Notice and Disclaimer: The South Carolina Department of Natural Resources (SCDNR)and South Carolina Department of Health and Environmental Control (SCDHEC) are providing this document to offer general information regarding site selection for the public and potential mariculture applicants. This document is not intended to be a comprehensive guide or all-inclusive notice of the requirements or implications involved with mariculture site selection or permitting. This documents in no way modifies or amends the state or federal law or the process for seeking a mariculture permit, and potential applicants are required to pursue permitting with the respective agencies.

SCDNR and SCDHEC including any board member, officer, or employee, does not warrant the function of the mariculture siting tool referenced herein, and shall not be liable for any losses caused by such reliance on the operation of the siting tool, including, but not limited to, incidental and consequential damages. The access to and distribution of the siting tool is provided 'as is' without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability, fitness for a particular purpose or non-infringement. The SCDNR and SCDHEC maintains all immunities and defenses provided in the South Carolina Tort Claims Act and otherwise provided by law.

The SCDNR and SCDHEC reserves the right to modify this document and information contained herein. Accordingly, members of the public and potential applicants are encouraged to ensure they are reviewing up-to-date and current information with regards to mariculture site selection and/or permitting.

Site Selection Guidance for Mariculture Applicants (Bottom & Floating Gear)

Mariculture in South Carolina requires permits from the Army Corps of Engineers (Army Corps), the SC Department of Natural Resources (SCDNR), and SC Department of Health and Environmental Control (SCDHEC) through (OCRM and Shellfish Sanitation). These guidelines cover requirements of all these permitting agencies but might not be all-inclusive. Additionally, projects may also be reviewed by other federal agencies such as the Protected Resource Division of National Marine Fisheries Service (NMFS). Each project is reviewed independently and may have elements which trigger additional requirements. This document is intended only as guidance for the applicant.

SCDNR has created a mariculture siting tool to assist applicants. This tool depicts areas where mariculture may not be permitted or may be less likely to be permitted. **The mariculture siting tool is meant to provide preliminary assistance in selecting an available and suitable mariculture site. It is not a substitute for meeting with the permitting agencies.** The mariculture siting tool can be accessed from http://dnr.sc.gov/marine/shellfish/mariculture.html

The following layers are depicted on the mapping tool:

There are two main map layers, Exclusion Areas and Cautionary Areas. Click on a layer to find more detailed information.

<u>Mariculture Exclusion areas (Bottom & Floating Gear):</u>

- Mariculture grow out operations need to be located in areas classified as “Approved Water Quality” for shellfish harvest by SCDHEC. Shellfish mariculture grow out operations <u>will not be approved</u> in areas classified as “Prohibited” by SCDHEC due to poor water quality. (SCDHEC Reg. 61-47)
- Mariculture operations <u>will not be permitted</u> in recreational-only harvest areas including Public Shellfish Grounds and recreational-only State Shellfish Grounds as commercial harvest is illegal in these areas. (SCDNR Section 50-5-955)

- Mariculture operations will not be permitted within 150 feet of Federally-maintained channels. Projects adjacent to federal channels will require additional review for potential impacts. (Army Corps)
- Mariculture operations will not be permitted where a conflicting permit has already been issued. (SCDNR Section 50-5-915).

Additional prohibitions which are not mapped include (Bottom & Floating Gear):

- A mariculture operation may not be located within 50 feet of a dock, unless the dock belongs to the mariculture operator or the dock owner has given written permission to the mariculture operator. If the applicant is proposing an operation within 50 feet of a dock, the proof of ownership of the dock by the applicant, or written permission of the owner of the dock must be provided at the time of application. (SCDHEC Reg. 30-12)
- A mariculture site may not be located on top of existing shellfish resources. A mariculture site may not be located on live bottom, submerged aquatic vegetation, or saltmarsh. (SCDNR Section 50-5-920; SCDHEC Reg. 30-11)

Mariculture Cautionary Areas (Bottom & Floating Gear):

- These areas will require additional scrutiny by SCDNR and/or other agencies for potential conflicts. This will likely prolong the permitting process and there is a higher probability of permits being denied due to use/resource conflicts.
- Mariculture Cautionary Areas include:
    a. Areas designated as critical habitat for Atlantic sturgeon or Loggerhead sea turtle.
    b. Areas designated as critical habitat for Atlantic sturgeon are North and South Santee River, Cooper River, North and South Edisto River, Combahee River.
    c. Areas designated as critical habitat for Loggerhead sea turtle are nesting beaches.
    d. The US Army Corps of Engineers may consult with NMFS Protected Resource Department for proposals that would occur in designated critical habitat. For more information on designated critical habitats visit http://sero.nmfs.noaa.gov/maps_gis_data/protected_resources/critical_habitat/
    e. Long-term sampling sites of DNR, DHEC or other governmental agencies.
    f. Resource or cultural heritage sites.

Cautionary Areas (Floating Gear Only):

Certain areas will receive additional scrutiny due to heavy on water boat traffic congestion, pre-existing uses, exposure to winds and waves (high-energy areas), and/or potential for damage to the environment or neighboring properties. These are depicted on the mapping application as Cautionary Areas with the notation “High-energy or congested area”. Mariculture proposals for floating gear in these areas will require additional justification and scrutiny.

Additional Cautionary Areas (NOT MAPPED) (Bottom & Floating Gear):

Applicants are advised that for reasons of sound management, not all potential areas are suitable for mariculture operations or for certain gear types. These areas are not indicated on the interactive site selection mapping tool. Applicants may wish to avoid:

- Popular fishing areas (potential for gear damage, poaching)
- High boat traffic (e.g. near boat landings or marinas)
- Areas of low flow (siltation will be heavy, food availability will be low)
- Areas which are subject to runoff from industrial activities (contaminants) or agriculture/golf courses (excess nutrients and pesticides)
- Volatile areas (e.g. shifting banks which move in every storm)

Change in DHEC classification:

If an area permitted for mariculture is reclassified to "Prohibited" the mariculture permit will be voided as it will no longer be in compliance with SCDHEC Reg. 61-47 and the operation will need to be removed in accordance with permit conditions. If an area permitted for mariculture is reclassified to "Restricted" the mariculture permit will be amended to reflect that all harvest must be done via joint relay to approved waters. Mariculture areas which are reclassified to "Restricted" may, at the discretion of SCDNR, be voided at the end of the current 5-year contract due to the considerable strain on state resources necessary when conducting mandatory joint relays at a high frequency.

Additional Considerations when selecting a site (Bottom & Floating):

The applicant is encouraged to make the original footprint large enough to accommodate a five-year plan, and changes that could occur to the environment during that time. By law, an applicant can be permitted for no more than 500 acres of bottom or 100 acres of water. (SCDNR Section 50-5-900). If you have floating gear the applicant is required to make the footprint boundary large enough to accommodate strings of gear within the footprint and must account for any sway or movement of gear. At any tidal stage the gear must meet the specifications (offsets) of placement in a creek. At all times gear must be within the specifications of the approved footprint boundary.

Use conflicts should be anticipated. If the gear will be near a private dock, a popular recreational boating area, or a beach-like area, we recommend communicating with the potential neighbors prior to submitting an application. You may be required to demonstrate that neighbors do not object to the activity. By law, gear cannot be within 50 feet of a dock unless that dock owner gives the applicant written permission.

Presence of a mariculture activity does not prevent neighboring landowners from applying for Critical Zone permits for docks, boat ramps, or bulkheads. By law, if a landowner builds a dock, the footprint will need to be relocated to be 50 feet from that dock unless the dock owner gives written permission for the footprint to be closer. (SCDHEC Reg. 30-12).

If you wish to install signs near the site, please contact SCDNR for information on permissible signs.

Floating Gear Guidelines

Creek size is a central consideration when initially contemplating a mariculture floating gear location. Each agency has its own considerations, and the proposal should include these requirements:

Army Corps

- Gear generally may not occupy more than 1/3 of the channel (33%) at MLW;
- If the opposite bank of the creek is high land which could be developed, gear generally may not occupy more than 25% of the channel at MLW;
- In some cases, it may be permissible to have a line of gear on each side of a creek. If that is the allowed, gear on each side is limited to 25% of the channel at MLW;
- In all cases, the deepest part of the channel generally needs to be left available for navigation.

SCDHEC – Shellfish Sanitation

- If summer harvest is requested, the gear must have the ability to be submerged for 14 consecutive days. (SCDHEC Reg. 61-47)

SCDNR

- The footprint boundary of the permitted area must be positioned approximately 50 feet from the shoreline at MLW to allow the public right of access for navigation, and to allow for nonconflicting uses. (SCDNR Section 50-5-915). Gear at all times must be within the specifications of the footprint boundary.

Due to the different requirements of permitting agencies, the smallest creek which will generally be considered for floating mariculture gear is 200 feet wide at MLW.

Additional Requirements for Floating Gear:

- Gear lines must include gaps to allow access to the shoreline and all side creeks or drains.
- Anchoring requirements must minimize marine species entanglement (NMFS-PRD).
- Anchoring requirements must account for extreme high tides and movement of gear with slack line at low tides.
- Applicants must submit a storm plan which includes plans to sink gear or remove it to a protected location in the event of a severe storm (SCDNR Section 50-5-915; SCDHEC Reg. 30-12).
- A surety bond is required for floating gear. Below is the pre-determined bond schedule for gear agreed to by all agencies.

Number of cages	Bond amount
Up to 100	$10,000
101-150	$15,000
151-200	$20,000
201-250	$25,000
251-300	$30,000

$10,000 per 100 cages rounded up to the nearest 50

Required Drawings

In order to determine whether the project meets these guidelines the applicant will need to submit drawings. Eventually engineer-certified drawings will be needed, but for preliminary purposes the applicant may hand-draw maps depicting the following:

General Location View: This will show a general location of the area being applied for on a map. The scale needs to show surrounding bodies of water and highlands so the permitting agencies can locate the area.

1. Plan View: This will show a closer view with the proposed location of the gear and the proposed project boundaries. The applicant may submit multiple maps depending on the number of areas in the application. This depiction should include:
    1. Location of MLW and MHW on both sides of water body ;
    2. Creek width (at MLW);
    3. Total number of gear units;
    4. Total length of the project area (and of each separate gear line within the project area);
    5. Width of the project area;
    6. Area, in acres, of each individual project area;
    7. Distance from each shore (at MLW) to gear.

    When locating gear lines, the applicant must account for any sway or movement of gear so that at any tidal stage the gear will be located entirely within the footprint.

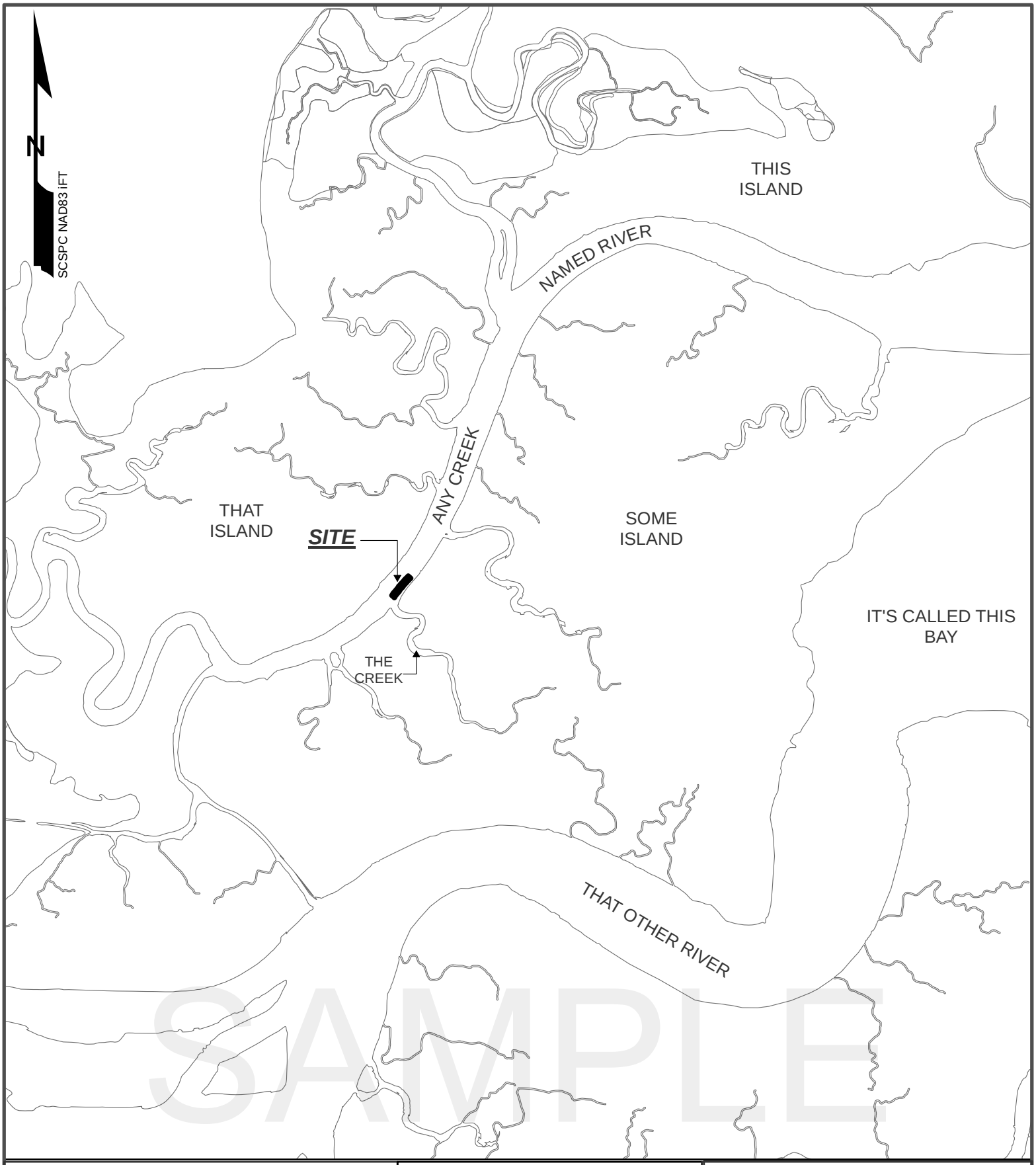
2. Side View: This will show a close-up of the gear as it will be deployed showing:
    1. Cage/gear dimensions;
    2. Anchors and lines including sizes of each;
    3. Spacing of gear;
    4. Depth below the gear at MLW.

3. Cross-section View: This will show a cross section of the creek indicating:
    1. MHW, MLW and the bottom profile with depths at ~ 10ft intervals;
    2. Indicate the creek width;
    3. Placement of the gear (each line) within the cross section;
    4. Distance from each shoreline at MLW;
    5. Location of required setbacks;
    6. Indicate where the Army Corps 25% or 33% boundary is located;

7. Indicate the depth below the cages at MLW;

Depending on the size of the project, more than one cross section may be necessary

Please see attached sample drawings.



South Carolina Professional Land Surveyor SEAL

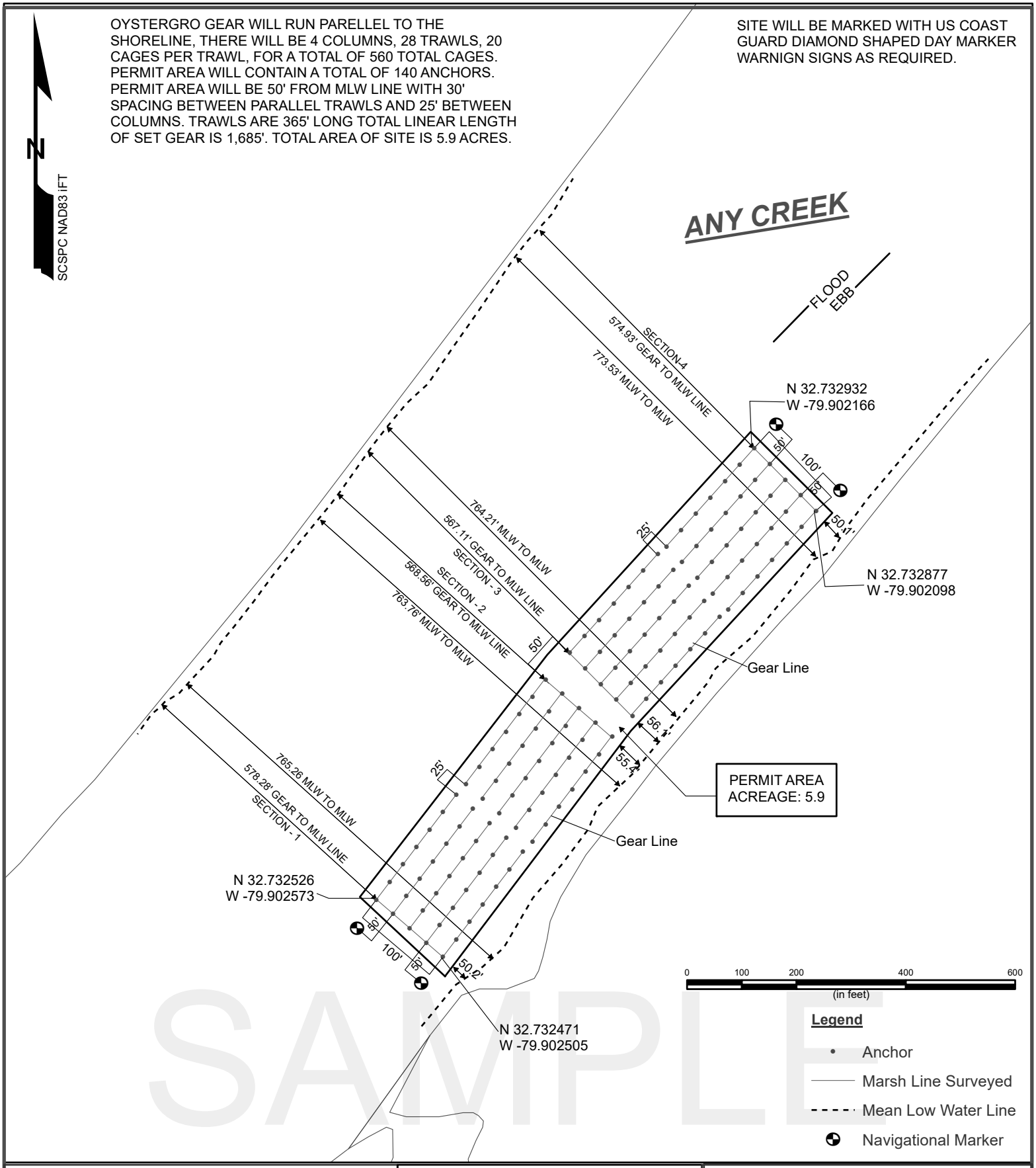
South Carolina SEAL

VICINITY MAP

NOT TO SCALE

Figure 1 of 7

PURPOSE: TO CONSTRUCT OYSTERGROW MARICULTURE CAGES
PROPOSED: OYSTERGRO MARICULTURE CAGES
AT: SOUTH END OF SOME ISLAND
IN: ANY CREEK
COUNTY: THIS COUNTY, SOUTH CAROLINA
DATE: 04/05/2019



South Carolina Professional Land Surveyor SEAL

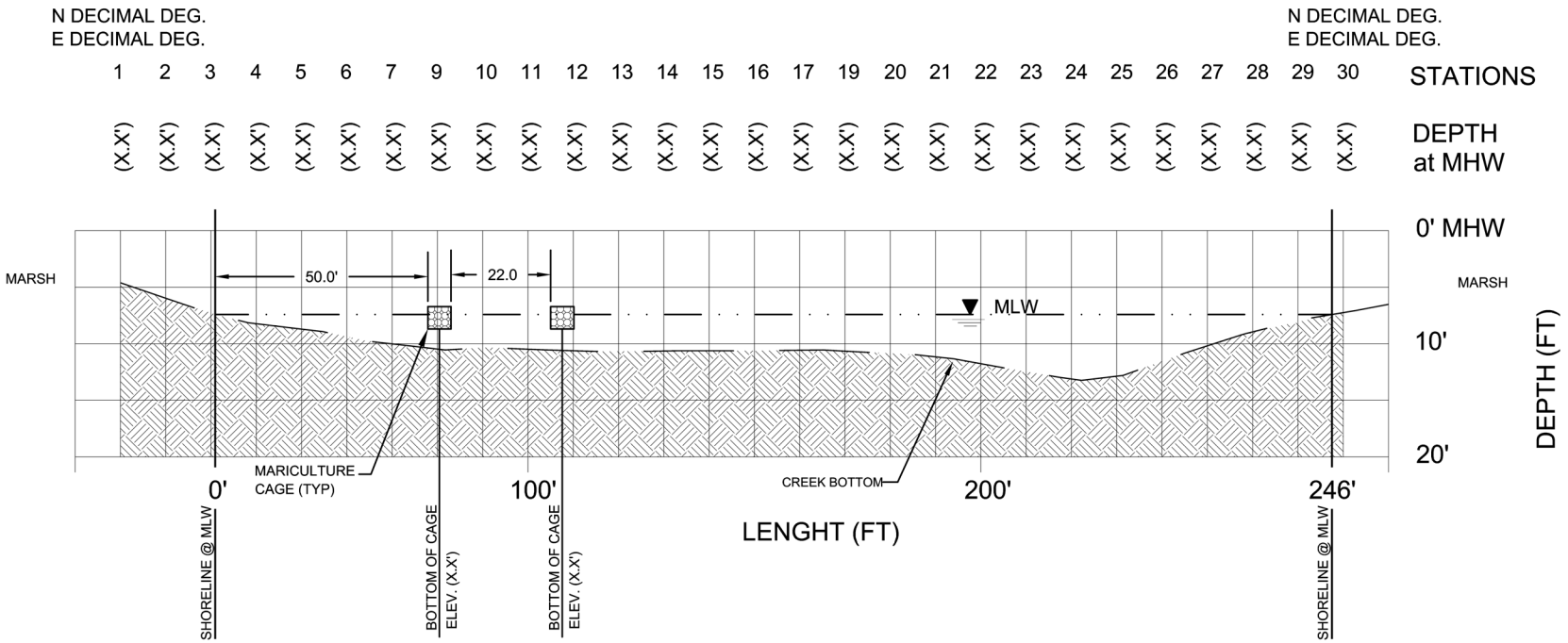
South Carolina SEAL

PLAN VIEW ANY CREEK

Figure 2 of 7

PURPOSE: TO CONSTRUCT OYSTERGROW MARICULTURE CAGES
PROPOSED: OYSTERGRO MARICULTURE CAGES
AT: SOUTH END OF SOME ISLAND
IN: ANY CREEK
COUNTY: THIS COUNTY, SOUTH CAROLINA
DATE: 04/05/2019

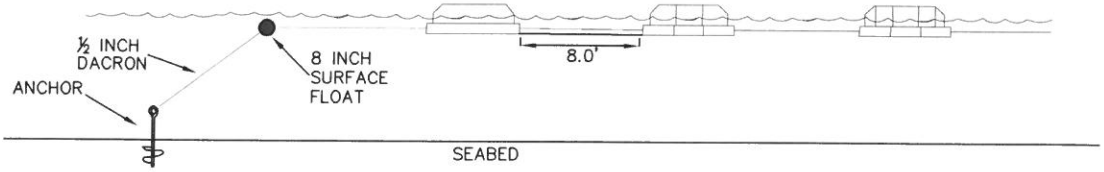
ANY CREEK SITE

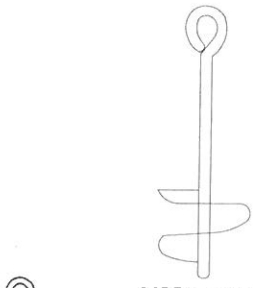


SAMPLE

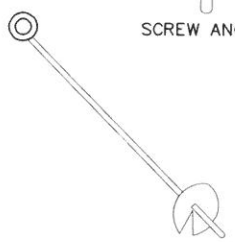
PROJECT TITLE	**MARICULTURE CAGES**
SHEET TITLE	**CROSS SECTION VIEW A-A**
LOCATION	SOME ISLAND ANY CREEK COUNTY, SC
REVISION DATE	**SC DEPARTMENT OF NATURAL RESOURCES ENGINEERING SECTION**
SCALE: SCALE	DATE: DATE
PROJECT #	SHEET: 1 of X

TRAWLS CONSISTS OF 25 CAGES
EACH, WITH AN ADDITIONAL ANCHOR
AFTER EVERY FIVE CAGES FOR
ADDED STABILITY.



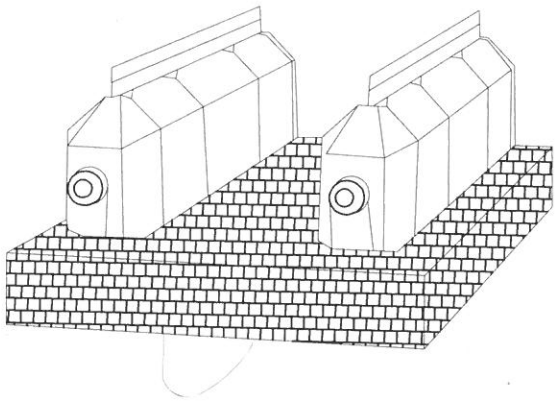


SCREW ANCHOR



1" SHAFT DIAMETER
72" SHAFT LENGTH
8" SCREWHEAD
RATED FOR 10,000 LBS

GEAR DIMENSIONS: 60 IN (L) X 40 IN (W) X 20 IN (H)



ROPE BRIDLE ON EACH ENDS.
LATERAL LINES ARE ATTACHED
TO ROPE BRIDLE

SAMPLE

SOUTH CAROLINA ☆ PROFESSIONAL LAND SURVEYOR ☆

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

FLOAT DETAIL

NOT TO SCALE

FIGURE 6 OF 7

PURPOSE: TO CONSTRUCT OYSTERGRO MARICULTURE CAGES

PROPOSED: OYSTERGRO MARICULTURE CAGES

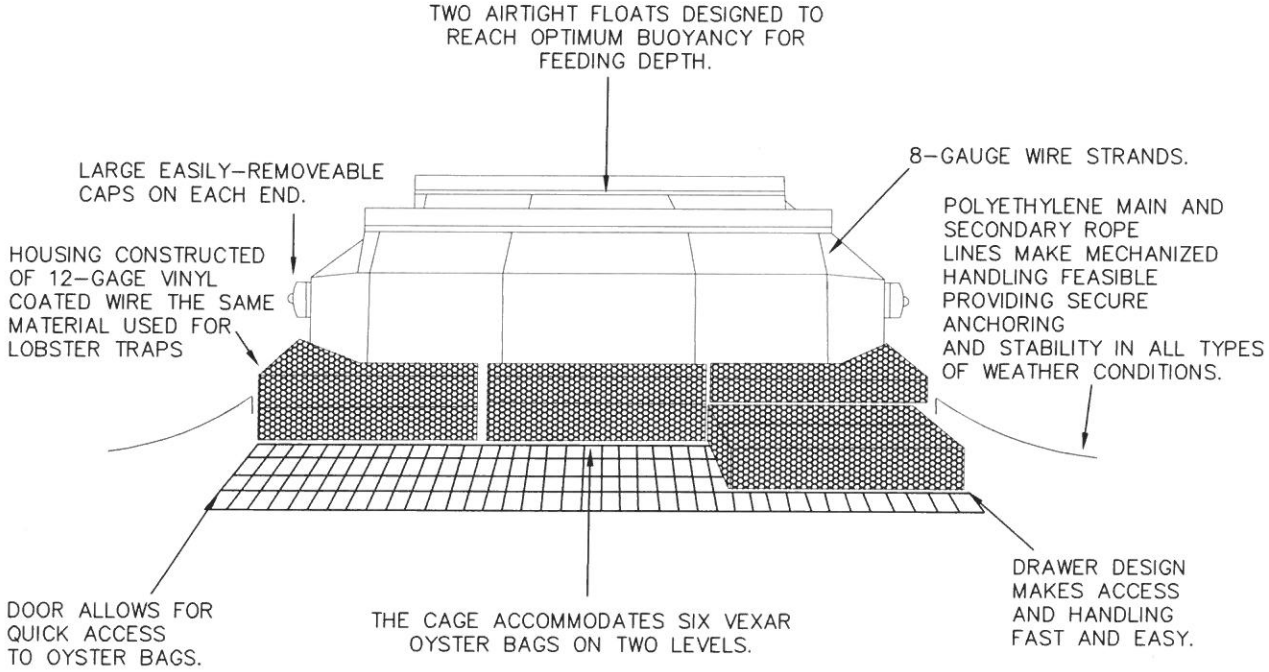
AT:

IN:

COUNTY OF: CHARLESTON, SOUTH CAROLINA

DATE:

HNK000118



SAMPLE

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

CAGE DETAIL

NOT TO SCALE

FIGURE 7 OF 7

PURPOSE: TO CONSTRUCT OYSTERGRO MARICULTURE CAGES

PROPOSED: OYSTERGRO MARICULTURE CAGES

AT:

IN:

COUNTY OF: CHARLESTON, SOUTH CAROLINA

DATE:

HNK000118