



**OREGON PARKS AND RECREATION DEPARTMENT
OCEAN SHORE PERMIT APPLICATION**

**ADDENDUM F
PIPELINES, CABLES AND CONDUITS**

**Section 1.
DEPARTMENT POLICY**

Pursuant to ORS 390.610(4), it is the policy of the Oregon Parks and Recreation Department to prohibit the use of the ocean shore as a north-south utility, communication, transshipment or conveyance corridor. This prohibition applies to pipelines, conduits, cables, wires, towers, transmission, relay or booster stations and other continuous or intermittent facilities for moving material or services, or transmitting data, information, energy, or other commodity whether for private or public use or benefit. The Department, in its discretion, may make exceptions to this policy in cases of emergency or when need is demonstrated for the project to occur on and alter the ocean shore. Need is demonstrated when practicable alternatives are not available. Benefit to the citizens of Oregon, as a whole, shall be a primary consideration in any decision by the Department to grant an exception to this policy. Cost shall not be the sole reason that an alternative is determined to be not available.

**Section 2.
PROPOSED PROJECT INFORMATION**

- Installation of pipeline
 Installation of cable
 Installation of conduit
 Other: _____

Estimated project start date: 3-1-17 Estimated completion date: 6/30/2017

Section 2.
PROPOSED PROJECT INFORMATION (continued)

Description of pipeline, cable or conduit (include details regarding nature, scope, purpose and materials):

Microsoft Infrastructure Group, LLC ("Microsoft") proposes to install the NCP Cable Network, a new trans-Pacific undersea fiber optic telecommunications cable system, linking the United States (at Pacific City, Oregon) to Asia. The NCP comprises a trunk route from Chongming in China to Pacific City in the USA (Figure 1), with branches to Nanhui in China, Busan in Korea, Toucheng in Taiwan and Maruyama in Japan.

The proposed submarine fiber optic cable will be installed using horizontal directional drilling (HDD), starting at the existing BMH at the terminus of Pacific Ave in Pacific City. The HDD will extend to approximately 0.78 mile offshore, at a water depth of approximately 49 to 56 feet (Figure 2 & 3). The cable will extend through a 5-inch submarine conduit. This HDD effort will provide the terrestrial-to-marine interface to minimize possible disturbances to the beach area near the landing station. It will also provide maximum protection to the cable in the surf zone. No terrestrial vegetation will be disturbed at the staging area (Figure 4). It will take approximately 30 working days to complete the HDD activities, depending on weather conditions and, if implementation of contingency measures is required (e.g., frac-out occurs). Upon completion of the HDD operations, areas near the BMH will be re-graded and covered with sand.

Seaward, HDD activities will disturb the seafloor at the location of the bore exit point. Between one to two cubic yards of sand/silt material could be disturbed as the HDD leaves the bore exit hole. From the HDD exit hole, the cable will be buried to water depths up to ~4,900 feet using a standard cable laying vessel. TE SubCom will use a 17.4-foot sea plow to excavate the trench to bury the cable. This sea-plow will create a rectangular shaped trench, approximately 1.5 feet wide and 3.3 feet deep. Sediment will either slough back into the trench after the cable is laid, be pushed to the sides and refill the trench over time from current/wave action, or will temporarily suspend in the water column, eventually settling out at varying distances from the trench.

The terrestrial portion of the fiber optic cable route begins approximately 307 feet west of the intersection of Pacific Ave and Cape Kiwanda Drive. The proposed route proceeds east underground along the south side of Pacific Ave until turning north at aforementioned intersection and following along the west side of Cape Kiwanda Drive, for approximately 1.04 miles. At this point, the route crosses to the east side of Cape Kiwanda Drive/McPhillips Drive, just north of Circle Drive, and continues north for approximately 440 feet before returning to the west side of McPhillips Drive. From here, the route continues north along McPhillips Drive for approximately 1.30 miles to the intersection of McPhillips Drive and Sandlake Road, where the route turns slightly east to follow Sandlake Road. The route proceeds east along the south side of Sandlake Rd for approximately 0.82 miles before crossing east beneath Sandlake Road, entering into the proposed cable landing station site (Figures 5 & 6).

At the approximately 35-acre parcel where the proposed cable landing station will be located, an approximately 0.4-acre area will be cleared and two buildings, a 650-sq ft. building and a 1,250-sq ft. building, will be constructed. Adjacent to the proposed new cable landing station, three anodes (the Ocean Ground Bed) will be buried in the ground. Each anode will be approximately 3 inches in diameter and 5 feet long. Anodes will be installed to a depth sufficient to interface with groundwater (or at an optimal level determined by soil resistivity testing) and connect with the cable station via a grounding cable. The purpose of these anodes is to provide for an earth ground the entire cable system.

Attach additional pages as necessary

Construction methods. Please describe the proposed construction methods including equipment to be used.

The HDD construction procedure to be followed consists of three stages. First, a perimeter will be set and the site will be clearly signposted informing the general public of the work in progress while limiting access to the site, following the fore-dune area grading as required. In continuation, all the equipment necessary for the pit excavation and drill rig installation will be transported to the site pending the excavation of the pit and the final positioning of all necessary tools and equipment.

A truck-mounted HDD rig will be brought to the site, including power generators, drill pipe and racks, storage tanks for the drilling muds, and clean water storage tanks. Water for the drilling operation will most likely come from a municipal source. Equipment to be used in the staging area may include:

- A frac-out tank
- Mud tank
- Drilling rig
- Control cab with power unit
- Recycle unit
- Mud and slurry pump units
- Jetting assembly
- Job trailer
- Crane
- Steel rods (28 feet by 5 inches)
- Bio-degradable bentonite clay and drilling fluids
- Equipment storage area

The fore-dune area around the existing beach manhole will be leveled down so that the set-up of the equipment and the drilling platform is feasible. Once completed, the drill entry pit will be formed in line with the HDD rig. A slurry pump will be set in place next to the mud receiving drill entry pit in order to pump out the returning fluid, feeding it to the recycling unit for further treatment, adjustment and reuse.

The drilling operation will begin by drilling a pilot hole using a drill bit and a drill head, and pressure injection of drilling fluid. The average drilling progress rate is assumed to be approx. 330 feet per day with the day to be a 12-hour shift, i.e. at least 10 effective working hours per day. Location of the drill bit will also be continuously monitored using an electronic transmitter in the drill head to send information to the drill operators. From this monitoring information, the operator will know the location of the drill head at all times and will use the information to maintain the pre-planned path of each bore.

Drilling mud used contains 98% bentonite. A polymer additive will be available on-site to be employed in the drilling fluid in negligible concentration. All components are biodegradable and non-toxic/environmentally friendly. This HDD installation will be implemented in a "drill & leave" manner. This entails drilling with 5-inch outer diameter steel drill pipes and leaving them in place once the pilot bore is completed. Upon completion of the operations, sand will be restored to its prior condition. All materials and equipment will be retrieved and the site area will be cleaned and cleared of rubbish.

The entirety of the terrestrial portion of the proposed cable alignment will be placed underground, in conduit, within the existing road right-of-way. Any potential wetlands or waters of the US will be avoided by moving the route to opposite side of the road. In some areas, there is a sufficient amount of road fill present that trenching or boring may be used above potential waters of the US without impact to said waters by keeping all of the ground disturbance activities within the existing road fill material.

Terrestrial construction methods will consist of either trenching or boring, depending on the location. Trenching will be done using a small excavator digging a trench approximately 24-inch wide by 48-inch deep. Boring will be done using

a horizontal boring machine. An excavator will also be used to dig any necessary bore pits and install all necessary vaults (18) at 48 inches by 48 inches by 48 inches. Vaults will be a flush-mounted variety and require an excavation of a hole approximately 96 inches by 72 inches by 48 inches. Bore pits are approximately 24 inches by 96 inches, with a depth of less than 48 inches. Regardless of installation method, conduit will be placed no less than 42 inches from top of conduit to surface. All of the ground disturbance that will occur with the underground placement of the fiber optic cable will result in less than 0.5 acres. (< 0.40 acres trenching and <0.01 acres bore pits per vault). All disturbed ground will be placed back and compacted as close as possible to original elevation and grade. All disturbed ground will be seeded with an approved seed mixture.

Public access to the beach over the dune shall be maintained throughout the HDD operations.

The Applicant's cable installer, Tyco Electronics Subsea Communications LLC (TE SubCom), has worked closely with the Oregon Fishermen's Cable Commission to revise the cable route to minimize impacts to fishing grounds and avoid rock outcrops, while at the same time providing protection to the cable system. Upon exiting the HDD hole, the cable will be simultaneously laid and buried below the seabed into 1.5-foot wide and 3.3-foot deep trench created by a seaplow towed by the cable ship. The cable will be buried in the sediment to a water depth of approximately 4,900 feet.

Attach additional pages as necessary.

Section 3.
PROPERTY IDENTIFICATION

Township: 4S Range: 11W Section: 25 Subsection: _____ Tax lot number(s) 500TC

City/town: Pacific City

County:

- | | | | |
|-------------------------------------|-----------|--------------------------|---------|
| <input type="checkbox"/> | Clatsop | <input type="checkbox"/> | Douglas |
| <input checked="" type="checkbox"/> | Tillamook | <input type="checkbox"/> | Coos |
| <input type="checkbox"/> | Lincoln | <input type="checkbox"/> | Curry |
| <input type="checkbox"/> | Lane | | |

Please complete the following information on upland property owners who are adjacent to and have common boundaries with the entry point, easement or right of way where the facility leaves the ocean shore. Incomplete or incorrect information may result in processing delays.

NAME	PROPERTY ADDRESS	MAILING ADDRESS
Faye M. Jensen LLC c/o Brock Stiles	5444 Sunset Drive, Pacific City, OR 97135 (Tax Parcel # 4S1125-AA-00200; Figure 7)	██████████ ██
R & M Properties	5976 Pacific Ave, Pacific City, OR 97135 (Tax Parcel # 4S1125-AA-00600, -00700; Figure 7)	██ ██

Where is the nearest **public** beach access?

Location: At the terminus of Pacific Ave, Pacific City. This is the same location where HDD will occur

Approximate distance from proposed project: At the existing beach manhole where HDD activities will occur.

Section 4.
BEACH AND SHORE ENVIRONMENT DESCRIPTION

- Sea cliff, headland or bluff
 Dune
 Other: _____

Section 5.
PROJECT NEED

Justify project need.

Microsoft proposes to install the New Cross Pacific (NCP) cable network, a newly constructed trans-Pacific undersea fiber optic telecommunications cable system, linking the west coast of the United States (at Pacific City, Oregon) to Asia. The NCP comprises a trunk route from Chongming in China to Pacific City in the USA, with branches to Nanhui in China, Busan in Korea, Toucheng in Taiwan, and Maruyama in Japan.

It is critical to the Microsoft that this cable be physically diverse from other trans-Pacific cables landing in OR, WA, and CA. The NCP terrestrial backhaul goes to all major US West Coast markets and also meets physical fiber diversity requirements. This will be an ultra-high speed cable system which will ultimately be able to carry 80 terabytes of traffic per second. With the increased demand of internet services worldwide, this cable will utilize the very latest 100G technologies to assure extremely high reliability, low latency, and long system life.

Section 6.
PROJECT IMPACTS

Please describe any impacts that your project might have in the short or longer term and the steps that will be taken to minimize those impacts.

Potential Impact	Steps that will be Taken to Minimize Impacts
<p>Increased turbidity - The installation of the NCP cable could have a temporary negative impact on the fish population due to noise and/or sediment disturbance caused by the cable plowing equipment out to ~4,900 feet water depth.</p>	<p>Due to the temporary nature of the installation process and ocean currents in the region, turbidity impacts will be negligible. HDD will be used to avoid impacting the nearshore habitat (within 0.78 miles of the coastline).</p>
<p>Alteration of nearshore/beach habitat - The installation of the NCP cable across the beach could have a negative impact by both temporarily disturbing the beach and potentially exposing the cable over the long-term.</p>	<p>HDD will be used to avoid impacting the nearshore and beach habitat. HDD will extend from the public property (terminus of Pacific Ave) to approximate 0.78 miles offshore.</p>
<p>Installation of a cable could potentially disturb habitat including hard bottom and marine life due to suspension of the cable.</p>	<p>As part of siting the NCP cable, the cable owners did their best to avoid known fish habitat to the greatest extent possible by working with the Oregon Fishermen's Cable Committee to identify a cable route that would achieve complete burial and avoid any rocky reef areas in the area. By burying the cable and avoiding reef areas, the cable will avoid any possibility of cable suspensions. Cable suspensions can adversely affect reef habitat and marine life while at the same time compromise the cable's integrity. To protect the cable, the NCP cable owners have chosen to increase armoring of the cable and utilize double armor cable in the nearshore. This increased armoring will increase the cable's diameter from approximately 1.1 inches to 1.5</p>

Section 7.
EVALUATION OF HAZARD ALLEVIATION METHODS

Please use the space provided below to describe alternative designs and locations to the proposed project. No action has been identified as one possible alternative to the proposed project.

Alternatives to Pipeline, Cable or Conduit Project	Was alternative used/considered?	Description of why alternative was not feasible
<u>No Action</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, date: 6-1-14	Existing cables entering the west coast of US are insufficient to carry the high speed and capacity of data. With the increased demand of internet services worldwide, this cable will utilize the very latest 100G technologies to assure extremely high reliability, low latency, and long system life. The NCP cable's design capacity is greater than the sum of all existing Asia bound cables landing in Oregon combined.
<u>Alternative 1</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, date: 6-1-14	Other landings in Oregon (Warrenton, Nedonna Beach, and Bandon) were ruled out due to landing and backhaul diversity concerns. Consequently, Microsoft focused landing the cable at either Pacific City or Florence. Pacific City was selected as Microsoft could utilize existing infrastructure (e.g., an existing BMH and fiber optic cable conduit right-of-way); (2) there are no erosion issues at the beach landing location; and (3) the backhaul to Hillsboro would be shorter from Pacific City than Florence, minimizing the risk of system failure
<u>Alternative 2</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, date: 6-1-14	Two landings in Washington and six in California were ruled out due to landing and backhaul diversity concerns.

Section 8.
COASTAL ZONE CERTIFICATION

Large scale projects below mean high water may require a federal permit from the U.S. Army Corps of Engineers. The Oregon Coastal Management Program reviews proposed federal permits for consistency with state and local programs. Applicants who need to obtain a federal permit must certify the statement below:

I certify that, to the best of my knowledge and belief, the proposed activity described in this application complies with the approved Oregon Coastal Zone Management Program and will be completed consistent with the program.


Applicant / Property Owner Signature

3/25/2016
Date

BA- _____

Section 9.
CITY/COUNTY PLANNING DEPARTMENT AFFIDAVIT
(To be completed by local planning official)

- This project is not regulated by the local comprehensive plan and zoning ordinance.
 - This project has been reviewed and is consistent with the local comprehensive plan and zoning ordinance.
 - This project has been reviewed and is not consistent with the local comprehensive plan and zoning ordinance.
 - Consistency of this project with local planning ordinance cannot be determined until the following local approval(s) are obtained:
 - Conditional Use Approval
 - Plan Amendment
 - Development Permit
 - Zone Change
 - Other: _____
- An application has has not been made for local approvals checked above.

[Redacted Signature]

April 20, 2016

City/County Planning Official Signature

Date

** See attached sheet: TCLUO Section 3.530: Beach & Dune Overlay Zone*

Section 10.
SIGNATURE (Required)

Application is hereby made for the activities described on the attachment(s) identified. I certify that I am familiar with the information contained in the application, and, to the best of my knowledge and belief, this information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities. I understand that the granting of other permits by local, state or federal agencies does not release me from the requirement of obtaining the permits requested before commencing the project. I understand that local permits may be required before the state permit is issued. I understand that payment of any required state processing fee does not guarantee issuance of a permit.

[Redacted Signature]

3/25/2016

Applicant / Property Owner Signature

Date

I certify that I am a duly authorized agent acting on behalf of the applicant.

[Redacted Signature]

3/30/2016

Contractor / Agent Signature

Date

BA- _____

A. General Development Criteria

1. Groundwater and Deflation Plain Areas:

- a. No filling or draining of deflation plain wetlands identified as significant wetlands in the Goal 17 Element of the Comprehensive Plan shall be allowed.
- b. The filling or draining of other deflation plains may be permissible if it can be demonstrated that the activity will not lead to the loss of stabilizing vegetation, a deterioration of water quality, or the intrusion of salt water into water supplies.
- c. Prior to the approval of development using groundwater resources, a hydraulic analysis report shall demonstrate that groundwater withdrawal will not lead to the loss of stabilizing vegetation, a deterioration of water quality, or the intrusion of salt water into water supplies.

2. Land Grading Practices:

- a. No excavations for residential and commercial site development shall be done earlier than thirty (30) days prior to the start of construction. Following the completion of major construction, excavated areas shall be stabilized. At a minimum, the site shall be stabilized within nine (9) months of the termination of major construction.
- b. All sidehill roads and driveways shall be built entirely in cut areas, unless adequate structural support is provided for fill.
- c. Excavated, filled or graded slopes in dune areas shall not exceed 30 degrees in slope. All surplus excavated material shall be removed off-site to a location where it will not constitute a hazard.
- d. Land grading proposals shall demonstrate that the removal of vegetation shall be limited to what is necessary to place buildings, or to install utilities.

3. Drainage and Erosion:

- a. Temporary measures shall be taken to control runoff and erosion of soils during all phases of construction. Storm water (roof and footing drains) shall be intercepted by closed conduits and directed into adjacent drainageways with adequate capacity to prevent flooding of adjacent or downstream properties.
- b. Plans for temporary and permanent stabilization programs, and the planned maintenance of restabilized areas, shall be provided by the applicant for areas



Figure 1:
 General Location Map
 Pacific City, OR
 New Cross Pacific (NCP) Cable Network

Legend

- Beach Manhole (BMH)
- Surveyed Cable Route

0 0.125 0.25 0.5 Miles

N

Notes:
 Source: TE SubCom, NOAA, Esri
 Projection: UTM WGS84
 The accuracy of source information cannot be verified, therefore all linework, labeling, and markings appearing on this map may be subject to errors or omissions in positions, classifications, and interpretations. This map should only be used as a visual guide for general overview purposes.



NE1/4 NE1/4 SEC.25 T.4S. R.11W. W.M.
TILLAMOOK COUNTY

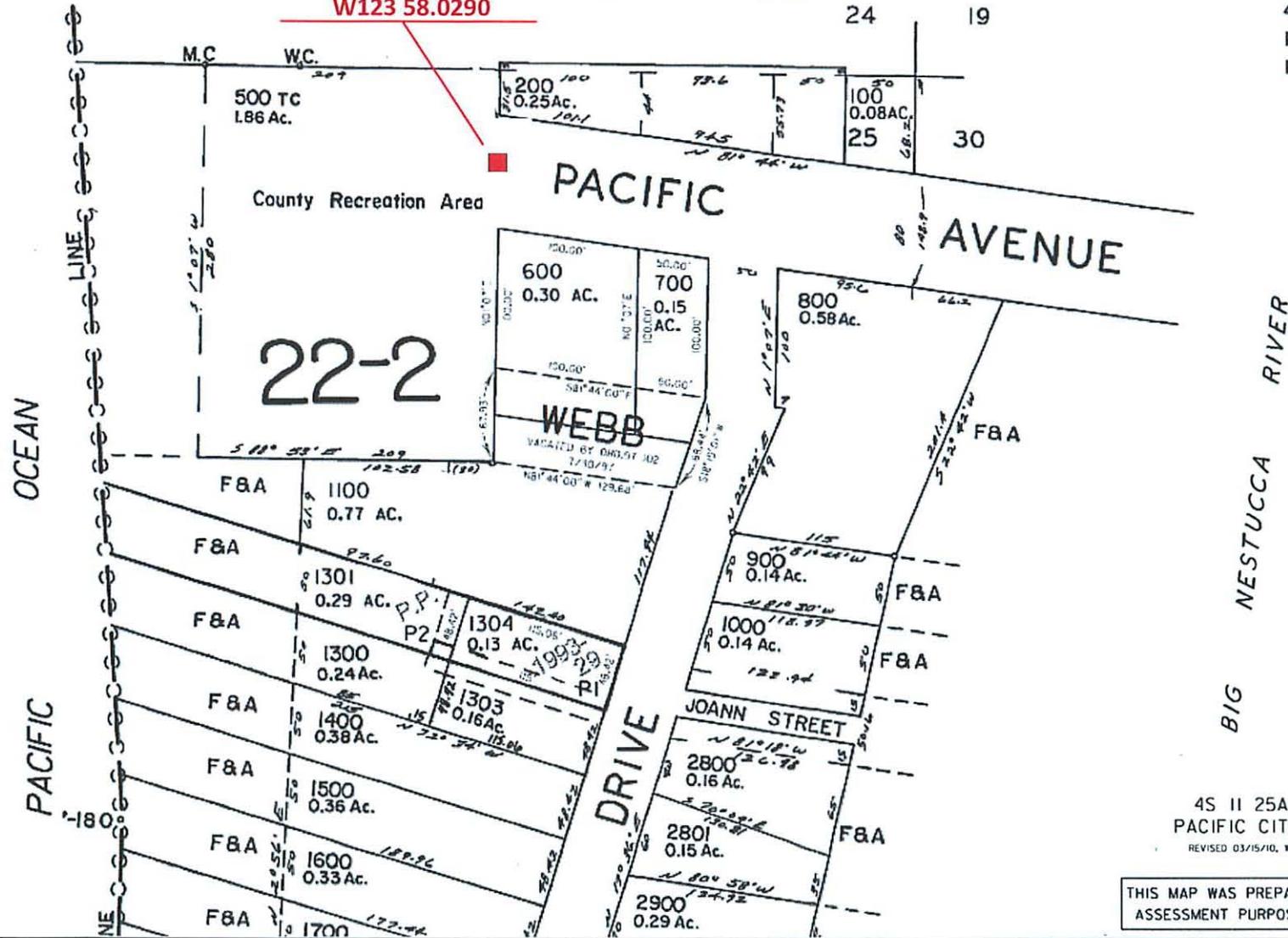
4S 11 25AA
PACIFIC CITY

Beach Manhole Location
N45 12.1380
W123 58.0290

1" = 100'

SEE MAP 4S 11 24DD

CANCELLED NO.
300
400
1200
1302



SEE MAP 4S 10 30BB

4S 11 25AA
PACIFIC CITY
REVISED 03/15/10, WS

THIS MAP WAS PREPARED FOR
ASSESSMENT PURPOSE ONLY

Figure 2:
Tax Parcel Map for Beach Manhole
New Cross Pacific (NCP) Cable Network



Notes:
Source: Tillamook County
The accuracy of source information cannot be verified, therefore all line work, labeling, and markings appearing on this map may be subject to errors or omissions in position, classification, and interpretation. This map should only be used as a visual guide for general overview purposes.

48north
solutions

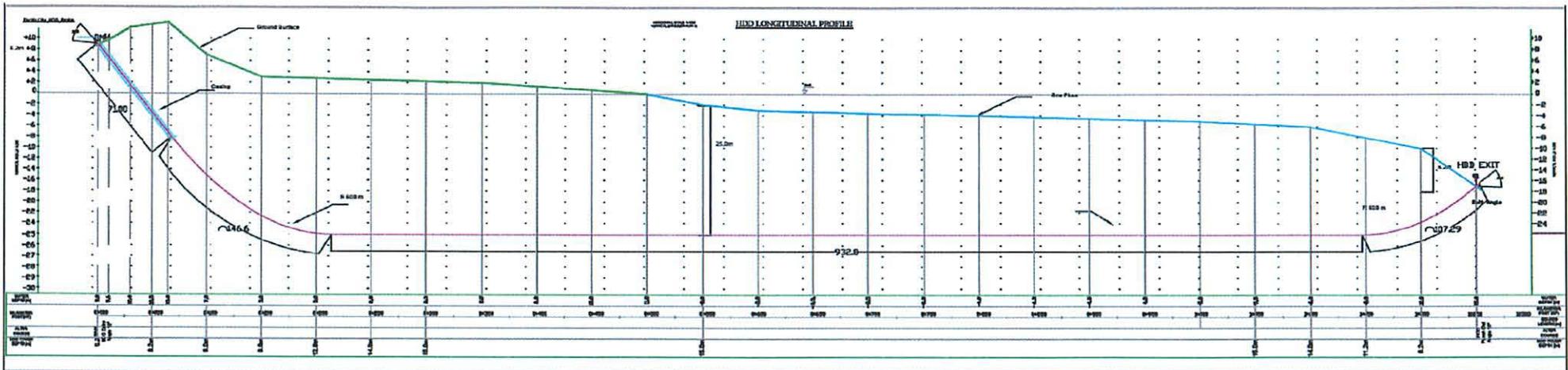


Figure 3:
HDD Profile
New Cross Pacific (NCP) Cable Network

Notes:
Source: Maritech
The accuracy of source information cannot be verified, therefore all line-work, labeling, and markings appearing on this map may be subject to errors or omissions in positions, classifications, and interpretations. This map should only be used as a visual guide for general overview purposes.





Figure 4:
 HDD Staging Area
 New Cross Pacific (NCP) Cable Network



Notes:

Source: Maritech

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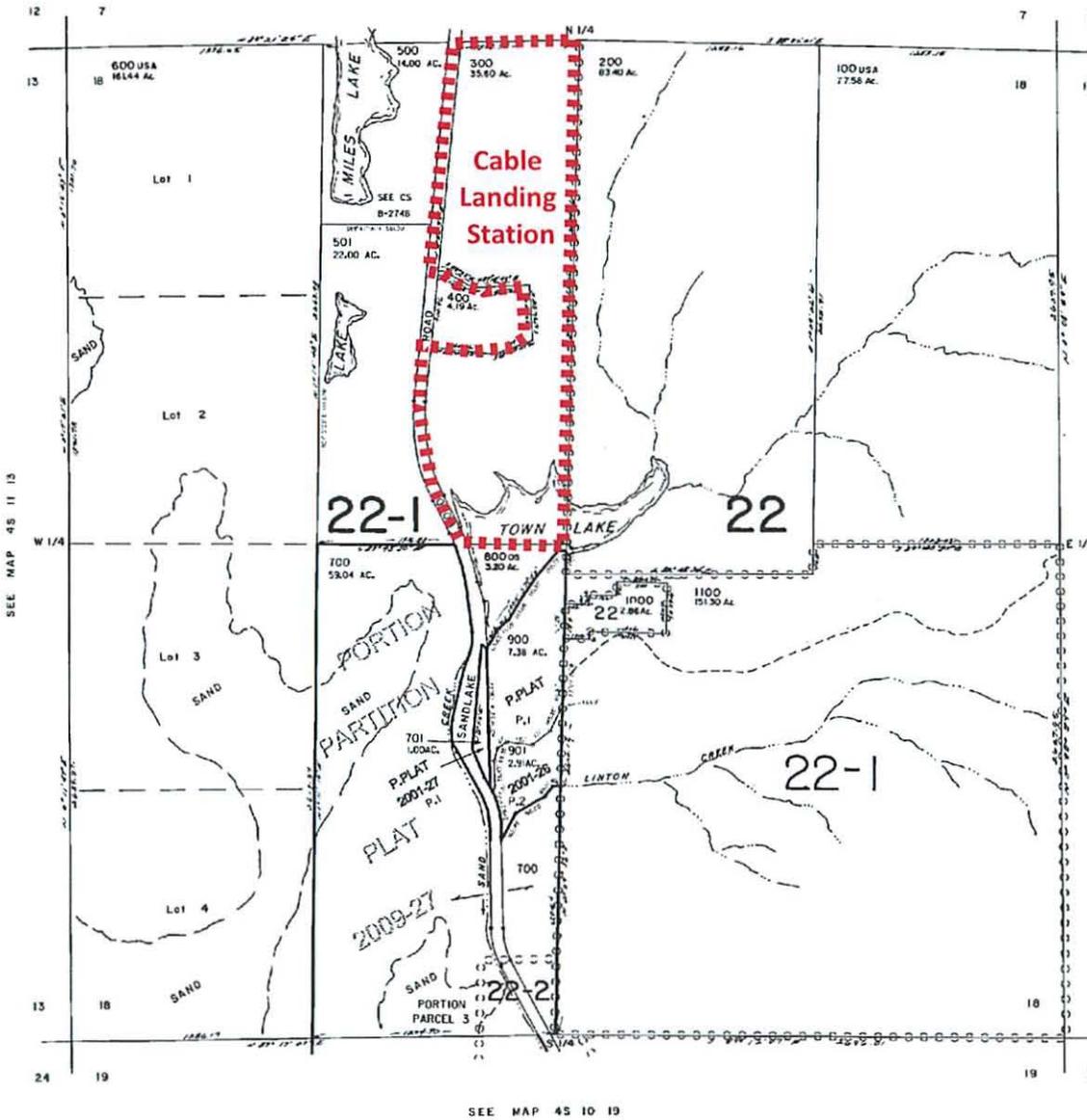


THIS MAP WAS PREPARED FOR
ASSESSMENT PURPOSE ONLY

SECTION 18 T.4S. R.10W. W.M.
TILLAMOOK COUNTY

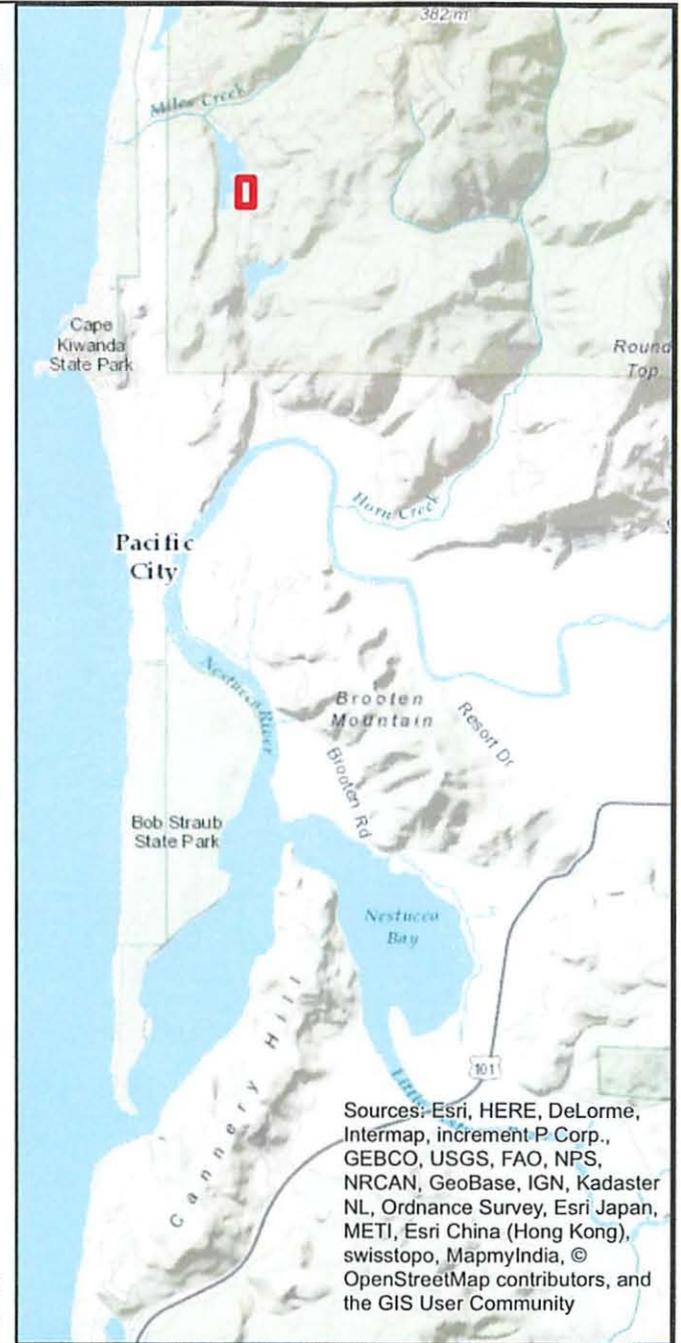
4S 10 18
& INDEX

SEE MAP 45 10 T



4S 10 18
& INDEX

REVISED 01/04/10. WS



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Figure 6:
Tax Parcel Map for Cable Landing Station
New Cross Pacific (NCP) Cable Network



Notes:

Source: Tillamook County

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solutions