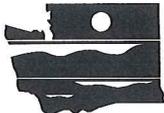




US Army Corps
of Engineers
Seattle District



WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y

Joint Public Notice

Application for a Department of the Army Permit and a Washington Department of Ecology Water Quality Certification and/or Coastal Zone Management Consistency Concurrence

US Army Corps of Engineers
Regulatory Branch
P.O. Box 3755
Seattle, WA 98124-3755
Telephone: (206) 316-3975
ATTN: Brian Hooper,
Project Manager

WA Department of Ecology
SEA Program
P.O. Box 47600
Olympia, WA 98504-7600
Telephone: (360) 407-6068
ATTN: SEA Program,
Federal Permit Coordinator

Public Notice Date: October 13, 2015
Expiration Date: November 12, 2015
Reference No.: NWS-2008-502
Name: Hood Canal Mariculture

Interested parties are hereby notified that the U.S. Army Corps of Engineers (Corps) and the Washington Department of Ecology (Ecology) have received an application to perform work in waters of the U.S. as described below and shown on the enclosed drawings dated September 17, 2015.

The Corps will review the work in accordance with Section 10 of the Rivers and Harbors Act. Ecology will review the work pursuant to the Coastal Zone Management Act.

APPLICANT: Hood Canal Mariculture Inc.
Attention: Mr. Jonathan P. Davis
10610 Northeast Manitou Park Boulevard
Bainbridge Island, Washington 98110
Telephone: (206) 799-7691

AGENT: Puget Sound Restoration Fund
Attention: Mr. Brian Allen
382 Wyatt Way Northeast
Bainbridge Island, Washington 98100
Telephone: (206) 780-3947

LOCATION: In Hood Canal near Port Ludlow, Jefferson County, Washington.

WORK: The applicant proposes to construct a suspended algae mariculture demonstration facility to evaluate the potential of a commercial-scale seaweed mariculture demonstration to modulate carbon and nitrogen in the marine environment. Additionally, the applicant proposes to continue commercial shellfish aquaculture operations (last in operation in 2013) at the project site.

The applicant proposes to suspend a 500-foot by 230-foot (2.64 acres) seaweed array centered within the 1,000-foot by 250-foot (5.74 acre) lease area from Washington Department of Natural Resources. The east and west edges of the proposed system (500-foot length) will have surface longlines supported by 4-foot "double backbone" longline buoys. These buoys will be spaced at 20 feet and will support two 1-inch surface longlines, one at either end of the buoy. 25 of these double-backbone buoys will be installed on

NWS-2008-502, Hood Canal Mariculture

each surface longline (east and west), for a total of 50 buoys.

The anchors and buoys from the commercial shellfish aquaculture facility will be retrofit. The anchoring system is currently comprised of three rows of auger-style “helix” anchors that are oriented perpendicular to shore and separated by 500 feet. Each row has 12 auger anchors, spaced 20 feet apart, which delineate the south, middle, and north of the lease area. Up to 12 additional pin or auger style embedment anchors will be installed along the southern row due to the substantial drag forces that will be exerted on the mariculture system. Six additional auger anchors will be added to secure the north and south end of the seaweed array (three at each end). They will be placed approximately 200 feet in from the north and south anchor rows.

24-inch mooring buoys (up to 32 total) will connect to anchors and support the mooring lines. A line holdfast (3/4-inch) shackled to each mooring in the north and south anchor rows, is the attachment location for seaweed “cultivation” lines. These cultivation lines will also be connected to anchors in the middle row. A total of 21 cultivation lines (500-feet in length each) will be spaced ten feet apart and oriented parallel to the long dimension of the lease area. Cultivation lines are constructed of sections of 7/16-inch twisted poly lines, attached end-to-end to span the 500 feet from the south row mooring, through the middle row mooring, to the north row mooring. The cultivation longlines are held suspended at a constant depth using “droppers” constructed with a 25-pound displacement foam or poly buoy, a 1-foot length of 1-inch PVC pipe, and a 10-pound cement weight. The dropper supports are spaced 125-feet apart and are attached to the cultivation longline. Up to 75 droppers will be used when operating at capacity.

Anchor and moorings will be retrofit prior to the deployment of the mariculture system; temporary surface buoys will provide access to moorings until buoy installation is complete. The double backbone surface lines (two 500-foot sections) will be assembled by hand on-site. The final assembly of the suspended mariculture system will occur on-site by hand from the surface.

The shellfish operation will be along the perimeter of, and below, the seaweed cultivation array. The double-backbone surface longline will suspend grow containers (cages or trays) of shellfish. The species to be cultivated will include the Pacific oysters (*Crassostrea gigas*), European flat oysters (*Ostrea edulis*), Olympia oysters (*Ostrea lurida*), and/or rock scallop (*Crassadoma gigantea*). The grow containers will sit lower in the water column (20-40 feet) relative to seaweed cultivation longlines (10-15 feet). Grow containers are maintained for the grow-out, one to three years. Harvesting consists of raising the grow containers from the water column, pouring content onto a sorting table, and separating the shellfish.

The macroalgae cultivated for this project will come from Puget Sound Restoration Fund’s facilities located at the National Oceanic and Atmospheric Administration Manchester Research Station. Species cultivated will include sugar kelp (*Saccharina latissima*), bull kelp (*Nereocystis luetkeana*), and dulse (*Palmaria molis*).

Two proposed instrument buoys will be independently anchored at upstream and downstream locations within the lease area. The instrument buoys will resemble other oceanographic instrument buoys deployed in Puget Sound (e.g. NANOOS system buoys). The instrument buoys will be anchored using a system of three auger-type screw anchors, connected to a mooring chain with a heavy chain bridle. Divers will install these anchors. Additional oceanographic instruments may be attached to the mariculture system itself or the double backed surface longline.

The deepest corners of the lease area (southeast and northeast) have existing United States Coast Guard permitted private aids to navigation (PATON) lighted navigational buoys. The PATON buoys will remain in their existing positions. Access to the site will be from a small (e.g. 20-foot) skiff.

NWS-2008-502, Hood Canal Mariculture

PURPOSE: The purpose of the macroalgae culture is to investigate seaweed cultivation as a potential mitigation strategy for ocean acidification in Puget Sound. The purpose of the shellfish aquaculture is to provide shellfish for human consumption.

ADDITIONAL INFORMATION: The work would be completed over a five-year period.

ENDANGERED SPECIES: The Endangered Species Act (ESA) requires Federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service pursuant to Section 7 of the ESA on all actions that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat. After receipt of comments from this public notice, the Corps will evaluate the potential impacts to proposed and/or listed species and their designated critical habitat.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). The proposed action would impact EFH in the project area. If the Corps determines that the proposed action may adversely affect EFH for Federally managed fisheries in Washington waters, the Corps will initiate EFH consultation with the NMFS. The Corps' final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

CULTURAL RESOURCES: The Corps has reviewed the latest published version of the National Register of Historic Places, Washington Information System for Architectural and Archaeological Records Data and other sources of information. There are no recorded historic properties within the permit area. The proposed work is of a limited nature and extent and involves activities within the demonstrated vertical and horizontal limits of previous construction or disturbance. There is little likelihood for the project to impinge upon an unrecorded historic property. The Corps invites responses to this public notice from Native American Tribes or Tribal governments; Federal, State, and local agencies; historical and archeological societies; and other parties likely to have knowledge of or concerns regarding historic properties and sites of religious and cultural significance at or near the project area. After receipt of comments from this public notice, the Corps will evaluate potential impacts and consult with the State Historic Preservation Officer and Native American Tribes in accordance with Section 106 of the National Historic Preservation Act, as appropriate.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

EVALUATION – CORPS: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The Corps is soliciting comments from the public; Native American Nations or Tribal governments; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species,

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historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

EVALUATION – ECOLOGY: Ecology is soliciting comments from the public; Federal, Native American Nations or Tribal governments, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Ecology will be considering all comments to determine whether to certify or deny certification for the proposed project.

ADDITIONAL EVALUATION: The site was developed for aquaculture in 1985. It is outside of Shoreline Management Act jurisdiction.

COMMENT AND REVIEW PERIOD: Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether authorizing the work would not be contrary to the public interest. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and reference number as shown below. Either conventional mail or e-mail comments must include the permit applicant's name and reference number, as shown below, and the commenter's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office, no later than the expiration date of this public notice to ensure consideration.

Copies of this public notice which have been mailed or otherwise physically distributed feature project drawings in black and white. The electronic version features those drawings in color, which we think more accurately communicates the scope of project impacts. To access the electronic version of this public notice, go to the Seattle District's web page at <http://www.nws.usace.army.mil/> and under the heading Open Public Comment Periods select Regulatory Public Notices. Recently-issued public notices are listed in chronological order of the date of issuance. Select and view the listing for this project.

CORPS COMMENTS: All e-mail comments should be sent to brian.d.hooper@usace.army.mil. Conventional mail comments should be sent to: U.S. Army Corps of Engineers, Regulatory Branch, Attention: Mr. Brian Hooper, P.O. Box 3755, Seattle, Washington 98124-3755. All comments received will become part of the administrative record and are subject to public release under the Freedom of Information Act including any personally identifiable information such as names, phone numbers, and addresses.

ECOLOGY COMMENTS: Any person desiring to present views on the project pertaining to a request for water quality certification under Section 401 of the CWA and/or Coastal Zone Management consistency concurrence, may do so by submitting written comments to the following address: Washington State Department of Ecology, Attention: Federal Permit Coordinator, P.O. Box 47600, Olympia, Washington 98504-7600, or e-mail to ecyrefedpermits@ecy.wa.gov.

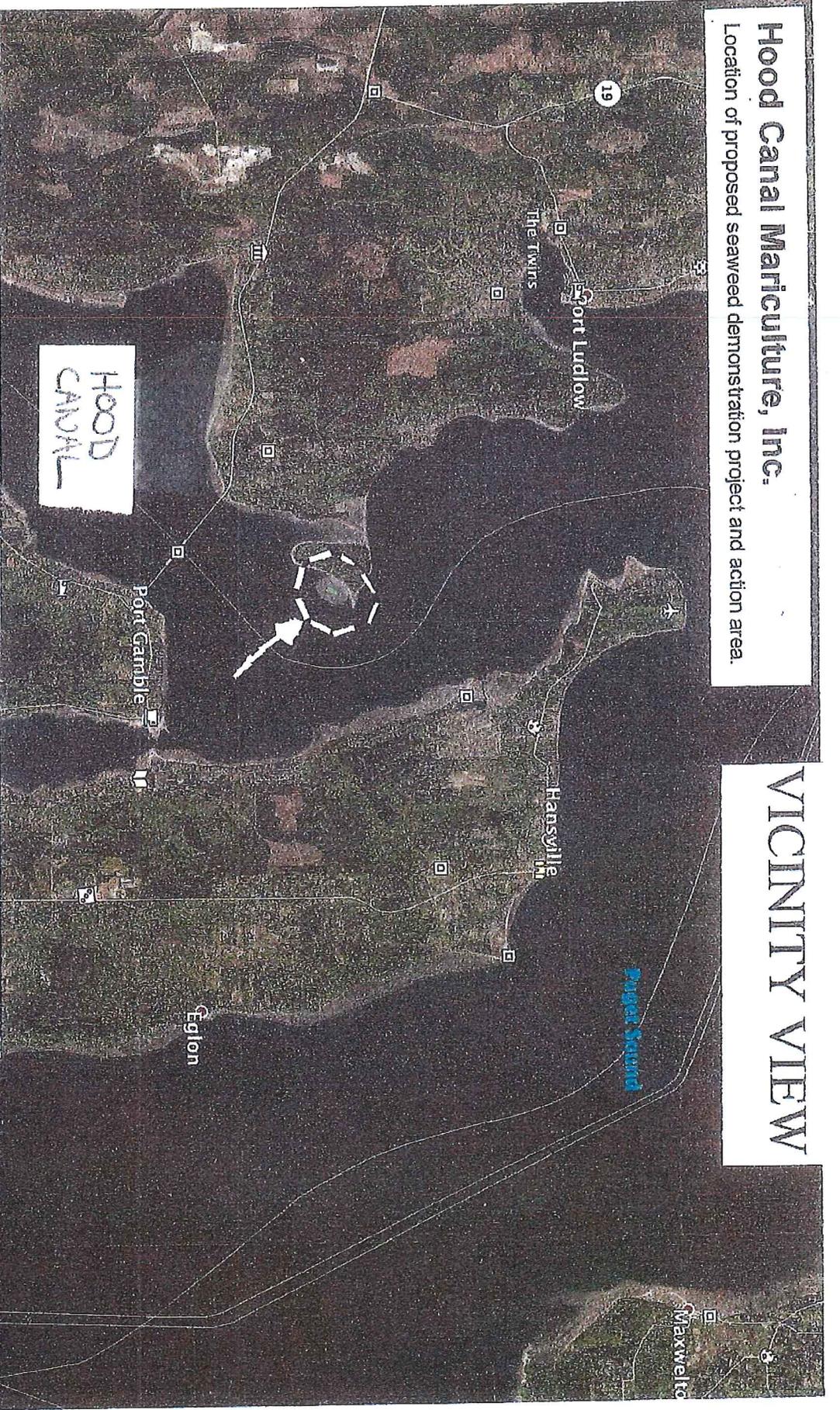
To ensure proper consideration of all comments, responders must include the following name and reference number in the text of their comments: Hood Canal Mariculture, NWS-2008-502

Encl: Figures (7)

Hood Canal Mariculture, Inc.

Location of proposed seaweed demonstration project and action area.

VICINITY VIEW



REFERENCE: NWS-2008-502

LOCATION: WDNR Aquaculture lease

20-B12535

Lat/Long: 47.883072 N / 122.613854 W

PROPOSED PROJECT:

2015 PAFP

OCEAN ACIDIFICATION

APPLICANT: HOOD CANAL
MARICULTURE, INC.

ADJACENT PROPERTY OWNERS:

- 1) Washington Parks and Recreation
- 2) Rounds Island Preserve LLC

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September 17, 2015

IN: north Hood Canal
NEAR/AT: Port Ludlow
COUNTY: Jefferson
STATE: WA



Hood Canal Mariculture, Inc.

Location of proposed seaweed demonstration project and action area.



Legend

- 2015 PAFF demonstration Survey Lease area
- ESA Action Area
- Hood Head
- Survey monument

Reference Number: *NDS-2008-502*
Applicant Name: Hood Canal Mariculture, Inc.
Proposed Project: 2015 PAFF Ocean Acidification
Location: WNDR Aquatic Lands Lease 20-B12535
Hood Head, Jefferson County, WA

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Hood Canal



Lat/Long Corners of Project Area:

NW: 47.885389, -122.613139
 SW: 47.882972, -122.615
 NE: 47.885083, -122.61225
 SE: 47.882667, -122.614

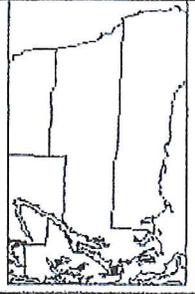
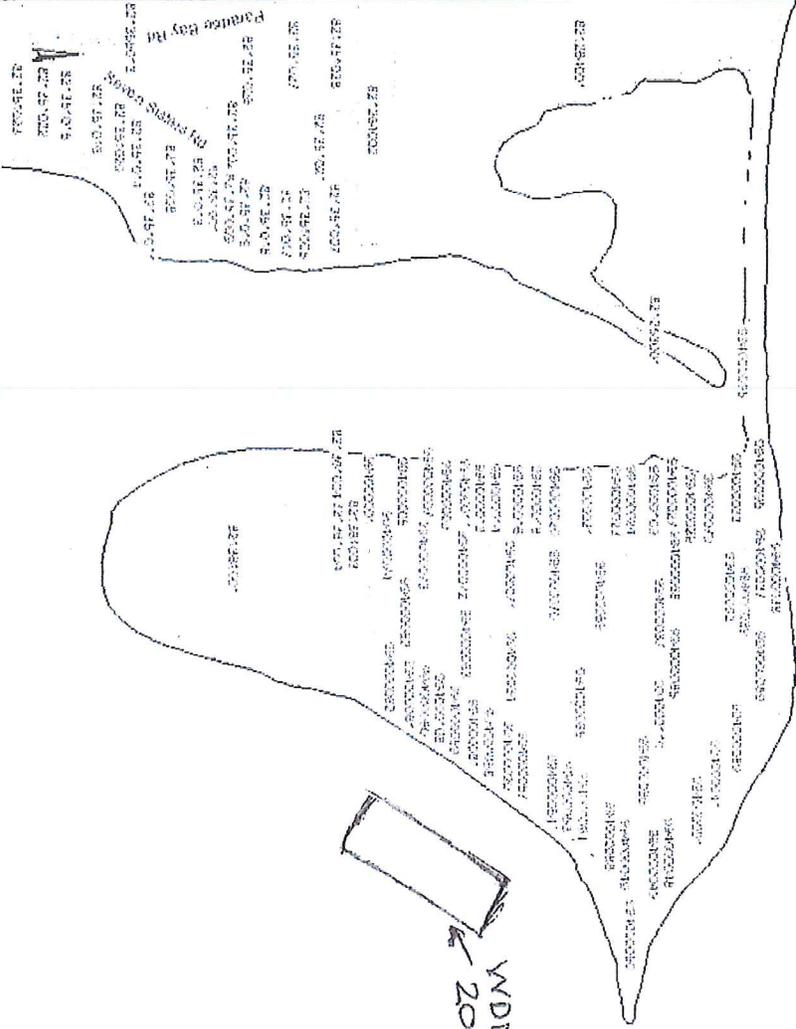
Project Area: 5.74 acres
 Culture Area: 2.64 acres

WDR Lease
 ← 20-B12535

Reference Number: *W05-2008-SOZ*
 Applicant Name: Hood Canal Mariculture, Inc.
 Proposed Project: 2015 PAFF Ocean Acidification
 Location: WDR Aquatic Lands Lease 20-B12535
 Hood Head, Jefferson County, WA

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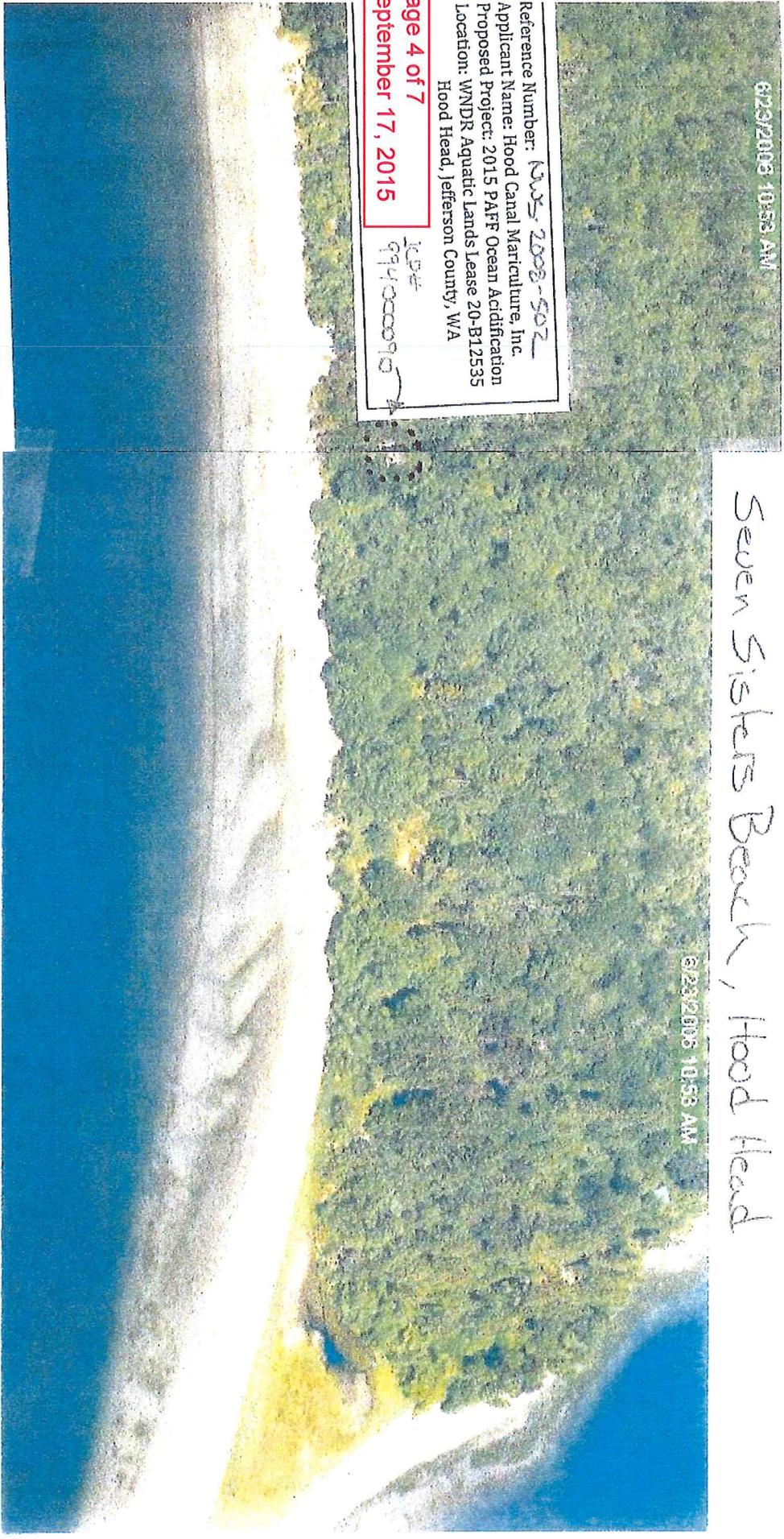
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- Legend
- Towns
 - County Seat
 - Rural Centers
 - JC_Roads
 - Parcels-H

Ecology Shoreline photos

Seven Sisters Beach, Hood Head



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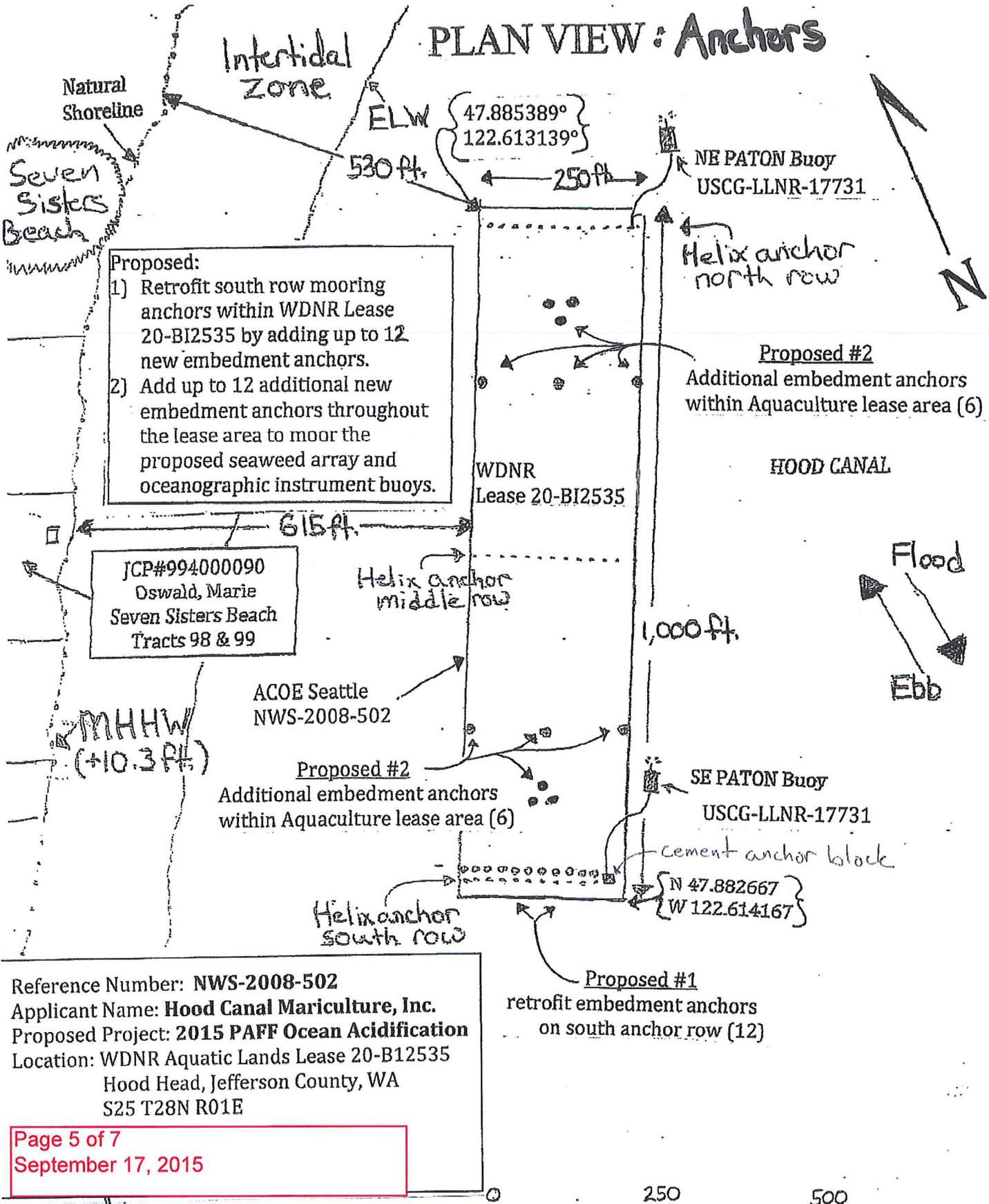
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Reference Number: WSS 2008-502
Applicant Name: Hood Canal Mariculture, Inc.
Proposed Project: 2015 PAFF Ocean Acidification
Location: WNDR Aquatic Lands Lease 20-B12535
Hood Head, Jefferson County, WA

ICD#
9940000910

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PLAN VIEW: Anchors



Proposed:

- 1) Retrofit south row mooring anchors within W.D.N.R. Lease 20-B12535 by adding up to 12 new embedment anchors.
- 2) Add up to 12 additional new embedment anchors throughout the lease area to moor the proposed seaweed array and oceanographic instrument buoys.

JCP#994000090
Oswald, Marie
Seven Sisters Beach
Tracts 98 & 99

ACOE Seattle
NWS-2008-502

Proposed #2
Additional embedment anchors
within Aquaculture lease area (6)

Proposed #2
Additional embedment anchors
within Aquaculture lease area (6)

W.D.N.R.
Lease 20-B12535

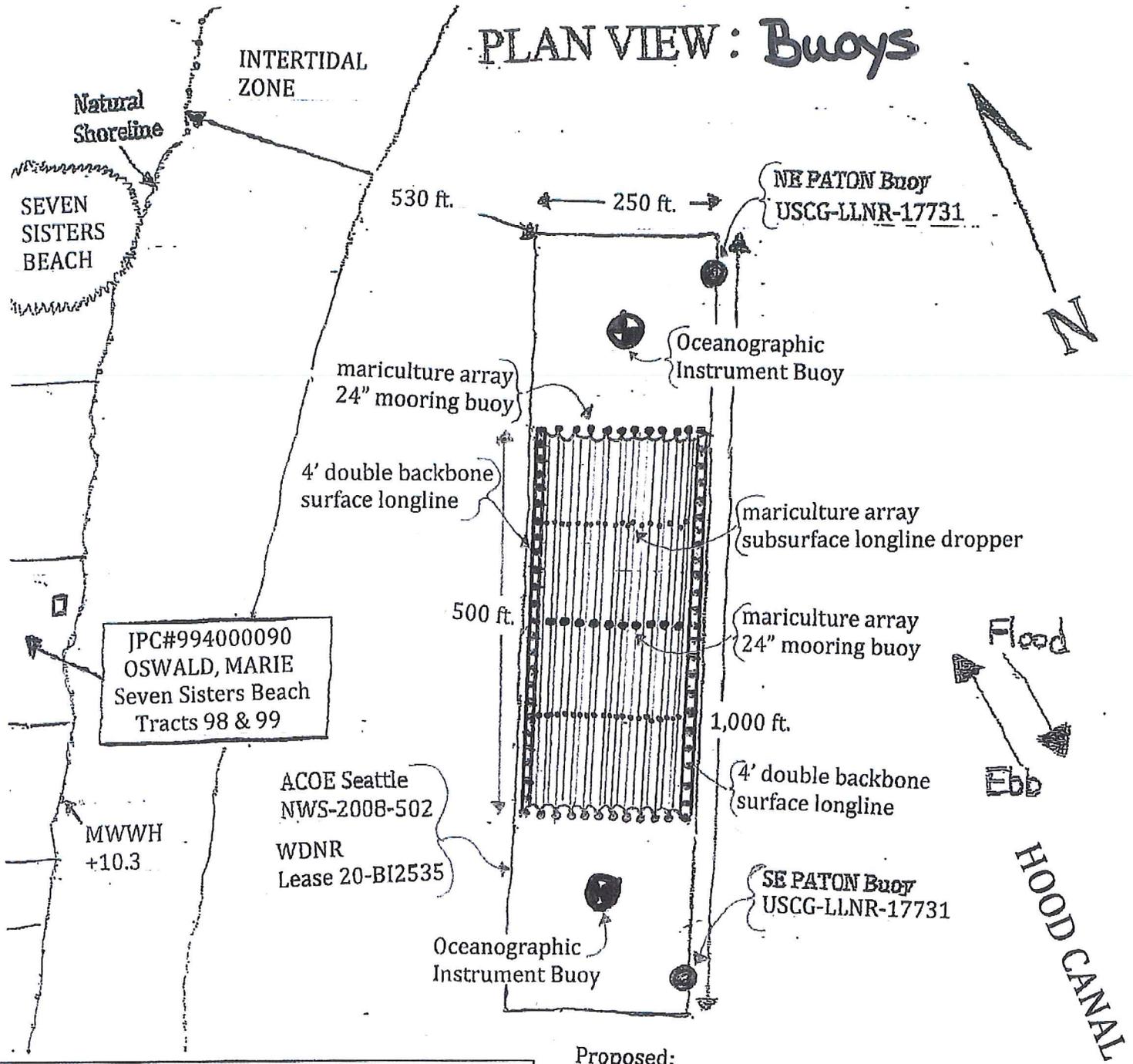
HOOD CANAL

Reference Number: **NWS-2008-502**
Applicant Name: **Hood Canal Mariculture, Inc.**
Proposed Project: **2015 PAFF Ocean Acidification**
Location: W.D.N.R. Aquatic Lands Lease 20-B12535
Hood Head, Jefferson County, WA
S25 T28N R01E

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September 17, 2015

Scale in Feet
GPS decimal degree WGS 84
Tide datum MLLW
Seattle, Elliott Bay (NOAA)
Station ID: 1033

PLAN VIEW: Buoys



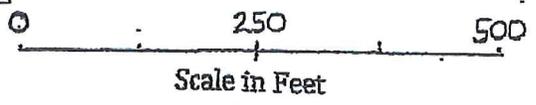
JPC#994000090
OSWALD, MARIE
Seven Sisters Beach
Tracts 98 & 99

ACOE Seattle
NWS-2008-502
WDRN
Lease 20-B12535

Reference Number: **NWS-2008-502**
 Applicant Name: **Hood Canal Mariculture, Inc.**
 Proposed Project: **2015 PAFF Ocean Acidification**
 Location: WDRN Aquatic Lands Lease 20-B12535
 Hood Head, Jefferson County, WA
 S25 T28N R01E

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September 17, 2015

- Proposed:
- 1) Utilize the existing and proposed anchors to moor the 250 ft. x 500 ft. mariculture array, subsurface longlines spaced 10 ft. and held at 10-15 ft. depth.
 - 2) Utilize the double-backbone surface longlines to suspend bivalve shellfish grow containers (e.g. trays) at 20-40 ft. depth.

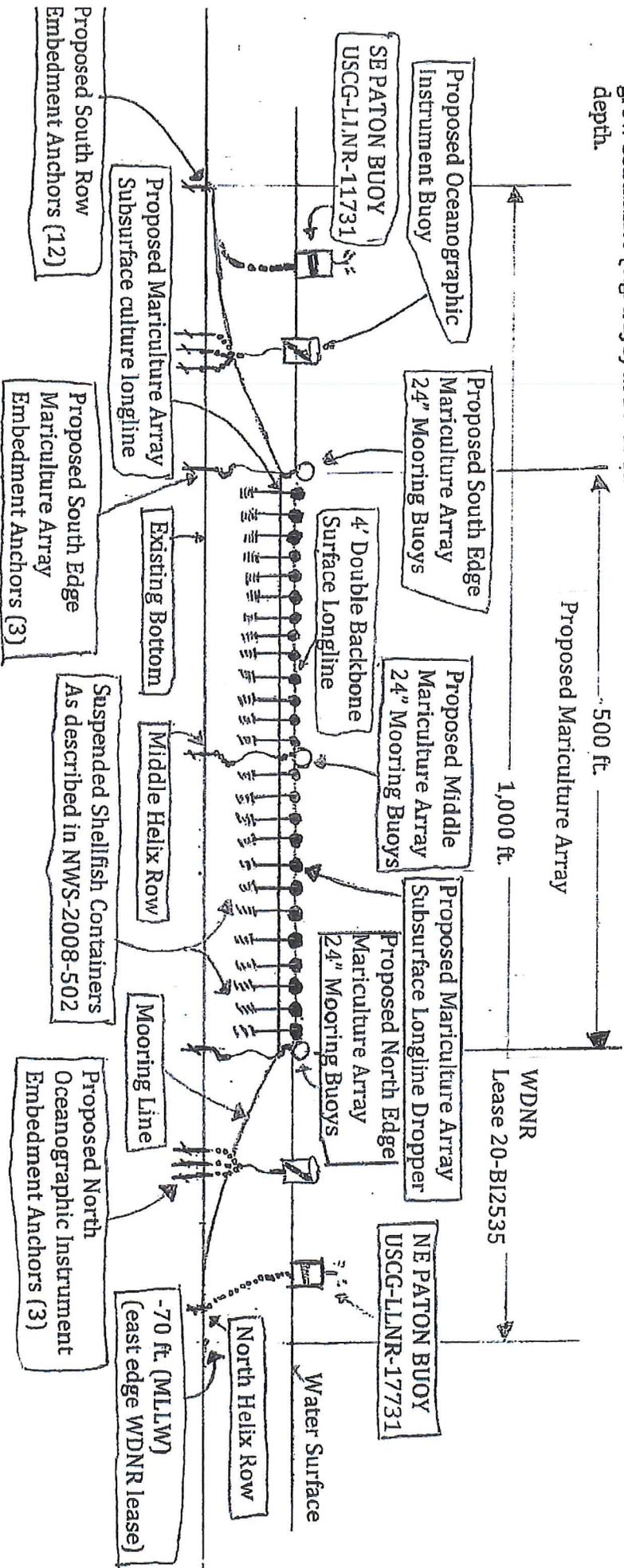


Scale in Feet
 GPS decimal degree WGS 84
 Tide datum MLLW
 Seattle, Elliott Bay (NOAA)
 Station ID: 1033

SECTIONAL VIEW



- Proposed:
- 1) Utilize the existing and proposed anchors to moor the 230 ft x 500 ft mariculture array, subsurface longlines spaced 10 ft. and held at 10-15 ft. depth.
 - 2) Utilize the double-backbone surface longlines to suspend bivalve shellfish grow containers (e.g. trays) at 20-40 ft. depth.



Scale in feet

200

400

Shellfish species will include:
 Pacific oysters (*Crassostrea gigas*),
 European flat oysters (*Ostrea edulis*),
 Olympia oysters (*Ostrea lurida*),
 and rock scallop (*Crassadoma gigantea*)

Macroalgae species will include:
 Sugar Kelp (*Saccharina latissima*),
 bull kelp (*Nereocystis luetkeana*),
 and dulse (*Palmaria mollis*)

Reference Number: NWS-2008-502
 Applicant Name: Hood Canal Mariculture, Inc.
 Proposed Project: 2015 PAFF Ocean Acidification
 Location: WDNR Aquatic Lands Lease 20-B12535
 Hood Head, Jefferson County, WA
 S25 T28N R01E

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