

# JOINT PUBLIC NOTICE

February 18, 2015

United States Army  
Corps of Engineers  
New Orleans District  
Regulatory Branch  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

(504) 862-2225  
[Brad.LaBorde@usace.army.mil](mailto:Brad.LaBorde@usace.army.mil)  
Project Manager  
Brad LaBorde  
Permit Application Number  
MVN 2013-1344 EOO

State of Louisiana  
Department of Environmental Quality  
ATTN: Water Quality Certifications  
Post Office Box 4313  
Baton Rouge, Louisiana 70821-4313

(225) 219-3225

Project Manager  
Elizabeth Johnson  
WQC Application Number  
WQC 150211-01

Interested parties are hereby notified that a permit application has been received by the New Orleans District of the U.S. Army Corps of Engineers pursuant to: [X] Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 USC 403); and/or [X] Section 404 of the Clean Water Act (86 Stat. 816; 33 USC 1344).

Application has also been made to the Louisiana Department of Environmental Quality, Water Quality Certifications, for a Water Quality Certification (WQC) in accordance with statutory authority contained in LRS30:2047 A(3), and provisions of Section 401 of the Clean Water Act (P.L.95-17).

## **Living Shoreline Demonstration Project within Eloi Bay in Saint Bernard Parish, Louisiana**

**NAME OF APPLICANT:** CPRA, Attn: Justin Merrifield, Post Office Box 44027, Baton Rouge, Louisiana, 70804.

**LOCATION OF WORK:** Along the northwestern shoreline of Eloi Bay, in Saint Bernard Parish, Louisiana, as shown on the enclosed drawings.

Hydrologic Unit Code: 08090203 - Eastern Louisiana Coastal  
Shoreline extending from: Latitude: 29.7567, Longitude: -89.4170 to Latitude: 29.7779,  
Longitude: -89.3671

**CHARACTER OF WORK:** The project proposes to install and maintain a bio-engineered oyster reef structure extending 30,000 linear feet (14.3 acres) along the Eloi Bay shoreline to dissipate wave energy, reduce erosion, and provide marine habitat. The structure is designed with 100 foot gaps every 1,000 feet to allow for the ingress and egress of estuarine aquatic organisms and tidal flushing. Construction will require a flotation channel excavated to -7.0 feet by temporarily removing 586,000 cubic yards (164.5 acres) of non-vegetated waterbottoms with a bucket dredge. Material will be sidecast on the lake side of the temporary channel impacting an additional 234.1 acres of non-vegetated waterbottoms. Upon completion, the temporary dredged material will be backfilled to pre-construction elevations. Navigation will be maintained at existing waterways with proper signage designating construction areas. No wetland impacts are associated with the project.

The comment period for the Department of the Army Permit and the Louisiana Department of Environmental Quality WQC will close **20 days** from the date of this joint public notice. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this permit and/or this WQC request and must be mailed so as to be received before or by the last day of the comment period. Letters concerning the Corps of Engineers permit application must reference the applicant's name and the Permit Application Number, and be mailed to the Corps of Engineers at the address above, **ATTENTION: REGULATORY BRANCH**. **Individuals or parties may request an extension of time in which to comment on the proposed work by writing or e-mailing the Corps of Engineers Project Manager listed above. Any request must be specific and substantively supportive of the requested extension, and received by this office prior to the end of the initial comment period. The Section Chief will review the request and the requestor will be promptly notified of the decision to grant or deny the request. If granted, the time extension will be continuous to the initial comment period and, inclusive of the initial comment period, will not exceed a total of 30 calendar days.**

The application for this proposed project is on file with the Louisiana Department of Environmental Quality and may be examined during weekdays between 8:00 a.m. and 4:30 p.m. Copies may be obtained upon payment of costs of reproduction.

### **Corps of Engineers Permit Criteria**

The decision whether to issue a permit will be based on an evaluation of the probable impacts, 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 and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers 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 U.S. Army Corps of Engineers to determine whether to make, 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 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.

The New Orleans District is unaware of properties listed on the National Register of Historic Places near the proposed work. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data. Issuance of this public notice solicits input from the State Archeologist and State Historic Preservation Officer regarding potential impacts to cultural resources.

It has been determined that this project would take place in waters that may impact the following Federally listed threatened and endangered species: Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and its critical habitat, and five species of sea turtles, the green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), Kemp's ridley (*Lepidochelys kempi*), leatherback (*Dermochelys coriacea*), and loggerhead (*Caretta caretta*). Each of the listed species is mobile and apt to avoid noise and disturbance created by the work activity. If required, the applicant has agreed to implement NOAA's National Marine Fisheries Service (NMFS) '2006 Sea Turtle and Smalltooth Sawfish Construction Conditions'. With this information, the Corps' preliminary determination is that the project is "Not Likely to Adversely Affect" these eight species. Concurrence for this determination will be requested via an informal consultation with NMFS.

In addition, the construction area is known to be utilized by the West Indian manatee (*Trichechus manatus*). The West Indian manatee is listed as endangered by the U.S. Department of Interior. Our initial finding is that the proposed work is "not likely to adversely affect" the West Indian manatee. Concurrence has been received from the U.S. Fish and Wildlife Service per the Standard Local Operating Procedure for Endangered Species in Louisiana, dated October 22, 2014. If authorized, "The Standard Manatee Conditions for In-Water Activities" will be made part of the permit's special conditions.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal would result in the destruction or alteration of **413** acres of EFH utilized by various life stages of red drum and penaeid shrimp. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries in the Gulf of Mexico. 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.

If the proposed work involves deposits of dredged or fill material into navigable waters, the evaluation of the probable impacts will include the application of guidelines established by the Administrator of the Environmental Protection Agency. Also, a certification that the proposed activity will not violate applicable water quality standards will be required from the Department of Environmental Quality, Water Quality Certifications, before a permit is issued.

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

The applicant has certified that the proposed activity described in the application complies with and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. The Department of the Army permit will not be issued unless the applicant received approval or a waiver of the Coastal Use Permit by the Department of Natural Resources.

You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have interest in the matter.

Michael V. Farabee  
Chief, Eastern Evaluation Section

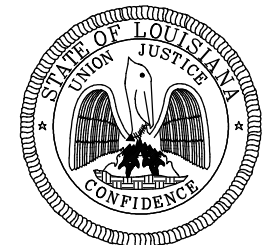
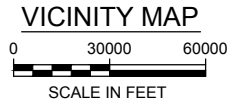
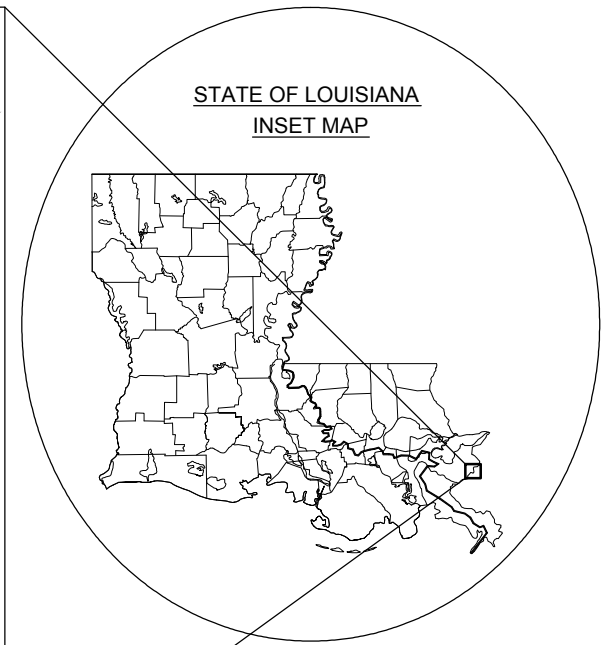
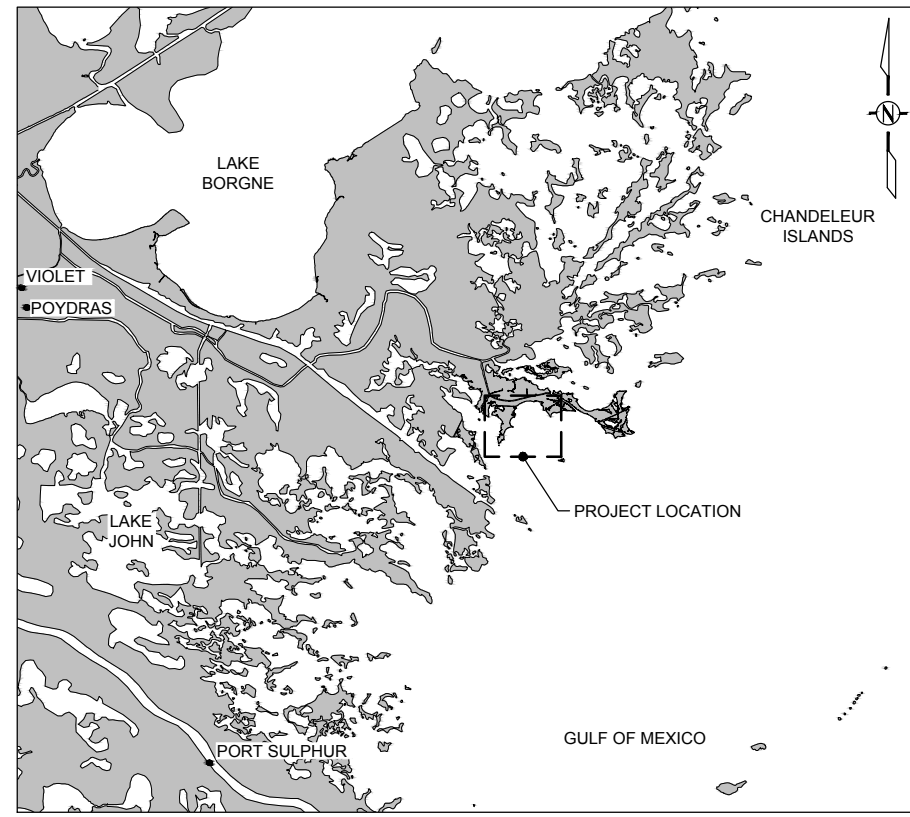
Enclosure

# PERMIT PLANS

## STATE OF LOUISIANA COASTAL PROTECTION AND RESTORATION AUTHORITY

### LIVING SHORELINE DEMONSTRATION PROJECT STATE PROJECT NUMBER PO-148 ST. BERNARD PARISH, LOUISIANA

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	PERMIT NOTES
3	OVERALL SITE PLAN
4	HAZARD PLAN
5	PERMIT PLAN-1
6	PERMIT PLAN-2
7	PERMIT PLAN-3
8	PERMIT PLAN-4
9	PERMIT PLAN-5
10	PERMIT PLAN-6
11	GENERAL BREAKWATER DETAIL
12	TYPICAL ACCESS CHANNEL DETAILS



APPLICATION BY:  
**COASTAL PROTECTION  
AND RESTORATION  
AUTHORITY**  
450 LAUREL STREET  
BATON ROUGE, LOUISIANA 70801

 **COAST & HARBOR  
ENGINEERING**  
3410 FAR WEST BLVD, STE 210 AUSTIN, TX 78731  
PH 512-342-9516 • FAX 512-342-9708

 **TETRA TECH, INC.**  
748 MAIN ST,  
BATON ROUGE, LA 70802  
(225) 383-1780

LIVING SHORELINE  
DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148

FEDERAL PROJECT NUMBER: N/A

COVER SHEET

DATE: 1/9/15

SHEET 1 OF 12

DRAWN BY: B TADLOCK

DESIGNED BY: J CARTER

APPROVED BY: H. BERMUDEZ

FEDERAL PROJECT NUMBER: N/A

SHEET 1 OF 12




**GENERAL NOTES:**

1. AERIAL PHOTOGRAPH BY GULF COAST AERIAL MAPPING ON 8/2/2013.
2. THERE IS NO UPLAND ACCESS TO THE PROJECT SITE. CONTRACTOR SHALL ACCESS THE PROJECT SITE FROM A NAVIGABLE WATER BODY SUCH AS BRETON SOUND VIA MISSISSIPPI RIVER.
3. TEMPORARY ACCESS/FLOTATION CHANNEL DREDGING MAY BE REQUIRED TO ACCESS THE PROJECT SITE. ALL DREDGED MATERIAL MAY BE PLACED INTO THE TEMPORARY SPOIL PLACEMENT AREAS SHOWN. THE TEMPORARY SPOILS SHALL BE BACKFILLED INTO THE TEMPORARY ACCESS CHANNEL AT THE COMPLETION OF THE PROJECT.
4. TOPOGRAPHIC AND BATHYMETRIC DATA FROM SURVEYS PERFORMED BY T. BAKER SMITH, LLC APRIL 2013-AUGUST 2013.
5. THE VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID 12A), IN U.S. SURVEY FEET. THE HORIZONTAL DATUM FOR ALL GRID COORDINATES IS LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET. THE HORIZONTAL DATUM FOR ALL GEOGRAPHIC COORDINATES IS NAD83.
6. THE REFERENCE BENCHMARKS ARE PO148-SM-01 AND PO148-SM-02.
7. PIPELINES ARE IDENTIFIED FROM BOEM AND CPRA DATABASES; ANTICIPATED PIPELINES ARE IDENTIFIED FROM MAGNETOMETER SURVEY PERFORMED BY T. BAKER SMITH, LLC JANUARY 2013.
8. PERMANENT NAVIGATION AIDS TO BE LOCATED AT EACH STRUCTURE IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
9. OYSTER REEF BREAKWATERS MAY BE CONSTRUCTED OF UNITS COMPOSED OF CONCRETE, STEEL, MESH, GEOGRID, OR SIMILAR MATERIAL.
10. OYSTER LEASE AREAS SHOWN FROM THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES. ALL OYSTER REEF BREAKWATER STRUCTURES AND FLOTATION/ACCESS CHANNEL DREDGING SHALL HAVE A MINIMUM BUFFER OF 300 FT FROM ALL OYSTER LEASES.
11. AS-BUILT DRAWINGS AND/OR PLATS SHALL HAVE WRITTEN ON THEM THE DATE OF COMPLETION OF SAID ACTIVITIES AND SHALL BE SUBMITTED TO THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES, OFFICE OF COASTAL MANAGEMENT, P. O. BOX 44487, BATON ROUGE, LA 70804-4487 WITHIN 30 DAYS FOLLOWING PROJECT COMPLETION.
12. ALL STRUCTURES, FACILITIES, WELL AND PIPELINES/FLOWLINES OCCURRING IN OPEN WATER AREAS OR IN OILFIELD CANALS OR SLIPS SHALL BE REMOVED WITHIN 120 DAYS OF ABANDONMENT OR THE FACILITIES FOR THE HEREIN PERMITTED USE UNLESS PRIOR WRITTEN APPROVAL TO LEAVE SUCH STRUCTURES IN PLACE IS RECEIVED FROM THE OFFICE OF COASTAL MANAGEMENT. THIS CONDITION DOES NOT PRECLUDE THE NECESSITY FOR REVISING THE CURRENT PERMIT OR OBTAINING A SEPARATE COASTAL USE PERMIT, SHOULD ONE BE REQUIRED.
13. STRUCTURES MUST ALSO BE MARKED/LIGHTED IN ACCORDANCE WITH U. S. COAST GUARD REGULATIONS.
14. IN ORDER TO ENSURE THE SAFETY OF ALL PARTIES, THE PERMITTEE SHALL CONTACT THE LOUISIANA ONE CALL SYSTEM (1-800-272-3020) A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION (DIGGING, DREDGING, JETTING, ETC.) OR DEMOLITION ACTIVITY.
15. FULLY LOADED DRAFTS OF ALL VESSELS WILL NOT EXCEED 8 FT.

REFERENCE BENCHMARKS			
POINT ID	NORTHING	EASTING	ELEVATION (NAVD88)
PO148-SM-01	29° 47' 43.673"	89° 23' 20.725"	+3.7'
PO148-SM-02	29°46' 24.809"	89° 19' 9.898"	+2.9'

TIDAL ELEVATIONS (NAVD88)	
TIDAL VERTICAL DATUM (NAVD88)	
MEAN HIGHER HIGH WATER (MHHW)	+1.32'
MEAN SEA LEVEL (MSL)	+0.60'
MEAN LOWER LOW WATER (MLLW)	-0.19'
NAVD88	0.00'

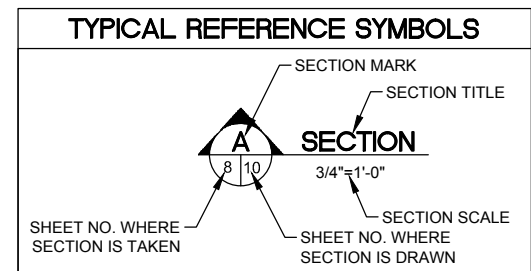
**STANDARD ABBREVIATIONS:**

- EL = ELEVATION
- T.O. = TOP OF
- B.O. = BOTTOM OF
- MHHW = MEAN HIGHER HIGH WATER
- EA = EACH
- TYP. = TYPICAL
- O.C. = ON CENTER
- @ = AT
- APPROX = APPROXIMATE
- BM = BENCH MARK
- MAX = MAXIMUM
- MIN = MINIMUM
- U.N.O. = UNLESS NOTED OTHERWISE
- ' = MINUTES OR FEET
- " = SECONDS OR INCHES
-  = CONTROL POINT
-  = GEOTECHNICAL BORING
-  = TEMPORARY WARNING SIGN

CONSTRUCTION QUANTITY SUMMARY	
TYPE	QUANTITY
OYSTER REEF BREAKWATER LENGTH	30,000 FT
OYSTER REEF BREAKWATER AREA	14.32 ACRES
TEMPORARY SPOIL PLACEMENT LENGTH	86,000 FT
TEMPORARY SPOIL PLACEMENT AREA	234.13 ACRES
TEMPORARY ACCESS/FLOTATION DREDGING LENGTH	59,000 FT
TEMPORARY ACCESS/FLOTATION DREDGING AREA	164.54 ACRES
TEMPORARY ACCESS/FLOTATION DREDGING VOLUME	586,000 CY

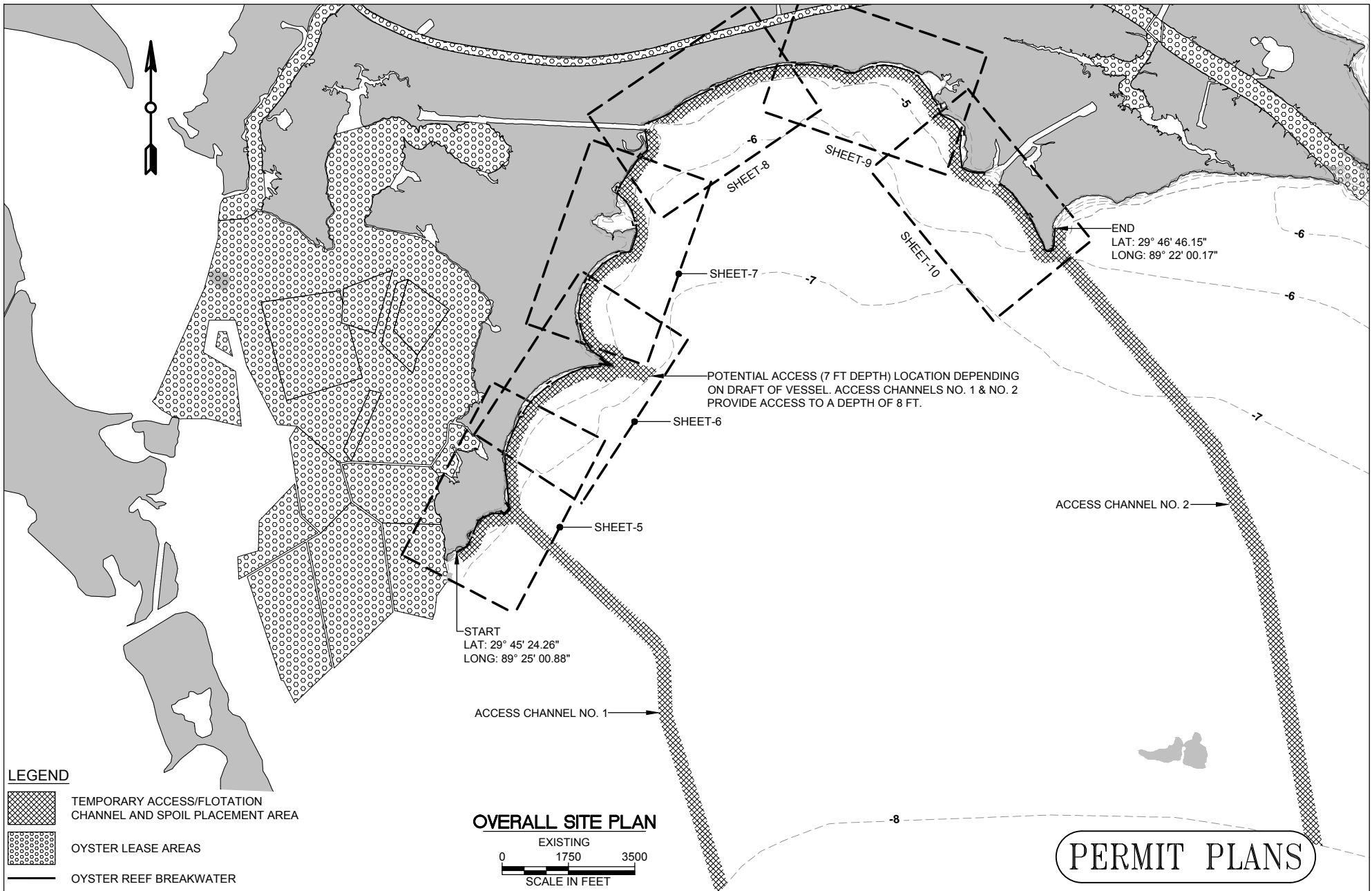
ESTIMATED IMPACTS	
TYPE	QUANTITY
PERMANENT IMPACTED SUBMERGED BOTTOM	14.32 ACRES
TEMPORARY IMPACTED SUBMERGED BOTTOM	398.67 ACRES
PERMANENT IMPACTED VEGETATED WETLANDS	0.00 ACRES

ESTIMATE BENEFITS	
TYPE	QUANTITY
WETLAND AREA SAVED BY OYSTER REEF BREAKWATER IN 1 YEAR	3.25 ACRES

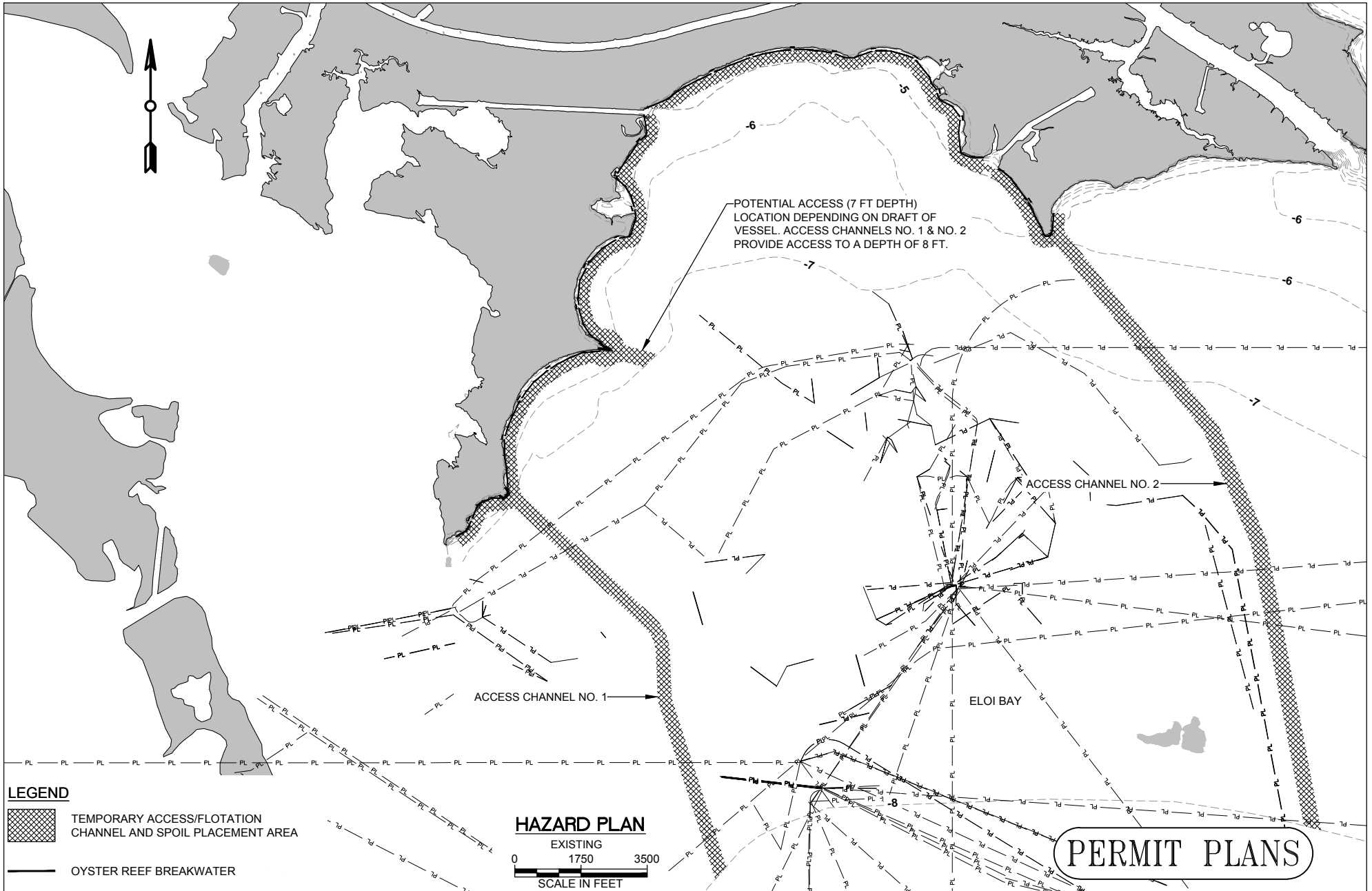


**PERMIT PLANS**

APPLICATION BY: <b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	 <b>COAST &amp; HARBOR ENGINEERING</b> 3410 FAR WEST BLVD, STE 210 AUSTIN, TX 78731 PH 512-342-9516 • FAX 512-342-9708	 <b>TETRA TECH, INC.</b> 748 MAIN ST. BATON ROUGE, LA 70802 (225) 383-1780	LIVING SHORELINE DEMONSTRATION PROJECT	PERMIT NOTES
			STATE PROJECT NUMBER: PO-148	DATE: 1/9/15
DRAWN BY: B TADLOCK	DESIGNED BY: J CARTER	APPROVED BY: H. BERMUDEZ	FEDERAL PROJECT NUMBER: N/A	SHEET 2 OF 12



APPLICATION BY: <b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	 <b>COAST &amp; HARBOR ENGINEERING</b> 3410 FAR WEST BLVD, STE 210 AUSTIN, TX 78731 PH 512-342-9516 • FAX 512-342-9708	 <b>TETRA TECH, INC.</b> 748 MAIN ST. BATON ROUGE, LA 70802 (225) 383-1780	LIVING SHORELINE DEMONSTRATION PROJECT	OVERALL SITE PLAN
DRAWN BY: B TADLOCK	DESIGNED BY: J CARTER	APPROVED BY: H. BERMUDEZ	STATE PROJECT NUMBER: PO-148	DATE: 1/9/15
FEDERAL PROJECT NUMBER: N/A			SHEET 3 OF 12	



APPLICATION BY:  
**COASTAL PROTECTION  
 AND RESTORATION  
 AUTHORITY**  
 450 LAUREL STREET  
 BATON ROUGE, LOUISIANA 70801



**COAST & HARBOR  
 ENGINEERING**  
 3410 FAR WEST BLVD, STE 210 AUSTIN, TX 78731  
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**TETRA TECH, INC.**  
 748 MAIN ST,  
 BATON ROUGE, LA 70802  
 (225) 383-1780

LIVING SHORELINE  
 DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148

FEDERAL PROJECT NUMBER: N/A

HAZARD PLAN

DATE: 1/9/15

SHEET 4 OF 12

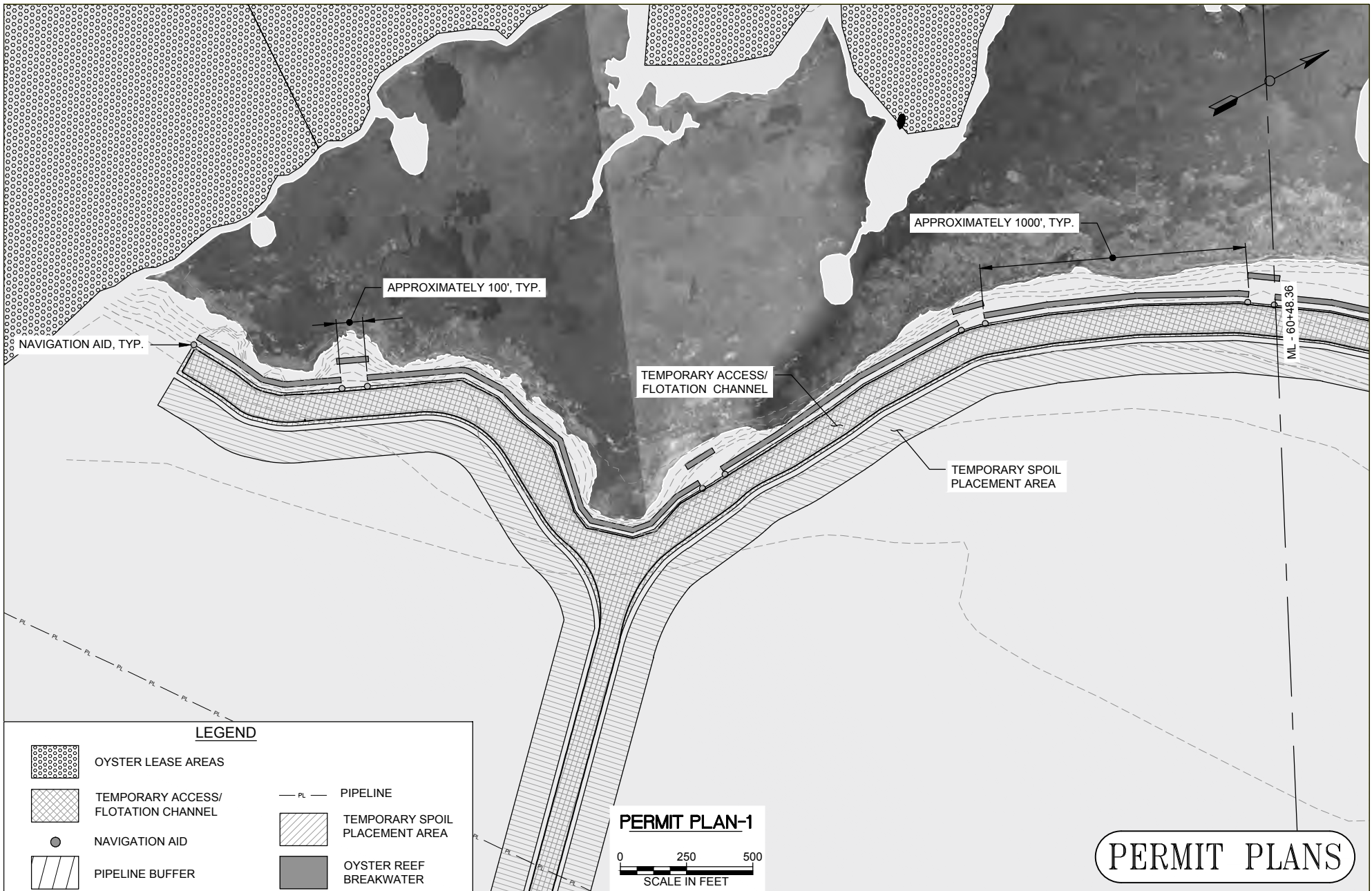
DRAWN BY: B TADLOCK

DESIGNED BY: J CARTER








APPROVED BY: H. BERMUDEZ

FEDERAL PROJECT NUMBER: N/A

SHEET 4 OF 12




**LEGEND**

-  OYSTER LEASE AREAS
-  TEMPORARY ACCESS/FLOTATION CHANNEL
-  NAVIGATION AID
-  PIPELINE BUFFER
-  PIPELINE
-  TEMPORARY SPOIL PLACEMENT AREA
-  OYSTER REEF BREAKWATER

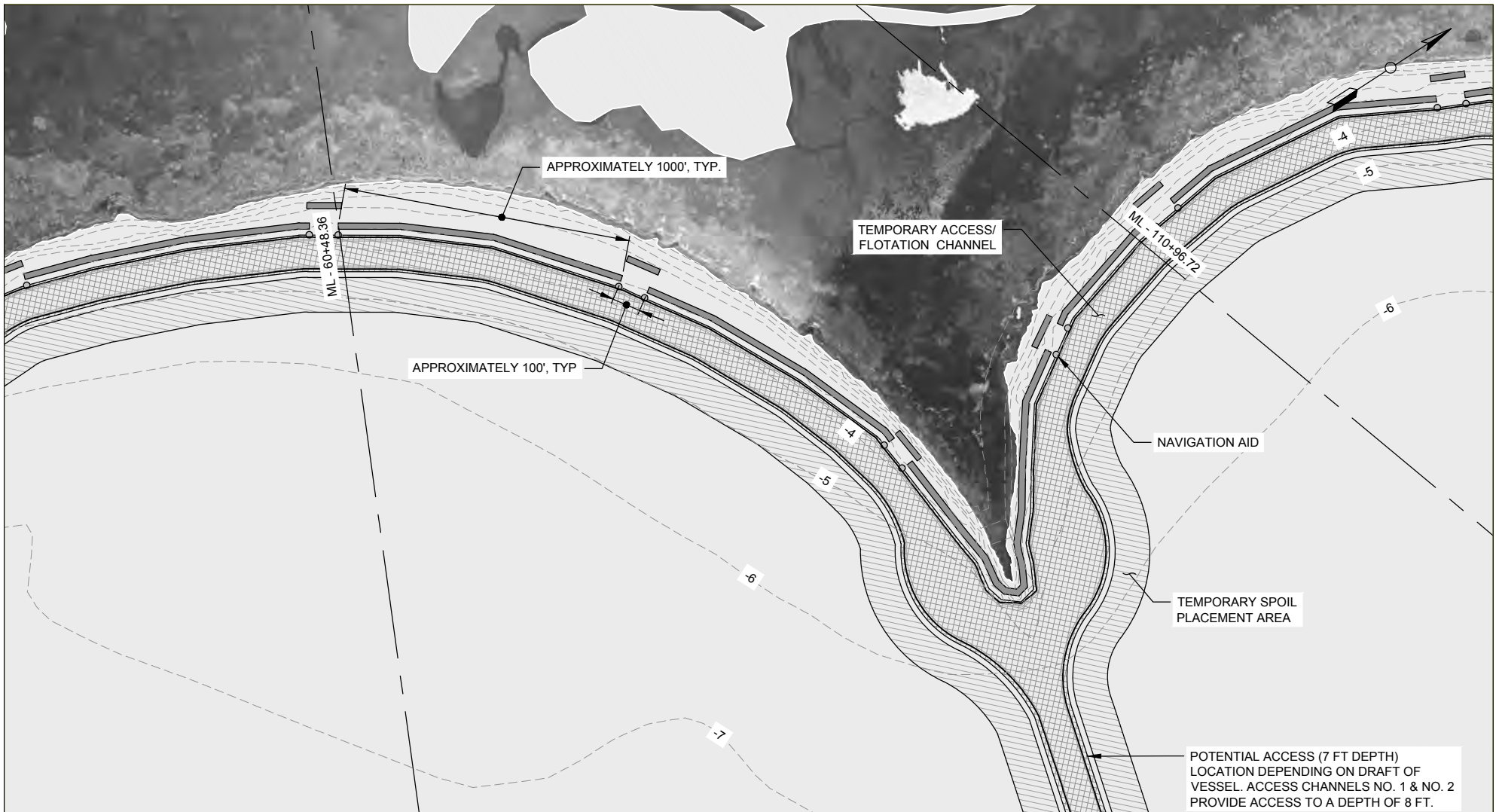
**PERMIT PLAN-1**







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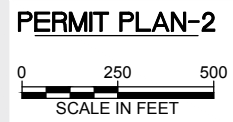
**PERMIT PLANS**

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DRAWN BY: B TADLOCK			DESIGNED BY: J CARTER	APPROVED BY: H. BERMUDEZ
STATE PROJECT NUMBER: PO-148			DATE: 1/9/15	
FEDERAL PROJECT NUMBER: N/A			SHEET 5 OF 12	



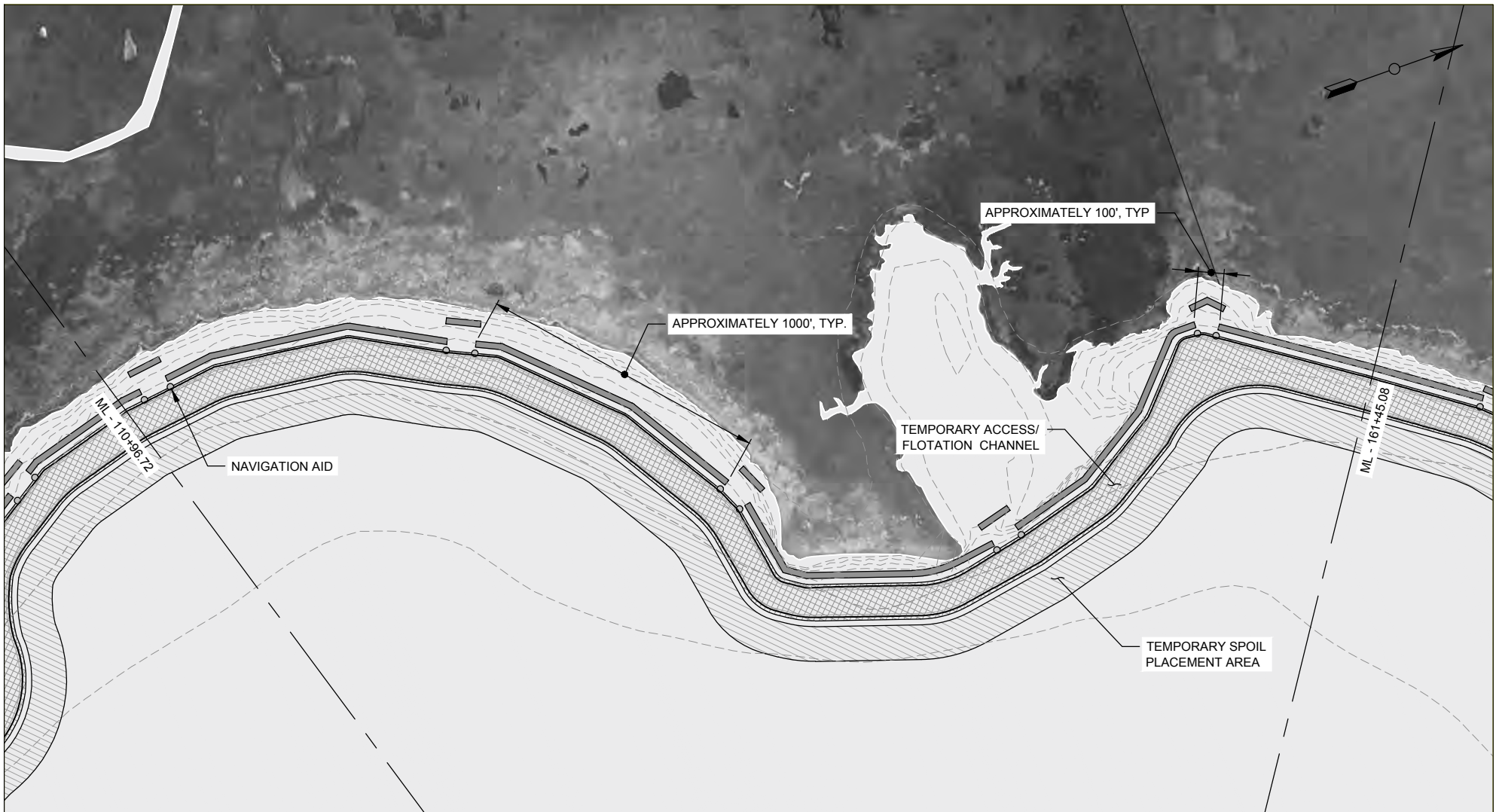


LEGEND	
	TEMPORARY ACCESS/ FLOTATION CHANNEL
	NAVIGATION AID
	PIPELINE BUFFER
	PIPELINE
	TEMPORARY SPOIL PLACEMENT AREA
	OYSTER REEF BREAKWATER









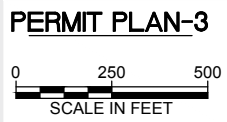
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DRAWN BY: B TADLOCK	DESIGNED BY: J CARTER	APPROVED BY: H. BERMUDEZ	STATE PROJECT NUMBER: PO-148	DATE: 1/9/15
FEDERAL PROJECT NUMBER: N/A			SHEET 6 OF 12	



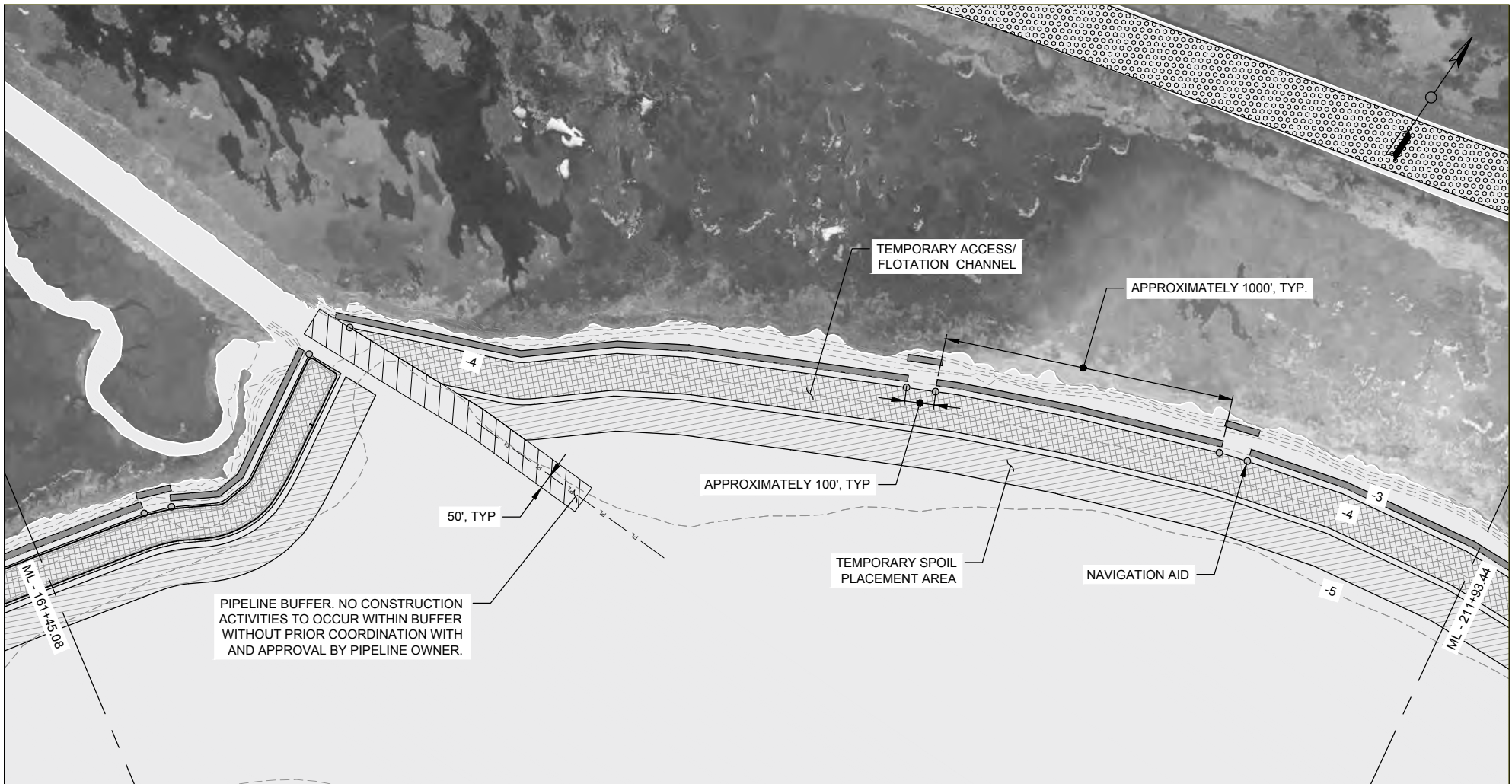
**LEGEND**

-  TEMPORARY ACCESS/  
FLOTATION CHANNEL
-  NAVIGATION AID
-  PIPELINE BUFFER
-  PIPELINE
-  TEMPORARY SPOIL  
PLACEMENT AREA
-  OYSTER REEF  
BREAKWATER










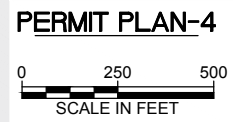
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			STATE PROJECT NUMBER: PO-148	DATE: 1/9/15
DRAWN BY: B TADLOCK			DESIGNED BY: J CARTER	APPROVED BY: H. BERMUDEZ
			FEDERAL PROJECT NUMBER: N/A	SHEET 7 OF 12



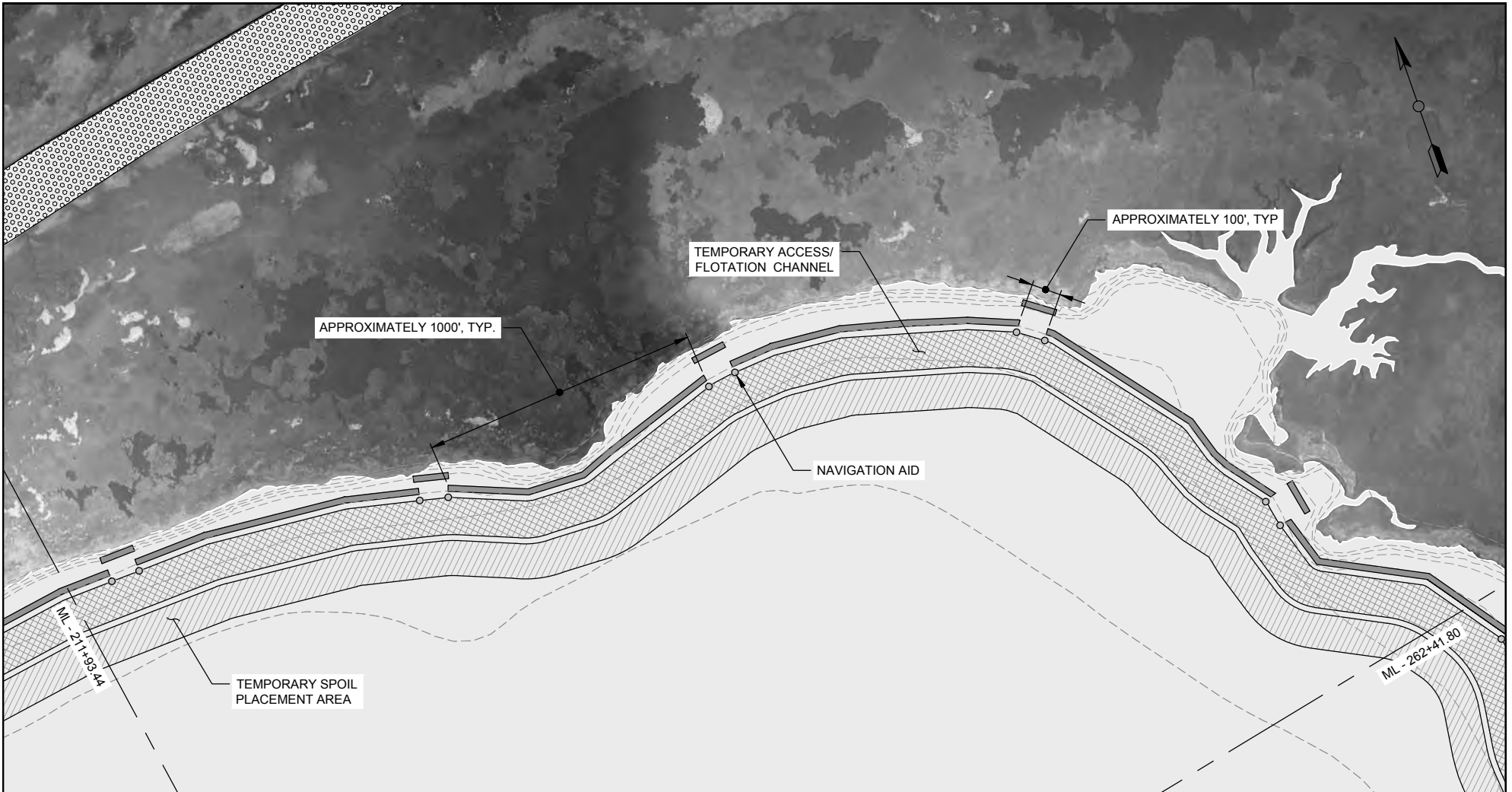
**LEGEND**

-  OYSTER LEASE AREAS
-  TEMPORARY ACCESS/FLOTATION CHANNEL
-  NAVIGATION AID
-  PIPELINE BUFFER
-  PL PIPELINE
-  TEMPORARY SPOIL PLACEMENT AREA
-  OYSTER REEF BREAKWATER










**PERMIT PLANS**

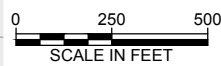
APPLICATION BY: <b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	 <b>COAST &amp; HARBOR ENGINEERING</b> 3410 FAR WEST BLVD, STE 210 AUSTIN, TX 78731 PH 512-342-9516 • FAX 512-342-9708	 <b>TETRA TECH, INC.</b> 748 MAIN ST. BATON ROUGE, LA 70802 (225) 383-1780	LIVING SHORELINE DEMONSTRATION PROJECT	PERMIT PLAN-4
DRAWN BY: B TADLOCK			DESIGNED BY: J CARTER	APPROVED BY: H. BERMUDEZ
STATE PROJECT NUMBER: PO-148			DATE: 1/9/15	
DRAWN BY: B TADLOCK			FEDERAL PROJECT NUMBER: N/A	
DESIGNED BY: J CARTER			SHEET 8 OF 12	



**LEGEND**

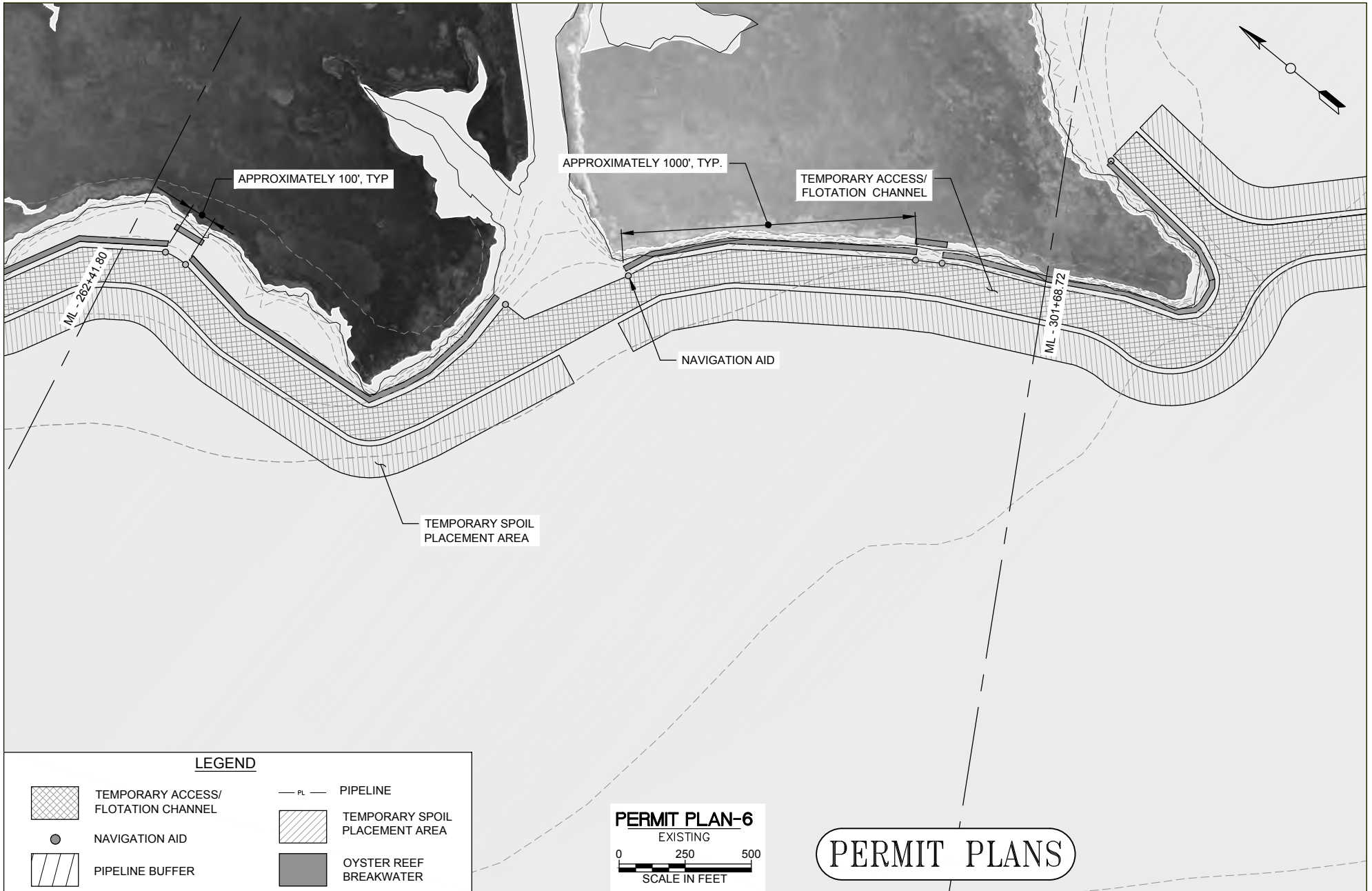
-  OYSTER LEASE AREAS
-  TEMPORARY ACCESS/FLOTATION CHANNEL
-  NAVIGATION AID
-  PIPELINE BUFFER
-  PIPELINE
-  TEMPORARY SPOIL PLACEMENT AREA
-  OYSTER REEF BREAKWATER

**PERMIT PLAN-5**



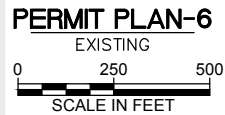
**PERMIT PLANS**

APPLICATION BY: <b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	 <b>COAST &amp; HARBOR ENGINEERING</b> 3410 FAR WEST BLVD, STE 210 AUSTIN, TX 78731 PH 512-342-9516 • FAX 512-342-9708	 <b>TETRA TECH, INC.</b> 748 MAIN ST, BATON ROUGE, LA 70802 (225) 383-1780	LIVING SHORELINE DEMONSTRATION PROJECT
			PERMIT PLAN-5
		STATE PROJECT NUMBER: PO-148	DATE: 1/9/15
DRAWN BY: B TADLOCK	DESIGNED BY: J CARTER	APPROVED BY: H. BERMUDEZ	FEDERAL PROJECT NUMBER: N/A
			SHEET 9 OF 12



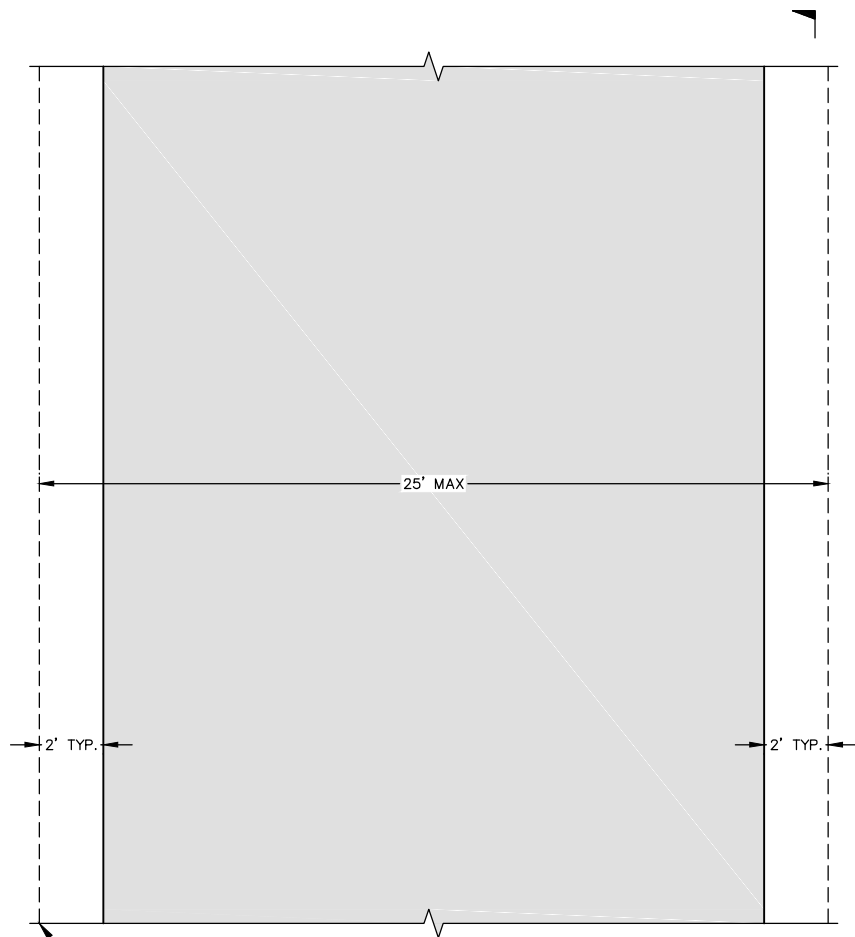
**LEGEND**

- TEMPORARY ACCESS/  
FLOTATION CHANNEL
- TEMPORARY SPOIL  
PLACEMENT AREA
- NAVIGATION AID
- OYSTER REEF  
BREAKWATER
- PIPELINE
- PIPELINE BUFFER



**PERMIT PLANS**

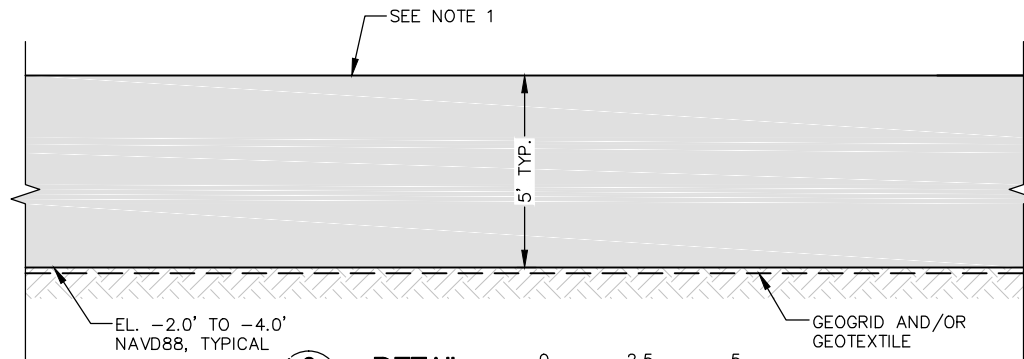
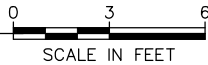
APPLICATION BY: <b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	<b>COAST &amp; HARBOR ENGINEERING</b> 3410 FAR WEST BLVD, STE 210 AUSTIN, TX 78731 PH 512-342-9516 • FAX 512-342-9708	<b>TETRA TECH, INC.</b> 748 MAIN ST, BATON ROUGE, LA 70802 (225) 383-1780	LIVING SHORELINE DEMONSTRATION PROJECT	PERMIT PLAN-6
DRAWN BY: B TADLOCK			DESIGNED BY: J CARTER	APPROVED BY: H. BERMUDEZ
STATE PROJECT NUMBER: PO-148			DATE: 1/9/15	
FEDERAL PROJECT NUMBER: N/A			SHEET 10 OF 12	



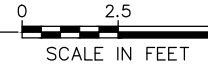
GEOGRID AND/OR  
GEOTEXTILE, TYP.



**DETAIL**  
TYPICAL  
PLAN VIEW



**DETAIL**  
TYPICAL  
ELEVATION VIEW

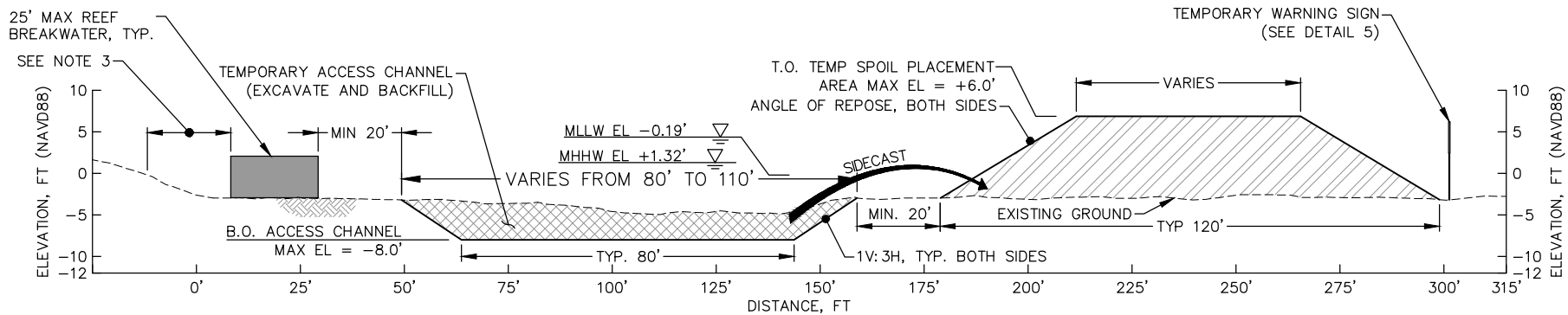


**NOTES**

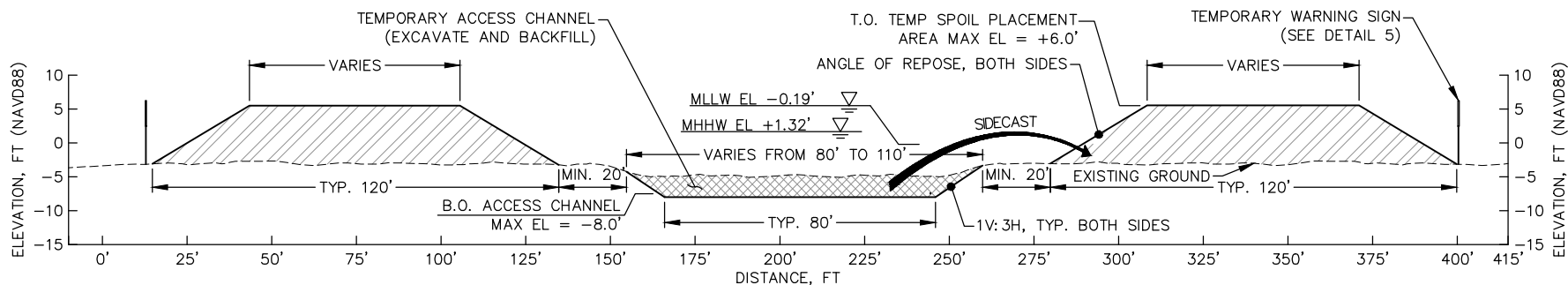
- OYSTER REEF BREAKWATER UNITS WILL BE COMPOSED OF CONCRETE, STEEL, MESH, GEOGRID, OR SIMILAR MATERIAL.

**PERMIT PLANS**

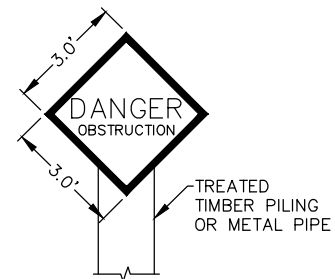
<p>APPLICATION BY: <b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	 <p><b>COAST &amp; HARBOR ENGINEERING</b> 3410 FAR WEST BLVD, STE 210 AUSTIN, TX 78731 PH 512-342-9516 • FAX 512-342-9708</p>	 <p><b>TETRA TECH, INC.</b> 748 MAIN ST, BATON ROUGE, LA 70802 (225) 383-1780</p>	<p>LIVING SHORELINE DEMONSTRATION PROJECT</p>	<p>OYSTER REEF BREAKWATER UNIT: GENERAL BREAKWATER DETAIL</p>
<p>DRAWN BY: B TADLOCK</p>	<p>DESIGNED BY: J CARTER</p>	<p>APPROVED BY: H. BERMUDEZ</p>	<p>STATE PROJECT NUMBER: PO-148</p>	<p>DATE: 1/9/15</p>
<p>FEDERAL PROJECT NUMBER: N/A</p>			<p>SHEET 11 OF 12</p>	



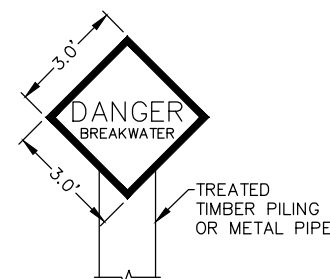
**3** DETAIL  
 FLOTATION CHANNEL  
 TYPICAL SECTION  
 0 20 40  
 SCALE IN FEET



**4** DETAIL  
 ACCESS CHANNEL  
 ENTRANCE TYPICAL SECTION  
 0 25 50  
 SCALE IN FEET



**5** DETAIL  
 TEMPORARY  
 WARNING SIGN



**6** DETAIL  
 PERMANENT  
 NAVIGATION AID

# PERMIT PLANS

## NOTES

1. THE TEMPORARY SPOILS SHALL BE BACKFILLED INTO THE TEMPORARY ACCESS AND FLOTATION CHANNEL AT THE COMPLETION OF THE PROJECT.
2. TEMPORARY WARNING SIGNS SHALL BE INSTALLED AT LOCATIONS SHOWN ON SHEETS 5-10. PERMANENT NAVIGATION AIDS TO BE LOCATED AS REQUIRED BY USCG. ALL SIGNS WILL MEET U.S. COAST GUARD STANDARDS.
3. DISTANCE FROM MLLW TO REEF BREAKWATER VARIES FROM 10' TO 300'.

APPLICATION BY: <b>COASTAL PROTECTION AND RESTORATION AUTHORITY</b> 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	 <b>COAST &amp; HARBOR ENGINEERING</b> 3410 FAR WEST BLVD, STE 210 AUSTIN, TX 78731 PH 512-342-9516 • FAX 512-342-9708	 <b>TETRA TECH, INC.</b> 748 MAIN ST. BATON ROUGE, LA 70802 (225) 383-1780	LIVING SHORELINE DEMONSTRATION PROJECT	TYPICAL ACCESS CHANNEL DETAILS
DRAWN BY: B TADLOCK      DESIGNED BY: J CARTER      APPROVED BY: H. BERMUDEZ			STATE PROJECT NUMBER: PO-148	DATE: 1/9/15
FEDERAL PROJECT NUMBER: N/A			SHEET 12 OF 12	