



REPLY TO
ATTENTION OF:

South Mississippi Branch
Regulatory Division

January 30, 2015

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

JOINT PUBLIC NOTICE SAM-2013-00088-MJF
U.S. ARMY CORPS OF ENGINEERS

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF POLLUTION CONTROL

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
DMR-140197

PROPOSED
CREATION OF MARSH HABITAT, PLACEMENT OF OYSTER CULTCH; ACCESS CHANNEL
DREDGING AND SIDECASTING; AND CONSTRUCTION OF BREAKWATERS,
HANCOCK COUNTY, MISSISSIPPI

TO WHOM IT MAY CONCERN:

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Please communicate this information to interested parties.

APPLICANT: **Mississippi Department of Environmental Quality**
Attention: Mr. Richard Harrell
Post Office Box 2261
Jackson, Mississippi 39225

AGENT: **Covington Civil and Environmental, LLC**
Attention: Ms. Alane Young
2510 14th Street, Suite 1010
Gulfport, Mississippi 39501

LOCATION: **In the Mississippi Sound, between Bayou Caddy and the mouth of the East Pearl River, Section 11, Township 10 South, Range 15 West, Hancock County, Mississippi**
[Bounding Coordinates: West – (-89.530W/30.184N) South – (-89.462W/30.169N) East – (-89.415W/30.233N) North – (-89.53W/30.184W) Centroid – (-89.457W/30.19N).

WORK: The applicant proposes to place fill material for the creation of 46 acres of salt marsh; place fill material for the creation of 46 acres of oyster cultch; construct 5.9 miles of breakwater structures; and dredge approximately 650,000 cubic yards of material for the construction of 55,008-linear feet of barge access channels. **Please note, the following is not the final design for the project, but the maximum proposed. The final decision of construction methods will be made during the final design period, which is expected to begin in March 2015.**

Breakwaters would be constructed at two locations: approximately 4 miles along St. Joseph’s Point and approximately 1.9 miles from the Pearl River to Heron Bay. The breakwaters would be installed in segments with each segment being approximately 75 feet with 25-foot gaps between segments. The breakwaters would consist of marine mattresses filled with riprap and some, or all, could be covered by a 9-inch thick layer of bagged oyster shell on the seaward side of the structure and crest. The structure would have a 15-foot crest width and 30-foot width at the base, and be approximately 3.75-feet in total height, with a total footprint of approximately 19.9 acres. The gap areas would also contain a single layer marine mattress. The target depth for deployment of the St. Joseph’s segment would be approximately -3.5 feet MLLW, but could be between -3.0 and -5.0 MLLW. The volume of material at the St. Joseph’s segment would be approximately 51,600 cubic yards of riprap and 16,400 cubic yards of shell. The target depth for deployment of the Pearl River-Heron Bay segment would be approximately -3.5 feet MLLW, but could be between -2.0 and -5.0 MLLW. The volume of material at the Pearl River-Heron Bay segment would be approximately 16,900 cubic yards of riprap and 6,300 cubic yards of shell. A layer of geotextile fabric would be placed under each marine mattress to minimize settlement. The mattresses would be constructed on shore and transported and deployed by barge. Barriers, navigation warning signs (up to approximately 185, lighted), and other safety devices would be installed along the work area to protect boaters as required.

Preliminary breakwater specifications:

Living Shoreline (Breakwater) Design Data	St. Joseph’s Point Breakwater (eastern reach)	Pearl River to Heron Bay Breakwater (western reach):
Total project length	Approx. 4 miles	Approx. 1.9 miles
Total project acreage	14.4 acres	5.5 acres
Crest width	15.0 feet	15.0 feet
Base width	30 feet	30 feet
Assumed bottom elevation	-3.5 MLLW	-3.5 MLLW
Total structure height	3.75 feet	3.75 feet
Bagged shell veneer thickness	9 inches	9 inches
Riprap Core volume	51,600 cubic yards	16,900 cubic yards
Bagged shell volume	16,400 cubic yards	6,300 cubic yards
Depth of material (riprap/marine mattress)	3 feet	3 feet
Estimate initial settlement	1 foot	1 foot
Design side slopes	2v:1h	2v:1h
Breakwater distance from shoreline	30’-90’	30’-90’
Reach of each breakwater	75 feet	75 feet
Length of each gap between breakwater	25 feet	25 feet

The installation of the breakwaters and deployment of proposed oyster cultch in Heron Bay would require the dredging of access channels to facilitate access for work barges into the work area. The channels would be excavated parallel to the alignment of the two breakwater segments with additional channels excavated perpendicular to these channels to provide access from the Mississippi Sound. All excavated dredged material not used for

marsh creation (see below) would be cast on the seaward side of the channels, covering approximately 22.9 acres. The applicant anticipates the channels to fill in naturally in five years (based on project engineer and contractor experience). A sediment transport study will be conducted to address the redeposition of the proposed flotation channels. The proposed channels would be dredged to -8.0 MLLW. Bottom width would be approximately 80 feet with 3H:1V side slopes. Total length of proposed channels would be 55,008 linear feet with a footprint of 101 acres.

Creation of 46 acres of salt marsh. The applicant proposes the placement of fill material for the construction of 46 acres of tidal marsh. Selected areas behind the proposed St. Joseph's Point breakwater totaling 46 acres would be backfilled with dredged material and allowed to re-vegetate by natural colonization of estuarine marsh species. It is anticipated that a dike (containment structure) would be constructed at the seaward extent of the marsh. The dike would be constructed by excavating existing material from the landward side of the proposed dike location, but not borrowing from existing marsh. Once an area of the marsh is diked, the area landward of the dike would be filled with dredged material until final marsh grades are achieved. Sediment would be pumped through a floating pipeline from a hydraulic dredge located where suitable fill material is available. Pumps and sediment controls would remain in place throughout the dredging and filling process and after initial settling. Dredged material would be obtained through the Mississippi Beneficial Sediment Use Program as available or excavated from a suitable borrow source. Once the entire marsh area(s) is constructed, the area would be monitored for natural re-vegetation. The applicant anticipates natural vegetative colonization would occur within one to three years.

Placement of 46 acres of oyster cultch. The applicant proposes to deploy oyster cultch over approximately 46 acres in Heron Bay in areas that currently support or previously supported oyster production. Oyster cultch deployment would occur generally in water depths of -3 to -5 feet MLLW. The reef(s) would be sited based on data from an oyster presence survey and would consist of approximately 6- to 9-inch thick layer of oyster shell or limestone. These locations would be marked with buoys or poles. Deployment would be by a barge-mounted crane with clam shell bucket. As a construction alternative, water jetting of cultch material may be used in case of water depth constraints. Access channels discussed previously would be used to provide access to the oyster cultch area.

The applicant proposes to conduct post-construction performance monitoring for a period of seven (7) years following completion. The applicant proposes to monitor the project's performance with respect to erosion control, marsh habitat creation, and the support of secondary productivity. Information collected and evaluated would include water quality parameters; structural integrity of breakwater structure; height/elevation and area of structure; consolidation rate of breakwater structure; shoreline profile; bivalve density, size, biomass and survival; non-bivalve invertebrate density and biomass; and percent cover of marsh vegetation. The applicant states that the project would incorporate a mix of long-term monitoring efforts to ensure project designs are correctly implemented during construction, and to identify any potential unanticipated erosion/sediment accumulation issues associated with the project. Corrective actions would be addressed through the maintenance budget included in the overall project budget.

EXISTING CONDITIONS: The project is located in open water within the Mississippi Sound and Heron Bay. This area is a relatively shallow water habitat. Recent sampling within the project footprint found soft silty clays with an interbedded layer of loose silty sands from East Pearl River to Heron Bay. The area westward of Heron Bay contained sediments consisting primarily of soft silty clays. Current resources within the project area consist of estuarine and marine wetlands and shallow water habitats such as tidal creeks, lagoons, bayous, and bays along the Pearl River estuary, the Hancock County marsh shoreline, and the Mississippi Sound.

PROJECT PURPOSE: As stated by the applicant, “The purpose of this project is to employ living shoreline techniques including natural and artificial breakwater material and marsh creation to reduce shoreline erosion by dampening wave energy while encouraging reestablishment of habitat that was once present in the region”. The U.S. Army Corps of Engineers (Corps) initially determined the basic project purpose is shoreline protection and would be considered a water dependent activity. Additional review will be performed by the Corps and cooperating agencies.

ALTERNATIVES: The Corps’ initial review of alternatives submitted by the applicant consists of two sites in addition to the proposed location, all located within southwestern Hancock County; two on-site alternative construction methods; and a “no action” alternative. Additional review of alternatives will be performed by the Corps and cooperating agencies.

MITIGATION: No mitigation was proposed by the applicant. The agent for the applicant states: “The applicant has designed the project to avoid and minimize impacts to waters of the U.S. The proposed project is an environmental restoration project, intended to accelerate meaningful restoration of injured natural resources and their services resulting from the *Deepwater Horizon* Oil Spill and related response actions (the Spill). The Hancock County Marsh, one of the largest remaining intact marsh habitats in Mississippi, was not only directly impacted by oiling from the Spill, but it is experiencing high rates of shoreline erosion and marsh loss. The project would include shoreline/marsh protection, marsh creation, subtidal reef restoration, and increased benthic secondary productivity, thus providing net positive long-term benefits to hydrology and water quality, living coastal and marine resources, socioeconomics, tourism and recreation. Thus, no compensatory mitigation is required.” Additional review of mitigation requirements will be performed by the Corps and cooperating agencies. Final compensatory mitigation will be evaluated by the Corps and cooperating resource agencies throughout the review process for the proposed project.

The applicant has applied for certification from the State of Mississippi in accordance with Section 401(a)(1) of the Clean Water Act and upon completion of the required advertising; a determination relative to certification will be made.

The applicant has applied for coastal zone consistency from the State of Mississippi Department of Marine Resources in accordance with Section 57-15-6 of the Mississippi Code Annotated. (DMR-140157.

This public notice is being distributed to all known interested persons in order to assist in developing facts on which a decision by the Corps can be based. For accuracy and completeness of the record, all data in support of or in opposition to the proposed work should be submitted in writing setting forth sufficient detail to furnish a clear understanding of the reasons for support or opposition. The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and in general, the needs and welfare of the people.

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 proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for this proposal. 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 proposed activity. Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held for consideration of this application. Requests for public hearings shall state with particularity, the reasons for holding a public hearing.

Evaluation of the probable impacts involving deposits of dredged or fill material into waters of the United States will include the application of guidelines established by the Administrator of the U.S. Environmental Protection Agency.

In accordance with Section 106 of the National Historic Preservation Act, and Appendix C of 33 CFR 325, the undertaking defined in this notice is being considered for the potential to effect cultural and historic properties within the permit area. In accordance with Appendix C of 33 CFR Part 325, the Corps has determined that the permit area is the overall project footprint and nearby surrounding environment. The National Park Service, National Register of Historic Places (NRHP) database has been consulted and the applicant performed a Cultural Resource Feasibility Study. The Feasibility Study included a desktop study of the project area (MDAH records, NOAA Shipwreck database), and a field magnetometer survey of the proposed breakwater footprint. Several prehistoric terrestrial sites are known to be located within or near the project area, as well as several shipwrecks. The proposed project **may have potential to cause effects** on cultural resources in the permit area. A Cultural Resource survey is recommended. We are seeking comment from the State Historic Preservation Officer, federally-recognized American Indian tribes, local historical societies, museums, universities, the National Park Service, in-house expertise, and the general public regarding the existence or the potential for existence of significant cultural and historic properties which may be affected by the work.

Preliminary review of this application and the U.S. Department of the Interior List of Endangered and Threatened Wildlife and Plants indicated the following species may be present onsite: the Gulf sturgeon (*Acipenser*) listed as threatened with critical habitat (TCH), the Green sea turtle (*Chelonia*) (T), the Kemp's ridley turtle (*Lepidochelys kempii*) (E), the Leatherback sea turtle (*Dermochelys comacea*) (E), the Hawksbill Sea Turtle (*Eretmochelys imbricate*) (E) the Loggerhead sea turtle (*Caretta caretta*) (T), the Piping Plover (*Charadrius melodus*) (TCH), and The West India manatee (*Trichechus manatus*) (E). Preliminary review of this application and the U.S. Department of the Interior List of Endangered and Threatened Wildlife and Plants for the 12-HUC watershed suggest that the proposed activity **may affect but is not likely to adversely affect** listed endangered or threatened species. Specifically, **the West India manatee, the Gulf sturgeon and its critical habitat and the Kemp's ridley, Loggerhead and Green sea turtles** may be affected by this project. The Hawksbill and Leatherback sea turtles are not typically found in nearshore and inshore coastal waters. The Piping plover utilizes beaches and mudflats. The proposed work will have no effect on the Piping plover as the project is not located within designated critical habitat and required habitat is not found within the project location.

By letter dated January 13, 2014, the **U.S. Fish and Wildlife Service** (USFWS), Deputy Deepwater Horizon Department of the Interior Natural Resource Damage Assessment and Restoration (NRDAR) Case Manager determined the proposed project may affect, but is not likely to adversely affect West Indian manatee and initiated an informal intra-service Section 7 consultation. The USFWS provided concurrence by signature dated January 24, 2014.

The National Oceanic and Atmospheric Administration (NOAA) Restoration Center requested **National Marine Fisheries Service** (NMFS) concurrence under Section 7 of the Endangered Species Act with their determination of "may affect, but not likely to adversely affect the green, hawksbill, Kemp's ridley, leatherback and loggerhead sea turtles, the Gulf sturgeon, smalltooth sawfish, and designated Gulf sturgeon critical habitat. Consultation was initiated on March 19, 2014 (SER-2014-12925). By letter dated April 11, 2014, NMFS-PRD (Protected Resources Division) provided concurrence with this determination providing applicant utilizes floating turbidity curtains, perform work within a May-October timeframe to avoid potential impacts to migrating Gulf sturgeon, and follows NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006; *Measures for Reducing Entrapment Risk to Protected Species*, revised May 22, 2012; and USFWS *Standard Manatee Conditions for In-Water Work*, dated 2011. By letter dated September 26, 2014, the NMFS removed the timeframe restrictions as well as the need for turbidity curtains.

Essential Fish Habitat (EFH). The proposal would impact approximately 19.9 acres for breakwaters, 101 acres for access channels, 22.9 acres for dredge spoil, 46 acres for marsh creation, and 46 acres for oyster cultch, for a total impact of 235.8 acres of marine substrate utilized by various life stages of red drum, shrimp, coastal migratory pelagic and highly migratory species. Our initial determination is that the proposed action **may affect but not likely to adversely affect** EFH or federally managed fisheries. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service (NMFS).

By electronic mail dated February 20, 2014, NOAA Restoration Center transmitted their EFH assessment to the NMFS-HCD (Habitat Conservation Division) for review and concurrence. By letter dated March 26, 2014, the NMFS Southeast Region's Habitat Conservation Division (SER HCD) issued concurrence with EFH assessment, stating "We concur with the EFH assessment

that the project may result in minor, adverse short-term impacts to EFH; however, the project is anticipated to result in long-term benefits to EFH. The SER HCD has no EFH conservation recommendations to provide pursuant to Section 305(b)(2) of the Magnuson-Stevens Act at this time. Further consultation is not necessary unless future modifications are proposed and such actions may result in adverse impacts to EFH”.

Correspondence concerning this Public Notice should refer to Public Notice Number **SAM-2013-00088-MJF** and should be directed to the District Engineer, U.S. Army Corps, of Engineers, Attention: Ms. Maryellen Farmer, 1141 Bayview Avenue, Suite 501, Biloxi, Mississippi 39530, Attention: USACE Biloxi Field Office, with a copy to the Mississippi Department of Environmental Quality, Office of Pollution Control, Attention: Ms. Florance Watson, P.E., Post Office Box 2261, Jackson, Mississippi 39225 and the Mississippi Department of Marine Resources, Attention: Ms. Willa Brantley, 1141 Bayview Avenue, Suite 501, Biloxi, Mississippi 39530.

All comments should be received no later than 30 days from the date of this Public Notice. If you have any questions concerning this publication, you may contact the project manager for this application, Ms. Maryellen Farmer at (228) 523-4116 or by email at maryellen.j.farmer@usace.army.mil. Please refer to the above Public Notice number.

For additional information about our Regulatory Program, please visit our web site at: www.sam.usace.army.mil/Missions/Regulatory.aspx.

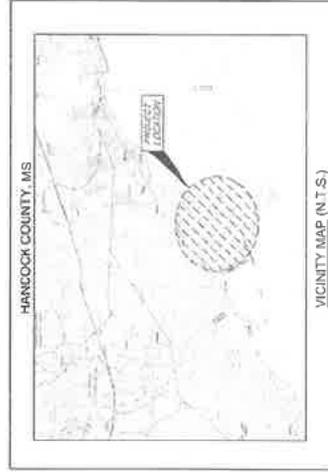
MOBILE DISTRICT
U.S. Army Corps of Engineers

Enclosures

PRELIMINARY DESIGN PLANS
 HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY, MS

TIER 3 EARLY RESTORATION PROJECT
 FOR
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
 AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

STATE OF MISSISSIPPI



PREPARED BY

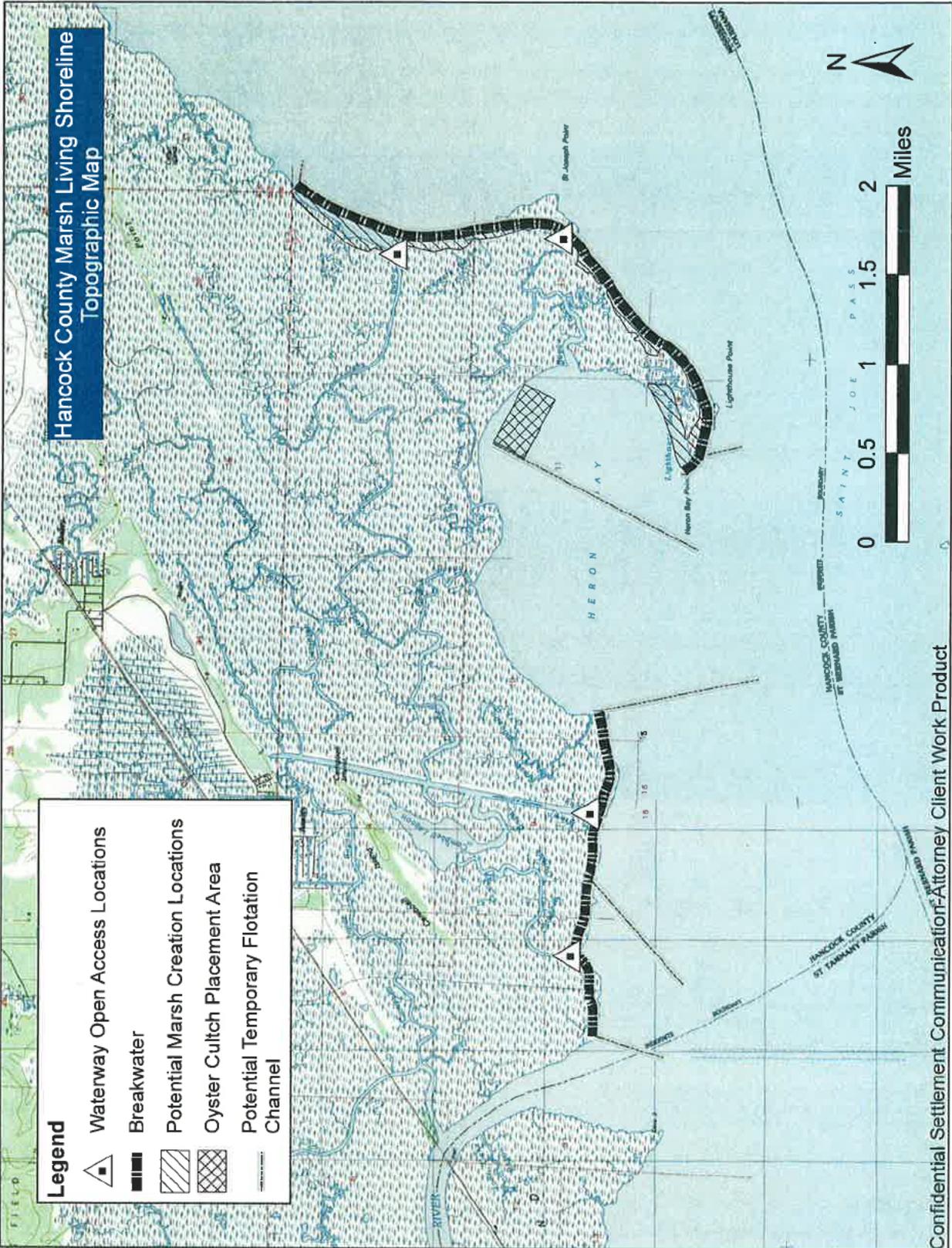


AUGUST 12, 2014

PRELIMINARY
 DOCUMENTS ARE NOT TO BE USED FOR
 CONSTRUCTION, BIDDING, RECORDATION,
 CONVEYANCE OR SALES.

INDEX OF SHEETS	
SHEET NUMBER	SHEET TITLE
1	TITLE SHEET
2	DRAWING INDEX
PROJECT PLAN VIEW - WEST OF HERON BAY	
C1.0	STA 0+00 - 28+00
C2.0	STA 28+00 - 56+00
C3.0	STA 56+00 - 84+00
C4.0	STA 84+00 - 100+28.59
PROJECT PLAN VIEW - EAST OF HERON BAY	
C5.0	STA 0+00 - 30+56
C6.0	STA 30+56 - 58+00
C7.0	STA 58+00 - 88+60
C8.0	STA 88+60 - 116+00
C9.0	STA 116+00 - 138+50
C10.0	STA 138+50 - 165+00
C11.0	STA 165+00 - 190+65.02
HERON BAY OYSTER REEF	
C12.0	HERON BAY OYSTER REEF AREA
MARSH CREATION	
C13.0	POTENTIAL MARSH CREATION AREAS
SECTIONS AND DETAILS	
C14.0	SECTIONS THRU STRUCTURE
C15.0	SECTIONS THRU OYSTER REEF

Hancock County Marsh Living Shoreline Topographic Map



Legend

- Waterway Open Access Locations
- Breakwater
- Potential Marsh Creation Locations
- Oyster Cultch Placement Area
- Potential Temporary Flotation Channel

Hancock County Marsh Living Shoreline Project Components



Legend

- ▲ Waterway Open Access Locations
- Breakwater
- ▨ Potential Marsh Creation Locations
- ▩ Oyster Cultch Placement Area
- Potential Temporary Flotation
- Channel

Produced by CCE Team
08/12/12

Map data is from the CCE Team, Mississippi Coastal Clearinghouse and ESR.

Coordinate System: NAD_83_UMZones16N
Projection: Transverse_Mercator

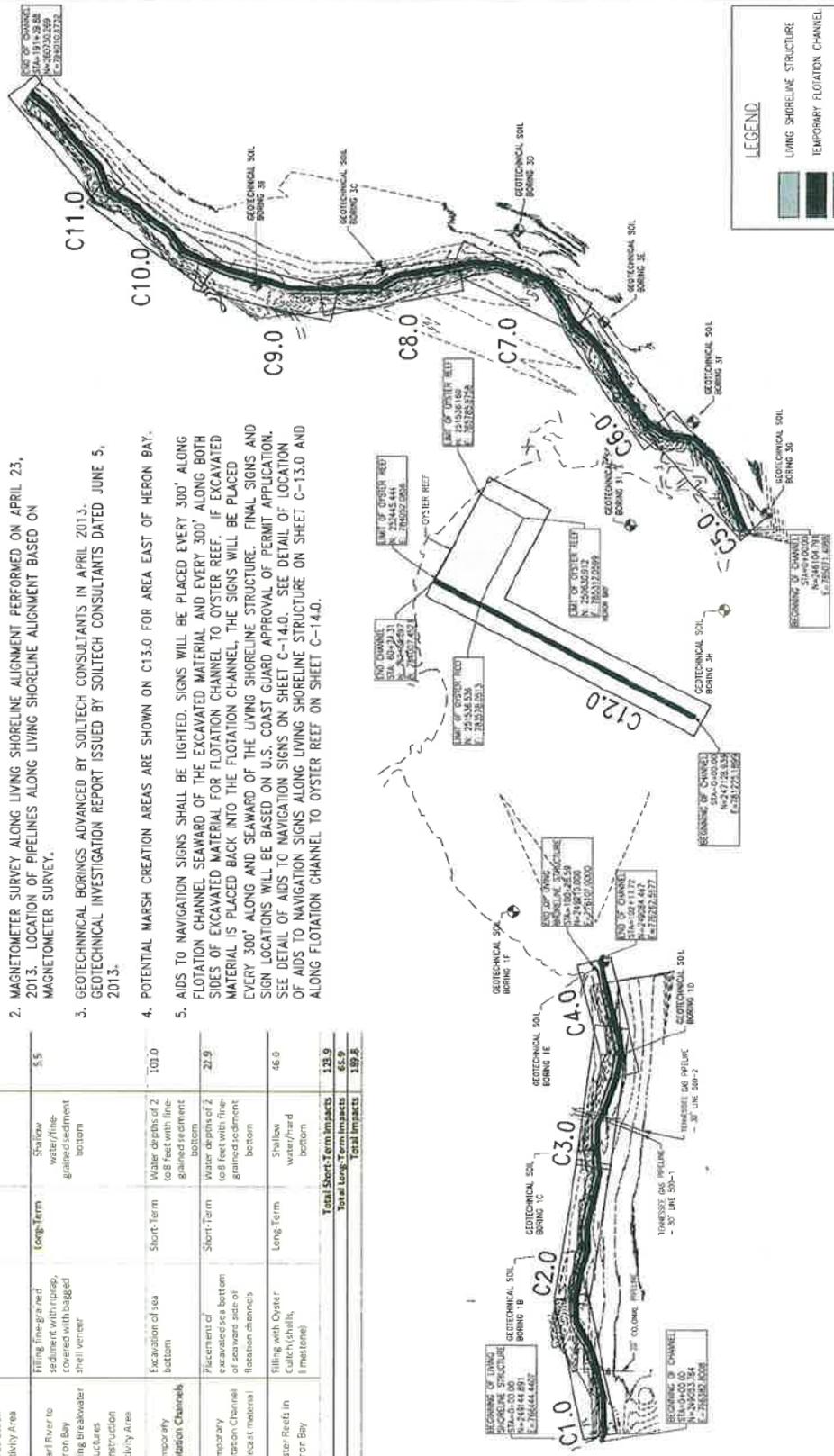
Neither the CCE Team nor the Mississippi Department of Environmental Quality make any warranties, expressed or implied, as to the accuracy, completeness, timeliness, reliability, or suitability for any particular purpose of the data contained on this map.

SUMMARY OF IMPACTS

Project Component	Impact Type	Duration of Impact	Habitat Type Impacted	Acres of Impact
St. Joseph's Point Area Living Breakwater Structures Construction Activity Area	Filling, fine-grained sediment with riprap, covered with bagged shell veneer	Long-Term	Shallow water/fine-grained sediment bottom	14.4
Fresh River to Heron Bay Living Breakwater Structures Construction Activity Area	Filling, fine-grained sediment with riprap, covered with bagged shell veneer	Long-Term	Shallow water/fine-grained sediment bottom	5.5
Temporary Rotation Channels	Excavation of sea bottom	Short-Term	Water depths of 2 to 8 feet with fine-grained sediment bottom	100.0
Temporary Flotation Channel Sill(s) & Weir(s)	Placement of excavated sea bottom on seaward side of flotation channels	Short-Term	Water depths of 2 to 8 feet with fine-grained sediment bottom	22.9
Oyster Reefs in Heron Bay	Filling with Oyster Culch (shells, limestone)	Long Term	Shallow water/hard bottom	46.0
Total Short-Term Impacts				178.9
Total Long-Term Impacts				65.9
Total Impacts				189.8

GENERAL NOTES:

1. CONTOURS AND APPROXIMATE SHORELINE BASED ON HYDROGRAPHIC SURVEYS PERFORMED ON APRIL 1 - 5, 2013, AND SEPTEMBER 12 - 13, 2014.
 - A. HYDROGRAPHIC SURVEYS INCLUDED A BASELINE ON THE SHORE AND TRANSECTS APPROXIMATELY EVERY 500' ALONG BASELINE.
 - B. APPROXIMATE SHORELINE ASSUMED TO BE 1.0' MSL FROM HYDROGRAPHIC SURVEYS.
2. MAGNETOMETER SURVEY ALONG LIVING SHORELINE ALIGNMENT PERFORMED ON APRIL 23, 2013. LOCATION OF PIPELINES ALONG LIVING SHORELINE ALIGNMENT BASED ON MAGNETOMETER SURVEY.
3. GEOTECHNICAL BORINGS ADVANCED BY SOILTECH CONSULTANTS IN APRIL 2013. GEOTECHNICAL INVESTIGATION REPORT ISSUED BY SOILTECH CONSULTANTS DATED JUNE 5, 2013.
4. POTENTIAL MARSH CREATION AREAS ARE SHOWN ON C13.0 FOR AREA EAST OF HERON BAY.
5. AIDS TO NAVIGATION SIGNS SHALL BE LIGHTED. SIGNS WILL BE PLACED EVERY 300' ALONG FLOTATION CHANNEL SEAWARD OF THE EXCAVATED MATERIAL AND EVERY 300' ALONG BOTH SIDES OF EXCAVATED MATERIAL FOR FLOTATION CHANNEL TO OYSTER REEF. IF EXCAVATED MATERIAL IS PLACED BACK INTO THE FLOTATION CHANNEL, THE SIGNS WILL BE PLACED EVERY 300' ALONG AND SEAWARD OF THE LIVING SHORELINE STRUCTURE. FINAL SIGNS AND SIGN LOCATIONS WILL BE BASED ON U.S. COAST GUARD APPROVAL OF PERMIT APPLICATION. SEE DETAIL OF AIDS TO NAVIGATION SIGNS ON SHEET C-14.0. SEE DETAIL OF LOCATION OF AIDS TO NAVIGATION SIGNS ALONG LIVING SHORELINE STRUCTURE ON SHEET C-13.0 AND ALONG FLOTATION CHANNEL TO OYSTER REEF ON SHEET C-14.0.



DATE: 11-20-14
 DRAWN BY: J. W. WOODRUFF
 CHECKED BY: J. W. WOODRUFF

1	DATE REVISION IN	11-20-14
2	DESCRIPTION OF REVISION	11-20-14
3	DATE REVISION IN	11-20-14
4	DESCRIPTION OF REVISION	11-20-14
5	DATE REVISION IN	11-20-14
6	DESCRIPTION OF REVISION	11-20-14

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

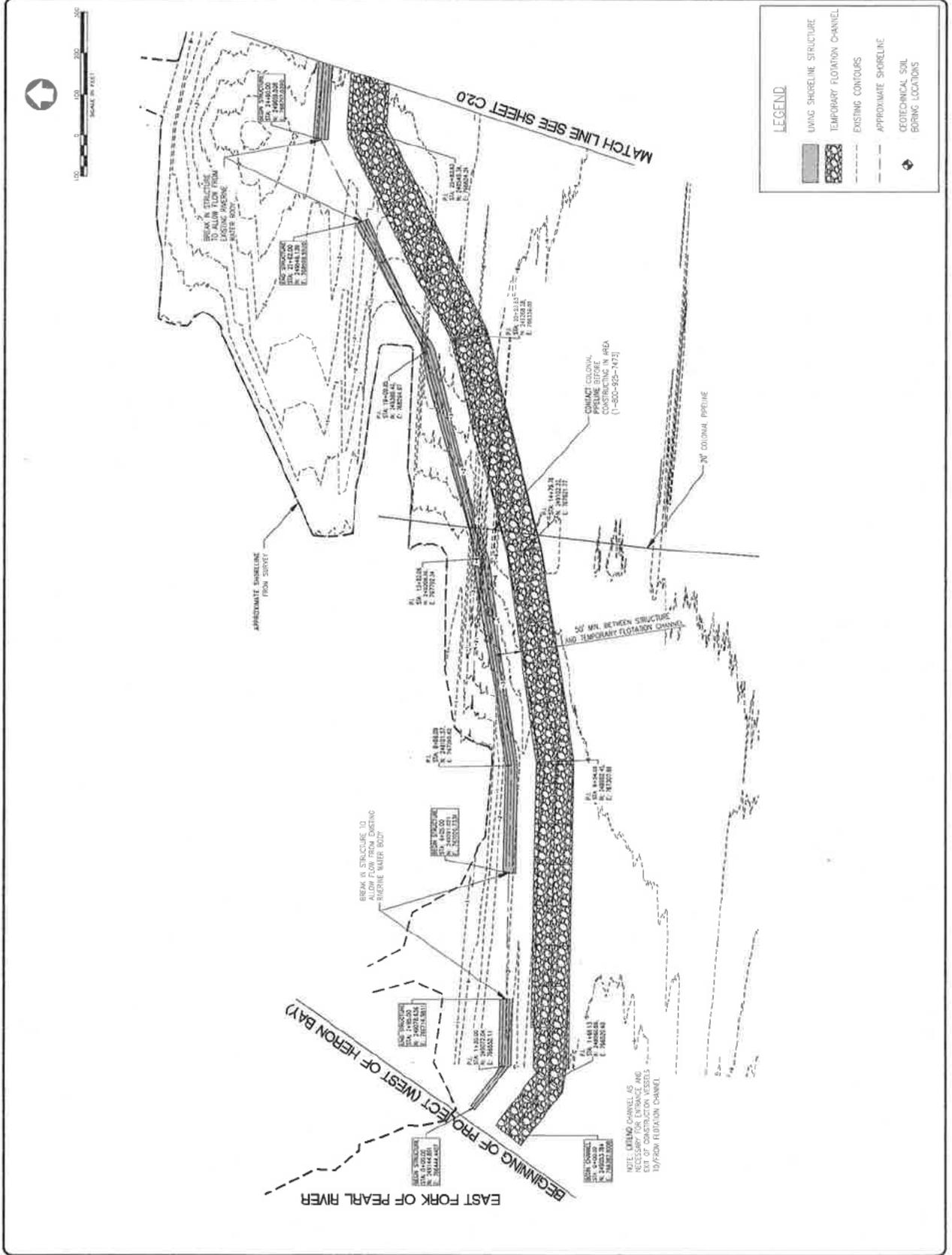
DRAWING INDEX
 SHEET NO. 2
 TOTAL SHEETS 2

NO.	DESCRIPTION	DATE

NO.	DESCRIPTION	DATE

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PROJECT PLAN VIEW
 STA: 0+00 - 28+00
 WEST OF HERON BAY
 DATE: 08-12-14
 SCALE: 1" = 100'
 SHEET: 1 OF 2
C1.0



LEGEND

- LIVING SHORELINE STRUCTURE
- TEMPORARY FLOTATION CHANNEL
- EXISTING CONTOURS
- APPROXIMATE SHORELINE
- GEOTECHNICAL SOIL
- BORING LOCATIONS



NOTE: LIVING CHANNEL AS NECESSARY FOR ENTRANCE AND EXIT OF CONSTRUCTION VESSELS TO/FROM FLOTATION CHANNEL

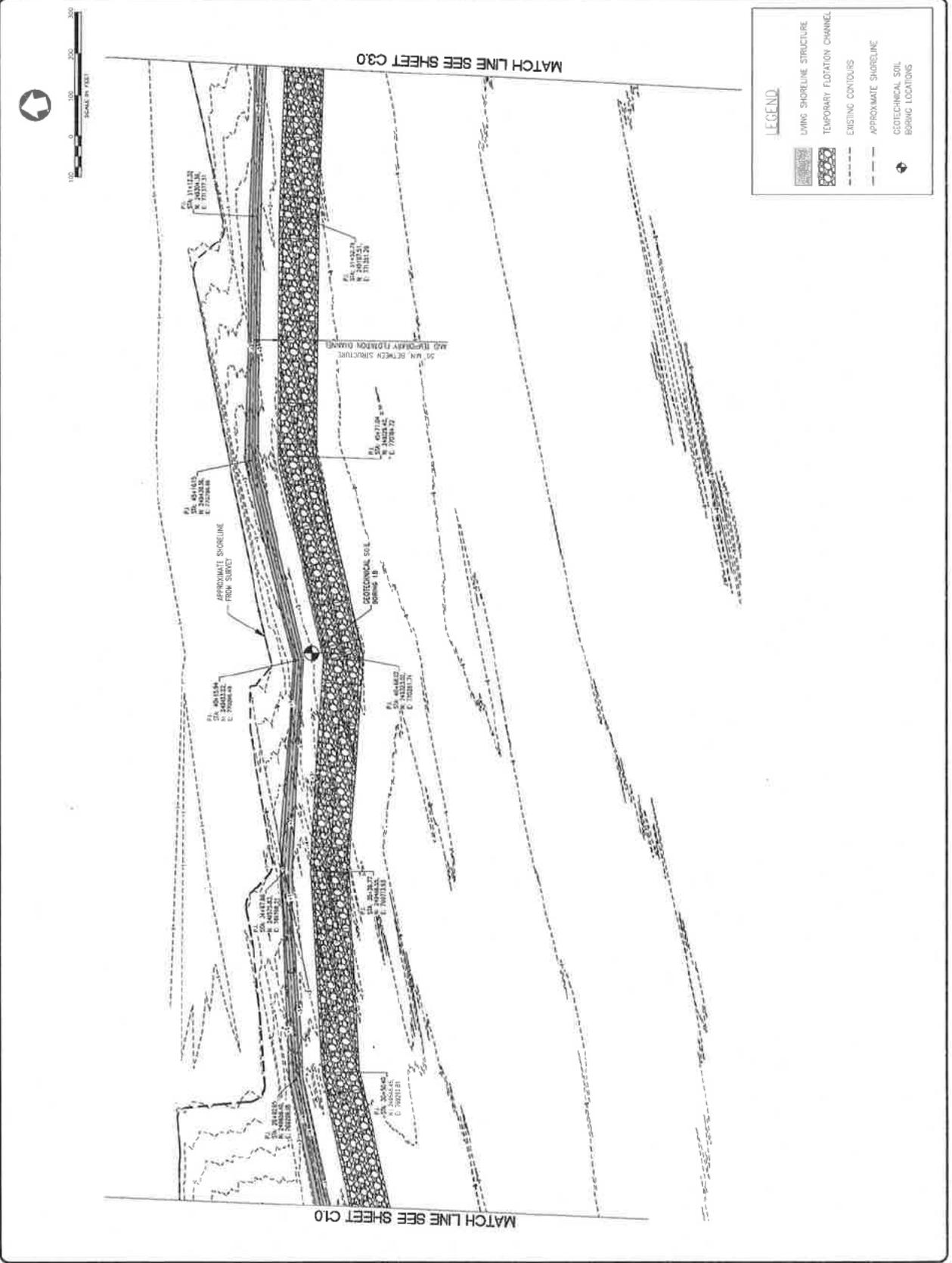
COVINGTON
 CIVIL & ENVIRONMENTAL, LLC
 2510 14TH STREET, SUITE 1010
 COLLEPORT, MISSISSIPPI 39504
 Office: (228) 396-6986

NO.	REVISION/DATE	DATE

GENERAL NOTES	

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PROJECT PLAN VIEW
 STA: 28+00 -- 56+00
 WEST OF HERON BAY
 DATE: 05-22-14
 SCALE: 1" = 100'
 SHEET: C2.0
 TOTAL SHEETS: 13



LEGEND

- LIVING SHORELINE STRUCTURE
- TEMPORARY FLOTATION CHANNEL
- EXISTING CONTOURS
- APPROXIMATE SHORELINE
- GEOCHEMICAL SOIL BORING LOCATIONS

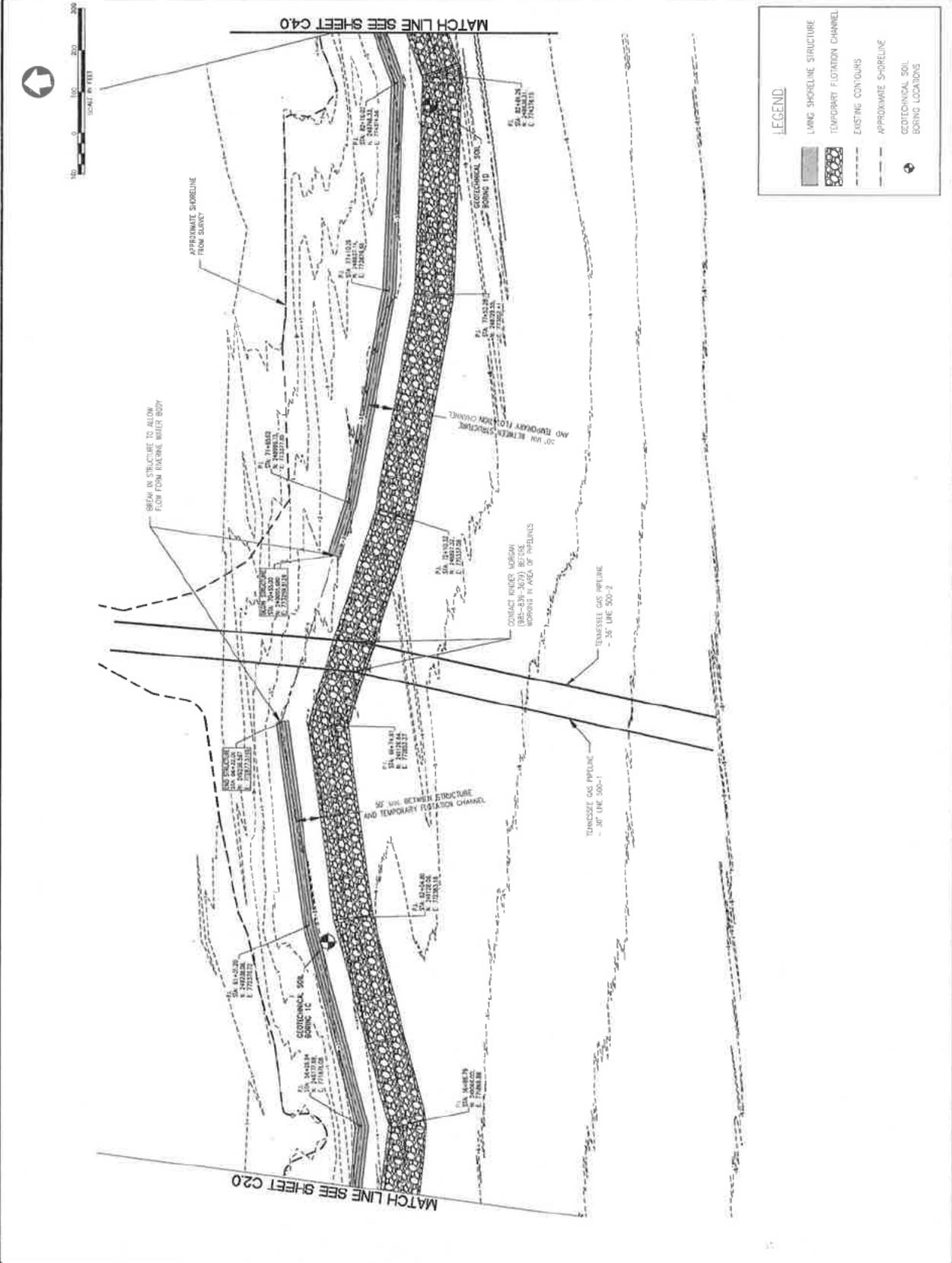
COVINGTON
 CIVIL & ENVIRONMENTAL, LLC
 250 14TH STREET, SUITE 1000
 GULFPORT, MISSISSIPPI 39501
 Office: (228)396-0486

DATE	DESCRIPTION	BY

DATE	DESCRIPTION	BY

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PROJECT PLAN VIEW
 STA: 56+00 - 84+00
 WEST OF HERON BAY
 SCALE: 1" = 100'
 DATE: 11/12/12
C3.0



LEGEND

- LIVING SHORELINE STRUCTURE
- TEMPORARY FLotation CHANNEL
- EXISTING CONTOURS
- APPROXIMATE SHOULDER
- GEOTECHNICAL SOIL BORING LOCATIONS



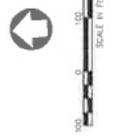
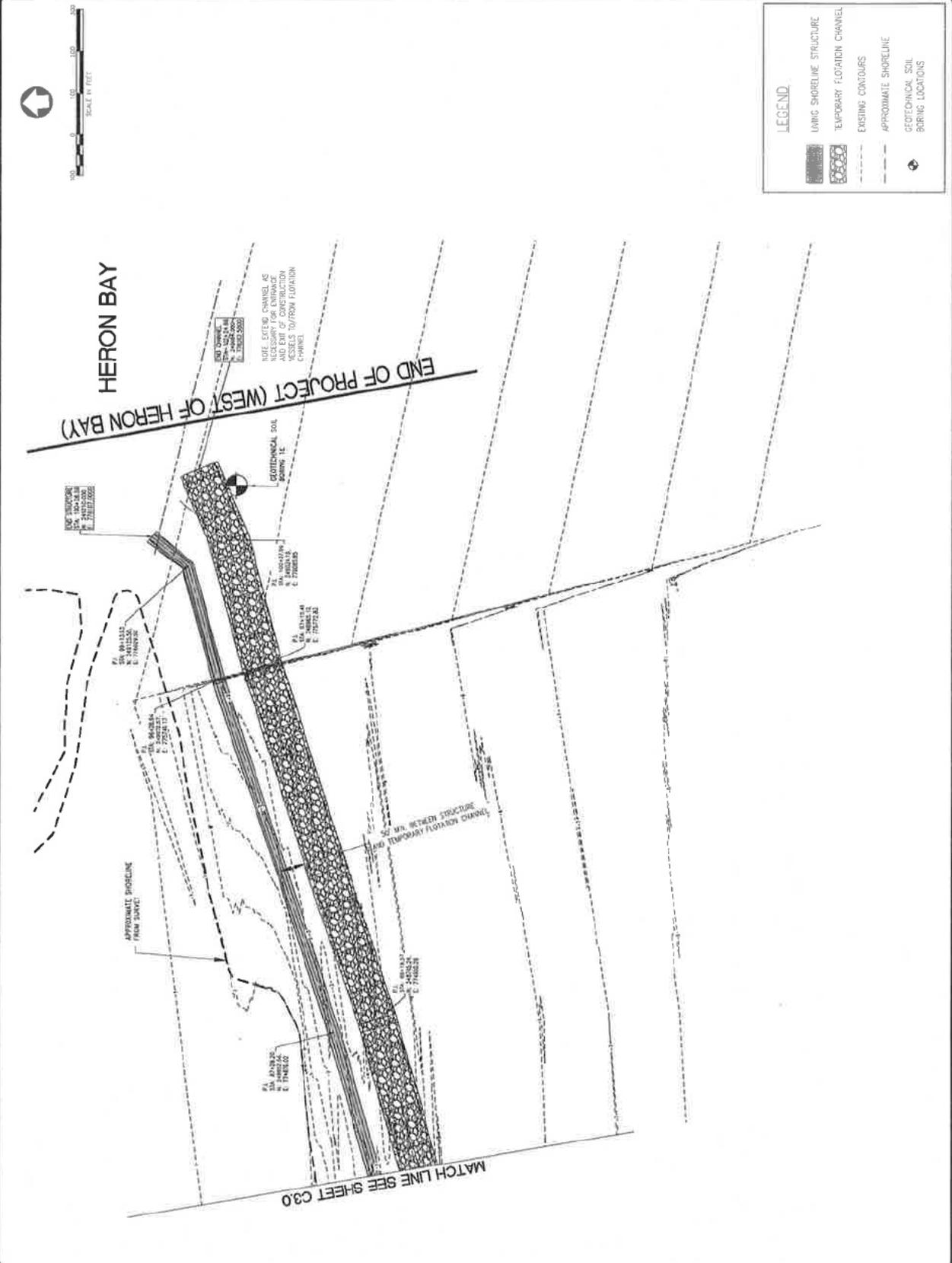
COVINGTON
 CIVIL & ENVIRONMENTAL, LLC
 2510 14TH STREET, SUITE 100
 GULFPORT, MISSISSIPPI 39061
 Office: (228)936-4886

NO.	DESCRIPTION	DATE

NO.	DESCRIPTION	DATE

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PROJECT PLAN VIEW
 STA: 84+00 - 100+26.55
 WEST OF HERON BAY
C4.0



LEGEND

- UNINC. SHOULDER STRUCTURE
- TEMPORARY FLOTATION CHANNEL
- EXISTING CONTOURS
- APPROXIMATE SHOULDER
- GEOCHEMICAL SOIL BORING LOCATIONS

NOTE: EXTEND CHANNEL AS NECESSARY FOR ENTRANCE AND EXIT OF CONSTRUCTION VESSEL TO/FROM FLOTATION CHANNEL

END OF PROJECT (WEST OF HERON BAY)

MATCH LINE SEE SHEET C3.0

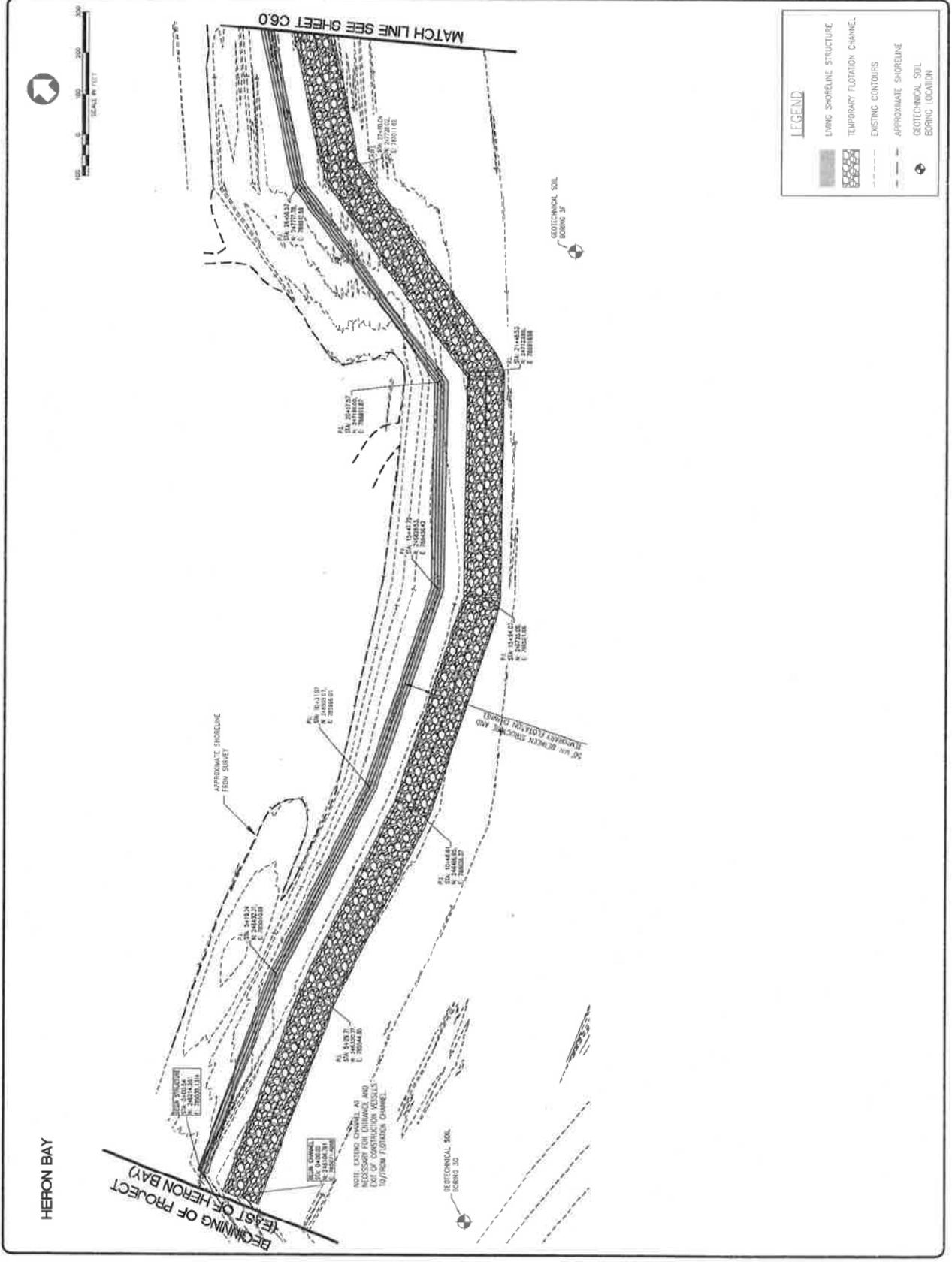
COVINGTON
 CIVIL & ENVIRONMENTAL, LLC
 2510 KATH STREET, SUITE 1010
 GULFPORT, MISSISSIPPI 39501
 Office: (228)336-6065

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HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PROJECT PLAN VIEW
 STA: 0+00 - 30+58
 EAST OF HERON BAY
 DATE: 04-12-14
 SCALE: 1" = 100'
 SHEET NO. **C5.0**
 OF 15



LEGEND

- LIVING SHORELINE STRUCTURE
- TEMPORARY FLOTATION CHANNEL
- EXISTING CONTOURS
- APPROXIMATE SHORELINE
- GEO TECHNICAL SOIL BORING LOCATION

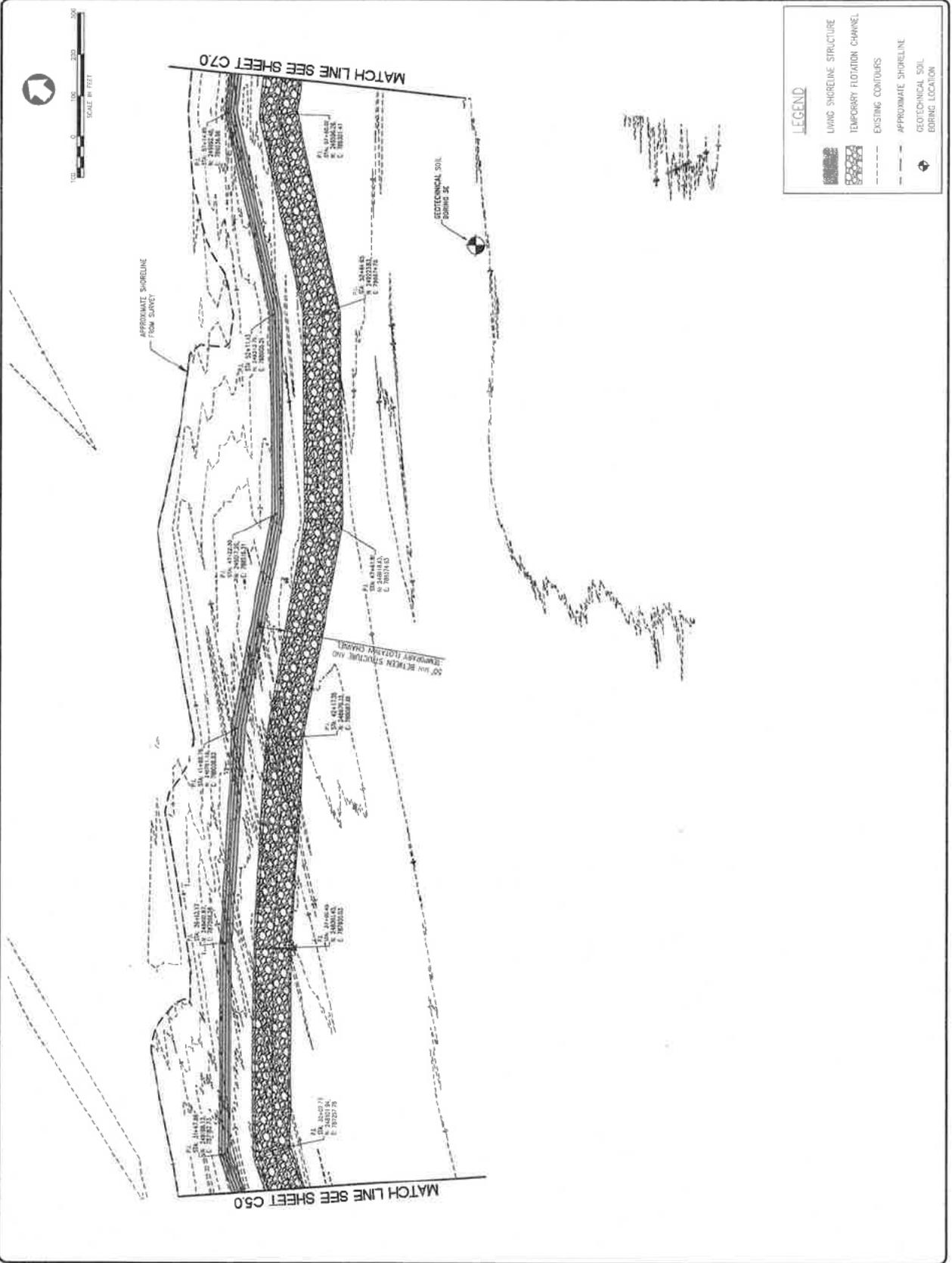
COVINGTON
 CIVIL & ENVIRONMENTAL, LLC
 2510 14TH STREET, SUITE 1000
 GULFPORT, MISSISSIPPI 39501
 Office: (228)394-9466

GENERAL NOTES

NO.	REVISION/DATE	BY

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PROJECT PLAN VIEW
 STA: 30+58 - 58+00
 EAST OF HERON BAY
 DATE: 04-12-14
 SHEET NO. **C6.0**
 OF 15
 USF212



LEGEND

- LIVING SHORELINE STRUCTURE
- TEMPORARY FLOTATION CHANNEL
- EXISTING CONTOURS
- APPROXIMATE SHORELINE
- GEOTECHNICAL SOIL BORING LOCATION

COVINGTON
 CIVIL & ENVIRONMENTAL, LLC
 2510 4TH STREET, SUITE 1070
 CULLEPORT, MISSISSIPPI 39034
 OFFICE: (228) 396-0486

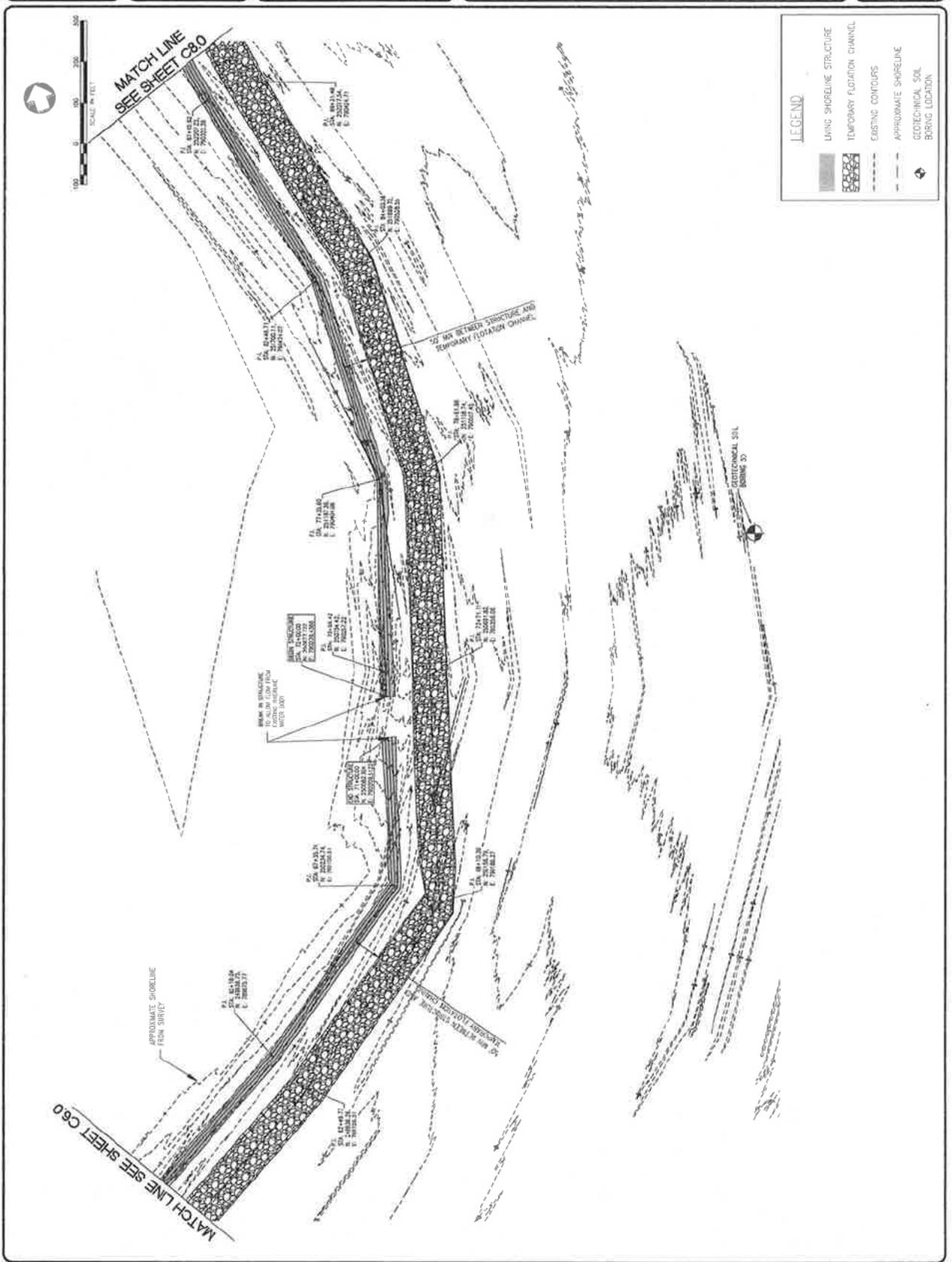
GENERAL NOTES

NO.	REVISION/DATE	DWG.

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PROJECT PLAN VIEW
 STA: 58+00 - 98+60
 EAST OF HERON BAY
 DATE: 08-12-14
 SCALE: 1" = 100'
 DRAWN BY: T. HARRIS
 CHECKED BY: J. HARRIS
 DATE: 12/21/14

C7.0



LEGEND

- LIVING SHORELINE STRUCTURE
- TEMPORARY FLUTATION CHANNEL
- EXISTING CONTOURS
- APPROXIMATE SHORELINE
- GEOLOGICAL SOIL BORING LOCATION

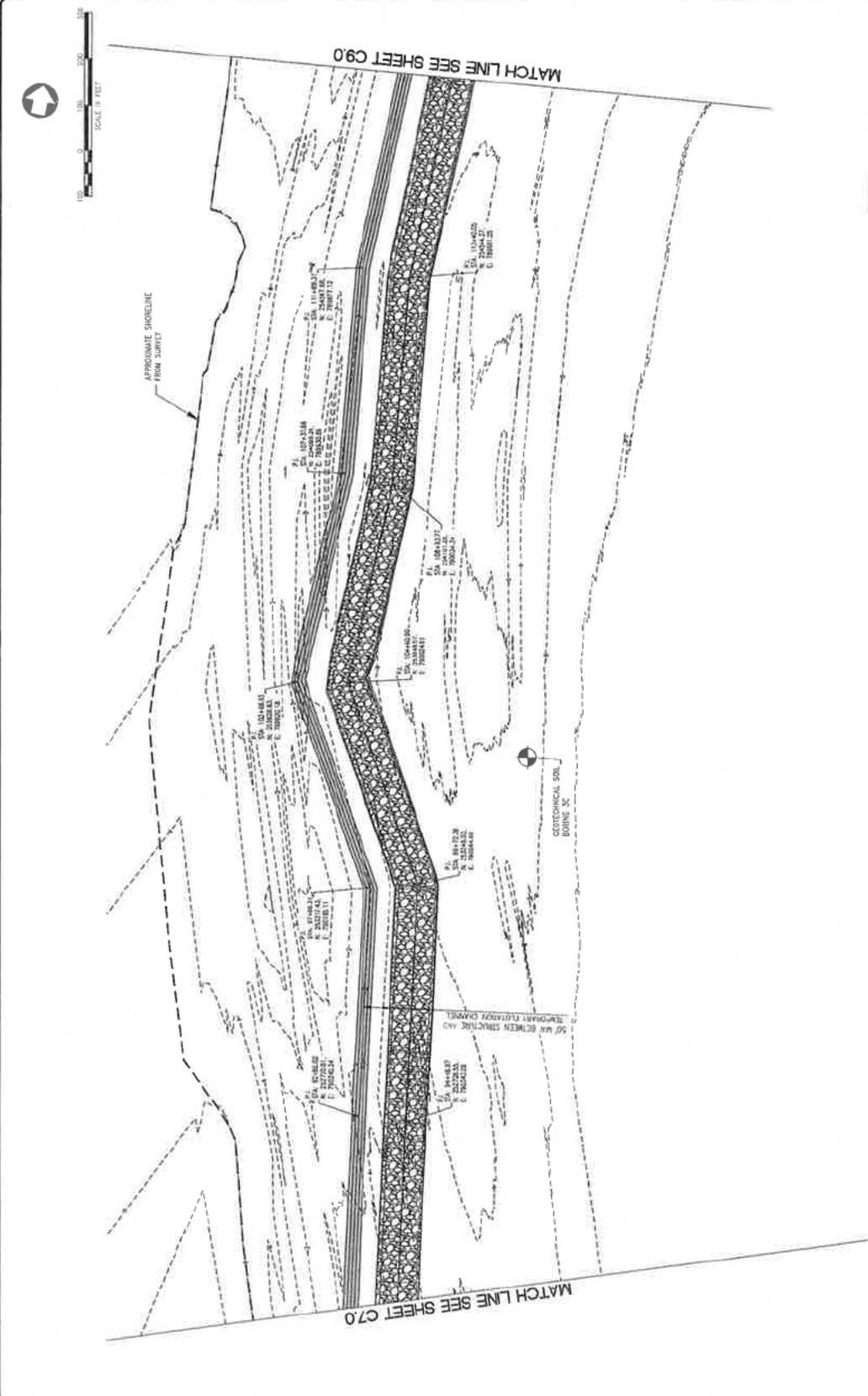
COVINGTON
 CIVIL & ENVIRONMENTAL, LLC
 250 NICHOLS STREET, SUITE 1000
 GULFPORT, MISSISSIPPI 39506
 Office: (228)395-4066

GENERAL NOTE

NO.	REVISION/SCALE	SHEET

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PROJECT PLAN VIEW
 STA: 88+60 - 116+00
 EAST OF HERON BAY
 DATE: 08-13-14
 SCALE: 1" = 100'
 SHEET NO. **C8.0**
 1482312



LEGEND

- LIVING SHORELINE STRUCTURE
- TEMPORARY FURROW CHANNEL
- EXISTING CONTOURS
- APPROXIMATE SHORELINE
- GEOTECHNICAL SOIL BORING LOCATION

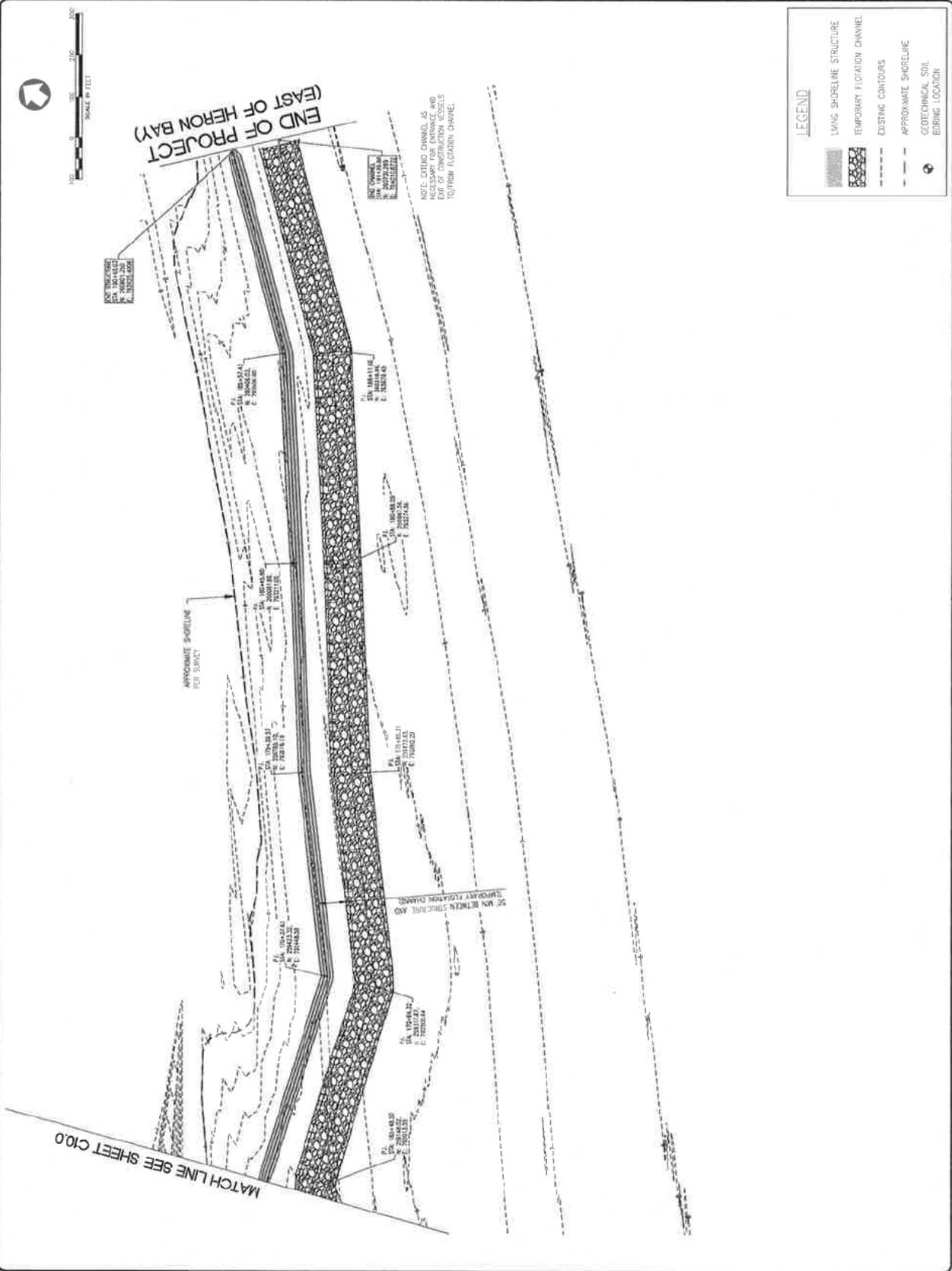
COVINGTON
 CIVIL & ENVIRONMENTAL, LLC
 2510 14TH STREET, SUITE 1000
 GULFPORT, MISSISSIPPI 39506
 Office: (228)966-6486

NO.	DESCRIPTION	DATE

NO.	DESCRIPTION	DATE

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI

PROJECT PLAN VIEW
 STA: 165+00 - 190+65.02
 EAST OF HERON BAY
 DATE: 06-12-14
 SCALE: 1" = 100'
 SHEET: 1 OF 2
C11.0
 12/03/12



LEGEND

- LIVING SHORELINE STRUCTURE
- TEMPORARY FLOTATION CHANNEL
- EXISTING CONTOURS
- APPROXIMATE SHOULDER
- GEOCHEMICAL SOIL BIRING LOCATION

NOTE: EXTEND CHANNEL AS
 NECESSARY FOR ENTRANCE AND
 EXIT OF CONSTRUCTION VESSELS
 TO/FROM FLOTATION CHANNEL.



MATCH LINE SEE SHEET C10.0

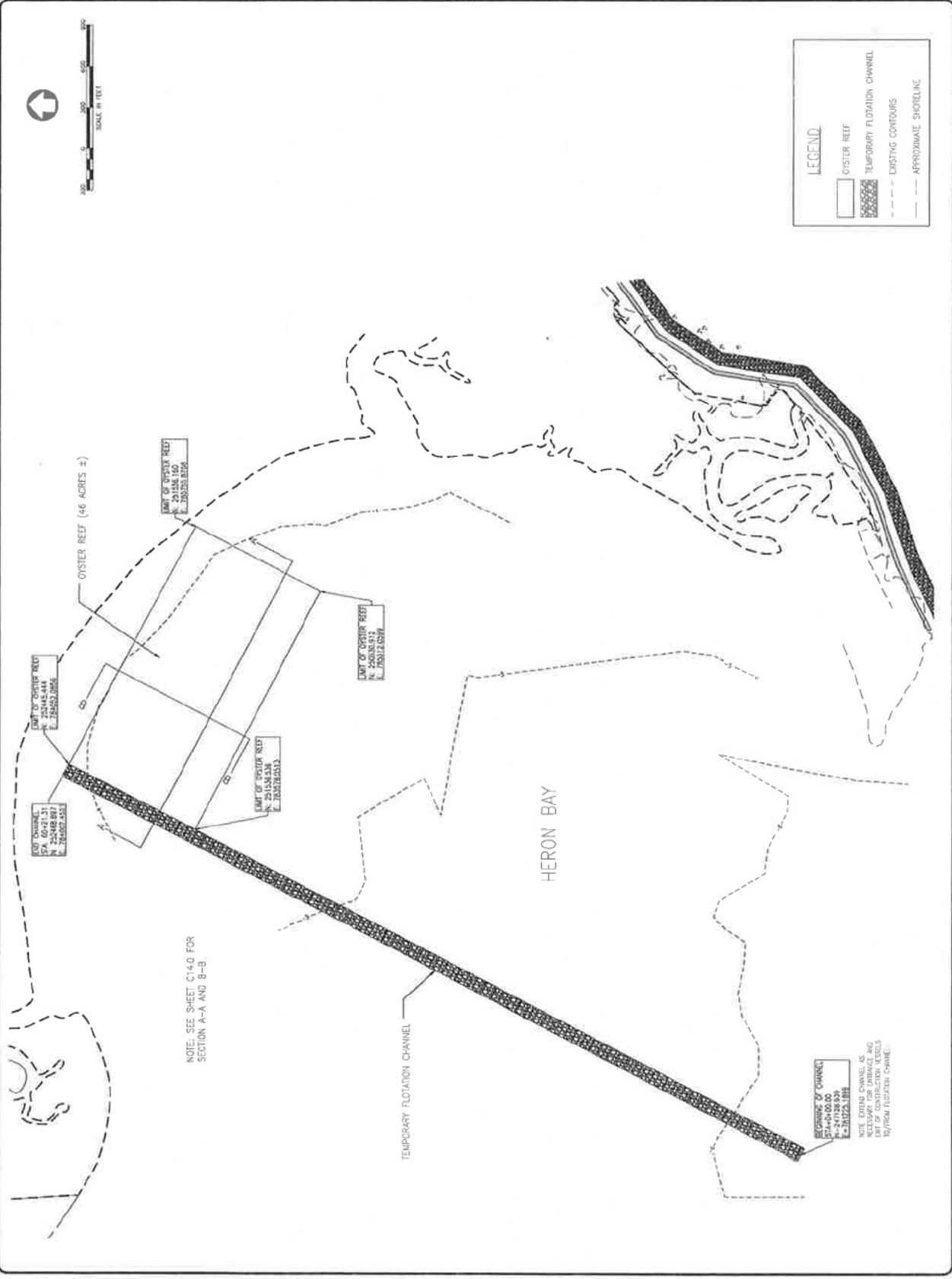
COVINGTON
 CRE & ENVIRONMENTAL, LLC
 7510 14TH STREET, SUITE 100
 GULFPORT, MISSISSIPPI 39501
 Office: (228)336-0466

OWNER: HEC

NO.	REVISION/DATE	DATE

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HERON BAY
 OYSTER REEF AREA
 SHEET NO. C12.0
 DATE: 11/13/13
 SCALE: 1" = 300'

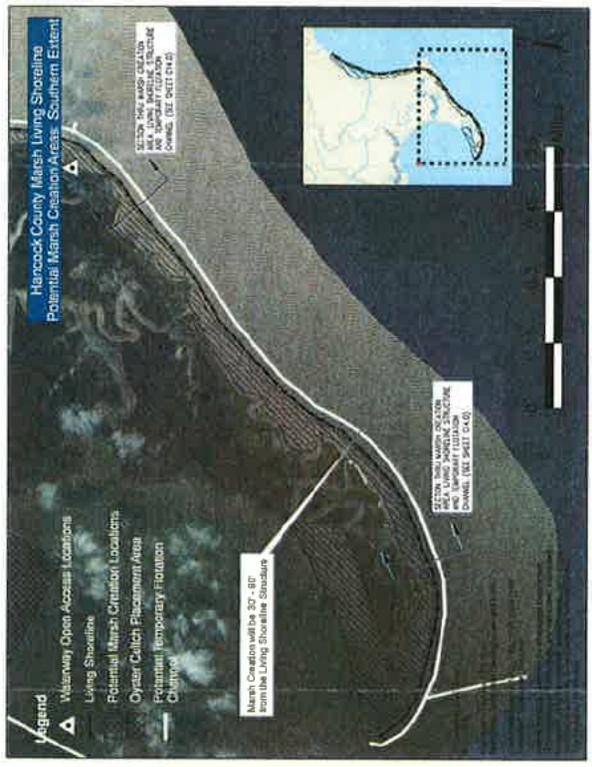
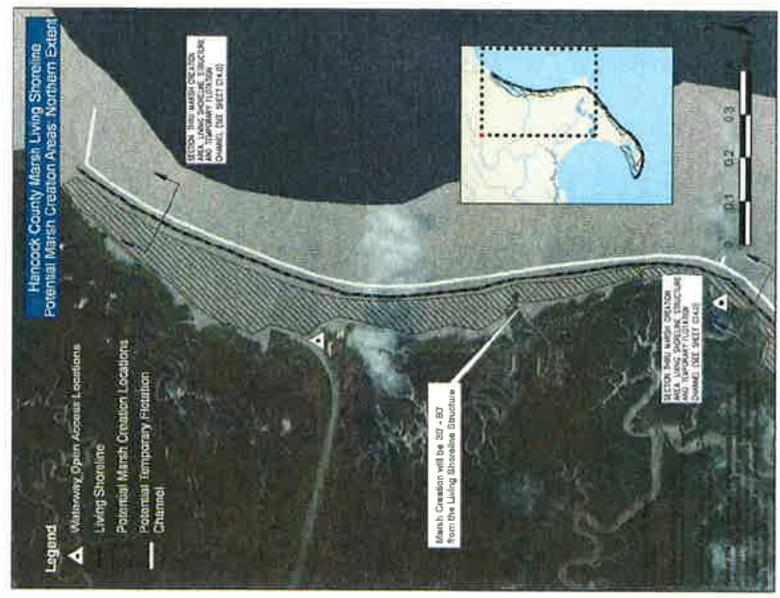


GENERAL NOTES	

NO.	RESPONSIBLE	DATE

HANCOCK COUNTY MARSH LIVING SHORELINE
 HANCOCK COUNTY MISSISSIPPI
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND

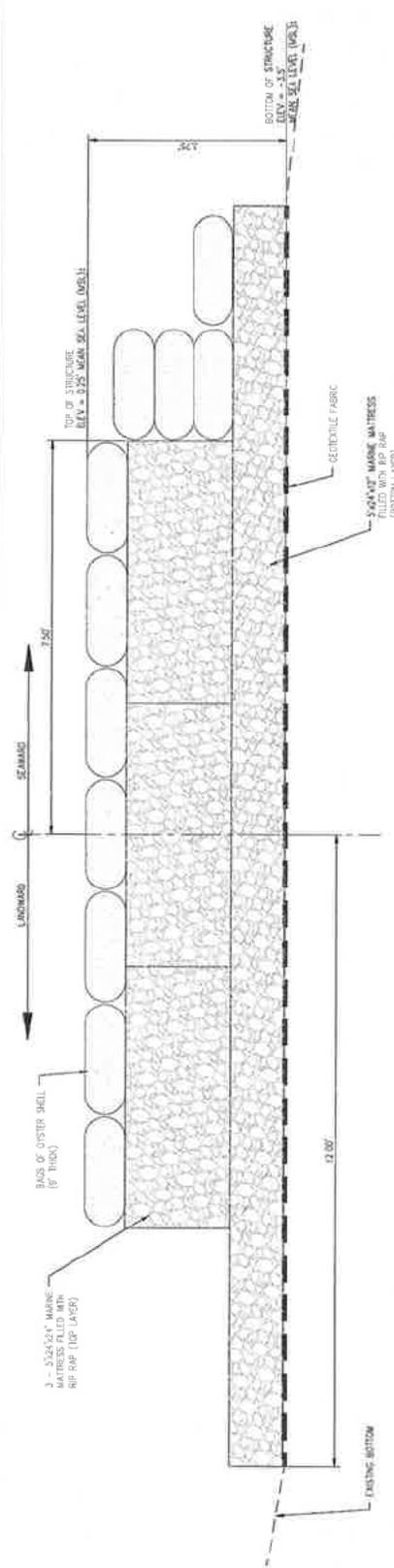
POTENTIAL MARSH CREATION AREAS
 SHEET NO. C13.0
 DATE: 05/20/13
 PROJECT: HANCOCK COUNTY MARSH LIVING SHORELINE
 1383112



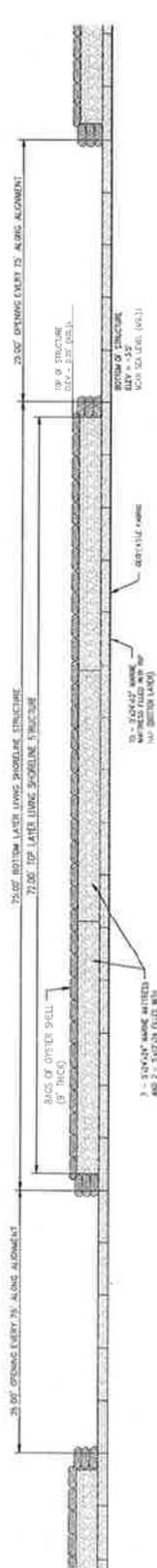
- NOTES:
- APPROXIMATE ACRES OF MARSH CREATION AREAS WILL BE DETERMINED DURING FINAL DESIGN FROM POTENTIAL MARSH CREATION LOCATIONS SHOWN ON PLANS ABOVE
 - MATERIAL FOR TEMPORARY CONTAINMENT DIKE SHALL BE OBTAINED BY EXCAVATING AREAS ADJACENT TO AND LANDWARD OF TEMPORARY CONTAINMENT DIKE
 - SUITABLE MATERIAL FOR MARSH CREATION SHALL BE OBTAINED THROUGH THE USMR REGIONAL USE OF SEDIMENT PROGRAM OR FROM SUITABLE PERMITTED BORROW SOURCE

NO.	DESCRIPTION	DATE
1	ADD MS TO NAVIGATION DIST. LOCATION	11-09-14
2	REVISIONS	

SECTION NOTES	

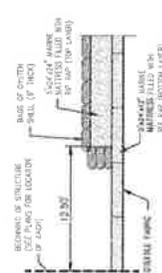


SECTION THRU LIVING SHORELINE STRUCTURE
 SCALE 1" = 1'



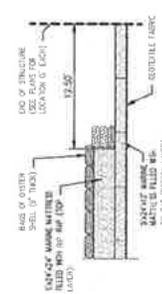
LONGITUDINAL SECTION THRU LIVING SHORELINE STRUCTURE
 SCALE 1" = 1'

NOTE: 25' OPENINGS SHALL BE MEASURED FROM "BEHIND STRUCTURE" LOCATION SHOWN ON C10 THROUGH C10

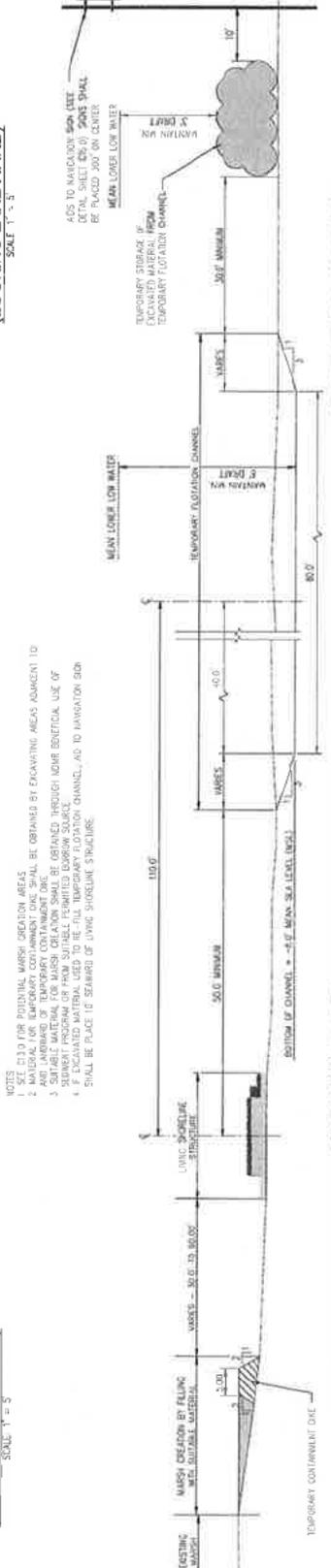


BEGINNING OF STRUCTURE DETAIL (LOOKING LANDWARD)
 SCALE 1" = 3"

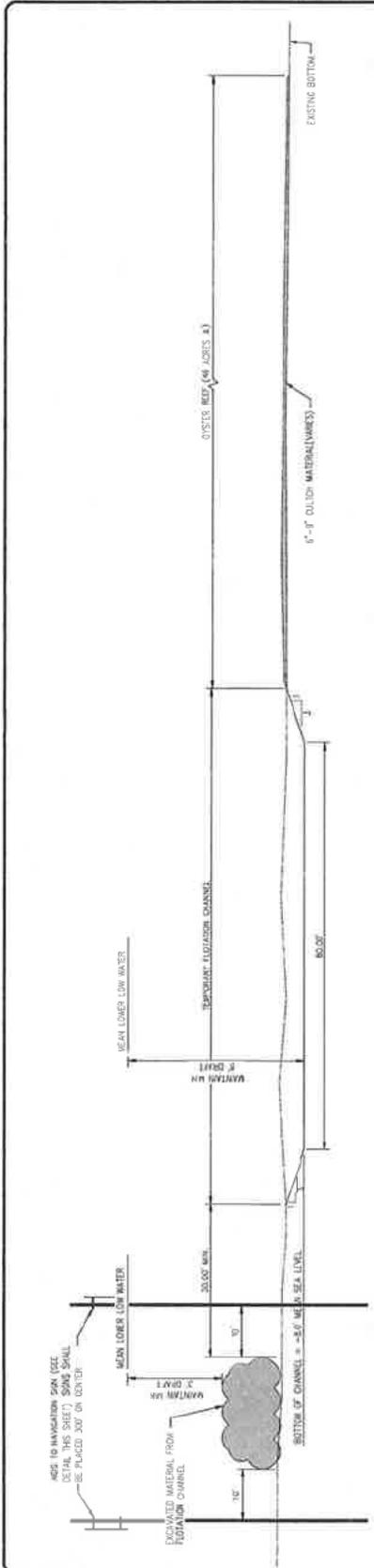
- NOTES:
1. SET C10 FOR PROTECTIVE MARSH CREATION AREAS
 2. MATERIAL FOR TEMPORARY CONTAINMENT DICE SHALL BE OBTAINED BY EXCAVATING AREAS ADJACENT TO
 3. THE LANDWARD OF TEMPORARY CONTAINMENT DICE SHALL BE OBTAINED THROUGH NEAR BENEFICIAL USE OF
 4. SEABERT PROGRAM OR FROM SUITABLE PERMITTED EXORISM SOURCE.
 5. IF EXCAVATED MATERIAL USED TO RE-FILL TEMPORARY FLOTATION CHANNEL, AD TO NAVIGATION SIGN SHALL BE PLACED TO SEABARD OF LIVING SHORELINE STRUCTURE.



END OF STRUCTURE DETAIL (LOOKING LANDWARD)
 SCALE 1" = 3"

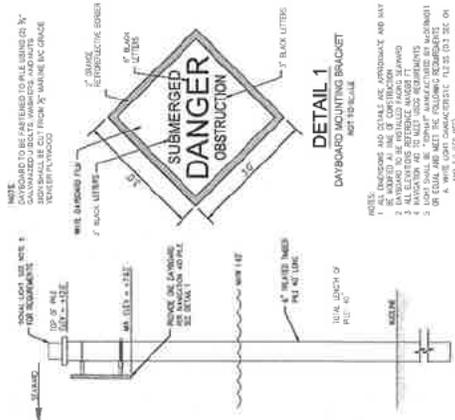


SECTION THRU MARSH CREATION AREA, LIVING SHORELINE STRUCTURE AND TEMPORARY FLOTATION CHANNEL
 SCALE 1" = 3"



SECTION A-A
 SCALE: 1" = 5'

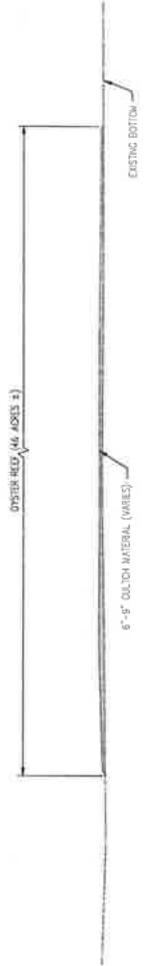
NOTE:
 OUTSIDE OF OYSTER REEF AREA, EXCAVATED MATERIAL FROM
 FLUTATION CHANNEL MAY BE PLACED ON THE EAST OR WEST
 SIDE OF THE FLUTATION CHANNEL. 30' (MIN) FROM THE
 EAST OR WEST SIDE OF THE FLUTATION CHANNEL, EXCAVATED MATERIAL
 SHALL BE PLACED 30' (MIN) WEST OF FLUTATION CHANNEL.



NOTES:
 1 ALL DIMENSIONS AND DETAILS ARE APPROXIMATE AND MAY
 VARY TO BE INSTALLED PROPERLY.
 2 DAYBOARD TO BE INSTALLED PROPERLY.
 3 DAYBOARD TO BE INSTALLED PROPERLY.
 4 DAYBOARD TO BE INSTALLED PROPERLY.
 5 DAYBOARD TO BE INSTALLED PROPERLY.
 6 DAYBOARD TO BE INSTALLED PROPERLY.
 7 DAYBOARD TO BE INSTALLED PROPERLY.
 8 DAYBOARD TO BE INSTALLED PROPERLY.
 9 DAYBOARD TO BE INSTALLED PROPERLY.
 10 DAYBOARD TO BE INSTALLED PROPERLY.

SECTION
 NAVIGATION AID
 NOT TO SCALE

SECTION B-B
 SCALE: 1" = 5'



NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMITS	11-17-14
2	ISSUED FOR PERMITS	11-17-14
3	ISSUED FOR PERMITS	11-17-14
4	ISSUED FOR PERMITS	11-17-14
5	ISSUED FOR PERMITS	11-17-14
6	ISSUED FOR PERMITS	11-17-14
7	ISSUED FOR PERMITS	11-17-14
8	ISSUED FOR PERMITS	11-17-14
9	ISSUED FOR PERMITS	11-17-14
10	ISSUED FOR PERMITS	11-17-14

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMITS	11-17-14
2	ISSUED FOR PERMITS	11-17-14
3	ISSUED FOR PERMITS	11-17-14
4	ISSUED FOR PERMITS	11-17-14
5	ISSUED FOR PERMITS	11-17-14
6	ISSUED FOR PERMITS	11-17-14
7	ISSUED FOR PERMITS	11-17-14
8	ISSUED FOR PERMITS	11-17-14
9	ISSUED FOR PERMITS	11-17-14
10	ISSUED FOR PERMITS	11-17-14