



Oliver Stedman Government Center  
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Wakefield, RI 02879  
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### PUBLIC NOTICE

File Number: 2013-04-090

Date: April 30, 2013

This office has under consideration the application of:

Robert Morvillo  
P.O. Box 9553  
Warwick, RI 02889

for a State of Rhode Island Assent to create and maintain: a three acre oyster aquaculture farm in the Conimicut Triangle (DEM Shellfish Growing Area GA1-4), using the rack and bag method, at coordinates:

41° 42' 53.02"N; 71° 21' 32.64"W  
41° 42' 51.21"N; 71° 21' 31.63"W  
41° 42' 49.02"N; 71° 21' 39.87"W  
41° 42' 47.35"N; 71° 21' 38.41"W

A brief description supplied by the applicant is attached.

Project Location:	Narragansett Bay
City/Town:	Warwick
Waterway:	Upper Narragansett Bay

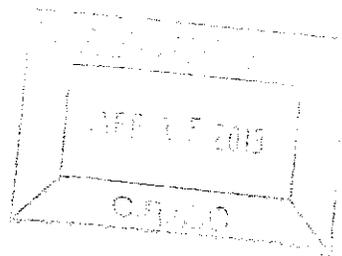
Plans of the proposed work may be seen at the CRMC office in Wakefield.

In accordance with the Administrative Procedures Act (Chapter 42-35 of the Rhode Island General Laws) you may request a hearing on this matter.

You are advised that if you have good reason to enter protests against the proposed work it is your privilege to do so. It is expected that objectors will review the application and plans thoroughly, visit site of proposed work if necessary, to familiarize themselves with the conditions and cite what law or laws, if any, would in their opinion be violated by the work proposed.

If you desire to protest, you must attend the scheduled hearing and give sworn testimony. A notice of the time and place of such hearing will be furnished you as soon as possible after receipt of your request for hearing. If you desire to request a hearing, to receive consideration, it should be in writing (**with your correct mailing address, e-mail address and valid contact number**) and be received at this office on or before May 30, 2013.

**Applicant:** Robert G. Morvillo  
142 South Shore Avenue  
Warwick, Rhode Island 02889



### **Introduction**

This application is for a 3-acre shellfish aquaculture lease site in Upper Narragansett Bay, just south of Conimicut Point, off the shore of land owned by me located at 142 South Shore Avenue in Warwick, Rhode Island (See Figures 1 and 2).

### **Operational Plan**

#### **Overview of Operation:**

The 3-acre leased site will be used to grow up to 500,000 market size eastern oysters (*Crassostrea virginica*) using the rack and bag system. The rack and bag system was chosen because it is a successfully tested system within the shellfish aquaculture industry. Additionally, the low-profile water rack and bag culture system is best suited for the water depth at the proposed lease site and will preserve the scenic resources by being below the water line at all times.

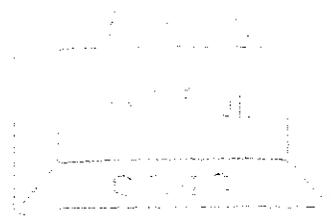
Seed oyster will be purchased from state-approved nursery operations in the New England region. (See Figure 3, list of state-approved shellfish hatchery and nursery operations). This aquaculture operation will not conduct hatchery or nursery operations, making this a strictly grow-out aquaculture facility.

#### **Seed Selection:**

A normal size seed oyster from an upweller hatchery system is approximately 5-8 mm in size and achieves market size growth within 18-24 months. To expedite a revenue stream and ensure a that high percentage of the initial cohort of oysters grow unaffected from environmental stress-related factors, the oyster seed grown in the first season will be primarily 10 mm. Oysters planted at 10 mm have a greater ability to resist environmental stressors caused by high water temperatures, low dissolved oxygen, predation and diseases such as Dermo, MSX (Multinucleated Sphere Unknown) and JOD (juvenile oyster disease). Utilizing a portion of the seed @ the 5-8mm size will stagger the market size oyster yield. Approximately 500,000 seed will be purchased initially; approximately 60% at 10 mm and 40% at 5-8mm.

#### **Gear Section:**

The seed will be placed in 800, 3mm (#1) ADPI bags (1,000/bag). The bags will be housed in a rack system and each rack will measure 43" x 36" x 12' (Figures 4, 4A and 6). Eight (8) bags will be housed in each rack and secured via bungee cords pulled taught across the open ends of the racks.



### Daily and Seasonal Maintenance and Care:

The facility will be accessed and maintained from my property via an 18-24' motorized vessel.

Gear maintenance is a critical aspect of a shellfish aquaculture. Racks accumulate various types of fouling agents, sea creatures and other floating organic and non-organic debris. The seed will be placed in the nursery rack and bag system in June and remain in the water on the Bay bottom through the end of the September. (See Figure 7). While in the water, each bag will be shaken once every week. In addition to shaking the bags, a brush will be used to remove fouling on the outside of the racks and inspection for fouling of the bags' inside will be conducted and fouled bags will be replaced if necessary. The racks will be moved from their original footprint once per month to remove unwanted predators and allow the tide to remove oyster waste (pseudo feces).

### Harvesting and Wintering:

The oyster growing process begins with the small mesh bags and after doubling in size, the oysters are sorted by size on a sieving table and re-bagged and placed in racks with like size oysters. The sieving and sorting process will be repeated a few times on each year class until they reach market size (18-24 months). (See Figure 4). In the fall, when water temperature dips to 50 degrees, the oysters will be transferred to the deeper water grow-out area and remain in closed containers (i.e., mesh bags or wire cages). (See Figure 5). The nursery racks will be removed by November and stored on my private property in Providence, Rhode Island.

When the oysters reach market size, the product will be harvested. The method of harvest is seasonally dependent. In the warmer months, the oysters will be retrieved from the Bay bottom in the grow-out area. During the winter months, the oysters will be harvested to extent ice and storm conditions allow. To address the winter limiting harvesting factors, 300 market-sized oysters in mesh bags/wire cages will be marked with a small toggle buoy attached using a sinking line and placed in the deeper sections of the lease area to avoid ice conditions and allow for easier retrieval. A hoist will be used to retrieve the cages/bags.

### Operational Timetable

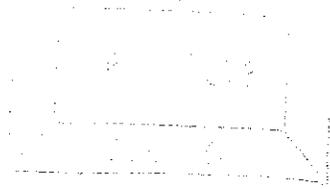
See Table 1, proposed operational timetable

### Customer Base:

See list of Wholesale Seafood supplier and local seafood markets – Figure 3A.

### Conditional Area A Closure Mitigation:

The proposed shellfish aquaculture operation is located in the Upper Narragansett Bay's Conditional Area A (see, Figure 8) and is designated as Type 1 waters (see, Figure 9). This area is periodically closed due to water quality conditions, which prohibit the harvesting of shellfish for human consumption. The conditional closures are primarily weather dependent, in that, rain events cause closures; however, historically closures were also due to sewage treatment plant bypass events (i.e., Narragansett Bay Commission's Fields Point and Bucklin Point facilities).



The frequency and duration of the closure of Conditional Area A due to bypass events has been significantly reduced due to the operation of Narragansett Bay Commission's Combined Sewer Overflow (CSO) tunnels. Prior to the completion of the CSO tunnels, closures would occur after a .5" rain event; currently closures occur after a .8" rain event. The duration of closures have been reduced by an agreement reached between RIDEM and US FDA, which allow RIDEM to re-open Conditional Area A shellfish harvesting as soon as post-storm monitoring data demonstrates it is safe to do so. RIDEM developed this plan to expedite the benefits associated with the tremendous investment in construction of NBC's Phase I CSO storage tunnel. Under this plan, RIDEM continues to enact a seven-day closure of the shellfish Conditional Area A after 0.8" of rainfall within a 24-hour period; however, as conditions allow, RIDEM may use post-storm monitoring data and operational information from NBC to determine whether this area can be re-opened earlier. Further water quality improvement and reductions in the frequency and duration of closures are expected through the completion of NBC's Phase II CSO Abatement Project, which is slated for completion by 2014.

The RIDEM Office of Water Resources Shellfish Program's data regarding the number of closures due to rain events indicates that in the years 2010 and 2011 (i.e., post-phase I CSO improvements), annual rainfall was slightly above average, but rain events exceeding .8" occurring in successive events were above average. This rain pattern resulted in higher days of closures than expected in light of the CSO improvements. In general, some closures occur due to sewage bypass events from sanitary sewage facilities due to excessive rain amounts over a short duration. Pre-Phase I, NBC wet weather bypass closures averaged 38 events/year versus 7 events/year post-phase I. Overall closures due to rain events are expected to provide 65 less closure days/year based on RIDEM's new regulations adopted in May of 2011 and discussion with NBC staff. In sum, the data strongly suggests that under normal rain conditions, the CSO improvements will manifest in reduced closure dates. RIDEM data indicates that Conditional Area A was closed for 195 days in year 2010 (54%) and 216.5 days in the year 2011 (59.3%).

To the extent possible, the maintenance of gear and relocation of product will occur when closure conditions do not exist; harvesting of product will only occur when the area is open. If maintenance of gear and relocation of product must occur when closure conditions exist, the operation manager will contact RIDEM Fish and Wildlife Enforcement to notify of the non-harvesting activities and/or hire RIDEM enforcement staff to oversee the non-harvesting activities. To maximize the avoidance of closure condition activities, the operation manager will monitor weather forecasts to schedule maintenance of gear and relocation activities (as well as harvest activities) and on a weekly basis (or more frequently as required), the operation manager will contact RIDEM Office of Water Resources' closure recorded hotline at 401 222.2900, which provides a daily notice of closure and re-opening periods.

The above-recited mitigation measures will ensure that this project complies with National Shellfish Sanitation Program and that no harm to public health or safety will result.

Benefits of Operation:

This aquaculture operation will have a positive affect on the diversity and abundance of native species and water quality. The gear will provide habitat for a wide array of native species. Oysters are prodigious filter feeders and 1 adult oyster can filter 50 gallons of water/day, thereby, removing enormous amounts of phytoplankton and seston from the water column to greatly improve water clarity.

This aquaculture operation is a true "green business" that will produce a 100% organic renewable product and capitalize on our state's natural resources to generate income, tax revenue and needed employment opportunities for local residents. Another tangible benefit would be to utilize this operation as an educational tool for students and a demonstration site for future shellfish aquaculture operations in the Upper Bay

#### Interest and Experience

My family has lived at 142 South Shore Avenue for over 100 years and throughout my 50-year residency, I gained intimate knowledge of these waters and its substrate. As a teenager, I harvested quahogs from this area and sold my catch to the Rocky Point Shore Dinner Hall.

Throughout my professional career, I have successfully launched numerous business ventures and as of late, I have been drawn back to these waters to initiate this proposed oyster aquaculture operation. Fortunately, my professional success allows me to have the financial resources to launch and sustain this project; without having an overbearing concern to net a profit, particularly if actual harvest rate is lower than expected.

This project will also enable me to pass on my passion for these waters and its environs to the youth of this state. I plan to collaborate with local schools and environmental educational organizations to develop this project as an education center for the next generation of aquaculturist and protectors of the Bay

I have immersed myself into the study and understanding of the shellfish aquaculture industry by performing countless hours of Internet research. I have been in communications with Roger Williams University's Associate Professor and Aquaculture Extension Specialist, Dr. Dale Leavitt, and have attended his aquaculture classes. I have also been in communication with CRMC's Aquaculture Coordinator, Dave Beutel

#### Performance Bond

Upon issuance of a lease a performance bond will be obtained in accordance with the criteria set for by the CRMC

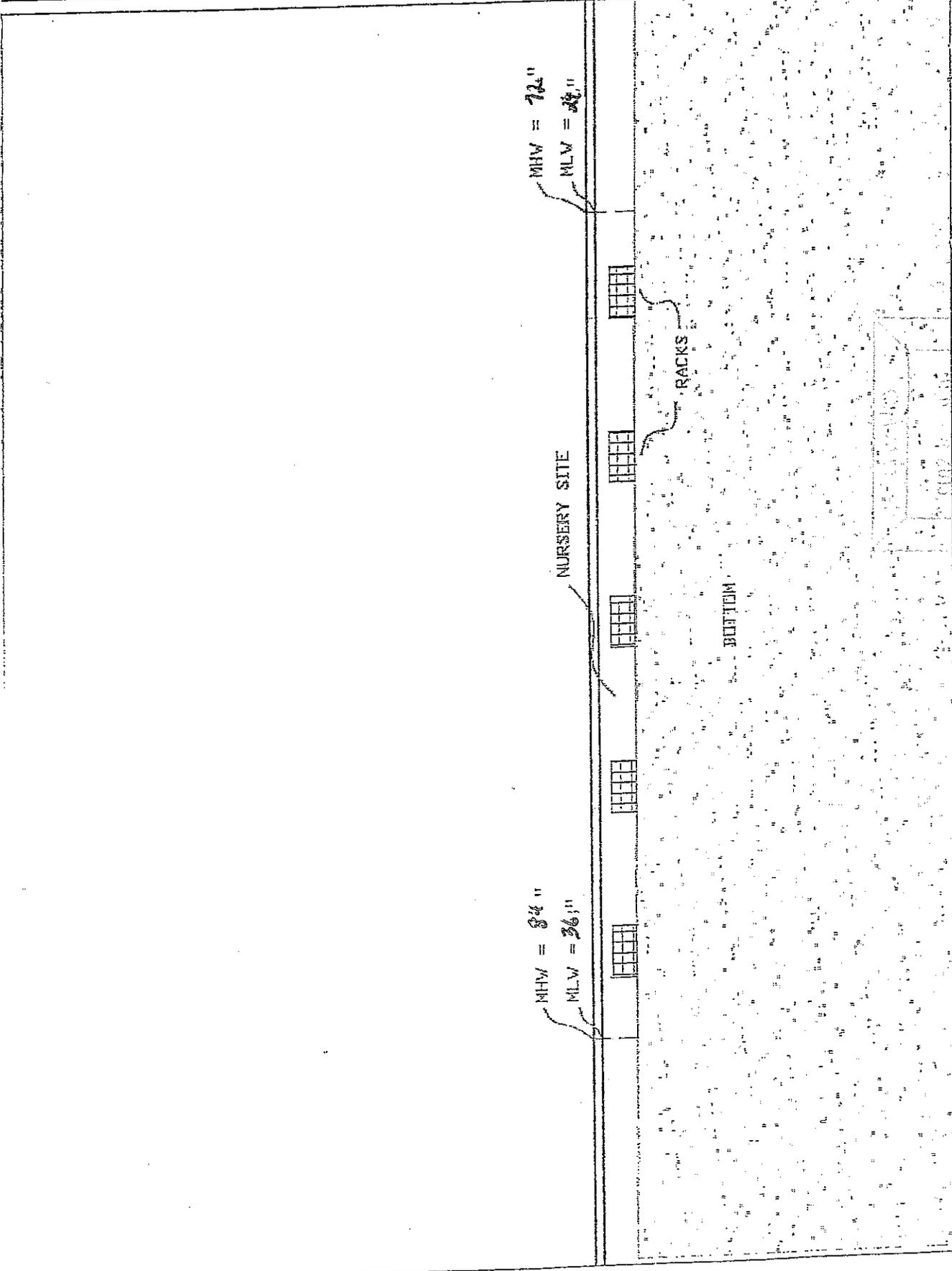


Figure 4: Cross-section view of nursery site

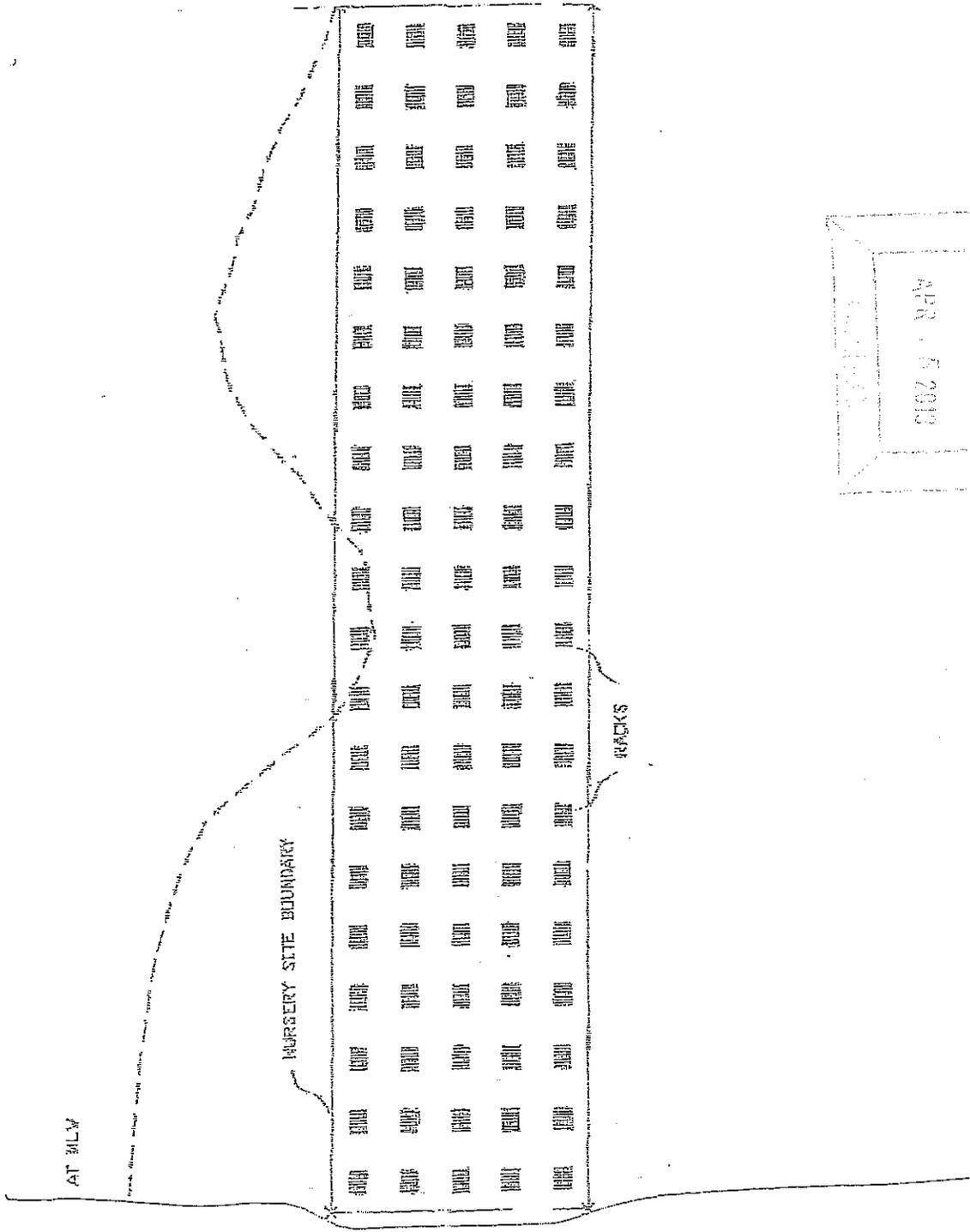
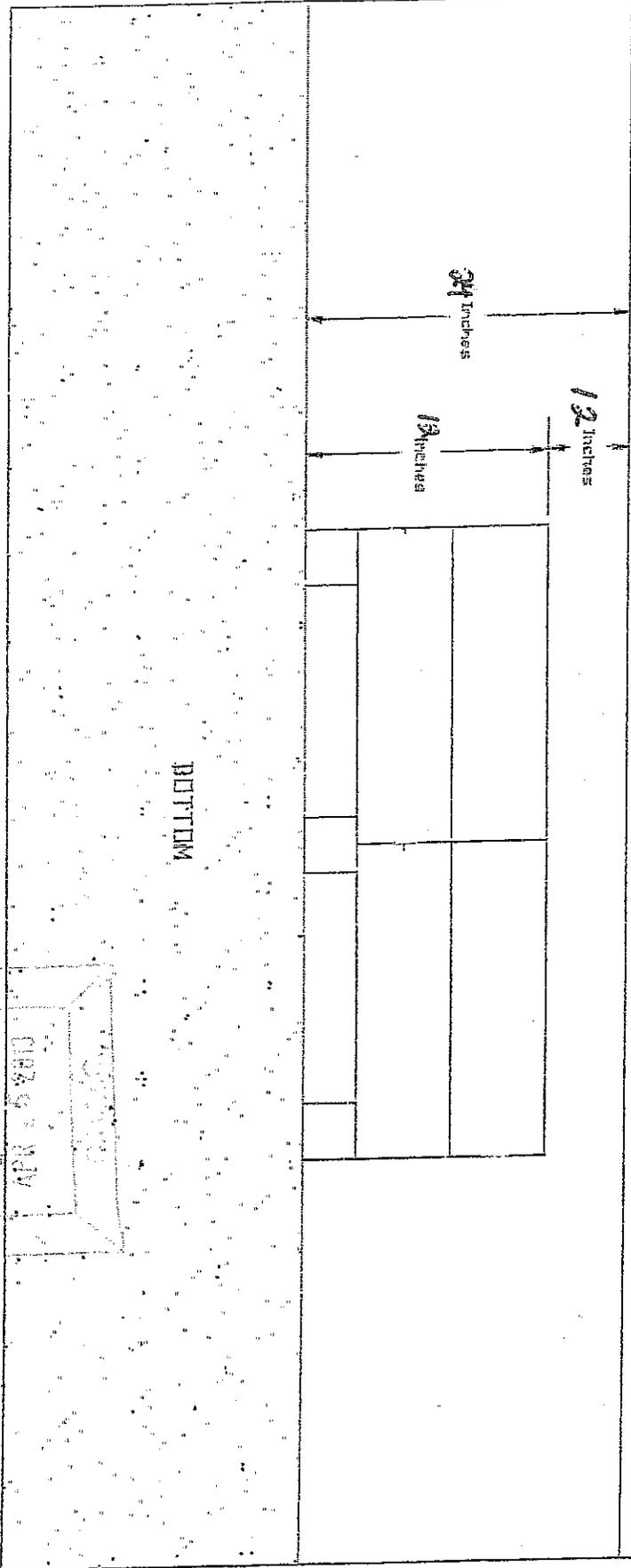


Figure 4A: Nursery Site



MEAN LOW TIDE

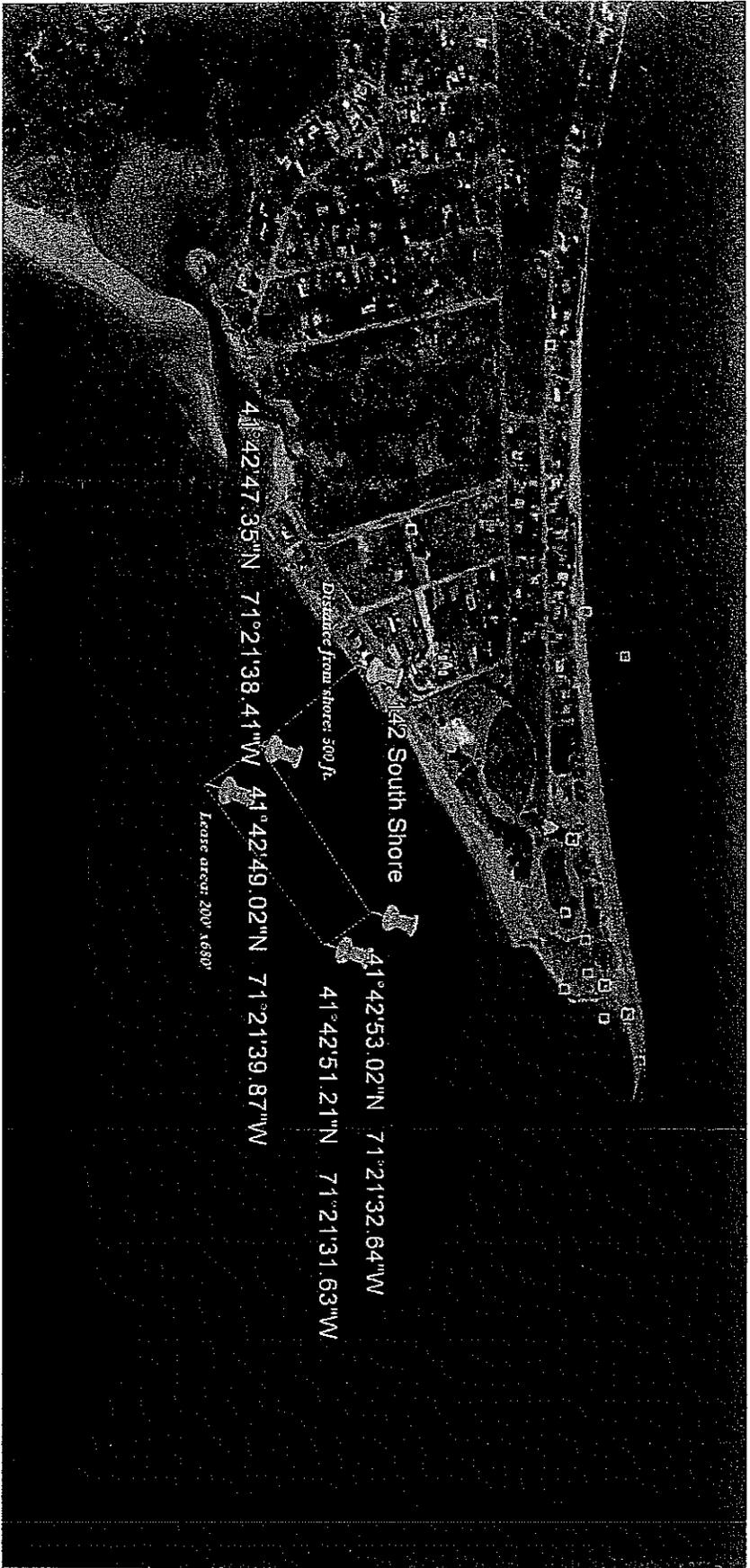


SCALE: 1" = 1'

NURSERY GEAR - DEPTH AT SHALLOWEST

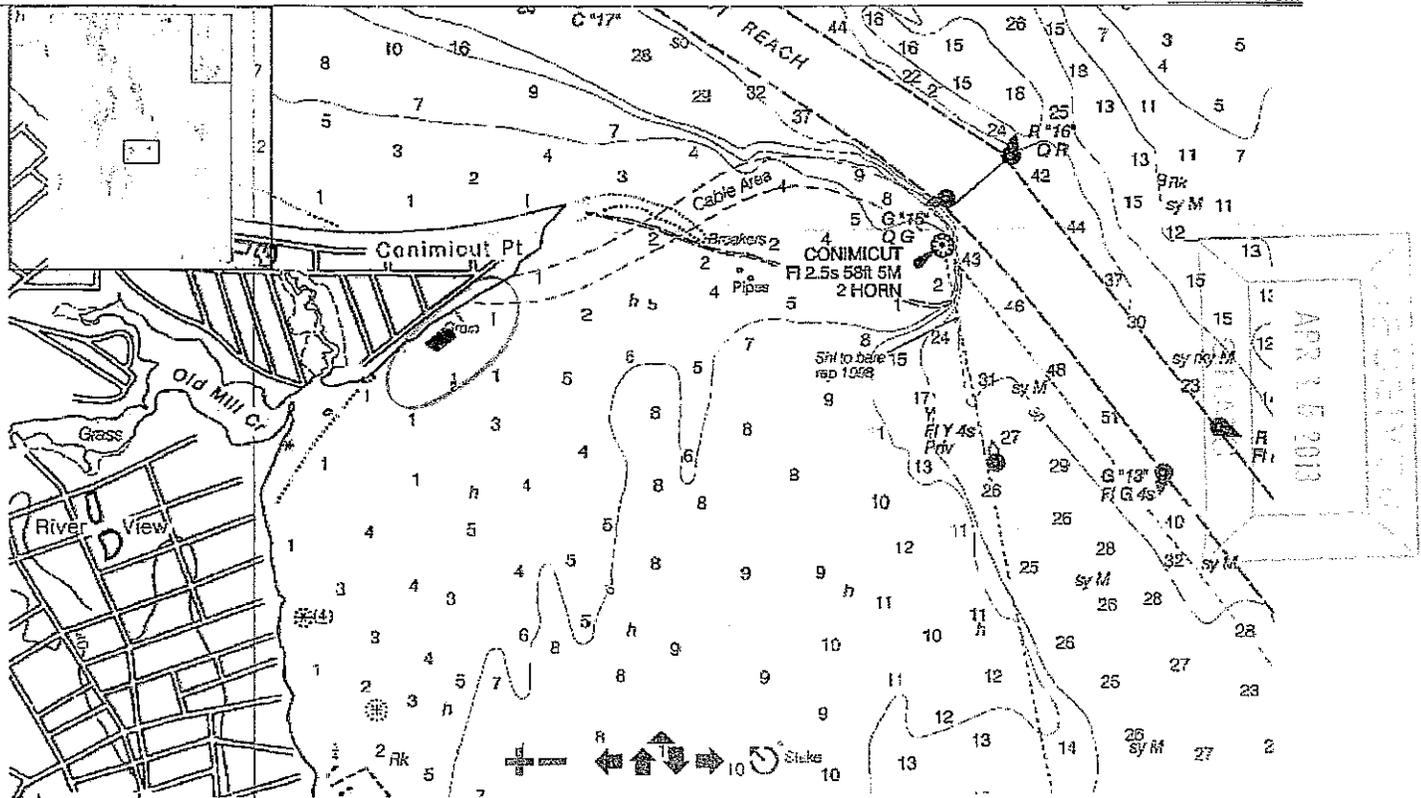
Robert G. Morvillo

Figure 7 : Cross-section view of depth of water covering nursery site gear at mean low tide at the shallowest portion of the site.



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- Click the arrow buttons to pan left/right and up/down.
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