

STANDARD LEASE APPLICATION: NON-DISCHARGE

1. APPLICANT CONTACT INFORMATION

Applicant	Abigail Barrows		
Contact Person	Abigail Barrows		
Address	396 Airport Road		
City	Stonington		
State, Zip	Maine, 04681		
County	Hancock		
Telephone	207 730 3370		
Email	Longcovefarm@gmail.com		
Type of Application	<input checked="" type="checkbox"/> Draft Application [submitted before scoping session]		<input type="checkbox"/> Final Application [submitted after scoping session]
Dates	Pre-Application Meeting: 11/18/21	Draft Application Submitted:	Scoping Session: TBD
Payment Type	Draft Application: <input checked="" type="checkbox"/> Check (included) <input type="checkbox"/> Credit Card		Final Application: <input type="checkbox"/> Check (included) <input type="checkbox"/> Credit Card

Note: The email address you list here will be the primary means by which we will contact you. Please provide an email address that is checked regularly. If you do not use email, please leave this blank.

2. PROPOSED LEASE SITE INFORMATION

Location of Proposed Lease Site	
Town	Deer Isle
Waterbody	Pickering Cove, Southeast Harbor
General Description (e.g. south of B Island)	At entrance to Pickering Cove, S. of Big Hay Island, W of Freese Island.
Lease Information	
Total acreage requested (100-acre maximum)	4.24 acres
Lease term requested (20-year maximum)	20-year
Type of culture (check all that apply)	<input type="checkbox"/> Bottom (no gear) <input checked="" type="checkbox"/> Suspended (gear in the water and/or on the bottom)
Is any portion of the proposed lease site above mean low water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Note: If you selected yes, you need to complete the steps outlined in the section titled: “19. Landowner/Municipal Permission Requirements”.

3. GROWING AREA DESIGNATION

Directions: Information for growing area designations can be found here:

<https://www.maine.gov/dmr/shellfish-sanitation-management/closures/index.html>

Growing Area Designation (e.g. WL):	EC
Growing Area Section (e.g. "A1"):	A, inset B

Note: If you are proposing to grow molluscan shellfish in waters classified as anything other than open/approved, you will need to contact the Bureau of Public Health to discuss your plans at the following email: DMRPublicHealthDiv@maine.gov

4. SPECIES INFORMATION

A. Please complete the table below and add additional rows as needed.

Name of species to be cultivated (include both common and scientific names):	Name and address of the source of seed stock or juveniles	Maximum number (or biomass) of organisms you anticipate on the site at any given time
1. American/Eastern oyster <i>Crassostrea virginica</i>	Muscongus Bay Aquaculture 24 Seal Ledge Rd Bremen, Maine 04551	1 million, count
2. Sugar Kelps: <i>Saccharina latissima</i> , <i>Saccharina latissima</i> (forma <i>angustissima</i>)	Springtide Seaweed 14 Facotry Road Gouldsboro, Maine 04607	2,600 feet
3. Horsetail kelp: <i>Laminaria digitata</i>	Springtide Seaweed 14 Facotry Road Gouldsboro, Maine 04607	2,600 feet
4. Winged Kelp: <i>Alaria esculenta</i>	Springtide Seaweed 14 Facotry Road Gouldsboro, Maine 04607	2,600 feet
5. Dulse: <i>Palmaria palmata</i>	Springtide Seaweed 14 Facotry Road Gouldsboro, Maine 04607	2,600 feet
6. Nori/Laver: <i>Porphyra umbilicalis</i>		2,600 feet

7. Belon/European Flat: *Ostrea edulis* Downeast Institute 39 Wildflower Ln Beals, ME 04611 200,000

B. Do you intend to possess, transport, or sell whole or roe-on scallops? Yes No

If you answered "yes" please contact the Bureau of Public Health to discuss your plans at the following email: DMRPublicHealthDiv@maine.gov

Note: If you are proposing to grow molluscan shellfish, this application also serves as your written operational plan as required in the National Shellfish Sanitation Program (NSSP) Model Ordinance Chapter 2 and must be maintained in your files. If you wish to submit an operational plan separate from this application, please contact: DMRPublicHealthDiv@maine.gov

5. VICINITY MAP

Note: Please label as: ‘Vicinity Map’.

Directions: Using a NOAA Chart or USGS topographic map, show the area within a minimum of one-half mile of the proposed lease site.

The map needs to display the following:

- The waters, shore lands, and lines of mean high and mean low water within the general area of the lease
- An arrow indicating true north
- A scale bar
- The approximate lease boundaries

6. BOUNDARY DRAWING

Note: Please label as: ‘Boundary Drawing’.

Directions: Depict the boundaries of the proposed lease site. Provide a drawing with all corners, directions, and distances labeled. Provide coordinates for each corner as follows:

- Coordinate Description
Provide geographic coordinates for each corner of the lease site in latitude and longitude as accurately as possible (e.g., to the nearest second or fraction of a second). Identify the datum from the map, chart, or GPS unit used to develop these coordinates. The datum will be shown on the map or chart you are using. The Coordinate Description may be provided separately from the Boundary Drawing.

The Proposed lease is rectangular in shape, 250 wide by 750 feet long, running NW-SE. Each corner and mid-way down the lease will be marked with a mooring ball and the required information.

Datum: WGS84

Coordinates in decimal degrees.

NW corner: -68.6191359, 44.2040855

NE corner: -68.6180463, 44.2042248

SW corner: -68.6181958, 44.2021412

SE corner: -68.6172502, 44.2022402

7. SITE DEVELOPMENT

Directions: If your operations require the use of cages, nets, ropes, trays, or any object (structure) other than the organism to be grown directly on the bottom or buoys to mark the corners of the lease site, you must submit gear drawings and maximum structure schematics (information below). This section is intended to provide accurate plans depicting the physical structures to be placed in the proposed area. All dimensions need to be labeled with the appropriate units (i.e. 10ft, 10in). If you are proposing a bottom lease (no gear), please skip to question “F. Marking”.

Note: You may embed the schematics within the document or attach them to the end of your application. If you attach the schematics, please label them according to the instructions provided below.

A. Gear Information

Directions: Include a drawing of an individual piece of gear for each of the gear type(s) you plan to use. Include units referenced (i.e. 10in, 10ft, etc.).

- Gear Drawing:** Please include the following for each gear type that will hold organisms to be cultured (e.g. polar circles, marine algae longlines, oyster cages) and label as “Gear Drawing”. This view must show the following:
 - Length, width, and height of each gear type.
- Gear Table:** List and describe each individual gear type that you will use in the table below. (e.g. polar circles, marine algae longline, oyster cages, moorings, mooring lines, buoys, etc.).

Specific Gear Type (e.g. soft mesh bag)	Dimensions (e.g. 16"x20"x2")	Time of year gear will be deployed (e.g. Spring, Winter, etc.)	Maximum amount of this gear type that will be deployed on the site (i.e. 200 cages, 100 lantern nets, etc.)	Species that will be grown using this gear type
Mesh floating bags	36"x 20"x4"	Year round	1050 oyster bags	<i>Crassostrea virginica</i> , <i>Ostrea edulis</i>
Oyster Ranch	40"x 60"x 23"	Spring/summer	50	<i>Crassostrea virginica</i> <i>Ostrea edulis</i>
Depth control weights	2" x 8"	Fall, winter, spring	24	will help weigh seaweed line
Marine Algae Spool	1/16" diameter line	Fall, winter, spring	12 310' lines (wrapped around 'seaweed line')	<i>Saccharina latissima</i> , <i>Saccharina latissima (forma angustissima)</i> , <i>Laminaria digitata</i> , <i>Palmaria palmata</i> , <i>Porphyra umbilicalis</i> , <i>Alaria esculenta</i>
Mooring Balls	24" for perimeter 12" for others	Balls for oyster lines, spring, summer, fall Balls for seaweed lines, winter, spring	Perimeter: 6 balls. Oyster lines: 28. Seaweed: +/-24 balls during winter if entire farm is under cultivation. Total: 58	N/A
Lines	5/16- 1/2" oyster & seaweed lines, 1/2"-3/4" mooring/rigging lines	Lines year round, except seaweed lines, late fall/winter/early spring only.	Seaweed lines: 3972' Oyster lines: 4340' Moorings/rigging: 1222'	Oyster bags will be tied to the surface lines Seaweed grown around lines
Moorings-most likely will be granite but may include a mix of pyramid or helix anchors	6000lb (varying dimensions) Granite or 800lb pyramid (16"16"16) or 10" helix anchor	Year round	9 moorings	N/A
Mooring chain	3/8"-1/2" chain	Year round	140'	N/A
Metal Rings	1"x5"	Year round	28	N/A

B. Maximum Structure and Mooring System Schematic

Directions: Include drawings of your maximum gear layout. Include units referenced (i.e. 10in, 10ft, etc.).

1. Overhead View. Please include the following and label as “Overhead View”:
 - Maximum layout of gear, including moorings.
 - Length and width of project.
 - Approximate spacing between gear.
 - Lease boundaries and the location of proposed corner markers and any additional gear markers that would be present.

2. Cross-Section View. Please include the following and label as “Cross-Section View”:
 - The sea bottom.
 - Profile of gear in cross-section as it will be deployed.
 - Label gear with dimensions and materials.
 - Show mooring gear with mooring type, scope, hardware, and line type and size.
 - Depth of gear in relation to the water’s surface at mean low water and mean high water (if applicable).

Note: Please include an additional Cross Section View, depicting the elements listed above, if there will be seasonal changes to gear layout (i.e. over wintering).

C. On-Site Support Structures

1. Describe structures such as barges, sheds, etc., to be located on-site. Provide a schematic and indicate the dimensions, including height above sea level, materials, etc.
N/A
2. Describe the storage and use of oil, gasoline, or other hazardous materials on site. If petroleum products are to be stored on site, provide a spill prevention plan.
N/A

D. Gear Color

Provide the color of the gear and structures proposed to be used at the lease site.

Perimeter marking mooring balls will be white (or yellow with reflective material if Ch. 2 rule changes) surface line mooring balls/buoys will be yellow/orange/white/ or black.
No structures planned for the site at time of application.

E. Equipment Layout

Provide schematic or photographic renderings of the generalized layout of the equipment as depicted from two vantage points on the water. Provide the locations of the two vantage points.

F. Marking

Will you be able to mark your site in accordance with DMR regulations, Chapter 2.80? In part, this requires marker buoys which clearly display the lease ID and the words SEA FARM to be located at each corner of the lease.

Yes No

If you answered no, explain why and suggest alternate markings.

Note: If a lease is granted, you will also be required to mark the site in accordance with appropriate US Coast Guard Regulations. If you have questions about US Coast Guard Regulations contact: 1st Coast Guard District, Aids to Navigation Office ((617)-223-3293).

8. PRODUCTION ACTIVITIES

Directions: If you are cultivating more than one species, you will need to provide the following information for each species. Please attach additional pages if needed.

A. Please explain your proposed seeding activities. What months will seeding occur and how often will you be onsite to seed during this time.

Seeding for oysters will occur in spring/early summer (April -June), depending on the seed size. Seed will be tended to at a minimum of once a week, more if growth of oysters or fouling is rapid. Marine algae would be seeded after oysters are winterized (Nov-Jan) and checked on a few times a month or as necessary until spring harvest.

B. Please explain your proposed tending/maintenance activities.

Oysters will be tended to as necessary with a focus on keeping a low stocking density in each bag. Oysters will be hand sorted or sorted using a grader in Long Cove and upgraded to larger mesh size bags as quickly as possible. Bags will be flipped as needed and the sun will be used to 'cook off' fouling. Pre- and post storm visits to the lease will occur to secure gear and check for any caught debris. Seaweed strings will be set out after oysters have been winterized. They will be checked on as necessary and harvest will happen over a few days in the spring when seaweed is at optimum harvestability.

C. How frequently will you visit the site for routine tending/maintenance (i.e. flipping cages, etc.)?

We will plan on flipping and splitting bags at least between one and six times a week during the summer months, increased frequency will depend on fouling, quantity of seed and growth rates/stocking densities. Tending frequency will depend on the season and amount of fouling at the site. Visual checks of seaweed will occur throughout the winter as necessary.

D. Describe the harvesting techniques you will use. If you plan on using a drag, please provide the dimensions.

Oysters are hand harvested from the boat. We untie oyster bags, pull bags on board the boat, sort by size, harvest marketable ones and return small shellfish to the water. We potentially would use the grader at Long Cove for tumbling/sorting smaller sized oysters. Seaweed will be hand harvested from the line into the boat in the spring.

E. How often will you be at the site during harvesting periods?

Harvesting will overlap with general tending/maintenance but most likely 1 to 6 times a week for oysters. For seaweed I foresee being on the lease a couple weeks in the spring to harvest.

F. Will gear be on the site year-round? Yes No

G. Describe any overwintering or "off season" plans for the site. For example, will you remove gear from the site and/or deploy gear in different areas within the proposed site? Please include where gear or product will be located if removed from the site.

Overwintering the oysters will involve combining oysters into fewer bags, removing mooring balls, and sinking the bags to the ocean floor using cinder blocks tied to the surface line. Once seaweed is harvested in the spring, the cultivation lines and extra balls will be removed until the following season. Any gear not being used for oysters or seaweed cultivation will be stored on land in Stonington.

H. Please provide details on any predator control techniques you plan to employ, including the use of bird deterrents. Will you use commercially available or custom equipment? If commercially available equipment, please include the brand and model names. If custom equipment, please attach a detailed schematic that includes the dimensions, materials, and function of the equipment.

I do not plan on any predator controls but will monitor the site. If predators became an issue I would implement the suggested physical deterrents to gear, zip ties or similar. If these did not suffice we would also use owl decoys with swivel heads on some gear.

J. Suspended culture gear can attract birds that roost on the gear and defecate, potentially creating a pollution source impacting the shellfish held within the gear. In order to comply with the National Shellfish Sanitation Program (NSSP) Model Ordinance (MO), DMR is requiring that applications for the suspended culture of shellfish include a description of mitigation or deterrent measures to minimize the potential pollution impacts of birds at the proposed site. If appropriate, include sketches or photos that clearly depict those measures put into practice.

We will monitor the site for bird presence. We will place harvested oysters in submerged bags for two weeks before selling product. Seaweed lines will be submerged for the duration of cultivation.

9. NOISE AND LIGHT

Directions: If a question does not pertain to your proposed operations, please write “**not applicable**” or “N/A”.

A. What type of boats will be used on the site? When and how often will these vessels be on the site?

Currently I have a 20 ft cape cod oyster scow, which is a low profile, open wood and fiberglass boat. I imagine I will be using the same or a similar boat in the future. It currently has a 25 hp 4-stroke outboard but I would like to convert to an electric outboard. The scow would be at the site during harvesting/tending between 1 and 5 times a week. When working on the farm, the outboard would not be running.

B. What type of powered equipment (e.g. generator, power washer, grading equipment, barges, etc.) will be used on the site? When and how often will the equipment be used?

At this time, no powered equipment is planned to be used on the farm. If there were equipment used in the future (winch, grader, etc) it would be electrically powered, significantly reducing any noise.

C. Specify how you intend to reduce noise levels from the boats and other powered equipment.

The outboard would only be running to get to the farm and move between the different lines. It would be shut off, not idling when working the lines. If there were equipment used in the future (winch, grader, etc) it would be electrically powered, significantly reducing any noise. I would strive to greatly reduce any unforeseen noise not covered in this application.

D. Provide the number, type (whether fixtures are shielded), wattage and location of lights, other than those used for navigation or marking, that will be used at the proposed lease site.

In the case of emergency, I would use a hand-held 3000-lumen spotlight from the boat. There will be no permanent lighting at the site.

E. Indicate under what circumstances you might work at your site beyond daylight hours.

I only would go out to the proposed site after dark if there was some sort of emergency and use a hand-held 3000-lumen spotlight from the boat.

10. CURRENT OPERATIONS

Directions: If a question does not pertain to your proposed operations, please write “**not applicable**” or “N/A”.

A. Describe your existing aquaculture operations, including the acronyms of all active leases and/or licenses.

PEN LD3, Standard aquaculture lease, currently only cultivating *Crassostrea virginica*. LPA: ABAR120, ABAR221, not cultivated in 2021. Plans to cultivate oyster spat at ABAR120 and spat through adulthood at ABAR221 in coming seasons.

B. What are your plans for any existing leases and/or Limited Purpose Aquaculture (LPA) licenses if the lease is granted? Will any existing leases and/or LPA licenses be relinquished if the lease is granted? If so, please indicate which ones.

I plan on maintaining the the standard lease (PEN LD3) and the LPA licenses for the time being, particularly ABAR120 as it is acting as a natural upweller site.

11. ENVIRONMENTAL CHARACTERIZATION

Directions: Using your knowledge of the area, describe the environment of the proposed lease site. Be sure to include units of measurement in your answers (i.e. feet, cm/s).

A. What are the approximate depths at mean low water?

Western side of lease section has a mean low water of approximately 14ft, this gradually becomes more shallow as you move towards the east till you reach a mean low water of 5.8ft.

B. What are the approximate depths at mean high water?

Western side of lease has a mean high water is approximately 25ft. The eastern section has a mean high water of 16.8ft.

C. Provide the approximate current speed and direction during the ebb and flow.

Current speed is approximately 0.20 knts at flood tide. Ebb/flow direction is 330°NW-150°SE.

D. The following questions (D.1 through D.6) may be answered in writing or by submitting a video. If you plan to submit a video, please contact the Department prior to video collection.

1. What are the bottom characteristics (mud, sand, gravel, rock, ledge or some mix, etc.)?

The bottom is mostly mud, mud/gravel with more gravel in the mix towards the south.

2. Describe the bottom topography (flat, steep rough, etc.).

Fairly flat, slightly sloping deeper towards the south and shallower towards the east.

3. Describe marine organisms by species or common names. Based on your personal observations or other sources of information, are these species abundant, common, or rare?

Nearby (>2,000ft away) on Toothacher ledge there are often harbor seals hauled out at low tide. Buffleheads, Eiders, Scoters, Goldeneyes and other sea ducks, often in large flotillas, commonly frequent the area during the winter months. There is a fair amount of brown algae (primarily ascophyllum spp.) in the intertidal zone adjacent to the proposed lease. Further north in Pickering Cove there are abundant soft shelled clams and other marine species commonly found in mud flats. The proposed lease site footprint appears mostly devoid of marine plants with a fairly barren mud/gravel bottom throughout. The occasional rock crab, green crab and lobster inhabit the footprint but not in any significant density. Seabirds and seaducks have been commonly observed swimming or flying in the area, especially during the fall and winter months but not at a different or higher frequency than other areas within SE Harbor.

4. Are there shellfish beds or fish migration routes in the surrounding area? If so, please describe.

There are softshell clam beds within the intertidal zone further north (> 0.4 miles) from the proposed lease site in Pickering Cove.
There are not migratory fish routes in the area that I am aware of but Pogies, Mackerel and River Herring have been known to school in the area.

5. Describe the presence and extent of submerged aquatic vegetation, i.e. eelgrass, within the proposed lease area. Please include the date of this observation along with the method of observation. If submerged aquatic vegetation is observed, please also describe the abundance below and sketch the limits of the beds in the vicinity map.

There is no observed aquatic vegetation within the proposed lease area. On Freese Island there was a small eelgrass (*Zostera marina*) bed observed (0-10% coverage) on the south western shore in **2010 by the DMR**, which does not fall within the proposed lease area. No eelgrass was observed in the vicinity during site visits in spring/summer 2020 or fall 2021.

6. Describe the general shoreline and upland characteristics (rocky shoreline, forested, residential, etc.)

The closest shores to the proposed lease site are rocky and forested. The land to the west is owned and managed by the Island Heritage Trust and has a trail system. Freese Island to the east has some ledges, salt grasses and a mix of mud and gravel beach. The island is forested and privately owned. Freese island has multiple, seasonal houses but none are situated on the Pickering Cove/western side of the island.

E. Is your proposed lease located within a Maine Department of Inland Fisheries and Wildlife designated Essential Habitat?
 Yes No

Note: The location of Essential Habitats in the State of Maine, along with information on how projects within these areas are reviewed, can be found here: <https://www.maine.gov/ifw/fish-wildlife/wildlife/endangered-threatened-species/essential-wildlife-habitat/index.html>

If a project is located within an Essential Habitat, applicants are strongly encouraged to contact the MDIFW Environmental Review Coordinator (John.Perry@maine.gov, phone: 207-287-5254) prior to application submission.

12. EXISTING USES

<p>A. Describe the existing uses of the proposed area in questions A.1 through A.5 below. Please include the a) type b) time of year c) frequency and d) proximity to the lease site for each existing use.</p>
<p>1. Commercial Fishing</p>
<p>Low-density lobster fishing occurs nearby and in the cove during shedder season in the summer. The majority of the lobstering occurs further out in Southeast harbor but the site of the lease would displace one, maybe two lobstermen's traps (n= <6). Some weekly lobstering will most likely occur adjacent or nearby the lease site at the beginning/middle of summer. In 2020 Pogies were harvested commercially further up in the cove using seine nets at least twice. This activity took place at least 1/4 to 1/2 mile from the proposed lease site in the shallower waters at high tide. Clamming (soft shell) occurs through the summer and sometimes into the winter, 1/4-1/2 mile further in Pickering, within the intertidal zone.</p>
<p>2. Recreational Fishing</p>
<p>In 2020 Pogies came into the coves and people were pole fishing for them in the shallower areas (1/4 to 1/2 mile away from proposed site in Pickering and all the adjacent coves. Some folks pole fish for mackerel as well when they are running. I have never observed this but have spoken to people who go out in canoes and row boats late summer.</p>
<p>3. Boating Activities (please also include the distance to any navigable channel(s) from your proposed site at low water)</p>
<p>There are a two sailboat moorings further in the cove, there would be more than sufficient space for boats to enter the cove without obstruction from the proposed lease site within the channel. There is over 700ft of navigable water at mean low tide between the lease perimeter and the Tennis Preserve. Sailboats and yachts anchor in the channel next to Tennis preserve during July/August but there is sufficient space for multiple boats to overnight. There are also numerous other (arguably better) protected coves nearby for overnight anchorage or weathering a storm.</p>
<p>4. Ingress and egress (i.e. coming and going) of shorefront property owners within 1,000 feet of the proposal (e.g. docks, moorings, landing boats on shore, etc.)</p>
<p>Freese Island is privately owned and is not accessed from Pickering cove. Therefore the lease would not effect the family's access to the island. Christopher Knight owns one of the moorings for his sailboat during the summer months. His access/property is over a mile away further in Pickering cove, he would not have to pass by the lease to access his boat and he should have no navigation issues sailing past the proposed lease if he chooses to leave the cove through the channel.</p>
<p>5. Other uses (kayaking, swimming, etc.)</p>
<p>This will not impact swimming, as it is not an overly popular spot and would merit a bit of a swim to get to the lease from the Tennis preserve. Kayakers will have no issue navigating around all sides of the proposed lease site. Although residents enjoy recreating in the cove, this is not an overly popular spot for kayakers or recreational boaters since there are no public launches nearby. All recreaters would be welcome to visit with me/ask questions while I am working the farm, as frequently occurs in Long Cove.</p>
<p>B. Are there private docks, moorings, or other access points within 1,000 feet of the proposed lease? If yes, please include approximate distance from the proposed lease.</p>
<p>There are a couple moorings next to Little Thumbcap Island approximately 820 feet from northern perimeter of proposed lease site. Navigation to or from the moorings through the channel past the proposed lease should pose no hazard as there is sufficient space to motor & or tack a boat (~560 feet at the narrowest, 700 at widest) to exit or enter Pickering cove.</p>

C. Are there public beaches, parks, docking facilities or federally, state, or municipally conserved lands within 1,000 feet of the proposed lease site? If yes, please describe and include approximate distances from proposed lease.

The Island Heritage Trust manages the land (J. Edgar Tennis Preserve) to the west of the proposed lease, about 560 feet away from the most western boundary. The preserve contains walking trails but no boat access. There are no docking facilities or public beaches within 1,000 feet.

D. Are there any Limited Purpose Aquaculture (LPA) licenses or aquaculture leases within 1,000 feet of your proposed lease site? If yes, please list their acronyms below.

Current and pending aquaculture leases and active LPA licenses may be found here: <https://www.maine.gov/dmr/aquaculture/leases/index.html>

There are no existing or pending leases within 1,000 feet of the proposed lease site.

13. EXCLUSIVE USE

If your lease is granted, what activities would you request be excluded from occurring within the boundaries of the lease site? In your answer please address applicable commercial and recreational fishing, boating activities, and other activities you listed in the 'Existing Uses' section of this application.

I would request that no lobster fishing or seine netting occur within the perimeter of the proposed lease, there would be too high a potential for gear fouling/loss for both parties involved. I would welcome kayackers and curious boaters!

14. RIPARIAN LANDOWNERS AND SITE ACCESS

A. If your lease is within 1,000ft of shorefront land (**which extends to mean low water or 1,650 ft. from shore, whichever is less, according to NOAA charts**), the following supporting documents are required:

1. A labeled copy of a tax map(s) depicting the location of the proposed lease site and including the following elements:
 - Label the map “Tax Map: Town of (name of town).”
 - Legible scale
 - Tax lot numbers clearly displayed
 - The boundaries of the proposed lease
2. Please use the Riparian Landowner List (included on the next page) to list the name and address of every shorefront landowner within 1,000ft of the proposed lease site. Have the tax collector or clerk of the municipality certify the list. Refer to the riparian determination guidance document to ensure all riparian landowners are included:
<https://www.maine.gov/dmr/aquaculture/forms/documents/RiparianDetermination.pdf>
3. If any portion of the site is intertidal, you need to complete the steps outlined in the section titled: “19. Landowner/Municipal Permission Requirements”.

B. Will your access to the lease area be across riparian land?

Yes No

Note: If you selected yes, you will need to complete the landowner permission requirements included in “19. Landowner/Municipal Permission Requirements” of this application.

C. How will you access the proposed site?

I have a rowboat on an outhaul from a public park (Mariners Park) in Long Cove in which I use to access my moored oyster scow, also in Long Cove. I will bring the oyster scow around to Pickering cove to work on the proposed site and return it the mooring after working.

D. How will your proposed activities affect riparian ingress and egress?

My activities should not affect riparian movement.

RIPARIAN LANDOWNER LIST

****THIS LIST MUST BE CERTIFIED****

On this list, please show the current landowners' names and mailing addresses as listed in the municipal tax records for all riparian shorefront parcels within 1,000 feet of the proposed lease site along with the map and lot number for each parcel. **It is the applicant's responsibility to assemble the information for the Town Clerk to certify.** The Town Clerk *only* certifies that the information is correct according to the Town's records. Once you have completed the form, ask the Town Clerk to complete the certification section below. If the parcels are within more than one municipality, provide a separate, certified riparian list for each municipality.

TOWN OF: Deer Isle

MAP #	LOT #	Landowner name(s) and address(es)
7	25	State of Maine Department of Agriculture, Conservation and Forestry 22 State House Station 18 Elkins Lane Augusta, ME 04333
7	26	State of Maine Department of Agriculture, Conservation and Forestry 22 State House Station 18 Elkins Lane Augusta, ME 04333
10	47	Readons Retreat, INC William Reardon 9 Steamboat lane Hingham, MA 02043
10	48	Reardons Retreat, INC William Reardon 9 Steamboat lane Hingham, MA 02043
10	45	William Gillien and David A Goding Jeri D Gillien, David A Goding PO Box 65 Deer Isle, Maine 04627

Please use additional sheets if necessary and attach hereto.

CERTIFICATION

I, Heather Cormier, Town Clerk for the Town of Deer Isle certify that the names and addresses of the property owners listed above, as well as the map and lot numbers, are those listed in the records of this municipality and are current as of this date.

SIGNED: Heather Cormier DATE: 12/16/2021



15. TECHNICAL CAPABILITY

Provide information regarding professional expertise. Attaching resume or documentation of practical experience necessary to accomplish the proposed project would satisfy this requirement.

Please see attached resume and note that I have been working as owner/operator of Long Cove Sea Farm since 2015. Please also visit www.longcoveseafarm.com and www.abbybarrows.com for more background and my professional expertise.

16. FINANCIAL CAPABILITY

A. Financial Capability

Please provide documentation to show you have the financial resources to implement the proposal. For example, you may submit a letter from a financial institution or funding agency indicating that you have an account in good standing, or their willingness to commit funds.

Note: Any financial information you submit with your application is part of the public record. Please exercise discretion when submitting financial information.

Letter attached.

B. Cost Estimates

Please provide cost estimates of the proposed aquaculture activities.

Moorings and associated gear will cost around \$30,000. Surface lines, rings, additional buoys and gear will run around \$6,000 since I already own some equipment.

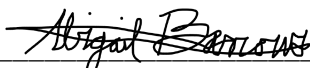
17. ESCROW ACCOUNT OR PERFORMANCE BOND

Check the category that describes your operation:

Check Here	Lease Category	Amount of Required Escrow or Performance Bond
<input type="checkbox"/>	No gear/structure, no discharge	\$500.00
<input type="checkbox"/>	No gear/structure, discharge	\$500.00
<input type="checkbox"/>	≤ 400 square feet of gear/structure, no discharge	\$1,500.00
<input checked="" type="checkbox"/>	>400 square feet of gear/structure, no discharge	\$5,000.00*
<input type="checkbox"/>	Gear/Structure, discharge	\$25,000.00

*DMR may increase the bond/escrow requirements for leases with more than 2,000 square feet of structure.

I, (*printed name of applicant*) Abigail Barrows have read DMR Aquaculture Regulations Chapter 2.64(10) (D) and if this proposed lease is granted by DMR, I will either open an escrow account or obtain a performance bond, in the amount determined by the lease category.


Applicant Signature
Note: Add title if signing on behalf of a corporate applicant.

2/2/2021
Date

ADDITIONAL APPLICANTS: Each applicant must sign this section indicating that they will open an escrow account or obtain a performance bond. Use the space below for additional persons listed on the application. You may attach additional pages, if necessary.

I, (*printed name of applicant*) _____ have read DMR Aquaculture Regulations Chapter 2.64(10) (D) and if this proposed lease is granted by DMR, I will either open an escrow account or obtain a performance bond, in the amount determined by the lease category.

Applicant Signature
Note: Add title if signing on behalf of a corporate applicant.

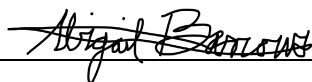
Date

18. APPLICANT SIGNATURE PAGE

I hereby state that the information included in this application is true and correct. I have also read and understand the requirements of the Department's rules governing aquaculture and the application instructions pertaining to the standard lease process.

Printed name: Abigail Barrows

Title (if corporate applicant): _____

Signature:  Date: 2/2/2021

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

Note:

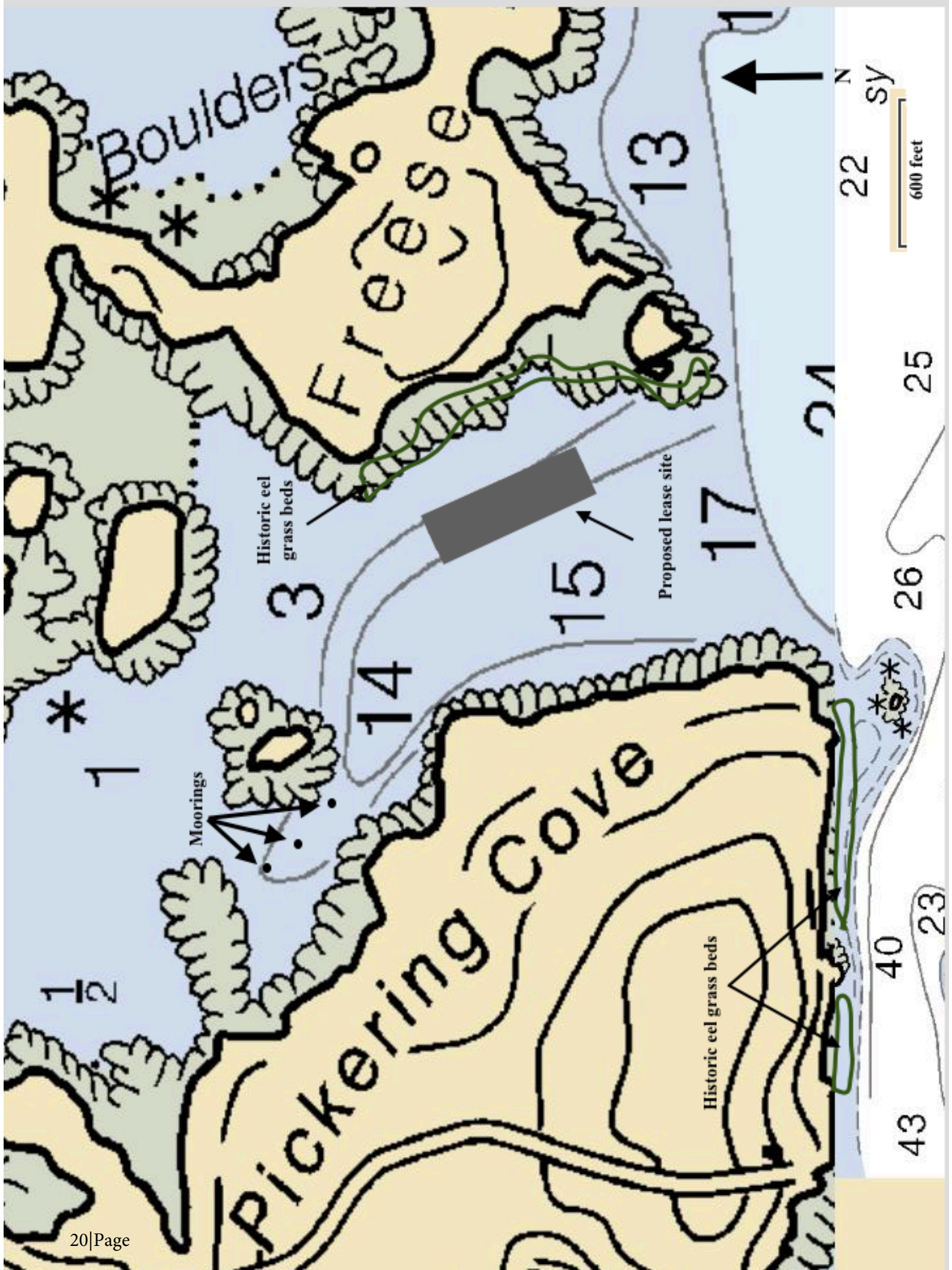
- All applicants must sign and date this page. Please use the space below, if additional signatures are required.
- Corporate applicants, please be sure to include the title(s) (i.e. President, Treasurer, etc.) of the individual(s) signing on the company's behalf.

Additional Applicant:

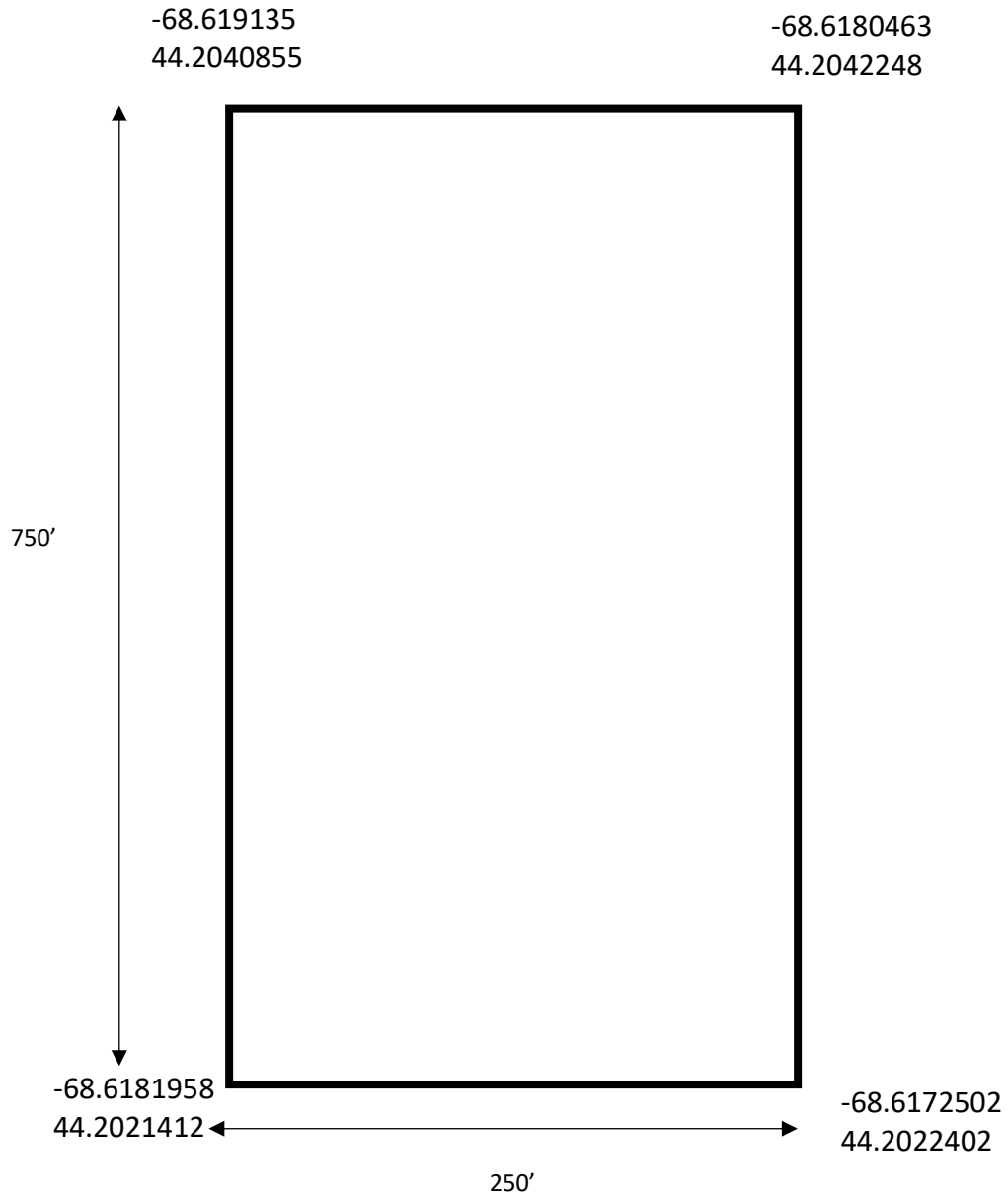
Printed name: _____

Title (if corporate applicant): _____

Signature: _____ Date: _____



Boundary Drawing



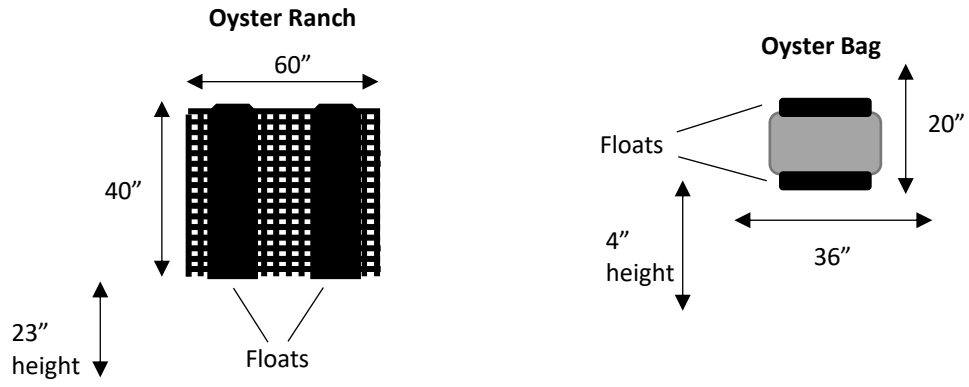
Datum: WGS84
Lat/long in decimal degrees

Boundary Drawing



GEAR DRAWING

Overhead view

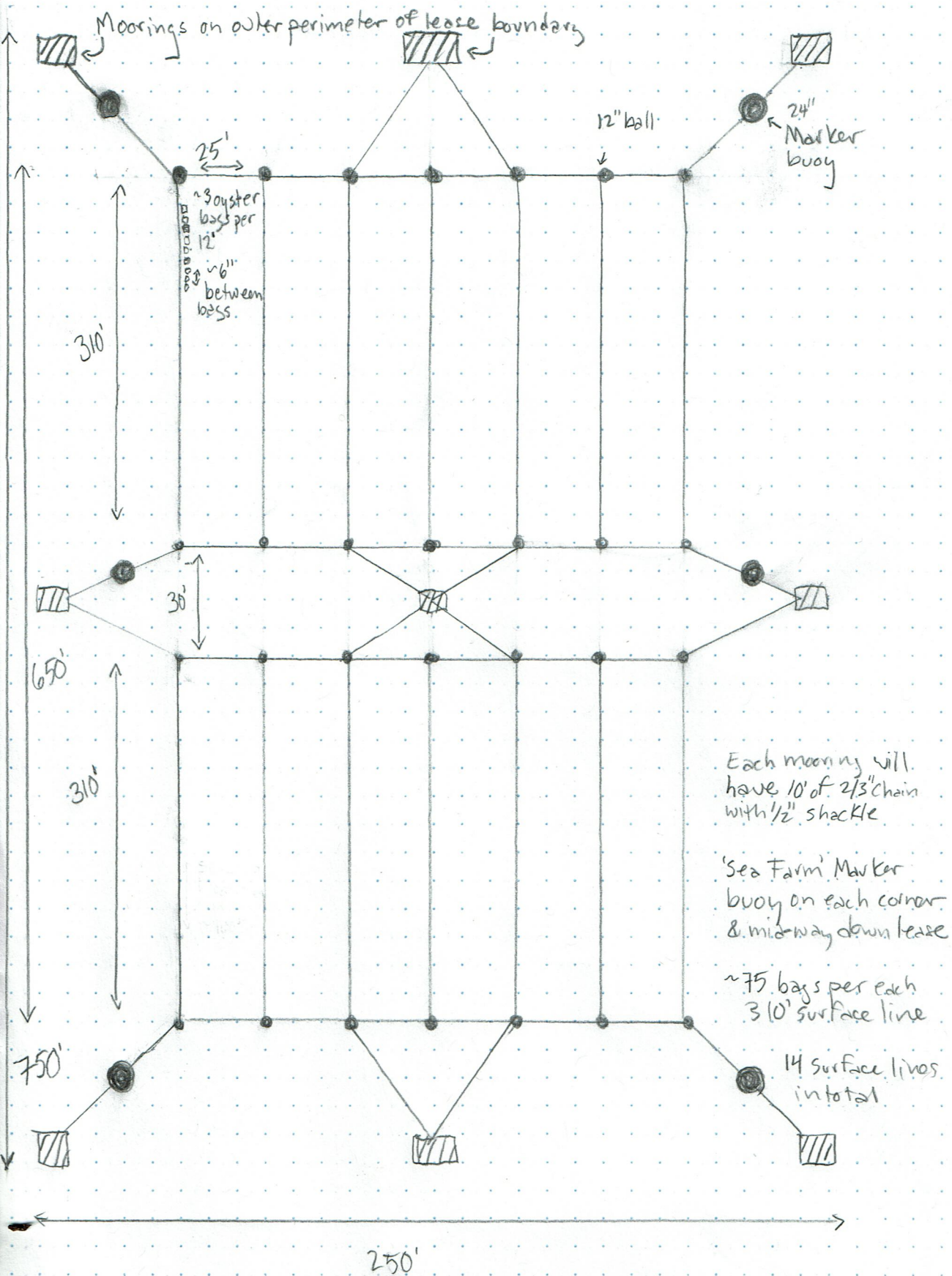


Seaweed 'seeded' twine spiraling around marine algae line



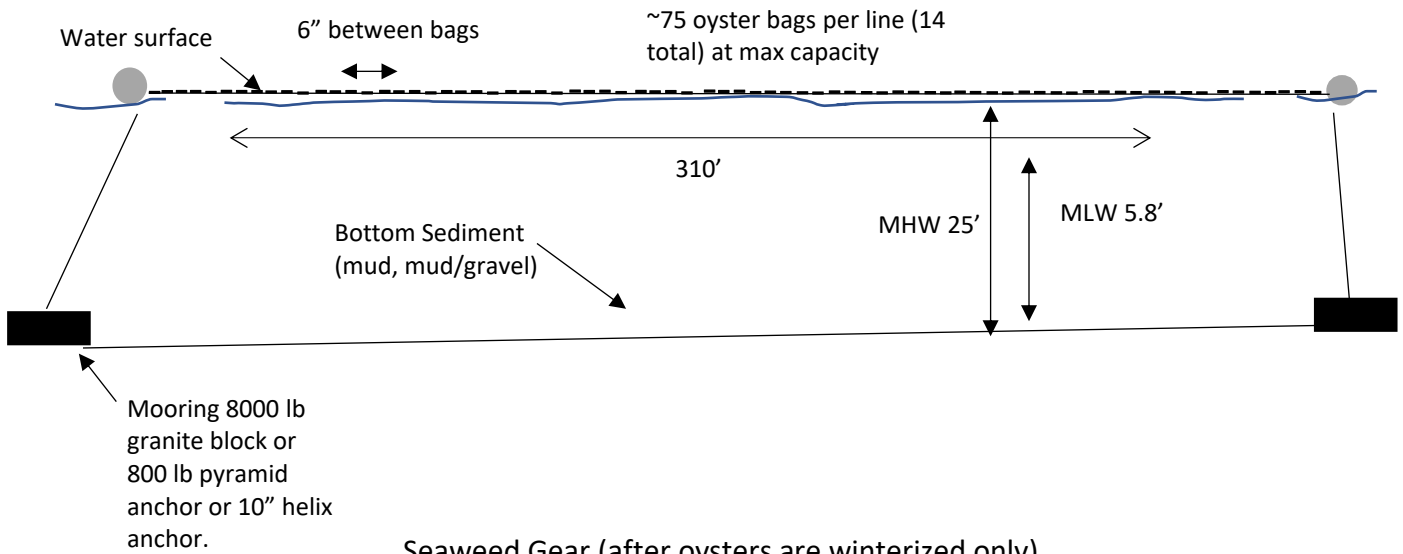
Spool will have ~400 feet of seeded twine and be wrapped around a 5/8"-1/2" 310' rope, with a total of 3720' rope seeded.

Overhead View



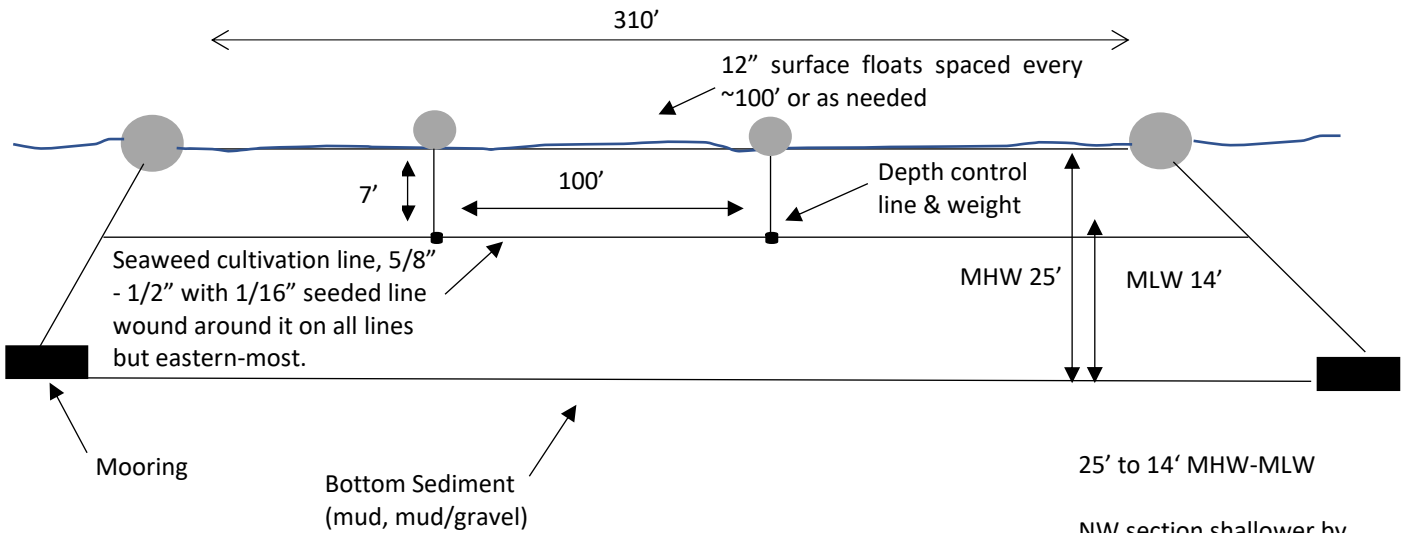
Cross-Section Gear View

Oyster Gear



Seaweed Gear (after oysters are winterized only)

This view does not apply to the eastern-most line, which would not be under cultivation



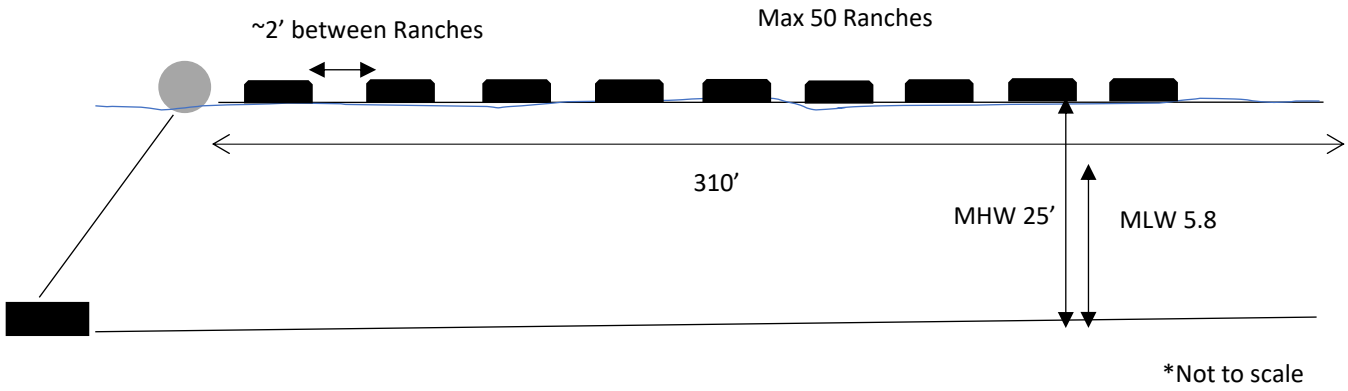
25' to 14' MHW-MLW

NW section shallower by about 2 feet than SW

E side about 9 feet shallower than W

No seaweed lines strung on eastern-most line, as MLW

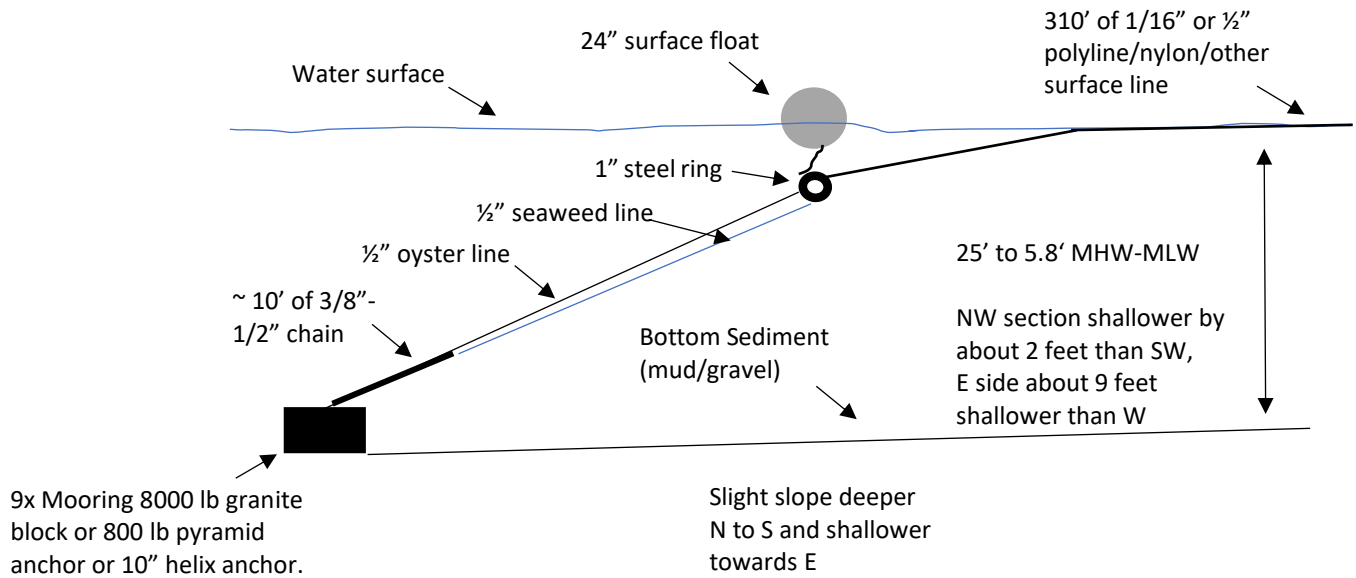
Cross Section Gear Oyster Ranch View



Cross Section Close up detail

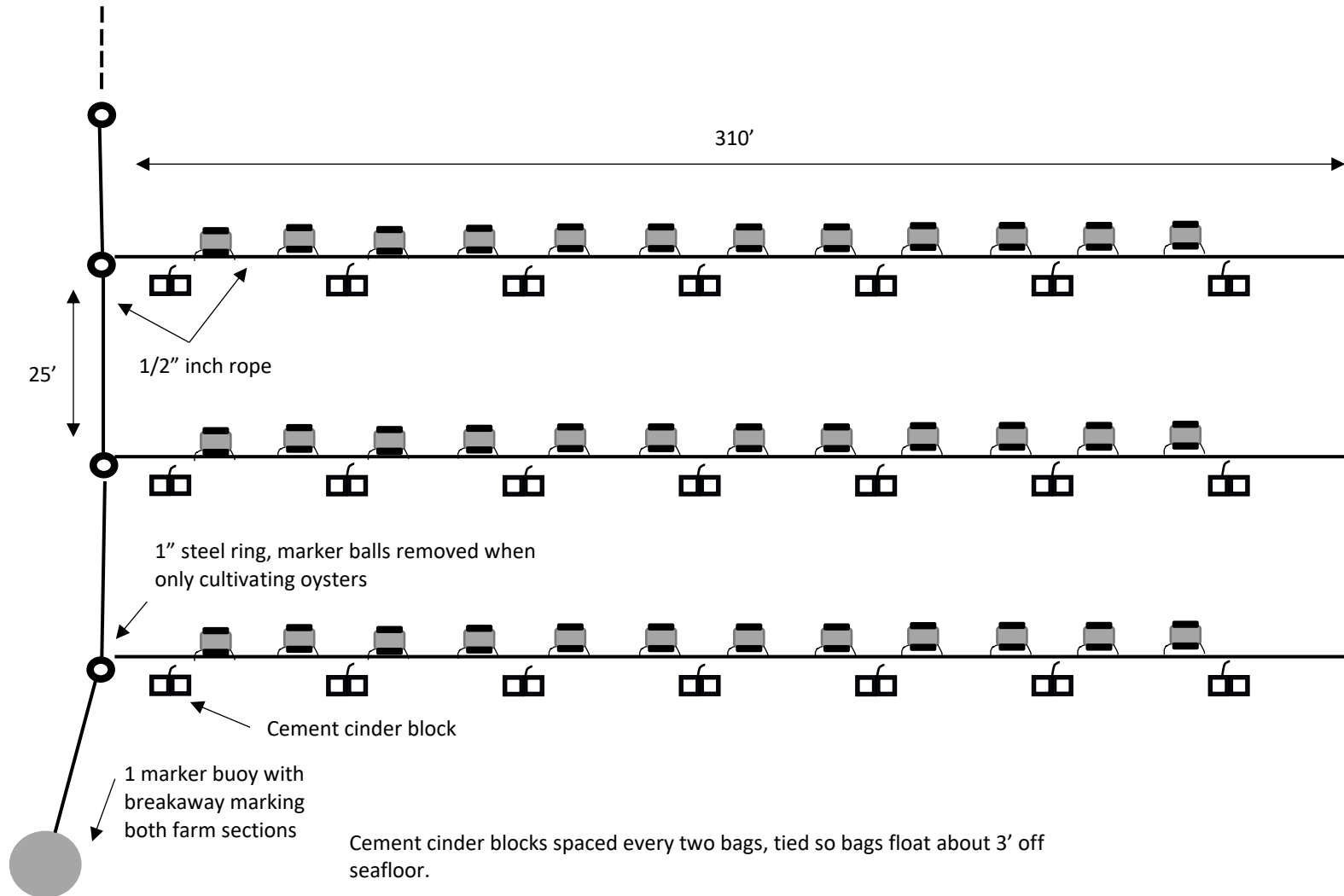
MLW:5.8'-14'
 MHW:16.8'-25'

Moorings will be rigged at a high water 2 to 1 scope.



*Not to scale

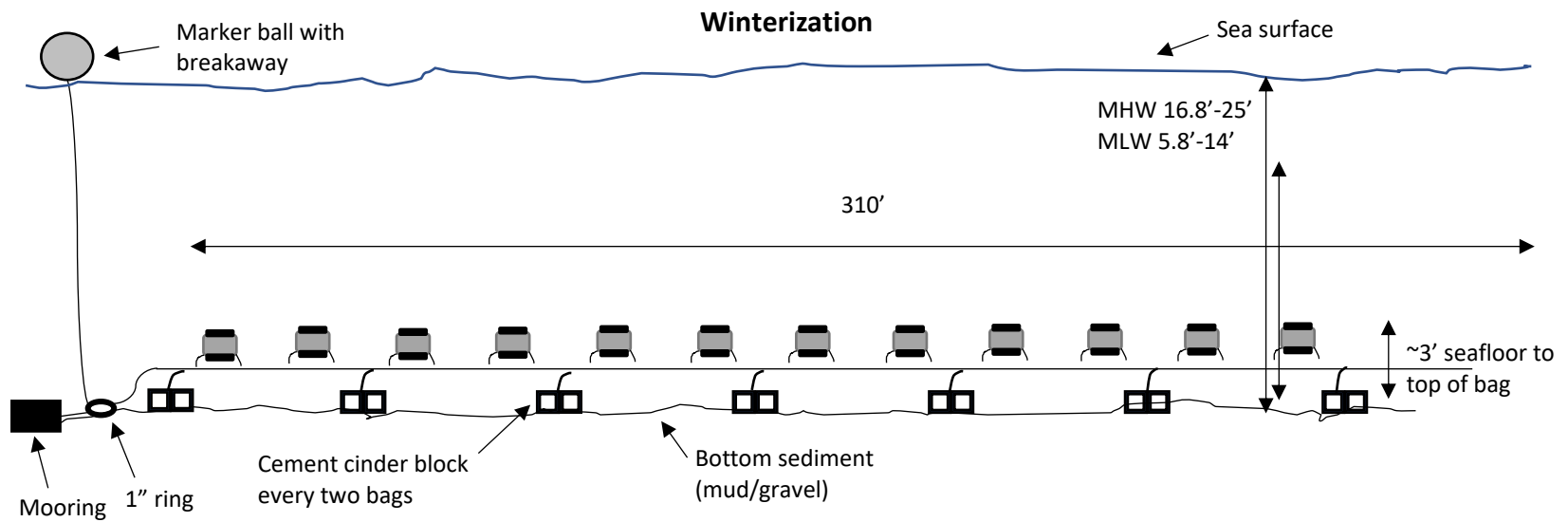
Overhead View Oyster Winterization



Cement cinder blocks spaced every two bags, tied so bags float about 3' off seafloor.

Gear layout (minus surface line balls) would be unchanged from summer season, it just would be on the ocean floor instead of the surface.

Cross Section View Oyster

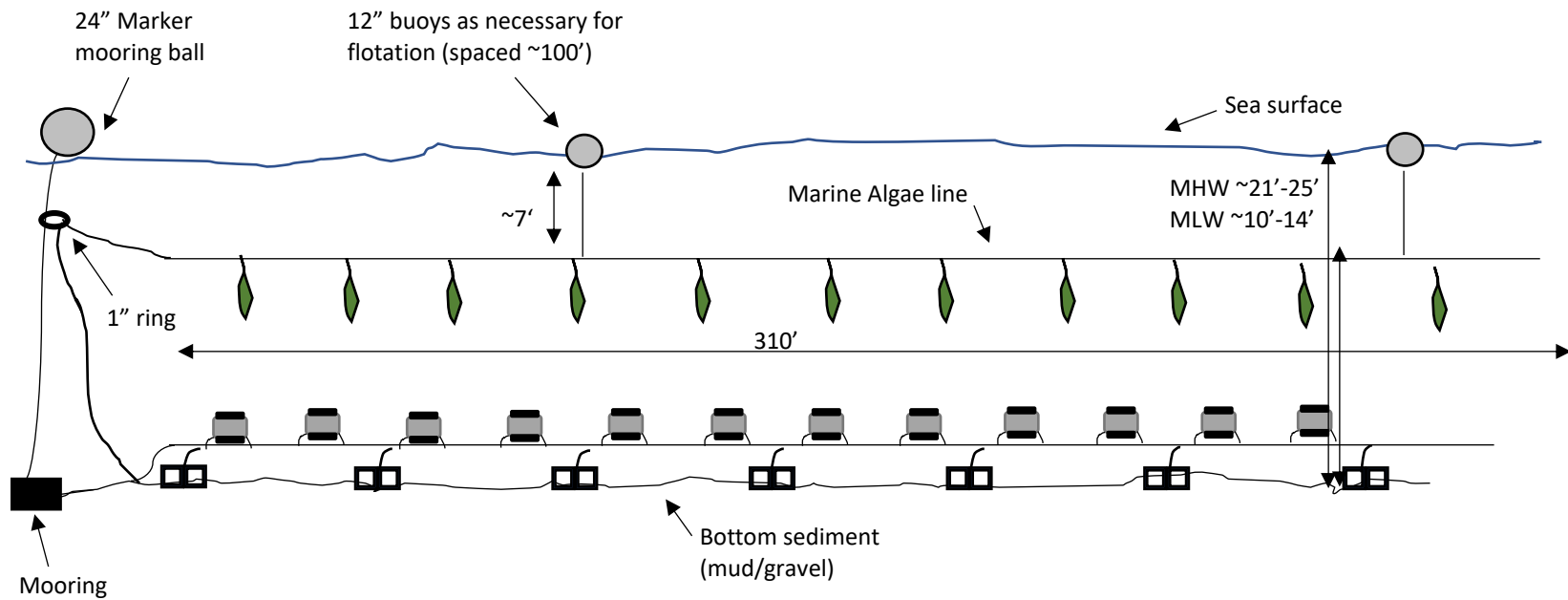


Cement cinder blocks spaced about every two bags, tied so bags float about 3' off seafloor.

Gear layout (mooring balls would stay when seaweed is cultivated) would be unchanged from summer season, gear just would be on the ocean floor instead of the surface.

*Not to scale

Cross Section View Seaweed & Winterized Oysters



Set up would not differ too greatly from summer.

Additional floatation for algae lines (~2 per 310').

No algae cultivated on easternmost line.

Up to 12 lines under algae cultivation during oyster winterization.

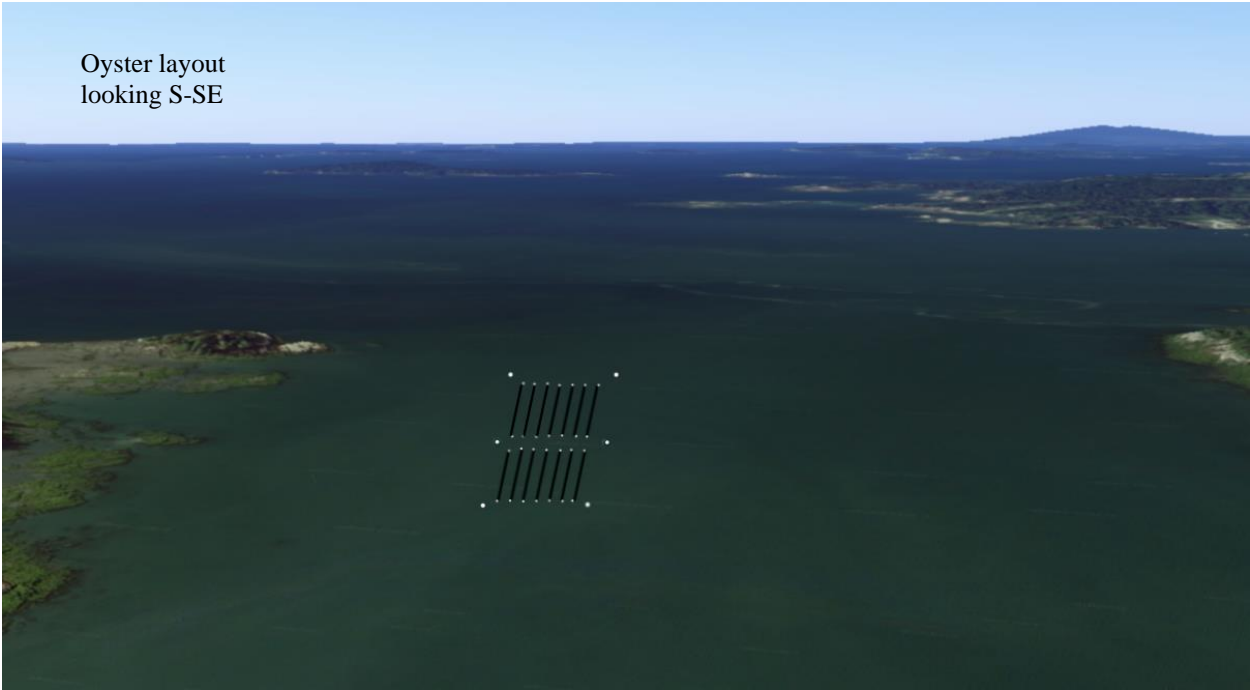
*Not to scale

Equipment Layout



Equipment Layout

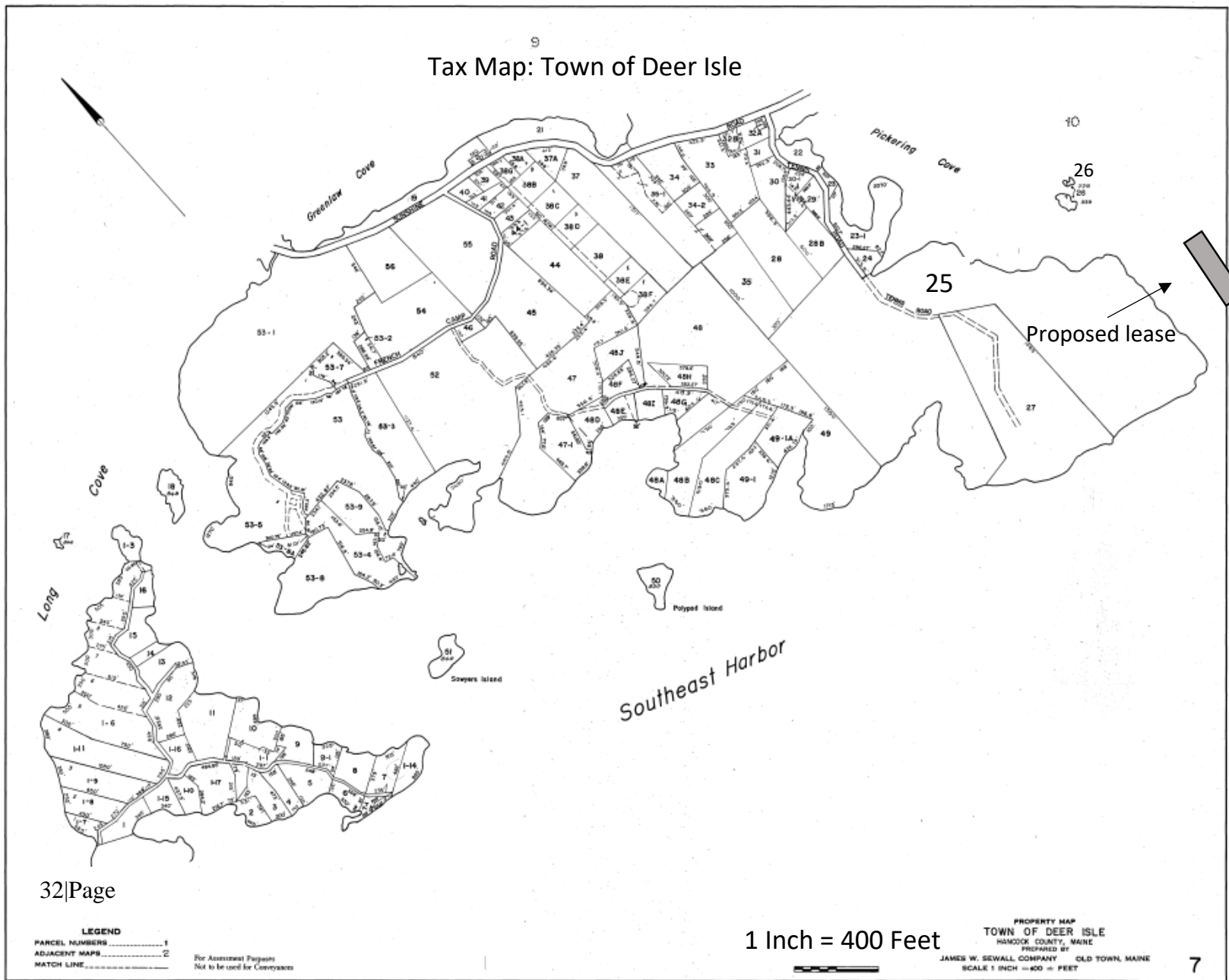
Oyster layout
looking S-SE



Seaweed layout
looking S-SE



9
Tax Map: Town of Deer Isle



32|Page

LEGEND
 PARCEL NUMBERS 1
 ADJACENT MAPS 2
 MATCH LINE..... 3

For Assessment Purposes
 Not to be used for Conveyances

1 Inch = 400 Feet

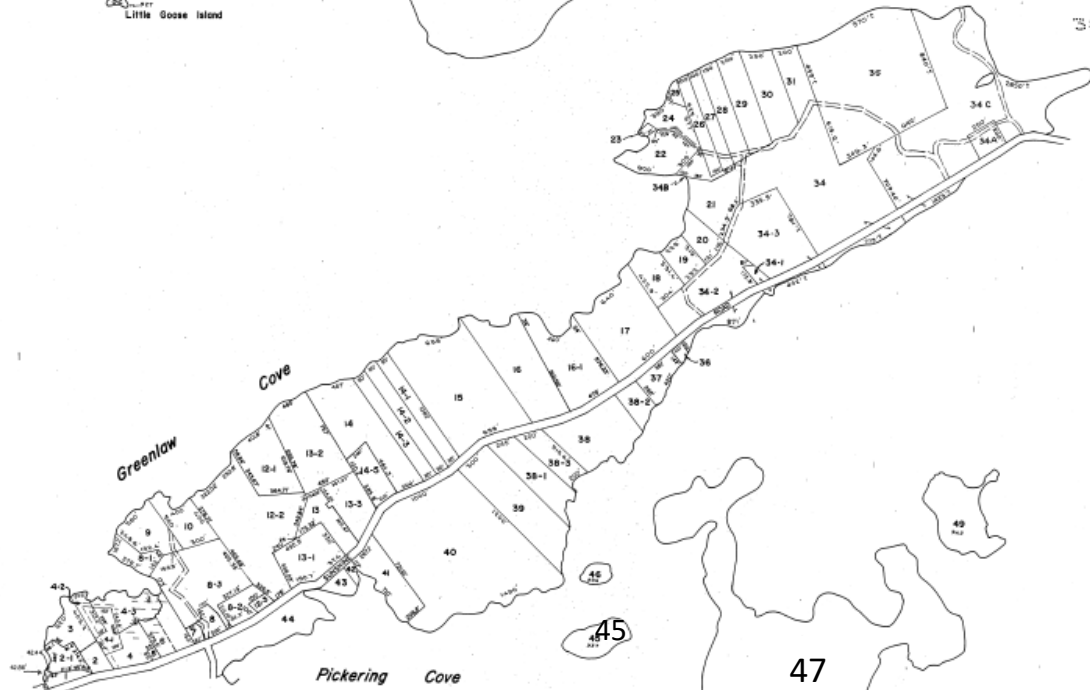
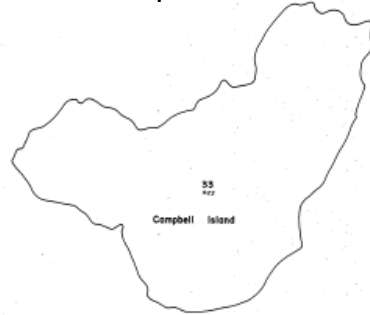


PROPERTY MAP
 TOWN OF DEER ISLE
 HANCOCK COUNTY, MAINE
 PREPARED BY
 JAMES W. SEWALL COMPANY OLD TOWN, MAINE
 SCALE 1 INCH = 400 FEET

Tax Map: Town of Deer Isle

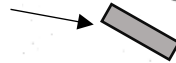


Little Goose Island



Map
not to
scale

Proposed Lease



1 inch = 400 Feet

33|Page

.1
.2
For Assessment Purposes
Not to be used for Conveyances

48

PROPERTY MAP
TOWN OF DEER ISLE
HANCOCK COUNTY, MAINE
PREPARED BY
JAMES W. SEWALL COMPANY OLD TOWN, MAINE
SCALE 1 INCH = 400 FEET

10



To whom it may concern,

11/18/2021

I am writing on behalf of Abigail WP Barrows, owner of Long Sea Farm LLC – to let it be known that she is in good standing account(s) wise with Camden National Bank.

Sincerely,

Katrina A Eaton

Relationship Banker

2 Atlantic Ave PO Box 65

Stonington ME 04681-0065

207-367-2201

OBJECTIVE

To utilize my science and communication skills to conduct meaningful research with tangible outcomes.

EXPERIENCE

Ocean Analytics, LLC

Consulting services

Stonington, Maine

January 2017-present

- Microplastic laboratory analysis
- Public speaking engagements
- Review & dissemination of scientific publications
- Single-use plastic legislation research

Long Cove Sea Farm, LLC

Aquaculture Owner/operator

Stonington, Maine

January 2015-present

- Responsible for all aspects of business & oyster husbandry

Adventure Scientists

Principal Investigator: Global Microplastics Initiative

Stonington, Maine/Bozeman, Montana

May 2014 – March 2018

- Laboratory management and QA/QC
- Hire, train and supervise lab analyst
- Data management, analysis for use in regulatory processes
- Peer-reviewed publication
- National and international academic presentation

The Shaw Institute

Coastal Monitoring Coordinator

Blue Hill, Maine

January 2013 – November 2015

- Management and execution of water quality monitoring program & citizen science program
- Results reporting, GIS mapping
- Grant writing and program budget administration
- Hire, train and supervisor to research interns
- Maine State House research testimonies on plastic research

Ocean Classroom Foundation

Marine Educator

New England, USA

May 2010 – August 2010

- Teach 15- 23 junior high/high school students/at-risk youth on 125 ft live-aboard schooner
- Curriculum design
- Medical Officer, education/food budget and crew duties

Motupore Island Research Center

Project Manager: Seahorse Distribution, Diversity and Trade

Papua New Guinea

March 2007 – December 2007

- Organize and conduct diving and net surveys in remote waters
- Data entry and statistical analysis, GIS mapping
- Wet laboratory and field assistant manager
- Public liaison and outreach with remote island tribes/fisherman

EDUCATION

University of Tasmania

Bachelor of Science, Zoology 2006

Hobart, Tasmania, Australia

College of the Atlantic

Master of Philosophy in Human Ecology 2018

Bar Harbor, Maine

PUBLICATIONS

Lima, A.R.A., Ferreira, G.B., Barrows, A.P.W., Christiansen, K.S., Treinish, G., Toshack, M.C. (2020). **Global patterns for the spatial distribution of floating microfibers: Arctic Ocean as a potential accumulation zone.** Journal of Hazardous Materials 40, (2021) 123796.

Barrows, A.P.W., Christiansen, K.S., Bode, E.T. and Hoellein, T.J. (2018). **A watershed-scale, citizen science approach to quantifying microplastic concentration in a mixed land-use river.** Water Research 147, 382-392.

Barrows, A.P.W., Cathey, S.E., Petersen, C.W. (2018). **Marine environment microfiber contamination: Global patterns and the diversity of microparticle origins.** Environmental Pollution 237, 275-284.

Miller, R.Z., Watts, A.J.R., Winslow, B.O., Galloway, T.S., Barrows, A.P.W. (2017). **Mountains to the sea: River study of plastic and non-plastic microfiber pollution in the northeast USA.** Marine Pollution Bulletin 124, 245-251.

Barrows, A.P.W., Neumann, C.A., Berger, M.L., Shaw, S.D. (2016). **Grab vs. neuston tow net: a microplastic sampling performance comparison and possible advances in the field.** Analytical Methods. Advanced Article

Bar-Ness, Y.D., McQuillan, P.B., Whitman, M., Junker, R.R., Cracknell, M., Barrows, A. (2011). **Sampling forest canopy arthropod biodiversity with three novel minimal-cost trap designs.** Australian Journal of Entomology. 51(1):12 – 21

Baine M.S.P., Barrows A.P.W., Ganiga, G., Martin-Smith, K.M. (2009). **Residence and Movement of Pygmy Seahorses, Hippocampus bargibanti, on sea fans (Muricella spp.)** Coral Reefs. 27:2 Pp. 421.

Barrows A.P.W., Martin-Smith K.M., Baine M.S.P. (2008). **Population Parameters and Life History Characteristics of the Alligator Pipefish Syngnathoides biaculeatus (Bloch), in Papua New Guinea.** Journal of Fish Biology. 74: 4 Pp. 806-819.

CURRENT LEADERSHIP

Haystack Mountain School of Crafts Board member

Island Heritage Trust Board member

Island Workforce Housing Board member

Plastic Pollution Coalition Scientific Advisor Board member

World Ocean Observatory Board member

5 Gyres Scientific Advisory Board member