

**CAILLOU LAKE HEADLANDS
RESTORATION PROJECT (TE-100)**

**SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT FOR ISSUANCE
OF A
NON-COMPETITIVE NEGOTIATED AGREEMENT
FOR THE USE OF OUTER CONTINENTAL SHELF SAND**

**LDNR NO. 2503-12-22
TERREBONNE PARISH, LOUISIANA**

**Prepared for United States Department of the Interior
Bureau of Ocean Energy Management
On Behalf of the Coastal Protection and Restoration Authority of Louisiana
450 Laurel Street
North Chase Tower, Suite 1200
Baton Rouge, Louisiana 70801**



Prepared and Submitted By:



January 13, 2014

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1.0 INTRODUCTION

On behalf of the Bureau of Ocean Energy Management (BOEM) and the Coastal Protection and Restoration and Authority of Louisiana (CPRA) a Supplemental Environmental Assessment (SEA) has been prepared for the Caillou Lake Headlands Restoration Project (TE-100) (hereinafter referred to as the Project) in support of modifying the Project's existing permits and Non-Competitive Negotiated Agreement with BOEM for use of an Outer Continental Shelf (OCS) sand resource located in federally-owned waters.

The U.S. Army Corps of Engineers (USACE) requires a permit for aspects of the Project involving dredging of any state-owned water borrow areas and conveyance and placement of sand resources. The operative federal authorities for USACE permitting are Section 10 of the Rivers and Harbors Act of 1899, which regulate dredging and filling of federally-owned waters and water bottoms, and Section 404 of the Clean Water Act, which regulates discharge of dredged sediment into federally-owned waters. BOEM and the USACE are working collaboratively to ensure effective implementation of the required National Environmental Policy Act (NEPA) process, the required Endangered Species Act (ESA) Section 7 consultations, the Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) consultation (Section 305); the National Historic Preservation Act Section 106 process; and the Coastal Zone Management Act Section 307 consistency determination.

The proposed modifications to the Project will be evaluated by the USACE as part of the 10/404 permitting process. USACE will prepare an independent Environmental Assessment (EA) to determine the least damaging, most practicable project alternative. Application for a permit modification has been submitted to the USACE and is under review.

The purpose of the SEA is to determine if the proposed action has the potential for creating significant impacts to the environment and would thereby warrant a more detailed study on possible impacts, mitigation, and alternative courses of action. The SEA evaluates whether the proposed action, new circumstances not previously analyzed, or information not previously available contribute to significantly different environmental effects (43 CFR 46.120). The effects of the proposed Project modifications are expected to be similar to effects of the original Project as evaluated in the Caillou Lake Headlands Restoration Project Environmental Assessment (EA) (CEC, 2014); however, since the CPRA has revised the proposed action to include a larger fill template and borrow area, there is the potential for new impacts to occur during dredging and fill placement.

1.1 PROJECT PURPOSE AND SCOPE

The purpose of the Project is to restore Whiskey Island's geomorphological and ecological form and function through simulation of historical conditions by enlarging the existing barrier island, both in width and elevation, and by preventing breaching during the design life. Restoration of the Island's geomorphic form and function will provide the buffer to reduce the full force and effects of wave action, saltwater intrusion, storm surge, and tidal currents on associated estuaries and wetlands; and provide a marsh platform to capture overwash sediments during episodic events and serve as a roll over platform as the Island migrates landward. Restoration of the Island's ecologic form and function provides wetland habitat for a diverse number of plant and animal species and to help retain sediment.

The purpose of the modifications is to introduce two optional alternatives for construction of the Caillou Lake Headlands Restoration Project (TE-100): one, should the construction bids be competitive and Project funding be adequate, for extending the beach, dune, and marsh templates to the west to provide additional habitat benefits; and two, a potential cost savings by constructing the marsh using Ship Shoal sand instead of sediment from the Whiskey Island 3A Borrow Area. The latter would enable the contractor to accomplish the entire Project from one borrow area, using a single conveyance corridor, single discharge pipeline, and single mobilization and demobilization.

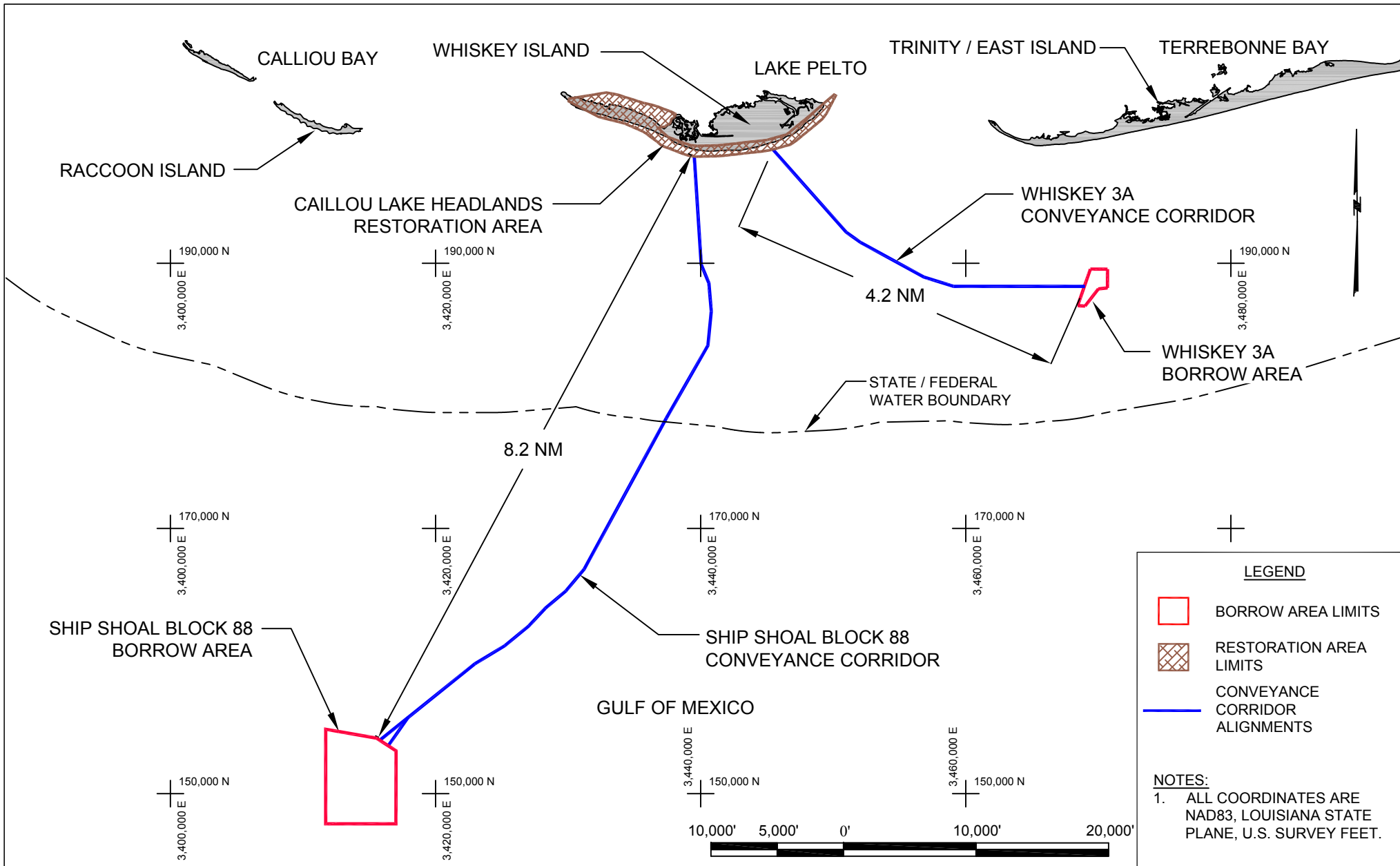
Impacts associated with this Project were discussed in the EA (CEC, 2014), Section 404 (b)(1) Evaluation, and in BOEM's Finding of No Significant Impact (FONSI), dated October 31, 2014. Findings in these documents determined that no significant impacts would occur as a result of this project.

1.2 PROJECT LOCATION

Whiskey Island is centrally located in the Isle Dernieres chain and it represents a remnant of the single, large Isle Derniere (Last Island), which was segmented into multiple smaller islands by a major hurricane in 1856. The storm breached the Island in several places. That breaching coupled with subsequent erosion events and increasing tidal prism due to interior wetland loss during the remainder of the 19th Century and throughout the 20th, led to the gradual evolution of the tidal inlets that presently separate Raccoon, Whiskey, and Trinity Islands. The easternmost remnant of Isle Derniere was Wine Island, which disappeared by the middle of the 20th Century. Wine Island persists as a sand shoal between Wine Island and Cat Island Passes. Hurricane Carmen (1974) created New Cut, separating East Island from Trinity Island. New Cut eventually healed in 2007, aided by CWPPRA project TE-37.

The Project area includes the Restoration Area on Whiskey Island; two (2) borrow areas located in the Gulf of Mexico, the sand source located approximately 8.2 nautical miles (NM) to the southwest of the Island on the OCS, and the mixed sediment source located approximately 4.2 NM to the southeast of the Island in state-owned waters; and two (2) conveyance corridors connecting the borrow areas to the Restoration Area (Figure 1-1). The length of the conveyance corridor to the sand source is approximately 8.9 NM and the length of the Conveyance Corridor to the mixed sediment source is approximately 4.5 NM. The corridors were aligned to avoid potential cultural resources and oil and gas infrastructure as well as minimize oil and gas pipeline crossings.

The proposed modifications to the project are located within the Area of Potential Effect (APE) as described in the EA. The modifications represent a 9% increase in the overall project footprint.



2.0 ALTERNATIVES ANALYSIS

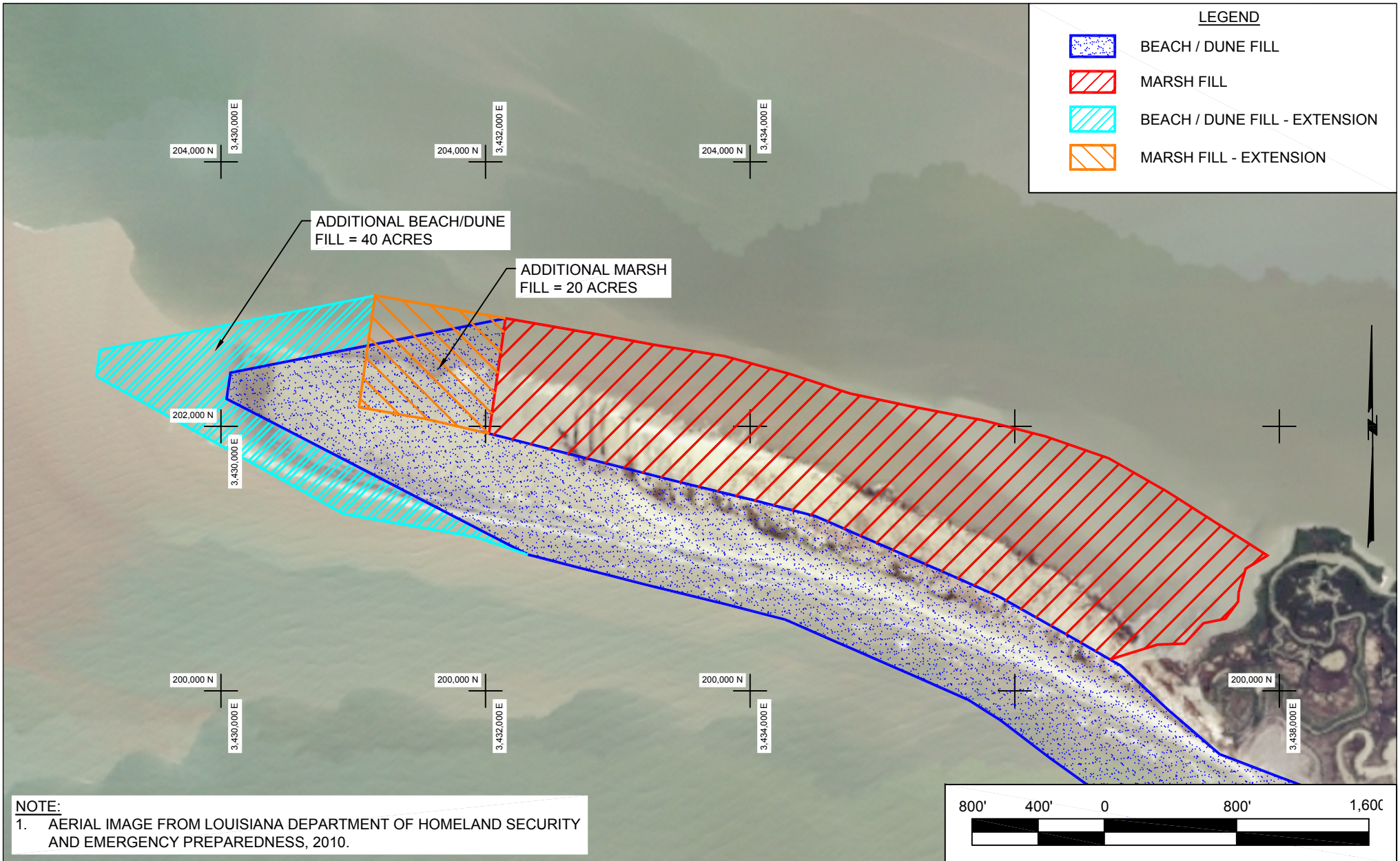
2.1 PROPOSED ACTIONS

The purpose of the modifications is to introduce two optional alternatives for construction of the Project. An extensive Alternatives Analysis was completed during Project design which is described in the EA (CEC, 2014). First, should the construction bids be competitive and funding adequate, CPRA will be able to extend the beach, dune, and marsh templates to the west to provide additional habitat benefits. Second, potential project cost savings could be realized by constructing the marsh using Ship Shoal sand instead of sediment from the Whiskey Island Borrow Area 3A. The latter would enable the contractor to accomplish the entire project from one borrow area, using a single conveyance corridor, single discharge pipeline, and single mobilization and demobilization.

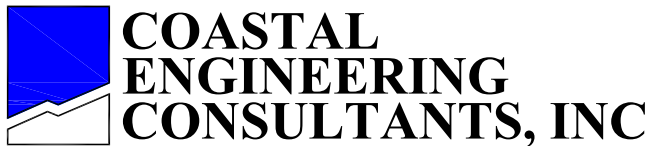
2.1.1 Restoration Area Alternative

An extension of the beach and dune fill template has been proposed as an option. The modification would shift the end of the template 1,000 ft westward. This would add approximately 40 acres to the original 500 acres of beach/dune fill and approximately 20 acres to the original 170 acres of marsh equal to 8.0% and 11.7% increase, respectively. It is noted the proposed extension footprint will be constructed over existing unvegetated water bottoms. This increase will require approximately 0.40 MCY of beach/dune fill sediments and approximately 0.11 MCY of marsh fill sediments. Including the optional extension, the volumes of material required to accomplish the restoration have been estimated to be 12.1 MCY of sand, adjusted for cut to fill ratio, and 1.5 MCY of mixed sediments, adjusted for cut to fill ratio. The optional extension is shown in Figure 2-1. This option will be considered prior to award of construction contract should the contractor's bids be competitive and the final funding allocation sufficient.

A potential cost-saving option has been proposed: to substitute sand instead of mixed sediment for marsh creation. The lowered cost would be achieved by elimination of the demobilization and remobilization cost for relocating the dredge and discharge pipeline from the sand borrow area to the mixed sediment borrow area; and reducing the dimensions/volumes to construct the separation and containment dikes required on Whiskey Island. There would be no change in the templates for either the beach and dune or marsh, however the substitution would increase the total volume of sand required, adjusted for cut to fill ratio, from the above-referenced 11.6 to 13.4 MCY, while eliminating the 1.3 MCY of mixed sediment.



NOTE:
 1. AERIAL IMAGE FROM LOUISIANA DEPARTMENT OF HOMELAND SECURITY AND EMERGENCY PREPAREDNESS, 2010.



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OPTIONAL RESTORATION AREA
 TEMPLATE EXTENSION

FIGURE 2-1

2.1.2 Borrow Areas Alternative

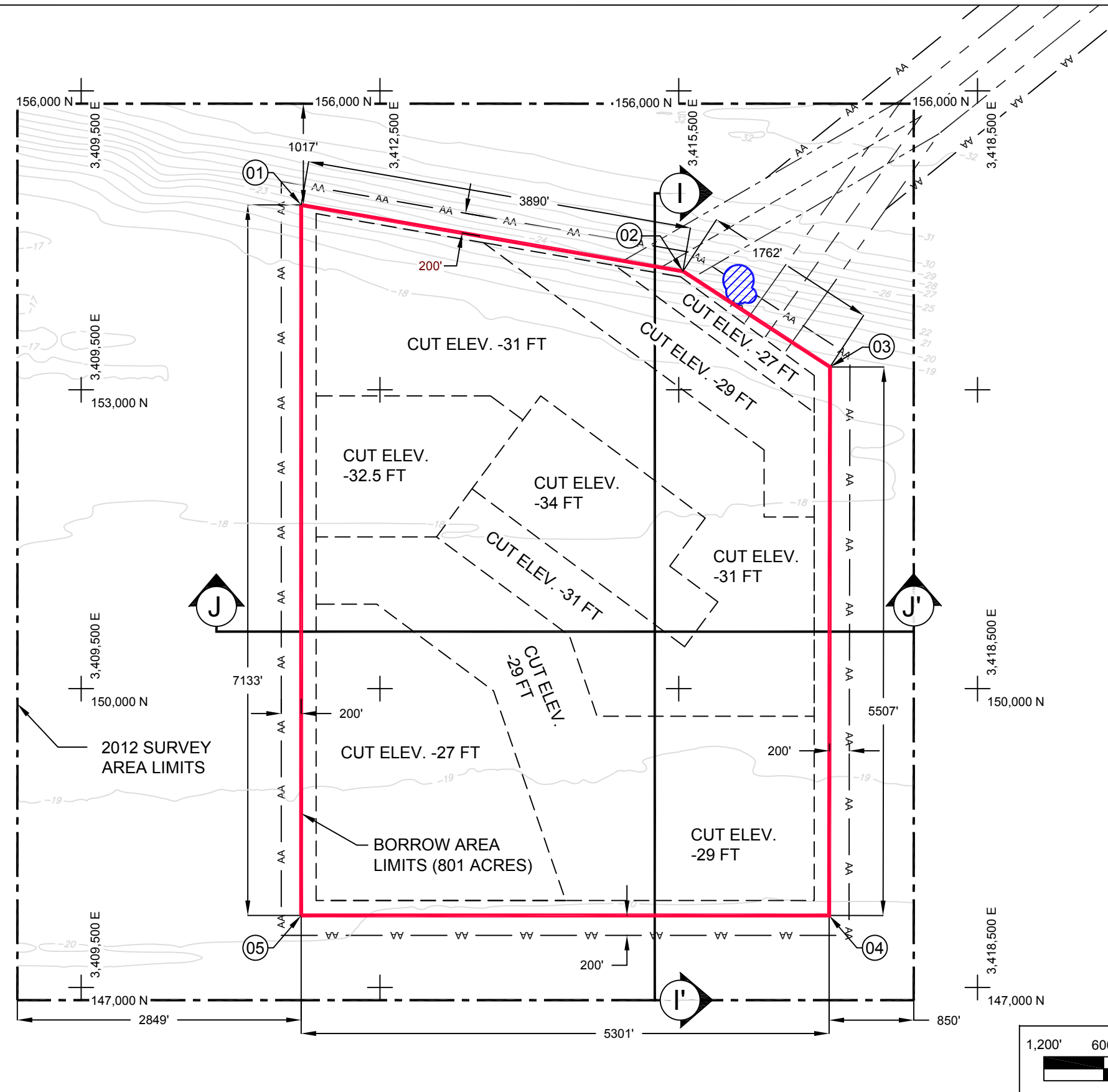
The sand for the beach and dune will be mined from a designated borrow area within Ship Shoal Lease Block 88, located on the OCS approximately 8.9 NM from Whiskey Island along its conveyance corridor. Ship Shoal has been studied extensively to define the stratigraphy of the shoal and identify any potential cultural resources and infrastructure that may be present. Lease Block 88 was selected because of its proximity to the Project Restoration Area.

The mixed sediment for marsh creation may be mined from the designated Whiskey 3A Borrow Area located in State-owned waters approximately 4.5 NM southeast of Whiskey Island along its Conveyance Corridor. This borrow area was subjected to geophysical and geotechnical studies during the planning and design phases of the TE-50 project. The stratigraphy showed a surficial muddy unit overlying a coarser sandy unit. Mining these two (2) units together would produce marsh-compatible mixed sediment. The surface area is approximately 77 acres. The marsh compatible sediment thickness averages approximately twenty (20) ft. The design depth is -37 ft NAVD88 with a 2.0 ft allowable overdredge to -39 ft NAVD88. The design volume is estimated to be over 2 MCY. The available sediment is composed of approximately 60% sand. If the contractor selects the option to construct both the beach/dune and marsh templates using Ship Shoal sand, the Whiskey 3A Borrow Area will remain unutilized and be available for other marsh creation endeavors.

As an alternative to the mixed sediment source, the contractor may mine the expanded Ship Shoal Block 88 Borrow Area to construct the proposed marsh. The revised borrow area, including the 1,000 ft extension to the west, has an estimated total volume of 16.1 MCY. The surface area of the extended borrow area will increase from 650 acres to 801 acres, which represents a 23% increase.

The Ship Shoal Block 88 Borrow Area expanded design plan and typical cross sections are shown in Figures 2-2 and 2-3, respectively.

BORROW AREA COORDINATES		
POINT	EASTING	NORTHING
①	3411709.2	154854.9
②	3415542.1	154189.9
③	3417018.8	153228.9
④	3417009.7	147722.3
⑤	3411709.2	147722.3

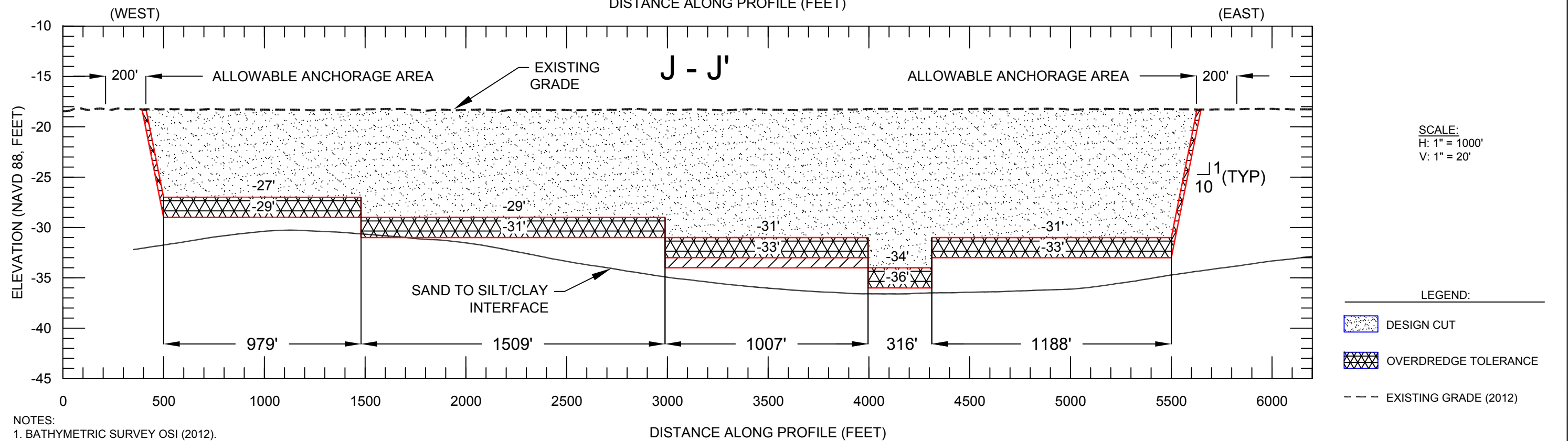
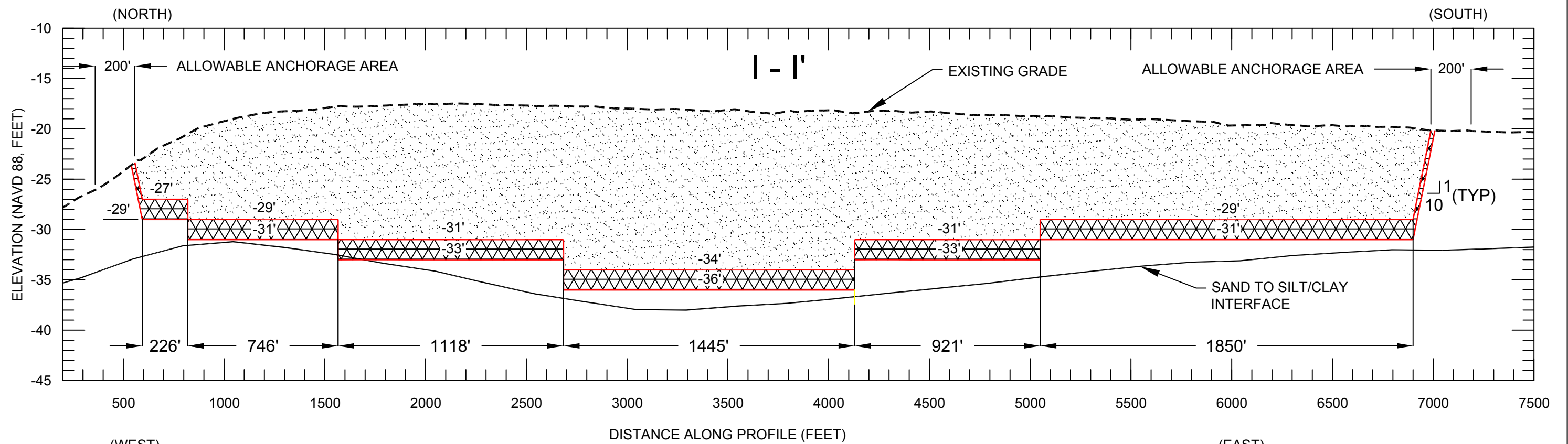


LEGEND

- BORROW AREA LIMITS
- - - CUT ELEVATION LIMITS
- BATHYMETRIC CONTOUR (OSI, 2012)
- - - 2012 SURVEY AREA LIMITS
- PL PIPELINE (LDNR, 2008)
- - - AA ANCHORAGE AREA
- AVOIDANCE AREA - NO ANCHORING OR DREDGING (C&C, 2003)
- - - SHIP SHOAL BLOCK 88 CONVEYANCE CORRIDOR
- - - CONVEYANCE CORRIDOR ALTERNATE SPUR

NOTES:

- ALL COORDINATES ARE IN NAD83, STATE PLANE - LOUISIANA SOUTH, US SURVEY FEET.
- ALL UNITS ARE IN U.S. SURVEY FEET.
- DEPTHS ARE SHOWN IN NAVD88, FEET.
- ANCHORING IS NOT ALLOWED WITHIN THE AVOIDANCE AREA.



SCALE:
H: 1" = 1000'
V: 1" = 20'

- LEGEND:
- DESIGN CUT
 - OVERDREDGE TOLERANCE
 - EXISTING GRADE (2012)

NOTES:
1. BATHYMETRIC SURVEY OSI (2012).
2. ELEVATIONS ARE SHOWN IN NAVD88, FEET



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SHIP SHOAL BLOCK 88 BORROW AREA
DESIGN CROSS SECTIONS - ALTERNATIVE

FIGURE 2-3

2.1.3 Conveyance Corridors

Sand Source

The Ship Shoal Block 88 Conveyance Corridor connecting the Ship Shoal Block 88 Borrow Area to Whiskey Island was sited based on a review of NOAA Nautical Chart Nos. 11356 (38th Edition, June 2008) and 11357 (41st Edition, May 2011), historical pipeline and infrastructure databases, and survey data and results from the prior investigations.

A detailed submerged cultural resources and geo-hazard survey of the conveyance corridor was conducted for the Project (OSI, 2012 and Goodwin, 2012). The survey area was over 980 ft in width and transects were surveyed at 30-m line spacing. The survey included collection of bathymetric soundings, sidescan sonar, marine magnetometer, and subbottom profiler data for 123 NM. The locations of the pipelines crossed by this conveyance corridor were confirmed by the magnetic anomalies identified through the magnetometer survey. The cultural resources investigation identified four (4) anomalies within the corridor and recommended avoidance buffers for those areas.

The conveyance corridor alignment will not change as a result of the proposed project modifications.

Mixed Sediment Source

The Whiskey 3A Conveyance Corridor connecting the Whiskey 3A Borrow Area to Whiskey Island was sited based on a review of NOAA Nautical Chart No. 11357 (41st Edition, May 2011), historical pipeline and infrastructure databases, and survey data and results from the prior investigations.

A detailed submerged cultural resources and geo-hazard survey of the conveyance corridor was conducted as part of the Project scope (OSI, 2012 and Goodwin, 2012). The survey area was over 980 ft in width and transects were surveyed at 30-m line spacing. The survey followed the same methodology as the offshore corridor for 57 NM of data collection (Section 6.2). The locations of the pipelines crossed by this conveyance corridor were confirmed by the magnetic anomalies identified through the magnetometer survey. The cultural resources investigation identified two (2) anomalies within the corridor and recommended avoidance buffers for those areas. Target 9 was resurveyed as part of the Island's Phase II cultural resources survey and determined to not be a cultural resource.

The conveyance corridor alignment will not change as a result of the proposed project modifications. If the contractor selects the option to construct both the beach/dune and marsh

templates using Ship Shoal sand, the Whiskey 3A Borrow Area conveyance corridor will not be needed.

2.2 NO-ACTION ALTERNATIVE

This Alternative assumes that there will be no barrier island restoration in the future, thus no action to combat ongoing erosion and land loss. Through analysis of land loss and barrier island degradation, TBBSR determined that if no action were taken to restore Whiskey Island, the environmental resources lost will be: 443 acres of EFH; critical habitat for piping plover and red knot; 377 acres of supratidal habitat; storm surge protection for Terrebonne Parish; and protection of oil and gas infrastructure.

Whiskey Island was predicted to disappear sooner than several other islands in the Isles Dernieres and Timbalier Island Reaches. The island currently lacks dune habitat. If no action is taken on the island, the supratidal and intertidal habitats are expected to disappear in approximately seventeen (17) and thirty-one (31) years, respectively (USACE, 2010).

3.0 AFFECTED ENVIRONMENT

Section 3.0 of the EA described the environmental resources of the Caillou Lake Headlands and the two proposed borrow areas that would be affected by the Project. Based on the EA, BOEM issued a FONSI. Current baseline conditions are generally believed to be similar to conditions described in the EA (CEC, 2014).

4.0 ENVIRONMENTAL CONSEQUENCES

The EA (CEC, 2014) analyzed the direct, indirect, and cumulative socioeconomic and environmental impacts of the proposed activities on resources in the project area. The effects of the proposed expansion of the beach, dune, and marsh templates is expected to be similar to the effects of the original project; however, since the CPRA has revised the proposed action to include larger fill templates and borrow areas, there is the potential for additional impacts to occur during dredging and fill placement.

4.1 IMPACT-PRODUCING FACTORS

The impacts resulting from the proposed modifications, should either or both alternatives be undertaken, would be minor, short-term, and localized. They could include temporary benthic and water column impacts in the areas adjacent to dredging operations at borrow areas and at fill discharge operations onshore, as well as excavation and placement associated with containment dike construction. The potential impacts include increased turbidity and disruption of infaunal

communities. All reasonable efforts would be made to avoid, minimize, and restore affected natural resources to the extent practicable. As described in EA, it is anticipated implementation of this project would result in increased intertidal and supratidal habitat for both wildlife and fisheries resources as well as improved function as a storm surge buffer and facilitate maintenance of estuarine conditions in the Terrebonne Basin.

4.2 PHYSICAL RESOURCES

The EA (CEC, 2014) analyzed direct and indirect effects of the Project and the No-Action Alternative on physical resources: Oceanographic and Coastal Processes; Geology; Air Quality; Water Quality; and Noise; for the Island, Borrow Areas, Conveyance Corridors, and Project area; and is incorporated by reference. The proposed modifications are expected to have similar effects and benefits on physical resources.

Overall, the Project would restore the geomorphic form of the beach and dune, enabling the barrier shoreline to absorb wave energy during storms and fair-weather conditions and provide some storm surge protection, reducing storm damage to upland areas landward of the beach and dune; inhibiting breaching; and decreasing land loss rates.

4.3 BIO-PHYSICAL ENVIRONMENT

The EA (CEC, 2014) analyzed direct and indirect effects of the Project and the No-Action Alternative on bio-physical resources: Vegetation; Aquatic Resources and Communities (Benthic Resources, Plankton Resources, Fishes and Macroinvertebrates, Invasive Fish and Macroinvertebrate Species); Wildlife Resources; Amphibians, Reptiles, Terrestrial Mammals, and Invasive Wildlife Species; Marine Mammals; and Avian Communities and Resources for the Island, Borrow Areas, Conveyance Corridors, and Project area; and is incorporated by reference. The proposed modifications are expected to have similar effects and future benefits on bio-physical resources.

4.4 CRITICAL BIOLOGICAL RESOURCES

The EA (CEC, 2014) analyzed direct and indirect effects of the Project and the No-Action Alternative on critical biological resources [EFH and Threatened and Endangered Species (Gulf Sturgeon, Sea Turtles, Piping Plover, Red Knot, West Indian Manatee, and Whales)] for the Island, Borrow Areas, Conveyance Corridors, and Project area; and is incorporated by reference. The proposed modifications are expected to have similar effects on these critical biological resources.

Public notice comments received from NMFS and FWS regarding EFH and Threatened and Endangered Species document concurrence with the EA.

4.5 CULTURAL RESOURCES

The EA (CEC, 2014) analyzed direct and indirect effects of the Project and the No-Action Alternative on cultural resources for the Island, Borrow Areas, Conveyance Corridors, and Project area. The proposed project modifications are within areas previously surveyed for the presence of cultural resources. Both the terrestrial and marine cultural resource surveys determined that the proposed actions would not negatively affect any known scientific, cultural, or historic resources in the APE. Four potential cultural resource targets were located in proximity to the proposed activities and SHPO and BOEM-agreed-upon buffers have been designated around each.

4.6 SOCIOECONOMICS AND HUMAN RESOURCES

The EA (CEC, 2014) analyzed direct and indirect effects of the project on Socioeconomic and Human Resources [Population and Housing; Employment and Income; Environmental Justice; Commercial Fisheries; Infrastructure (Onshore Infrastructure, Offshore Infrastructure); Waterborne Commerce; Oil, Gas, and Minerals; Aesthetic Resources; Recreational Resources; and Navigation and Public Safety]. This information is incorporated by reference. The proposed project modifications are anticipated to have similar effects on Socioeconomic and Human Resources.

4.7 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW) IMPACTS

The EA (CEC, 2014) analyzed direct and indirect effects of the Project and the No-Action Alternative on Hazardous, Toxic, and Radioactive Waste (HTRW). This information is incorporated by reference. HTRW effects are anticipated to be similar to those described in the EA.

Accidental spills and releases of waste/fuel, although remote, are possible. The contractor will prevent oil, fuel, or other hazardous substances from entering the air or water. This will be accomplished by design and procedural controls. All wastes and refuse generated by project construction would be removed and properly disposed. The contractor will implement a spill contingency plan for hazardous, toxic, or petroleum material for the borrow area. Compliance with U.S. EPA Vessel General Permits would be ensured, as applicable. The use of Ship Shoal would not adversely affect HTRW within the project area.

4.8 CUMULATIVE IMPACTS

Cumulative impacts are those impacts on the environment that result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions. The EA (CEC, 2014) analyzes the cumulative effects of the proposed actions as well as any connected, cumulative, and similar existing and potential actions occurring in the area surrounding the project. The potential adverse direct environmental and socioeconomic impacts associated with the proposed action are insignificant and outweighed by the benefits. In general, the proposed modifications would have no significant adverse cumulative effects.

Based on the above discussion of the minor impacts which would result from the implementation of the proposed project modifications and due to the lack of long term adverse impacts, reasonable assurance has been provided that no significant cumulative impacts would occur as a result of the proposed optional alternatives.

5.0 CONSULTATION AND COORDINATION

5.1 USACE ENVIRONMENTAL IMPACT STATEMENT, SECTION 10/SECTION 404 PERMIT, AND COASTAL USE PERMIT

The EA (CEC, 2014) describes the consultation and coordination efforts undertaken prior to its September 24, 2014 submission. The actions completed subsequent to its publication include the following:

- July 16, 2014 receipt of Department of Wildlife and Fisheries Fill Material License No. WLF201444 and WLF201444(REVISED) to remove fill material from water bottoms of the State of Louisiana.
- August 28, 2014 request to the Office of Coastal Management for modification to Consistency Determination C20130224, modification to Coastal Use Permit P20121652, and modification to Corps of Engineers Permit MVN-2013-0266-WOO.
- September 30, 2014 receipt of Consistency Determination C20130224 mod 01 (P201201652 amendment) from the Office of Coastal Management.
- December 15th 2014 received Modification to Permit Number USCOE-MVN-2013-0026-WOO (originally received on June 18th 2014), allowing expansion of the Ship Shoal borrow area and changes to the design of the back-barrier marsh.

6.0 PERMITS AND COMMITMENTS

CPRA anticipates no changes from the commitments presented in the EA (CEC, 2014) to compliance with all permit and consultation document conditions and general and special

provisions. As described herein, the proposed permit modifications are designed to increase the environmental benefits of the project by increasing the beach, dune, and marsh habitat to be created in the most cost effective manner practicable.

7.0 CONCLUSION

The proposed action would have no significant environmental impacts on the existing environment. No additional mitigation actions should be required beyond those noted within the USACE permit and BOEM OCS Lease. Best Management Practices would be employed during the proposed actions to minimize any identified adverse impacts. The implementation of the proposed action would not have a significant adverse impact on the quality of the environment and an environmental impact statement is not required.

8.0 LIST OF PREPARERS

No changes from the original September 24, 2014 submission.

Name	Organization	Role in Preparation
Michael Miner, Ph.D.	BOEM	Document Review
Kenneth Ashworth, Ph.D.	BOEM	Document Review
Chad Chauvin, PE	CPRA	Project Management
Elizabeth Davoli, R.P.A.	CPRA	Document Review
Clayton Breland, Ph.D., CPG	CPRA	Document Review
Devyani Kar, Ph.D., CFM	CPRA	Project Management
Jon Staiger, Ph.D.	Coastal Engineering Consultants, Inc.	Document Preparation
Michael Poff, PE	Coastal Engineering Consultants, Inc.	Document Preparation
Michael Stephen, Ph.D., PG	Coastal Engineering Consultants, Inc.	Document Preparation
Greg Grandy, ASLA	Coastal Engineering Consultants, Inc.	Document Preparation
R. Christopher Goodwin, Ph.D.	R. Christopher Goodwin & Associates, Inc.	Marine and Terrestrial Archaeology
David McCullough, Ph.D.	R. Christopher Goodwin & Associates, Inc.	Marine and Terrestrial Archaeology
John Sullivan, P.G.	Ocean Surveys, Inc.	Geophysical Survey

9.0 REFERENCES

One addition to the original September 24, 2014 submission. The original section is incorporated by reference.

Coastal Engineering Consultants, Inc. (CEC). 2014. Caillou Lake Headlands Restoration Project (TE-100) Environmental Assessment for Issuance of a Non-Competitive Negotiated Agreement for the Use of Outer Continental Shelf Sand. LDNR No. 2503-12-22. Terrebonne Parish, Louisiana. For Coastal Protection and Restoration Authority of Louisiana, Baton Rouge, Louisiana. 126 pp.

Appendix A

Modified Permits and Associated Letters, and Coordination.



**DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT**

P.O. BOX 44487
BATON ROUGE, LOUISIANA 70804-4487
(225)342-7591
1-800-267-4019

COASTAL USE PERMIT/CONSISTENCY DETERMINATION

C.U.P. No.: P20121652 (Revised)

C.O.E. No.: MVN- 2013- 00266- WOO

NAME: **COASTAL PROTECTION AND RESTORATION AUTHORITY**
c/o COASTAL ENGINEERING CONSULTANTS, INC.
5745 ESSEN LANE, SUITE 200
BATON ROUGE, LA 70810
Attn: Greg Grandy

LOCATION: Terrebonne Parish, LA

Lat. 29° 02' 47.76"N, Long. 90° 48' 19.44"W; Ship Shoal Borrow Area @ Lat. 28° 55' 28.80"N, Long. 90° 55' 16.14"W; Whiskey 3A Borrow Area @ Lat. 29° 01' 11.57"N, Long. 90° 44' 36.24"W; Sections 2, 3, & 10; T24S-R16E; Whiskey Island, LA.

DESCRIPTION: Mining of approximately 11,315,940 cu. yds. of sand from the Whiskey 3A borrow area (2,920' x 1,300') and Ship Shoal Lease Block 88 (6,959' x 4,375') to create a beach and dune marsh habitat on Whiskey Island (TE-100). Mined sediment will be transported via a 30" sediment pipe. A 500' wide conveyance corridor will be required from each of the borrow areas. No dredging will be required for the corridors. For the beach and dune restoration; material will be placed along approximately 23,500' of shoreline. The dune will be constructed with a typical width of 232' at the base and 100' at the crest. The beach fill will be placed approximately 464' wide along the length of the shoreline. A dike will be constructed to contain fill material and a sand fence will be installed. For the marsh restoration; approximately 972,000 cu. yds. of mixed sediment will be placed and planted within a 5,500' x 1,000' area surrounded by primary and secondary containment dikes to prevent fill from entering the adjacent mangroves on the bay side of the island. All proposed containment dikes will be constructed by excavating borrow channels adjacent to the dikes. Approximately 447,800 cu. yds. of material will be excavated and used for construction of the dikes.

REVISION 1: The permit is being revised to include updates to excavation and fill at the Caillou Lake Headlands Restoration Project (TE-100). The revision is being requested to allow the contractors the option to use sandy sediments from Ship Shoal Block 88 Borrow Area to construct the marsh platform to reduce construction costs and to allow the option to extend the beach/dune and marsh fill templates to the west by approximately 1,000'. The proposed expansion of the Ship Shoal Block 88 Borrow Area would move the currently permitted boundary approximately 1,000' further to the west and re-align the borrow area dredge cut patterns to provide sufficient sediment for the construction of the beach, dune, and marsh on Whiskey Island. Should the entire project be constructed using sand from the Ship Shoal Block 88 Borrow Area, the total fill volume required, adjusted for the cut to fill ratio, would be 16.4MCY and the footprint of the extended borrow area will increase to 801 acres. The modified Ship Shoal Block 88 Borrow Area, The Whiskey 3A Borrow Area, and the associated conveyance corridors would provide for an allowable anchorage area 200 feet outside of the borrow area to allow for dredges to be able to work to the edge of the borrow area and to allow for safe anchorage of equipment within the conveyance corridors. No dredging or anchoring shall occur in the avoidance area. The revision includes an option to use geotechnical foundation mats for added slope stability when constructing the marsh containment dikes. Also included is a drawing to depict optional sediment pipeline crossing typical details.

This revised permit supersedes the original permit which was issued October 29, 2013.

In accordance with the rules and regulations of the Louisiana Coastal Resources Program and Louisiana R.S. 49, Sections 214.21 to 214.41, the State and Local Coastal Resources Management Act of 1978, as amended, the permittee agrees to:

1. Carry out, perform, and/or operate the use in accordance with the permit conditions, plans and specifications approved by the Department of Natural Resources.
2. Comply with any permit conditions imposed by the Department of Natural Resources.
3. Adjust, alter or remove any structure or other physical evidence of the permitted use if, in the opinion of the Department of Natural Resources, it proves to be beyond the scope of the use as approved or is abandoned.
4. Provide, if required by the Department of Natural Resources, an acceptable surety bond in an appropriate amount to ensure adjustment, alteration, or removal should the Department of Natural Resources determine it necessary.
5. Hold and save the State of Louisiana, the local government, the department, and their officers and employees harmless from



any damage to persons or property which might result from the use, including the work, activity, or structure permitted.

6. Certify that the use has been completed in an acceptable and satisfactory manner and in accordance with the plans and specifications approved by the Department of Natural Resources. The Department of Natural Resources may, when appropriate, require such certification to be given by a registered professional engineer.

7. All terms of the permit shall be subject to all applicable federal and state laws and regulations.

8. This revised permit, or a copy thereof, shall be available for inspection at the site of work at all times during operations.

9. The applicant will notify the Office of Coastal Management of the date on which initiation of the permitted activity described under the "Coastal Use Description" began. The applicant shall notify the Office of Coastal Management by mailing the enclosed green initiation card on the date of initiation of the coastal use.

10. Unless specified elsewhere in this revised permit, this revised permit authorizes the initiation of the coastal use described under "Coastal Use Description" for two (2) years from the date of the signature of the Secretary or his designee on the original permit which was October 29, 2013. If the coastal use is not initiated within this two (2) year period, then this revised permit will expire and the applicant will be required to submit a new application. Initiation of the coastal use, for the purposes of this permit, means the actual physical beginning of the use of activity for which the permit is required. Initiation does not include preparatory activities, such as movement of equipment onto the coastal use site, expenditure of funds, contracting out of work, or performing activities which by themselves do not require a permit. In addition, the permittee must, in good faith, and with due diligence, reasonably progress toward completion of the project once the coastal use has been initiated.

11. The following special conditions must also be met in order for the use to meet the guidelines of the Coastal Resources Program:

- a. This revised permit does not convey any property rights, mineral rights, or exclusive privileges; nor does it authorize injury to property.
- b. All logs, stumps and other debris encountered during dredging activities shall be removed from the site during or immediately after the activity and disposed of in accordance with all applicable laws and regulations.
- c. That permittee shall insure that all sanitary sewage and/or related domestic wastes generated during the subject project activity and at the site, thereafter, as may become necessary shall receive the equivalent of secondary treatment (30 mg/l BOD5) with disinfection prior to discharge into any of the streams or adjacent waters of the area or, in the case of total containment, shall be disposed of in approved sewerage and sewage treatment facilities, as is required by the State Sanitary Code. Such opinion as may be served by those comments offered herein shall not be construed to suffice as any more formal approval(s) which may be required of possible sanitary details (i.e. provisions) scheduled to be associated with the subject activity. Such shall generally require that appropriate plans and specifications be submitted to the Department of Health and Hospitals for purpose of review and approval prior to any utilization of such provisions.
- d. The area where the project is located is all part of the aboriginal homelands of the Chitimacha Tribe of Louisiana. As such, large villages, burial sites, and sacred sites were in place in that entire area. If at any time during the course of the work, any traditional cultural properties are discovered, Permittee shall immediately contact Kimberly S. Walden (Cultural Director) or Melanie Aymond (Research Coordinator) at (337) 923-9923 or (337) 923-4395. Office hours are Monday through Thursday from 7:30 A.M. - 5:00 P.M. and on Friday between 7:30 A.M. - 11:30 A.M. If traditional cultural properties are discovered on the weekend or after business hours, the notification shall be made the next business morning.
- e. Prior to the initiation of the proposed project, CPRA shall notify Vaughan McDonald, in writing their intent to begin the project and give a brief outline of the project schedule. Upon receipt of this notification, LDWF may request a pre-project meeting with BP to coordinate project details.

CPRA shall notify Mr. Cassidy Lejeune prior to any activities within Isles Dernieres Barrier Island Refuge, Mr. Lejeune may be reached at (337) 373-0032.

- f. The piping plover (*Charadrius melodus*) may occur within one mile of the project area. This species is federally listed as threatened with its critical habitat designated along the Louisiana coast. Piping plovers winter in Louisiana feeding at intertidal beaches, mudflats, and sand flats with sparse emergent vegetation. Primary threats to this species are



destruction and degradation of winter habitat, habitat alteration through shoreline erosion, woody species encroachment of lake shorelines and riverbanks, and human disturbance of foraging birds. For more information on piping plover critical habitat, visit the U.S. Fish and Wildlife website: <http://endangered.fws.gov>. Contact Bridgette Firmin with the United States Fish & Wildlife Service at (337) 291-3132 to coordinate activities.

No other impacts to rare, threatened or endangered species or critical habitats are anticipated from the proposed project. No state or federal parks, wildlife refuges, wildlife management areas or scenic rivers are known at the specified site or within ¼ mile of the proposed project.

The Louisiana Natural Heritage Program (LNHP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the State of Louisiana. LNHP reports summarize the existing information known at the time of the request regarding the location in question. LNHP reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. If at any time LNHP tracked species are encountered within the project area, please contact our biologist at 225-765-2643.

- g. All equipment shall remain within the proposed work area as indicated on the plats, and not on the adjacent wetlands. Applicant shall avoid placing any fill or tracking outside of the project area as shown on the permitted plats.
- h. All temporary concrete mats installed under this authorization shall be removed immediately upon completion of activities that require usage of the sediment pipe at that location.
- i. All fill material shall be clean and free of contaminants and shall not contain hazardous materials such as asbestos or asbestos residue, shingles, tires, oil/grease residue, exposed rebar, protruding objects, etc.
- j. Dredged material shall be marked in accordance with USCG regulations until such time that the dredged material is 6" or less above surrounding water bottom elevation, or has become 80% vegetated.
- k. Permittee is subject to all applicable state laws related to damages which are demonstrated to have been caused by this action.
- l. Permittee shall allow representatives of the Office of Coastal Management or authorized agents to make periodic, unannounced inspections to assure the activity being performed is in accordance with the conditions of this permit.
- m. Permittee shall comply with all applicable state laws regarding the need to contact the Louisiana One Call (LOC) system (1-800-272-3020) to locate any buried cables and pipelines.
- n. This revised permit authorizes the initiation of the Coastal Use described under "Coastal Use Description" for two (2) years from the date of the signature of the Secretary or his designee on the original permit which was October 29, 2013. Initiation of the Coastal Use, for purposes of this revised permit, means the actual physical beginning of the use or activity for which the permit is required. Initiation does not include preparatory activities, such as movement of equipment onto the Coastal Use site, expenditure of funds, contracting out of work, or performing activities which by themselves do not require a permit. In addition, Permittee must, in good faith and with due diligence, reasonably progress toward completion of the project once the Coastal Use has been initiated. If the Coastal Use is not initiated within this two (2) year period, an extension may be granted pursuant to the requirements contained in the Rules and Procedures for Coastal Use Permits (Title 43:I.723.D.). Please note that a request for permit extension MUST be made no sooner than one hundred eighty (180) days and no later than sixty (60) days prior to the expiration of the permit.



The expiration date of this revised permit is five (5) years from the date of the signature of the Secretary or his designee on the original permit which was October 29, 2013.

Upon expiration of this revised permit, a new Coastal Use Permit will be required for completion of any unfinished or uncommenced work items and for any maintenance activities involving dredging or fill that may become necessary. Other types of maintenance activities may also require a new Coastal Use Permit.

***** End of Conditions *****

By accepting this revised permit the applicant agrees to its terms and conditions.

I affix my signature and issue this revised permit this 6th day of November, 2014.

THE DEPARTMENT OF NATURAL RESOURCES

Karl L. Morgan, Administrator
Office of Coastal Management

This agreement becomes binding when signed by Administrator of the Office of Coastal Management Permits/Mitigation Division, Department of Natural Resources.

Attachments

Page: 5 of 5
C.U.P. No.: P20121652 (Revised)
C.O.E. No.: MVN- 2013- 00266- WOO



Final Plats:

1) P20121652 Final Plats 08/29/2014

cc: Martin Mayer, COE w/attachments
Dave Butler, LDWF w/attachments
Elizabeth Johnson, DEQ w/attachments
Jessica Diez, OCM w/attachments
Rod Pierce, OCM/FI w/attachments
Terrebonne Parish w/attachments

COASTAL PROTECTION AND RESTORATION AUTHORITY w/attachments



DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P. O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO

ATTENTION OF:

Operations Division
Western Evaluation Section

DEC 15 2014

SUBJECT: MVN-2013-00266-WPP

Coastal Protection and Restoration Authority
Post Office Box 44027
Baton Rouge, Louisiana 70804

Gentlemen:

Revised drawings attached in twenty two sheets, furnished with your application dated August 29, 2014, requesting modification to allow for expansion of the originally permitted offshore borrow area in the Outer Continental Shelf to create dune features at Whiskey Island, in Terrebonne Parish, Louisiana, are approved and will be included in your plans for the work authorized by the Secretary of the Army in the permit dated June 18, 2014, from the District Engineer at New Orleans, Louisiana.

All other conditions to which the work is made subject remain in full force and effect.

A copy of this permit approval letter must be conspicuously displayed at the project site. Also, you must keep a copy of this signed letter, with attached drawings, at the project site until the work is completed.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

A handwritten signature in black ink, reading "Martin S. Mayer".

Martin S. Mayer
Chief, Regulatory Branch
for

Richard L. Hansen
Colonel, US Army
District Commander

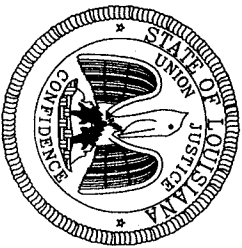
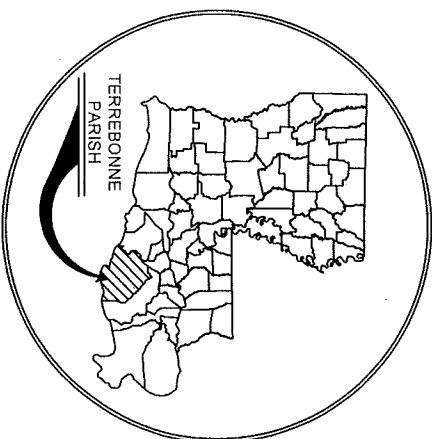
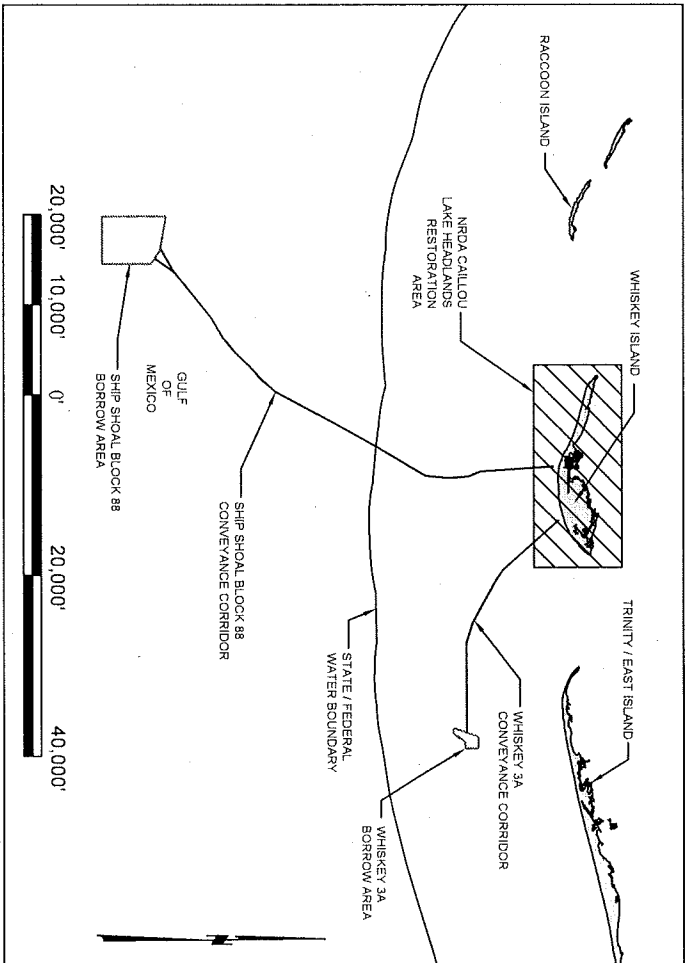
Enclosure

STATE OF LOUISIANA
COASTAL PROTECTION AND RESTORATION AUTHORITY


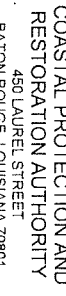
NRDA CAILLOU LAKE HEADLANDS
STATE PROJECT NO. TE-100
TERREBONNE PARISH, LOUISIANA
PERMIT (MVN-2013-00266-W00)

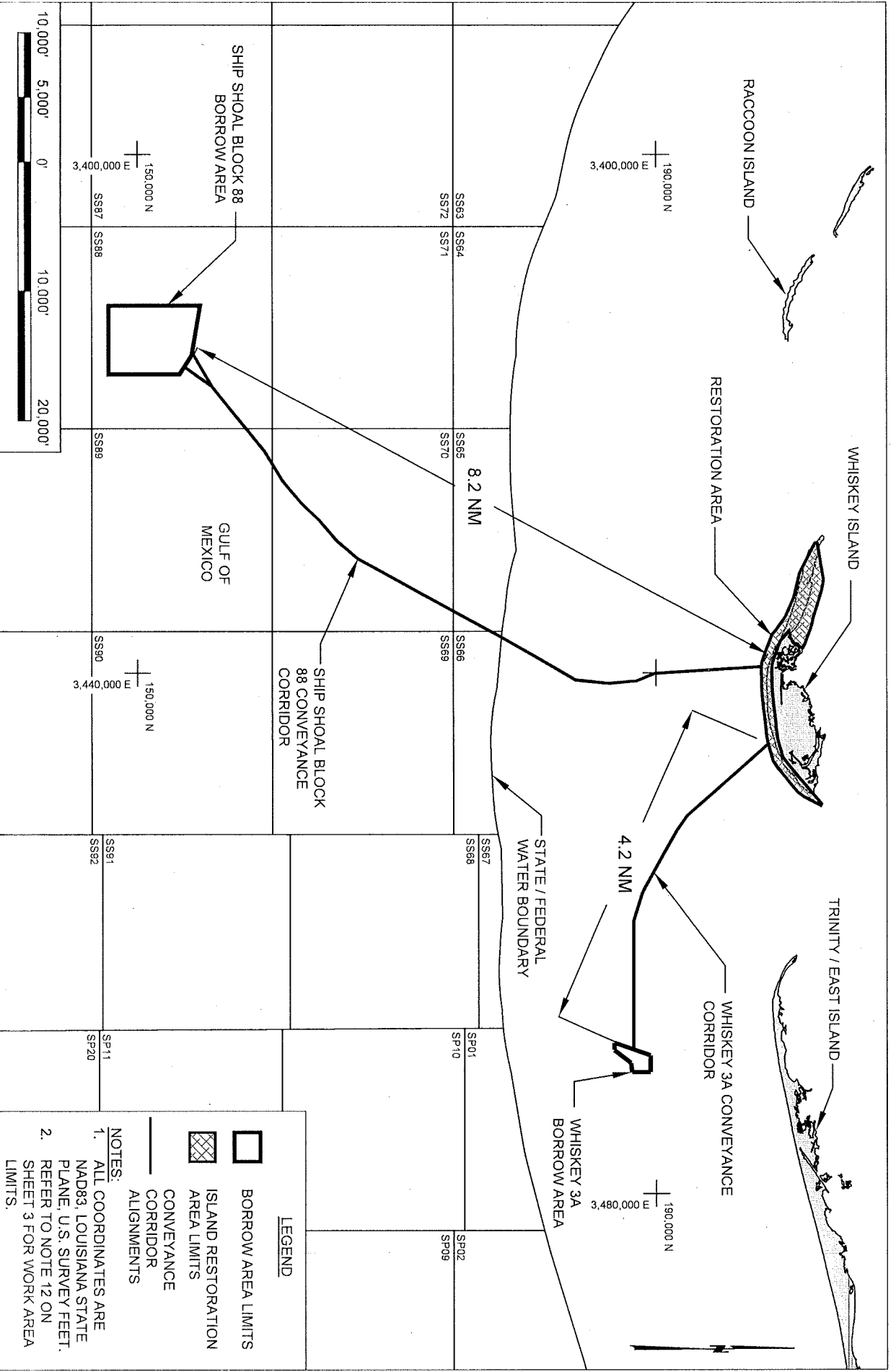
INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PROJECT OVERVIEW MAP
3	GENERAL NOTES
4	RESTORATION AREA PLAN VIEW
5-6	RESTORATION PLAN VIEW INSET
7-8	RESTORATION AREA TYPICAL SECTIONS
9	ACCESS CHANNEL TYPICAL SECTIONS
10	OPTIONAL RESTORATION AREA EXTENSION
11	SHIP SHOAL BLOCK 88 BORROW AREA PLAN VIEW
12	SHIP SHOAL BLOCK 88 BORROW AREA TYPICAL SECTIONS
13	WHISKEY 3A BORROW AREA PLAN VIEW
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15	SHIP SHOAL BLOCK 88 CONVEYANCE CORRIDOR PLAN VIEW
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18	WHISKEY 3A CONVEYANCE CORRIDOR TYPICAL SECTION
19	OPTIONAL SEDIMENT PIPELINE CROSSING TYPICAL DETAILS
20	SETTLEMENT PLATE DETAIL
21	SAND FENCING DETAIL
22	ALIGNMENT TABLES



NOTES:
1. NOT TO BE USED FOR CONSTRUCTION.
2. RETAIN ENTIRE SET AS ONE. INDIVIDUAL SHEETS SHOULD NOT BE REMOVED.

BY	DESCRIPTION	DATE	DESIGNED BY	APPROVED BY	FEDERAL PROJECT NUMBER	SHEET
MTP	UPDATE TO SHEET INDEX AND SHEET NUMBER REVISIONS	01/15 2013	 COASTAL ENGINEERING CONSULTANTS, INC.	 COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	NRDA - CAILLOU LAKE HEADLANDS	TITLE SHEET
MTP	SH88 CONVEYANCE CORRIDOR AND FILL AREA REVISIONS	04/19 2013				
MTP	EXPANSION OF SHIP SHOAL BLOCK 88 BORROW AREA TO WEST BY 1,000 FEET. SHEET NUMBER REVISIONS	08/19 2014				
DRAWN BY: STEVE DARTZ			DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.	FEDERAL PROJECT NUMBER: TE-100	SHEET 1 OF 22



LEGEND

- BORROW AREA LIMITS
- ISLAND RESTORATION AREA LIMITS
- CONVEYANCE CORRIDOR ALIGNMENTS

NOTES:

1. ALL COORDINATES ARE NAD83, LOUISIANA STATE PLANE, U.S. SURVEY FEET.
2. REFER TO NOTE 12 ON SHEET 3 FOR WORK AREA LIMITS.

BY	DESCRIPTION	DATE	
MTP	SHEET NUMBER REVISIONS	01/15 2013	 COASTAL ENGINEERING CONSULTANTS, INC. RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801
MTP	SH88 CONVEYANCE CORRIDOR REVISION	04/19 2013	
MTP	EXPANSION OF SHIP SHOAL BLOCK 88 BORROW/AREA TO WEST BY 1,000 FEET, SHEET NUMBER REVISIONS	08/19 2014	

DRAWN BY: STEVE DARTIZ	DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.
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NRDA - CAULLOU LAKE HEADLANDS	PROJECT OVERVIEW MAP
STATE PROJECT NUMBER: TE-100	DATE: NOVEMBER 2012
FEDERAL PROJECT NUMBER: TE-100	SHEET 2 OF 22

GENERAL NOTES:


1. ANY EXCAVATED MATERIAL WILL BE TO THE BEST OF KNOWLEDGE, FREE OF CONTAMINANTS AND/OR WILL BE DISPOSED OF IN AN APPROVED LANDFILL.
2. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SITE, CONSTRUCTION PLANS, AND CONTRACT DOCUMENTS AND SHALL CONDUCT WORK IN STRICT ACCORDANCE WITH ALL PERMITS AND APPROVALS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY ERRORS OR DISCREPANCIES IN THE PLANS PRIOR TO BIDDING.
3. ALL AERIAL MAPPING FROM LOUISIANA DEPARTMENT OF HOMELAND SECURITY AND EMERGENCY PREPAREDNESS, 2010 AND MAY NOT BE INDICATIVE OF CURRENT CONDITIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING PIPELINE AND UTILITY OPERATORS AT TIME OF CONSTRUCTION. ALL PIPELINES AND UNDERGROUND UTILITIES SHALL BE FIELD LOCATED AND MARKED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING 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. THE CONTRACTOR SHALL ALSO NOTIFY PIPELINE AND UTILITY OPERATORS 72 HOURS PRIOR TO ANY EXCAVATION.
6. THE WATER BOTTOM SHALL NOT BE DISTURBED DURING ACCESS TO THE PROPOSED WORK LOCATION, OR BY THE AUTHORIZED ACTIVITIES WHETHER IT BE BY DREDGING, WHEEL WASHING, PROP WASHING, JETTING, MUCKING, PLOWING, BULL DOZING OR ANY MEANS OF MOVING BOTTOM MATERIAL, EXCEPT AS DEPICTED ON THE PERMIT SHEETS. POWERED VESSELS SHALL BE OPERATED SO AS NOT TO DISTURB THE WATER BOTTOM BY PROPELLER OR JET ACTION.
7. ALL LOGS, STUMPS, AND OTHER DEBRIS UNEARTHED DURING DREDGING SHALL BE REMOVED TO AN APPROVED OFFSITE DISPOSAL AREA.
8. THE CONTRACTOR MUST INSTALL AND MAINTAIN ANY SAFETY LIGHTS, SIGNS, AND SIGNALS PRESCRIBED BY THE U.S. COAST GUARD THROUGH REGULATIONS OR OTHERWISE ON THE AUTHORIZED FACILITIES.
9. ANY DAMAGE TO EXISTING U.S. COAST GUARD NAVIGATION AIDS OR PRIVATE NAVIGATION AIDS SHALL BE REPAIRED BY THE CONTRACTOR TO U.S. COAST GUARD STANDARDS AT THE EXPENSE OF THE CONTRACTOR.
10. PIPELINES IN OPEN WATER AND/OR NAVIGABLE WATERS SHALL BE MARKED WITH BUOYS BY THE CONTRACTOR IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL MAINTAIN BUOYS DURING CONSTRUCTION OR HAVE ADEQUATE NAVIGATIONAL EQUIPMENT ON THE DREDGE TO AVOID DREDGING IN RESTRICTED AREAS.
11. THE PROPOSED PROJECT AND ANY FUTURE MAINTENANCE WORK INVOLVING THE USE OF FLOATING CONSTRUCTION EQUIPMENT (BARGE MOUNTED CRANES, BARGE MOUNTED PILE DRIVING EQUIPMENT, FLOATING DREDGE EQUIPMENT, DREDGE DISCHARGE PIPELINES, ETC.) IN FEDERAL WATERS, SHALL NOTIFY THE U.S. COAST GUARD SO THAT A NOTICE TO MARINERS, IF REQUIRED, MAY BE PREPARED. NOTIFICATION, WITH A COPY OF THE PERMIT APPROVAL AND DRAWINGS, SHALL BE MAILED TO THE U.S. COAST GUARD, SECTOR NEW ORLEANS COMMAND CENTER, 201 HAMMOND HIGHWAY, METAIRIE, LOUISIANA 70005, 30 DAYS BEFORE COMMENCEMENT OF WORK.
12. THE OFFSHORE WORK AREAS SHALL CONSIST OF THE ALLOWABLE ANCHORAGE AREAS OF THE BORROW AREAS AND CONVEYANCE CORRIDORS. THE INSHORE WORK AREA IS DEFINED BY A 250' OFFSET FROM THE OUTER LIMITS OF THE ACCESS CHANNELS, TEMPORARY SIDECAST DISPOSAL AREAS, SECONDARY BORROW CHANNEL, AND THE GULF TOE OF THE BEACH FILL TEMPLATE AND A 40' OFFSET FROM THE CONTAINMENT DIKE TOE AND THE NORTHERN BEACH FILL TOE ADJACENT TO THE MANGROVE HABITATS AND THE PRIOR TE-50 MARSH RESTORATION PROJECT AREA. THE CONTRACTOR SHALL BE REQUIRED TO CONFINE HIS/HER PLANT, EQUIPMENT, AND OPERATIONS OF PERSONNEL WITHIN THE LIMITS OF THE WORK AREA AREAS PERMITTED BY LAW, ORDINANCES, PERMITS, AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT UNREASONABLY ENCUMBER THE PREMISES WITH PLANT OR EQUIPMENT.
13. THE CONTRACTOR SHALL FOLLOW CONVEYANCE CORRIDORS, ACCESS CHANNELS, AND / OR FILL TEMPLATES, AND SHALL NOT, AT ANY TIME, TRAVEL ON EXISTING MARSH OR VEGETATED WETLANDS UNLESS SPECIFIED IN THE PERMIT OR THROUGH WRITTEN DIRECTION FROM ENGINEER.
14. THE CONTRACTOR SHALL WORK COOPERATIVELY WITH THE OWNER TO ADDRESS THE NOTIFICATION AND COORDINATION REQUIREMENTS WITH THE LANDOWNERS, UTILITY OPERATORS, AND PIPELINE COMPANIES.
15. 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.
16. ALL STRUCTURES, FACILITIES, WELL AND PIPELINE/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.
17. THIS DRAWING SET IS FOR PERMITTING PURPOSES ONLY AND IS NOT TO BE USED FOR CONSTRUCTION.

SURVEY NOTES:

1. ALL COORDINATES ARE NORTH AMERICAN DATUM OF 1983 (NAD 83 - GEOID 2009), LOUISIANA STATE PLANE, SOUTHERN ZONE, U.S. SURVEY FEET. ALL RESTORATION AREA ELEVATIONS ARE BASED ON NATIONAL GEODETIC SURVEY AND LOUISIANA DEPARTMENT OF NATURAL RESOURCES MONUMENTS.

MONUMENTS	ELEVATION	NORTHING	EASTING
TBBSR-SM-01	3.30'	199,122.52	3,444,226.48
TE14-SM-01	2.29'	199,323.20	3,438,609.45

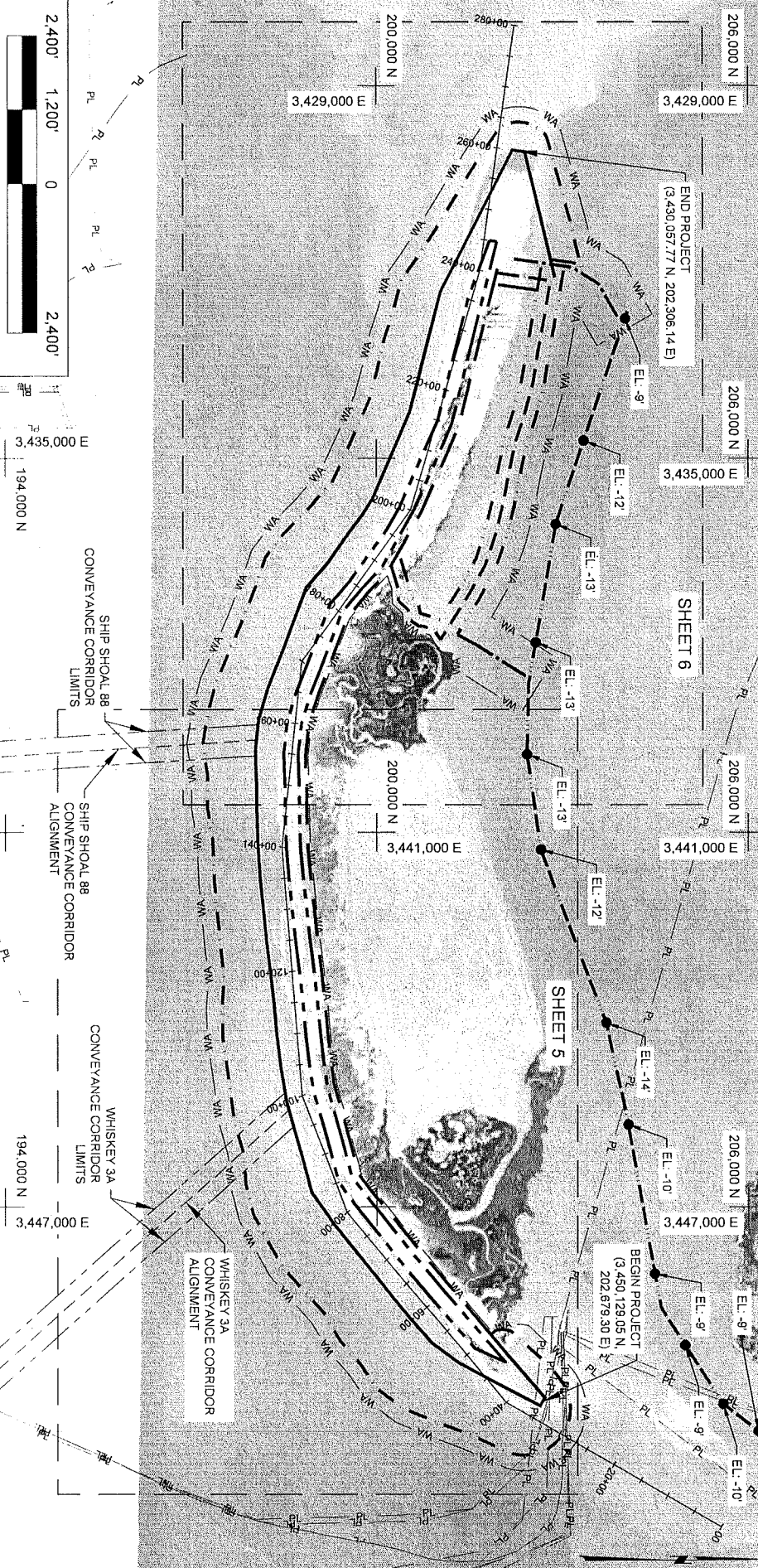
2. ALL ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88 - 2004.65), U.S. SURVEY FEET UNLESS OTHERWISE SPECIFIED.
3. ALL BORROW AREA AND CONVEYANCE CORRIDOR SURVEYS PERFORMED BY OCEAN SURVEYS, INC., 2012.
4. ALL HEADLAND SURVEYS PERFORMED BY EMC, INC., 2012.
5. INFORMATION SHOWN HERE IN REFLECTS CONDITIONS AS THEY EXISTED ON THE SURVEY DATE SHOWN AND CAN ONLY BE CONSIDERED INDICATIVE OF CONDITIONS AT THAT TIME.

BY	DESCRIPTION	DATE	 COASTAL ENGINEERING CONSULTANTS, INC.		COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	NRDA - CAILLOU LAKE HEADLANDS	GENERAL NOTES
DESCRIPTION	DATE						
MTP	GENERAL NOTES AND SHEET NUMBER REVISIONS	01/15 2013					
MTP	WORK AREA LIMITS GENERAL NOTE REVISION	04/19 2013					
MTP	SHEET NUMBER REVISIONS, WORK LIMITS NOTE REVISION	08/19 2014					
DRAWN BY: STEVE DARTZ			DESIGNED BY: MICHAEL T. POFF, P.E.		APPROVED BY: CATHERINE RICKS, P.E.	FEDERAL PROJECT NUMBER: TE-100	SHEET 3 OF 22

- NOTES:**
1. AERIAL IMAGE FROM LOUISIANA DEPARTMENT OF HOMELAND SECURITY AND EMERGENCY PREPAREDNESS, 2010.
 2. SEE SHEETS 5 THROUGH 9 FOR DESIGN DETAILS.
 3. PROBABLE PIPELINES FROM COASTAL MANAGEMENT DIVISION, LOUISIANA DEPARTMENT ON NATURAL RESOURCES, 2010.
 4. REFER TO NOTE 12 ON SHEET 3 FOR WORK AREA LIMITS.

LEGEND

———	Beach Crest Alignment	———	Marsh Fill Containment Dike Alignment
———	Beach Toe Alignment	———	Primary/Secondary Containment Dike Borrow Channel Alignment
———	Dune Toe Alignment	———	Beach Separation Dike Alignment
———	Project Baseline	———	Conveyance Corridors
———	Probable Pipelines		
———	Deep Water Access		
———	Access Channel Alignment		
———	Work Area Limits		



BY	DESCRIPTION	DATE
MTP	ADDITION OF DEEP WATER ACCESS ALIGNMENT, SHEET NUMBER REVISIONS	01/15
MTP	ACCESS CHANNEL, CONTAINMENT DIKE BORROW CHANNEL, MARSH FILL TEMPLATE AND WORK AREA REVISIONS	04/19
MTP	SHEET NUMBER REVISIONS	08/19
		2014

DESIGNED BY: MICHAEL T. POFF, P.E.

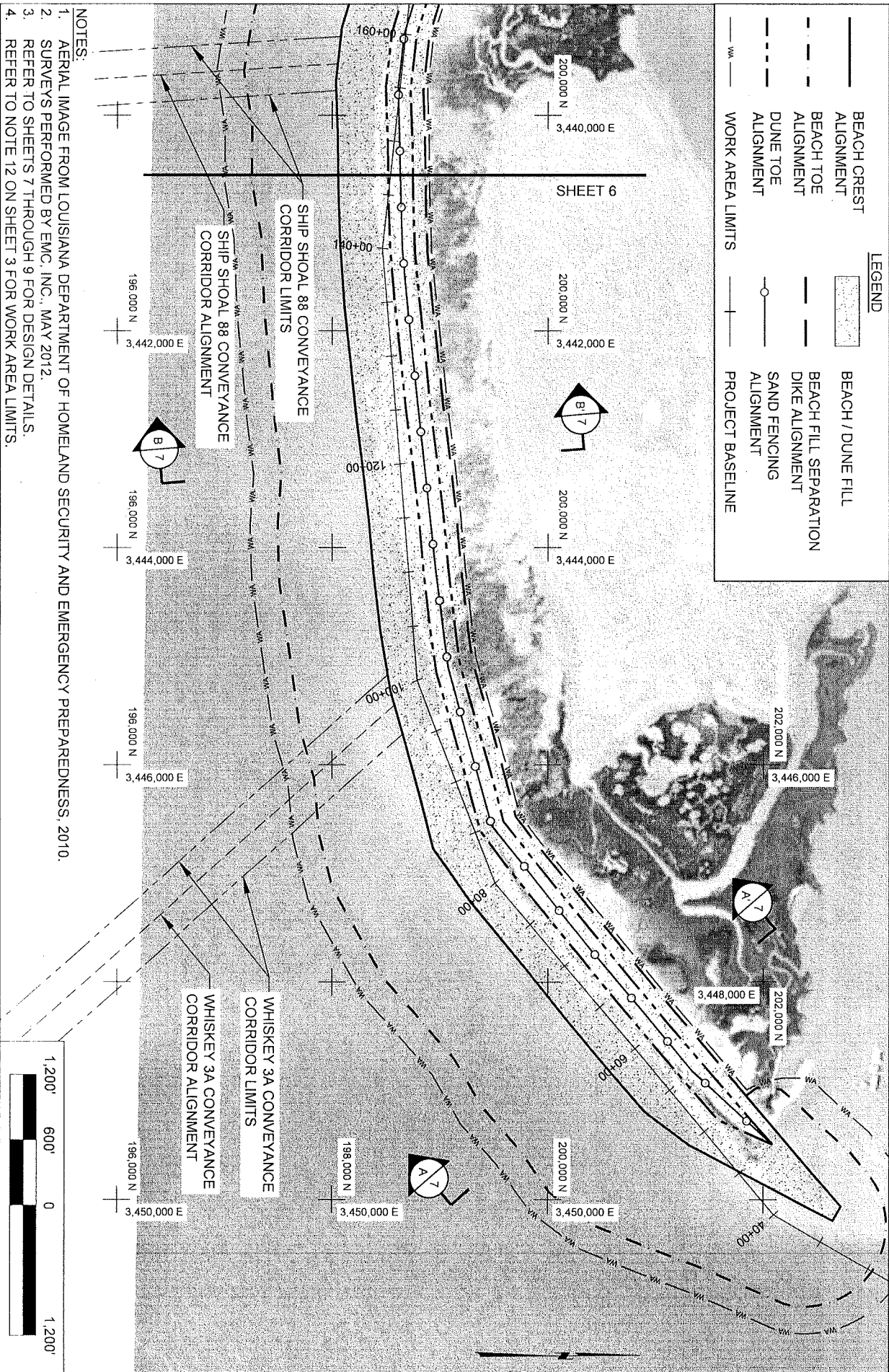
COASTAL ENGINEERING CONSULTANTS, INC

APPROVED BY: CATHERINE RICKS, P.E.

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

STATE PROJECT NUMBER: TE-100	NRDA - CAILLOU LAKE HEADLANDS	RESTORATION AREA PLAN VIEW
FEDERAL PROJECT NUMBER: TE-100		DATE: NOVEMBER 2012
		SHEET 4 OF 22

LEGEND			
	BEACH CREST ALIGNMENT		BEACH / DUNE FILL
	BEACH TOE ALIGNMENT		BEACH FILL SEPARATION DIKE ALIGNMENT
	DUNE TOE ALIGNMENT		SAND FENCING ALIGNMENT
	WORK AREA LIMITS		PROJECT BASELINE

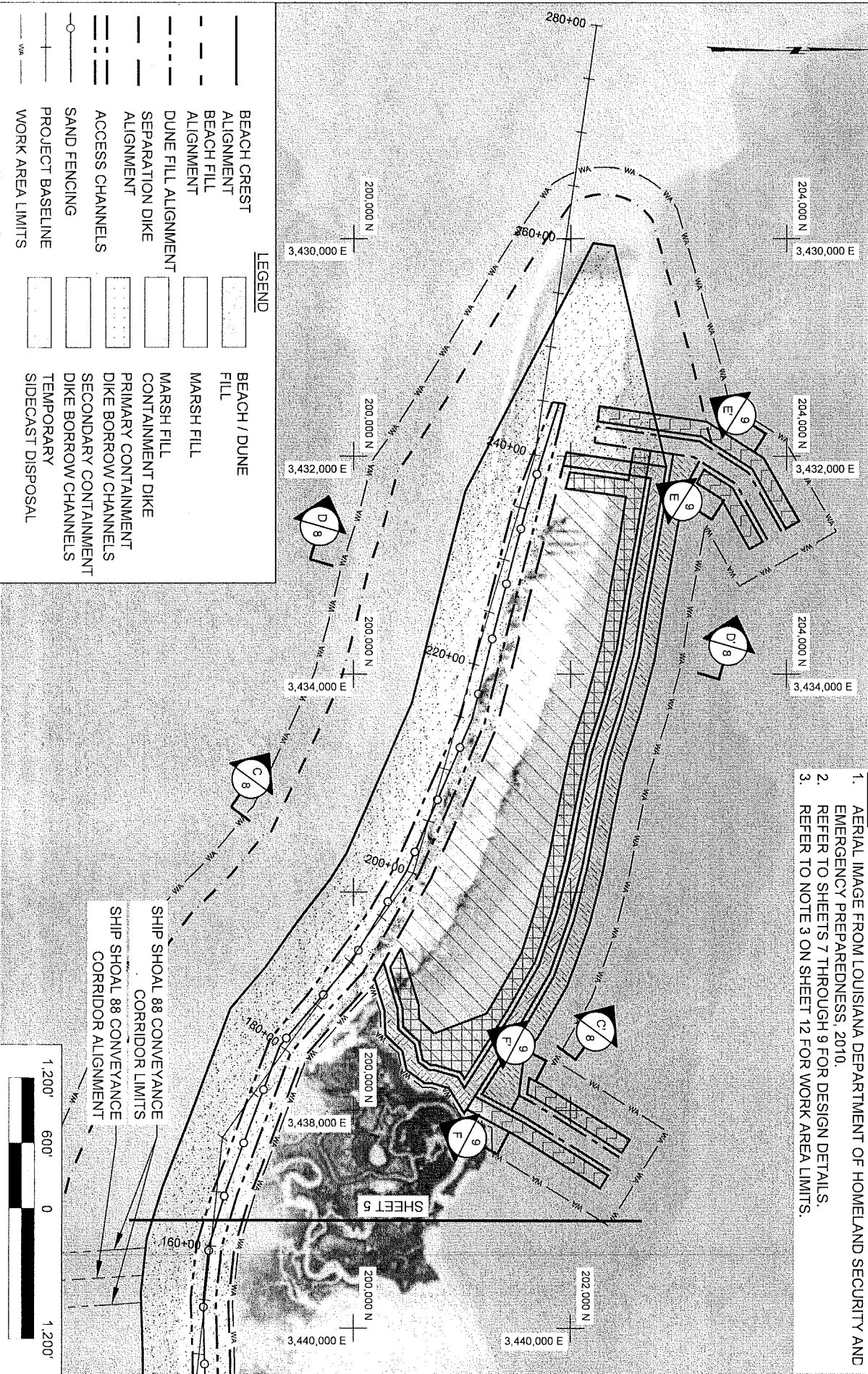


- NOTES:
1. AERIAL IMAGE FROM LOUISIANA DEPARTMENT OF HOMELAND SECURITY AND EMERGENCY PREPAREDNESS, 2010.
 2. SURVEYS PERFORMED BY EMC, INC., MAY 2012.
 3. REFER TO SHEETS 7 THROUGH 9 FOR DESIGN DETAILS.
 4. REFER TO NOTE 12 ON SHEET 3 FOR WORK AREA LIMITS.

BY	DESCRIPTION	DATE
MTP	ADDITION OF INSERT PLAN VIEW SHEET AND SAND FENCING ALIGNMENT, SHEET NUMBER REVISIONS	01/15 2013
MTP	WORK AREA REVISION	04/19 2013
MTP	SHEET NUMBER REVISIONS	09/19 2014

DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.
COASTAL ENGINEERING CONSULTANTS, INC. 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801
NRDA - CAILLOU LAKE HEADLANDS	RESTORATION AREA PLAN VIEW INSERT
STATE PROJECT NUMBER: TE-100	DATE: NOVEMBER 2012
FEDERAL PROJECT NUMBER: TE-100	SHEET 5 OF 22

- NOTES:
1. AERIAL IMAGE FROM LOUISIANA DEPARTMENT OF HOMELAND SECURITY AND EMERGENCY PREPAREDNESS, 2010.
 2. REFER TO SHEETS 7 THROUGH 9 FOR DESIGN DETAILS.
 3. REFER TO NOTE 3 ON SHEET 12 FOR WORK AREA LIMITS.



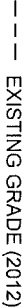


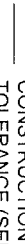


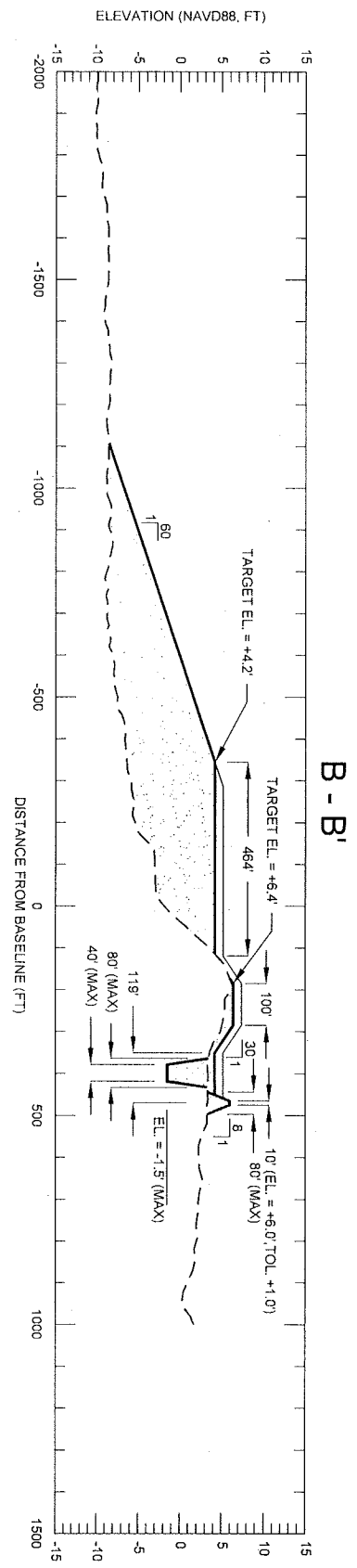
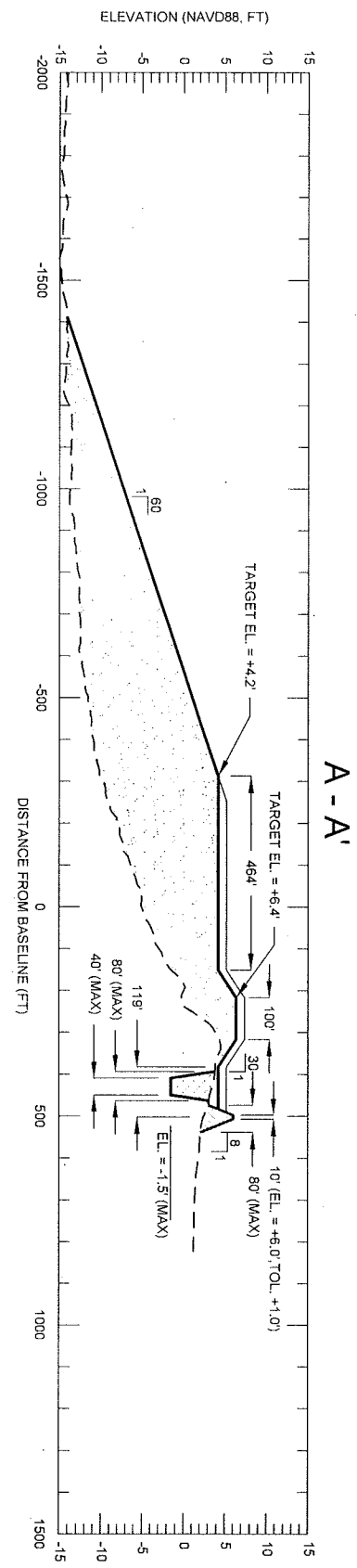
LEGEND	
—	BEACH CREST ALIGNMENT
- - -	BEACH FILL ALIGNMENT
- · - · -	DUNE FILL ALIGNMENT
- · - · -	SEPARATION DIKE ALIGNMENT
—	ACCESS CHANNELS
—	SAND FENCING
—	PROJECT BASELINE
—	WORK AREA LIMITS
▨	BEACH / DUNE FILL
▨	MARSH FILL
▨	MARSH FILL CONTAINMENT DIKE
▨	PRIMARY CONTAINMENT DIKE BORROW CHANNELS
▨	SECONDARY CONTAINMENT DIKE BORROW CHANNELS
▨	TEMPORARY SIDECAST DISPOSAL

BY	DESCRIPTION	DATE
MTP	ADDITION OF SAND FENCING ALIGNMENT, SHEET NUMBER REVISIONS	07/15 2013
MTP	ACCESS CHANNEL, CONTAINMENT DIKE BORROW CHANNEL, MARSH FILL, TEMPLATE, AND WORK AREA REVISIONS	04/19 2013
MTP	SHEET NUMBER REVISIONS	08/19 2014



DRAWN BY: STEVE DARTIEZ	DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.	NRDA - CAILLOU LAKE HEADLANDS	RESTORATION AREA PLAN VIEW INSET
			COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	STATE PROJECT NUMBER: TE-100
			COASTAL ENGINEERING CONSULTANTS, INC.	FEDERAL PROJECT NUMBER: TE-100
				DATE: NOVEMBER 2012
				SHEET 6 OF 22

SCALE:
 H: 1" = 400'
 V: 1" = 20'

- LEGEND:
-  BEACH / DUNE FILL
 -  BEACH SEPARATION DIKE
 -  EXISTING GRADE (2012)
 -  BEACH SEPARATION DIKE BORROW CHANNEL
 -  DESIGN
 -  CONSTRUCTION TOLERANCE (SEE NOTE 3)

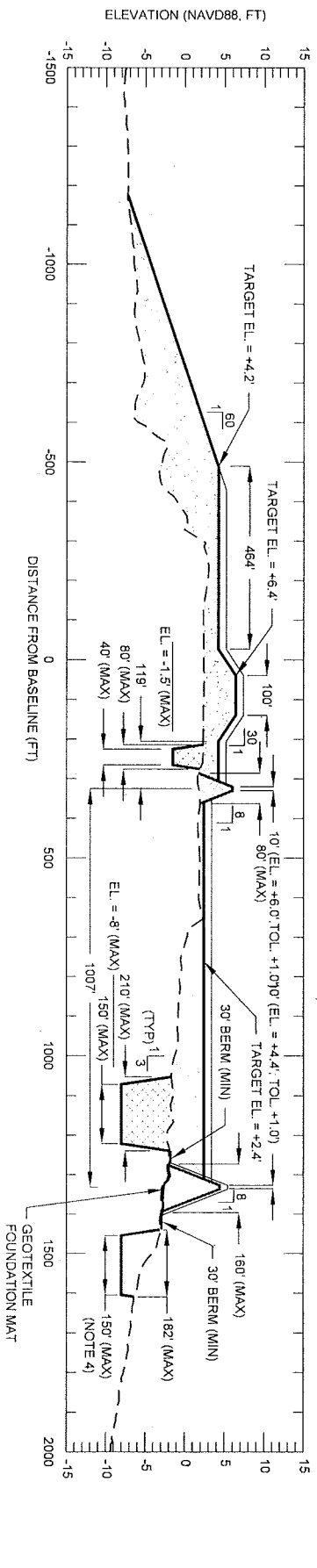
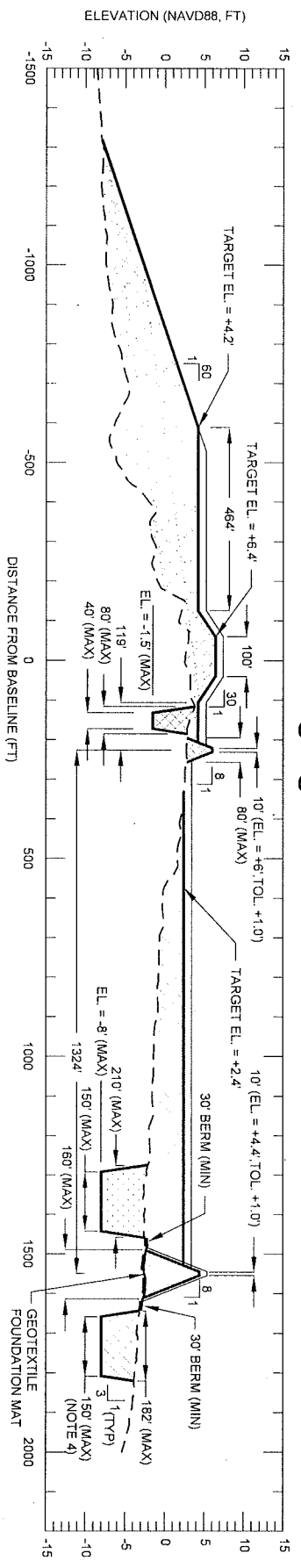


- NOTES:
1. SECTIONS ARE VIEWED AS LOOKING WEST.
 2. SURVEY PERFORMED BY EMC, INC. 2012.
 3. A ONE FOOT TOLERANCE IS INCLUDED TO ACCOUNT FOR CONSTRUCTION METHODS AND CONSOLIDATION/SETTLEMENT OF THE FILL.

BY	DESCRIPTION	DATE	 COASTAL ENGINEERING CONSULTANTS, INC.		COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		NRDA - CAILLOU LAKE HEADLANDS RESTORATION AREA TYPICAL SECTIONS	
MTP	UPDATE TO CHANNEL AND DIKE DIMENSIONS.	01/15 2013						
MTP	SHEET NUMBER REVISIONS	09/19	 COASTAL ENGINEERING CONSULTANTS, INC.		COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		STATE PROJECT NUMBER: TE-100 FEDERAL PROJECT NUMBER: TE-100	
MTP	SHEET NUMBER REVISIONS	2014						
DRAWN BY: STEVE DARTZ								

SCALE:
H: 1" = 400'
V: 1" = 20'

- LEGEND:
- BEACH / DUNE FILL
 - MARSH FILL
 - BEACH SEPARATION DIKE / MARSH CONTAINMENT DIKE
 - PRIMARY SEPARATION / CONTAINMENT DIKE BORROW CHANNELS
 - SECONDARY CONTAINMENT DIKE BORROW CHANNELS
 - EXISTING GRADE (2012)
 - CONSTRUCTION TOLERANCE (SEE NOTE 3)



- NOTES:
1. SECTIONS ARE VIEWED AS LOOKING WEST.
 2. SURVEY PERFORMED BY EMC, INC. 2012.
 3. A ONE FOOT TOLERANCE IS INCLUDED TO ACCOUNT FOR CONSTRUCTION METHODS AND CONSOLIDATION/SETTLEMENT OF THE FILL.
 4. SECONDARY CONTAINMENT DIKE BORROW CHANNEL MAXIMUM BOTTOM OF CUT WIDTH IS 150' EXCEPT AT INTERSECTION TO ACCESS CHANNELS.

BY	DESCRIPTION	DATE
MTF	UPDATE TO CHANNEL AND DIKE DIMENSIONS.	01/15
MTF	SHEET NUMBER REVISIONS	2013
MTF	ACCESS CHANNEL, CONTAINMENT DIKE BORROW/CHANNEL, MARSH FILL TEMPLATE, AND WORK AREA REVISIONS.	04/19
MTF	SHEET NUMBER REVISIONS, GEOTEXTILE FOUNDATION MAT FOR MARSH FILL CONTAINMENT DIKE	08/19
MTF		2014




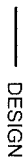
DESIGNED BY: STEVE DARTTZ	DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.
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COASTAL ENGINEERING CONSULTANTS, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 456 LAUREL STREET BATON ROUGE, LOUISIANA 70801	NRDA - CAILLOU LAKE HEADLANDS	RESTORATION AREA TYPICAL SECTIONS
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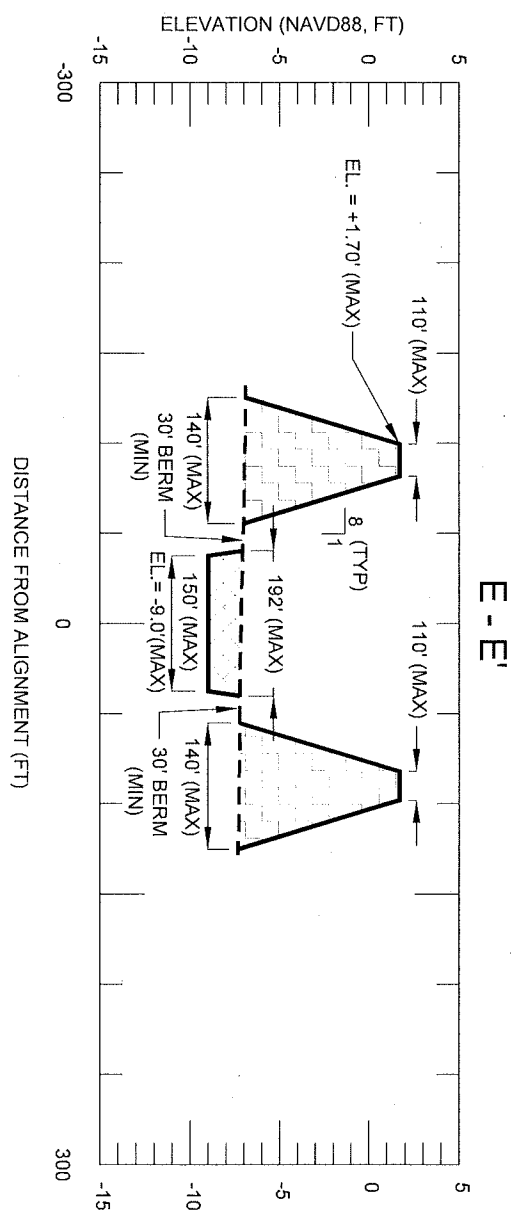
STATE PROJECT NUMBER: TE-100	DATE: NOVEMBER 2012
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FEDERAL PROJECT NUMBER: TE-100	SHEET 8 OF 22
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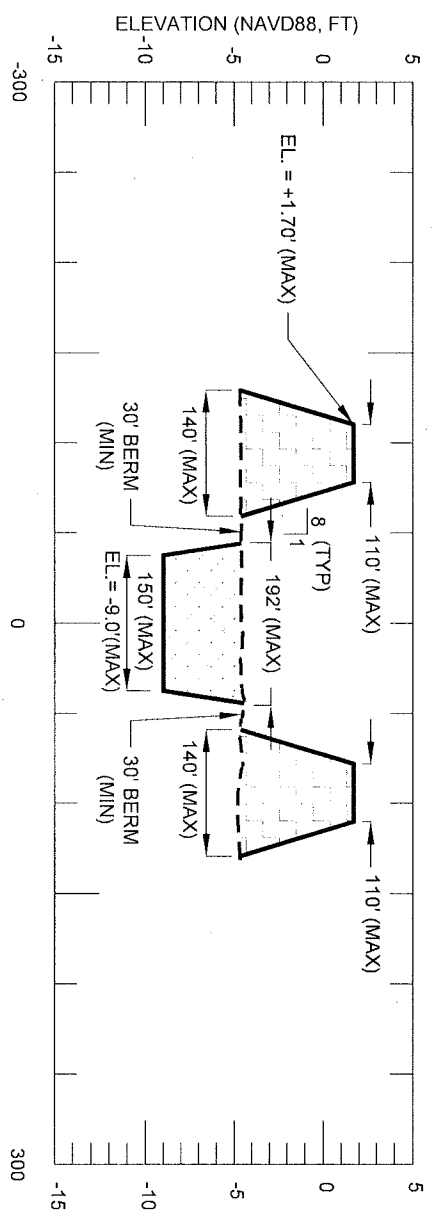
LEGEND:

-  ACCESS CHANNEL
-  TEMPORARY SIDECAST DISPOSAL
-  EXISTING GRADE (2012)
-  DESIGN


SCALE:
 H: 1" = 200'
 V: 1" = 10'







E - E'

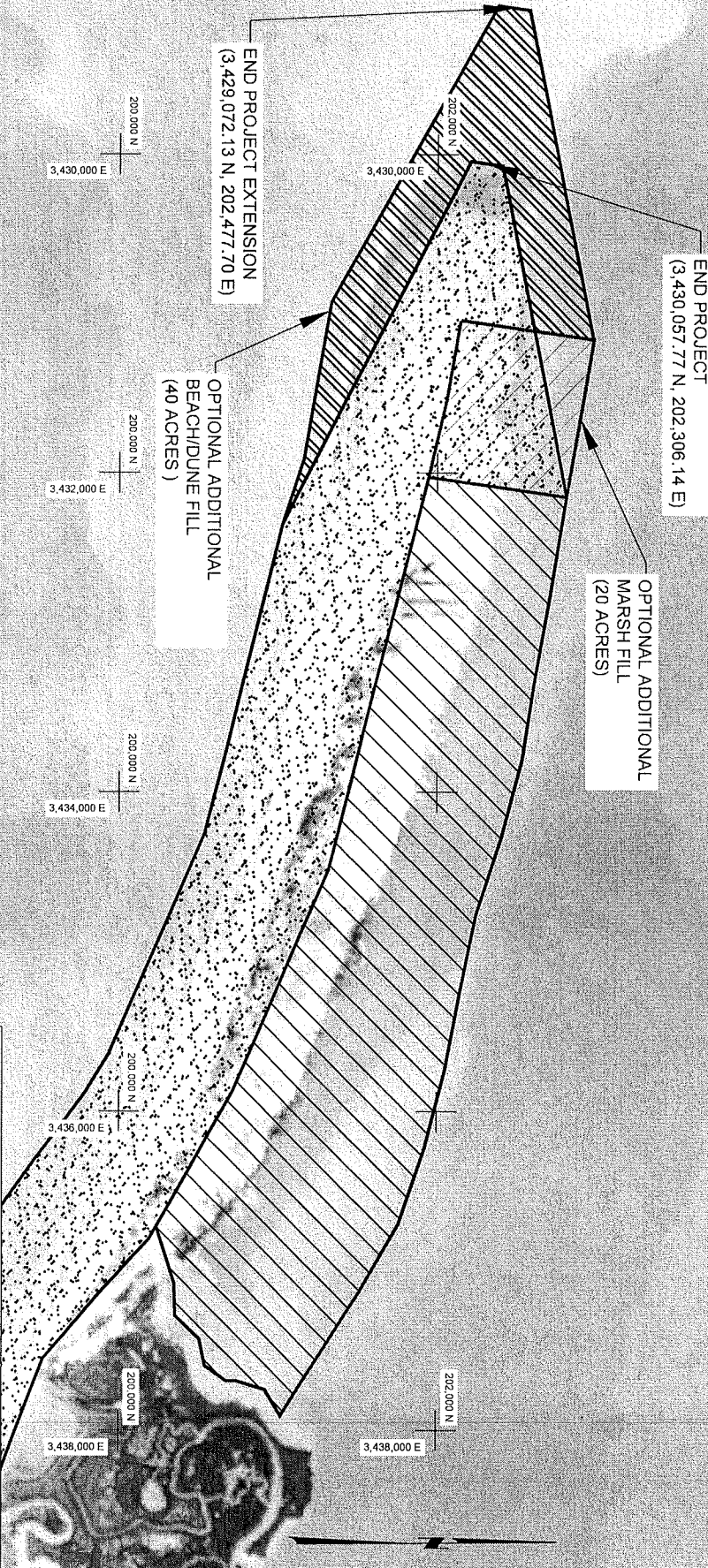


- NOTES:
1. SECTIONS ARE VIEWED AS LOOKING SOUTH.
 2. SURVEY PERFORMED BY EMC, INC. 2012.

BY	DESCRIPTION	DATE	DESIGNED BY: MICHAEL T. POFF, P.E.		APPROVED BY: CATHERINE RICKS, P.E.	
MTP	UPDATE TO CHANNEL AND TEMPORARY DISPOSAL DIMENSIONS, SHEET NUMBER REVISIONS	01/15 2013	 <p>COASTAL ENGINEERING CONSULTANTS, INC.</p>		<p>COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	
MTP	REVISION TO ACCESS CHANNELS	04/19 2013				
MTP	SHEET NUMBER REVISIONS	08/19 2014				
DRAWN BY STEVE DARTERZ			FEDERAL PROJECT NUMBER: TE-100		SHEET 9 OF 22	
			STATE PROJECT NUMBER: TE-100		DATE: NOVEMBER 2012	
			NRDA - CAILLOU LAKE HEADLANDS		ACCESS CHANNEL TYPICAL SECTIONS	

LEGEND

-  BEACH / DUNE FILL
-  MARSH FILL
-  BEACH / DUNE FILL - EXTENSION
-  MARSH FILL - EXTENSION




NOTE:
 1. AERIAL IMAGE FROM LOUISIANA DEPARTMENT OF HOMELAND SECURITY AND EMERGENCY PREPAREDNESS, 2010.



BY	DESCRIPTION	DATE
MTP	ADDITIONAL SHEET - OPTIONAL RESTORATION AREA EXTENSION, SHEET NUMBER REVISIONS	07/29 2014

DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.
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 <p>COASTAL ENGINEERING CONSULTANTS, INC</p>	<p>COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>
	<p>NRDA - CAILLOU LAKE HEADLANDS</p>

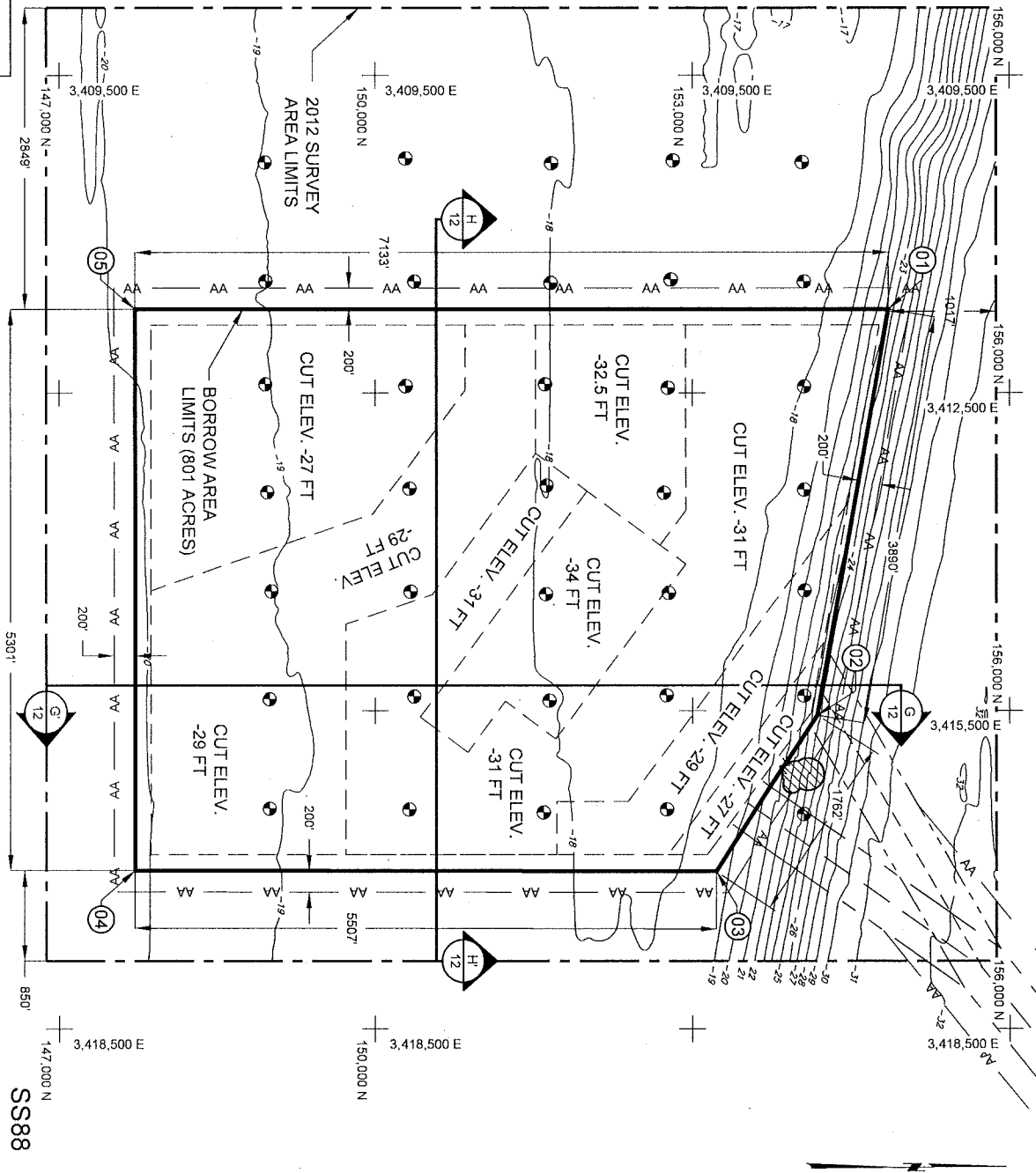
STATE PROJECT NUMBER: TE-100	DATE: NOVEMBER 2012
FEDERAL PROJECT NUMBER: TE-100	SHEET 10 OF 22

DRAWN BY: STEVE DARTZ

LEGEND

- BATHYMETRIC CONTOUR (2012)
- BORROW AREA LIMITS
- DREDGE CUT ELEVATION CHANGE (TOE OF CUT)
- ALLOWABLE ANCHORAGE AREA
- BOEM LEASE BLOCK
- SHIP SHOAL BLOCK 88 CONVEYANCE CORRIDOR
- CONVEYANCE CORRIDOR ALTERNATE SPUR
- AVOIDANCE AREA (2012)
- VIBRACORE (2005)

- NOTES:**
1. ALL COORDINATES ARE IN NAD 83, STATE PLANE - LOUISIANA SOUTH, U.S. SURVEY FEET.
 2. ELEVATIONS ARE SHOWN IN NAVD88 U.S. SURVEY FEET.
 3. SURVEY PERFORMED BY OCEAN SURVEY, 2012.
 4. GEOTECHNICAL VIBRACORES COLLECTED BY STE. 2005.
 5. SEE SHEET 22 FOR BORROW AREA BOUNDARY COORDINATES.
 6. REFER TO NOTE 12 ON SHEET 3 FOR WORK AREA LIMITS.
 7. ANCHORAGE IS NOT ALLOWED WITHIN THE AVOIDANCE AREA.



BY	DESCRIPTION	DATE
MTP	NOTES AND SHEET NUMBER REVISIONS	01/15 2013
MTP	SH88 CONVEYANCE CORRIDOR REVISION, 2012 SURVEY ADDITION	04/19 2013
MTP	EXPANSION OF SHIP SHOAL BLOCK 88 BORROW AREA TO WEST BY 1,000 FEET, ALLOWABLE ANCHORAGE AREA	08/19 2014

DESIGNED BY: STEVE DARTZ	DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.	NRDA - CAILLOU LAKE HEADLANDS	SHIP SHOAL BLOCK 88 BORROW AREA PLAN VIEW
			COASTAL ENGINEERING CONSULTANTS, INC 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	STATE PROJECT NUMBER: TE-100
				FEDERAL PROJECT NUMBER: TE-100
				DATE: NOVEMBER 2012
				SHEET 11 OF 22

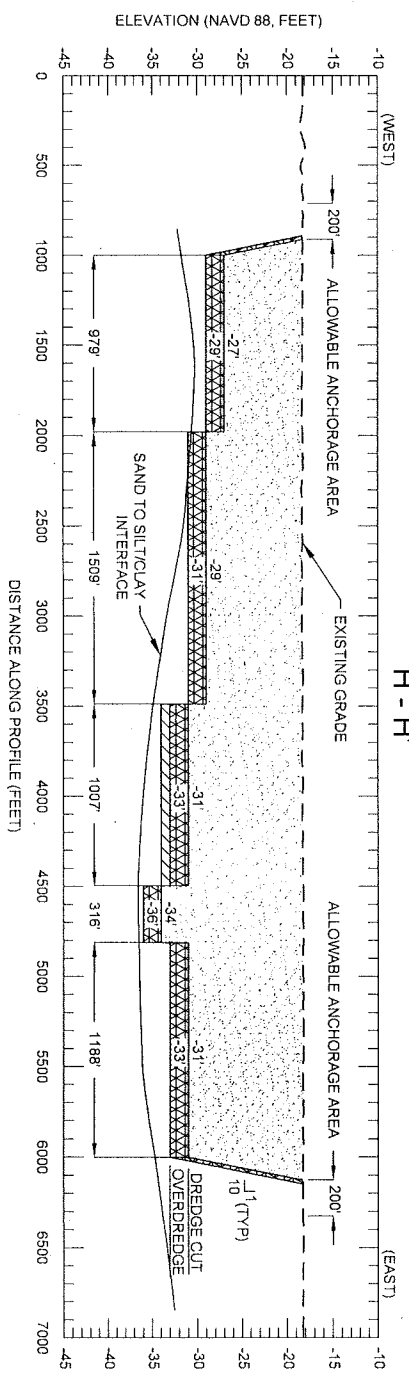
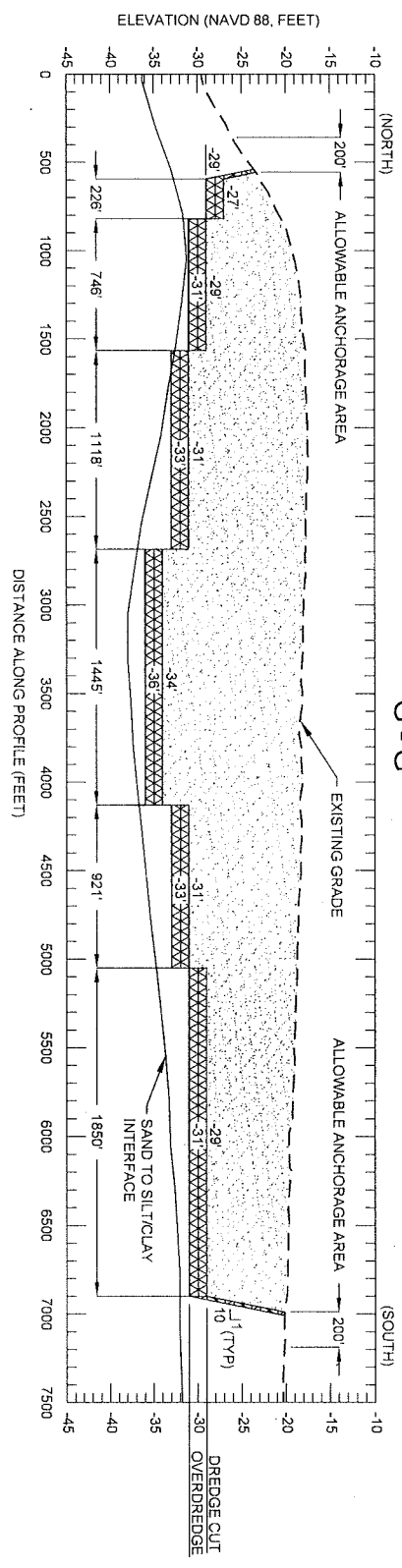
SCALE:
H: 1" = 1000'
V: 1" = 20'

LEGEND:

DESIGN CUT

OVERDREDGE TOLERANCE

EXISTING GRADE (2012)

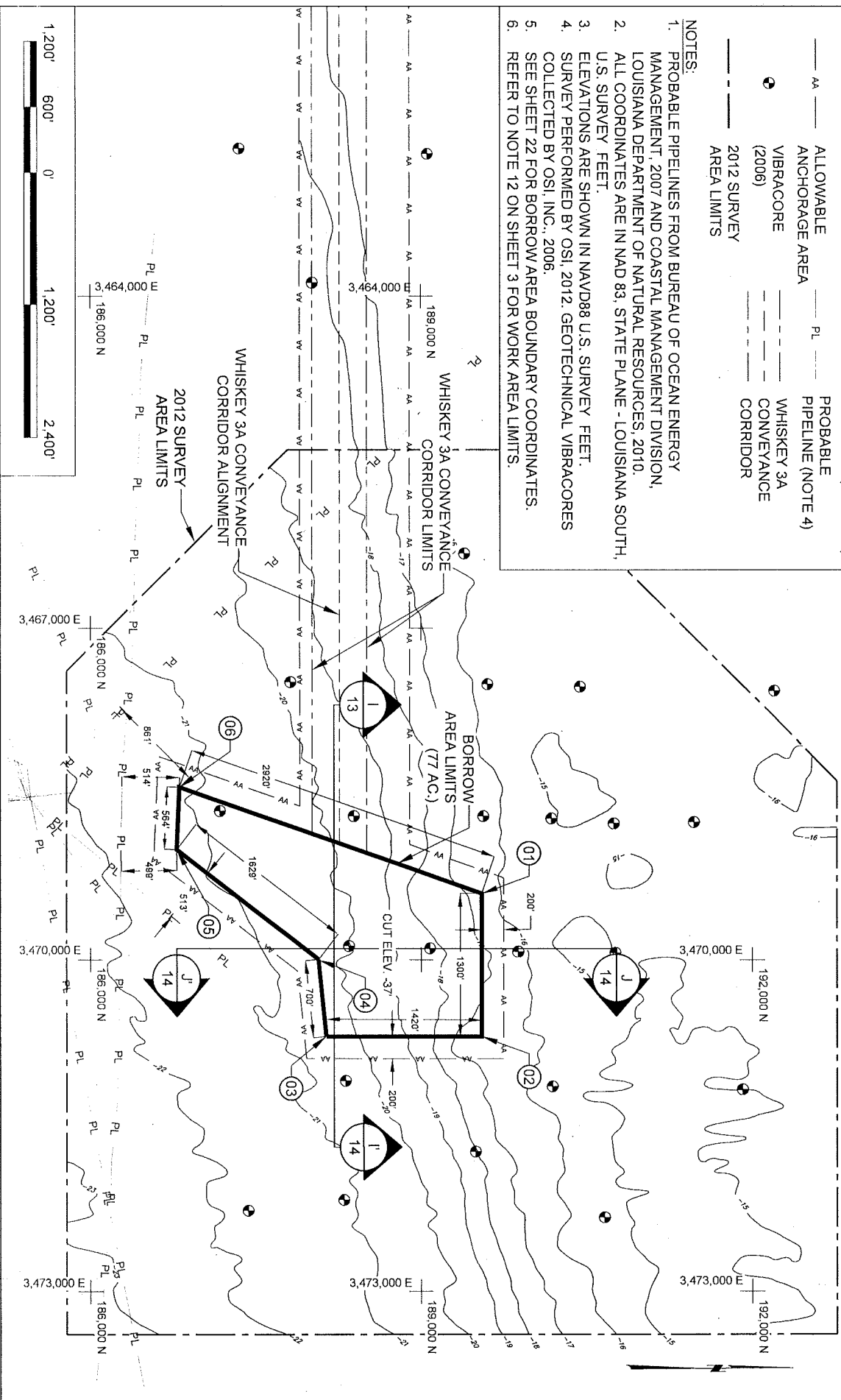


- NOTES:
1. ELEVATIONS ARE SHOWN IN NAVD88 U.S. SURVEY FEET.
 2. BATHYMETRIC SURVEY CONDUCTED BY OCEAN SURVEY, 2012.
 3. MEAN HIGH WATER = +1.70' (NAVD88), MEAN LOW WATER = +0.66' (NAVD88)

BY	DESCRIPTION	DATE	COASTAL ENGINEERING CONSULTANTS, INC.		COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		NRDA - CAILLOU LAKE HEADLANDS		SHIP SHOAL BLOCK 88 BORROW AREA TYPICAL SECTIONS
MTP	SHEET NUMBER REVISIONS	07/15							
MTP	2012 SURVEY ADDITION	04/19							
MTP	EXPANSION OF SHIP SHOAL BLOCK 88 BORROW AREA TO WEST BY 1,000 FEET, ALLOWABLE ANCHORAGE AREA	08/19							
MTP	DESIGNED BY: MICHAEL T. POFF, P.E.	2014	APPROVED BY: CATHERINE RICKS, P.E.		FEDERAL PROJECT NUMBER: TE-100		STATE PROJECT NUMBER: TE-100		DATE: NOVEMBER 2012
DRAWN BY: STEVE DARTZ			DESIGNED BY: MICHAEL T. POFF, P.E.		APPROVED BY: CATHERINE RICKS, P.E.		FEDERAL PROJECT NUMBER: TE-100		SHEET 12 OF 22

- LEGEND**
- BORROW AREA LIMITS
 - BATHYMETRIC CONTOUR (OSI, 2012)
 - ALLOWABLE ANCHORAGE AREA VIBRACORE (2006)
 - PROBABLE PIPELINE (NOTE 4)
 - WHISKEY 3A CONVEYANCE CORRIDOR
 - 2012 SURVEY AREA LIMITS

- NOTES:**
- PROBABLE PIPELINES FROM BUREAU OF OCEAN ENERGY MANAGEMENT, 2007 AND COASTAL MANAGEMENT DIVISION, LOUISIANA DEPARTMENT OF NATURAL RESOURCES, 2010.
 - ALL COORDINATES ARE IN NAD 83, STATE PLANE - LOUISIANA SOUTH, U.S. SURVEY FEET.
 - ELEVATIONS ARE SHOWN IN NAVD88 U.S. SURVEY FEET.
 - SURVEY PERFORMED BY OSI, INC., 2012. GEOTECHNICAL VIBRACORES COLLECTED BY OSI, INC., 2006.
 - SEE SHEET 22 FOR BORROW AREA BOUNDARY COORDINATES.
 - REFER TO NOTE 12 ON SHEET 3 FOR WORK AREA LIMITS.



BY	DESCRIPTION	DATE
MTP	GENERAL NOTES AND SHEET NUMBER REVISIONS	01/15 2013
MTP	2012 SURVEY ADDITION	04/19 2013
MTP	ALLOWABLE ANCHORAGE AREA SHEET NUMBER REVISION	08/19 2014

<p>COASTAL ENGINEERING CONSULTANTS, INC</p> <p>COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	<p>DESIGNED BY: STEVE DARTIEZ</p> <p>DESIGNED BY: MICHAEL T. POFF, P.E.</p> <p>APPROVED BY: CATHERINE RICKS, P.E.</p>	<p>NRDA - CAILLOU LAKE HEADLANDS</p> <p>STATE PROJECT NUMBER: TE-100</p> <p>FEDERAL PROJECT NUMBER: TE-100</p>	<p>WHISKEY 3A BORROW AREA PLAN VIEW</p> <p>DATE: NOVEMBER 2012</p> <p>SHEET 13 OF 22</p>
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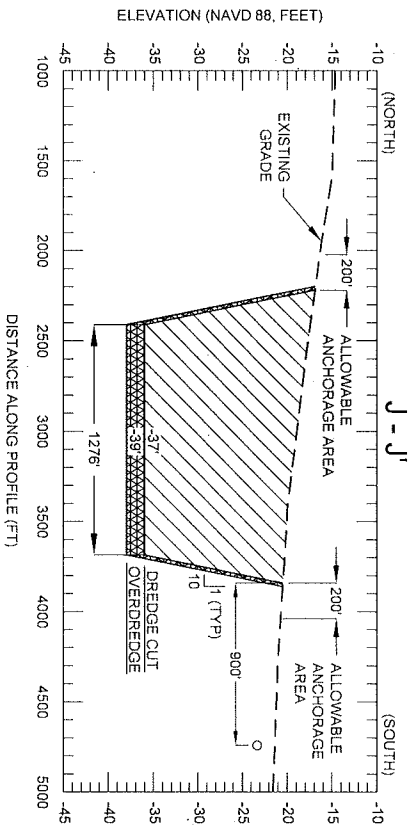
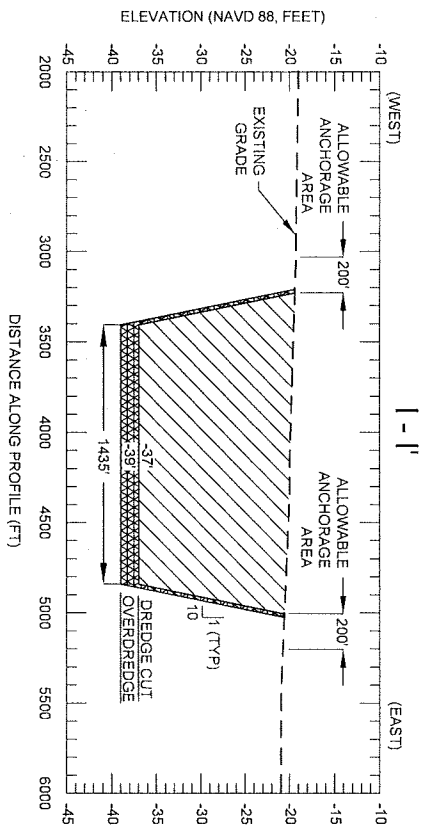
LEGEND:

DESIGN CUT

OVERDREDGE TOLERANCE

EXISTING GRADE (2012)

SCALE:
H: 1" = 1000'
V: 1" = 20'

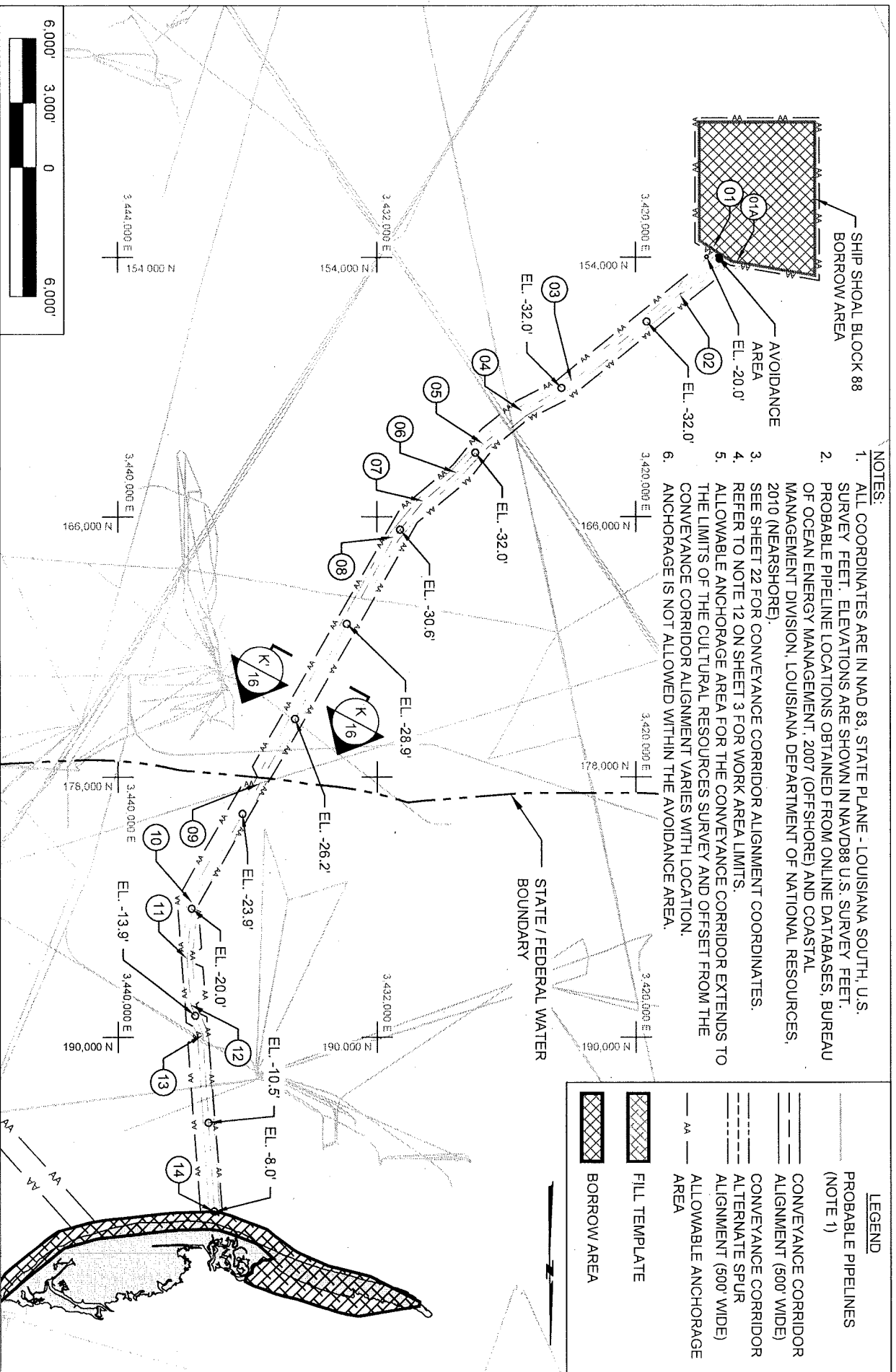


- NOTES:
- ELEVATIONS ARE SHOWN IN NAVD88 U.S. SURVEY FEET.
 - BATHYMETRIC SURVEY CONDUCTED BY OSI, 2012.
 - MEAN HIGH WATER = 1.70' (NAVD88), MEAN LOW WATER = +0.66' (NAVD88)

BY	DESCRIPTION	DATE
MTP	SHEET NUMBER REVISIONS	07/15 2013
MTP	2012 SURVEY ADDITION	04/19 2013
MTP	ALLOWABLE ANCHORAGE AREA, SHEET NUMBER REVISIONS	08/19 2014

DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.	FEDERAL PROJECT NUMBER: TE-100	SHEET 14 OF 22
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<p>COASTAL ENGINEERING CONSULTANTS, INC.</p>	<p>COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	NRDA - CAILLOU LAKE HEADLANDS	WHISKEY 3A BORROW AREA TYPICAL SECTIONS
		STATE PROJECT NUMBER: TE-100	



- NOTES:**
1. ALL COORDINATES ARE IN NAD 83, STATE PLANE - LOUISIANA SOUTH, U.S. SURVEY FEET. ELEVATIONS ARE SHOWN IN NAVD88 U.S. SURVEY FEET.
 2. PROBABLE PIPELINE LOCATIONS OBTAINED FROM ONLINE DATABASES, BUREAU OF OCEAN ENERGY MANAGEMENT, 2007 (OFFSHORE) AND COASTAL MANAGEMENT DIVISION, LOUISIANA DEPARTMENT OF NATIONAL RESOURCES, 2010 (NEARSHORE).
 3. SEE SHEET 22 FOR CONVEYANCE CORRIDOR ALIGNMENT COORDINATES.
 4. REFER TO NOTE 12 ON SHEET 3 FOR WORK AREA LIMITS.
 5. ALLOWABLE ANCHORAGE AREA FOR THE CONVEYANCE CORRIDOR EXTENDS TO THE LIMITS OF THE CULTURAL RESOURCES SURVEY AND OFFSET FROM THE CONVEYANCE CORRIDOR ALIGNMENT VARIES WITH LOCATION.
 6. ANCHORAGE IS NOT ALLOWED WITHIN THE AVOIDANCE AREA.

LEGEND

	PROBABLE PIPELINES (NOTE 1)
	CONVEYANCE CORRIDOR ALIGNMENT (500' WIDE)
	CONVEYANCE CORRIDOR ALIGNMENT SPUR
	ALLOWABLE ANCHORAGE AREA
	FILL TEMPLATE
	BORROW AREA

BY	DESCRIPTION	DATE
MTP	GENERAL NOTES AND SHEET NUMBER REVISIONS	01/15 2013
MTP	SH88 CONVEYANCE CORRIDOR REVISION	04/19 2013
MTP	ALLOWABLE ANCHORAGE AREA, SHEET NUMBER REVISIONS	08/19 2014

DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.
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<p>COASTAL ENGINEERING CONSULTANTS, INC. 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	<p>NRDA - CAILLOU LAKE HEADLANDS</p> <p>STATE PROJECT NUMBER: TE-100</p> <p>FEDERAL PROJECT NUMBER: TE-100</p>
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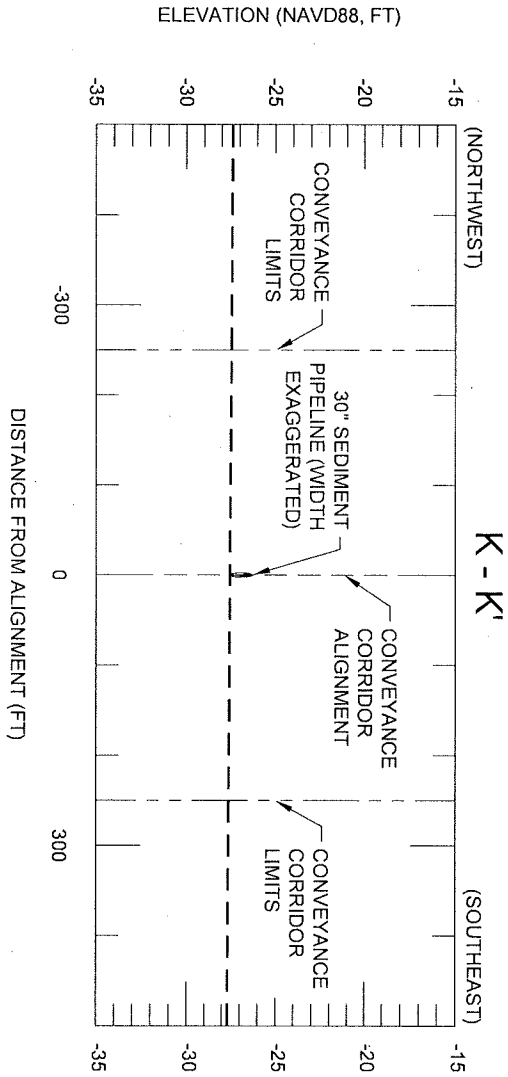
<p>SHIP SHOAL BLOCK 88 CONVEYANCE CORRIDOR PLAN VIEW</p> <p>DATE: NOVEMBER 2012</p>	<p>SHEET 15 OF 22</p>
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LEGEND:

--- EXISTING GRADE (2012)

--- SUBMERGED SEDIMENT PIPELINE

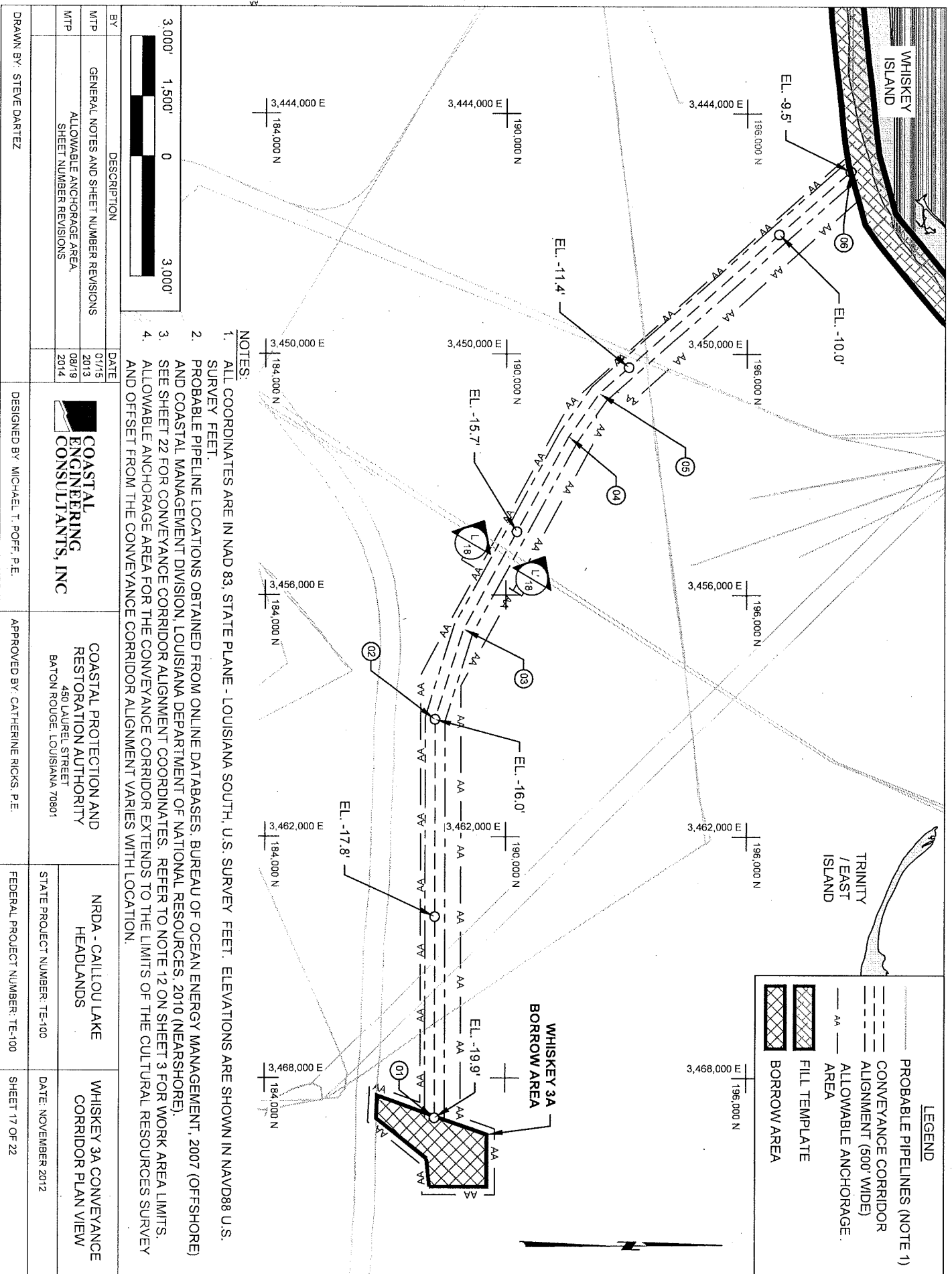
SCALE:
H: 1" = 200'
V: 1" = 10'



- NOTES:
1. SURVEY PERFORMED BY OSI, 2012.
 2. NO EXCAVATIONS OR FILLS ARE REQUIRED FOR THE CONVEYANCE CORRIDOR.
 3. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
 4. SECTION IS VIEWED AS LOOKING NORTHEAST.
 5. MEAN HIGH WATER = +1.70' NAVD88. MEAN LOW WATER = +0.66' NAVD88.
 6. ALLOWABLE ANCHORAGE AREA FOR THE CONVEYANCE CORRIDOR EXTENDS TO THE LIMITS OF THE CULTURAL RESOURCES SURVEY AND OFFSET FROM THE CONVEYANCE CORRIDOR ALIGNMENT VARIES WITH LOCATION.

BY	DESCRIPTION	DATE	DESIGNED BY: MICHAEL T. POFF, P. E.		APPROVED BY: CATHERINE RICKS, P. E.		FEDERAL PROJECT NUMBER: TE-100	SHEET 16 OF 22
MTP	SHEET NUMBER REVISIONS	01/15 2013	<p>COASTAL ENGINEERING CONSULTANTS, INC</p>	<p>COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>		<p>NRDA - CAILLOU LAKE HEADLANDS</p>	<p>SHIP SHOAL BLOCK 88 CONVEYANCE CORRIDOR TYPICAL SECTION</p>	
MTP	ALLOWABLE ANCHORAGE AREA SHEET NUMBER REVISIONS	09/19 2014						STATE PROJECT NUMBER: TE-100

DRAWN BY: STEVE DARTIEZ



LEGEND	
	PROBABLE PIPELINES (NOTE 1)
	CONVEYANCE CORRIDOR ALIGNMENT (500' WIDE)
	ALLOWABLE ANCHORAGE AREA
	FILL TEMPLATE BORROW AREA

- NOTES:**
1. ALL COORDINATES ARE IN NAD 83, STATE PLANE - LOUISIANA SOUTH, U.S. SURVEY FEET. ELEVATIONS ARE SHOWN IN NAVD88 U.S. SURVEY FEET.
 2. PROBABLE PIPELINE LOCATIONS OBTAINED FROM ONLINE DATABASES, BUREAU OF OCEAN ENERGY MANAGEMENT, 2007 (OFFSHORE) AND COASTAL MANAGEMENT DIVISION, LOUISIANA DEPARTMENT OF NATIONAL RESOURCES, 2010 (NEARSHORE).
 3. SEE SHEET 22 FOR CONVEYANCE CORRIDOR ALIGNMENT COORDINATES. REFER TO NOTE 12 ON SHEET 3 FOR WORK AREA LIMITS.
 4. ALLOWABLE ANCHORAGE AREA FOR THE CONVEYANCE CORRIDOR EXTENDS TO THE LIMITS OF THE CULTURAL RESOURCES SURVEY AND OFFSET FROM THE CONVEYANCE CORRIDOR ALIGNMENT VARIES WITH LOCATION.





BY	DESCRIPTION	DATE
MTP	GENERAL NOTES AND SHEET NUMBER REVISIONS	01/15
MTP	ALLOWABLE ANCHORAGE AREA	2013
MTP	SHEET NUMBER REVISIONS	08/19
		2014

DESIGNED BY MICHAEL T. POFF, P.E.	APPROVED BY CATHERINE RICKS, P.E.
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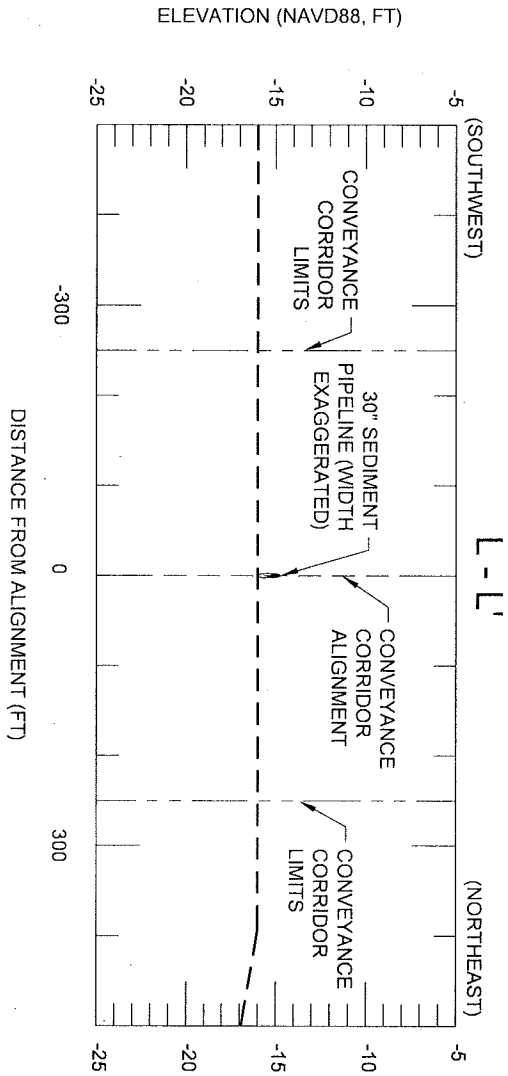
 COASTAL ENGINEERING CONSULTANTS, INC 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	NRDA - CALLOU LAKE HEADLANDS STATE PROJECT NUMBER: TE-100	WHISKEY 3A CONVEYANCE CORRIDOR PLAN VIEW DATE: NOVEMBER 2012
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DRAWN BY: STEVE DARTIEZ	DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.	FEDERAL PROJECT NUMBER: TE-100	SHEET 17 OF 22
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LEGEND:

-  EXISTING GRADE (2012)
-  SUBMERGED SEDIMENT PIPELINE

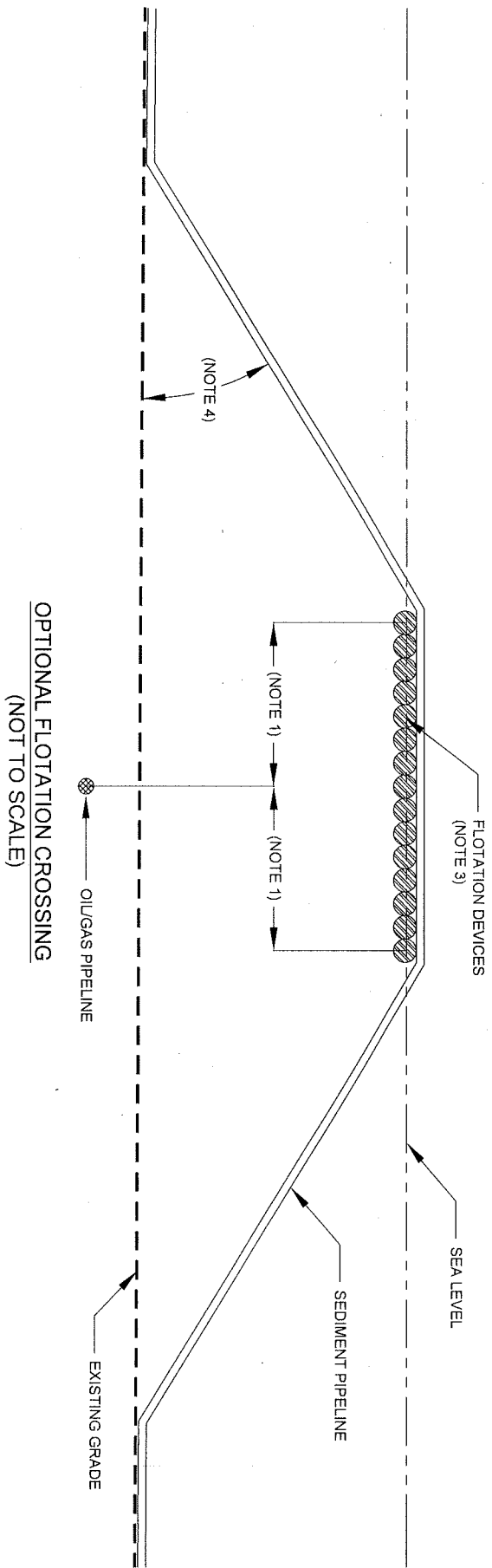
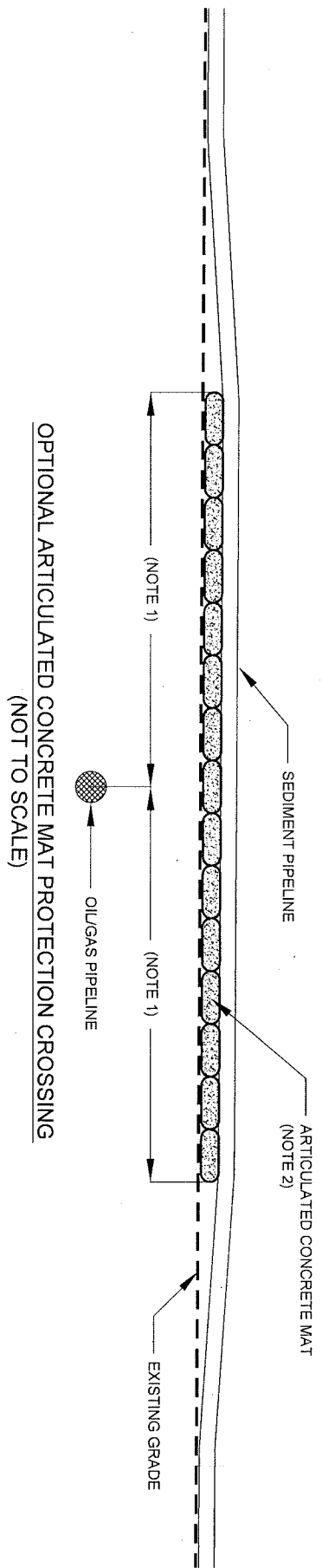
SCALE:
H: 1" = 200'
V: 1" = 10'



- NOTES:
1. SURVEY PERFORMED BY OSI, 2012.
 2. NO EXCAVATIONS OR FILLS ARE REQUIRED FOR THE CONVEYANCE CORRIDOR.
 3. SEDIMENT PIPELINE SHALL BE LIGHTED AND MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
 4. SECTION IS VIEWED AS LOOKING NORTHWEST.
 5. MEAN HIGH WATER = +1.70' NAVD88. MEAN LOW WATER = +0.66' NAVD88.
 6. ALLOWABLE ANCHORAGE AREA FOR THE CONVEYANCE CORRIDOR EXTENDS TO THE LIMITS OF THE CULTURAL RESOURCES SURVEY AND OFFSET FROM THE CONVEYANCE CORRIDOR ALIGNMENT VARIES WITH LOCATION.

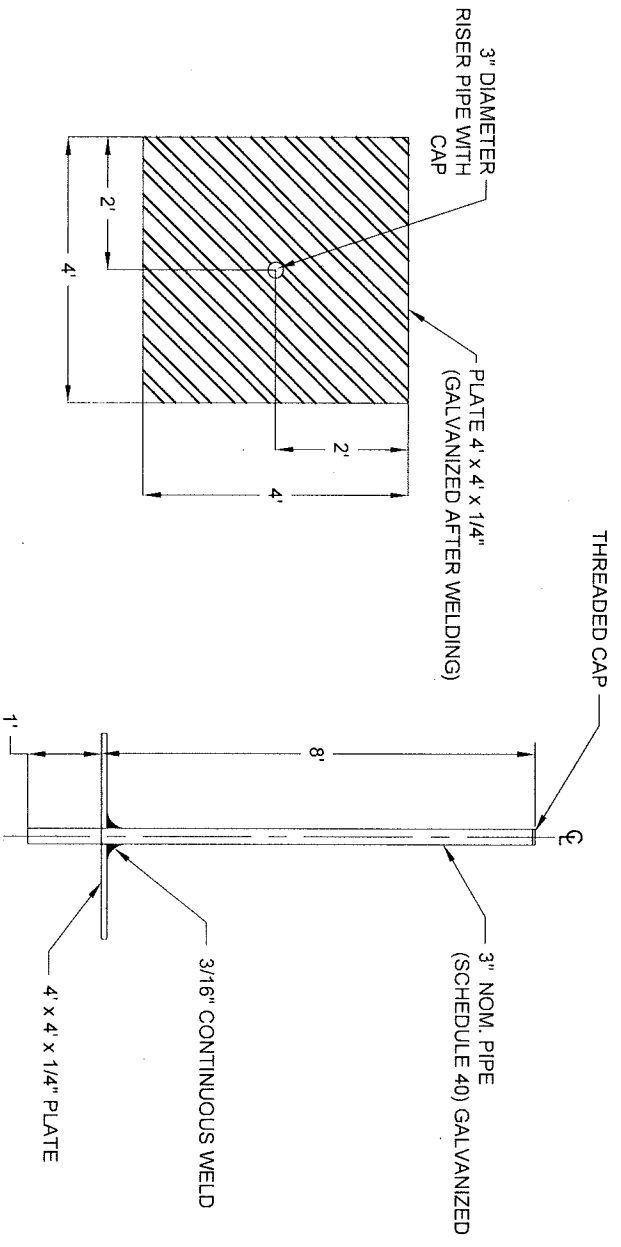
BY	DESCRIPTION	DATE	DESIGNED BY: MICHAEL T. POFF, P. E.		APPROVED BY: CATHERINE RICKS, P. E.		FEDERAL PROJECT NUMBER: TE-100	SHEET 18 OF 22
MTP	SHEET NUMBER REVISIONS	01/15 2013	 COASTAL ENGINEERING CONSULTANTS, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	NRDA - CAILLOU LAKE HEADLANDS		WHISKEY 3A CONVEYANCE CORRIDOR TYPICAL SECTION	
MTP	ALLOWABLE ANCHORAGE AREA, SHEET NUMBER REVISIONS	08/19 2014			STATE PROJECT NUMBER: TE-100	DATE: NOVEMBER 2012		

DRAWN BY: STEVE DARTERZ




- NOTES:**
1. MEANS AND METHODS OF SEDIMENT PIPELINE CROSSING OF AN OIL/GAS PIPELINE SHALL BE COORDINATED BY THE CONSTRUCTION CONTRACTOR WITH THE OIL/GAS PIPELINE OPERATOR.
 2. ARTICULATED CONCRETE MAT CONSTRUCTION AND COVERAGE AREA SHALL BE COORDINATED BY THE CONSTRUCTION CONTRACTOR WITH THE OIL/GAS PIPELINE OPERATOR.
 3. FLotation DEVICE CONSTRUCTION AND PLACEMENT SHALL BE DETERMINED BY INDUSTRY STANDARDS FOR SEDIMENT PIPELINE SUPPORT AND CONSTRUCTION CONTRACTOR STANDARD EQUIPMENT.
 4. ANGLE OF SEDIMENT PIPELINE DEPARTURE FROM EXISTING GRADE SHALL BE DETERMINED BY INDUSTRY STANDARDS FOR SEDIMENT PIPELINE SUPPORT AND CONSTRUCTION CONTRACTOR EQUIPMENT.

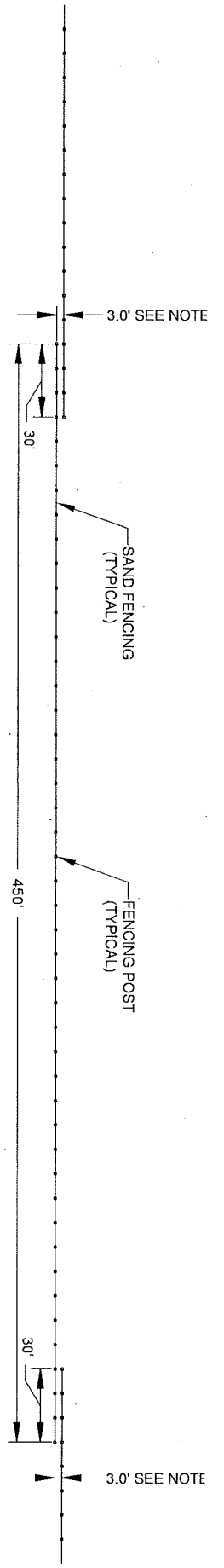
BY	DESCRIPTION	DATE	COASTAL ENGINEERING CONSULTANTS, INC. COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		NRDA - CAILLOU LAKE HEADLANDS STATE PROJECT NUMBER: TE-100	OPTIONAL SEDIMENT PIPELINE CROSSING TYPICAL DETAILS DATE: NOVEMBER 2012
MTP	ADDITIONAL SHEET - OPTIONAL SEDIMENT PIPELINE CROSSING TYPICAL DETAILS, SHEET NUMBER REVISIONS	06/19 2014				
DRAWN BY: STEVE DARTZ						



SETTLEMENT PLATE
NOT TO SCALE

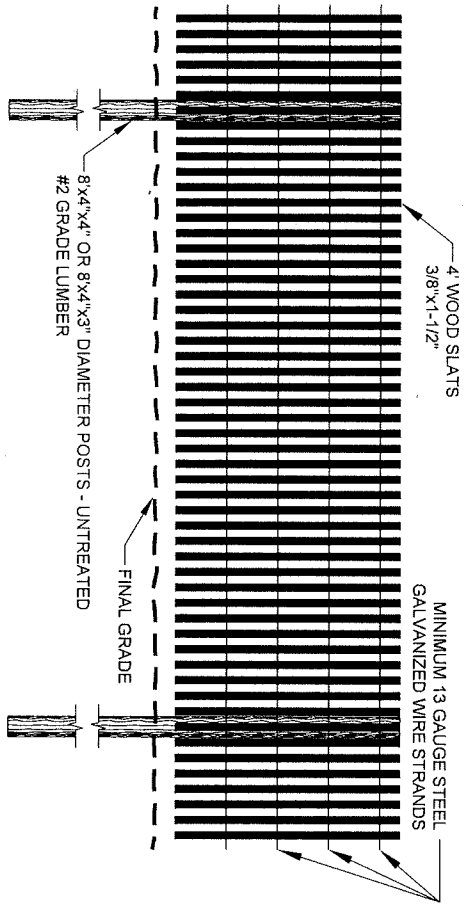
- NOTES:**
1. SETTLEMENT PLATES SHALL BE CONSTRUCTED USING ASTM A36 STEEL AND HOT-DIPPED GALVANIZED AFTER FABRICATION.
 2. ALL SETTLEMENT PLATES SHALL BE SURVEYED UNDER THE SUPERVISION OF THE RESIDENT PROJECT REPRESENTATIVE WITHIN A DAY OF INSTALLATION AND WEEKLY THROUGHOUT THE DURATION OF THE PROJECT.
 3. ALL SETTLEMENT PLATES MUST BE INSTALLED AND MAINTAINED WITHIN 10.5 DEGREES OF VERTICAL.
 4. ALL SETTLEMENT PLATES SHALL BE MARKED WITH SURVEY FLAGGING.
 5. LENGTH OF THE SETTLEMENT PLATE RISER PIPE SHALL BE SUCH THAT THE ELEVATION OF THE TOP CAP BE NO LESS THAN 4 FEET ABOVE MAXIMUM FINAL DESIGN GRADE FOR ITS LOCATION.

BY	DESCRIPTION	DATE	DESIGNED BY: MICHAEL T. POFF, P.E.		APPROVED BY: CATHERINE RICKS, P.E.		FEDERAL PROJECT NUMBER: TE-100	SHEET 20 OF 22
MTP	SHEET NUMBER REVISIONS	01/15 2013	 COASTAL ENGINEERING CONSULTANTS, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		NRDA - CAILLOU LAKE HEADLANDS	SETTLEMENT PLATE DETAIL	
MTP	SHEET NUMBER REVISIONS	06/19 2014						STATE PROJECT NUMBER: TE-100
DRAWN BY: STEVE DARTIEZ								

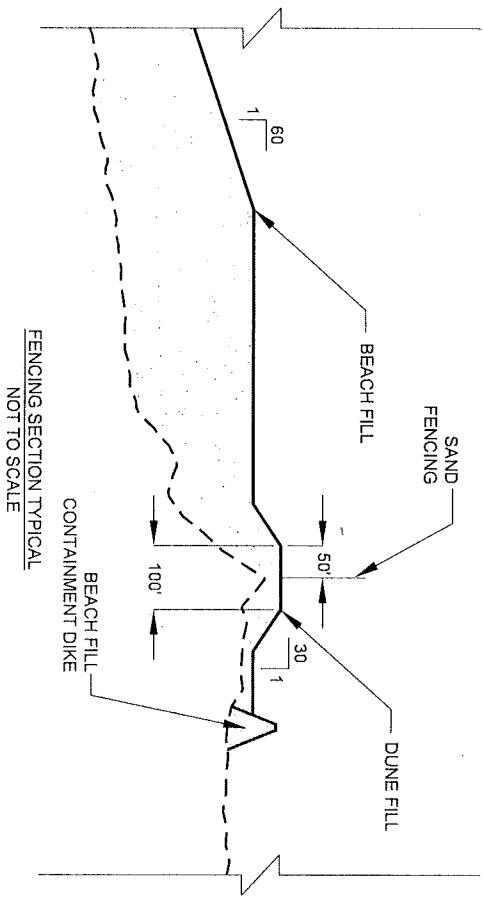


NOTES:
 1. THE DISTANCE BETWEEN FENCES SHALL BE INCREASED FROM 3.0' TO 8.0' AT EVERY FIFTH GAP TO ALLOW ALL-TERRAIN VEHICLE ACCESS.

FENCING GAPPING DIMENSIONS
 NOT TO SCALE



FENCING DETAIL
 NOT TO SCALE



FENCING SECTION TYPICAL
 NOT TO SCALE

BY	DESCRIPTION	DATE
MTP	SHEET NUMBER REVISIONS	01/15 2013
MTP	SHEET NUMBER REVISIONS	09/19 2014

DRAWN BY: STEVE DARTTZ	DESIGNED BY: MICHAEL T. POFF, P.E.	APPROVED BY: CATHERINE RICKS, P.E.
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		NRDA - CALLLOU LAKE HEADLANDS SAND FENCING DETAIL
STATE PROJECT NUMBER: TE-100		DATE: NOVEMBER 2012
FEDERAL PROJECT NUMBER: TE-100		SHEET 21 OF 22

WHISKEY 3A BORROW AREA BOUNDARY

POINT NO.	NORTHING	EASTING	LATITUDE	LONGITUDE
01	189555.02	3469399.83	29° 01' 11.57" N	90° 44' 36.24" W
02	189555.02	3470694.04	29° 01' 11.50" N	90° 44' 21.67" W
03	188135.02	3470691.98	29° 00' 57.44" N	90° 44' 21.77" W
04	188063.22	3469995.68	29° 00' 56.77" N	90° 44' 29.62" W
05	186774.18	3469002.65	29° 00' 44.06" N	90° 44' 40.88" W
06	186798.10	3468439.03	29° 00' 44.33" N	90° 44' 47.22" W

SHIP SHOAL 88 BORROW AREA BOUNDARY

POINT NO.	NORTHING	EASTING	LATITUDE	LONGITUDE
01	154855.32	3411709.23	28° 55' 30.55" N	90° 55' 27.38" W
02	154189.82	3415542.12	28° 55' 23.83" N	90° 54' 44.28" W
03	153228.94	3417018.77	28° 55' 14.27" N	90° 54' 27.71" W
04	147722.32	3417009.77	28° 54' 19.76" N	90° 54' 28.04" W
05	147722.32	3411709.17	28° 54' 19.95" N	90° 55' 27.67" W

WHISKEY 3A CONVEYANCE CORRIDOR

POINT NO.	STATION	NORTHING	EASTING	LATITUDE	LONGITUDE
01	0+00.00	188255.48	3468989.77	29° 00' 58.72" N	90° 44' 40.94" W
02	99+00.00	188255.16	3459089.77	29° 00' 59.21" N	90° 46' 32.43" W
03	122+50.00	188955.23	3456846.47	29° 01' 06.25" N	90° 46' 57.66" W
04	177+00.00	191569.00	3452064.14	29° 01' 32.35" N	90° 47' 51.38" W
05	190+25.00	192336.59	3450984.12	29° 01' 40.00" N	90° 48' 03.50" W
06	273+75.00	198583.27	3445443.24	29° 02' 42.08" N	90° 49' 05.60" W

SHIP SHOAL 88 CONVEYANCE CORRIDOR

POINT NO.	STATION	NORTHING	EASTING	LATITUDE	LONGITUDE
01	-27+00.00	153536.92	3416373.84	28° 55' 17.34" N	90° 54' 34.95" W
02	0+00.00	155743.29	3417930.10	28° 55' 39.12" N	90° 54' 17.35" W
03	64+50.00	159784.83	3422956.87	28° 56' 18.94" N	90° 53' 20.61" W
04	91+00.00	161156.89	3425224.01	28° 56' 32.44" N	90° 52' 55.03" W
05	114+50.00	162651.75	3427037.27	28° 56' 47.16" N	90° 52' 34.56" W
06	132+75.00	163984.18	3428284.37	28° 57' 00.30" N	90° 52' 20.47" W
07	153+00.00	165288.72	3429833.18	28° 57' 13.16" N	90° 52' 02.97" W
08	174+50.00	166935.78	3431215.10	28° 57' 29.40" N	90° 51' 47.34" W
09	304+00.00	178310.10	3437405.99	28° 59' 21.74" N	90° 50' 37.12" W
10	367+25.00	183800.86	3440545.62	29° 00' 15.96" N	90° 50' 01.50" W
11	393+25.00	186388.36	3440800.24	29° 00' 41.57" N	90° 49' 58.50" W
12	414+50.00	188505.60	3440618.85	29° 01' 02.53" N	90° 50' 00.44" W
13	429+50.00	189890.94	3440043.65	29° 01' 16.27" N	90° 50' 06.85" W
14	511+00.00	198024.21	3439521.68	29° 02' 36.81" N	90° 50' 12.33" W

SHIP SHOAL 88 CONVEYANCE CORRIDOR - ALTERNATE SPUR

POINT NO.	STATION	NORTHING	EASTING	LATITUDE	LONGITUDE
01A	-30+25.00	154224.09	3415314.25	28° 55' 24.18" N	90° 54' 46.84" W
02	0+00.00	155743.29	3417930.10	28° 55' 39.12" N	90° 54' 17.35" W

BY	DESCRIPTION	DATE
MTP	SHEET NUMBER REVISIONS	01/15 2013
MTP	SH88 CONVEYANCE CORRIDOR REVISION	04/19 2013
MTP	EXPANSION OF SHIP SHOAL BLOCK 88 BORROW AREA TO WEST BY 1,000 FEET. SHEET NUMBER REVISIONS	08/19 2014



**COASTAL
ENGINEERING
CONSULTANTS, INC.**

COASTAL PROTECTION AND
RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

NRDA - CALLOU LAKE
HEADLANDS

ALIGNMENT TABLES

BY	DESCRIPTION	DATE
MTP	SHEET NUMBER REVISIONS	01/15 2013
MTP	SH88 CONVEYANCE CORRIDOR REVISION	04/19 2013
MTP	EXPANSION OF SHIP SHOAL BLOCK 88 BORROW AREA TO WEST BY 1,000 FEET. SHEET NUMBER REVISIONS	08/19 2014

DRAWN BY: STEVE DARTTZ

DESIGNED BY: MICHAEL T. POFF, P.E.

APPROVED BY: CATHERINE RICKS, P.E.

FEDERAL PROJECT NUMBER: TE-100

SHEET 22 OF 22

BOBBY JINDAL
GOVERNOR



STEPHEN CHUSTZ
SECRETARY

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT

RECEIVED

2014 OCT -3 P 4: 06

CPRA

September 30, 2014

Devyani Kar, PhD
Coastal Protection and Restoration Authority
450 Laurel Street, Suite 1200
Baton Rouge, LA 70801

RE: **C20130224 mod 01 (P20121652 amendment)**, Coastal Zone Consistency
Coastal Protection and Restoration Authority
Federal License or Permit
Expand borrow area in Outer Continental Shelf Area Ship Shoal Block 88 to create dune
feature in Terrebonne Parish (TE-100)
Offshore, Louisiana

Dear Dr. Kar:

The above referenced project modification has been reviewed for consistency with the approved Louisiana Coastal Resources Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The project modification, as proposed in the application, is consistent with the LCRP. If you have any questions concerning this determination please contact Carol Crapanzano of the Consistency Section at (225) 342-7949.

Sincerely,

A handwritten signature in blue ink, appearing to read "Don Haydel".

for: Don Haydel
Acting Administrator
Interagency Affairs/Field Services Division

DH/JDH/cmc

cc: David Butler, LDWF