

JOINT
PUBLIC NOTICE

CHARLESTON DISTRICT, CORPS OF ENGINEERS
Charleston
69-A Hagood Avenue
Charleston, South Carolina 29403
and
THE S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405

REGULATORY DIVISION
Refer to: P/N SAC-2016-00360

25 October 2016

Pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), and the South Carolina Coastal Zone Management Act (48-39-10 et.seq.), an application has been submitted to the Department of the Army and the South Carolina Department of Health and Environmental Control by

Mr. Thomas Bierce
Charleston Mooring and Marine
1731 Tower Battery Road
Charleston, South Carolina 29412

for a permit to install floating cages in the

STONO RIVER AND GREEN CREEK

In four (4) four different areas near Folly Island in Charleston County, South Carolina. (Legareville and James Island Quad Sheets)

Area 1: 32.653058 Latitude/ -79.9958078 Longitude (Green Creek)
Area 2: 32.651847 Latitude/ -79.996883 Longitude (Green Creek)
Area 3: 32.64649 Latitude/ -79.993886 Longitude (Green Creek)
Area 4: 32.660939 Latitude/ -80.000742 Longitude (Stono River)

In order to give all interested parties an opportunity to express their views

NOTICE

is hereby given that written statements regarding the proposed work will be received by the **Corps** until

15 Days from the Date of this Notice,

and **SCDHEC** will receive written statements regarding the proposed work until

30 Days from the Date of this Notice

from those interested in the activity and whose interests may be affected by the proposed work.

The proposed work consists of the installation of a total of 20 floating mesh bags and 350 floating OysterGro cages. In detail the proposed work consists of the following work:

Area 1: The installation of twenty (20) floating mesh bags (36" L X 26" W X 4"H). The floating bags will be anchored using three (3) 4' screw anchors with ten bags between anchors. The connection will be bag to bag with 3/8" rope line that will be 4' long. The total length of the line will be 66'. All gear will be secured to the anchors using 5/8" – 3/4" polydacron rope and 1/2" chain

Area 2: The installation of one hundred and eighty (180) floating OysterGro cages (68" L X 40" W X 21"). The OysterGro cages will be anchored using 4' screw anchors with ten (10) cages between anchors, totaling 108' of lines and cages between anchors. There will be a total of twenty-three (23) screw anchors. Crab trap buoys will be attached directly above anchor points to easily identify gear strings. The connection will be cage to cage using 1/2"- 5/8" rope line with 4' between cages. All gear will be secured to the anchors using 5/8" – 3/4" polydacron rope and 1/2" chain. Area 2 also includes installation of four (4) floating navigation/warning buoys and one osprey nesting pole. A camera will be attached to the osprey nesting pole.

Area 3: The installation of one hundred and fifty (150) floating OysterGro cages (68" L X 40" W X 21"). The OysterGro cages will be anchored using 4' screw anchors with ten (10) cages between anchors, totaling 108' of lines and cages between anchors. There will be a total of seventeen (17) screw anchors. Crab trap buoys will be attached directly above anchor points to easily identify gear strings. The connection will be cage to cage using 1/2"- 5/8" rope line with 4' between cages. All gear will be secured to the anchors using 5/8" – 3/4" polydacron rope and 1/2" chain. Area 3 also includes installation of two (2) floating navigation/warning buoys and one osprey nesting pole. A camera will be attached to the osprey nesting pole.

Area 4: The installation of twenty (20) floating OysterGro cages (68" L X 40" W X 21"). The OysterGro cages will be anchored using 6' screw anchors with ten (10) cages between anchors, totaling 108' of lines and cages between anchors. There will be a total of four (4) screw anchors. Crab trap buoys will be attached directly above anchor points to easily identify gear strings. The connection will be cage to cage using 1/2"- 5/8" rope line with 4' between cages. All gear will be secured to the anchors using 5/8" – 3/4" polydacron rope and 1/2" chain. Area 4 also includes installation of two (2) floating navigation/warning buoys and one osprey nesting pole. A camera will be attached to the osprey nesting pole.

Project Purpose:

According to the applicant, the overall project is to develop and oyster farm in Charleston, South Carolina, using floating oyster cages. The oysters will be purchased as seed (>5mm) from a SCDNR approved source and grown within a 3rd order creek using low profile gear. As the animals grow they will be transferred into larger gear types until they reach market size where they will be harvested and sold. There are three stages of confinement as the oysters grow from seed to market ready animals. Stage on (Area 1) consists of twenty (20) soft floating mesh bags where seed can grow in a semi-protected environment at high densities. Stage 2 (Areas 2 and 3) is where the animals will spend most of their time growing to legal size. Area 3 will be used for the same purpose as Area 2 once the farm is ready to scale up operations. Once the animals have reached market size they will be taken to the wet storage area (Area 4). When an order is received the animals will be pressure washed on the dock then taken to Battery Island boat landing where they

will be shipped and sold to a licensed seafood dealer or directly to a restaurant. Keeping the harvest ready animals in wet storage (Area 4), which is nearest the boat landing, minimizes transport time from the water to market, thus making a safer product.

According to the applicant, the purpose of this project is to grown oysters from seed to harvest size using floating oyster cages. The reason for utilizing floating cages is that floating near the surface keeps animal feeding in the photic zone 24 hours a day, which means feeding and growing approximately twice as long as wild animals (wild oysters grow in the intertidal zone so must close their shells for 12 hours a day when water is low). Remaining submerged for such extended periods of time in the OysterGro cages cause an excess of biofouling (e.g. any algae, tunicates, mud worms, or wild oyster spat that grows on gear and/or animals and blocks water flow). Floating cages are designed to be flipped over, which exposes the animals and biofouling to the atmosphere (up to 24 hours every three weeks), thus killing the biofouling and maximizing water flow to animals. Floating on the surface allows animals to be gently tossed about within the bags as boat wakes pass by which also helps to keep biofouling down and all those micro-collisions within the bags helps cultivate oyster to grow thick shells and a cup shape that the market wants. Using floating gear enables the farmer to work any time of day instead of having to work only at low tide, which has traditionally been the case. That enables the animals to reach market size on a predictable schedule.

Avoidance and Minimization:

According to the applicant, the very purpose of this project is beneficial to the environment because of the oyster's ability to filter and clean up the water. One mature oyster growing in this system will be able to filter 50 gallons of water per day. Floating oyster gear will be deployed in sections of the creek that have intertidal slope, which indicates high erosion in that area. Placing gear in these locations will help to block the erosive boat wake and natural waves that eat at the marsh edge. Gear will be set off to shallower sides of the creek leaving the deepest and widest water available for navigation. A minimum 20' buffer will be maintained between gear lines and marsh edge and 15' buffer between gear lines. Gear will be held in place using un-intrusive auger type anchors to minimize impact to the benthic environment.

Mitigation Plan:

The applicant is the permit holder for SC Culture Permit 198, which gives rights to harvest and cultivate shellfish in that area. The applicant will use a variety of husbandry practices approved by SCDNR to enhance existing oyster beds as well as create new ones adjacent to proposed mariculture areas. The applicant doubled the annual husbandry requirements FY2016 and will continue to go above and beyond with efforts to enhance the health of the system.

The applicant submitted a storm plan that outlines steps that will be taken to secure the proposed gear in the event that a hurricane threatens the area. The applicant also submitted an estimate for the cost to remove the installed gear. The estimate(s) will be used by the permitting agencies to determine the amount of a surety bond that the applicant will be

NOTE: This public notice and associated plans are available on the Corps' website at:
<http://www.sac.usace.army.mil/Missions/Regulatory/PublicNotices> .

The work shown on this application must also be certified as consistent with applicable provisions of the Coastal Zone Management Program (15 CFR 930). This activity may also require evaluation for compliance with the S. C. Construction in Navigable Waters Permit Program. State review, permitting and certification is conducted by the S. C. Department of Health and Environmental Control. The District Engineer will not process this application to a conclusion until such certifications are received. The applicant is hereby advised that supplemental information may be required by the State to facilitate the review.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project would impact acres of open waters above estuarine substrates and emergent wetlands utilized by various life stages of species comprising the shrimp, and snapper-grouper management complexes. The District Engineer's initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and the National Marine Fisheries Service (NMFS). The District Engineer's final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

Pursuant to the Section 7 of the Endangered Species Act of 1973 (as amended), the Corps has reviewed the project area, examined all information provided by the applicant, the District Engineer has determined that the project is not likely to adversely affect the West Indian Manatee or result in the destruction or adverse modification of designated or proposed critical habitat. This public notice serves as a request for written concurrence from the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service on this determination. In addition, the District Engineer has made no determination of effect on the Atlantic Sturgeon, Shortnose Sturgeon and Sea Turtles. This public notice serves as a request to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service for any additional information they may have on whether any Federally listed or proposed to be listed endangered or threatened species and/or designated or proposed critical habitat may be present in the area which would be affected by the activity

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), this public notice also constitutes a request to Indian Tribes to notify the District Engineer of any historic properties of religious and cultural significance to them that may be affected by the proposed undertaking.

In accordance with Section 106 of the NHPA, the District Engineer has consulted South Carolina ArchSite (GIS), for the presence or absence of historic properties (as defined in 36 C.F.R. 800.16)(1)(1)), and has initially determined that no historic properties are present; therefore, there will be no effect on historic properties. To ensure that other historic properties that the District Engineer is not aware of are not overlooked, this public notice also serves as a request to the State Historic Preservation Office and any other interested parties to provide any information they may have with regard to historic properties. This public notice serves as a request for concurrence within 30 days from the SHPO (and/or Tribal Historic Preservation Officer).

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO and/or THPO, as appropriate and required and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps-identified permit area.

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 a public hearing shall state, with particularity, the reasons for holding a public hearing.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest. The benefit which reasonably may be expected to accrue from the project must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project 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, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production and, in general, the needs and welfare of the people. A permit will be granted unless the District Engineer determines that it would be contrary to the public interest. In cases of conflicting property rights, the Corps cannot undertake to adjudicate rival claims.

The Corps is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; 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 this project. To make this decision, comments are used to assess impacts on endangered species, 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. **Please submit comments in writing, identifying the project of interest by public notice number, to the following address:**

**U.S. Army Corps of Engineers
ATTN: REGULATORY DIVISION
Charleston
69-A Hagood Avenue
Charleston, South Carolina 29403**

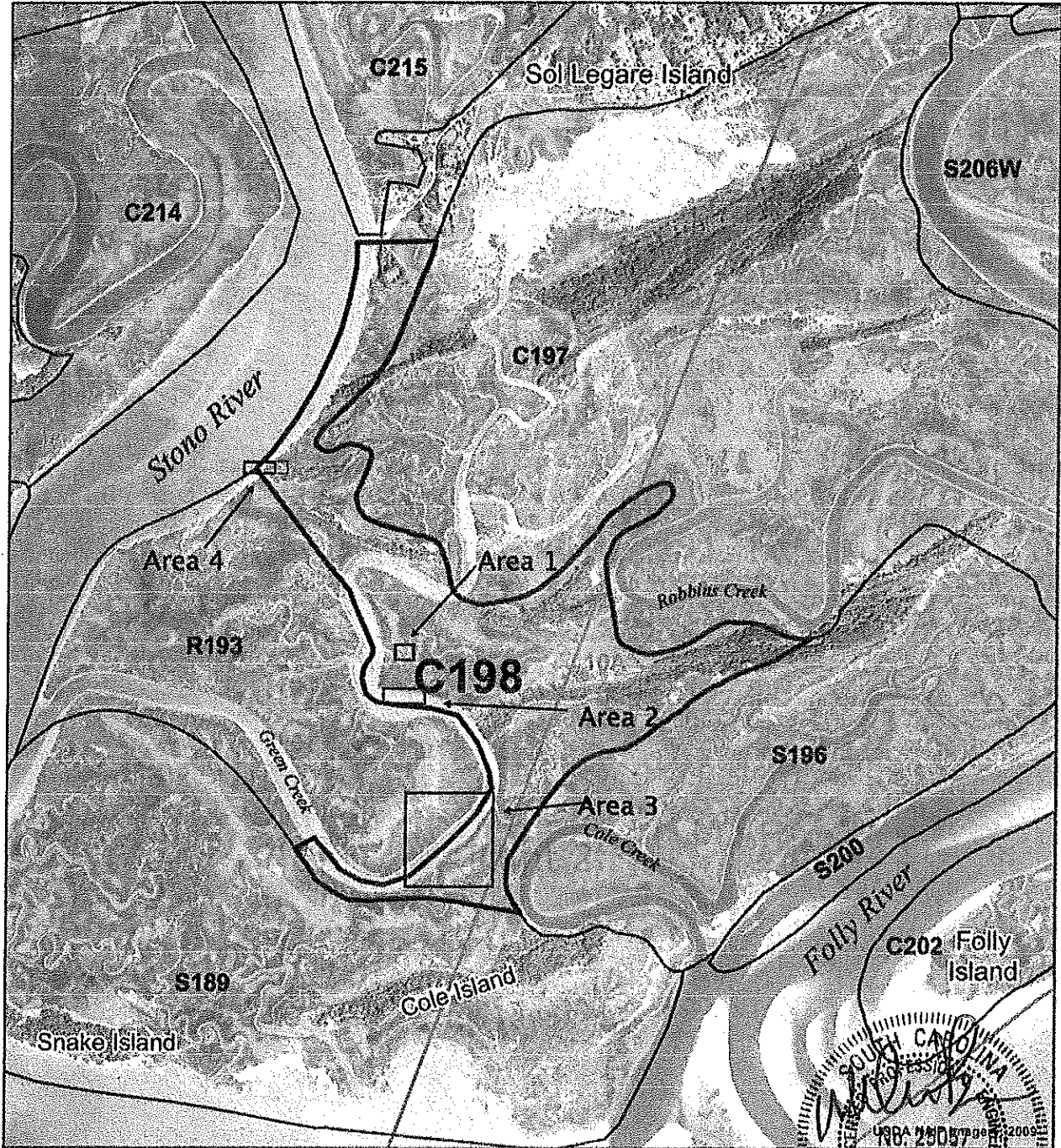
If there are any questions concerning this public notice, please contact Tracy D. Sanders, Project Manager, at 843-329-8190 or toll free at 1-866-329-8187.

Acraege
 Subtidal: 0.0
 Intertidal: 1.4

CULTURE PERMIT C198

LOCATION: Intertidal portions of Green Creek and Stono River.
 COUNTY: Charleston

C198 is located within
 SCDHEC Shellfish
 Management Area 10A and
 11. These areas are
 subject to closure at any
 time. Please call (803) 285-
 1618



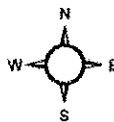
Legend

SHELLFISH HARVEST BOUNDARIES

- AREA OF INTEREST
- NEIGHBORING AREAS
- C600 = COMMERCIAL CULTURE PERMIT
- C000 = GRANT PERMIT
- M000 = MARICULTURE PERMIT
- R000 = RECREATIONAL GROUND
- S000 = STATE SHELLFISH GROUND
- SHELLFISH MANAGEMENT AREAS (SCDHEC)

2016-18 SCDHEC SHELLFISH HARVEST CLASSIFICATIONS

- PROHIBITED
- RESTRICTED



0 0.1625 0.325 0.4875 0.65
 Miles

0 0.25 0.6 0.75 1
 Kilometers

PRODUCED BY:
 SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES
 OFFICE OF FISHERIES MANAGEMENT
 SHELLFISH MANAGEMENT SECTION
 08/2016

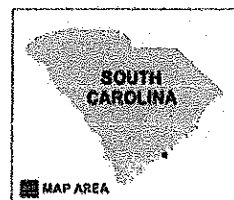
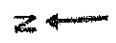


Figure 1

P/N #: SAC-2016-00360-2T

M198-B Top View

Growout Area 1/ Nursery Side Creek off Green Creek



Green Creek
Ebb ←
Flood
→ Finger Creek

-20 floating mesh nursery bags (36" L x 26" W x 4" T)
-cage to cage connection (3/8" line 4' long)
-66' Total Length
-4' Screw anchors (3 total)

Purpose: to construct soft nursery
mariculture bags.
Purposed: soft floating mariculture
bags
At: Green Creek
In: finger creek
County of Charleston, South Carolina
Date: 8-16-16

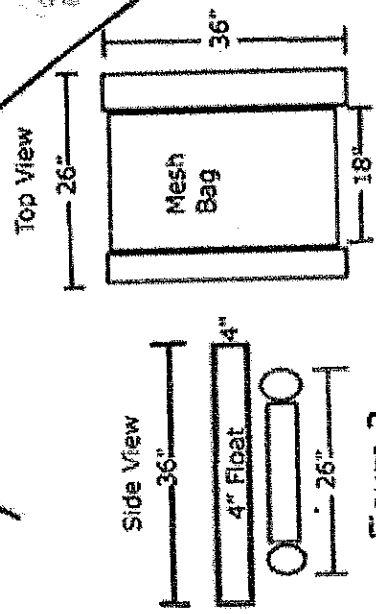
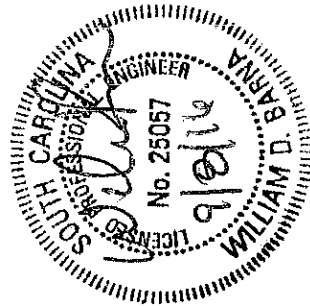
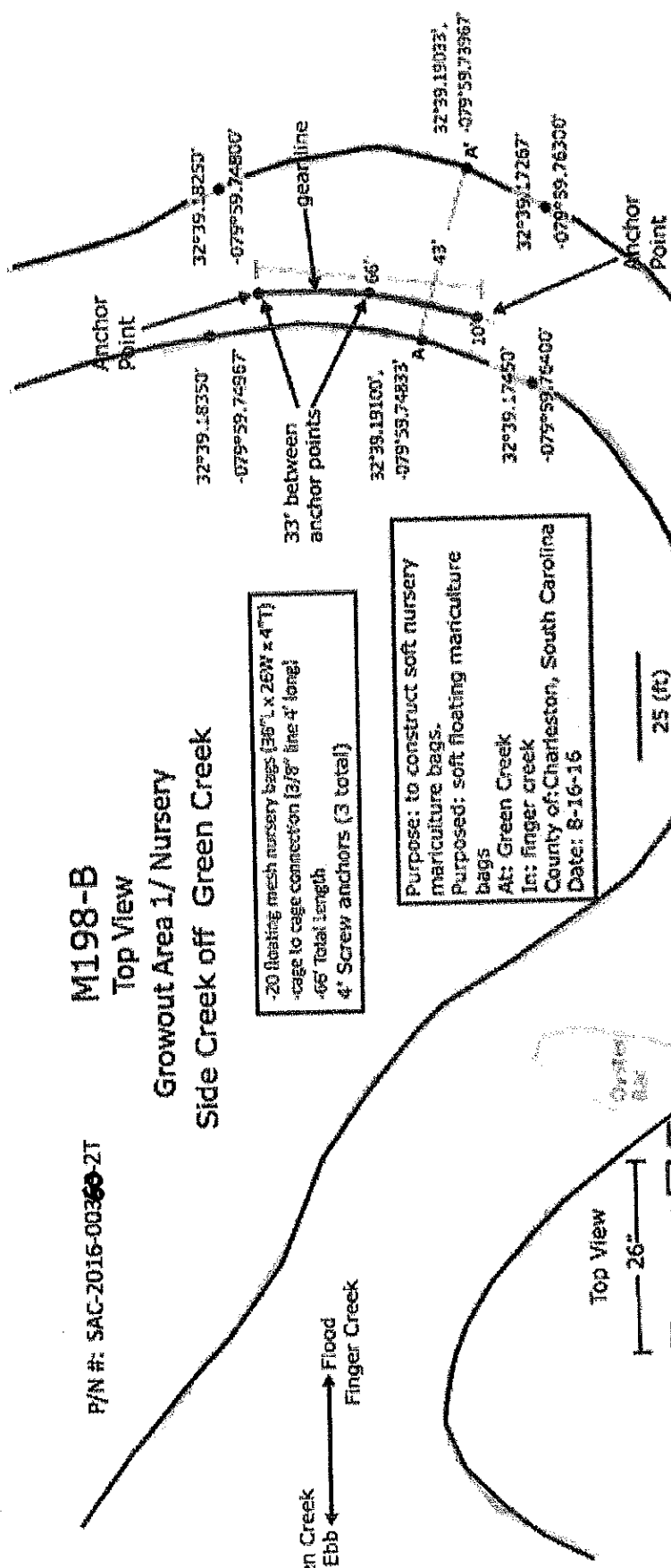
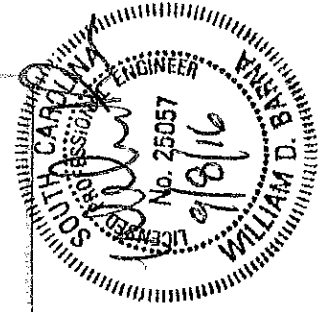
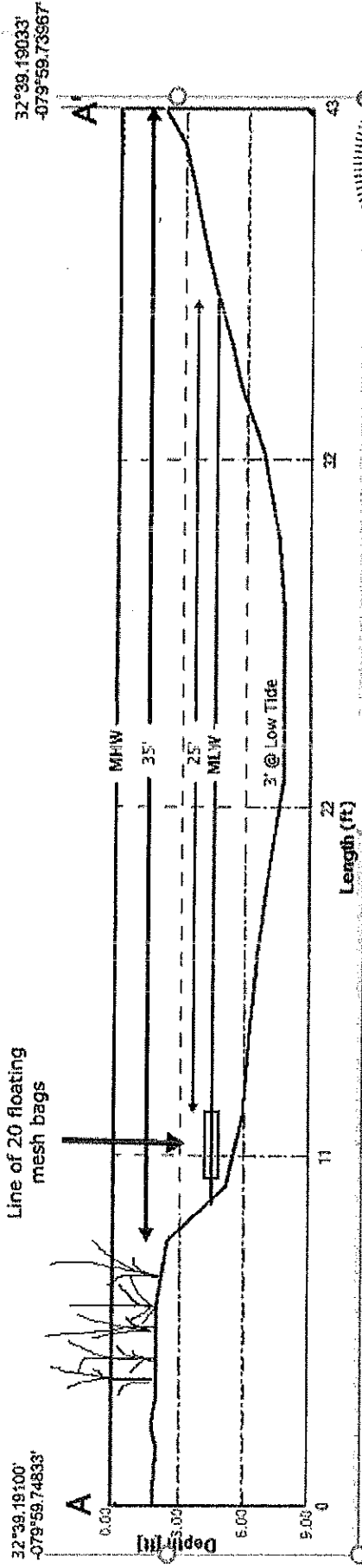


Figure 2

M198-B

Growout Area 1/ Nursery Transect A

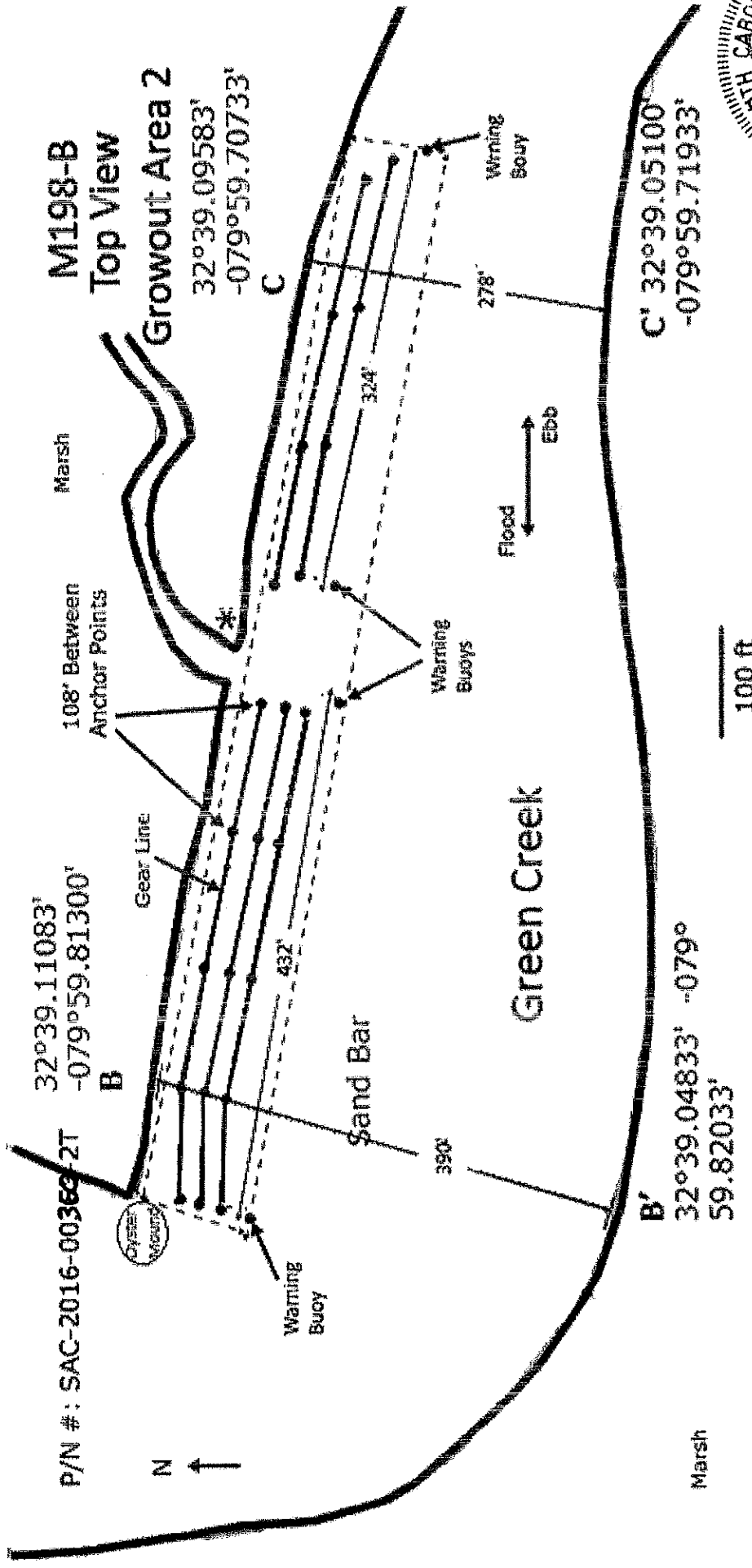
P/N #: SAC-2016-00360-2T



Purpose: To construct Oyster nursery flats
Proposed: Nursery mariculture floats (26"x36"x4")
At: Green Creek
In: Finger Creek
County of: Charleston
Date: 8-16-2016

-20 floating mesh nursery bags (36" L x 25W x 4")
-cage to cage connection (3/8" line 4' long)
-65' Total Length
4' Screw anchors (3 total)

Figure 3



M198-B
Top View

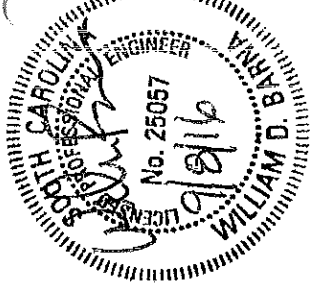
Growout Area 2
32°39.09583'
-079°59.70733'

32°39.11083'
-079°59.81300'

C' 32°39.05100'
-079°59.71933'

B' 32°39.04833' -079°
59.82033'

100 ft



<p>180 OysterGro units parallel to shore line OysterGro: 68" L X 40" W X 21" H 10 units between anchors 4' screw anchors (23 total) *Osprey nest/ camera post 20' at high tide.</p>	<p>Purpose: To construct OysterGro mariculture cages Proposed: Oyster mariculture cages At: Stono River In: Green Creek County of: Charleston, South Carolina Date: 8-16-2016</p>
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Figure 4

M198-B

Growout Area 2

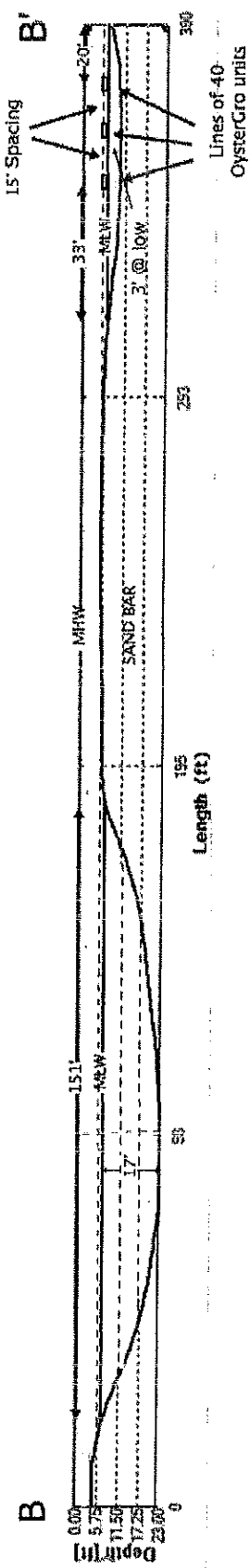
Transect B

Green Creek

P/N #: SAC-2016-00360-2T

32°39.11083',
-079°59.81360

32°39.04833',
-079°59.82033'



Purpose: To construct oysterGro mariculture cages
Proposed: OysterGro mariculture cages
At: Stono River
In: Green Creek
County of: Charleston
Date: 8-16-2016

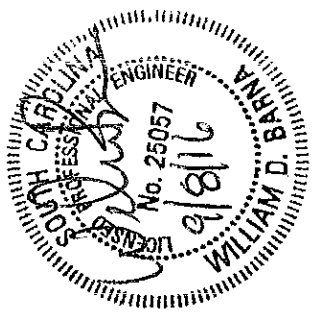


Figure 5

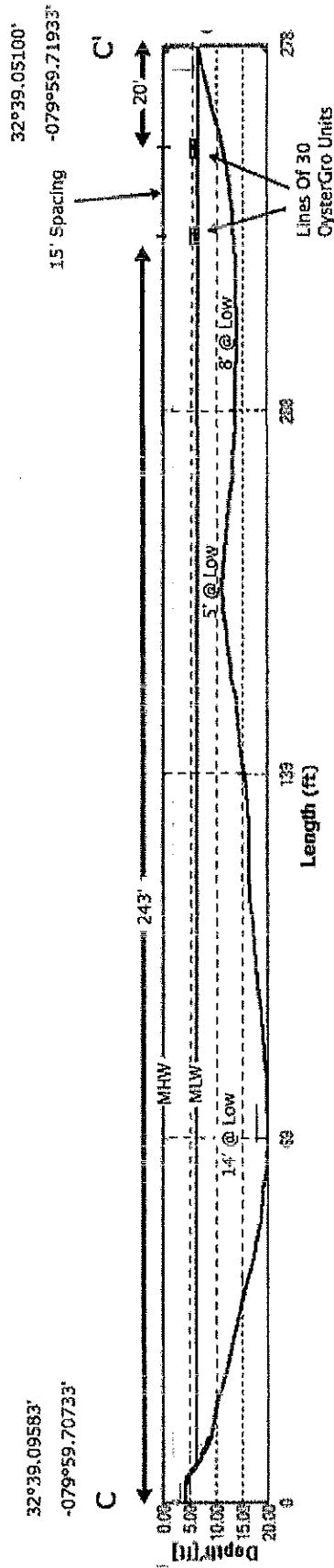
M198-B

Growout Area 2

Transect C

Green Creek

P/N #: SAC-2016-00360-2T



Purpose: To construct oysterGro mariculture cages
Proposed: OysterGro mariculture cages
At: Stono River
In: Green Creek
County of: Charleston
Date: 8-16-2016

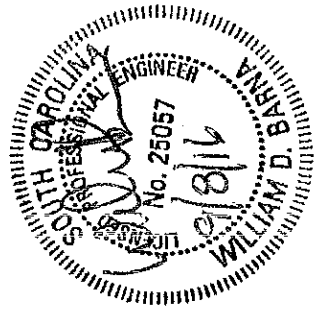
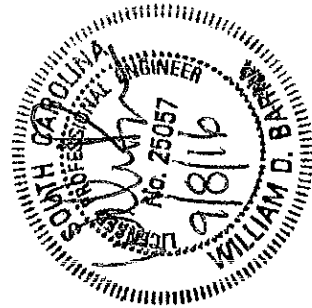
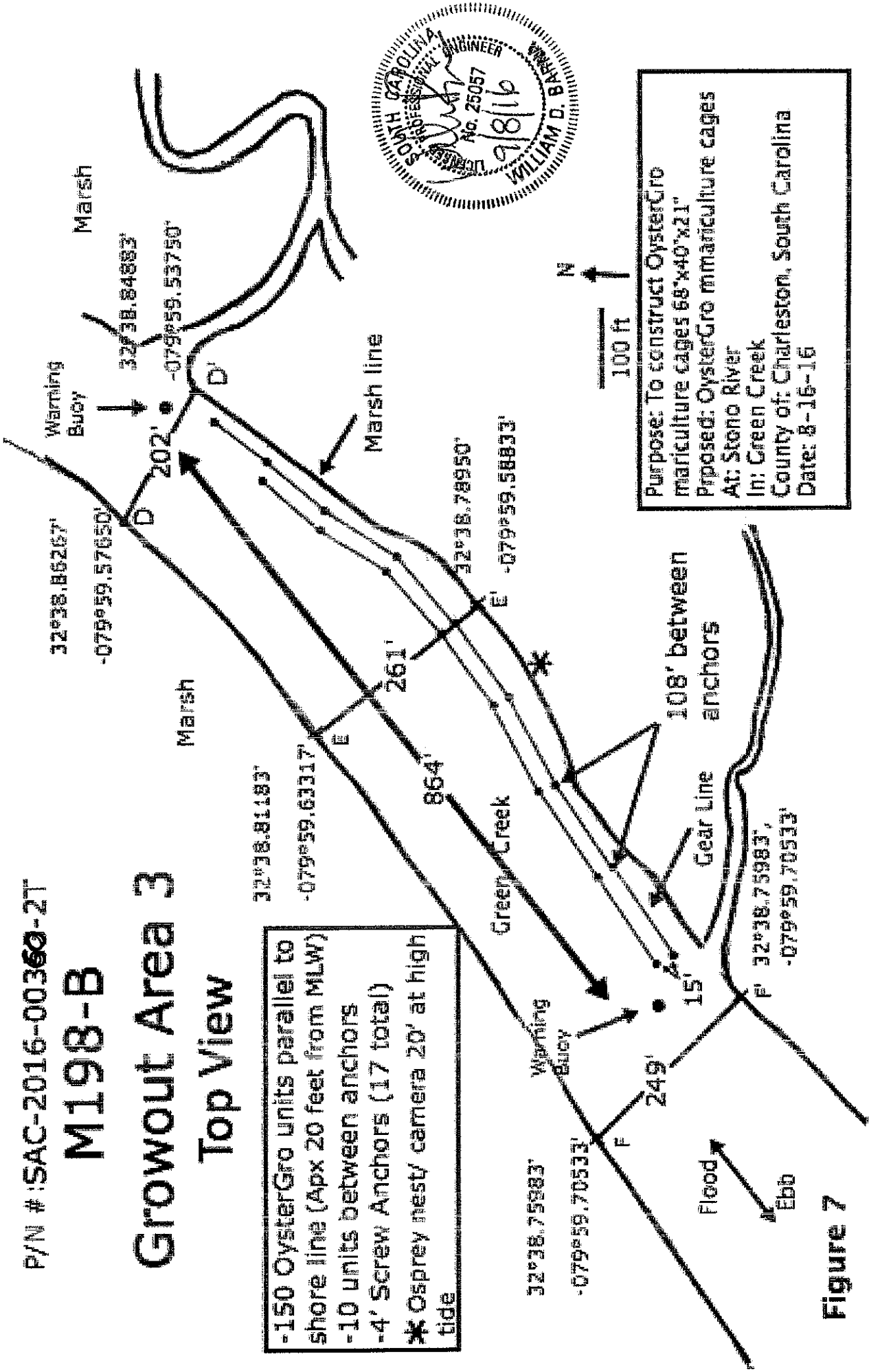


Figure 6

P/N # : SAC-2016-00360-2T
M198-B

Growout Area 3 Top View

-150 OysterGro units parallel to shore line (Apx 20 feet from MLW)
 -10 units between anchors
 -4' Screw Anchors (17 total)
 * Osprey nest/ camera 20' at high tide



Purpose: To construct OysterGro mariculture cages 66"x40"x21"
 Proposed: OysterGro mariculture cages
 At: Stono River
 In: Green Creek
 County of: Charleston, South Carolina
 Date: 8-16-16

Figure 7

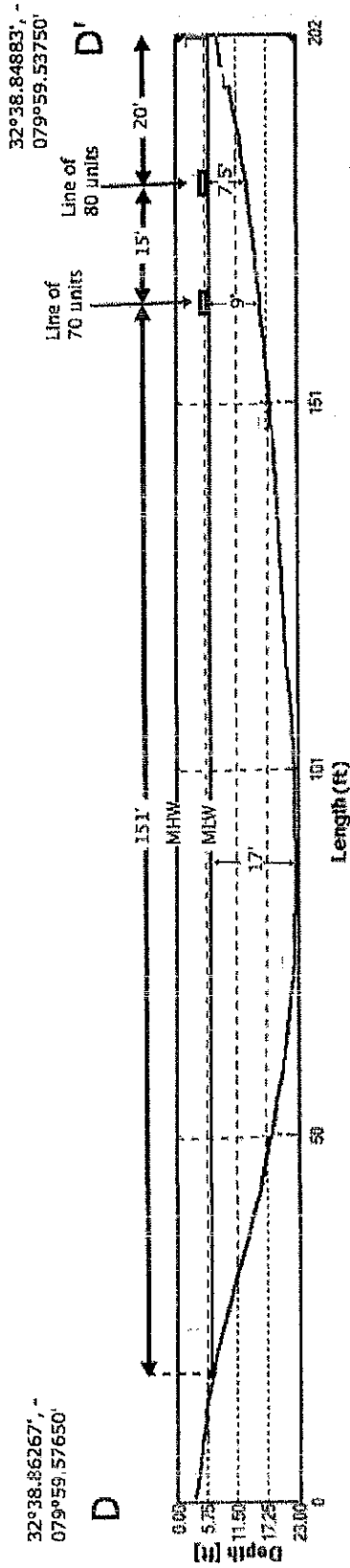
M198-B

Growout Area 3

Transect D

Green Creek

P/N #: SAC-2016-0036-2T



32°38.86267', -
079°59.57650'

32°38.84883', -
079°59.53750'

Line of
70 units

Line of
80 units

D

15'

20'

151'

MHW

MLW

101'

50'

17'

7.5'

9'

151

202

Depth (ft)

Length (ft)

Purpose: To construct OysterGro
mariculture cages
Proposed: OysterGro mariculture cages
At: Stono River
In: Green Creek
County of Charleston, South Carolina
Date: 8-16-16

~150 OysterGro units parallel to
shore line
~10 units between anchors
~4' Screw Anchors (17 total)

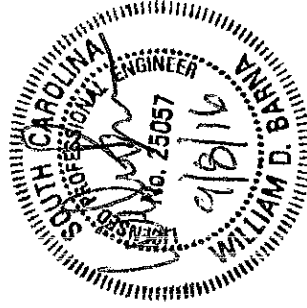


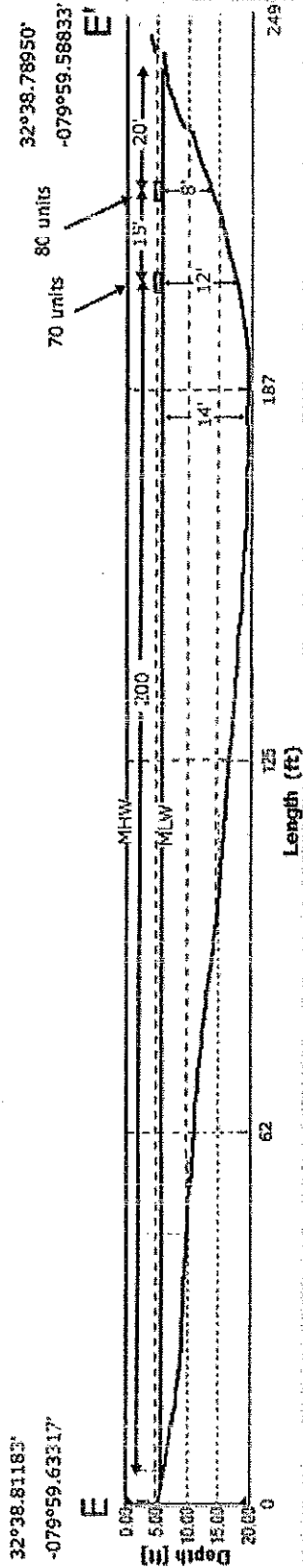
Figure 8

Growout Area 3
M198-B

Transect E

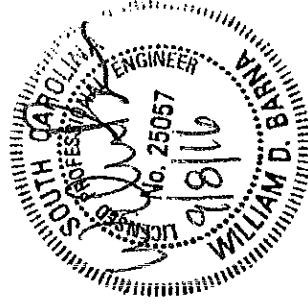
Green Creek

P/N #: SAC-2016-003602T



~150 OysterGro units parallel to shore line ~10 units between anchors ~4' Screw Anchors (17 total)	Purpose: To construct OysterGro mariculture cages Proposed: OysterGro mariculture cages At: Steno River In: Green Creek County of: Charleston, South Carolina Date: 8-16-16
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Figure 9



M198-B

Growout Area 3

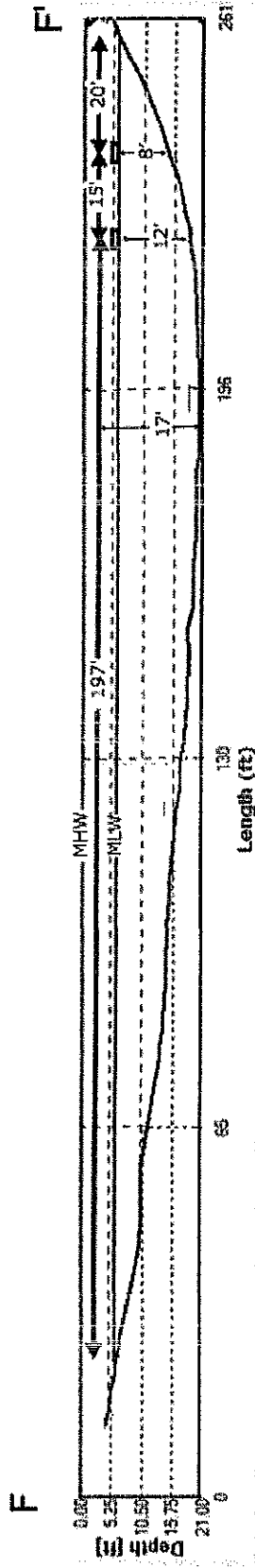
Transect F

Green Creek

P/N #: SAC-2016-00360-2T

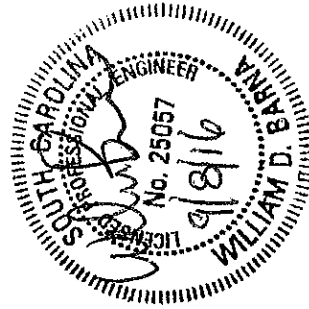
32°38.75983'
-079°59.70533'

32°38.75983'
-079°59.70533'



<p>-150 OysterGro units parallel to shore line -10 units between anchors -4' Screw Anchors (17 total)</p>	<p>Purpose: To construct OysterGro manifacure cages Propose: OysterGro manifacure cages At: Stono River in: Green Creek County of: Charleston, South Carolina Date: 8-15-16</p>
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Figure 10

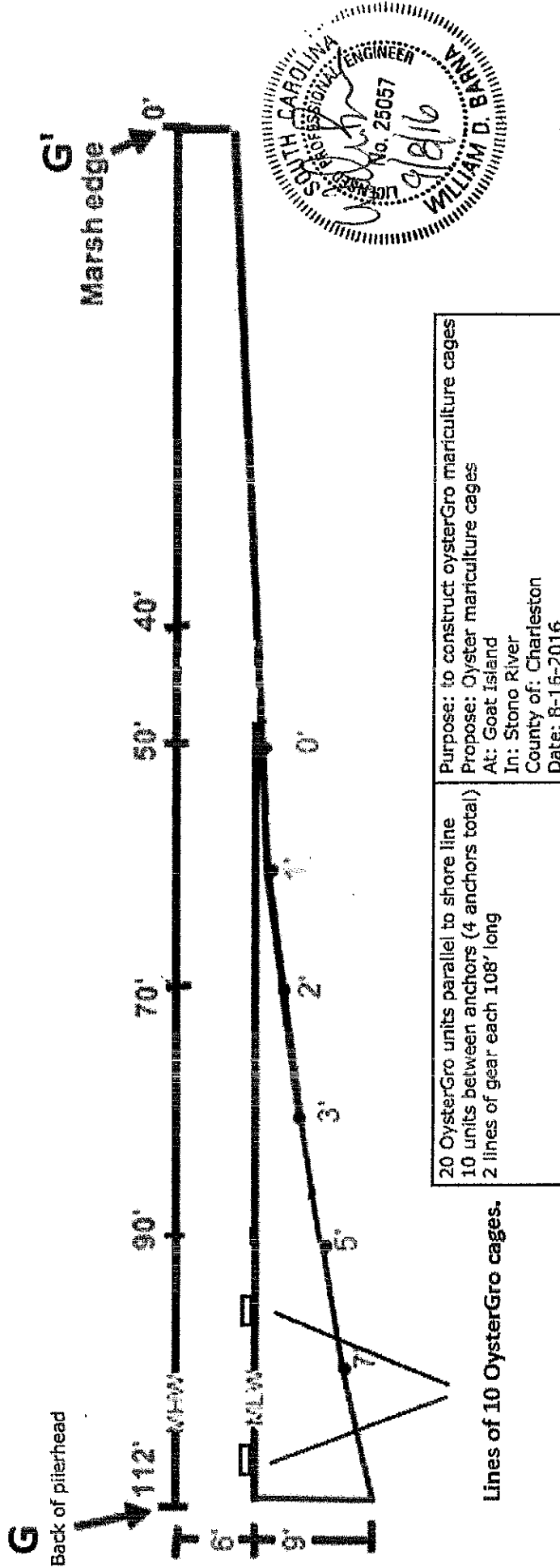


32°39.61867'
-080°00.11383'

P/N #: SAC-2016-00360-2T

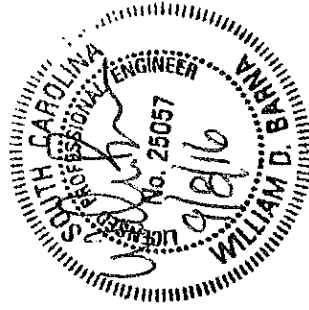
32°39.60433'
-080°00.09867'

M198-B Transect G Wet Storage



Lines of 10 OysterGro cages.

Figure 11



P/N #: SAC-2016-00350-2T

M198-B
Area 4 Wet Storage
East Bank Stono River



100 feet

Flood
Stono River
Ebb

10'x40' floating
dock to be built
pending permit

90 Off-bottom units to be deployed
along 300' low intertidal zone
pending permit #: SAC-2016-00353
(M-198-A)

32°39'35.95"
-80°00'08.17"

MUW line

Marsh edge
32°39'15.14"
-80°00'08.94"

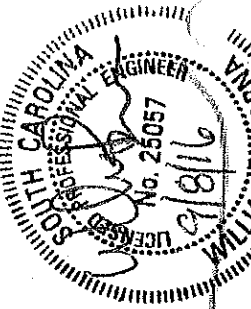
32°39'29.25"
-80°00'02.57"

32°39'36.47"
-80°00'03.00"

Marsh

Anchors
Gear lines
112'
6'
6'112'

20 OysterGro units parallel to shoreline
10 units between anchors (two lines)
108' between anchors
6' screw anchors (4 total)
* Osprey nest/ camera 20' at high tide



Marsh

Goat Island

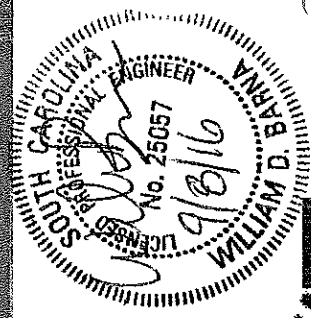
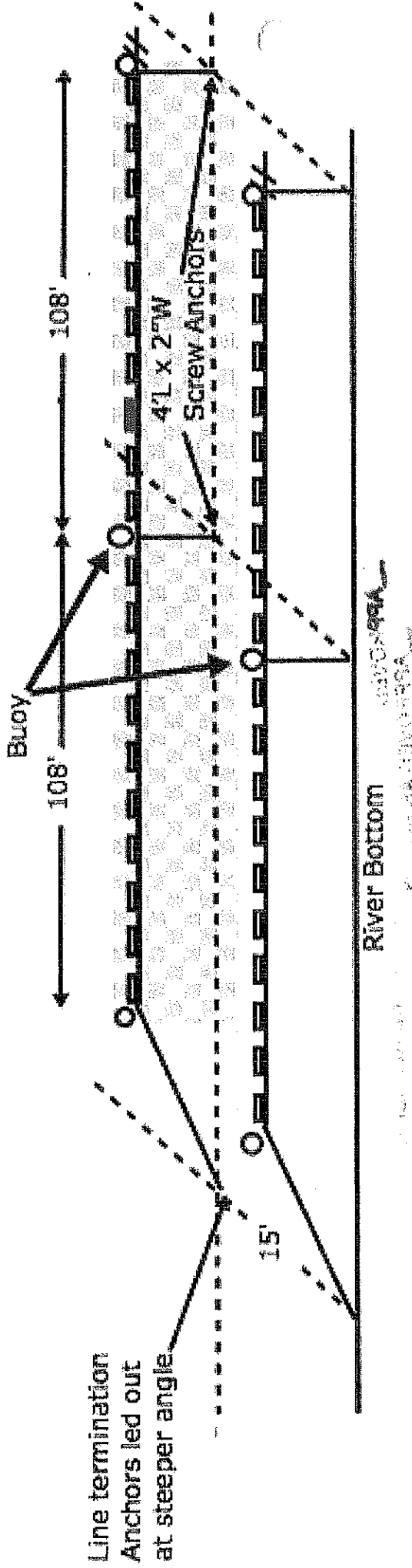
Purpose: To construct OysterGro Mariculture Cages
Proposed: OysterGro mariculture cages 68'x40'x21"
At: Goat Island
In: Stono River
County of: Charleston
Date: 8-16-2016

Figure 11

Anchoring Diagram
For: Areas 2-4

M198-B

Top View



Side View

1/2" - 5/8" rope
4' lengths with
chalf gear

Note: Anchoring for area 1 will
be done in similar fashion only
scaled down for single floating
bags in line

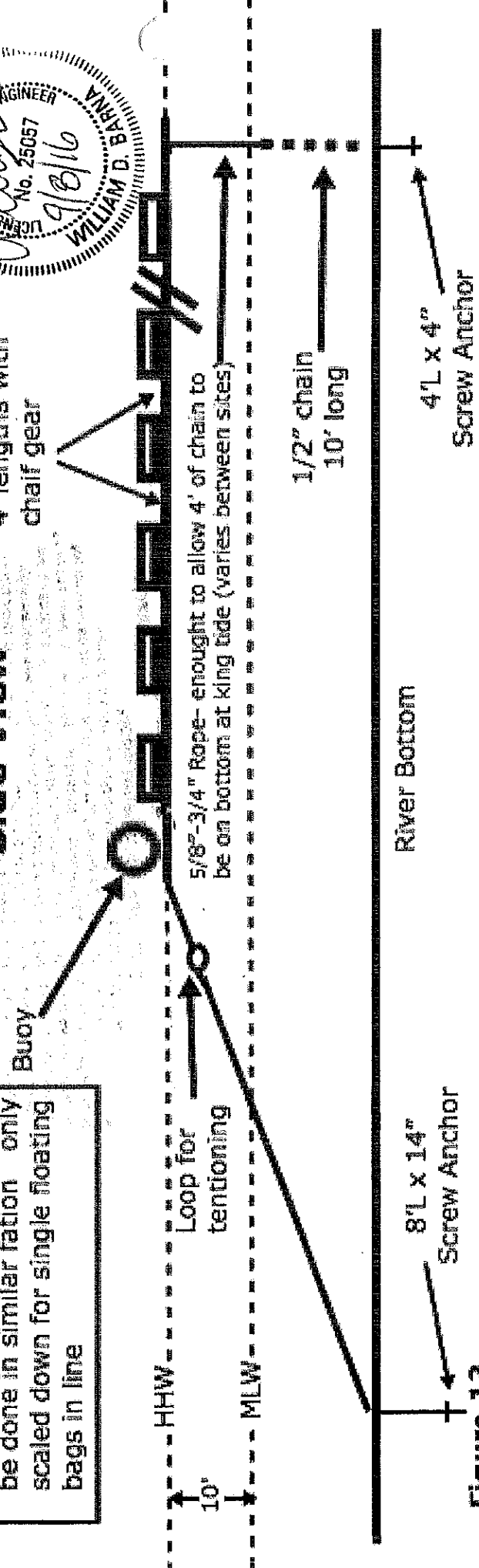
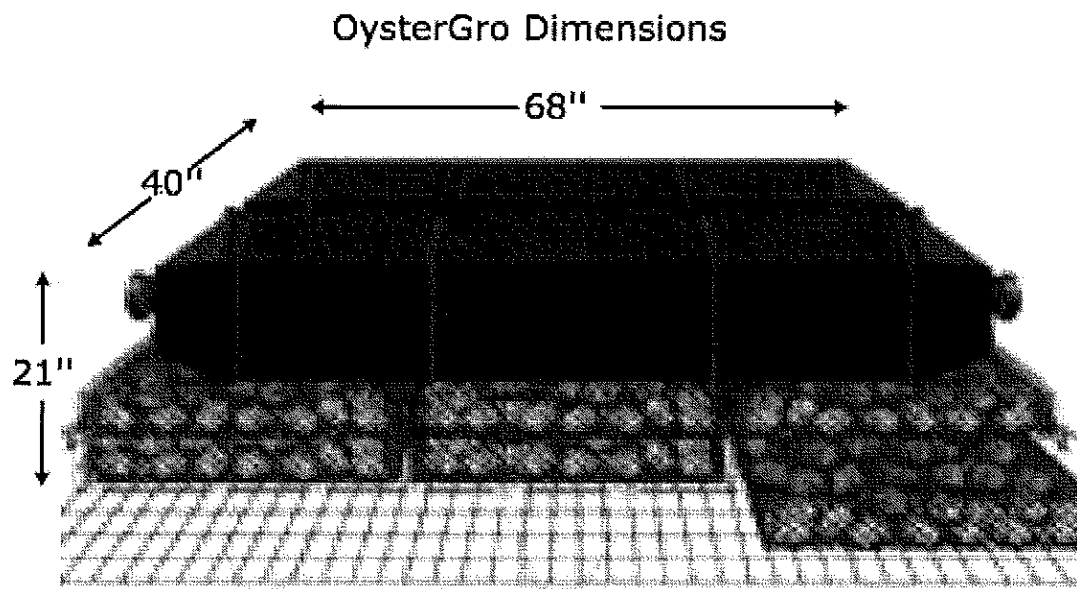


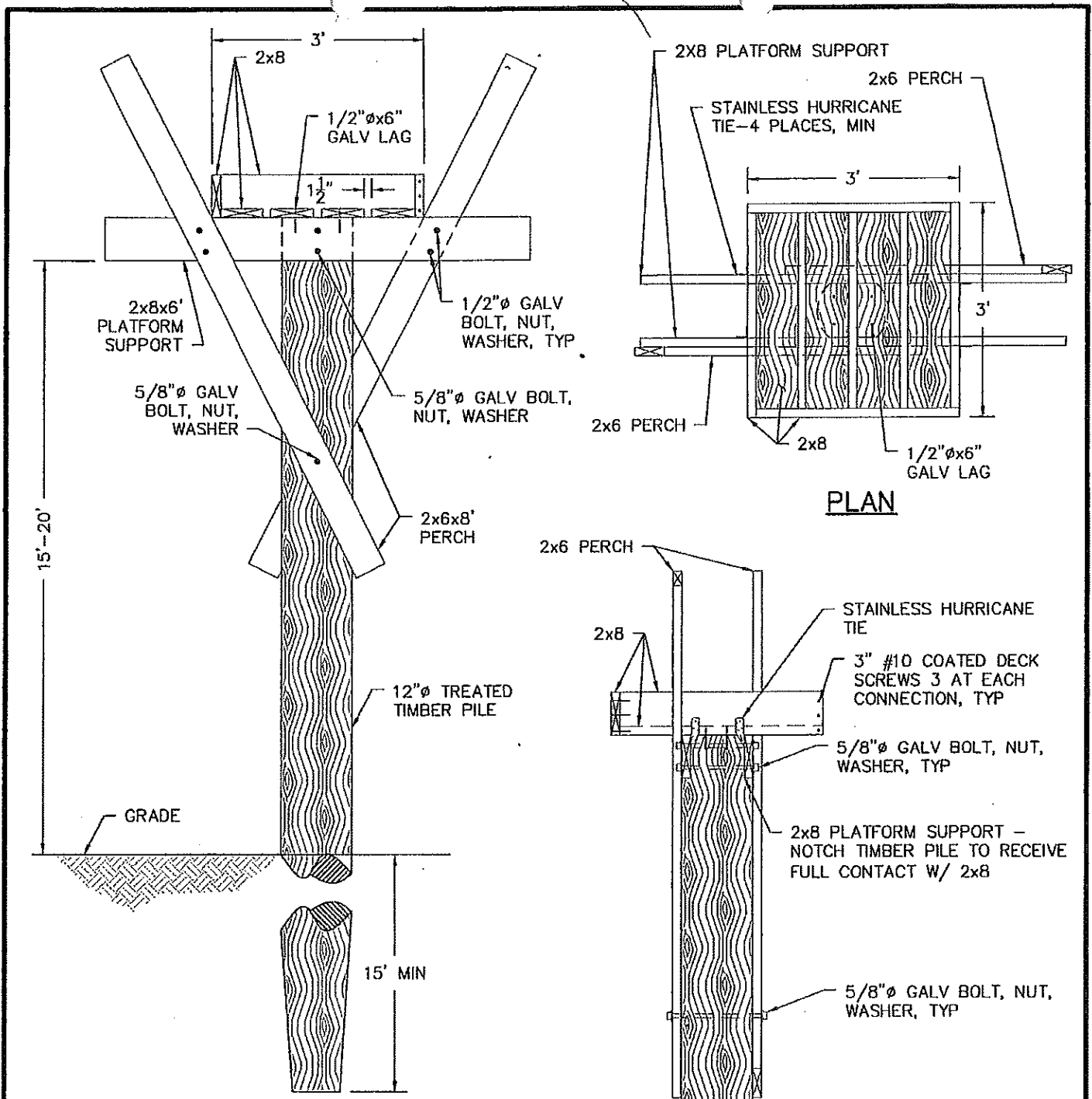
Figure 13

P/N #: SAC-2016-00353-2T

M198-B



180 units in Area 2, 150 units in Area 3, and 20 units in Area 4.
350 units total



****NOTE**** FOR ALL 2x8 CONNECTIONS USE 3" #10 COATED DECK SCREWS

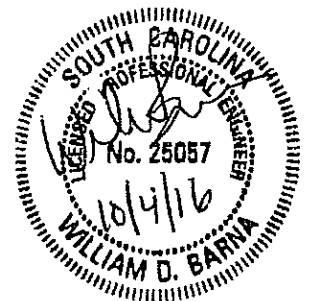
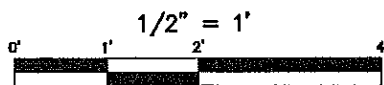


FIGURE 1
OSPREY NESTING PLATFORM



SHEET: 1 OF 1 DATE: 10/4/16

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