 PRICE BID SUBMISSION REQUIREMENTS — Failure to comply with any of these requirements may be grounds for rejection of the offer.**

1. Offeror’s Price Bid submission shall be comprised of the following:
  - a. Offer Form OF-1 – Exhibit B1;
  - b. Offer Form OF-2 – Exhibit B2;
  - c. Corporate Resolution – Exhibit C;
  - d. Offeror’s HCE Certificate of Vendor Compliance – Exhibit D; and
  - e. Offer Guarantee (bid bond) - see Section 5.12.1.
  
2. The Price Bid shall be submitted using Offeror’s exact legal name as registered with the Hawaii Department of Commerce and Consumer Affairs (DCCA), if applicable, and to indicate exact legal name in the appropriate space on Offer Form OF-1 (Exhibit B1) Failure to do so may delay proper execution of the contract.  
The name of the organization filing the offer must match the name which is either legally registered with the DCCA for Hawaii corporations, partnerships, or trade names, or the DOTAX for sole proprietors who do not have registered trade names with the DCCA. An out-of-state organization must be legally registered with its appropriate state.
  
3. The authorized signature on the first page of the Offer Form shall be an original signature. If unsigned or the affixed signature is a facsimile or a photocopy, the offer shall automatically be rejected unless accompanied by other material, containing an original signature, indicating the Offeror’s intent to be bound.

4. The Price Bid must be signed by an authorized representative, and the corporate resolution or evidence of authorization to bind must be attached.
5. The original plus one (1) electronic copy of the Price Bid shall be submitted in a sealed envelope or box. **Neither facsimiles nor e-mailed submissions shall be accepted.**
6. "Solicitation No. IFB-20-01-NELHA" shall be referenced on the outside of the sealed Price Bid packet.
7. The address for delivering a Price Bid in person or via Federal Express or the United Parcel Service the address is:

Natural Energy Laboratory of Hawaii Authority  
73-987 Makako Bay Drive  
Kailua-Kona, Hawaii 96740

Attn. Alexander B. Leonard, Ph.D., Chief Projects Officer

The address for delivering a Price Bid via the US Postal Service the address is:

Natural Energy Laboratory of Hawaii Authority  
73-4460 Queen Kaahumanu Highway, #101  
Kailua-Kona, Hawaii 96740

Attn. Alexander B. Leonard, Ph.D., Chief Projects Officer

8. NELHA must receive sealed Price Bids no later than the date and time indicated in Section 1.03 "IFB Schedule and Significant Dates". Price Bids shall be marked with the date and time upon receipt. Late offers shall not be accepted. The NELHA clock shall serve as the official time.
9. Offerors are cautioned to make prior arrangements to ensure delivery by the Price Bid due date. Offers received after the deadline shall be returned unopened.
10. The State will not provide any reimbursement for the cost of developing, submitting, or evaluating any proposals or Price Bids in response to the IFB.

**SECTION FIVE:  
SPECIAL PROVISIONS**

**5.01 SCOPE**

The furnishing of services to conduct the underwater pipeline survey shall be in accordance with this IFB, including the Scope of Work specified herein, the Special Conditions for the Work (Section 2.09), the Special Provisions in this section, the General Conditions (Exhibit E) and the NELHA Special Conditions (Exhibit F). In the case of conflict between Contract documents, this IFB document shall prevail.

**5.02 RESPONSIBILITY OF OFFERORS**

Offeror is advised that prior to award of a contract under this solicitation, Offeror will be required to be compliant with all the laws governing entities doing business in the State including the following chapters pursuant to HRS 103D-310(c):

- a. Chapter 237, General Excise Tax Law;
- b. Chapter 383, Hawaii Unemployment Security Law;
- c. Chapter 386, Workers' compensation Law;
- d. Chapter 392, Temporary Disability Insurance;
- e. Chapter 393, Prepaid Health Care Act;
- f. Chapter 103C-310 (c), Certificate of Good Standing (COGS) for entities doing business in the State; and
- g. Chapter 104, Wages and Hours of Employees on Public Works Law.

**Hawaii Compliance Express:** The State will verify compliance on Hawaii Compliance Express (HCE). The HCE is an electronic system that allows vendors/contractors/service providers doing business with the State to quickly and easily demonstrate compliance with applicable laws. It is an online system that replaces the necessity of obtaining paper compliance certificates from the Department of Taxation, Federal Internal Revenue Services, Department of Labor and Industrial Relations, and Department of Commerce and Consumer Affairs.

Vendors/contractors/service providers should register with HCE prior to submitting an offer at <https://vendors.ehawaii.gov>. The annual registration fee is \$12.00 and the "Certificate of Vendor Compliance" is required for the execution of the Contract and for issuance of final

payment. If a vendor/contractor/service provider is not compliant on HCE at the time of the award, an Offeror will not receive the award.

### **5.03 PREFERENCES**

The following preferences shall apply to this solicitation. The evaluated price shall be based on application of these preferences in the order specified below:

1. In-State Contractor. Preference shall be given to Offerors within the State of Hawaii. Whenever an Offeror selects and qualifies for an in-state contractor preference, all prices from Offerors who do not select or qualify under the in-state contractor preference shall be increased by 5% for evaluation purposes. Offerors claiming this preference shall submit a "Certificate of Vendor Compliance" with their proposal and must indicate a State of Hawaii business address;
2. Tax adjustment for out-of-state and tax exempt bidders. Where the Offeror is an out-of-state vendor not doing business in the State or is a person exempted from paying the applicable general excise tax, the proposal price, for the purpose of determining the lowest price offer, shall be increased by the applicable retail rate of general excise tax and the applicable use tax; and
3. Reciprocal Preference. Resident Offerors of the State of Hawaii may be given a reciprocal preference equal to the preference that an out-of-state Offeror would be given in their own state. If the out-of-state Offeror's state has a preference comparable to a Hawaii preference, the reciprocal preference shall be equal to the amount the out-of-state preference exceeds the Hawaii preference.

### **5.04 OFFEROR QUALIFICATIONS**

Offeror shall meet all of the qualifications required by this IFB. Failure to meet the qualifications as specified in Section 3.02, Offeror Experience and Capabilities, will disqualify Offeror from being invited to submit a Price Bid.

### **5.05 CONFIDENTIAL INFORMATION**

If a person believes that any portion of a proposal, offer, specification, protest, or correspondence contains information that should be withheld as confidential, then the Procurement Officer named on the cover of this IFB should be so advised in writing and provided with justification to support confidentiality claim. Price is not considered confidential and will not be withheld.

An Offeror shall request in writing nondisclosure of designated trade secrets or other proprietary data considered confidential. Such data shall accompany the proposal, be clearly

marked and shall be readily separable from the proposal in order to facilitate eventual public inspection of the non-confidential portion of the proposal.

Pursuant to HAR Section 3-122-58, the head of the purchasing agency or designee shall consult with Attorney General and make a written determination in accordance with HRS Chapter 92F. If the request for confidentiality is denied, such information shall be disclosed as public information, unless the person appeals the denial to the Office of Information Practices in accordance with HRS Section 92F-42(12).

#### **5.06 REQUIRED REVIEW**

Prospective Offerors shall carefully review this solicitation for defects and questionable or objectionable matter. Comments and questions **must be made in writing and should be received by the STATE prior to the Deadline to Submit Written Questions in the Significant Dates section of the IFB.** This will allow issuance of any necessary corrections to the IFB. It will also help prevent the opening of a possible defective solicitation and unnecessary exposure of Offeror's proposal when an award could not be made. Any exceptions taken to the terms, conditions, specifications, or other requirements listed herein, must be listed in the Exceptions section of the Offer's proposal, if the exception is unresolved by the Proposal Due date.

#### **5.07 PROPOSAL AS PART OF THE CONTRACT**

This IFB, any addenda issued, and the successful Offeror's Technical Proposal and Price Bid shall become a part of the contract.

#### **5.08 PROTEST**

A protest shall be submitted in writing within five (5) working days after the aggrieved person knows or should have known of the facts giving rise thereto: provided that protest based upon the content of the solicitation shall be submitted in writing prior to the date set for receipt of offers. Further provided that a protest of an award or proposed award shall be submitted within five (5) working days after the posting of the award of the contract.

The notice of award letter(s), if any, resulting from this solicitation shall be posted on the Procurement Reporting System, which is available on the State Procurement Office website: <http://www.hawaii.gov/spo2/source/>.

Any protest pursuant to Section 103D-701, HRS, and Section 3-126-3, HAR, shall be submitted in writing to the Natural Energy Laboratory of Hawaii Authority.

## 5.09 GOVERNING LAW; COST OF LITIGATION

The validity of the Contract and any of its terms or provisions, as well as the rights and duties of the parties to the contract, shall be governed by the laws of the State of Hawaii. Any action at law or equity to enforce or interpret the provisions of the contract shall be brought in a state court or competent jurisdiction in Honolulu, Hawaii.

In case the State shall, without any fault on its part, be made a party to any litigation commenced by or against the Contractor in connection with the Contract, the Contractor shall pay all costs and expenses incurred by or imposed on the State, including attorneys' fee.

## 5.10 SUBMISSION OF PROPOSAL

The submission of a proposal shall constitute an incontrovertible representation by the Offeror of compliance with every requirement of the IFB, and that the IFB documents are sufficient in scope and detail to indicate and convey reasonable understanding of all terms and conditions of performance of the work.

Before submitting a proposal, each Offeror must:

1. Examine the solicitation documents thoroughly. Solicitation documents include this IFB, and attachments, plans referred to herein, and any other relevant documents; and
2. Become familiar with State, local, and federal laws, statutes, ordinances, rules, and regulations that may in any manner affect cost, progress, or performance of the work.

NELHA must receive sealed proposals no later than the date and time indicated in Section 1.03, IFB Schedule and Significant Dates. Timely receipt of proposals shall be evidenced by the date and time registered by the NELHA time clock. Offers received after the deadline shall be returned unopened.

## 5.11 PROPOSAL PREPARATION

1. **Offer Guaranty.** An offer guaranty (bid bond) is required for submission of a complete Price Bid in response to this IFB. The offer guarantee shall be in the form of one of the following:
  - a surety bond underwritten by company licensed to issue bonds in this State;
  - legal tender; or
  - a certificate of deposit; share certificate; or cashier's, treasurer's, teller's, or official check drawn by, or a certified check accepted by, and payable on demand to the State by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration.

The face value of the offer guaranty (bid bond) shall be no less than 5% of the Total Lump Sum Bid Price shown in the Offeror's completed Offer Form OF-2 (Exhibit B2).

2. **Tax Liability.** Work performed under this solicitation is a business activity taxable under HRS Chapter 237, and if applicable, taxable under HRS Chapter 238. Vendors are advised that they are liable for the Hawaii General Excise Tax (GET) at the current rate of 4.25% or, if applicable, Use Tax at the current ½% rate. If, however, an Offeror is a person exempt by the HRS from paying the GET and therefore not liable for the taxes on this solicitation, Offeror shall state its tax exempt status and cite the HRS chapter or section allowing the exemption.

3. Costs for developing the Proposal are solely the responsibility of the Offeror, whether or not any award results from this solicitation. NELHA will not reimburse such costs. Offeror is cautioned that illegible offers of any item(s) may be automatically rejected to avoid any errors in interpretation by the reviewers during the evaluation process.

4. All proposals and other material submitted in response to this IFB shall become the property of the State of Hawaii.

5. Copies of all documents transmitted by Offerors via facsimile machines shall be limited to the modifications or withdrawal of an offer pursuant to HAR Sections 3-122-108 and 3-122-28, respectively.

## 5.12 PRICING

Pricing shown in Price Bids shall be an all-inclusive fixed cost. These prices shall be inclusive of all federal, state and local tax; and any and all expenses, required for the completion of the services to be performed as listed under Section 2, Scope of Work. **No other costs will be honored.**

## 5.13 PROPOSAL OPENING

Technical Proposals shall not be opened publicly but shall be opened in the presence of two or more procurement officials. Price Bids received from qualified Offerors shall be publicly opened at the date and time given in Section 1.03 "IFB Schedule and Significant Dates".

The register of bids and Offerors' proposals (excluding confidential information) shall be open to public inspection at the bid opening. All proposals and other material submitted by Offerors become the property of the State and may be returned only at the State's option.

#### **5.14 ACCEPTANCE OF OFFER**

The State's acceptance of an offer, if any, will be made within ninety (90) calendar days after opening of Price Bids. Unless extended by mutual agreement, the Offeror's proposal shall remain firm for the ninety-day period.

#### **5.15 CANCELLATION OF IFB AND PROPOSAL REJECTION**

The State reserves the right to cancel this IFB and to reject any and all Technical Proposals and Price Bids in whole or in part when it is determined to be in the best interest of the State, as provided in Sections 3-122-95 through 3-122-97, HAR.

The State shall not be liable for any costs, expenses, loss of profits or damages whatsoever, incurred by the Offeror in the event this IFB is cancelled or a Technical Proposal or Price Bid is rejected.

#### **5.16 DEBRIEFING**

Pursuant to Section 3-122-60, HAR, a debriefing may be provided, if requested, to the non-selected Offerors to inform them of the basis for the source selection decision and contract award.

A request for debriefing on the rejection of a Technical Proposal shall be made in writing within three (3) working days after the receipt of a letter informing Offeror that their Technical Proposal has been rejected.

A request for debriefing on the rejection of a Price Bid shall be made in writing within three (3) working days after posting of the award of the contract.

In either of the above two cases, the procurement officer or designee shall hold the debriefing within seven (7) working days to the extent practicable from the receipt date of written request.

A protest by the requestor submitted pursuant to §103D-303(h), HRS, following a debriefing shall be filed within five (5) working days of the debriefing, as specified in §103D-303(h), HRS.

#### **5.17 DISQUALIFICATIONS OF PROPOSALS**

The State reserves the right to consider as acceptable only those Technical Proposals and Price Bids submitted in accordance with all the requirements set forth in this IFB and which demonstrate an understanding of the scope of services. Any Technical Proposal or Price Bid offering any other set of terms and conditions contradictory of those included in the IFB may be disqualified without further notice.

## **5.18 CONTRACT EXECUTION**

Successful Offeror receiving award shall enter into a formal written contract which will include:

- (1) Contractor's accepted Technical Proposal and Price Bid;
- (2) General Conditions;
- (3) Special Conditions; and
- (4) This Invitation for Bids;

## **5.19 AWARD OF CONTRACT**

The award will be made to the lowest responsive, responsible Offeror.

## **5.20 NOTICE TO PROCEED**

Work will commence on the official commencement date specified in the Notice to Proceed issued by the State upon execution on the contract by both parties. No work is to be undertaken by the Contractor prior to that date. The State of Hawaii is not liable for any work, contract, costs, expenses, loss of profits, or any damages whatsoever incurred by the Contractor prior to the official commencement date.

## **5.21 PAYMENT**

Incremental payments shall be made to the awarded Contractor based on an approved schedule of values, upon receipt of reports that meet the expectations of the IFB.

HRS Section 103-10 provides that the State shall have thirty (30) calendar days after receipt of invoice or satisfactory completion of contract to make payment. For this reason, the State will reject any offer submitted with a condition requiring payment within a shorter period. Further, the State will reject any offer submitted with a condition requiring interest payments greater than that allowed by HRS §103-10, as amended.

The State will not recognize any requirement established by the Contractor and communicated to the State after award of the contract, which requires payment within a shorter period or interest payment not in conformance with statute.

## **5.22 INVOICING**

Contractor shall submit an invoice with each request for payment and shall be mailed to: Natural Energy Laboratory of Hawaii Authority, 73-4460 Queen Kaahumanu Highway, #101, Kailua-Kona, Hawaii 96740 or emailed to [accounting@nelha.org](mailto:accounting@nelha.org).

## **5.23 SUBCONTRACTING**

No work or services shall be subcontracted or assigned without the prior written approval of the State. No subcontract shall under any circumstances relieve the Contractor of his/her

obligations and liability under the Contract with the State. All persons engaged in performing the work covered by the contract shall be considered employees of the Contractor.

#### **5.24 NON-DISCRIMINATION**

No person performing work under this Agreement, including any subcontractor, employee, or agency of the Contractor, shall engage in any discrimination that is prohibited by any applicable federal, state or county law.

#### **5.25 CONFLICTS OF INTEREST**

The Contractor represents that neither the Contractor, nor any employee or agent of the contractor, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the Contractor's performance of this contract.

#### **5.26 WAIVER**

The failure of the State to insist upon the strict compliance with any term, provision or condition of the contract shall not constitute or be deemed to constitute a waiver or relinquishment of the State's right to enforce the same in accordance with this contract.

#### **5.27 SEVERABILITY**

In the event that any provision of this contract is declared invalid or unenforceable by a court, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this contract.

#### **5.28 CAMPAIGN CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS**

It has been determined that funds for this contract have been appropriated by a legislative body.

Therefore, Offeror, if awarded a contract in response to this solicitation, agrees to comply with Section 11-202.5, HRS, which states that campaign contributions are prohibited from a State and county government contractor during the term of the contract if the contractor is paid with funds appropriated by a legislative body.

**SECTION SIX:  
PROPOSAL FORMS AND QUESTIONNAIRES**

**EXHIBIT A1 -  
PROPOSAL TRANSMITTAL LETTER**

Alexander B. Leonard, Ph.D., Chief Projects Officer  
Natural Energy Laboratory of Hawaii Authority  
73-4460 Queen Kaahumanu Highway, #101  
Kailua-Kona, HI 96740

The undersigned has carefully read and understands the terms, conditions and requirements specified in the Invitation for Bids attached hereto and hereby submit the following Technical Proposal to perform the work specified herein, all in accordance with the true intent and meaning thereof.

The undersigned further understands and agrees to the following:

- That by submitting this proposal, the undersigned is declaring that this proposal is not in violation of Chapter 84, Hawaii Revised Statutes, concerning prohibited State contracts;
- That by submitting this proposal, the undersigned is declaring that the proposal is being made without collusion with any other person, firm or corporation;
- That the NELHA Executive Director reserves the right to cancel the Invitation for Bids at any time and all proposals may be rejected in whole or in part when it is in the best interest of the State;
- That discussions may be conducted with offerors who submit proposals determined to be reasonably susceptible of being selected for award, but a proposal may be accepted without such discussions;
- That award, if any, will be made on a firm fixed fee basis to the lowest responsive and responsible offeror;
- That by submitting this proposal, the undersigned is declaring that if awarded a contract, the undersigned will comply with all requirements for wages, hours and working conditions in accordance with Section 103-55, Hawaii Revised Statutes; and
- That if awarded a contract, the undersigned hereby commits to a minimum of two consultation sessions with the State.

The undersigned acknowledges receipt of any addenda issued by NELHA by recording in the space below the date of receipt:

Addendum No. 1 \_\_\_\_\_ Addendum No. 2 \_\_\_\_\_

Addendum No. 3 \_\_\_\_\_ Addendum No. 4 \_\_\_\_\_

The undersigned hereby certifies that the proposal hereby attached has been carefully checked and is submitted as correct.

Respectfully submitted,

Exact Legal Name of Offeror (company name)

Authorized signature (attach corporate resolution or evidence of authorization to bind)

---

Title

---

Date

---

Street Address

---

City, STATE, Zip Code

---

Telephone No.

Mailing Address (if different from street address):



**EXHIBIT A3 -  
PROPOSAL QUALIFICATION QUESTIONNAIRE**

To be filled in and submitted for each member of the proposed Project Team.

Name of Company: \_\_\_\_\_

1. How many years has your organization been in business under your present business name?
2. How many years' experience in this field of work has your organization had?
3. Show what projects your organization has completed in the past five (5) years that are related to this project:

Name and Address of Project Owner	Description	Contract Amount	Completion Date
--------------------------------------	-------------	--------------------	--------------------

4. Have you ever failed to complete any work awarded to you?

If so, please provide a brief description, including when and where it took place and why work was not completed.

5. Has any officer or partner of your organization in the past five (5) years been an officer, partner or individual of some other organization that failed to complete a contract?

If so, state name of individual, other organization and reason therefore:

6. For what entities within the State of Hawaii other than government agencies have you performed work and to whom do you refer?

Agency	Project Description	Contact Person	Phone
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7. For what State departments and county agencies of the State of Hawaii have you performed work and to whom do you refer?

Department	Project Description	Contact Person	Phone
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8. Have you performed work for the U.S. Government? \_\_\_\_\_

If so, list and to whom do you refer?

Agency	Project Description	Contact Person	Phone
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9. Have you ever performed any work for any other governmental agencies outside the State of Hawaii?

If so, list and to whom do you refer?

Agency	Project Description	Contact Person	Phone
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10. List a minimum of three references for work performed similar to this project.

Company	Project Description	Contact Person	Phone
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11. What is the professional or project experience of the principal individuals being assigned to this project?

Individual's Name	Position or Title	Years Experience	Type of Work
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**EXHIBIT B1 -  
OFFER FORM OF-1**

**IFB-20-01-NELHA - UNDERWATER PIPELINE SURVEY  
Solicitation IFB-20-01-NELHA**

Alexander B. Leonard, Ph.D., Chief Projects Officer  
Natural Energy Laboratory of Hawaii Authority  
73-4460 Queen Kaahumanu Highway, #101  
Kailua-Kona, HI 96740

Dear Dr. Leonard:

The undersigned has carefully read and understands the terms and conditions specified in the Specifications and Special Provisions attached hereto, and in the General Conditions and Special Conditions, by reference made a part hereof and available upon request; and hereby submits the following Price Bid to perform the work specified herein, all in accordance with the true intent and meaning thereof. The undersigned further understands and agrees that by submitting this offer, 1) he/she is declaring his/her offer is not in violation of Chapter 84, Hawai'i Revised Statutes, concerning prohibited State contracts, and 2) he/she is certifying that the price(s) submitted was (were) independently arrived at without collusion.

The undersigned represents that it is: **(Check v one only)**

- A **Hawaii business** incorporated or organized under the laws of the State of Hawaii;  
**OR**  
 A **Compliant Non-Hawaii business** not incorporated or organized under the laws of the State of Hawaii, is or shall be registered at the State of Hawai'i, Department of Commerce and Consumer Affairs Business Registration Division (DCCA-BREG) to do business in the State of Hawaii.

State of incorporation: \_\_\_\_\_

Offeror is:

Sole Proprietor    Partnership    Corporation    Joint Venture    Other \_\_\_\_\_

Federal I.D. No.: \_\_\_\_\_

Hawaii General Excise Tax License I.D. No.: \_\_

Payment address (other than street address below): \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

Business address (street address): \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

Respectfully submitted:

(x) \_\_\_\_\_

Authorized (Original) Signature

Date: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ Name and Title (Please Type or Print)

\*

Exact Legal Name of Company (Offeror)

Fax No.: \_\_\_\_\_

\*If Offeror is a "dba" or a "division" of a corporation, furnish the exact legal name of the corporation under which the awarded contract will be executed:

E-mail Address:

OFFER FORM

OF-1

**EXHIBIT B2 -  
OFFER FORM OF-2**

**UNDERWATER PIPELINE SURVEY  
Solicitation IFB-20-01-NELHA**

Proposed Contract Cost:

The costs for providing the services defined in this Invitation for Bids are as follows (**see Note-1 below**):

A) Basic Work .....\$ \_\_\_\_\_

B1) Additional Work: 2 days<sup>†</sup> x \$ \_\_\_\_\_ = \$ \_\_\_\_\_  
Unit Price per Day

B2) Additional Work: 4 hours<sup>†</sup> x \$ \_\_\_\_\_ = \$ \_\_\_\_\_  
Unit Price per Hour \_\_\_\_\_

Total Lump Sum Bid Price (Sum of the items above): \$ \_\_\_\_\_

**See Note-2 below**

Total Lump Sum Bid Price written in words:

\_\_\_\_\_ DOLLARS

†: the quantity multipliers shown for Additional Work are estimated Variable Quantities. See Special Conditions for the Work (Section 2.09) for a description of how the actual value of Additional Work will be calculated and paid.

**Note-1:** Pricing shall include labor, equipment, materials, supplies, shipping, transportation, all applicable taxes, and any other costs incurred to provide the specified services.

**Note-2:** The value shown on this line item shall be the basis for the face value of the Offer Guarantee (bid bond) described in Section 5.12.1.

Offeror

\_\_\_\_\_  
Name of Company

**NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY  
UNDERWATER PIPELINE SURVEY  
SOLICITATION No. IFB-20-01-NELHA**

**EXHIBIT C -  
CORPORATE RESOLUTION**

Attach here the corporate resolution or written authorization for offeror's representative to sign this offer.

**NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY  
UNDERWATER PIPELINE SURVEY  
SOLICITATION No. IFB-20-01-NELHA**

**EXHIBIT D -  
HCE CERTIFICATE OF VENDOR COMPLIANCE**

Attach a current certificate for Offeror's Hawaii registered business from Hawaii Compliance Express here.

**NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY  
UNDERWATER PIPELINE SURVEY  
SOLICITATION No. IFB-20-01-NELHA  
EXHIBIT E – GENERAL CONDITIONS**

# GENERAL CONDITIONS

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## GENERAL CONDITIONS

1. Coordination of Services by the STATE. The head of the purchasing agency ("HOPA") (which term includes the designee of the HOPA) shall coordinate the services to be provided by the CONTRACTOR in order to complete the performance required in the Contract. The CONTRACTOR shall maintain communications with HOPA at all stages of the CONTRACTOR'S work, and submit to HOPA for resolution any questions which may arise as to the performance of this Contract. "Purchasing agency" as used in these General Conditions means and includes any governmental body which is authorized under chapter 103D, HRS, or its implementing rules and procedures, or by way of delegation, to enter into contracts for the procurement of goods or services or both.
2. Relationship of Parties: Independent Contractor Status and Responsibilities, Including Tax Responsibilities.
  - a. In the performance of services required under this Contract, the CONTRACTOR is an "independent contractor," with the authority and responsibility to control and direct the performance and details of the work and services required under this Contract; however, the STATE shall have a general right to inspect work in progress to determine whether, in the STATE'S opinion, the services are being performed by the CONTRACTOR in compliance with this Contract. Unless otherwise provided by special condition, it is understood that the STATE does not agree to use the CONTRACTOR exclusively, and that the CONTRACTOR is free to contract to provide services to other individuals or entities while under contract with the STATE.
  - b. The CONTRACTOR and the CONTRACTOR'S employees and agents are not by reason of this Contract, agents or employees of the State for any purpose, and the CONTRACTOR and the CONTRACTOR'S employees and agents shall not be entitled to claim or receive from the State any vacation, sick leave, retirement, workers' compensation, unemployment insurance, or other benefits provided to state employees.
  - c. The CONTRACTOR shall be responsible for the accuracy, completeness, and adequacy of the CONTRACTOR'S performance under this Contract. Furthermore, the CONTRACTOR intentionally, voluntarily, and knowingly assumes the sole and entire liability to the CONTRACTOR'S employees and agents, and to any individual not a party to this Contract, for all loss, damage, or injury caused by the CONTRACTOR, or the CONTRACTOR'S employees or agents in the course of their employment.
  - d. The CONTRACTOR shall be responsible for payment of all applicable federal, state, and county taxes and fees which may become due and owing by the CONTRACTOR by reason of this Contract, including but not limited to (i) income taxes, (ii) employment related fees, assessments, and taxes, and (iii) general excise taxes. The CONTRACTOR also is responsible for obtaining all licenses, permits, and certificates that may be required in order to perform this Contract.
  - e. The CONTRACTOR shall obtain a general excise tax license from the Department of Taxation, State of Hawaii, in accordance with section 237-9, HRS, and shall comply with all requirements thereof. The CONTRACTOR shall obtain a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of the Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid and submit the same to the STATE prior to commencing any performance under this Contract. The CONTRACTOR shall also be solely responsible for meeting all requirements necessary to obtain the tax clearance certificate required for final payment under sections 103-53 and 103D-328, HRS, and paragraph 17 of these General Conditions.
  - f. The CONTRACTOR is responsible for securing all employee-related insurance coverage for the CONTRACTOR and the CONTRACTOR'S employees and agents that is or may be required by law, and for payment of all premiums, costs, and other liabilities associated with securing the insurance coverage.

- g. The CONTRACTOR shall obtain a certificate of compliance issued by the Department of Labor and Industrial Relations, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- h. The CONTRACTOR shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- i. In lieu of the above certificates from the Department of Taxation, Labor and Industrial Relations, and Commerce and Consumer Affairs, the CONTRACTOR may submit proof of compliance through the State Procurement Office's designated certification process.

3. Personnel Requirements.

- a. The CONTRACTOR shall secure, at the CONTRACTOR'S own expense, all personnel required to perform this Contract.
- b. The CONTRACTOR shall ensure that the CONTRACTOR'S employees or agents are experienced and fully qualified to engage in the activities and perform the services required under this Contract, and that all applicable licensing and operating requirements imposed or required under federal, state, or county law, and all applicable accreditation and other standards of quality generally accepted in the field of the activities of such employees and agents are complied with and satisfied.

4. Nondiscrimination. No person performing work under this Contract, including any subcontractor, employee, or agent of the CONTRACTOR, shall engage in any discrimination that is prohibited by any applicable federal, state, or county law.

5. Conflicts of Interest. The CONTRACTOR represents that neither the CONTRACTOR, nor any employee or agent of the CONTRACTOR, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the CONTRACTOR'S performance under this Contract.

6. Subcontracts and Assignments. The CONTRACTOR shall not assign or subcontract any of the CONTRACTOR'S duties, obligations, or interests under this Contract and no such assignment or subcontract shall be effective unless (i) the CONTRACTOR obtains the prior written consent of the STATE, and (ii) the CONTRACTOR'S assignee or subcontractor submits to the STATE a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR'S assignee or subcontractor have been paid. Additionally, no assignment by the CONTRACTOR of the CONTRACTOR'S right to compensation under this Contract shall be effective unless and until the assignment is approved by the Comptroller of the State of Hawaii, as provided in section 40-58, HRS.

a. Recognition of a successor in interest. When in the best interest of the State, a successor in interest may be recognized in an assignment contract in which the STATE, the CONTRACTOR and the assignee or transferee (hereinafter referred to as the "Assignee") agree that:

- (1) The Assignee assumes all of the CONTRACTOR'S obligations;
- (2) The CONTRACTOR remains liable for all obligations under this Contract but waives all rights under this Contract as against the STATE; and
- (3) The CONTRACTOR shall continue to furnish, and the Assignee shall also furnish, all required bonds.

b. Change of name. When the CONTRACTOR asks to change the name in which it holds this Contract with the STATE, the procurement officer of the purchasing agency (hereinafter referred to as the "Agency procurement officer") shall, upon receipt of a document acceptable or satisfactory to the

Agency procurement officer indicating such change of name (for example, an amendment to the CONTRACTOR'S articles of incorporation), enter into an amendment to this Contract with the CONTRACTOR to effect such a change of name. The amendment to this Contract changing the CONTRACTOR'S name shall specifically indicate that no other terms and conditions of this Contract are thereby changed.

- c. Reports. All assignment contracts and amendments to this Contract effecting changes of the CONTRACTOR'S name or novations hereunder shall be reported to the chief procurement officer (CPO) as defined in section 103D-203(a), HRS, within thirty days of the date that the assignment contract or amendment becomes effective.
  - d. Actions affecting more than one purchasing agency. Notwithstanding the provisions of subparagraphs 6a through 6c herein, when the CONTRACTOR holds contracts with more than one purchasing agency of the State, the assignment contracts and the novation and change of name amendments herein authorized shall be processed only through the CPO's office.
7. Indemnification and Defense. The CONTRACTOR shall defend, indemnify, and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys' fees, and all claims, suits, and demands therefore, arising out of or resulting from the acts or omissions of the CONTRACTOR or the CONTRACTOR'S employees, officers, agents, or subcontractors under this Contract. The provisions of this paragraph shall remain in full force and effect notwithstanding the expiration or early termination of this Contract.
  8. Cost of Litigation. In case the STATE shall, without any fault on its part, be made a party to any litigation commenced by or against the CONTRACTOR in connection with this Contract, the CONTRACTOR shall pay all costs and expenses incurred by or imposed on the STATE, including attorneys' fees.
  9. Liquidated Damages. When the CONTRACTOR is given notice of delay or nonperformance as specified in paragraph 13 (Termination for Default) and fails to cure in the time specified, it is agreed the CONTRACTOR shall pay to the STATE the amount, if any, set forth in this Contract per calendar day from the date set for cure until either (i) the STATE reasonably obtains similar goods or services, or both, if the CONTRACTOR is terminated for default, or (ii) until the CONTRACTOR provides the goods or services, or both, if the CONTRACTOR is not terminated for default. To the extent that the CONTRACTOR'S delay or nonperformance is excused under paragraph 13d (Excuse for Nonperformance or Delay Performance), liquidated damages shall not be assessable against the CONTRACTOR. The CONTRACTOR remains liable for damages caused other than by delay.
  10. STATE'S Right of Offset. The STATE may offset against any monies or other obligations the STATE owes to the CONTRACTOR under this Contract, any amounts owed to the State of Hawaii by the CONTRACTOR under this Contract or any other contracts, or pursuant to any law or other obligation owed to the State of Hawaii by the CONTRACTOR, including, without limitation, the payment of any taxes or levies of any kind or nature. The STATE will notify the CONTRACTOR in writing of any offset and the nature of such offset. For purposes of this paragraph, amounts owed to the State of Hawaii shall not include debts or obligations which have been liquidated, agreed to by the CONTRACTOR, and are covered by an installment payment or other settlement plan approved by the State of Hawaii, provided, however, that the CONTRACTOR shall be entitled to such exclusion only to the extent that the CONTRACTOR is current with, and not delinquent on, any payments or obligations owed to the State of Hawaii under such payment or other settlement plan.
  11. Disputes. Disputes shall be resolved in accordance with section 103D-703, HRS, and chapter 3-126, Hawaii Administrative Rules ("HAR"), as the same may be amended from time to time.
  12. Suspension of Contract. The STATE reserves the right at any time and for any reason to suspend this Contract for any reasonable period, upon written notice to the CONTRACTOR in accordance with the provisions herein.
    - a. Order to stop performance. The Agency procurement officer may, by written order to the CONTRACTOR, at any time, and without notice to any surety, require the CONTRACTOR to stop all or any part of the performance called for by this Contract. This order shall be for a specified period

not exceeding sixty (60) days after the order is delivered to the CONTRACTOR, unless the parties agree to any further period. Any such order shall be identified specifically as a stop performance order issued pursuant to this section. Stop performance orders shall include, as appropriate: (1) A clear description of the work to be suspended; (2) Instructions as to the issuance of further orders by the CONTRACTOR for material or services; (3) Guidance as to action to be taken on subcontracts; and (4) Other instructions and suggestions to the CONTRACTOR for minimizing costs. Upon receipt of such an order, the CONTRACTOR shall forthwith comply with its terms and suspend all performance under this Contract at the time stated, provided, however, the CONTRACTOR shall take all reasonable steps to minimize the occurrence of costs allocable to the performance covered by the order during the period of performance stoppage. Before the stop performance order expires, or within any further period to which the parties shall have agreed, the Agency procurement officer shall either:

- (1) Cancel the stop performance order; or
- (2) Terminate the performance covered by such order as provided in the termination for default provision or the termination for convenience provision of this Contract.

b. Cancellation or expiration of the order. If a stop performance order issued under this section is cancelled at any time during the period specified in the order, or if the period of the order or any extension thereof expires, the CONTRACTOR shall have the right to resume performance. An appropriate adjustment shall be made in the delivery schedule or contract price, or both, and the Contract shall be modified in writing accordingly, if:

- (1) The stop performance order results in an increase in the time required for, or in the CONTRACTOR'S cost properly allocable to, the performance of any part of this Contract; and
- (2) The CONTRACTOR asserts a claim for such an adjustment within thirty (30) days after the end of the period of performance stoppage; provided that, if the Agency procurement officer decides that the facts justify such action, any such claim asserted may be received and acted upon at any time prior to final payment under this Contract.

c. Termination of stopped performance. If a stop performance order is not cancelled and the performance covered by such order is terminated for default or convenience, the reasonable costs resulting from the stop performance order shall be allowable by adjustment or otherwise.

d. Adjustment of price. Any adjustment in contract price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

### 13. Termination for Default.

a. Default. If the CONTRACTOR refuses or fails to perform any of the provisions of this Contract with such diligence as will ensure its completion within the time specified in this Contract, or any extension thereof, otherwise fails to timely satisfy the Contract provisions, or commits any other substantial breach of this Contract, the Agency procurement officer may notify the CONTRACTOR in writing of the delay or non-performance and if not cured in ten (10) days or any longer time specified in writing by the Agency procurement officer, such officer may terminate the CONTRACTOR'S right to proceed with the Contract or such part of the Contract as to which there has been delay or a failure to properly perform. In the event of termination in whole or in part, the Agency procurement officer may procure similar goods or services in a manner and upon the terms deemed appropriate by the Agency procurement officer. The CONTRACTOR shall continue performance of the Contract to the extent it is not terminated and shall be liable for excess costs incurred in procuring similar goods or services.

b. CONTRACTOR'S duties. Notwithstanding termination of the Contract and subject to any directions from the Agency procurement officer, the CONTRACTOR shall take timely, reasonable, and necessary action to protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest.

- c. Compensation. Payment for completed goods and services delivered and accepted by the STATE shall be at the price set forth in the Contract. Payment for the protection and preservation of property shall be in an amount agreed upon by the CONTRACTOR and the Agency procurement officer. If the parties fail to agree, the Agency procurement officer shall set an amount subject to the CONTRACTOR'S rights under chapter 3-126, HAR. The STATE may withhold from amounts due the CONTRACTOR such sums as the Agency procurement officer deems to be necessary to protect the STATE against loss because of outstanding liens or claims and to reimburse the STATE for the excess costs expected to be incurred by the STATE in procuring similar goods and services.
- d. Excuse for nonperformance or delayed performance. The CONTRACTOR shall not be in default by reason of any failure in performance of this Contract in accordance with its terms, including any failure by the CONTRACTOR to make progress in the prosecution of the performance hereunder which endangers such performance, if the CONTRACTOR has notified the Agency procurement officer within fifteen (15) days after the cause of the delay and the failure arises out of causes such as: acts of God; acts of a public enemy; acts of the State and any other governmental body in its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes or other labor disputes; freight embargoes; or unusually severe weather. If the failure to perform is caused by the failure of a subcontractor to perform or to make progress, and if such failure arises out of causes similar to those set forth above, the CONTRACTOR shall not be deemed to be in default, unless the goods and services to be furnished by the subcontractor were reasonably obtainable from other sources in sufficient time to permit the CONTRACTOR to meet the requirements of the Contract. Upon request of the CONTRACTOR, the Agency procurement officer shall ascertain the facts and extent of such failure, and, if such officer determines that any failure to perform was occasioned by any one or more of the excusable causes, and that, but for the excusable cause, the CONTRACTOR'S progress and performance would have met the terms of the Contract, the delivery schedule shall be revised accordingly, subject to the rights of the STATE under this Contract. As used in this paragraph, the term "subcontractor" means subcontractor at any tier.
- e. Erroneous termination for default. If, after notice of termination of the CONTRACTOR'S right to proceed under this paragraph, it is determined for any reason that the CONTRACTOR was not in default under this paragraph, or that the delay was excusable under the provisions of subparagraph 13d, "Excuse for nonperformance or delayed performance," the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to paragraph 14.
- f. Additional rights and remedies. The rights and remedies provided in this paragraph are in addition to any other rights and remedies provided by law or under this Contract.

14. Termination for Convenience.

- a. Termination. The Agency procurement officer may, when the interests of the STATE so require, terminate this Contract in whole or in part, for the convenience of the STATE. The Agency procurement officer shall give written notice of the termination to the CONTRACTOR specifying the part of the Contract terminated and when termination becomes effective.
- b. CONTRACTOR'S obligations. The CONTRACTOR shall incur no further obligations in connection with the terminated performance and on the date(s) set in the notice of termination the CONTRACTOR will stop performance to the extent specified. The CONTRACTOR shall also terminate outstanding orders and subcontracts as they relate to the terminated performance. The CONTRACTOR shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated performance subject to the STATE'S approval. The Agency procurement officer may direct the CONTRACTOR to assign the CONTRACTOR'S right, title, and interest under terminated orders or subcontracts to the STATE. The CONTRACTOR must still complete the performance not terminated by the notice of termination and may incur obligations as necessary to do so.
- c. Right to goods and work product. The Agency procurement officer may require the CONTRACTOR to transfer title and deliver to the STATE in the manner and to the extent directed by the Agency procurement officer:

- (1) Any completed goods or work product; and
- (2) The partially completed goods and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (hereinafter called "manufacturing material") as the CONTRACTOR has specifically produced or specially acquired for the performance of the terminated part of this Contract.

The CONTRACTOR shall, upon direction of the Agency procurement officer, protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest. If the Agency procurement officer does not exercise this right, the CONTRACTOR shall use best efforts to sell such goods and manufacturing materials. Use of this paragraph in no way implies that the STATE has breached the Contract by exercise of the termination for convenience provision.

d. Compensation.

- (1) The CONTRACTOR shall submit a termination claim specifying the amounts due because of the termination for convenience together with the cost or pricing data, submitted to the extent required by chapter 3-122, HAR, bearing on such claim. If the CONTRACTOR fails to file a termination claim within one year from the effective date of termination, the Agency procurement officer may pay the CONTRACTOR, if at all, an amount set in accordance with subparagraph 14d(3) below.
- (2) The Agency procurement officer and the CONTRACTOR may agree to a settlement provided the CONTRACTOR has filed a termination claim supported by cost or pricing data submitted as required and that the settlement does not exceed the total Contract price plus settlement costs reduced by payments previously made by the STATE, the proceeds of any sales of goods and manufacturing materials under subparagraph 14c, and the Contract price of the performance not terminated.
- (3) Absent complete agreement under subparagraph 14d(2) the Agency procurement officer shall pay the CONTRACTOR the following amounts, provided payments agreed to under subparagraph 14d(2) shall not duplicate payments under this subparagraph for the following:
  - (A) Contract prices for goods or services accepted under the Contract;
  - (B) Costs incurred in preparing to perform and performing the terminated portion of the performance plus a fair and reasonable profit on such portion of the performance, such profit shall not include anticipatory profit or consequential damages, less amounts paid or to be paid for accepted goods or services; provided, however, that if it appears that the CONTRACTOR would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss;
  - (C) Costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to subparagraph 14b. These costs must not include costs paid in accordance with subparagraph 14d(3)(B);
  - (D) The reasonable settlement costs of the CONTRACTOR, including accounting, legal, clerical, and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the Contract and for the termination of subcontracts thereunder, together with reasonable storage, transportation, and other costs incurred in connection with the protection or disposition of property allocable to the terminated portion of this Contract. The total sum to be paid the CONTRACTOR under this subparagraph shall not exceed the total Contract price plus the reasonable settlement costs of the CONTRACTOR reduced by the amount of payments otherwise made, the proceeds of any sales of

supplies and manufacturing materials under subparagraph 14d(2), and the contract price of performance not terminated.

- (4) Costs claimed, agreed to, or established under subparagraphs 14d(2) and 14d(3) shall be in accordance with Chapter 3-123 (Cost Principles) of the Procurement Rules.

15. Claims Based on the Agency Procurement Officer's Actions or Omissions.

a. Changes in scope. If any action or omission on the part of the Agency procurement officer (which term includes the designee of such officer for purposes of this paragraph 15) requiring performance changes within the scope of the Contract constitutes the basis for a claim by the CONTRACTOR for additional compensation, damages, or an extension of time for completion, the CONTRACTOR shall continue with performance of the Contract in compliance with the directions or orders of such officials, but by so doing, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, damages, or an extension of time for completion; provided:

- (1) Written notice required. The CONTRACTOR shall give written notice to the Agency procurement officer:

- (A) Prior to the commencement of the performance involved, if at that time the CONTRACTOR knows of the occurrence of such action or omission;

- (B) Within thirty (30) days after the CONTRACTOR knows of the occurrence of such action or omission, if the CONTRACTOR did not have such knowledge prior to the commencement of the performance; or

- (C) Within such further time as may be allowed by the Agency procurement officer in writing.

- (2) Notice content. This notice shall state that the CONTRACTOR regards the act or omission as a reason which may entitle the CONTRACTOR to additional compensation, damages, or an extension of time. The Agency procurement officer, upon receipt of such notice, may rescind such action, remedy such omission, or take such other steps as may be deemed advisable in the discretion of the Agency procurement officer;

- (3) Basis must be explained. The notice required by subparagraph 15a(1) describes as clearly as practicable at the time the reasons why the CONTRACTOR believes that additional compensation, damages, or an extension of time may be remedies to which the CONTRACTOR is entitled; and

- (4) Claim must be justified. The CONTRACTOR must maintain and, upon request, make available to the Agency procurement officer within a reasonable time, detailed records to the extent practicable, and other documentation and evidence satisfactory to the STATE, justifying the claimed additional costs or an extension of time in connection with such changes.

b. CONTRACTOR not excused. Nothing herein contained, however, shall excuse the CONTRACTOR from compliance with any rules or laws precluding any state officers and CONTRACTOR from acting in collusion or bad faith in issuing or performing change orders which are clearly not within the scope of the Contract.

c. Price adjustment. Any adjustment in the price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

16. Costs and Expenses. Any reimbursement due the CONTRACTOR for per diem and transportation expenses under this Contract shall be subject to chapter 3-123 (Cost Principles), HAR, and the following guidelines:

a. Reimbursement for air transportation shall be for actual cost or coach class air fare, whichever is less.

- b. Reimbursement for ground transportation costs shall not exceed the actual cost of renting an intermediate-sized vehicle.
- c. Unless prior written approval of the HOPA is obtained, reimbursement for subsistence allowance (i.e., hotel and meals, etc.) shall not exceed the applicable daily authorized rates for inter-island or out-of-state travel that are set forth in the current Governor's Executive Order authorizing adjustments in salaries and benefits for state officers and employees in the executive branch who are excluded from collective bargaining coverage.

17. Payment Procedures; Final Payment; Tax Clearance.

- a. Original invoices required. All payments under this Contract shall be made only upon submission by the CONTRACTOR of original invoices specifying the amount due and certifying that services requested under the Contract have been performed by the CONTRACTOR according to the Contract.
- b. Subject to available funds. Such payments are subject to availability of funds and allotment by the Director of Finance in accordance with chapter 37, HRS. Further, all payments shall be made in accordance with and subject to chapter 40, HRS.
- c. Prompt payment.
  - (1) Any money, other than retainage, paid to the CONTRACTOR shall be disbursed to subcontractors within ten (10) days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and
  - (2) Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten (10) days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.
- d. Final payment. Final payment under this Contract shall be subject to sections 103-53 and 103D-328, HRS, which require a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid. Further, in accordance with section 3-122-112, HAR, CONTRACTOR shall provide a certificate affirming that the CONTRACTOR has remained in compliance with all applicable laws as required by this section.

18. Federal Funds. If this Contract is payable in whole or in part from federal funds, CONTRACTOR agrees that, as to the portion of the compensation under this Contract to be payable from federal funds, the CONTRACTOR shall be paid only from such funds received from the federal government, and shall not be paid from any other funds. Failure of the STATE to receive anticipated federal funds shall not be considered a breach by the STATE or an excuse for nonperformance by the CONTRACTOR.

19. Modifications of Contract.

- a. In writing. Any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract permitted by this Contract shall be made by written amendment to this Contract, signed by the CONTRACTOR and the STATE, provided that change orders shall be made in accordance with paragraph 20 herein.
- b. No oral modification. No oral modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract shall be permitted.
- c. Agency procurement officer. By written order, at any time, and without notice to any surety, the Agency procurement officer may unilaterally order of the CONTRACTOR:

- (A) Changes in the work within the scope of the Contract; and
  - (B) Changes in the time of performance of the Contract that do not alter the scope of the Contract work.
- d. Adjustments of price or time for performance. If any modification increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, an adjustment shall be made and this Contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined, where applicable, in accordance with the price adjustment clause of this Contract or as negotiated.
- e. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if written modification of the Contract is not made prior to final payment under this Contract.
- f. Claims not barred. In the absence of a written contract modification, nothing in this clause shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under this Contract or for a breach of contract.
- g. CPO approval. If this is a professional services contract awarded pursuant to section 103D-303 or 103D-304, HRS, any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract which increases the amount payable to the CONTRACTOR by at least \$25,000.00 or ten per cent (10%) of the initial contract price, whichever increase is higher, must receive the prior approval of the CPO.
- h. Tax clearance. The STATE may, at its discretion, require the CONTRACTOR to submit to the STATE, prior to the STATE'S approval of any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract, a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid.
- i. Sole source contracts. Amendments to sole source contracts that would change the original scope of the Contract may only be made with the approval of the CPO. Annual renewal of a sole source contract for services should not be submitted as an amendment.
20. Change Order. The Agency procurement officer may, by a written order signed only by the STATE, at any time, and without notice to any surety, and subject to all appropriate adjustments, make changes within the general scope of this Contract in any one or more of the following:
- (1) Drawings, designs, or specifications, if the goods or services to be furnished are to be specially provided to the STATE in accordance therewith;
  - (2) Method of delivery; or
  - (3) Place of delivery.
- a. Adjustments of price or time for performance. If any change order increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, whether or not changed by the order, an adjustment shall be made and the Contract modified in writing accordingly. Any adjustment in the Contract price made pursuant to this provision shall be determined in accordance with the price adjustment provision of this Contract. Failure of the parties to agree to an adjustment shall not excuse the CONTRACTOR from proceeding with the Contract as changed, provided that the Agency procurement officer promptly and duly makes the provisional adjustments in payment or time for performance as may be reasonable. By proceeding with the work, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, or any extension of time for completion.

- b. Time period for claim. Within ten (10) days after receipt of a written change order under subparagraph 20a, unless the period is extended by the Agency procurement officer in writing, the CONTRACTOR shall respond with a claim for an adjustment. The requirement for a timely written response by CONTRACTOR cannot be waived and shall be a condition precedent to the assertion of a claim.
- c. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if a written response is not given prior to final payment under this Contract.
- d. Other claims not barred. In the absence of a change order, nothing in this paragraph 20 shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under the Contract or for breach of contract.

21. Price Adjustment.

- a. Price adjustment. Any adjustment in the contract price pursuant to a provision in this Contract shall be made in one or more of the following ways:
  - (1) By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;
  - (2) By unit prices specified in the Contract or subsequently agreed upon;
  - (3) By the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as specified in the Contract or subsequently agreed upon;
  - (4) In such other manner as the parties may mutually agree; or
  - (5) In the absence of agreement between the parties, by a unilateral determination by the Agency procurement officer of the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as computed by the Agency procurement officer in accordance with generally accepted accounting principles and applicable sections of chapters 3-123 and 3-126, HAR.
- b. Submission of cost or pricing data. The CONTRACTOR shall provide cost or pricing data for any price adjustments subject to the provisions of chapter 3-122, HAR.

22. Variation in Quantity for Definite Quantity Contracts. Upon the agreement of the STATE and the CONTRACTOR, the quantity of goods or services, or both, if a definite quantity is specified in this Contract, may be increased by a maximum of ten per cent (10%); provided the unit prices will remain the same except for any price adjustments otherwise applicable; and the Agency procurement officer makes a written determination that such an increase will either be more economical than awarding another contract or that it would not be practical to award another contract.

23. Changes in Cost-Reimbursement Contract. If this Contract is a cost-reimbursement contract, the following provisions shall apply:

- a. The Agency procurement officer may at any time by written order, and without notice to the sureties, if any, make changes within the general scope of the Contract in any one or more of the following:
  - (1) Description of performance (Attachment 1);
  - (2) Time of performance (i.e., hours of the day, days of the week, etc.);
  - (3) Place of performance of services;

- (4) Drawings, designs, or specifications when the supplies to be furnished are to be specially manufactured for the STATE in accordance with the drawings, designs, or specifications;
  - (5) Method of shipment or packing of supplies; or
  - (6) Place of delivery.
- b. If any change causes an increase or decrease in the estimated cost of, or the time required for performance of, any part of the performance under this Contract, whether or not changed by the order, or otherwise affects any other terms and conditions of this Contract, the Agency procurement officer shall make an equitable adjustment in the (1) estimated cost, delivery or completion schedule, or both; (2) amount of any fixed fee; and (3) other affected terms and shall modify the Contract accordingly.
  - c. The CONTRACTOR must assert the CONTRACTOR'S rights to an adjustment under this provision within thirty (30) days from the day of receipt of the written order. However, if the Agency procurement officer decides that the facts justify it, the Agency procurement officer may receive and act upon a proposal submitted before final payment under the Contract.
  - d. Failure to agree to any adjustment shall be a dispute under paragraph 11 of this Contract. However, nothing in this provision shall excuse the CONTRACTOR from proceeding with the Contract as changed.
  - e. Notwithstanding the terms and conditions of subparagraphs 23a and 23b, the estimated cost of this Contract and, if this Contract is incrementally funded, the funds allotted for the performance of this Contract, shall not be increased or considered to be increased except by specific written modification of the Contract indicating the new contract estimated cost and, if this contract is incrementally funded, the new amount allotted to the contract.
24. Confidentiality of Material.
- a. All material given to or made available to the CONTRACTOR by virtue of this Contract, which is identified as proprietary or confidential information, will be safeguarded by the CONTRACTOR and shall not be disclosed to any individual or organization without the prior written approval of the STATE.
  - b. All information, data, or other material provided by the CONTRACTOR to the STATE shall be subject to the Uniform Information Practices Act, chapter 92F, HRS.
25. Publicity. The CONTRACTOR shall not refer to the STATE, or any office, agency, or officer thereof, or any state employee, including the HOPA, the CPO, the Agency procurement officer, or to the services or goods, or both, provided under this Contract, in any of the CONTRACTOR'S brochures, advertisements, or other publicity of the CONTRACTOR. All media contacts with the CONTRACTOR about the subject matter of this Contract shall be referred to the Agency procurement officer.
26. Ownership Rights and Copyright. The STATE shall have complete ownership of all material, both finished and unfinished, which is developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract, and all such material shall be considered "works made for hire." All such material shall be delivered to the STATE upon expiration or termination of this Contract. The STATE, in its sole discretion, shall have the exclusive right to copyright any product, concept, or material developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract.
27. Liens and Warranties. Goods provided under this Contract shall be provided free of all liens and provided together with all applicable warranties, or with the warranties described in the Contract documents, whichever are greater.
28. Audit of Books and Records of the CONTRACTOR. The STATE may, at reasonable times and places, audit the books and records of the CONTRACTOR, prospective contractor, subcontractor, or prospective subcontractor which are related to:

- a. The cost or pricing data, and
- b. A state contract, including subcontracts, other than a firm fixed-price contract.

29. Cost or Pricing Data. Cost or pricing data must be submitted to the Agency procurement officer and timely certified as accurate for contracts over \$100,000 unless the contract is for a multiple-term or as otherwise specified by the Agency procurement officer. Unless otherwise required by the Agency procurement officer, cost or pricing data submission is not required for contracts awarded pursuant to competitive sealed bid procedures.

If certified cost or pricing data are subsequently found to have been inaccurate, incomplete, or noncurrent as of the date stated in the certificate, the STATE is entitled to an adjustment of the contract price, including profit or fee, to exclude any significant sum by which the price, including profit or fee, was increased because of the defective data. It is presumed that overstated cost or pricing data increased the contract price in the amount of the defect plus related overhead and profit or fee. Therefore, unless there is a clear indication that the defective data was not used or relied upon, the price will be reduced in such amount.

30. Audit of Cost or Pricing Data. When cost or pricing principles are applicable, the STATE may require an audit of cost or pricing data.

31. Records Retention.

(1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.

(2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.

32. Antitrust Claims. The STATE and the CONTRACTOR recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, the CONTRACTOR hereby assigns to STATE any and all claims for overcharges as to goods and materials purchased in connection with this Contract, except as to overcharges which result from violations commencing after the price is established under this Contract and which are not passed on to the STATE under an escalation clause.

33. Patented Articles. The CONTRACTOR shall defend, indemnify, and hold harmless the STATE, and its officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys fees, and all claims, suits, and demands arising out of or resulting from any claims, demands, or actions by the patent holder for infringement or other improper or unauthorized use of any patented article, patented process, or patented appliance in connection with this Contract. The CONTRACTOR shall be solely responsible for correcting or curing to the satisfaction of the STATE any such infringement or improper or unauthorized use, including, without limitation: (a) furnishing at no cost to the STATE a substitute article, process, or appliance acceptable to the STATE, (b) paying royalties or other required payments to the patent holder, (c) obtaining proper authorizations or releases from the patent holder, and (d) furnishing such security to or making such arrangements with the patent holder as may be necessary to correct or cure any such infringement or improper or unauthorized use.

34. Governing Law. The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, shall be governed by the laws of the State of Hawaii. Any action at law or in equity to enforce or interpret the provisions of this Contract shall be brought in a state court of competent jurisdiction in Honolulu, Hawaii.

35. Compliance with Laws. The CONTRACTOR shall comply with all federal, state, and county laws, ordinances, codes, rules, and regulations, as the same may be amended from time to time, that in any way affect the CONTRACTOR'S performance of this Contract.
36. Conflict Between General Conditions and Procurement Rules. In the event of a conflict between the General Conditions and the procurement rules, the procurement rules in effect on the date this Contract became effective shall control and are hereby incorporated by reference.
37. Entire Contract. This Contract sets forth all of the agreements, conditions, understandings, promises, warranties, and representations between the STATE and the CONTRACTOR relative to this Contract. This Contract supersedes all prior agreements, conditions, understandings, promises, warranties, and representations, which shall have no further force or effect. There are no agreements, conditions, understandings, promises, warranties, or representations, oral or written, express or implied, between the STATE and the CONTRACTOR other than as set forth or as referred to herein.
38. Severability. In the event that any provision of this Contract is declared invalid or unenforceable by a court, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this Contract.
39. Waiver. The failure of the STATE to insist upon the strict compliance with any term, provision, or condition of this Contract shall not constitute or be deemed to constitute a waiver or relinquishment of the STATE'S right to enforce the same in accordance with this Contract. The fact that the STATE specifically refers to one provision of the procurement rules or one section of the Hawaii Revised Statutes, and does not include other provisions or statutory sections in this Contract shall not constitute a waiver or relinquishment of the STATE'S rights or the CONTRACTOR'S obligations under the procurement rules or statutes.
40. Pollution Control. If during the performance of this Contract, the CONTRACTOR encounters a "release" or a "threatened release" of a reportable quantity of a "hazardous substance," "pollutant," or "contaminant" as those terms are defined in section 128D-1, HRS, the CONTRACTOR shall immediately notify the STATE and all other appropriate state, county, or federal agencies as required by law. The Contractor shall take all necessary actions, including stopping work, to avoid causing, contributing to, or making worse a release of a hazardous substance, pollutant, or contaminant, and shall promptly obey any orders the Environmental Protection Agency or the state Department of Health issues in response to the release. In the event there is an ensuing cease-work period, and the STATE determines that this Contract requires an adjustment of the time for performance, the Contract shall be modified in writing accordingly.
41. Campaign Contributions. The CONTRACTOR is hereby notified of the applicability of 11-205.5, HRS, which states that campaign contributions are prohibited from specified state or county government contractors during the terms of their contracts if the contractors are paid with funds appropriated by a legislative body.
42. Confidentiality of Personal Information.
- a. Definitions.
- "Personal information" means an individual's first name or first initial and last name in combination with any one or more of the following data elements, when either name or data elements are not encrypted:
- (1) Social security number;
  - (2) Driver's license number or Hawaii identification card number; or
  - (3) Account number, credit or debit card number, access code, or password that would permit access to an individual's financial information.

Personal information does not include publicly available information that is lawfully made available to the general public from federal, state, or local government records.

"Technological safeguards" means the technology and the policy and procedures for use of the technology to protect and control access to personal information.

b. Confidentiality of Material.

- (1) All material given to or made available to the CONTRACTOR by the STATE by virtue of this Contract which is identified as personal information, shall be safeguarded by the CONTRACTOR and shall not be disclosed without the prior written approval of the STATE.
- (2) CONTRACTOR agrees not to retain, use, or disclose personal information for any purpose other than as permitted or required by this Contract.
- (3) CONTRACTOR agrees to implement appropriate "technological safeguards" that are acceptable to the STATE to reduce the risk of unauthorized access to personal information.
- (4) CONTRACTOR shall report to the STATE in a prompt and complete manner any security breaches involving personal information.
- (5) CONTRACTOR agrees to mitigate, to the extent practicable, any harmful effect that is known to CONTRACTOR because of a use or disclosure of personal information by CONTRACTOR in violation of the requirements of this paragraph.
- (6) CONTRACTOR shall complete and retain a log of all disclosures made of personal information received from the STATE, or personal information created or received by CONTRACTOR on behalf of the STATE.

c. Security Awareness Training and Confidentiality Agreements.

- (1) CONTRACTOR certifies that all of its employees who will have access to the personal information have completed training on security awareness topics relating to protecting personal information.
- (2) CONTRACTOR certifies that confidentiality agreements have been signed by all of its employees who will have access to the personal information acknowledging that:
  - (A) The personal information collected, used, or maintained by the CONTRACTOR will be treated as confidential;
  - (B) Access to the personal information will be allowed only as necessary to perform the Contract; and
  - (C) Use of the personal information will be restricted to uses consistent with the services subject to this Contract.

d. Termination for Cause. In addition to any other remedies provided for by this Contract, if the STATE learns of a material breach by CONTRACTOR of this paragraph by CONTRACTOR, the STATE may at its sole discretion:

- (1) Provide an opportunity for the CONTRACTOR to cure the breach or end the violation; or

- (2) Immediately terminate this Contract.

In either instance, the CONTRACTOR and the STATE shall follow chapter 487N, HRS, with respect to notification of a security breach of personal information.

e. Records Retention.

- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
- (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.

**NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY  
UNDERWATER PIPELINE SURVEY  
SOLICITATION No. IFB-20-01-NELHA**

**EXHIBIT F – NELHA SPECIAL CONDITIONS**

## NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

### SPECIAL CONDITIONS

#### 1. Materials Prepared

- a. Government Access. The STATE, or any of their duly authorized representatives, shall have access to any documents, books, papers, and records of the CONTRACTOR relating directly to this project for the purpose of making an audit, examination, excerpts, and transcriptions.
- b. Record Maintenance. The CONTRACTOR shall maintain all required records relating to this project for at least three years after the STATE makes final payment and all pending matters are closed.

#### 2. Control and Progress of the Work

- a. Subcontracts and Assignments. Subject to the terms and conditions set forth in the General Conditions, any subcontractor or assignee of all or any part of the work under this Contract shall be a designated representative of the CONTRACTOR. The CONTRACTOR and its representative shall be bound to this Contract. Said representative shall be experienced and qualified in the type of work involved. All the professional engineers, architects, land surveyors or landscape architects retained by the CONTRACTOR, if any, shall be those registered with the State Board of Registration of Professional Engineers, Architects, Land Surveyors, and Landscape Architects as required by Chapter 464, HRS.
- b. Designation of Project Manager. The STATE's NELHA Administrator shall designate in writing a representative of the STATE, as may be amended in writing from time to time, to coordinate the work under this Contract and to act as principal liaison between the CONTRACTOR and the STATE's NELHA Administrator to resolve any questions, and to expedite decisions and progress reports. The CONTRACTOR shall designate in writing, subject to the approval of the STATE's NELHA Administrator and as may be amended in writing from time to time, a project manager who will maintain close and frequent communications with the STATE's representative, and said project manager shall be experienced and qualified in the type of work involved and shall be directly responsible for the performance of the work and administration of this Contract.

Every effort shall be made by all parties to this Contract to retain the same liaison representative during the term of this Contract in order to maintain continuity of effort and control.

- c. Review of Work. All work and reports of the CONTRACTOR shall be subject to the approval of the STATE's designated representative, and the STATE shall have the right to review and comment on all work and reports prior to finalization.

### 3. Quality of work

When a disagreement arises between the CONTRACTOR and the STATE in regards to the performance of specific service requirements within the Contract specifications, the wishes of the STATE shall prevail. Failure on the part of the CONTRACTOR to comply shall be deemed cause for corrective action and subject to contractual remedies.

### 4. General Conditions

The State of Hawaii GENERAL CONDITIONS (AG-008 – Rev 04/15/09) and the GENERAL CONDITIONS FOR CONSTRUCTION 1999 EDITION form part of the Agreement to be entered into between the CONTRACTOR and the STATE. In case of a conflict between the project specifications and the GENERAL CONDITIONS or GENERAL CONDITIONS FOR CONSTRUCTION, the project specifications shall prevail. In case of a conflict between the project specifications and the project drawings the project specifications shall prevail.

The GENERAL CONDITIONS, GENERAL CONDITIONS for CONSTRUCTION, and SPECIAL PROVISIONS shall govern the Work specified in all DIVISIONS and SECTIONS. In case of a conflict between the GENERAL CONDITIONS, GENERAL CONDITIONS FOR CONSTRUCTION, and the SPECIAL PROVISIONS, the SPECIAL PROVISIONS shall prevail. In case of a conflict between the GENERAL CONDITIONS and the GENERAL CONDITIONS FOR CONSTRUCTION, the GENERAL CONDITIONS FOR CONSTRUCTION shall prevail.

### 5. Legal Relations and Responsibility

- a. Nonliability of STATE Employees. The STATE's Director - DBEDT, STATE's NELHA Administrator, and any duly authorized representatives and subordinates, in carrying out the provisions of this Contract or in exercising any power or authority granted herein, shall not be held personally liable in any way, it being understood that in such matters they act as agents and representatives of the STATE.
- b. Interest of Members of the State. No member of the governing body of the STATE and no other officer, employee or agent of the STATE, who exercises any functions or responsibilities in connection with the planning and carrying out of the work, shall have any personal financial interest, direct or indirect, in this Contract, and the CONTRACTOR shall take appropriate steps to assure compliance.
- c. Interest of Other State of Hawaii Public Officials. No member of the governing body of the State of Hawaii and no other public official of the State of Hawaii, who exercises any functions or responsibilities in connection with the planning and carrying out of the work, shall have any personal financial interest, direct or indirect, in this Contract, and the CONTRACTOR shall take appropriate steps to assure compliance.
- d. CONTRACTOR's Professional Responsibility. The CONTRACTOR shall be responsible for the accuracy, completeness, clarity and adequacy of all work or

services performed and provided by any partners, employees, agents and/or subcontractors. The CONTRACTOR shall ensure that such partners, employees, agents and/or subcontractors are qualified to engage in the activities and services in which they participate in, and all applicable licensing and operating requirements imposed or required under Federal, State and/or City and County law, and all applicable accreditation and other standards of quality generally accepted in the field of activities of such partners, employees, agents and/or subcontractors are complied with and satisfied.

The CONTRACTOR shall duly apprise each of such partners, employees, agents and/or subcontractors of all the provisions of this Contract.

The CONTRACTOR shall have the authority and responsibility to control and direct the performance, provision and details of all work and services required by this Contract, provided, however, that the STATE shall have a general right to inspect work in progress to determine whether in its opinion, the services of the CONTRACTOR are being performed and provided in accordance with terms, provisions and conditions of the Contract.

- e. Professional Errors and Omissions. The CONTRACTOR or the CONTRACTOR's subcontractors understands that the CONTRACTOR is subject to liability, under applicable law, for any professional errors and omissions which may occur in connection with the performance of service in connection with this Contract.

## 6. Miscellaneous

- a. Rights and Remedies. The rights and remedies of the STATE provided for under this Contract are in addition to any other rights and remedies provided by law.
- b. All Necessary Services. The CONTRACTOR's fee must cover all services necessary for the successful execution of the project, including all labor, tools, materials and equipment necessary and required to construct in place and complete all work as indicated on the drawings and as specified herein

## 7. Insurance

- a. Required Insurance. The CONTRACTOR agrees to secure and maintain during all times that it is engaged in performing its duties and obligations pursuant to this Contract the policies of insurance specified in this section. In the event of any reduction or exhaustion of the aggregate annual limits of liability, the CONTRACTOR shall immediately obtain additional insurance to replenish the limits of liability herein provided.
- b. Comprehensive General Liability Insurance. Insurance for bodily injury and property damage liability covering all of the operations of the CONTRACTOR, including but not limited to, automobile liability and contractual liability specifically covering liability assumed herein in forms satisfactory to the STATE and with limits of liability which shall not be less than the following:

- i. LIABILITY INSURANCE. The CONTRACTOR shall provide the following minimum liability insurance coverage:

<u>Coverage</u>	<u>Limits</u>
Commercial General Liability (occurrence form)	\$1,000,000 combined single limit per occurrence for bodily injury and property damage. \$2,000,000 aggregate coverage.

- ii. AUTOMOBILE INSURANCE provision:

<u>Coverage</u>	<u>Limits</u>
Automobile contractual liability	\$1,000,000 per accident or:
Uninsured and Underinsured motorist coverage	Bodily Injury \$1,000,000 per person \$1,000,000 per accident
Basic No-Fault and Personal Injury Protection (occurrence form)	Property Damage \$1,000,000 per accident

The STATE shall retain the right at any time to review the coverage, form, and amount of the insurance required hereby. If, in the opinion of the STATE, the insurance provisions in the Contract do not provide adequate protection, the STATE may request that CONTRACTOR obtain additional insurance sufficient in coverage, form, and amount to provide the protection required. The request shall be reasonable but shall be designed to assure protection from and against the kind and extent of the risks involved. If the CONTRACTOR is unable to provide the additional coverage as requested, the STATE reserves the right to terminate the Contract with prior written notice.

The insurance policy required by the Contract shall contain the following clauses:

- (1) "This insurance shall not be canceled, limited in scope of coverage or non-renewed until after 30 days written notice has been given to the Natural Energy Laboratory of Hawaii Authority, 73-4460 Queen Kaahumanu Hwy., #101, Kailua Kona, HI 96740."
- (2) "The State of Hawaii, its departments, attached agencies, officers, and employees are added as additional insureds with respect to operations performed for the State of Hawaii."
- (3) "It is agreed that any insurance maintained by the State of Hawaii will apply in excess of, and not contribute with, insurance provided by this policy."

Failure of the CONTRACTOR to provide and keep in force such insurance shall be regarded as material default under the Contract, entitling the STATE to exercise any or all of the remedies provided in the Contract for a default of the CONTRACTOR.

The procuring of such required policy or policies of insurance shall not be construed to limit CONTRACTOR'S liability hereunder or to fulfill the indemnification provisions and requirements of the Contract. Notwithstanding said policy or policies of insurance, CONTRACTOR shall be obliged for the full and total amount of any damage, injury, or loss arising out of or resulting from the acts or omissions of the CONTRACTOR under this Contract.

- c. Worker Compensation Insurance. The CONTRACTOR shall in accordance with Sections 369-121 to 386-129 Hawaii Revised Statutes inclusive, procure and keep in force during the term of this Contract adequate workers compensation insurance for all of its employees who will be engaged in work on the premises under this Contract, and in case any part of this Contract is sublet, the CONTRACTOR shall require its subcontractor's employees who will be so engaged to provide adequate workers compensation insurance, unless the latter's employees are protected by the CONTRACTOR's insurance.
- d. Other Insurance. The CONTRACTOR shall secure additional insurance coverage required by law depending on the nature of the CONTRACTOR's business and whether the CONTRACTOR employs individuals. Such insurance coverage includes but is not limited to temporary disability, unemployment insurance, and prepaid health insurance.
- e. General Insurance Requirements
  - i. Each insurance policy shall be written by insurance companies licensed to do business in the State of Hawaii or meet Section 431:8-301, HRS if utilizing an insurance company not licensed by the State of Hawaii.
  - ii. The CONTRACTOR agrees to deposit with the State of Hawaii, on or before the effective date of this Contract, certificate(s) of insurance necessary to satisfy the STATE that the insurance provisions of this Contract have been complied with and to keep such insurance in effect and the certificate(s) therefor on deposit with the STATE during the entire term of this Contract. Upon request by the STATE, the CONTRACTOR shall furnish a copy of the policy or policies.

**NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY  
UNDERWATER PIPELINE SURVEY  
SOLICITATION No. IFB-20-01-NELHA**

**SCOPE OF WORK ATTACHMENT-A**

**Ocean Farms Hawaii Corporation Deep Seawater Pipeline History (2/20/2019)  
with Appendices A & B.**

# OCEAN FARMS OF HAWAII CORPORATION

## DEEP SEAWATER PIPELINE HISTORY

### 1. Ocean Farms of Hawaii Deep Seawater Pipelines

Former Natural Energy Laboratory of Hawaii Authority (NELHA) tenant Ocean Farms of Hawaii (OFH) first attempted to deploy a 15" PVC deep seawater pipeline (DSW) in 1987. This pipeline failed within the first few hours of the deployment process and sank to the bottom in pieces. Various sections of this 15" PVC pipe are lying on the bottom in several places offshore, primarily above the steep drop off at 150M depth. The PVC pipe is covered with silt and marine growth and is easily confused as being a high-density polyethylene (HDPE) plastic pipe. Figure 1 below shows two photos of pieces of 15" pipe lying on the bottom offshore. The photo to the left is an 18-24m section PVC pipe lying on the bottom at the north end of the OFH pipeline corridor. The photo to the right is presumed to be a much longer section of PVC pipe lying under pipelines 18D and 18C at the south end of the pipeline corridor.



**Figure 1 - Sections of Abandoned 15" PVC Pipe on Bottom in Various Locations**

In late 1987, OFH constructed and deployed two 16" high density polyethylene (HDPE) plastic pipelines. Each of these pipelines were approximately 1,829M long and intended to have their intakes at 610M depth. These pipelines were constructed on shore along the Makako Bay Drive, lifted onto rollers spaced along the shoulder of the road and deployed from a launching area at the shoreline.

Shortly after the two 16" pipelines became operational in 1988, the pipe closest to the pump station offshore began to collapse. This was due to insufficient wall thickness of the pipe material (too high SDR). To attempt to solve this problem, OFH decided to insert 12" HDPE pipe within each of their two 16" DSW pipelines to limit the degree of collapsing. Although this reduced the flow capacity of the pipelines, it

served to keep them operational. These pipelines were named 16A and 16B. The 12” pipe within them were later removed and utilized for distribution pipelines onshore.

Between 1988 and 1989, OFH constructed and deployed four 18” diameter HDPE pipelines. Each of these 18” pipelines were also approximately 1,829M long, with intakes located at a depth of approximately 610M. The shoreward ends of these pipelines were fastened to the reef. These DSW pipelines were named 18A, 18B, 18C and 18D. Pump stations were also constructed and installed on the reef for pipelines 18A and 18B. No pump stations or plumbing connections back to shore were ever constructed for pipelines 18C and 18D. The shallow end of 18B is located at a depth of 8-9M. The shallow ends of 18C and 18D are located approximately 305M feet south of pipeline 18B. The water depth at the shore end of 18C and 18D is 9M.

The OFH pipelines offshore of the pump stations lay directly on the bottom and are primarily weighted down with epoxy coated expanded metal grating (see Figure 2). Each section of grating consists of two 3M long, half round lengths of expanded metal that are fastened to the outside surface of the pipe using four evenly spaced 316 stainless steel banding straps. The stainless-steel banding was isolated from the grating using rubber padding strips. In some locations, the grating on the pipe is spaced evenly apart with open gaps between them. In other locations where more weight or protection was required, the grating is continuously attached along the entire length of pipe.



**Figure 2 – 18” Ocean Farms of Hawaii Pipeline with Expanded Metal Grating**

During the deployment of the initial OFH DSW pipelines, foam buoyancy modules were tied onto the outside surface of the floating pipelines at strategic locations (See Figure 3). The purpose of the added buoyance was to reduce the risk of the pipe kinking during the submergence process. The lines that attached the foam modules to the pipeline included magnesium fasteners that were supposed to release the floats from the pipeline after several hours of being totally submerged. Many of the floats did not

breakaway, are still attached to several of the OFH DSW pipelines and crushed by water pressure; especially those that ended up at deeper depths. The floating lines associated with these floatation modules should be considered a potential entanglement hazard for ROV's and other submersibles.



**Figure 3 – Crushed Foam Floatation Units still attached to Pipeline**

In addition to the expanded metal grating, OFH's 18" DSW pipelines were weighted down in two regions offshore with concrete gravity anchors (see Figure 4 below). The concrete gravity anchors were attached to the pipelines with metal saddle clamps between 12M and 150M depth. An unknown number of concrete gravity anchors were also installed near to the pipeline intake location at 610M depth. It is unknown how many or how far apart these concrete anchors are spaced from each other. Although not closely inspected in the most recent offshore surveys, the gravity anchors at deeper depths appear to be in fair to good condition. The metal clamps fastening the concrete anchors to the 18" pipelines at shallower depth are severely corroded and are not expected to stay attached if moved or lifted.



**Figure 4 – Example of Concrete Gravity Anchor Attached to 18" Pipeline**

## 2. Prior OFH Pipeline Survey Reports

In 1991 Seatech Contracting Inc. conducted a shallow water survey to 100 Ft depth for all six OFH pipelines – the resulting report is included as Appendix-A.

Appendix-B provides a brief summary of the status of the pipelines including some design and deployment information prepared by Makai Ocean Engineering Inc in 1991.

## 3. Present Condition of OFH Deep Seawater Pipelines

Portions of the 2016 Hawaii Undersea Research Laboratory (HURL) pipeline surveys using the PIVES V manned submersible were conducted over the OFH pipelines at two different depths. The results of the survey conducted on September 10<sup>th</sup> reveal that the offshore intake of each of the six pipelines appear to be in their original installation locations and the deployment hardware at these depths to be in relatively good condition, with only light surface corrosion. The September 11<sup>th</sup> inspection dive included three north-to-south passes over the OFH pipelines at depths ranging from 98–137M. On each pass, six pipelines were seen laying on the bottom. Several of these pipelines are almost entirely buried under sand in this area.

After careful review of the video coverage taken during the inspection dive passes over the six OFH pipelines at shallower depth (98-137M) on September 11th, has been determined that one of the six pipelines seen may be an abandoned section of 15” PVC pipe and not a 16-18” HDPE pipeline.

It should be noted that during a deep inspection dive performed on September 10<sup>th</sup>, the section of pipeline 16A above where it is crossed over by pipeline 18D at 433M depth was not seen and is presumed to be missing. The portion of pipeline 16A that appears to be missing may be approximately 1,219M long.

Following, is a brief narrative of the known present-day condition of each of the six (6) DSW pipelines deployed by OFH:

### 2.1 Introduction

It has been NELHA’s experience that the strongest ocean currents occur offshore of Keahole Point between 14M to 213M depths. The primary reef area along the coastline averages 121M – 183M wide and then begins to increase in slope after 18M -24M depth. The coral reef slope essentially ends, and the bottom begins to flatten off after 60M depth. The bottom beyond this depth turns into a relatively flat, gently sloping sandy plain with scattered areas of boulders that have rolled down the reef slope.

At approximately 137M depth and nominally 760M from the coastline, a prehistoric shoreline exists that was once a thriving reef approximately 20,000 years ago when sea level was

approximately 130M lower and the Island of Hawaii higher than present day mean sea level. This “drop off” area is near vertical in some locations and contains very large boulders and rock formations. This type of bottom continues until a depth of approximately 215M.

Beyond the “drop off”, the bottom slope increases to 30-35 degrees and consists mostly of hard volcanic substrate with occasional areas of rocks and boulders. In some locations, overhanging cliffs are part of the bottom terrain.

The strongest currents offshore of NELHA tend to be in a northerly direction. These currents are especially strong on the south side of Keahole Point lighthouse. The indentation in the coastline south of the lighthouse tends to concentrate the ocean currents closer to shore. When these current reaches shallower water, they tend to increase in strength and velocity. Northerly currents offshore of NELHA are routinely in the 0.5 – 2.5 knot range. Beyond depths of 215M, the ocean currents tend to slacken and drop off to nearly no current near the intake openings of each of the OFH deep seawater pipelines between 500-600M depth.

### 3.2 Pipeline 16A

This pipeline was deployed in 1988. During the final stages of deployment, the lowering cable parted. This caused the end of this pipeline to freefall the rest of the way to the bottom, which resulted in the intake end of the pipeline kinking back on itself in two locations at 560M depth. During the September 2016 HURL survey, these kinks were found to be in the same general deployment location. A photo of one of the kinked sections is shown in Figure 5 below.

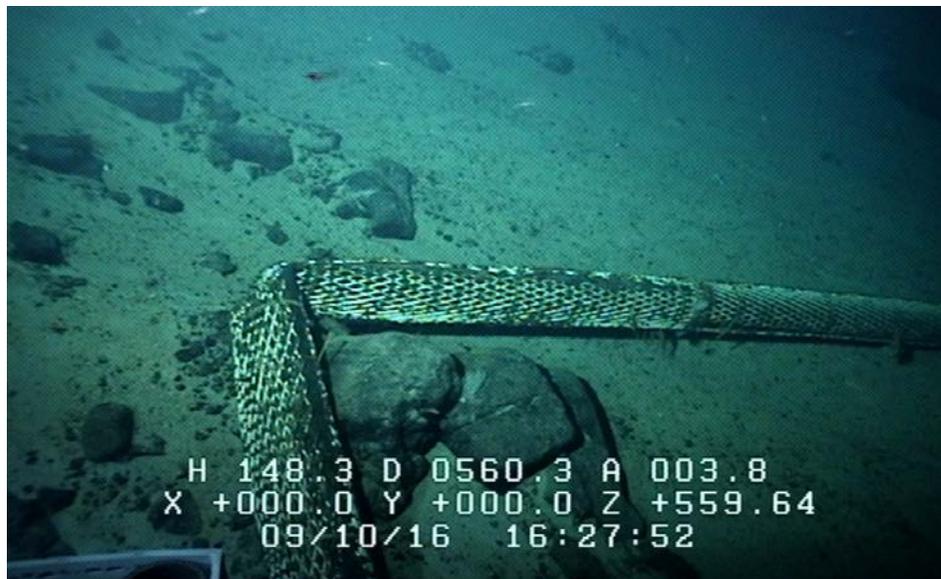


Figure 5 – One of Two Kinks near end of Pipeline 16B at 560M depth

In May 1997, a decision was made to attempt to raise pipeline 16A to the surface to remove it from the ocean. Various sections of pipelines 16A and 16B along the reef had become loose by this time and floated to the surface. This presented challenges to NELHA each time and

incurred significant costs. A portion of 16A had broken loose from its hold down assembly's and was kinked around a large boulder at 40' depth. This project resulted in recovering only 390M of 16" pipe. It is estimated that approximately 1,372M of pipeline 16A fell back to the bottom, with the shallow end landing in an unknown location.

During the final stages of the deployment of pipeline 18D, the lowering cable at the stern of the tugboat broke and the pipeline sank to the bottom on its own accord. While it was falling to the bottom, 18D drifted to the north and crossed over all the formerly deployed OFH pipelines, including pipeline 16A. The fact that 16A was crossed by an 18" pipeline with expanded metal grading covering it, is likely to be the reason why more of pipeline 16A could not be fully raised to the surface.

Figures 6 & 7 below shows what is believed to be a kinked and abandoned portion of 16A at 107M depth that was dropped back to the bottom in 1997. This photo was clipped from a video filmed from the PICES V submersible on June 23, 2012. The pipeline was kinked twice at this location. During a later PICES V inspection dive in September 2016, this kinked pipe section was not seen. It is presumed that this section of 16A eventually broke loose and became the 305M long section of 16" pipe that floated away and was eventually recovered off the west coast of Maui Island.



**Figure 6 & 7**

**Presumed to be Abandoned Top Section of 16A – Kinked Twice at 105M Depth**

### **3.3 Pipeline 16B**

This pipeline was deployed shortly after 16A in 1988 without incident.

The nearshore, reef mounted sections of pipeline 16B began breaking loose from the bottom shortly after OFH went bankrupt in 1993. Various short lengths of pipe were cut off by divers

and hauled out at the shoreline. The remainder of pipeline 16B eventually slid into deeper water by strong northerly currents and disappeared from safe diver's depth. It is not known where the shoreward end of this pipeline is presently located.

#### **2.4 Pipeline 18A**

Pipeline 18A was installed in 1989. Over time, several short lengths of this pipeline became loose floated to the surface, were cut off by divers, and removed from the ocean. In late December 2016, a long section of this pipeline floated to the surface. Under slack current conditions approximately 90M of pipe was on the surface. This posed a major hazard to navigation as the floating pipe was in an area of high boat traffic.

On January 17, 2017, a plan was implemented to attempt to recover as much of pipeline 18A as possible. This project followed a similar sequence of work that was implemented to recover 16A in 1997. Air was pumped into the shoreward end of the pipeline and approximately 457M of pipe was raised to the surface. A cut location was determined where the pipeline submerged back down to the bottom furthest offshore. A large weight was attached to the seaward end of the cut point and the pipeline was cut with a chainsaw. Entrapped air in the pipeline did not fully sink the offshore end with the original weight attached to it. The following day, a second weight was attached to the floating end of pipeline and released from a lift bag. The end of this pipeline is presumed to have one to two floating humps in it. It is very likely that one or both weights attached to the abandoned shoreward end of this pipeline move across the bottom in strong current conditions.

It is unknown where the shallow end of 18A originally landed on the bottom. The depth where the shore end of the pipeline was dropped was determined to be 91M. Approximately 366M of 18A was recovered and pulled out of the ocean at the shoreline. Assuming the overall length of 18A was originally 1,829M long, approximately 1,463M of the pipeline was abandoned back to the bottom. The shoreward end of the pipeline is now at a difficult depth to access and has no flange face to easily attach anything to. OFH pipelines 18B, 18C and 18D all cross over the top of 18A. This is probably why more of 18A could not be raised to the surface and fully recovered.

#### **2.5 Pipeline 18B**

This pipeline was deployed between 1989-1990. The design was like pipeline 18A. Expanded metal grating was attached to the pipeline for its entire length and concrete gravity anchors were attached over the grating at intervals of approximately every 100 ft. down to a depth of 152M. The cable used to lower this pipeline to the bottom broke at some point during the deployment process. This caused the pipeline to fall to the bottom, kink and loop back on itself at a depth of 495M.

In 1990, a contractor was hired by Ocean Farms of Hawaii to place an explosive charge within pipeline 18B to attempt to blow it apart the kink location. Twenty-foot sections of 2" PVC pipe was connected together and used as a ram rod to place the charge at the presumed kink

location. Small diameter wire rope was attached to the outside of the PVC pipe to facilitate removing the PVC pipe after the charge was set off. A continuous length of primer cord was installed within the PVC pipe. After no additional 2" PVC pipe and primer cord could be installed within 18B it was assumed that the explosive charge had reached the kink location. The explosive charge was then set off and presumed to have gone off. It was later discovered that the primer cord within the 2" PVC pipe also exploded when ignited. This created a mess of PVC pipe fragments and wire rope within the 18B. A subsequent PICES V submersible inspection of 18B revealed that the kink had not been blown apart or disturbed. The explosive charge either had no effect or did not ignite.

Pipeline 18B crosses over 16B at a depth of approximately 82M, then crosses over pipeline 18A at a depth of 266M. 18B then crosses over 16B at a depth of 371M and has slipped under 16B at a depth of 385M and at 420M. As mentioned above, 18B is kinked at a depth of 495M where it also slides under 16B again. 18B crossed over 16B again at 565M.

During the shallow inspection dive in September 2016, it was revealed that pipeline 18B may be kinked at the base of the reef at an approximate depth of 82M. This kink can be faintly seen in the lower right of Figure 8 below. It is presumed that a section of 18B between depths of 82M and 152M has moved across the sandy bottom towards the north and caused a kink to develop at the bottom of the reef slope. This is disturbing in that it reveals that 18B may be moving and could begin coming apart.



**Figure 8 – Note pipeline 18B deeper and in background appears to be kinked (Pipeline in foreground is 18A before the floating section was removed)**

## **2.6 Pipeline 18C**

This pipeline was deployed between 1989-1990. The design is the same as pipelines 18A and 18B. This pipeline was considered the best of all the OFH pipeline deployments. This is mainly because the deployment process was very smooth, and the pipeline was installed fully according to plan. Despite this, 18C crosses over 18B at 360M, 16B at 351M and 18A at 348M depths.

## 2.7 Pipeline 18D

This pipeline was deployed between 1989-1990. The deployment process went smoothly up to the point where it was fully flooded with seawater and ready to be lowered by cable to the bottom. Just as divers were preparing to remove the blind flange on the offshore end of the pipeline, the lowering cable broke at the stern of the tugboat. This resulted in pipeline 18D free falling to the bottom on its own accord during a strong northerly current event. As the pipeline fell to the bottom, it crossed over 18C at a depth of 203M and pipelines 18B at 315M, 18A at 305M and 16B at 280M depths.

As indicated above, 18D fell to the bottom with the metal blind flange plate still bolted to the offshore end of the pipeline. Seven (7) five-foot diameter steel floatation buoys were also attached near the intake end of the pipeline when it sank. Subsequent inspections of 18D at its intake location at 603M show that six of the seven buoys are still attached to the end of the pipeline with a wire rope bridle. The seventh buoy is presumed to have broken off and floated away. When the pipeline sank to the bottom, both of the two 1 ½" gate valves plumbed into the blind flange was in the open position. It was later established that approximately 400 gpm of seawater could be pumped into the shore end of the pipeline and out of the open valves. Figures 9 & 10 below show the steel buoys and blind flanged end of pipeline 18D. Figure 11 shows the intake end of 18D with the blind flange still attached to it.



**Figures 9 & 10 - Crushed 5 ft. Diameter Floatation Buoys near Intake End of 18D at 512M**



**Figure 11 – Blind Flanged Intake of 18D at 602M**

## 2.9 Conclusions

Following is a table that summarizes the known status of each of the Ocean Farms of Hawaii Pipelines. As indicated earlier, the offshore intake end of each pipeline appears to be in their original deployed location. It is presumed that the offshore end of each pipeline includes a large holdfast clamp, Sampson braid nylon bridles, bridle plate, and 680kg deployment anchor. Pipelines 16B, 18A, and 18C should also include 762M to 915M of lowering (deployment) cable offshore of their intakes. The lowering cables of pipelines 16A, 18B and 18D severed at some point during their deployments. The lowering cable of 18D broke near the surface when it severed allowing this pipeline to free fall to the bottom and cross over all other OFH pipelines.

Pipeline	Status	Other Features
16A	Pipeline may end above 400M depth where it is crossed by 18D. 1,372M pipe = missing?	Location of top end of pipe unknown. End of pipeline kinked in two places
16B	Existing length of pipe unknown	Location of top end of pipe unknown
18A	366M of shallow end of pipe cut off in 2017. Existing length of pipeline unknown	Location of top end of pipe unknown
18B	Pipe kinked back on itself at 495M. Shallow end of pipeline on reef at 8M depth	Pipe above kink filled with PVC chards and small wire rope.
18C	Entire length of pipe intact. Shallow end of pipeline on reef at 9M depth	
18D	Entire length of pipe intact. Shallow end of pipeline on reef at 9M depth	Blind flange attached to intake end. Six steel floatation buoys attached near offshore end of pipe.

Ocean Farms of Hawaii Deep Seawater Pipeline History:  
Appendix-A - Seatech Contracting, Inc. Shallow Water Survey Report, 1991

SEATECH CONTRACTING, INC.  
MARINE CONSTRUCTION

REVIEW OF THE CONDITIONS AND  
REPLACEMENT COSTS FOR SIX (6)  
OCEAN FARMS OF HAWAII PIPELINES

PROVIDED FOR:  
MS. CLARE HACHMUTH  
NATURAL ENERGY LABORATORY  
OF HAWAII AUTHORITY

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## 1. Pipeline 16A

Pipeline 16A was installed in 1987, 1988. In the original configuration, all piping and fittings shoreward of the offshore transition point were PVC. When the pumps were turned on, the Offshore Pipeline collapsed due to the thin-walled polyethylene. In 1989, a thicker walled 12" diameter polyethylene pipe was inserted approximately 5500 linear feet into the 6000 linear foot 16" pipe. Subsequent to that sleeving operation, several PVC components of the pump station and Nearshore Pipe failed and were replaced with polyethylene. The only remaining underwater PVC components are the pump station pressure manifold and the 15" flanged elbow in the shore landing. Specifics of the condition of this pipeline are:

Shore Landing 16A - There are (4) 15" PVC flanged elbows that exit the 52" diameter shore transition conduit pipe. Pipe 16A has an additional 45" PVC flanged elbow installed that bolts up to a continuous run of 12" polyethylene to the pump station. The additional elbow is required because of limited working space (see photo #2). The approximately 6ft. PVC piece is very susceptible to wave/storm damage and if it is damaged, will be difficult to repair, as evidenced by the work required to repair the same component of pipeline 16B.

Nearshore Pipe 16A - This 12" polyethylene pipe was installed in 1990 and is in good condition. The anchoring system is the same as used for 16A and 18B. The pipeline could not be checked for leaks because there were no pumps installed at the time of inspection.

Nearshore Rigging 16A - The rigging on this run of pipe is in good condition. All clamps are tight and the pipe appears to be secure. However, this type of anchoring system does require routine inspections.

Electrical Conduit 16A - (See photo #3) Power cables for this pipeline exit on the North side of the shore transition base. The design requires the cables to make (2) 90 turns and then enter another conduit. This system requires constant inspection and maintenance as the cables are extremely susceptible to chafe. As with the other pipelines, the electrical conduit system is the weak link and needs to be replaced.

Pump Station 16A - (See photo #4) At the time of inspection, there were no pumps installed in 16A. The pump station consists of a 16" polyethylene suction manifold (1990) and a 15" PVC pressure manifold. The manifolds are bolted to a steel "I" beam frame that is bolted into the bottom. The PVC pressure manifold should be replaced with polyethylene.

Offshore Pipe to 100' 16A - The pipe from the pump station out to a depth of 100' is in fair condition. There are a few points where the pipe bears directly on rock. However, the expanded metal wrapping appears to be protecting the pipe from chafe. In my opinion, this pipe has moved to the South from a pivot point located in 45 feet of water. The pipe was originally deployed with only expanded metal as weight. During a dive in 1987, when an unusually strong current was running to the North, I observed 16A moving up and down and the pipe appeared to be tending in a Northerly direction. During the 8/14/91 inspection dive, the pipe was tending more to the South and coral in the area from 45' to 100' deep appeared to have been swept by the pipe. I think this pipe is inadequately weighted and it moves in unusually high currents.

Offshore Rigging to 100' 16A - The rigging seaward of the pump station is in poor condition. Several of the chains and related hardware need to be replaced or secured.

General Condition of 16A - This pipeline will need an estimated \$29,500.00 (pumps not included) of work (labor, material) to bring it back to a reasonable condition.

## 2. Pipeline 16B

Pipeline 16B was installed in 1987, 1988. In the original configuration, all piping and fittings shoreward of the offshore transition point were PVC. When the pumps were turned on, the Offshore pipeline collapsed due to the thin-walled polyethylene. In 1989, a thicker walled 12" diameter polyethylene pipe was inserted approximately 2500 linear feet into the 6000 linear foot 16" pipe. Subsequent to that sleeving operation, several PVC components of the pump station and Nearshore pipe failed and were replaced with polyethylene. The only remaining underwater PVC components are the pump station pressure manifold and the 15" flanged elbow in the shore landing. Pipeline 16B differed from 16A in that a few concrete weights were added to the Offshore pipe in addition to the expanded metal. The weights were spares from the NELH 18" pipe deployment. Specifics of the condition of this pipeline are:

Shore Landing 16B - The 15" PVC flanged elbow that exits the 52" steel pipe was broken during heavy weather in early 1991. The PVC broke off approximately 2 feet up inside the steel pipe. As a temporary repair, a 12" polyethylene pipe was inserted into the PVC and epoxied in place. At the time of this inspection, there were no noticeable leaks and the repair appeared to be holding.

Nearshore Pipe 16B - This 12" polyethylene pipe was installed in 1990 and is in fair condition. There is a slight leak at the flange joint between the temporary repair and the first spool piece.

Nearshore Rigging 16B - The rigging on this run of pipe is in fair condition. Some clamps need tightening.

Electrical Conduit 16B - (See photo #3) Power cables for this pipeline exit on the South side of the shore transition base. The design requires the cables to make (2) 90 turns and then enter another conduit. This system requires constant inspection and maintenance as the cables are extremely susceptible to chafe. At the pump station, the cables are inadequately secured. The entire conduit system needs to be replaced.

Pump Station 16B - (See photo #5) At the time of this inspection, (4) pumps were installed in the pump station. The pump station has a warm water intake with a butterfly valve that allows warm water/cold water mixing. The polyethylene suction manifold (1990) is equipped with a vacuum gauge and the PVC pressure manifold (date unknown) has a pressure gauge. The manifolds are bolted to a steel "I" beam frame that is bolted into the bottom. The PVC pressure manifold should be replaced with polyethylene.

Offshore Pipe to 100' 16B - The pipe from the pump station out to a depth of 100' is in fair condition. Several sections of expanded metal are laying on the bottom next to the pipe. The sections had to be removed in 1989 during the 12" sleeving operation because the collapsed pipe also deformed the expanded metal. The pipe in approximately 35 feet of water, bridges 75' between 2 rocks and is unsupported. The pipe bears hard against rocks at several points but the expanded metal appears to have protected the pipe from chafe.

Offshore Rigging to 100' 16B - The rigging seaward of the pump station is in fair condition. It was substantially upgraded in 1989 - 1990. The missing expanded metal sections need to be put back in place and the rigging needs a general tightening.

General Condition of 16B - This pipeline will need an estimated \$16,000.00 of work (labor, materials) to bring it back to a reasonable condition. Pipe 16B has restricted flow that is probably caused by a restriction in the pipe at a depth of 500'. That is the point at which the 12" pipe stopped. We do not know the magnitude of the flow restriction.

### 3. Pipeline 18A

Pipeline 18A was installed in 1989, 1990. The basic design followed that of the NELH 18" pipeline with the exception that there is no buoyant catenary and the pipe is weighted over the entire length with expanded metal and lays on the bottom. Concrete weights are on the pipe out to a depth of approximately 500'. The pipe was visually inspected over the entire length on 10/25/89 using the submarine "Pisces". Specifics of the condition of this pipe are:

Shore Landing 18A - (See photo #2) The Nearshore portion of 18A flanges to a 15" x 6' PVC spool piece that in turn bolts to the PVC flanged elbow that exits the steel conduit. The PVC spool piece is very susceptible to damage and should be replaced with polyethylene.

Nearshore Pipe 18A - This section of the pipeline was installed in early 1990 and appears to be in good condition.

Electrical Conduit 18A - (See photos #6, 7, 8) The conduit for pipes 18A and 18B starts as a 12" polyethylene pipe that is chained to the 52" steel pipe. From the base of the 12" conduit the cables enter 6" PE conduits. During a storm earlier this year, the 12" PE was torn out and took the cables with it. The 12" conduit is in a location that is very dangerous for divers during anything other than calm conditions. The system is poorly designed and difficult to maintain. Another problem with the conduit system is that the pumps do not have underwater connectors. This means that during a pump change-out, divers must pull approximately 150' feet of cable through the conduit. Underwater connectors should be installed on the whips of the pumps.

Pump Station 18A - (See photos # 9, 10) The pump station appears to be in good condition. It is constructed of steel "I" beam and channel that is bolted to a "I" beam base that is bolted and tremied into the bottom. The zinc anodes are approximately 25% decomposed. At the time of this inspection 2 pumps were installed. There is a minor leak in the check valve of one pump. The pump station has a warm water intake with a butterfly valve that allows warm water/cold water mixing. The PE suction manifold has a vacuum gauge and the PE pressure manifold has a pressure gauge. The pump station has a hinged davit to facilitate installing and removing pumps.

Offshore Pipe to 100' 18A - The pipe from the pump station out to a depth of 100' is in good condition.

Offshore Rigging to 100' 18A - The rigging seaward of the pump station is in good condition. A second set of holdback chains is installed on this pipe at a depth of 45'. The purpose was to enable the pipe to make a 15 turn to avoid a large boulder at that point. Surface rust is evident on the shackles and other hardware. The expanded metal and associated stainless steel banding appears to be in good condition.

General Condition of 18A - This pipeline is in good condition. However, in my opinion, the electrical conduit system must be changed. Another consideration with this pipeline is that 18A and 18B are plumbed together onshore and there is no way to isolate the two. This report does not address the work and costs associated with running another onshore line. An estimated \$25,000.00 of work (labor, material) will be required to design and install a new conduit system that can serve both 18A and 18B.

#### 4. Pipeline 18B

Pipeline 18B was installed in 1989, 1990. The basic design followed that of the NELH 18" pipeline with the exception that there is no buoyant catenary and the pipe is weighted over the entire length with expanded metal and lays on the bottom. Concrete weights are on the pipe out to a depth of approximately 500'. The pipe was visually inspected over the entire length on 10/25/89 using the submarine "Pisces". The pipe is kinked at an approximate depth of 1350' (see photo #11). In 1990 Ocean Farms attempted to cut the pipe on the onshore side of the kink using explosives. The attempt failed and now the pipe is choked with wire rope and PVC used to transport the explosive charge. Specifics of this pipeline are:

Shore Landing 18B - The Nearshore pipe of 18B flanges to a 16" x 7' polyethylene spool piece that in turn flanges to the 15" PVC flanged elbow. The pipe appears to be in good condition at the shore landing. There is a moderate leak at the polyethylene to PVC joint.

Nearshore Pipe 18B - This section of the pipe was installed in mid 1990 and appears to be in good condition.

Electrical Conduit 18B - (See write up for electrical conduit 18A)

Pump Station 18B - (See photo #12) At the time of this inspection there were no pumps installed. It has the same basic construction as that of pump station 18A except that straight spool pieces on the pressure side of the pumps allow the pressure manifold to be lower. In my opinion, this is a better design.

Offshore Pipe to 100' 18B - The pipe from the pump station out to a depth of 100' is in good condition.

Offshore Rigging to 100' 18B - The rigging seaward of the pump station is in good condition. Surface rust is evident on the shackles and other hardware. The expanded metal and associated stainless steel banding appears to be in good condition.

General Condition of 18B - In my opinion, 18B can only be considered as a warm water pipeline. In order to get cleaner water than is available at the pump station, the pipe could be cut by divers at a deeper point and an intake strainer installed. An estimated cost (labor and materials) to complete that is \$13,500.00. Also a new conduit should be installed. See the paragraph General Condition of 18A.

## 5. Pipeline 18C

Pipeline 18C was installed in 1989 and consists of the offshore portion only. The basic design followed that of the NELH 18" pipeline with the exception that there is no buoyant catenary and the pipe is weighted with expanded metal over the entire length and lays on the bottom. Concrete weights are on the pipe out to a depth of approximately 500'. The shoreward end of the pipe is located approximately 400' offshore at a depth of 35'. Pipeline 18D is located about 30-40' South of pipeline 18C. Just shoreward of the ends of both pipes there is an area that is suitable for a future pump station (see photo #13). To my knowledge, the pipe has not been inspected along the entire length. The deployment of 18C went very well and Ocean Farms Personnel were able to pump water through the pipe from shore at a flow rate that was consistent with an unrestricted pipeline.

Offshore Pipe to 100' 18C - (See photo #14) The pipe from the shoreward end out to a depth of 100' is in good condition.

Offshore Rigging to 100' 18C - (See photos #15, 16) The rigging from the shoreward end out to a depth of 100' is in good condition. There is no noticeable corrosion on either the expanded metal or stainless steel banding that secures the expanded metal. There is some surface rust on the nuts and bolts that secure the holdback clamps. The surface rust was removed from (2) bolts revealing bright steel with good thread remaining. The zinc anodes on the concrete weight clamps are approximately 50-60% decomposed. There is no blind flange on the shoreward end of the pipe and debris has collected in the pipe.

General Condition of 18C - In my opinion, 18C is a good pipeline. Please see paragraph D for a cost estimate to complete the pipe to a shore connection.

## 6. Pipeline 18D

Pipeline 18D was installed in 1989 and consists of the offshore portion only. The basic design followed that of the NELH 18" pipeline with the exception there is no buoyant catenary and the pipe is weighted with expanded metal over the entire length and lays on the bottom. Concrete weights are on the pipe out to a depth of approximately 500'. The shoreward end of the pipe is located approximately 400' offshore at a depth of 35'. During deployment, after the pipe had been flooded for sinking, but before the offshore blind flange had been removed, the wire rope cable used to lower the pipe to the bottom parted. The pipe went to the bottom with the blind flange bolted on. There are (2) open 1 1/2" valves in the blind flange. Ocean Farms Personnel pumped water from shore through the pipe at a flow rate consistent with (2) open valves.

Offshore Pipe to 100' 18D - The pipe from the shoreward end out to a depth of 100' is in good condition.

Offshore Rigging to 100' 18D - (See photo #16) The rigging from the shoreward end out to a depth of 100' is in good condition. There is no noticeable corrosion on either the expanded metal or the stainless steel banding that secures the expanded metal. There is some surface rust on the nuts and bolts that secure the holdback clamps. The zinc anodes on the concrete weight clamps are approximately 50-60% decomposed. There is no blind flange on the shoreward end of the pipe and debris has collected in the pipe. The concrete weight at 130' deep is suspended off the bottom by 12-18", (see photo #17).

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General Condition of 18D - Assuming the blind flange can be removed from the offshore end, 18D should be a good pipe. A rough estimate to complete the blind flange removal is \$20,000.00. Please see paragraph D for a cost estimate to complete the pipe to a shore connection.

Ocean Farms of Hawaii Deep Seawater Pipeline History:  
Appendix-B - Makai Ocean Engineering, Inc. - Pipeline Status Report, 1991

September 23, 1991

OCEAN FARMS PIPELINE

A. 16" A

1. Installation:
  - a. Date: 1987
  - b. intake end: 100' pipe broke off during deployment
2. Design:
  - a. Weight: extremely light
    - o 8.8 lbs/ft first 2000'
    - o 1.7 lbs/ft much of remainder
    - o 5.6 lbs/ft at intake end (half of which lost)
  - b. Polyethylene DR
    - o Original - 32.5 both ends, dr 21 in middle
    - o Liner - 3910' of dr 21, dr 17 1590'
  - c. Polyethylene: Sclairpipe, good quality. liner 9800 resin.
3. Repair:
  - a. Liner added in 1989, 12"
  - b. approximately 5500' - dr 17 and 21 at end.
4. Inspection:
  - a. Shore Landing - "rocket launcher". Mess of pipes.
  - b. Pipeline has moved beyond 50', nearshore held with MOE connectors.
  - c. offshore:
    - o end does full loop. Crosses several other pipelines.
    - o at ledge: Steep drop off, drop several hundred feet unsupported.
5. Performance:
  - a. Flow OF rating: 1600 gpm
    - o not used because it discharges into 40" CWP line with higher pressure, therefore can't make adequate flow and not worth operating.
    - o based on MOE design approach, not recommended to pump this pipeline more than 1120 gpm, 23' suction, to get reasonable remaining life out of it. Limited by collapse resistance of the DR 21 pipe liner.
    - o The external 16" pipe, DR 32, collapses under very low pressure and is already ovoided. As an outer sleeve, it still has suction pressure and is probably collapsed over the 12" and giving additional external load on this pipe. this should be checked, and the pipeline not be over pumped or it will collapse again.
  - b. Depth, temperature - ?
6. Pump Station:
  - a. Pump Type: Canister, Grundfos/Franklin, etc.
  - b. Number of Pumps:
    - o 4 locations, none installed
    - o Need motors (4) and 1 pump
      - » (existing pumps are not adequate head to deliver to present discharge line)

- c. Cables:
  - o need cable
  - o need proper conduit, routing.
- 7. Shore Landing
  - a. Share 52" pipe slant landing
  - b. 15" pvc pipe through 52"
  - c. PVC pipe end flanges u/w, crowded and vulnerable

## B. 16" B

1. Installation:
  - a. Date: 1987
2. Design:
  - a. Weight
    - o Expanded metal, etc same as 16A
    - o 8.8 lbs/ft first 2000'
    - o 1.7 lbs/ft much of remainder
    - o 5.6 lbs/ft at intake end (half of which lost)
    - o Added left-over wts from state's 18" (5 wts @ 1700 lb each? - where?)
  - b. Polyethylene DR
    - o Original: 26 in middle, 32.5 at ends.
    - o Liner: 2200' of dr 21.
  - c. Polyethylene: Sclairpipe, good quality. liner 9800 resin.
3. Repair:
  - a. Liner added 1989 after collapse
    - o 2200' only - liner would go no further (stopped at bend in pipe at 500' depth)
4. Inspection:
  - a. Similar to 16A although less or no movement.
  - b. Clay recommends changing PVC manifold.
  - c. Most vulnerable: conduit.
5. Performance:
  - a. Flow 1600 gpm OFH
    - o Operating now, but no confirmation of flow, pressure, temp because water flow is mixed from both cwp and ww intake at pump station
    - o MOE basis for flow, 2 SF, 10 yrs: Should not pump more than 1030 gpm, 13' head.
    - o Future collapse: this pipe particularly vulnerable because bottom DR 32.5 pipe not lined, the pipe bends strongly at 500' drop off, and there are several 18" pipes resting on the thin 16" pipe. Anything causing the onset of ovaling can initiate a premature collapse.
  - b. Pressure - see MOE curve, no field data.
  - c. Depth, temperature - no data
6. Pump Station:

- a. Pump Type: canister, grundfos/franklin
- b. Number of Pumps: 4 slots, 2 working now
- c. Cables: poor
7. Shore Landing
  - a. Share 52" pipe slant landing
  - b. 15" pvc pipe through 52"
  - c. PVC pipe end flanges u/w, crowded and vulnerable
8. Summary:
  - a. Bad Points:
    - o Not much suction capability.
    - o Old 16" pipe still under suction, puts collapse load on the 12".
  - b. Good Points:
    - o has been working well - their "workhorse"

### C. 18" A"

1. Installation:
  - a. Date: 1989
2. Design:
  - a. Weight: at top approx 30 lbs/ft
  - b. Polyethylene DR: 11 to 13.5 at top.
  - c. Polyethylene: Sclairpipe, good quality. 9800 resin.
3. Repair:
4. Inspection:
  - a. Shore Landing
  - b.
5. Performance:
  - a. Flow 3600 gpm Ocean Farms
    - o no means of checking now, currently working mixed flow.
    - o OF pump test 3/22/90:
      - » 1 pump avg 2100 gpm, 5.35' suction, 38.2 disc
      - » 2 pump avg 3600 gpm, 12.84' suction, 51.7' disc
      - » 3 pump 4000 gpm, 18.19' suction, 67.42 disc
      - » how measure, where - unknown
      - » Flow must have had ww intake open, see system flow curves. 4000 gpm should have resulted in 55' suction head. MOE est that half of above flow was warm water.
  - b. Depth, temperature - unknown
6. Pump Station:
  - a. Pump Type: Flygt HP-3201/462
    - o Have performance curves
    - o NPSHR not available catalog or at Berkley
  - b. Number of Pumps: three flygt slots, 2 in place

- c. Cables:
  - 7. Shore Landing
    - a. Share 52" pipe slant landing
    - b. 15" pvc pipe through 52"
    - c. PVC pipe end flanges u/w, crowded and vulnerable
- D. 18" B"
- 1. Installation:
    - a. Date: 1989
    - b. Improperly pulled offshore, kinked and looped
  - 2. Design:
    - a. Weight: at top approx 30 lbs/ft
    - b. Polyethylene DR: 11 to 13.5 at top.
    - c. Polyethylene: Sclairpipe, good quality. 9800 resin.
  - 3. Repair:
    - a. kink in pipe
    - b. attempted to explosively cut
      - o Used charge pushed in place with 2" PVC, primer cord.
      - o PVC exploded by primer cord, pipe not cut. Lots PVC fragments in pipeline.
      - o Second attempt failed, charge stuck in pipe. finally removed
  - 4. Inspection:
    - a. Shore Landing: similar to others with conduit problems.
      - o Has vulnerable PVC spool piece near rocket launcher - why?
    - b. For WW intake, would need intake structure and anchors for this structure.
  - 5. Performance:
    - a. Flow 0 gpm (kinked)
    - b. For warm water: limited by pumps. Est 3000 gpm optimal, 3600 gpm max at poor efficiency. (Pumps not a good fit for this service)
  - 6. Pump Station:
    - a. Pump Type: Flygt HP-3201/462
      - o Have performance curves
      - o NPSHR not available catalog or at Berkley
    - b. Number of Pumps: 3 slots, none installed
    - c. Cables: no cables installed
  - 7. Shore Landing
    - a. Share 52" pipe slant landing
    - b. 15" pvc pipe through 52"
    - c. PVC pipe end flanges u/w, crowded and vulnerable
- E. 18" C"
- 1. Installation:

- a. Date: 1989
- b. "Best deployment of all pipelines" - Clay
- c. Pumped water down pipe after deployment - flow ok
2. Design:
  - a. Weight: at top approx 30 lbs/ft
  - b. Polyethylene DR: 11 to 13.5 at top.
  - c. Polyethylene: Sclairpipe, good quality. 9800 resin.
3. Repair: none
4. Inspection:
  - a. diver inspection only - OK
  - b. no deep inspection
5. Performance: none known - see est curve
6. Pump Station:
  - a. None exists, none installed
  - b. Flat bottom in area for pump station
  - c. Have some parts
    - o 3 Flygt pumps Flygt HP-3201/462
      - \* Have performance curves
      - \* NPSHR not available catalog or at Berkley
    - o Poly manifolds
7. Shore Landing - none

## F. 18" D"

1. Installation:
  - a. Date: 1989
  - b. Dropped intake end with blind flange attached under full pull
    - o will be curled and possibly kinked on bottom
    - o may be entangled in 18C
  - c. two open 1.5" holes in flange, pumped 400 gpm after drop
    - o unknown pressure.
2. Design:
  - a. Weight: at top approx 30 lbs/ft
  - b. Polyethylene DR: 11 to 13.5 at top.
  - c. Polyethylene: Sclairpipe, good quality. 9800 resin.
3. Repair: none
4. Inspection:
  - a. only to diver depth: looks OK
5. Performance: none - see est curve for capabilities (if flange removed)
6. Pump Station:
  - a. None exists, none installed
  - b. Have some parts
    - o 3 Flygt pumps

- 2 Poly manifolds
- 7. Shore Landing - none

G. SHORE LANDING (ROCKET LAUNCHER)

1. 52" OTEC-1 pipe, heavy walled. good
2. Concrete filled. Carries 4-15" pvc pipes
  - a. Serves 16a,b and 18a,b
3. Intake end vulnerable and crowded
  - a. Pipes overlap
  - b. One has broken, been repaired
4. Will need repair to make trouble free
  - a. tremie in vulnerable pvc pipes at base.
  - b. replace one pvc spool piece
  - c. remove 12" elec conduit alongside 52" pipe.
  - d. route elec cables through pipelines
    - need pull through slots at top of rocket launcher. some concrete work. details unknown.
  - e. Add weak link bolts to flanges, so bolts go before PVC flange pulled off.

**NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY  
UNDERWATER PIPELINE SURVEY  
SOLICITATION No. IFB-20-01-NELHA**

**SCOPE OF WORK ATTACHMENT-B**

**Ocean Farms Hawaii Deep Seawater Pipeline Features (3/6/2019)**

Pipeline ID: 16A

JW 12/20/2018

Marker	Depth (m)	Pipe Station (m)	Latitude (ddm)	Longitude (ddm)	Type of Feature	Details	Location Information Source	Notes/Comments
16A1*	112	05+19	19 43.471	156 03.996	Straight Pipe	16A again at north end 112M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16A2*	114	05+19	19 43.433	156 03.978	Straight Pipe	Sixth pipe moving north 16A unknown 114M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16A3*	114	05+19	19 43.459	156 03.979	Straight Pipe	Sixth pipe 16A corroded grating 114M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16A4	433	11+10	19 43.316	156 04.293	Pipes Cross	18D - 16A cross at 433M (Photo 16A-3)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16A5	552	13+89	19 43.304	156 04.398	Pipe Intake	At kinked intake of 16A / pipe on bottom	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16A6	560	13+13	19 43.272	156 04.394	Pipe Kink	At 16A kink at 560M (Photo 16A-1 & 16A-2)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16A7	574	13+13	19 43.276	156 04.403	Pipe Intake	16A intake at 574M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
NA	667	Unknown	Unknown	Unknown	Deployment Anchor	Crushed Buoy	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter

\* Pipe identification is not confirmed

**Additional Observations:**

1. Remainder of pipeline may be missing above 400 meters.
2. Pipeline identification at shallow depths not certain.
3. 1,280 ft (390 m) of pipe recovered during May 1997 recovery project. Abandoned approximately 3,900 ft (1,189 m) of pipe offshore. Do not know where shallow end of pipe is located.



Marker	Depth (m)	Pipe Station (m)	Latitude (ddm)	Longitude (ddm)	Type of Feature	Details	Location Information Source	Notes/Comments
16B1*	111	05+52	19 43.374	156 03.946	Straight Pipe	Third pipe movng north 16B unknown 111M buried	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16B2*	113	05+52	19 43.411	156 03.976	Straight Pipe	Next pipe moving south - 16B unknown 113M (3) - buried	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16B3*	121	06+25	19 43.375	156 03.996	Straight Pipe	At next pipe - 16B?	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
NA	280	Unknown	Unknown	Unknown	Pipe Crossing	18D over 16B	1996 HURL survey	
NA	348	Unknown	Unknown	Unknown	Pipe Crossing	18A over 16B	1996 HURL survey	
NA	351	Unknown	Unknown	Unknown	Pipe Crossing	18C over 16B	1996 HURL survey	
NA	371	Unknown	Unknown	Unknown	Pipe Crossing	18B over 16B	1996 HURL survey	
NA	385	Unknown	Unknown	Unknown	Pipe Crossing	18B under 16B	1996 HURL survey	
NA	420	Unknown	Unknown	Unknown	Pipe Crossing	18B under 16B	1996 HURL survey	
NA	495	Unknown	Unknown	Unknown	Pipe Crossing	18B under 16B	1996 HURL survey	
NA	565	Unknown	Unknown	Unknown	Pipe Crossing	18B over 16B	1996 HURL survey	
NA	600	Unknown	Unknown	Unknown	Pipe Crossing	18A over 16B	1996 HURL survey	
16B4	629	15+10	19 43.145	156 04.427	Straight Pipe	Locate 16B at 629M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16B5	629	15+10	19 43.121	156 04.429	Straight Pipe	Turn south 16B to NELHA 18 - 629M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16B6	645	15+68	19 43.110	156 04.440	Straight Pipe	Moving up 16B - 645M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16B7	659	15+68	19 43.109	156 04.449	Pipe Intake	At 16B intake 659M / Altitude 1.3M near bottom (Photo 16B-1)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16B8	662	15+68	19 43.107	156 04.453	Bridle Plate	At 16B bridle plate 662M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
16B9	669	16+04	19 43.095	156 04.463	Deployment Anchor	At 16B deployment anchor 669M (Photo 16B-2)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter

\* Pipe identification is not confirmed

**Additional Observations:**

1. Do not know where shallow end of pipe is located.
2. Pipeline no longer reaches reef. Segments missing above 100 meters.
3. Pipeline identification at shallow depths not certain.



Photo 16B-1: OFFSHORE INTAKE OF 16B AT 658M



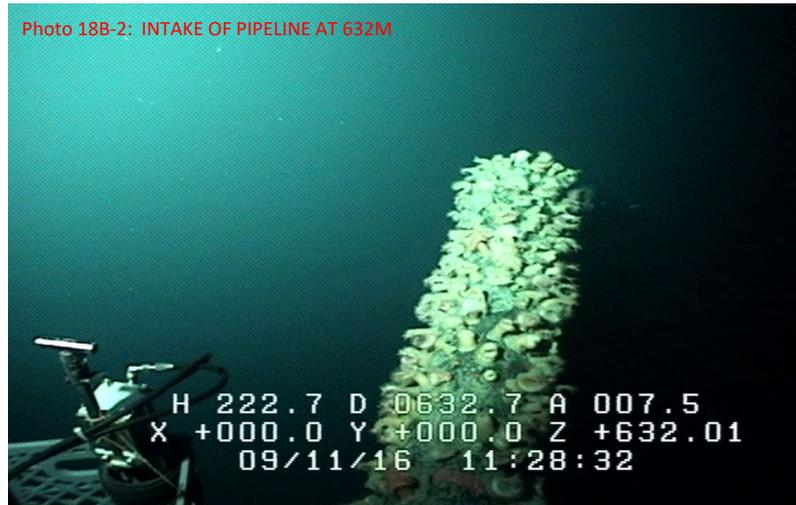
Photo 16B-2: DEPLOYMENT ANCHOR AND CRUSHED BUOY AT 667M

Marker	Depth (m)	Pipe Station (m)	Latitude (ddm)	Longitude (ddm)	Type of Feature	Details	Location Information Source	Notes/Comments
18A1*	107	05+04	19 43.451	156 03.951	Concrete Weight	Another pipe north end - concrete weight 18A 107M unknown	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18A2*	109	05+67	19 43.409	156 03.969	Straight Pipe	Fifth pipe movng north 18A unknown 109M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18A3*	110	05+67	19 43.423	156 03.997	Straight Pipe	Next pipe to north - 16A_18A? 110M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18A4*	111	05+67	19 43.433	156 03.985	Straight Pipe	Next pipe moving south - 18A unknown 111M (2)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
NA	266	Unknown	Unknown	Unknown	Pipe Crossing	18B over 18A	1996 HURL survey	
NA	305	Unknown	Unknown	Unknown	Pipe Crossing	18D over 18A	1996 HURL survey	
NA	348	Unknown	Unknown	Unknown	Pipe Crossing	18A over 16B	1996 HURL survey	
NA	600	Unknown	Unknown	Unknown	Pipe Crossing	18A over 16B	1996 HURL survey	
18A5	608	14+62	19 43.172	156 04.411	Straight Pipe	At 18A moving to intake - 608M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18A6	611	14+85	19 43.159	156 04.420	Holdfast	At 18A holdfast / intake slope up	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18A7	621	15+23	19 43.153	156 04.443	Straight Pipe	Turning south to 16A - 621M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18A8	628	15+23	19 43.153	156 04.448	Straight Pipe	Moving up 18A - 628M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18A9	629	15+23	19 43.156	156 04.431	Holdfast	At 18A holdfast - 629M (Photo 18A-3)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18A10	633	15+23	19 43.152	156 04.437	Pipe Intake	At 18A intake 633M / Altitude 8.0M off bottom (Photo 18A-2)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18A11	641	15+41	19 43.158	156 04.450	Deployment Anchor	At 18A deployment anchor 641M (Photo 18A-1)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter

\* Pipe identification is not confirmed

**Additional Observations:**

1. 366 meters of pipe removed in 2017. Pipeline no longer reaches reef. Missing above 100 meters depth?
2. Attempt to recover pipe in 2017. 1,200 ft (366 m) of pipe recovered.
3. Do not know where shallow end of pipe is located. Abandoned approximately 1,463 meters of pipe offshore.



Marker	Depth (m)	Pipe Station (m)	Latitude (ddm)	Longitude (ddm)	Type of Feature	Details	Location Information Source	Notes/Comments
18B1	8	Unknown	19 43.582	156 03.683	Shallow End of Pipeline	Full length of pipeline presumed to be intact (Photo 18B-1)	Jack's Dive Locker Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
NA*	69	Unknown	Unknown	Unknown	Straight Pipe	Pipe may be kinked at base of reef slope (Photo 18B-2)	1996 HURL Survey	
NA*	108	Unknown	Unknown	Unknown	Straight Pipe	18A next to 18B	1996 HURL Survey	
18B2*	109	05+86	19 43.390	156 03.952	Straight Pipe	Fourth pipe movng north 18B unknown 109M buried	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18B3*	111	05+86	19 43.403	156 04.002	Straight Pipe	Next pipe - 18A_18B_PVC? 111	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18B4*	118	05+86	19 43.389	156 03.974	Straight Pipe	Next pipe moving south - 18B unknown 118M (4) buried	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
NA	266	Unknown	Unknown	Unknown	Pipe Crossing	18B over 18A	1996 HURL Survey	
NA	315	Unknown	Unknown	Unknown	Pipe Crossing	18D over 18B	1996 HURL Survey	
NA	495	Unknown	Unknown	Unknown	Pipe Crossing	18B under 16B / 18B kinked back on itself at this location	1996 HURL Survey	Pipe filled with 2" PVC pipe shards and wire rope from this depth towards shore
NA	565	Unknown	Unknown	Unknown	Pipe Crossing	18B over 16B	1996 HURL Survey	
18B5	583	15+15	19 43.212	156 04.399	Straight Pipe	Encounter 18B at 583M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18B6	589	15+15	19 43.192	156 04.395	Holdfast	18B Holdfast_Upside down weight 589M (Photo 18B-3)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18B7	602	15+15	19 43.183	156 04.408	Pipe Intake	At 18B intake 602M / Altitude 3.8M off bottom (Photo 18B-4)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter

\* Pipe identification is not confirmed

**Additional Observations:**

1. Pipe may be kinked at base of reef slope at 69 meters.
2. 1990 attempt to blow off kink at 495 meters (1624 ft) with explosives not successful.
3. Pipe filled with 2" PVC pipe shards, small wire rope from this depth towards shore.
4. Top end of pipeline located at 25 feet (7.62 m). depth on reef
5. Pipeline identification at shallow depths not certain



Marker	Depth (m)	Pipe Station (m)	Latitude (ddm)	Longitude (ddm)	Type of Feature	Details	Location Information Source	Notes/Comments
NA	9	Unknown	Unknown	Unknown	Shallow End of Pipeline	Full length of pipeline presumed to be intact (Photo 18C-1)	Jack's Dive Locker Survey	Top end of pipeline located at 30 ft depth on reef.
18C1*	115	06+24	19 43.360	156 03.937	Straight Pipe	Second pipe moving north 18C - 115M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18C2*	117	06+24	19 43.374	156 03.964	Straight Pipe	Next pipe moving south - 18C unknown 117M (5)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18C3*	131	07+21	19 43.342	156 04.003	Pipes Cross	At Cross of 18C? Over PVC? - 131M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
NA	203	Unknown	Unknown	Unknown	Pipe Crossing	18D over 18C	1996 HURL Survey	
NA	348	Unknown	Unknown	Unknown	Pipe Crossing	18C over 18A	1996 HURL Survey	
NA	351	Unknown	Unknown	Unknown	Pipe Crossing	18C over 16B	1996 HURL Survey	
NA	360	Unknown	Unknown	Unknown	Pipe Crossing	18C over 18B	1996 HURL Survey	
18C4	582	15+62	19 43.257	156 04.433	Straight Pipe	18C turn to south 582M (Photo 18C-2)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18C5	601	15+62	19 43.256	156 04.439	Holdfast	At 18C holdfast 601M (Photo 18C-3)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18C6	602	15+62	19 43.253	156 04.448	Straight Pipe	Going up 18C	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18C7	609	15+62	19 43.251	156 04.450	Pipe Intake	At 18C intake opening 609M_a 6.8m (Photo 18C-4)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18C8	612	15+62	19 43.248	156 04.460	Pipe Intake	At 18C intake opening 612M_Altitude 10.3M off bottom	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18C9	613	15+62	19 43.250	156 04.474	Pipe Intake	At 18C intake again 613M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18C10	629	15+62	19 43.245	156 04.472	Bridle Plate	At 18C Bridle Plate - 629M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter

\* Pipe identification is not confirmed

**Additional Observations:**

1. Pipeline identification at shallow depths not certain.

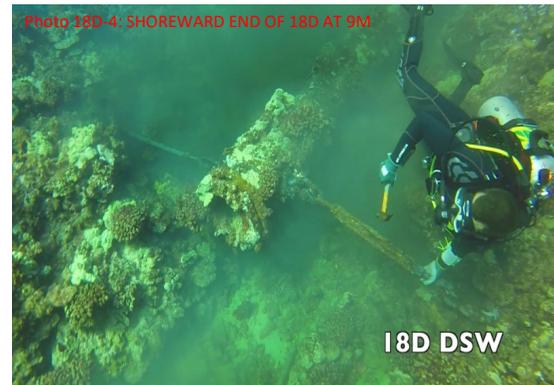
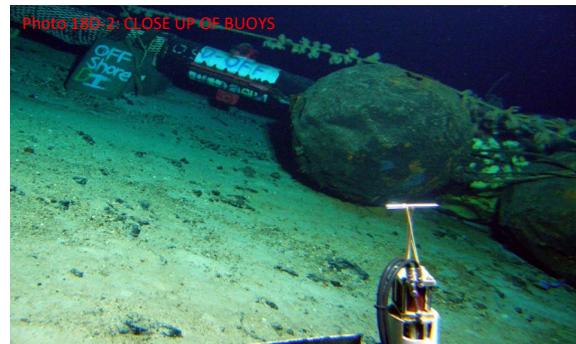


Marker	Depth (m)	Pipe Station (m)	Latitude (ddm)	Longitude (ddm)	Type of Feature	Details	Location Information Source	Notes/Comments
18D1	9	Unknown	19 43.442	156 03.580	Shallow End of Pipeline	Full length of pipeline presumed to be intact (Photo 18D-4)	Jack's Dive Locker Survey	Top end of pipeline located at 30 ft. depth on reef
18D2*	119	06+31	19 43.360	156 03.949	Bucket	Next pipe movng south - 18D 119M (6) - bucket	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D3*	136	07+42	19 43.313	156 03.992	Pipes Cross	See 18D over PVC? = 136M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D4*	140	07+42	19 43.331	156 04.002	Pipes Cross	At Cross of 18D over PVC? - 140M (Photo 18D-6)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
NA	203	Unknown	Unknown	Unknown	Pipe Crossing	18D over 18C	1996 HURL survey	
NA	280	Unknown	Unknown	Unknown	Pipe Crossing	18D over 16B	1996 HURL survey	
NA	305	Unknown	Unknown	Unknown	Pipe Crossing	18D over 18A	1996 HURL survey	
NA	315	Unknown	Unknown	Unknown	Pipe Crossing	18D over 18B	1996 HURL survey	
18D5	354	10+53	19 43.310	156 04.179	Straight Pipe	Encounter 18D - 354M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D6	415	12+05	19 43.306	156 04.262	Bucket	18D Bucket - 415M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D7	433	12+55	19 43.316	156 04.293	Pipes Cross	18D - 16A cross at 433M (Photo 18D-5)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
NA	433	Unknown	Unknown	Unknown	Pipe Crossing	18D over 16A	1996 HURL survey	
18D8	442	12+88	19 43.315	156 04.308	Straight Pipe	Moving down 18D	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D9	517	13+62	19 43.331	156 04.348	Straight Pipe	18D turn to north - 517M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D10	544	14+62	19 43.306	156 04.456	Straight Pipe	Moving up 18D - 544M	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D11	563	14+62	19 43.313	156 04.403	Flange	At 18D Intake Flange	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D12	565	14+62	19 43.314	156 04.407	Pipe Weight	18D at 565M - Last Pipe Weight	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D13	568	15+66	19 43.322	156 04.408	Straight Pipe	Encounter 18D	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D14	587	15+66	19 43.311	156 04.459	Buoys	At 18D buoys (Photo 18D-1 & 18-2)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D15	601	15+66	19 43.307	156 04.469	Straight Pipe	Moving Up 18D	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter
18D16	602	16+46	19 43.342	156 04.492	Flange	18D Intake / Flange 602M (Photo 18D-3)	2016 HURL Survey	TrackLink 5000HA USBL submersible tracking system, Simrad altimeter

\* Pipe identification is not confirmed

**Additional Observations:**

1. Pipeline identification at shallow depths not certain.



**NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY  
UNDERWATER PIPELINE SURVEY  
SOLICITATION No. IFB-20-01-NELHA**

**SCOPE OF WORK ATTACHMENT-C**

**Maps of Ocean Farms Hawaii Deep Seawater Pipelines (3/6/2019)**

# NELHA OFH Abandoned Pipelines



SURVEYED POSITION MARKER  
BASED ON AVERAGE OF SEVERAL  
MINUTES OF DATA TAKEN WITH  
ULTRA-SHORT BASELINE/DGPS NAV. SYST.



POSITIONS ESTABLISHED BY PISCES 5  
DIVES 864 & 865 (2016)

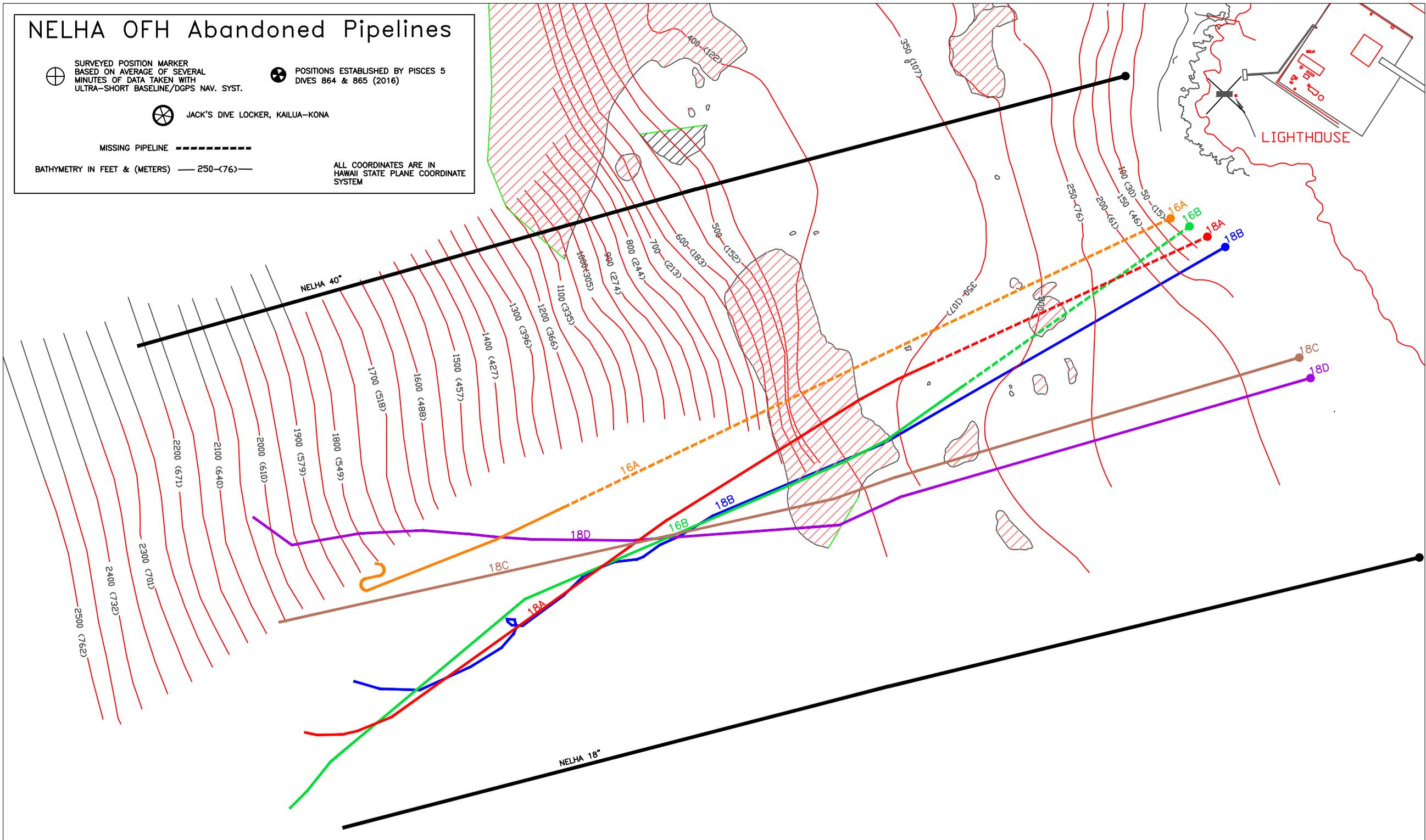


JACK'S DIVE LOCKER, KAILUA-KONA

MISSING PIPELINE - - - - -

BATHYMETRY IN FEET & (METERS) — 250-(76) —

ALL COORDINATES ARE IN  
HAWAII STATE PLANE COORDINATE  
SYSTEM



# NELHA OFH Abandoned Pipelines



SURVEYED POSITION MARKER  
BASED ON AVERAGE OF SEVERAL  
MINUTES OF DATA TAKEN WITH  
ULTRA-SHORT BASELINE/DGPS NAV. SYST.



POSITIONS ESTABLISHED BY PISCES 5  
DIVES 864 & 865 (2016)

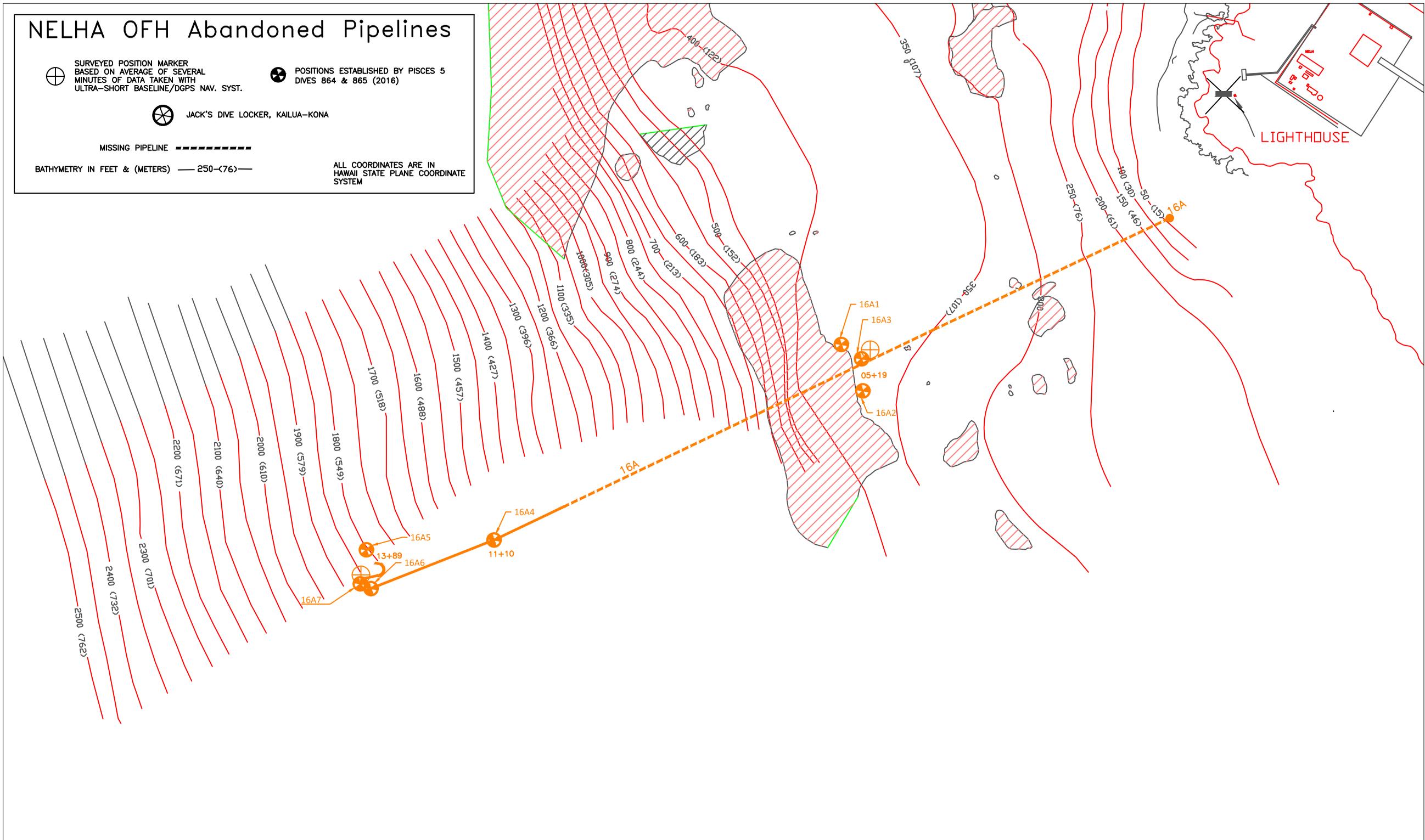


JACK'S DIVE LOCKER, KAILUA-KONA

MISSING PIPELINE - - - - -

BATHYMETRY IN FEET & (METERS) — 250—(76)—

ALL COORDINATES ARE IN  
HAWAII STATE PLANE COORDINATE  
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# NELHA OFH Abandoned Pipelines



SURVEYED POSITION MARKER  
BASED ON AVERAGE OF SEVERAL  
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POSITIONS ESTABLISHED BY PISCES 5  
DIVES 864 & 865 (2016)

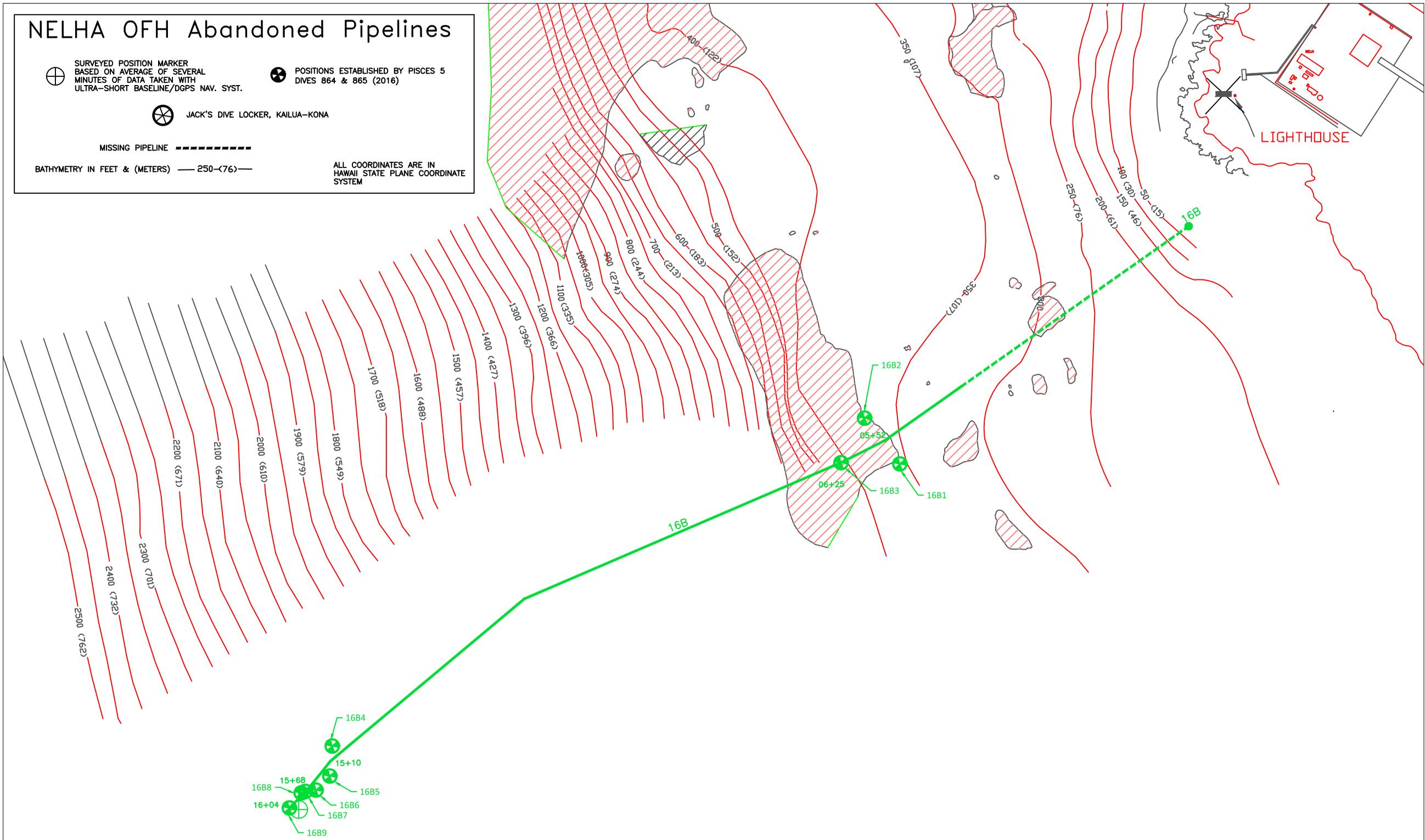


JACK'S DIVE LOCKER, KAILUA-KONA

MISSING PIPELINE - - - - -

BATHYMETRY IN FEET & (METERS) — 250—(76)—

ALL COORDINATES ARE IN  
HAWAII STATE PLANE COORDINATE  
SYSTEM



# NELHA OFH Abandoned Pipelines



SURVEYED POSITION MARKER  
BASED ON AVERAGE OF SEVERAL  
MINUTES OF DATA TAKEN WITH  
ULTRA-SHORT BASELINE/DGPS NAV. SYST.



POSITIONS ESTABLISHED BY PISCES 5  
DIVES 864 & 865 (2016)

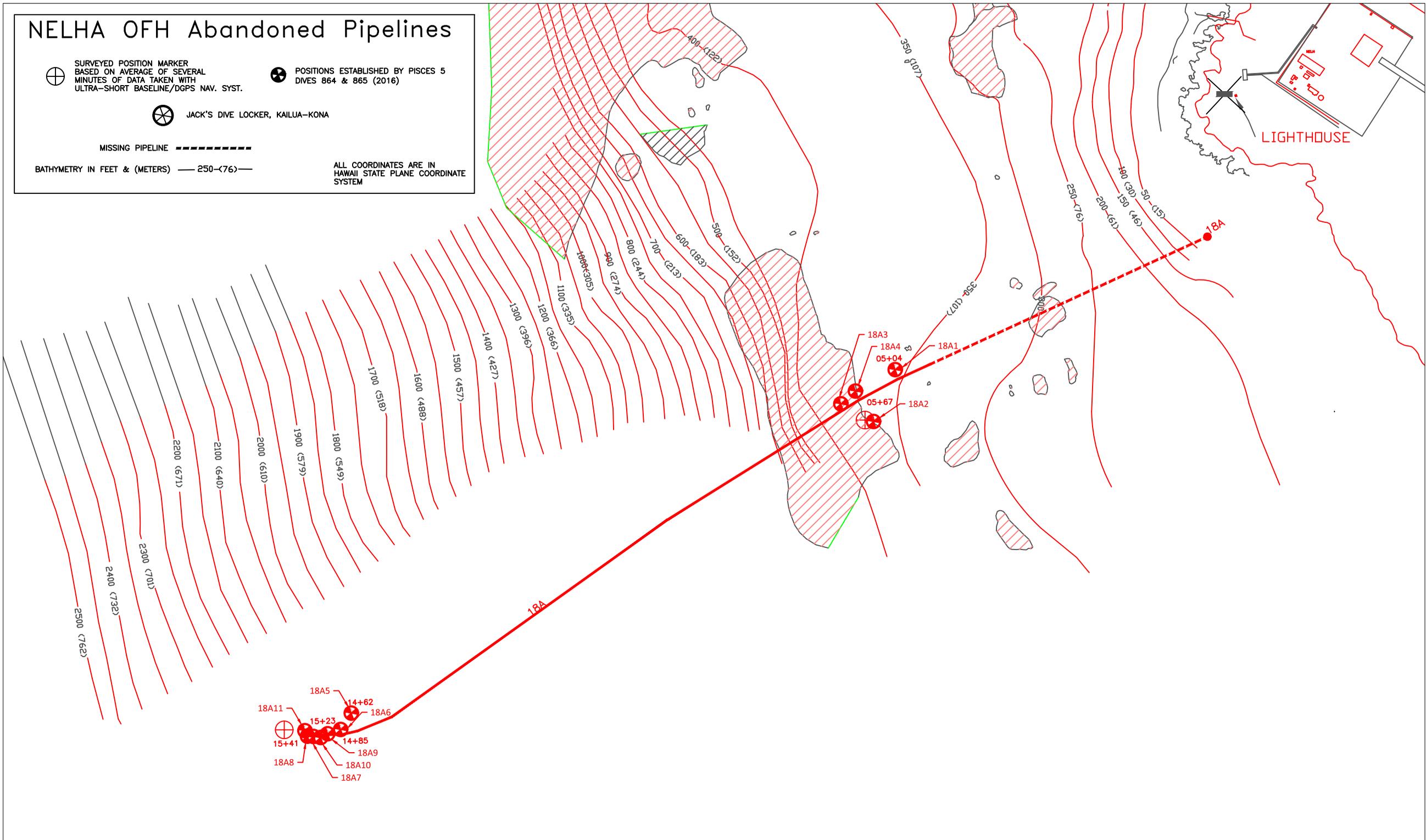


JACK'S DIVE LOCKER, KAILUA-KONA

MISSING PIPELINE - - - - -

BATHYMETRY IN FEET & (METERS) — 250-(76) —

ALL COORDINATES ARE IN  
HAWAII STATE PLANE COORDINATE  
SYSTEM



# NELHA OFH Abandoned Pipelines



SURVEYED POSITION MARKER  
BASED ON AVERAGE OF SEVERAL  
MINUTES OF DATA TAKEN WITH  
ULTRA-SHORT BASELINE/DGPS NAV. SYST.



POSITIONS ESTABLISHED BY PISCES 5  
DIVES 864 & 865 (2016)

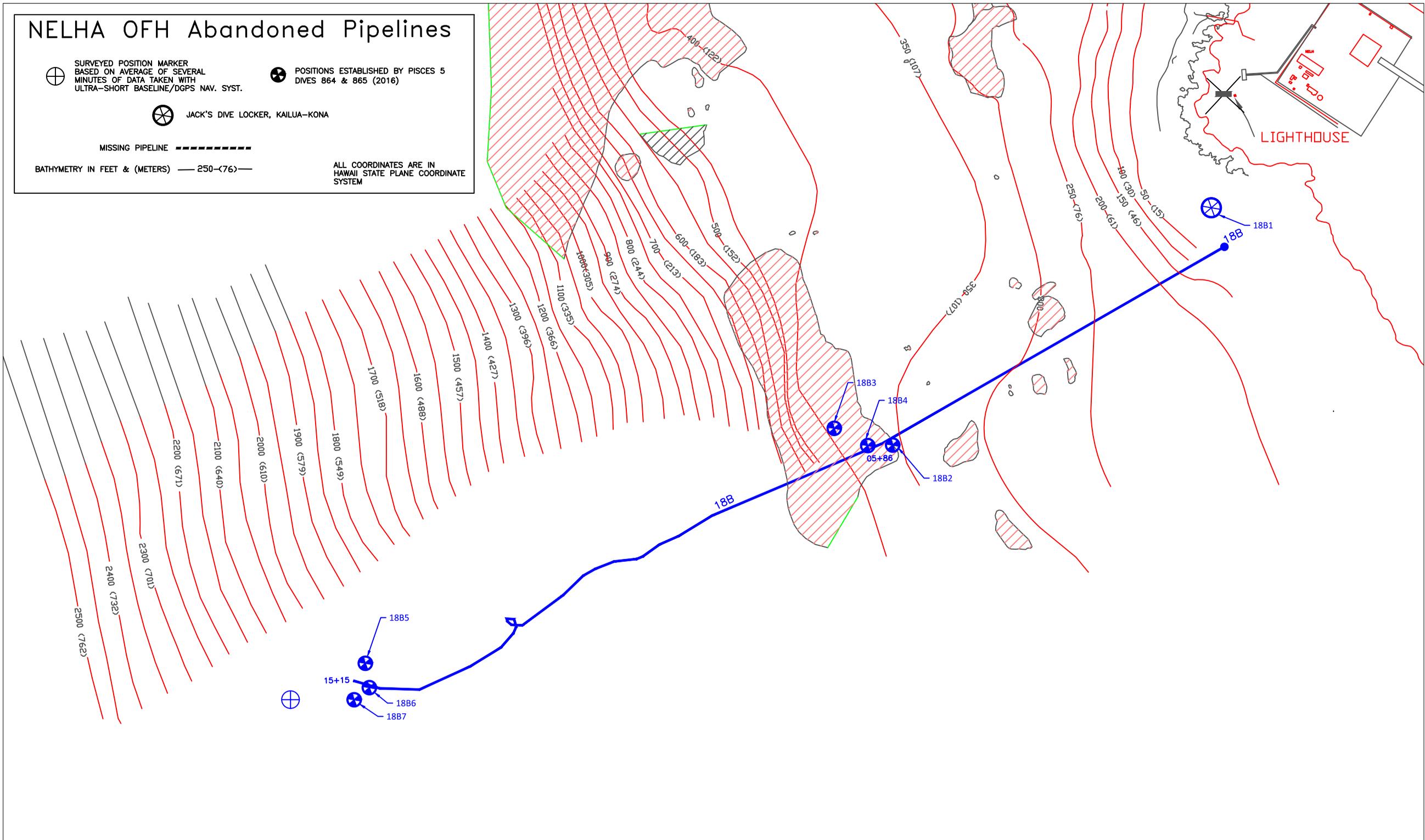


JACK'S DIVE LOCKER, KAILUA-KONA

MISSING PIPELINE - - - - -

BATHYMETRY IN FEET & (METERS) — 250-(76) —

ALL COORDINATES ARE IN  
HAWAII STATE PLANE COORDINATE  
SYSTEM



# NELHA OFH Abandoned Pipelines



SURVEYED POSITION MARKER  
BASED ON AVERAGE OF SEVERAL  
MINUTES OF DATA TAKEN WITH  
ULTRA-SHORT BASELINE/DGPS NAV. SYST.



POSITIONS ESTABLISHED BY PISCES 5  
DIVES 864 & 865 (2016)

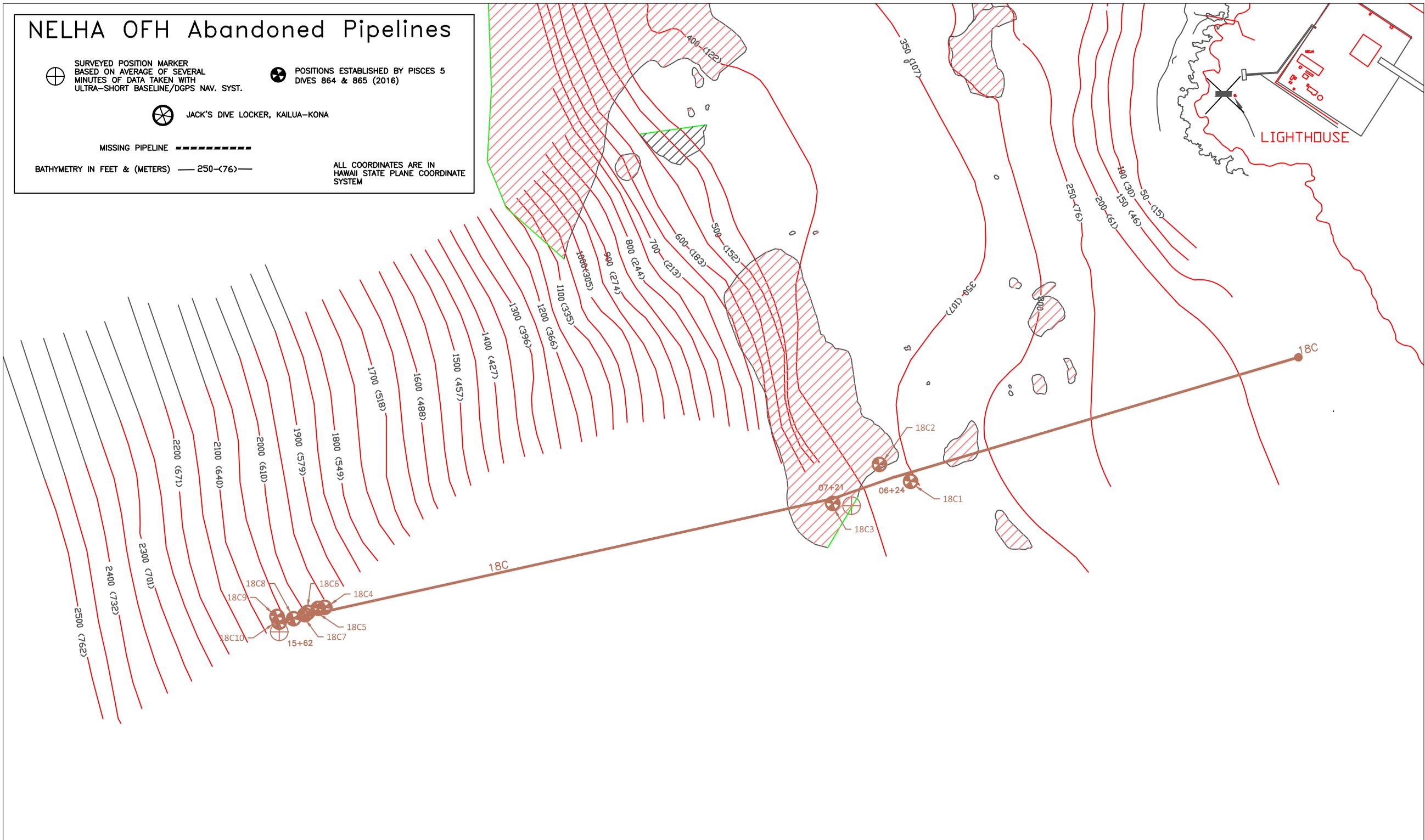


JACK'S DIVE LOCKER, KAILUA-KONA

MISSING PIPELINE - - - - -

BATHYMETRY IN FEET & (METERS) — 250—(76)—

ALL COORDINATES ARE IN  
HAWAII STATE PLANE COORDINATE  
SYSTEM



# NELHA OFH Abandoned Pipelines

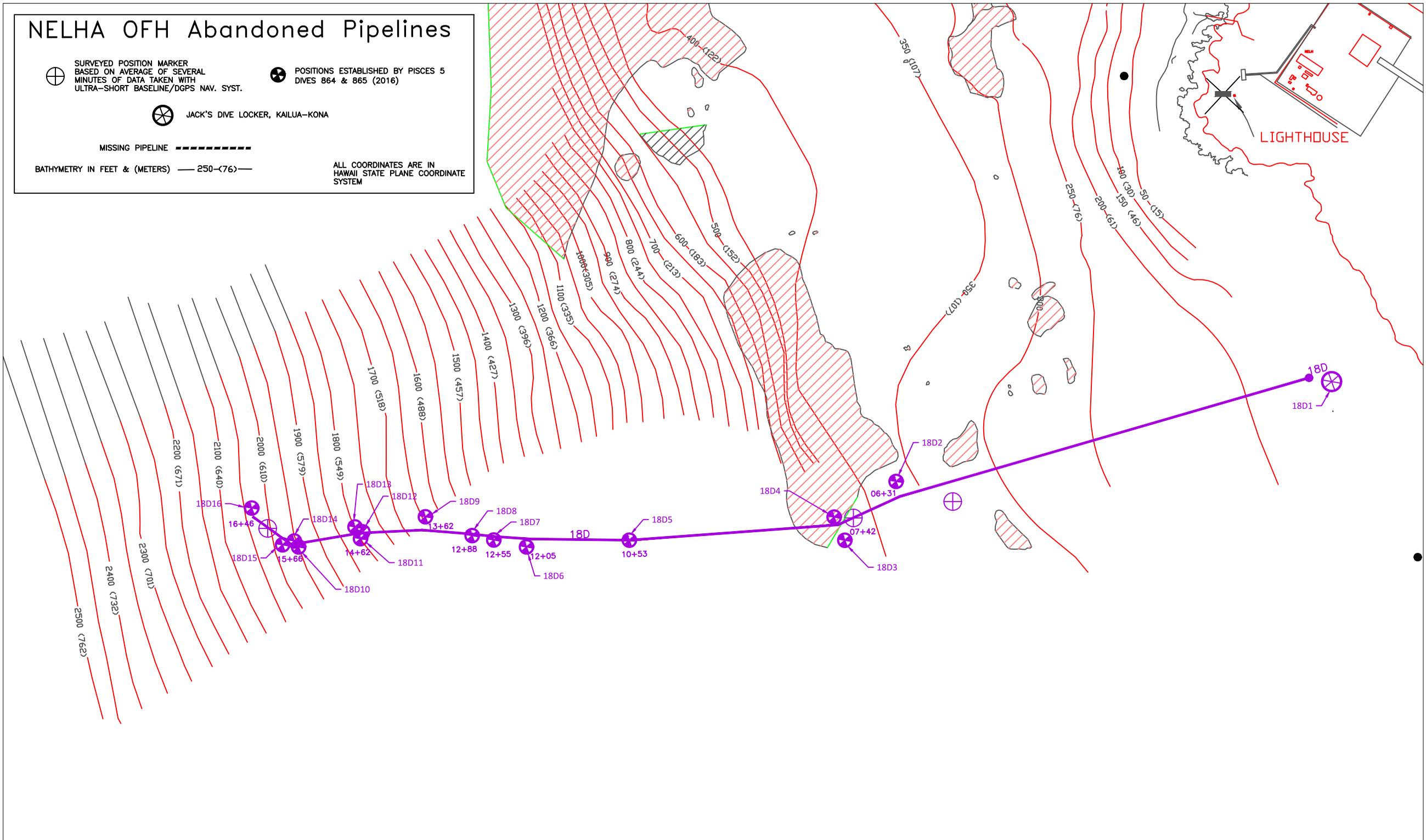
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BASED ON AVERAGE OF SEVERAL  
MINUTES OF DATA TAKEN WITH  
ULTRA-SHORT BASELINE/DGPS NAV. SYST.

⊗ POSITIONS ESTABLISHED BY PISCES 5  
DIVES 864 & 865 (2016)

⊗ JACK'S DIVE LOCKER, KAILUA-KONA

MISSING PIPELINE - - - - -  
BATHYMETRY IN FEET & (METERS) — 250—(76)—

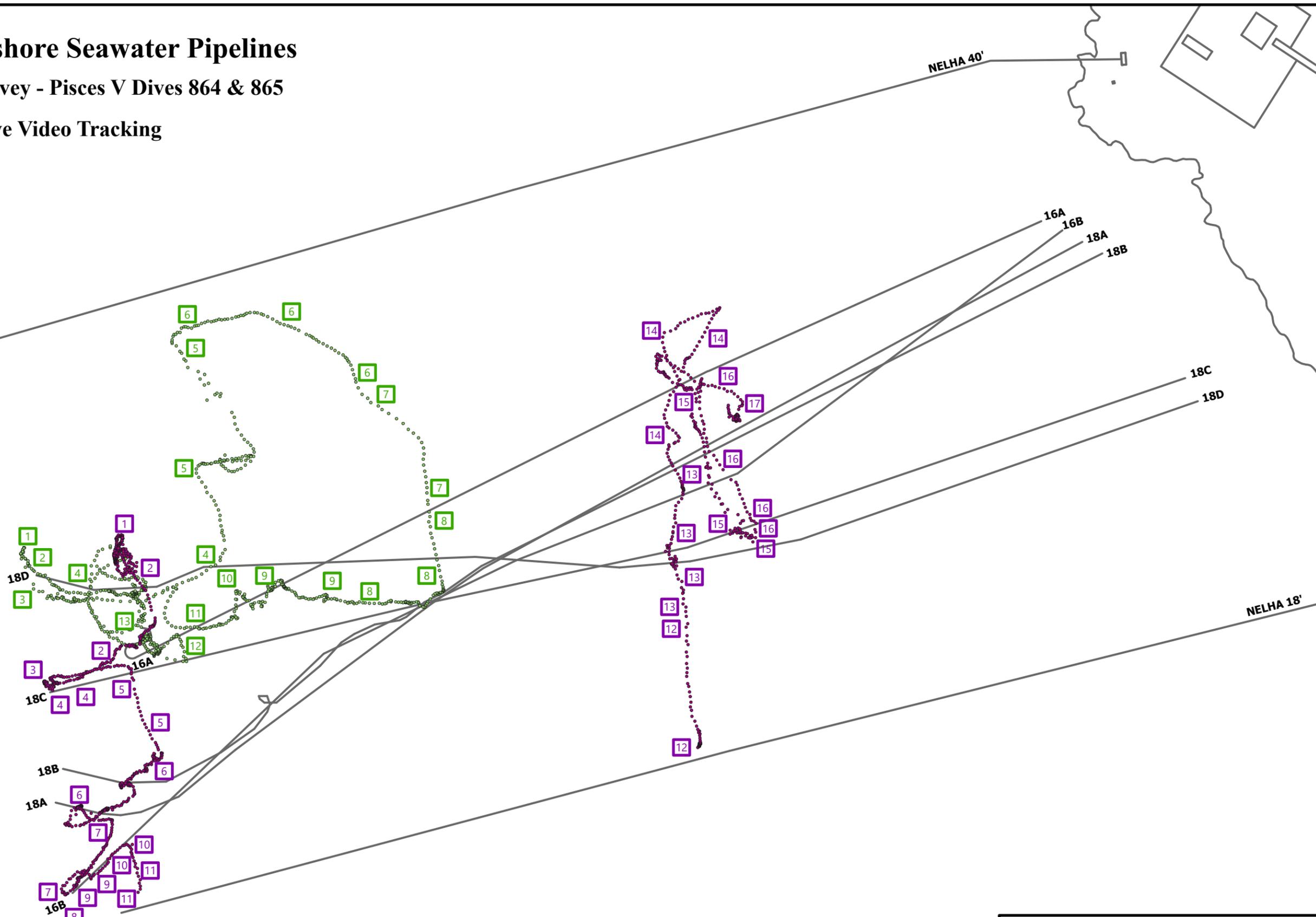
ALL COORDINATES ARE IN  
HAWAII STATE PLANE COORDINATE  
SYSTEM



# NELHA Offshore Seawater Pipelines

2016 HURL Survey - Pisces V Dives 864 & 865

Dive Video Tracking



- Pisces V Dive 865
- Pisces V Dive 864
- NELHA Offshore Pipelines