

**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
Honolulu, Hawaii**

180-Day Exp. Date: March 9, 2008

January 25, 2008

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

**REGARDING:** Conservation District Use Application (CDUA) OA-3435 for an Australia-Hawaii Fiber Optic Cable System Located at and offshore of Keawaula, Waianae, Island of Oahu, portion of TMK: (1) 8-1-001:007 & 008

**AGENT/APPLICANT:** AMEC Earth and Environmental Inc. for Telstra, Inc.

**LANDOWNER:** State of Hawaii

**USE:** Approximately (≈) 0.3 Acres Landward to the Extent of State Jurisdictional Submerged Land Within a 10-Foot Wide Easement

**SUBZONE:** Resource

**DESCRIPTION OF AREA AND CURRENT USE**

The proposed project site lies within Keawaula Ahupuaa, Waianae, Oahu and adjacent submerged lands within the Resource subzone of the Conservation District. The landing area is within Kaena State Park at the beach commonly known as Yokohamas. The area is utilized for recreational uses such as hiking, swimming, surfing, and sunbathing. Access to the site is via Farrington Highway at the end of the road (**Exhibits 1 & 2**).

The onshore telecommunications infrastructure consists of the existing AT&T Keawaula conduits, an existing Beach Manhole (BMH), an existing 285-meter duct that leads to the existing AT&T Cable Station. The existing station site and project area has served as a landing site since 1963. The current station was constructed in 1985 (CDUP OA-1417), expanded upon in 1995 (CDUP OA-2558) and is currently the terminus for nine subsea cables (**Exhibits 3 & 4**).

The land area of the project is composed of alluvial deposits and talus material sediment near the base of the mountainside and beach sand. Avifauna that may be in the vicinity

include Laysan albatross and wedge-tailed shearwaters. The beach area is predominantly sand with a grassy area makai of Farrington Highway. Kou, pohuehue, uhaloa are common native plants observed at the project site landing.

In marine waters, Hawaiian marine protected species that may occur in the vicinity of the project include the federally threatened green sea turtle, the federally endangered Hawaiian monk seal and federally the endangered humpback whale. Spinner dolphins may also frequent the area.

The project route avoids the Marine Protected Area offshore of Kaena Point as well as the Humpback National Marine Sanctuary. A dive survey was conducted in May 2007 from  $\approx$  82-foot water depth to the surf zone (5-ft water depth). The dive survey found the biological community within the near shore varied from generally sparse to discrete limited zones of moderate abundance and diversity. Reef fish and coral communities are lower in abundance and diversity in this area relative to other near shore environments surrounding Oahu. The lack of biological development is likely the result of the geological characteristics combined with exposure to significant seasonal wave action (**Exhibits 5, 6, & 7**).

The most biologically diverse area is found on a shallow elevated reef platform  $\approx$  800 feet offshore in 13-20-ft water depth. Biotic colonization of the reef platform is the highest of any zone surveyed and consists primarily of wave-resistant corals and algae as well as sea urchins and sea cucumbers. The living coral in this biotope covered about 20% of the reef platform and provides habitat for other macro biota. Approximately half of the coral heads on this shallow reef platform were non-living, but readily recognizable skeletons. A predominant feature of this platform reef is the presence of a 1.6-foot deep notch cut into the reef platform to accommodate two existing cables. No species of fish, algae, or coral that are listed as endangered, threatened, or species of concern were reported or observed during the survey except for a monk seal that was observed 2,625 feet from shore.

Descending into the ocean from Keawaula, only the areas close to the beach are expected to have appreciable amounts of sand. The seafloor consists of volcanic sediments, volcanic rocks, coral debris, and some pelagic mud with exposures of lava. The proposed cable would descend down the Oahu island slope, crosses the Waianae slump down into contiguous waters outside of the State's jurisdiction.

## **PROPOSED USE**

According to the applicant, the project activities shall consist of laying the cable within the same near shore corridor on submerged land as existing cables along the route. The cable will be routed through gaps in the inshore section of the reef currently occupied by existing cable as to avoid or reduce new contact with the seafloor. The cable landing at the beach is proposed adjacent to the existing BMH with connection to the cable station via the existing conduits within the manhole (**Exhibits 8 & 9**).

The proposed cable route shall run  $\approx$  5,592 miles from Sydney, Australia to this landing site and operation of the cable system is expected for  $\approx$  25 years. The project consists of the following elements: cable installation by main lay vessel; shore end landing and commissioning and operation of the system. The main lay cable installation will involve laying the cable along a pre-determined route using special-purpose cable ships. The routing is designed to avoid potential hazards, disruption to marine resources and operations, and to secure long-term protection of the cable. The project route is situated among the existing cables already installed at the landing point.

### CABLE

The proposed cable is an optical fiber sub sea cable. The cable design can accommodate up to six pairs of fibers that are housed in a jelly-filled stainless steel tube, surrounded by two layers of steel wires that form a protective vault against pressure and external contact and also provided tensile strength. The vault is then enclosed in a hermetically sealed copper tube and insulated with a layer of polyethylene to form the basic deep-sea lightweight cable. This basic Lightweight Cable (LC) is generally used in waters greater than 11,500-ft deep and is  $\approx$  0.67 inches in diameter.

In shallower waters, additional protection is provided by adding galvanized steel armor wires by stranding a single layer of high strength treated (the steel wires are saturated with bituminous compound and covered by polypropylene yarns) galvanized steel wires over the basic lightweight cable structure. This Single Armor (SA) cable is normally used where full protection by burial is possible. It may be used at water depths of 0-4900-ft deep. This Single Armor cable is  $\approx$  1.02 inches in diameter.

In very shallow waters, Double Armor (DA) cable could be used. This cable is made by adding a second layer of treated galvanized steel wires around the SA cable. This cable is normally used for surface lay or to add additional protection where burial was originally thought to be possible. It may be used at any water depth between 0-1640 feet deep but is generally used between 0-656-ft deep and is  $\approx$  1.38 inches in diameter.

Where cable stability and protection require it, articulated pipe may be fitted over the cable. Articulated pipes may be installed by divers, so the maximum deployment depth is usually 66 feet. The pipe has a diameter of 3 inches (**Exhibits 10 & 11**).

The routing at the landing was selected to optimize the approach to the existing infrastructure to minimize interference with existing cables and to use the seafloor features that effectively function as a natural corridor for the cable route. There are natural and man-made gaps in the rock where the existing cable are placed. The Australia-Hawaii cable route will use these features to minimize impact to the seabed.

According to the applicant, Telstra Inc, intends to install one sub sea fiber optic cable that will provide a connection between the existing cable station and onshore telecommunications infrastructure. The proposed single fiber optic will interconnect with other cable systems at Hawaii providing a direct access to the U.S. mainland and increase

and improve international connectivity and reliability between Australia and the U.S. and accommodating projected growth in broadband applications.

The purpose of the project is to contribute to the upgrading of telecommunications between Australia and the United States in response to increasing demand by home and business broadband users.

### *Main Lay Vessel*

Cable-Laying Vessels-The Australia-Hawaii cable will be laid by a number of cable ships between Sydney and Keawaula. The ship will be  $\approx$  420 feet long and will have a dynamic positioning (DP) system that enables it to maneuver in the near shore area without anchoring. Smaller boats are typically required to assist the cable ship during the shore end landing operation. There will be one or two support boats about 18-30 feet in size depending upon availability of boats.

The cable ship shall comply with applicable regulations and international conventions addressing navigational safety, safe operations and pollution prevention measures. The location and duration of the vessel's presence in the project area shall be included in a notice submitted in advance in accordance with U.S. Coast Guard (USCG) requirements to allow the USCG to issue a notice to mariners and alert other vessels of its presence, expected time in the project area, and contact information.

The main lay will be conducted 24 hours a day until the ship reaches shallow water from where the shore end landing operation is carried out. During the main lay, the ship will operate at speeds of about 4 knots as it approaches Oahu. From the point of entering U.S. territorial waters, the duration of the main lay operations will be approximately one day to approach the Keawaula landing. Once off the landing location, the cable ship will wait for daylight hours and suitable conditions before initiating the shore end landing operations.

### *Shore End Landing*

Prior to commencing the shore end landing, the beach and beach manhole area shall be prepared. Once the existing in-service cables are identified, an area will be excavated at the back of the beach, exposing the beach end of existing conduits coming from the BMH. It is expected that this excavation will be 7-feet deep. Vegetation around the BMH shall be trimmed, but not uprooted. Digging on the beach will be primarily by a small mechanical excavator, but some digging shall also be performed by hand when operating near the existing in-service cables to minimize the risk of damage. A qualified archaeological monitor will be present during excavation activities in the cable corridor. Activities will halt if there is a find until the on-site archaeologist can determine the significance of the find.

Prior to the cable landing, the excavator will be positioned on the grass area on the seaward side of Farrington Highway to be used as a deadweight holding-point for the cable-hauling winch. The winch shall be positioned on the grass area, seaward of the

excavator but landward of the end of the conduit exit point. By using the excavator as a deadweight holding point, no excavation to the landward side of the conduit shall be necessary, thereby minimizing the project footprint. Floating hauling ropes shall be positioned in readiness for the hauling operation.

The worksite shall be cordoned off from public access using safety fencing. Markers and site control on the beach shall identify and maintain a safe work area, without the need to close the entire beach area to users. Security shall be provided for equipment that may be staged overnight. Farrington Highway (the road into the park) will not be affected by this cable-landing set-up and will therefore remain safely open to public use throughout all operations.

On the day of the shore end landing, a Beach master at the hauling position ashore, a Dive master on the dive support vessel, the commander of the cable ship on the ship's bridge, as well as any workboat crews shall be in radio contact to coordinate the cable landing.

A hauling line will be run from shore, through the surf zone, out to the cable ship. This line will be used to pull a heavy hauling line ashore. Once the hauling line is ashore the cable will be attached to the shipboard end. The landward end of the hauling line will then be secured to the winch.

The winch shall slowly take up, pulling the hauling line. The ship will simultaneously pay out the cable, allowing it to be pulled ashore. Tension will be monitored at both the winch and cable ship. As the cable is paid out from the cable ship, floats will be attached as necessary (about every 10-16-feet). These floats will be secured to the cable. As the floats reach the shoreline, the floats are removed from the cable and returned to the ship by a workboat.

This hauling operation will continue until sufficient cable is ashore to reach the BMH, including enough slack for jointing and testing ( $\approx$  82-feet). Additional slack ( $\approx$  82-feet) may also be pulled ashore to allow manipulation of the cable by divers offshore, if required. As the cable end is pulled ashore, the shore team will continue to pull the cable until all the remaining shore-end cable onboard the ship is paid overboard. The final heaving from the shore will straighten the cable out, and the ship will lower the cable to the seafloor. The cable will then be released and the ship will move away to deeper water **(Exhibits 12, 13, 14 & 15)**.

Once the cable end is secured ashore, the hauling rope will then be disconnected and the cable end opened up for electrical insulation and fiber tests. As soon as the tests are completed, divers will be instructed to start trimming the remaining cable floats. Efforts shall be made to make the cable line as straight as possible. Due to currents and wind, a bow or bight may occur in the cable between the ship and shore. Usually some slight tension applied from either end will straighten the cable line. Floats will be cut away progressively from the shoreline towards the cable ship. As the divers cut the floats, the cable will be placed into its desired position.

The divers will confirm the cable is lying flat in position on the seabed and where possible, manually reposition the cable if required. Specifically for the Keawaula landing site, the divers shall direct the cable through the inner reef gaps. Once the cable is laid onto the seabed, the cable end, currently on the beach, will be fed up the ducts to the BMH.

There are six .5-foot diameter steel conduits coming from the BMH, approximately 138 feet long. One of these conduits shall be utilized to install the Australia-Hawaii cable. Once inside the BMH, the cable armor wires will be anchored.

Articulated pipe will then be applied over the cable from the conduit end to  $\approx$  656 feet offshore (about 20 feet deep) like the other existing cables at the landing. A trench will then be excavated from the existing excavation at the end of the BHM conduits down to the waterline to bury the cables. The current planned depth of the trench across the beach will also be  $\approx$  7-feet. The estimated amount of sand to be excavated is approximately 150 cubic yards. The cable will be positioned in the bottom of the trench. All excavations will then be back-filled and the beach returned to its former condition. No sediments will be removed from the project area, nor will materials be introduced to the beach to fill the excavated area.

An excavator will be used to bury the cable as close as possible to the low water mark, and self-burial of the cable is expected to occur through the surf zone. In areas where self-burial has not occurred, jet burial into the seabed by divers out to 10-feet in depth will be carried out where possible and where adequate sediment is present.

An ocean grounding bed may be installed at the existing AT&T Station and will not affect the beach or shore end installation area.

The duration of the shore end landing activities is 6-10 days dependent on weather and swell conditions. Once installed, the cable requires no routine maintenance. Best Management Practices shall be utilized to keep impacts at a minimum.

Mitigation measures have been developed to avoid or reduce impacts during installation of the cable. An onboard observer shall implement marine Protected Species Protection Protocols during installation to identify and take action as needed to avoid disturbance of or contact with marine animals. An observer shall be present onshore prior to beach activities to ensure there are no turtles or seals present at the beach prior to staging.

### Alternatives

#### *Site*

As there are established cable landings and onshore infrastructure available on Oahu, only existing cable stations and landings were considered as a means of avoiding new construction. The Makaha cable landing and station was also considered. However Telstra selected the Keawaula cable station and landing site over Makaha because of the combination of available capacity and landing services at Keawaula. Additional cable

lines are also proposed at the same location and by installing the cables at the same time, this would reduce impact to the environment and total beach disturbance.

*Technique*

Instead of the proposed trenching, Horizontal Directional Drilling (HDD) was also considered to implement the project. HDD would require more equipment and materials to be staged in the project area. Diesel fuel and bentonite lubricant would be required for the machinery. Although spillage capture techniques would be used for HDD operations, there remains a potential for bentonite, topsoil or other sediment to escape into the fresh and seawater environments should heavy rain conditions affect the site. As such the HDD alternative was not selected.

*No Action Alternative*

The project objectives of increasing access to Trans-Pacific telecommunications networks and improving the diversity and security of existing networks would not be achieved.

**SUMMARY OF COMMENTS**

The application was referred to the following agencies for their review and comment-the State: Department of Land and Natural Resources Divisions of: Aquatic Resources, Conservation & Resource Enforcement, Forestry & Wildlife, Oahu District Land, Engineering and Historic Preservation, Parks; Department of Accounting and General Services-Information Communication Services Division; the Department of Health; the Office of Hawaiian Affairs; the Office of Environmental Quality Control; the City: Department of Planning and Permitting and the Waianae Neighborhood Board. In addition, this CDUA was also sent to the nearest public library, the Waianae Public Library, to make this information readily available to those who may wish to review it.

Comments were received by the following and summarized by Staff as follows:

THE STATE

DEPARTMENT OF HEALTH

*Clean Water Branch*

There maybe additional requirements related to our program. We recommend that you read our standard comments on our website. Any project and its potential impacts to State waters must meet the criteria of HAR, §11-54. Consult with the Army Corps of Engineers for determination of a Department of the Army (DA) permit. Should the project require a DA permit, a Section 401 Water Quality Certification shall be required from our office. A National Pollutant Discharge Elimination System (NPDES) permit is required before the start of the construction activities. The State Water Quality Standards must be complied with.

*Applicant's response*

The project proposal will be installed and operated in compliance with all applicable laws and regulations. A DA permit is in progress noted as file # POH-20070157; A NPDES permit is not required as the project will generate no wastewater discharge or storm water run-off into State surface waters and the area to be excavated and equipment operations and staging areas will be fully contained in less than one acre of total land area; and a Section 401 Water Quality Certification application will be submitted.

OFFICE OF HAWAIIAN AFFAIRS

We appreciate that the project will be on an existing near shore route occupied by other undersea cables. We note that the project will only close off a portion of the beach for a limited amount of time and that the rest of the beach will remain open to users. We commend the applicant for its intention to cutback rather than uproot vegetation in the project area. OHA requests that special attention be given to the area's native plants. We recommend that in the case human remains or Hawaiian cultural objects are discovered during the course of the project, all work will cease and The State Historic Preservation Division notified. We note the marine Protected Species Protocols shall be observed.

We note that the State lands, including the submerged lands, being used for the project are ceded lands, which hold a considerable amount of sentimental, historical and legal significance for Native Hawaiians and OHA. These lands were illegally taken from the Hawaiian Kingdom after the 1893 overthrow and later transferred ("ceded") by the United States government to the State of Hawaii upon statehood. Today, the State holds these lands in trust for Native Hawaiians and the General Public.

*Applicant's response*

Precautions will be taken to minimize impacts to the natural environment. Disruption of public access will be restricted to the work area for public safety.

An archaeologist will be on-site during all ground disturbing work, and in the event human remains or Hawaiian cultural objects are discovered, work will cease and the State Historic Preservation Division will be notified.

We have been coordinating with the National Oceanic and Atmospheric Administration (NOAA) and the National Marine Fisheries Service to ensure protection of marine life during the installation of the cable project. Formal consultation is underway between the Army Corps and NOAA as part of the department of the Army Permit.

DEPARTMENT OF LAND AND NATURAL RESOURCES

*Conservation and Resource Enforcement*

No comments

*Division of Aquatic Resources*

Our usual construction comments and recommendation for best management practices apply. The proposed project is not expected to adversely impact aquatic resource values, provided normal precautions are taken to minimize disturbances to public due to construction and installation activities.

*Applicant's response*

Best management practices will be used throughout the construction and installation phase and precautions will be taken to minimize the disturbance to the natural environment and public use of the beach.

*Engineering*

We confirm that the project site, according to the Flood Insurance Rate Map (FIRM) is located in Zone D and also in seawater. The Flood Insurance Program does not have any regulations for developments within Zone D and n seawater.

*Division of Forestry and Wildlife (DOFAW)*

The project site is not within the Kaena Point Natural Area Reserve.

*Applicant's response*

The Environmental Assessment will be revised to reflect the project's location in relation to the Kaena Point Natural Area Reserve.

*Oahu District Land Office (ODLO)*

A land disposition from the Board of Land and Natural Resources shall be required.

*Applicant's Response*

We are currently finalizing our easement (land disposition) application for submittal to the Land Division.

*State Parks (SP)*

The coordination of the activities shall minimize disruption to park users at Yokohama Beach. We have no objections to the proposed project as the project site already serves as a cable-landing site for existing international submarine cables and archaeological excavation of the project area found no archaeological deposits. Please notify the Oahu District Superintendent when the construction schedule is finalized.

*Applicant's response*

Best management practices will be used throughout the construction and installation phase and precautions shall be taken to minimize the disturbance to the natural environment and the public use of the beach. The Oahu District Superintendent will be notified when the construction schedule is finalized.

THE CITY AND COUNTY OF HONOLULU

DEPARTMENT OF PLANNING AND PERMITTING

We note that the entire landside area of the project is within the Special Management Area (SMA). All construction activity including storage and staging for cable laying that occurs within the existing utility or roadway easement, is not considered development. Development activities that are outside the existing cable easement will require approval of an SMA use permit.

The EA notes a Shoreline Setback Variance (SSV) is required. The certified shoreline shall determine if a Variance is required. We request that excavation estimates be provided in the final EA for work that is proposed within the shoreline setback area.

Pleas include a brief discussion of the consistency of the project and the Waianae Sustainable Communities Plan. A separate section should be included in the Final EA which discloses and describes how the project is consistent with and complies with the objectives and policies of the shoreline setback regulations.

*Applicant's Response*

It is our understanding that an SMA Use Permit will not be necessary pursuant to Chapter 25, Section (2)(M) of the Revised Ordinance of Honolulu which defines exemptions and states, "Installation of underground utility lines and appurtenant aboveground fixtures less than four feet in height along existing corridors."

A portion of the equipment staging area may fall within the shoreline setback area, therefore an application for a SSV permit will be submitted. Excavation estimates will be added to the final EA.

A discussion will be added to the Final EA describing the projects consistency and compliance with the objectives and polices of the shoreline setback regulations and consistency with the Waianae sustainability Communities Plan.

WAIANAE NEIGHBORHOOD BOARD

The Waianae Neighborhood Board's Planning, Zoning, Housing and Law Enforcement committee has had two public meetings regarding this project with Applicant's Consultants. There have been requests by those in attendance for some type of benefits

package to the community, specifically scholarships for area high school students. Telstra has not been able to make such a commitment now but is considering what they can give to the community in the way of something such as park improvements.

The committee also recommended that a continued commitment to ensure that respect would be paid to cultural issues, beliefs and findings. The draft Environmental Assessment states, "A qualified archaeological monitor will be present during the excavation activities in the cable corridor. If potentially significant resources are uncovered during excavation or trenching activities, all activities shall halt until the nature and significance of the resources can be determined by the onsite archaeologist. It is noted that the trench has been opened before and neither iwi, nor any other cultural or historical items have been previously found in the trench.

The committee recommends that the Waianae Neighborhood Board support the project contingent upon AT&T and Telstra fulfilling there above referenced commitments to the Waianae community.

#### *Applicant's response*

Precautions will be taken to minimize the disturbance to the natural environment and public use of the beach. An archaeologist shall be on site during all ground disturbing work, and in the event cultural objects are discovered, work will cease until the nature of the resource can be assessed.

We will continue our conversations with the Waianae Neighborhood Planning Committee regarding providing assistance with beach or park improvements in the project area.

#### **ANALYSIS**

After reviewing the application, by letter dated September 11, 2007, the Department has found that:

1. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to §13-5-3, Hawaii Administrative Rules (HAR), §13-5-22, P-6, PUBLIC PURPOSE USES, D-2, Transportation systems, transmission facilities for public utilities, water systems, etc., which are undertaken by non-governmental entities which benefit the public and are consistent with the purpose of the conservation district. Please be advised however, that this finding does not constitute approval of the proposal;
2. Pursuant to §13-5-40 of the HAR, a Public Hearing will be required as the fiber optic line may be utilized for commercial purposes;
3. In conformance with Chapter 343, Hawaii Revised Statutes (HRS), as amended, and Chapter 11-200, HAR, a finding of no significant impact to the environment (FONSI) is anticipated for the proposed project.

As work shall take place in the existing easement, the City & County of Honolulu has determined that the use is not development; therefore a SMA would not be required.

Notice of CDUA OA-3435 and the draft Environmental Assessment was published in the September 23, 2007 issue of the Environmental Notice. The FONSI was published in the December 23, 2007 issue of the Environmental Notice.

A public hearing took place on October 23, 2007 at the Waianae Library. Two community members were present. Comments and concerns brought up at this public venue are similar to the Waianae Neighborhood Board comments.

### CONSERVATION CRITERIA

The following discussion evaluates the merits of the proposed land use by applying the criteria established in Section 13-5-30, HAR.

1. *The proposed land use is consistent with the purpose of the Conservation District.*

The objective of the Conservation District is to conserve, protect and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare.

The project is considered an identified land use in the subject area of the Conservation District; as such, it is subject to the regulatory process established in Chapter 183C, HRS and detailed further in Chapter 13-5, HAR. This process provides for the application of appropriate management tools to protect the relevant resources, including objective analysis and thoughtful decision-making by the Department and Board of Land and Natural Resources.

Staff believes the proposal is consistent with the purpose of the Conservation District as the proposal is within a previously disturbed area within an existing easement. Location of this and other cables promotes the practice of submarine fiber optic co-location landing sites. The Applicant shall observe best management practices for groundwork, marine species observation and shall have an archaeological monitor on site.

2. *The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur.*

The objective of the Resource subzone is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to §13-5-3, Hawaii Administrative Rules (HAR), §13-5-22, P-6, PUBLIC PURPOSE USES.

As work shall take place within an existing defined and previously disturbed easement, Staff believes the proper management and use of the easement shall sustain the natural resources of the project area.

3. *The proposed land use complies with provisions and guidelines contained in Chapter 205, HRS, entitled "Coastal Zone Management," where applicable.*

The proposed project will be of a short duration and incorporates protective measures to prevent adverse effects to the resources. Staff believes that recreational resources, historical resources, scenic and open space resources, and coastal ecosystems, shall be preserved with the incorporation of the stated best management practices.

As this is not considered development a Special Management Area permit is not required.

4. *The proposed land use will not cause substantial adverse impacts to existing natural resources within the surrounding area, community, or region.*

Staff believes the proposed land use will not cause substantial adverse impacts to existing natural resources within the surrounding area, community or region. The proposed land use does not change the existing use of the area.

5. *The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding area, appropriate to the physical conditions and capabilities of the specific parcel or parcels.*

The proposed use does not require new construction of above ground facilities. All landing site infrastructure are present at the site. The project will not create a visual or functional change in the project area.

6. *The existing physical and environmental aspect of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, which ever is applicable.*

As the project is of a short duration, the project area shall be returned to it's natural state and mitigation for potential impacts have been formulated. Staff believes the existing physical and environmental aspects of the land shall be preserved.

7. *Subdivision of the land will not be utilized to increase the intensity of land uses in the Conservation District.*

There will be no subdivision of land for this proposed project.

8. *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

Staff believes the proposed project will not be materially detrimental to the public health, safety and welfare. During the construction period, the public shall be restricted from entering the work area to maintain safety. There shall be controlled access to clearly define and limit work areas, which shall protect the public from potential hazards associated with machinery. Staff believes increased telecommunication systems shall improve public health, safety and welfare by providing another venue to channel information for public good.

## **DISCUSSION**

The proposed single fiber optic will interconnect with other cable systems at Hawaii providing a direct access to the U.S. mainland and increase and improve international connectivity and reliability between Australia and the U.S. to accommodate projected growth in broadband applications. The purpose of the project is to contribute to the upgrading of telecommunications between Australia and the United States in response to increasing demand by home and business broadband users.

The routing at the landing was selected to optimize the approach to the existing infrastructure to minimize interference with existing cables and to use the seafloor features that effectively function as a natural corridor for the cable route. There are natural and man-made gaps in the rock where the existing cables are placed. The Australia-Hawaii cable route will use these features to minimize impact to the seabed.

Prior to project implementation, the location and duration of the cable laying vessel's presence in the project area shall be included in a notice submitted in advance in accordance with U.S. Coast Guard (USCG) requirements to allow the USCG to issue a notice to mariners and alert other vessels of its presence, expected time in the project area, and contact information.

The worksite shall be cordoned off from public access using safety fencing. Markers and site control on the beach shall identify and maintain a safe work area, without the need to close the entire beach area to users. Security shall be provided for equipment that may be staged overnight. Farrington Highway will not be affected by this cable-landing set-up and will therefore remain safely open to public use throughout all operations.

The project proposal lies within an existing disturbed corridor within an existing easement. Location of this and other cables promotes the practice of submarine fiber optic co-location landing sites. The Applicant shall observe best management practices for groundwork, marine species observation and shall have an archaeological monitor on site.

## **RECOMMENDATION:**

Based on the preceding analysis, Staff recommends that the Board of Land and Natural Resources APPROVE this Conservation District Use Application (CDUA) OA-3435 for an Australia-Hawaii Fiber Optic Cable System Located at Keawaula, Waianae, Island of

Oahu, portion of TMK: (1) 8-1-001:008 and offshore submerged State lands subject to the following conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules, regulations, and conditions of the Federal, State, and County governments, and applicable parts of the Hawaii Administrative Rules, Chapter 13-5;
2. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury or death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit;
3. The applicant shall obtain appropriate authorization from the Department for the occupancy of State lands;
4. The applicant shall comply with all applicable Department of Health administrative rules;
5. Before proceeding with any work authorized by the Board, the applicant shall submit four (4) copies of the construction and grading plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three (3) of the copies will be returned to the applicant. Plan approval by the Chairperson does not constitute approval required from other agencies;
6. Any work done or construction to be done on the land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the Chairperson, and, unless otherwise authorized, shall be completed within three (3) years of the approval. The applicant shall notify the Department in writing when construction activity is initiated and when it is completed;
7. All mitigation measures set forth in the application materials and in the final environmental assessment for this project are hereby incorporated as conditions of the permit including but not limited to the following:
  - a. Upon construction completion, the Applicant shall restore the project site to its original condition;
  - b. The Applicant shall provide public notification to inform the public of the project;
  - c. The Applicant shall have an Archaeological Monitor on site during any and all excavation work;

- d. The Applicant shall have an onboard observer to implement marine Protected Species Protection Protocols during installation to identify and take action as needed to avoid disturbance of or contact with marine animals;
8. The applicant understands and agrees that this permit does not convey any vested rights or exclusive privilege;
  9. In issuing this permit, the Department and Board have relied on the information and data that the applicant has provided in connection with this permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;
  10. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take the measures to minimize or eliminate the interference, nuisance, harm, or hazard;
  11. The applicant shall notify the Office of Conservation and Coastal Lands (OCCL) in writing at least one week prior to the initiation of work within the Conservation District and the cable installation, and upon completion of the project;
  12. Should historic remains such as artifacts, burials or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact HPD (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;
  13. Other terms and conditions as may be prescribed by the Chairperson; and
  14. Failure to comply with any of these conditions shall render this Conservation District Use Permit null and void.

Respectfully submitted,



K. Tiger Mills, Staff Planner  
Office of Conservation and Coastal Lands

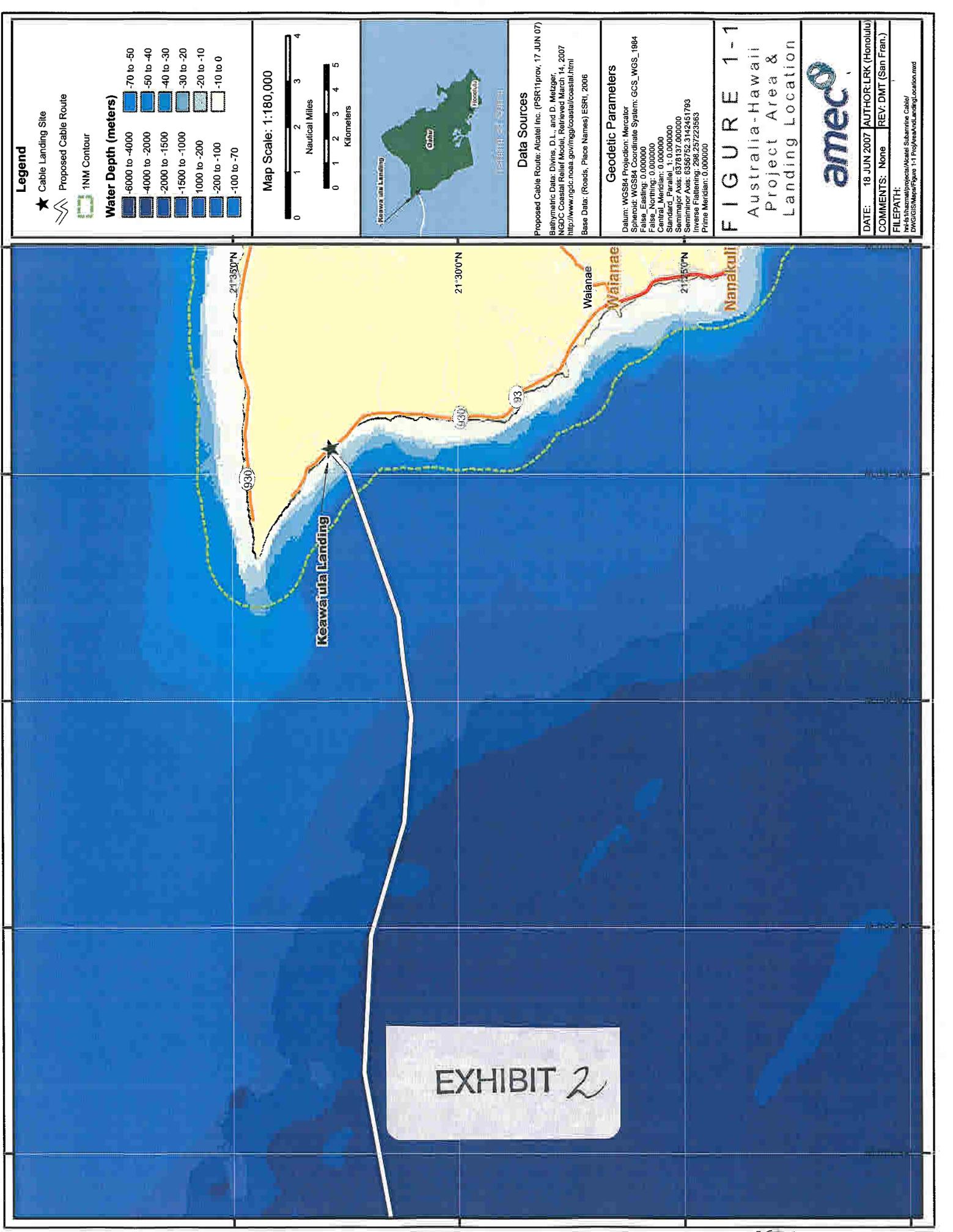
**Approved for submittal:**



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Laura H. Thielen, Chairperson  
Board of Land and Natural Resources





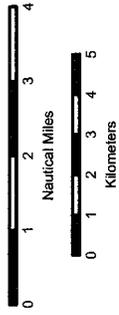
**Legend**

- ★ Cable Landing Site
- Proposed Cable Route
- 1NM Contour

**Water Depth (meters)**

-6000 to -4000	-70 to -50
-4000 to -2000	-50 to -40
-2000 to -1500	-40 to -30
-1500 to -1000	-30 to -20
1000 to -200	-20 to -10
-200 to -100	-10 to 0
-100 to -70	

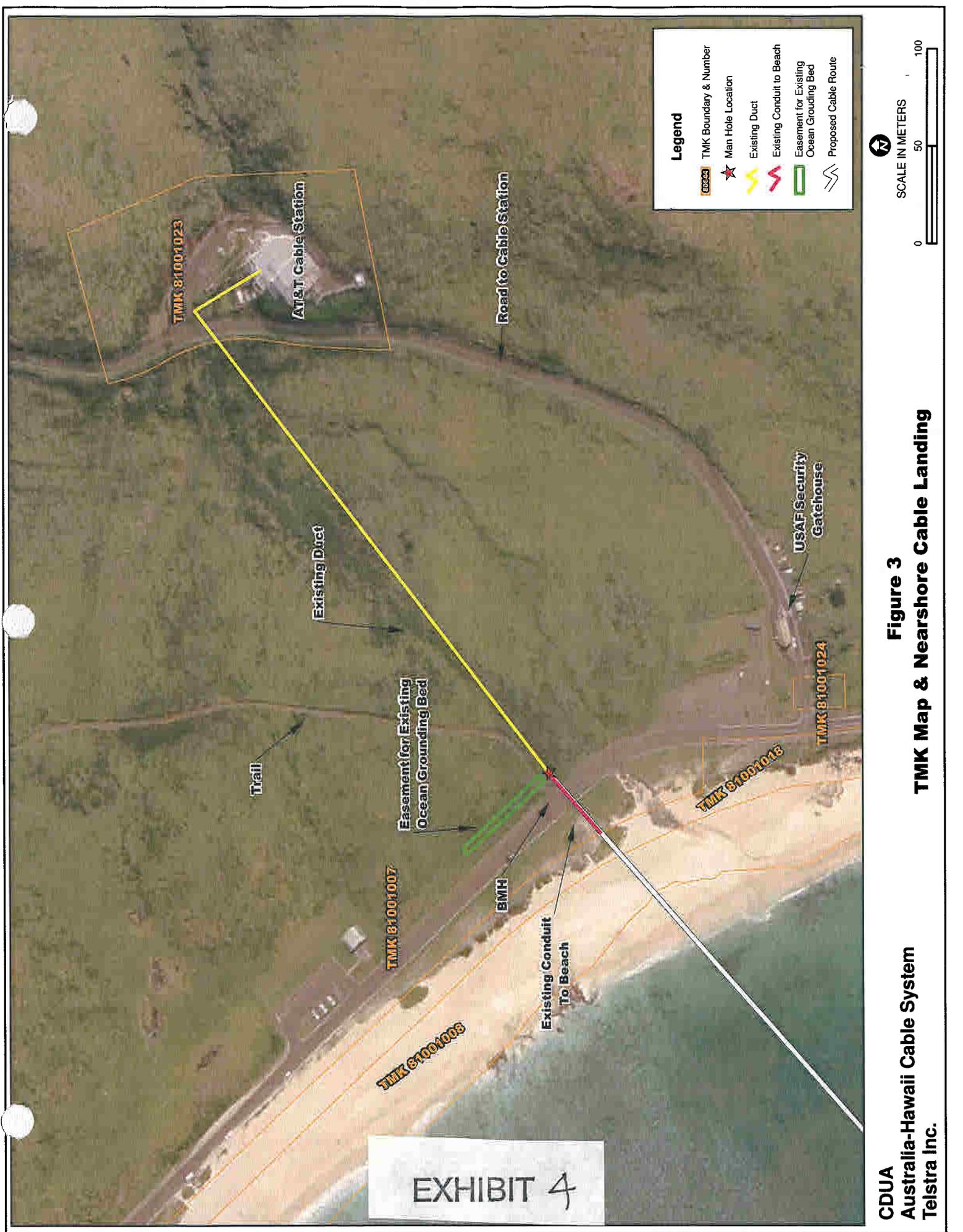
Map Scale: 1:180,000



<p><b>Data Sources</b></p> <p>Proposed Cable Route: Alcatel Inc. (PSR11prov, 17 JUN 07)</p> <p>Bathymetric Data: Divins, D.L., and D. Metzger, NGDC Coastal Relief Model, Retrieved March 14, 2007 <a href="http://www.ngdc.noaa.gov/mgl/coastal/coastal.html">http://www.ngdc.noaa.gov/mgl/coastal/coastal.html</a></p> <p>Base Data: (Roads, Place Names) ESRI, 2006</p>	<p><b>Geodetic Parameters</b></p> <p>Datum: WGS84 Projection: Mercator          Spheroid: WGS84 Coordinate System: GCS_WGS_1984          False Easting: 0.000000          False Northing: 0.000000          Central Meridian: 0.000000          Standard Parallel: 1.0.000000          Semimajor Axis: 6378137.000000          Semiminor Axis: 6356752.3142451793          Inverse Flattening: 298.257223563          Prime Meridian: 0.000000</p>
<p><b>FIGURE 1-1</b>          Australia-Hawaii          Project Area &amp;          Landing Location</p>	
<p><b>ameco</b></p>	
<p>DATE: 18 JUN 2007 AUTHOR:LRK (Honolulu)          COMMENTS: None REV: DMT (San Fran.)</p>	
<p>FILEPATH: \\server\projects\Hawaii\Submarine Cable\DWG\GIS\Map\Figure 1-1 Proj\area_and_landing_location.dwg</p>	

EXHIBIT 2





**Figure 3**  
**TMK Map & Nearshore Cable Landing**

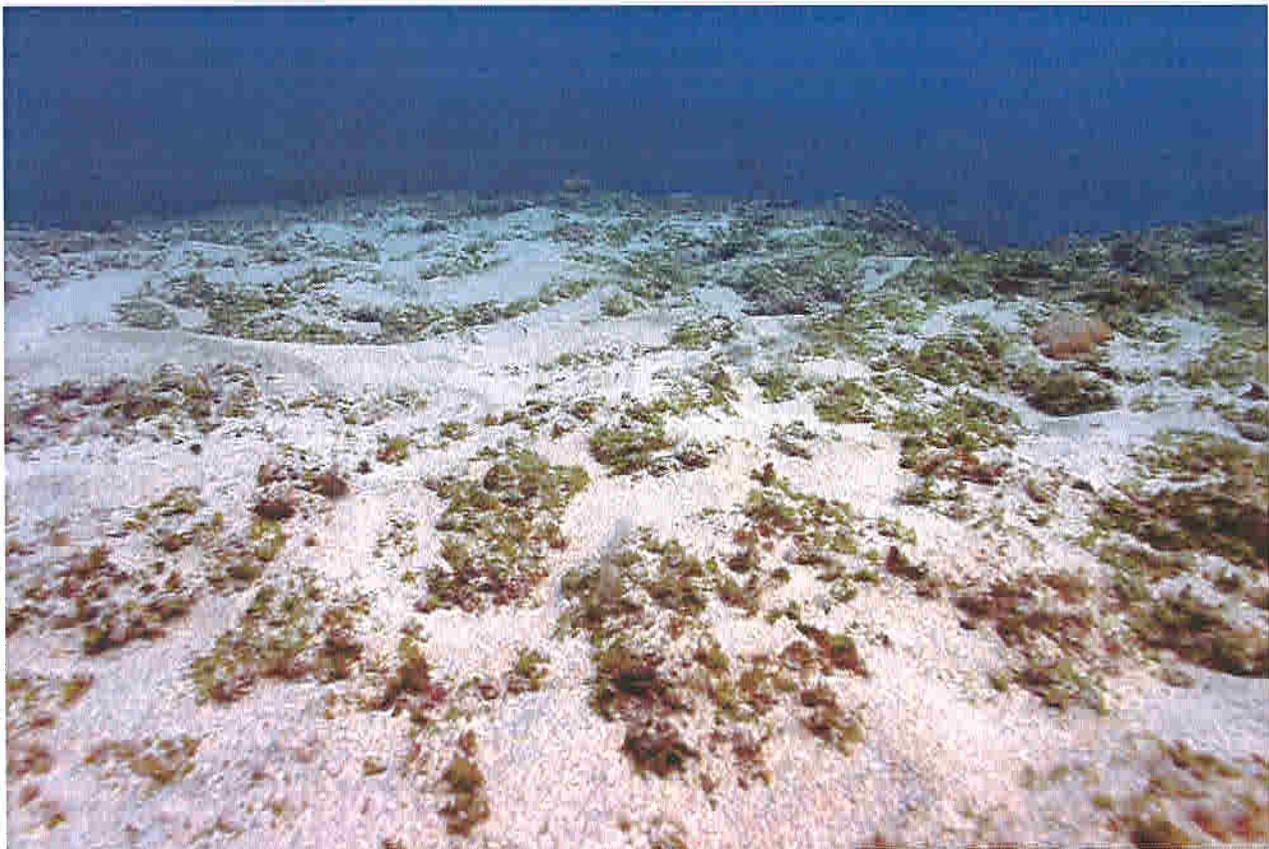


FIGURE 2. Two views of the reef surface in the vicinity of the elevated reef platform near the route of the Australia-Hawaii cable landing. Upper photo shows portion of route over the top of the reef platform. Bottom photo shows area to the north of proposed route where reef surface is predominantly sand. Wire tracing proposed route is visible at lower right of upper photo. Water depth is approximately 7 m.

EXHIBIT 5



FIGURE 7. Large colonies of the branching coral *Pocillopora eydouxi* growing on cables in the vicinity of the Australia-Hawaii cable route at Keawaula, Oahu. No colonies of this species of this size were observed in the area growing on natural substratum. Water depth in both photos is ~11-12 m. Yellow fish in lower photo are *Chaetodon miliaris*; black and white fish clustered over the coral heads are *Dascyllus albisella*.

EXHIBIT 6

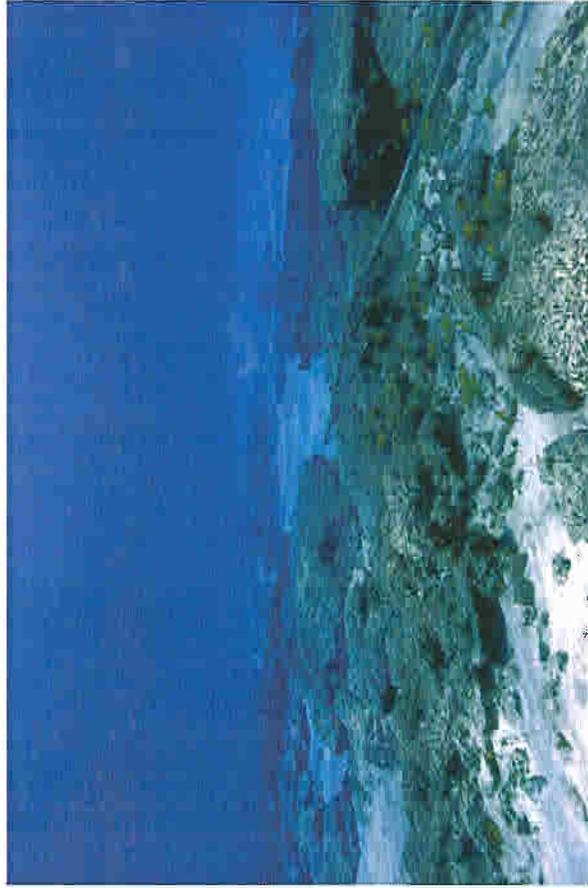
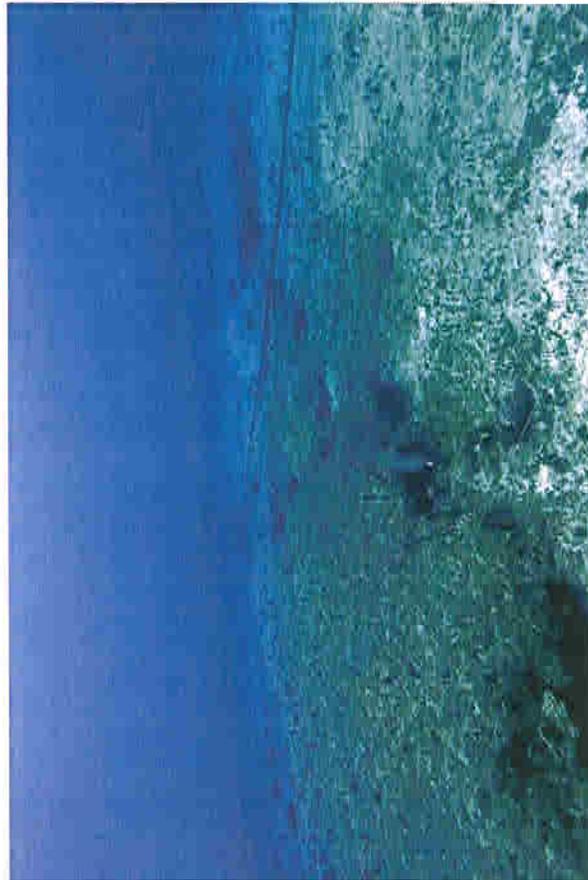


FIGURE 8. Four views of the deep reef flat at Keawaula, Oahu on the proposed route of the Australia-Hawaii cable. Upper two photos show areas of the reef flat that occurs between approximately 250 and 900 m from shore. Large hemispherical coral colonies in both photos is *Pocillopora meandrina*. Photo at lower right shows section of reef where the limestone platform is broken up (water depth 11 m); photo at bottom left shows fossil shoreline notch at a depth of 18 m. Numerous existing cables can be seen in all photos. Wire marking proposed route of Australia-Hawaii cable can be seen in photos at upper right and lower left.

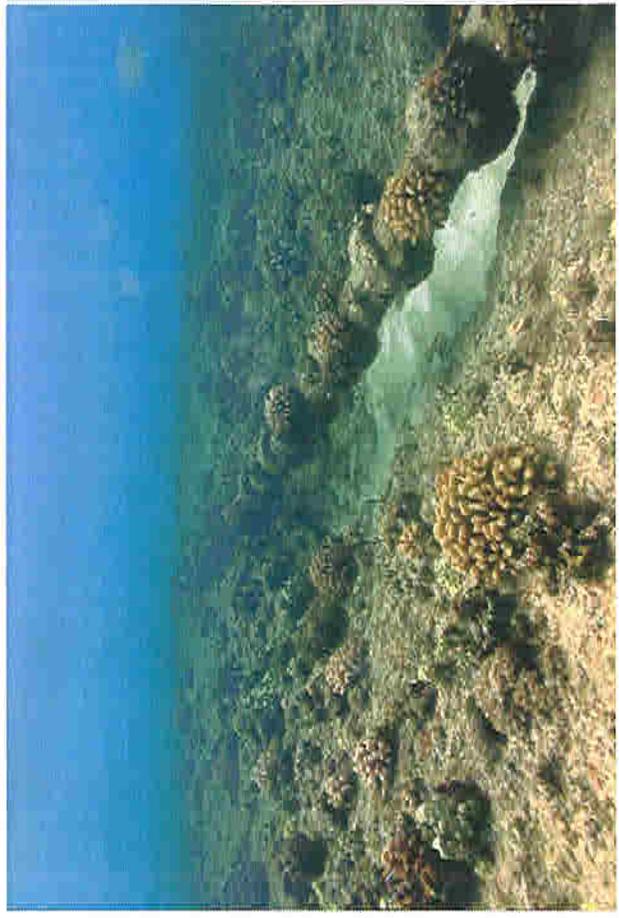


EXHIBIT 8

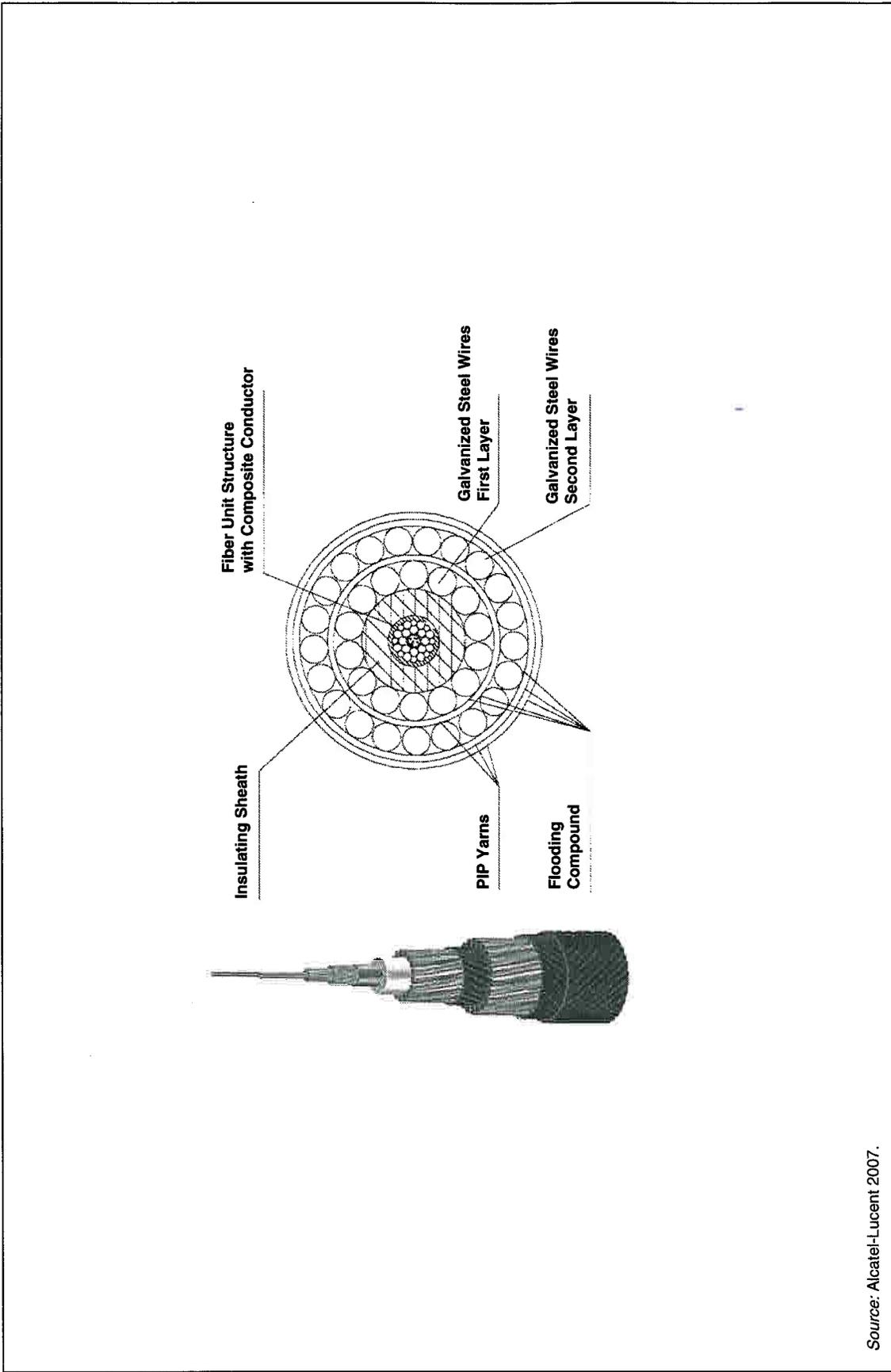
FIGURE 3. Four views of armored cables crossing elevated reef flat at Keawaula, Oahu. The area where these cables cross the reef is the proposed route for the Australia-Hawaii cable landing. Note the high settlement of coral on all of the cables that are elevated above the reef surface. The most common coral on the cables is the hemispherical branching species *Pocillopora meandrina*. Water depth is approximately 7 m in all photos.



EXHIBIT 9

FIGURE 5. Four views of cables bisecting the reef platform through a notch cut into the reef located several meters to the south of the proposed route of the Australia-Hawaii cable. Note very low incidence of coral colonization of cables below the level of the reef platform. Water depth is approximately 8 m.

# EXHIBIT 10



EA

FIGURE 2-3

Double Armoured (DA) Cable Arrangement

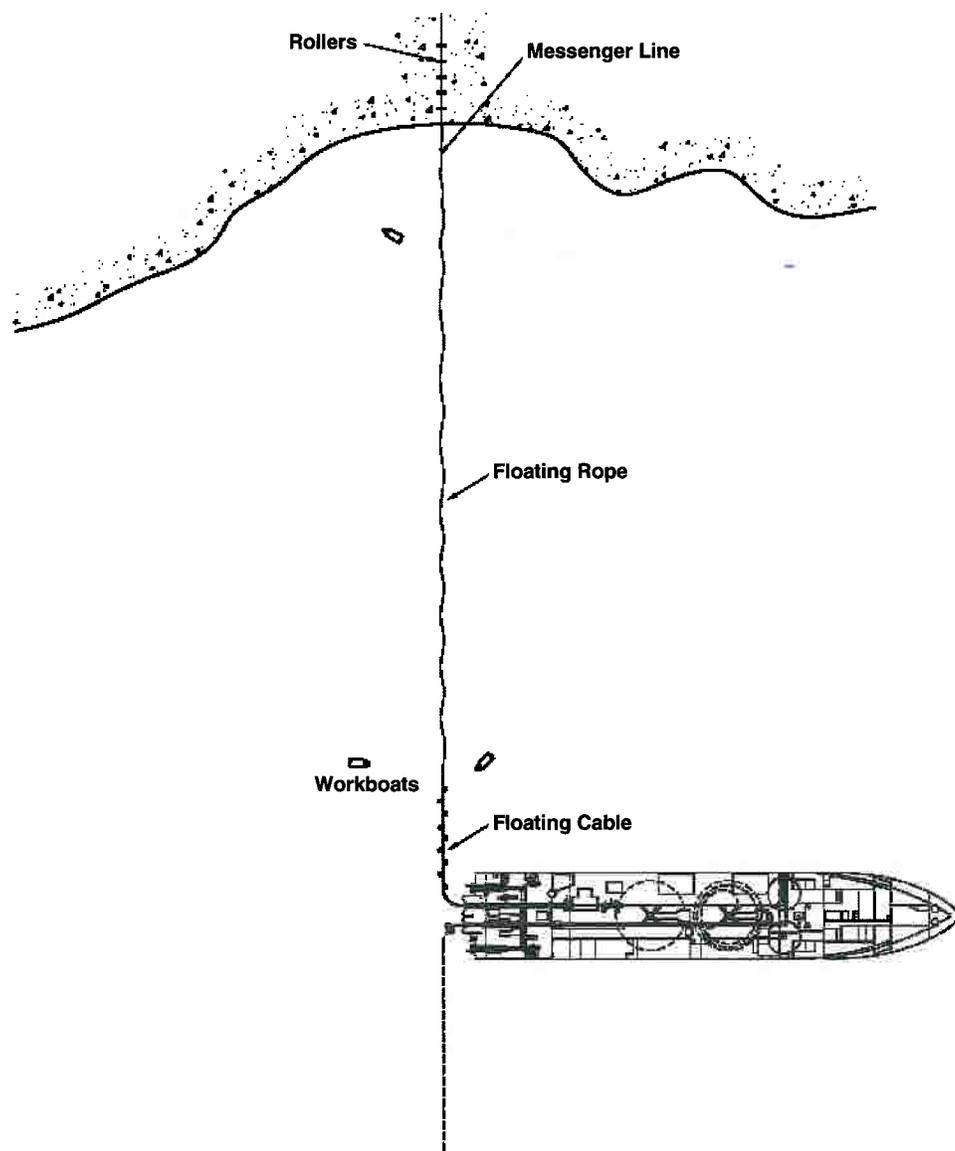


Source: Alcatel-Lucent 2007.

EA

FIGURE 2-13

Articulated Pipe Applied over Cable Across Beach before Burial

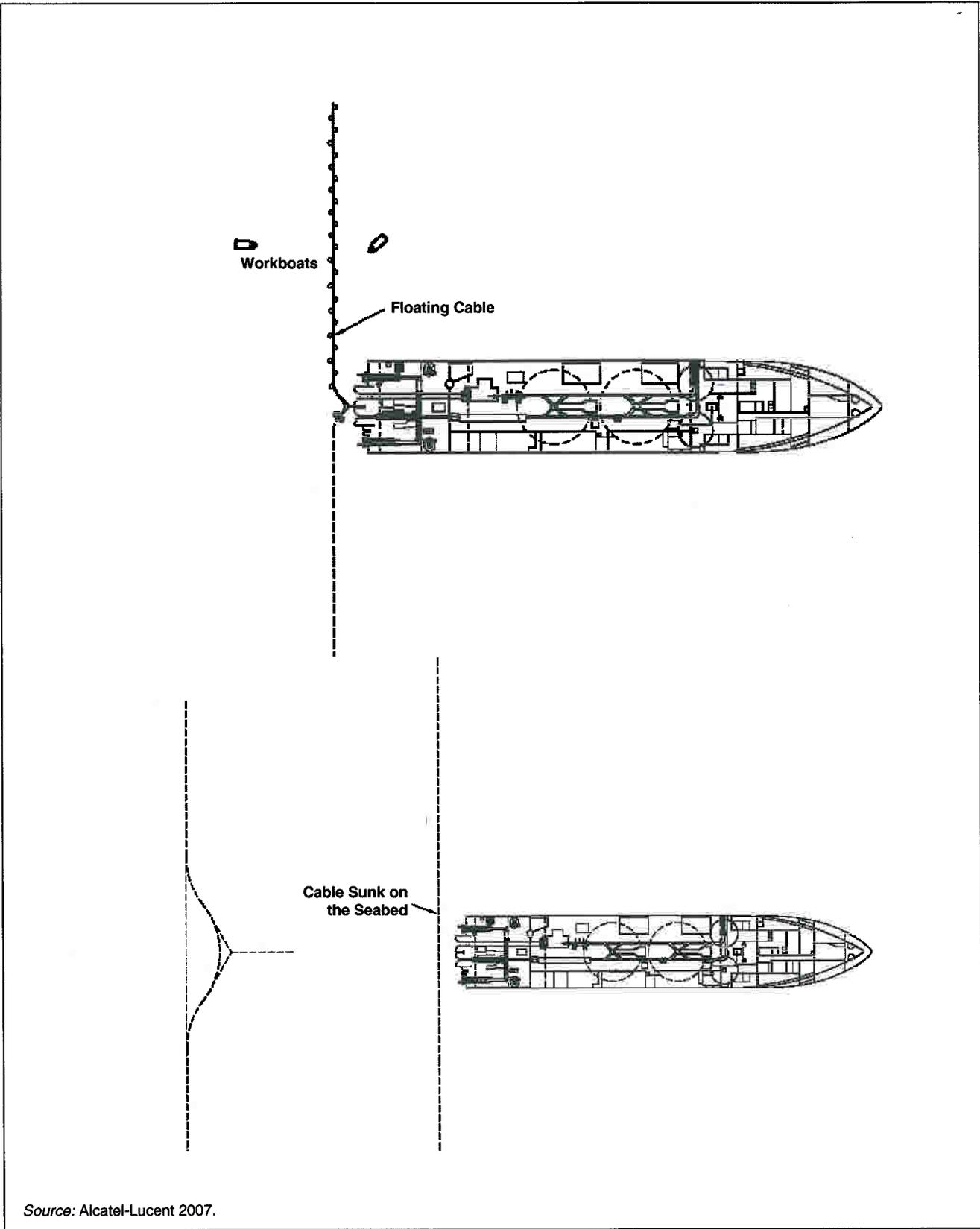


Source: Alcatel-Lucent 2007.

EA

Payout of Cable from Ship to Beach

FIGURE  
2-11



Source: Alcatel-Lucent 2007.

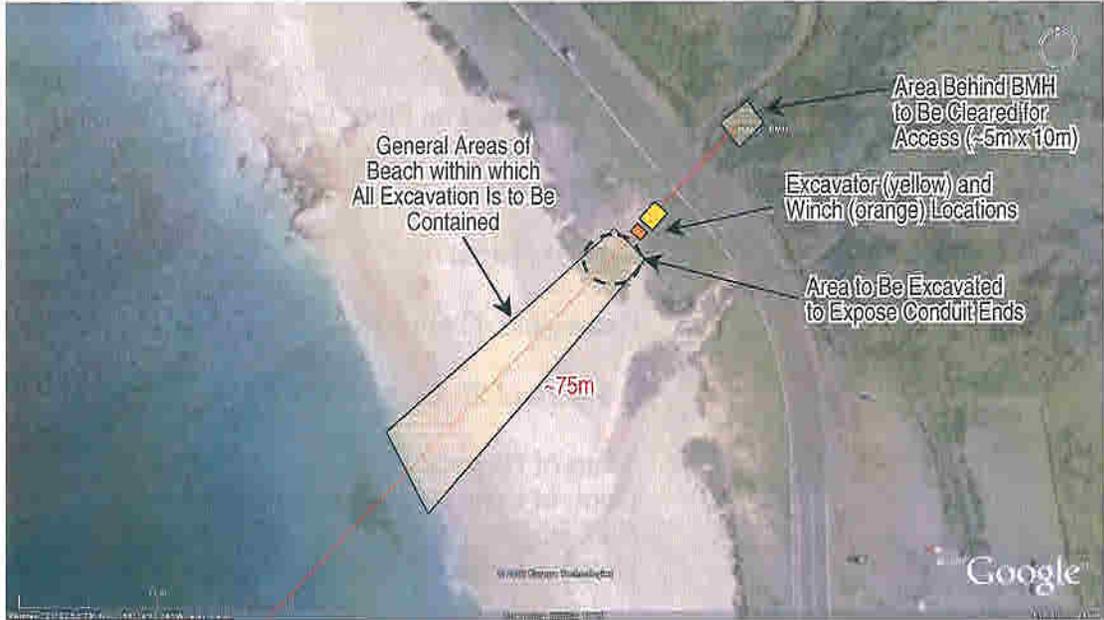
EA

Cable Floated Ashore and Vessel Is Released

FIGURE  
2-12



EXHIBIT 14.



**Equipment Layout on Beach**



**Example of Similar Arrangement on a Public Beach**

Source: Alcatel-Lucent 2007.

EA

**Beach Equipment Layout**

**FIGURE 2-7**

**EXHIBIT 15**