APPENDIX A: PERMIT APPLICATION (SECTION 10/404) AND PERMISSIONS REQUEST (SECTION 408)

A1: Section 10/404 Permit Application

A2: Section 408 Permissions Request

A1: Section 10/404 Permit Application

2018 Revised Joint Permit Application

Louisiana Department of Natural Resources
Office of Coastal Management
(OCM)

Joint Permit Application

For Work Within the Louisiana Coastal Zone

U.S. Army Corps Of Engineers
(COE)
New Orleans District

Print Application

Permit Number: P20131098 Date Received: 03/19/2018

Step 1 of 15 - Applicant Information

Applicant/Company Name:	COASTAL PROTECTION & RESTORATION AUTHORITY OF LOUISIANA (CPRA)	***Applicant Type:***	GOVERNMENT AGENCY
Mailing Address:	150 Terrace Avenue Baton Rouge, LA 70802		
Contact Information:	Megan Terrell		
Daytime:	225 342 6952 ***Fax:***	***Contact Email:***	

Step 2 of 15 - Agent Information

Company Name:	Coastal Protection & Restoration Authority (CPRA)
Mailing Address:	150 Terrace Avenue Baton Rouge, LA 70802
Contact Information:	Elizabeth Davoli
Daytime:	225 342 4616 ***Fax:*** 225 342 4591 ***Contact Email:*** Elizabeth.Davoli@la.gov

Step 3 of 15 - Permit Type

☒ **Coastal Use Permit (CUP)** ☐ **Solicitation of Views (SOV)** ☐ **Request for Determination (RFD)**

Step 4 of 15 - Pre-Application Activity

a. Have you participated in a Pre-Application or Geological Review Meeting for the proposed project?

☐ **No** ☒ **Yes** **Date meeting was held: 05/19/2016**

Attendees:	Elizabeth Davoli (CPRA)	Stephanie Zumo	Brad LaBorde
	(Individual or Company Rep)	(OCM Representative)	(COE Representative)

b. Have you obtained an official wetland determination from the COE for the project site?

☐ **No** ☒ **Yes** **JD Number:** MVN-2012-02806-SY

c. Is this application a mitigation plan for another CUP?

☒ **No** ☐ **Yes** **OCM Permit Number:**

Step 5 of 15 - Project Information

a. Describe the project:

The Mid-Barataria Sediment Diversion is a large-scale, complex civil works and ecosystem restoration project. When operated, up to 75.000 cubic feet per second (cfs) of sediment-laden water would be diverted from the Mississippi River to the mid-Barataria Basin to reconnect and re-establish the natural or deltaic sediment deposition process between the the Mississippi River and the Barataria Basin to deliver sediment, freshwater, and nutrients to reduce land loss and sustain wetlands.

b. Is this application a change to an existing permit?

☒ **No** ☐ **Yes** **OCM Permit Number:**

c. Have you previously applied for a permit or emergency authorization for all or any part of the proposed project?

☐ **No** ☒ **Yes**

	Agency Name	Permit Number	Decision Status	Decision Date
OCM	Stephanie Zumo	P20131098	Pending	
COE	Brad LaBorde	MVN-2012-02806-EOO	Pending	
Other				

Step 6 of 15 - Project Location

a. Physical Location

Street: Louisiana State Highway 23 (LA 23)

City: Ironton (vicinity) **Parish:** PLAQUEMINES **Zip:** 70083

Water Body: Mississippi River (Mile 60.7) / Barataria Basin

b. Latitude and Longitude

Latitude: 29 39 42.5 **Longitude:** -89 57 48.6

c. Section, Township, and Range

Section #: 5 16 47 48 49 **Township #:** 16S **Range #:** 25E

Section #: 3 2 1 41 19 **Township #:** 17S **Range #:** 24E

d. Lot, Tract, Parcel, or Subdivision Name

Lot #: **Parcel #:**

Tract #: **Subdivision Name:**

e. Site Direction:

START- From I-10 in New Orleans, take US-90Bus W across Mississippi River. Continue on US-90Bus W / Westbank Expy for 4 miles. Take exit #7 for LA 23 / Lafayette St. Continue south on LA 23 for 21 miles to the project area between the Phillips 66 Alliance Refinery and the community of Ironton, near Mississippi River Mile 60.7 -END

Step 7 of 15 - Adjacent Landowners

Adjacent Landowner : Woodland Borrow Pits, LLC c/o Phyllis Adams

Mailing Address: 1074A Highway 1
Thibodaux, , LA 70301

Adjacent Landowner : Canard Land, LLC c/o John W. Newman

Mailing Address: 605 South America Street
Covington, , LA 70433

Adjacent Landowner : River Rest, LLC c/o John W. Newman

Mailing Address: 605 South America Street
Covington, , LA 70433

Adjacent Landowner : Plaquemines Parish Government

Mailing Address: 106 Avenue G
Belle Chasse, , LA 70037

Adjacent Landowner :	Michael A. Neeb
Mailing Address:	221 W. 9th St. Rushville, , IN 46173
Adjacent Landowner :	Ralph C. Neeb, Jr. et al.
Mailing Address:	1001 Amelia St. Gretna, , LA 70053
Adjacent Landowner :	Shawn E. Dugas and Ken Dugas
Mailing Address:	515 Moncla Ave. Belle Chasse, , LA 70037
Adjacent Landowner :	Lois F. Landry
Mailing Address:	1401 St. Andrew St. 208 New Orleans, , LA 70130
Adjacent Landowner :	Walter Landry
Mailing Address:	111 Landridge Dr. Belle Chasse, , LA 70037
Adjacent Landowner :	Entergy Louisiana c/o John A. Braymer
Mailing Address:	639 Loyola Avenue, 26th Floor New Orleans, , LA 70113
Adjacent Landowner :	CHS-SLE Land LLC c/o Francis J. Lobrano
Mailing Address:	147 Keating Belle Chasse, , LA 70037
Adjacent Landowner :	Loch Leven 7 LLC c/o Michael Jeansome
Mailing Address:	850 Engineers Road Belle Chasse, , LA 70037
Adjacent Landowner :	Benjamin X. & Gwendolyn Becnel, Jr.
Mailing Address:	16198 Highway 23 Belle Chasse, , LA 70037
Adjacent Landowner :	Ameripure Processing Company, Inc.
Mailing Address:	803 Willow St. Franklin, , LA 70538
Adjacent Landowner :	Eugene & Jacey Linder
Mailing Address:	119 E. St. A Belle Chasse, , LA 70037
Adjacent Landowner :	Midway Cattle Ranch LLC c/o Khai Q. Nguyen

Mailing Address: 1051-A W, Ravenna Rd.
Belle Chasse, , LA 70037

Adjacent Landowner : Stone Energy Corp.

Mailing Address: 625 Kaliste Saloom Road
Lafayette, , LA 70508

Step 8 of 15 - Project Specifics

a. Project Name and/or Title: Mid-Barataria Sediment Diversion (BA-153)

b. Project Type: Non-Residential

c. Source of Funding: Federal

d. What will be done for the proposed project?

☒ **Bridge/Road**	☐ **Home Site/Driveway**	☒ **Pipeline/Flow Line**	☒ **Rip Rap/Erosion Control**
☒ **Bulkhead/Backfill**	☒ **Levee Construction**	☐ **Plug/Abandon**	☒ **Site Clearance**
☒ **Drainage Improvements**	☒ **Dredging**	☐ **Production Barge/Structure**	☐ **Subdivision**
☒ **Drill Barge/Structure**	☐ **Prop Washing**	☐ **Vegetative Plantings**	☐ **Wharf/Pier/Boathouse**
☐ **Drill Site**	☒ **Pilings**	☒ **Remove Structures**	
☒ **Fill**	☐ **Marina**	☐ **Major Industrial/Commercial**	

☒ **Other: excavation for conveyance channel / levee tie-ins**

e. Why is the proposed project needed?

Consistent with the Louisiana Trustee Implementation Group's Strategic Restoration Plan (SRP) and Environmental Assessment #3 and the Louisiana Coastal Master Plan (CMP), the purpose is to restore for injuries caused by the Deepwater Horizon oil spill by implementing a large-scale sediment diversion in the Barataria Basin that will reconnect and re-establish sustainable deltaic processes between the Mississippi River and the Barataria Basin through the delivery of sediment, freshwater, and nutrients to support the long-term viability of existing and planned coastal restoration efforts. The proposed project is needed to help restore habitat and ecosystem services injured in the northern Gulf of Mexico as a result of the DWH oil spill.

Step 9 of 15 - Project Status

a. Proposed project start date: 01/01/2020 ***Proposed project completion date:*** 01/01/2025

b. Is any of the project work in progress?

☒ **No** ☐ **Yes**

c. Is any of the project work complete?

☒ **No** ☐ **Yes**

Step 10 of 15 - Structures, Materials, and Methods for the Proposed Project

a. Excavations

3,850,000 **yd³** 288 **Acres**

b. Fill Areas

4,152,001,00 **yd³** 554.30 **Acres**

c. Fill Materials

☒ **Concrete:**	371,293 **yd³**	☒ **Rock:**	65,676 **yd³**
☒ **Crushed Stone or Gravel:**	102,290 **yd³**	☐ **Sand:**	**yd³**
☒ **Excavated and placed onsite:**	1,100,000 **yd³**	☒ **Hauled in topsoil/Dirt:**	584,035 **yd³**
☒ **Excavated and hauled offsite:**	2,300,000 **yd³**		
☒ **Other: Nourishment Disposal Area**	2,300,000.00 **yd³**		

d. What equipment will be used for the proposed project?

☒ **Airboat**	☒ **Bulldozer/Grader**	☒ **Marsh Buggy**
☒ **Backhoe**	☒ **Dragline/Excavator**	☒ **Other Tracked or Wheeled Vehicles**
☒ **Barge Mounted Bucket Dredge**	☐ **Handjet**	☐ **Self Propelled Pipe Laying Barge**
☐ **Barge Mounted Drilling Rig**	☐ **Land Based Drilling Rig**	☒ **Tugboat**
☐ **Other:**		

Step 11 of 15 - Project Alternatives

a. Total acres of wetlands and/or waterbottoms filled and/or excavated.

484.6 acres

b. ***What alternative locations, methods, and access routes were considered to avoid impact to wetlands and/or waterbottoms?***

As part of the engineering and design phase, construction and staging areas would consider the use of existing access roads and drives to minimize impacts to wetlands. See pp. 16-19 for additional information on alternatives (location, capacity, and structure type) analysis conducted since 1996 that resulted in the location of the Mid-Barataria Sediment Diversion at River Mile 60.7 with a capacity of 75,000 cfs.

c. ***What efforts were made to minimize impact to wetlands and/or waterbottoms?***

The analysis of the Mid-Barataria Sediment Diversion was developed using the minimum construction footprint to maximize the conveyance of sediment-laden water from the Mississippi River to the mid-Barataria Basin. The gravity conveyance alignment was developed for efficient sediment conveyance between the river and the basin. Best Management Practices (BMPs) are being developed for access routes to minimize disturbance to wetlands between the MR&T and NOV levees.

d. ***How are unavoidable impacts to vegetated wetlands to be mitigated?***

The project is self-mitigating. The purpose of the Project is to reconnect and re-establish the natural or deltaic sediment deposition process between the Mississippi River and the Barataria Basin as a long-term resilient, sustainable strategy to reduce land loss rates and sustain DWH injured wetlands through the delivery of sediment, freshwater, and nutrients.

Step 12 of 15 - Permit Type and Owners

a. Are you applying for a Coastal Use Permit?

☐ **No** ☒ **Yes**

b. Are you the sole landowner/oyster lease holder?

☒ **No** ☐ **Yes**

☐ **The applicant is an owner of the property on which the proposed described activity is to occur.**

☒ **The applicant has made reasonable effort to determine the identity and current address of the owner(s) of the land on which the proposed described activity is to occur, which included, a search of the public records of the parish in which the proposed activity is to occur.**

☒ **The applicant hereby attests that a copy of the application has been distributed to the following landowners/oyster lease holders.**

Landowner/Oyster Lease Holder:	Ram Terminals, LLC
Mailing Address:	7733 Forsyth Blvd.
City/State/Zip:	St. Louis MO 63105-1836

Landowner/Oyster Lease Holder:	Phillips 66
Mailing Address:	P.O. Box 2197
City/State/Zip:	Houston TX 77252

c. ***Does the project involve drilling, production, and/or storage of oil and gas?***

☒ No ☐ Yes

Step 13 of 15 - Maps and Drawing Instructions

USACE_Figure_Jurisdictional_Wetlands_and_WOTUS.pdf	03/19/2018 08:20:03 AM
Pages_from_JD_final_2012_02806_1_SY_Davoli.pdf	03/19/2018 08:20:59 AM
MBSDBA-153PermitSet.pdf	06/22/2016 03:29:40 PM
P20131098NeedsandAlternativesJustification.pdf	06/22/2016 03:29:40 PM
RevisedP20131098_MVN-2012-02806-ETTSupplementInfo.pdf	06/22/2016 03:29:41 PM
Supplementalfigures2.pdf	06/22/2016 03:29:41 PM
FEE_WAIVER_REQUEST_LETTER_07-24-13.pdf	07/24/2013 01:31:40 PM

Step 14 of 15 - Payment

The fee for this permit is: $100.00

Step 15 of 15 - Payment Processed

Applicant Information

Applicant Name: COASTAL PROTECTION & RESTORATION AUTHORITY OF LOUISIANA (CPRA)
Address: 150 Terrace Avenue
City/State/Zip: Baton Rouge, LA 70802

Application Information

Permit Type: CUP

To the best of my knowledge the proposed activity described in this permit application complies with, and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. If applicable, I also certify that the declarations in Step 12c, oil spill response, are complete and accurate.

View Comments related to this project

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INTERNAL TRACKING SHEET FOR JURISDICTIONAL DETERMINATIONS

(to be used for accounts where no letter is being sent)

Account #: 2012-02806-1 Account Name: Davoli, Elizabeth

DETERMINATION DATE: 8/11/16 SUBJECT: Jurisdictional Determination

MEMORANDUM FOR CEMVN-OD-SE, ATTN: Brad Laborde

MEMORANDUM FROM CEMVN-OD-SS, Surveillance & Enforcement Section

==

PARISH: Plaquemines SECTION 5,16,47,48,4 TWP 16S RANGE 25E

PROPERTY/PROJECT DESCRIPTION: Mid-Barataria Sediment Diversion (BA-153)

OWNER/COMPANY NAME: CPRA of LA

==

1. After careful review, the Surveillance & Enforcement Section has determined that this property/project is:

   NONWETLAND ☐ NO PERMIT REQUIRED ☐

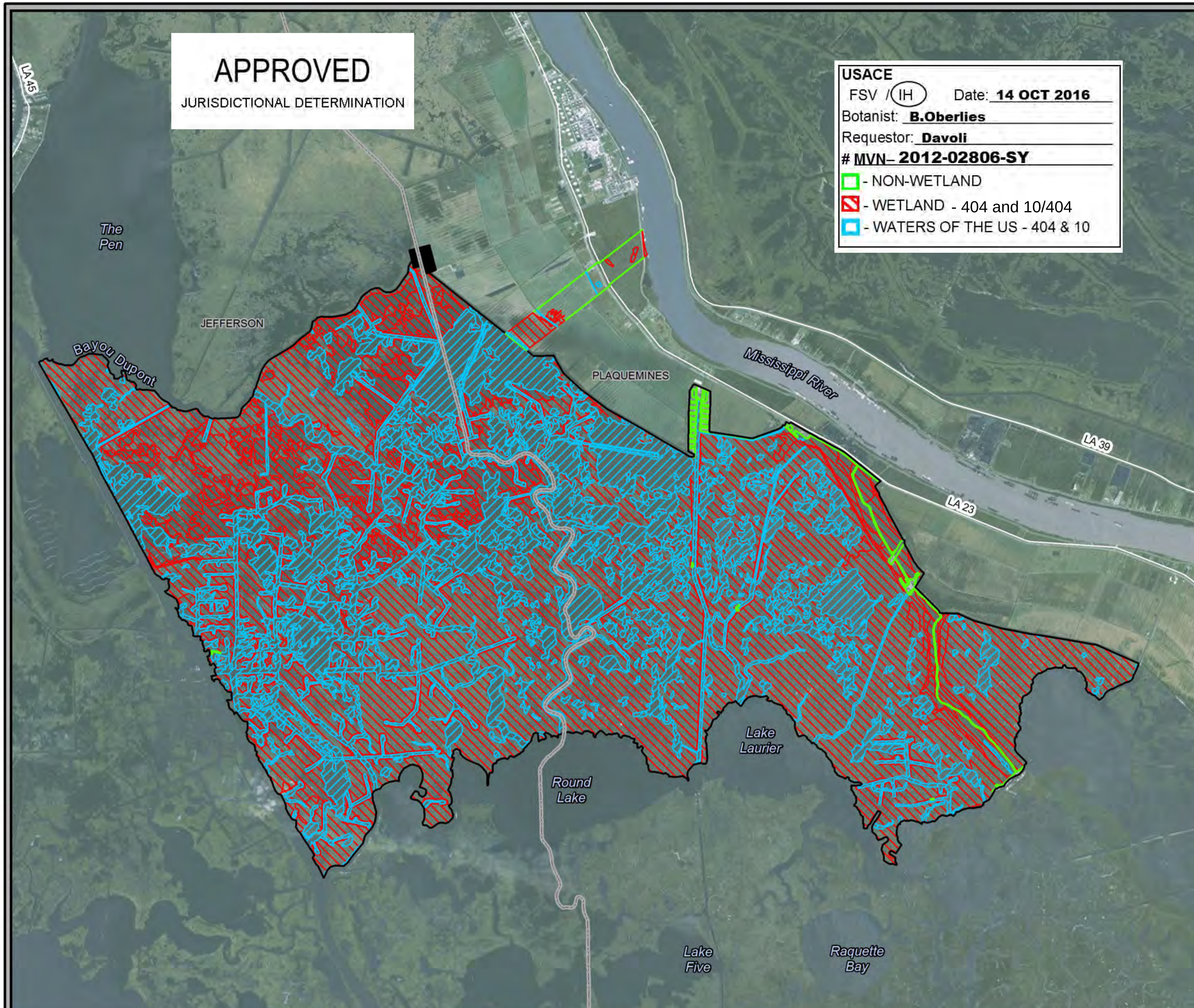
   MIXED ☒ AND/OR SECTION 10 ☒

   WETLAND ☐ OTHER: _____

   ☒ A map is enclosed that outlines the wetland or nonwetland area that has been delineated.

2. Additional comments: _____

3. P.O.C. for this determination: Brian Oberlies, x 2275



Mid-Barataria Sediment Diversion Site Map - Wetlands Permitting October 2016

Jefferson and Plaquemines Parishes, La

Project Features

MBSD Pump Station

Habitat Types

Open Water

Uplands

Wetlands

Reference Features

Parish Boundary

Road

All project features are graphical representations only, are subject to change, and may not reflect true location or dimension

N

1:80,000

0 0.5 1 2 Kilometers

0 0.5 1 2 Miles

Source:
Coastal Protection and Restoration Authority of Louisiana
Imagery: ESRI World Imagery
Map Date: October 13, 2016
//2016040375

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: New Orleans District | File/ORM #: MVN-2012-02086-1-SY | PJD Date: Aug 11, 2016

State	LA
City/County	Plaquemines Parish
Nearest Waterbody:	Mississippi River
Location: TRS, LatLong or UTM:	Sec. 5,16,47,48,49, T16S, R25E 29.661806 N -89.9635 W
Name/ Address of Person Requesting PJD	Ms. Elizabeth Davoli Coastal Protection & Restoration Authority of LA P. O. Box 44027 Capitol Station Baton Rouge, LA 70804

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: ___ linear ft ___ width ___ acres Stream Flow: Perennial

Wetlands: ~38 acre(s) Cowardin Class: Estuarine

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: Mississippi River Non-Tidal:

☑ Office (Desk) Determination
☐ Field Determination: Date of Field Trip:

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☑ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☑ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite quad name: 1:24k Phoenix
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: NRCS web soil survey
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☑ Aerial (Name & Date): 98, 04, 05,06, 08, 10,13
  - ☐ Other (Name & Date):
- ☑ Previous determination(s). File no. and date of response letter: 2009-00898-SY, 5/5/09;
- ☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

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Signature and Date of Regulatory Project Manager (REQUIRED)

Requested by applicant 6/30/16

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

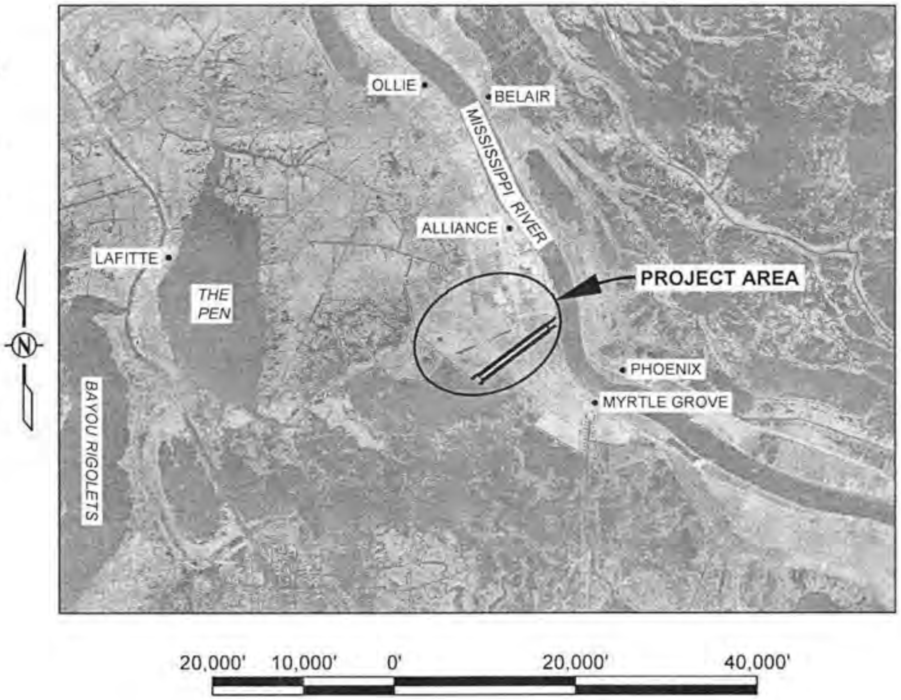
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
3	PROJECT LAYOUT
4	CONVEYANCE CHANNEL LAYOUT
5	OVERALL ROADWAY AND RAIL PLAN
6	CHENIER TRAVERSE BAYOU PUMP STATION SITE
7	TYPICAL CONVEYANCE CHANNEL SECTION (1 OF 2)
8	TYPICAL CONVEYANCE CHANNEL SECTION (2 OF 2)
9	TYPICAL ROADWAY SECTION (1 OF 2)
10	TYPICAL ROADWAY SECTIONS (2 OF 2)
11	DISPOSAL AREA
12	POTENTIAL SEDIMENT DEPOSITION/LAND BUILDING AREA

STATE OF LOUISIANA
COASTAL PROTECTION AND RESTORATION AUTHORITY

MID-BARATARIA SEDIMENT DIVERSION PROJECT
BA-153
PLAQUEMINES PARISH, LOUISIANA



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION & RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	TITLE SHEET
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 1 OF 12

GENERAL NOTES

1. THESE PLANS WERE DEVELOPED USING 2010 AERIAL PHOTOGRAPHY, NAD83, LOUISIANA STATE COORDINATE SYSTEM, SOUTH ZONE.

2. ALL ELEVATIONS SHOWN ARE IN NAVD 88.

3. AS-BUILT DRAWINGS WILL BE SUBMITTED WITHIN 30 DAYS OF COMPLETION OF THIS PROJECT TO THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES, COASTAL MANAGEMENT DIVISION, P.O. BOX 44487, BATON ROUGE, LA 70804-4487.

4. THE PERMIT APPLICANT 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.

5. ALL NORTHING / EASTING AND LATITUDE / LONGITUDE VALUES ARE BASED ON PRELIMINARY DESIGN DATA AND ARE SUBJECT TO CHANGE.

6. ALL ELEVATIONS ARE BASED ON PRELIMINARY DESIGN DATA AND ARE SUBJECT TO CHANGE.

FEATURE LOCATION TABLE

DESCRIPTION	NORTHING / LATITUDE	EASTING / LONGITUDE
POB CHANNEL BASELINE	426308.37 / 29° 39' 54.20" N	3717488.25 / 89° 57' 30.31" W
POE CHANNEL BASELINE	417902.28 / 29° 38' 32.30" N	3706292.82 / 89° 59' 38.32" W
DIVERSION GATE STRUCTURE	424567.11 / 29° 39' 37.24" N	3715169.19 / 89° 57' 56.83" W
BACK STRUCTURE	418983.06 / 29° 38' 42.84" N	3707732.23 / 89° 59' 21.86" W
POB PUMP STATION BASELINE	424556.45 / 29° 39' 38.77" N	3701081.76 / 90° 00' 36.50" W
POE PUMP STATION BASELINE	424331.16 / 29° 39' 36.65" N	3700158.86 / 90° 00' 46.99" W

SYMBOLS

FLOW — FLOW DIRECTION

NATURAL GROUND

WATER SURFACE

CUT SLOPE

FILL SLOPE

CONSTRUCTION LIMIT

A / C-01 — SECTION DESIGNATION / WHERE SECTION IS SHOWN

1 / C-01 — DETAIL DESIGNATION / WHERE DETAIL IS SHOWN

ABBREVIATIONS

APPROX	APPROXIMATE
B/L	BASELINE
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
DWG	DRAWING
E	EASTING
EL, ELEV	ELEVATION
HORIZ	HORIZONTAL
HWY	HIGHWAY
LA	LOUISIANA
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MR & T	MISSISSIPPI RIVER & TRIBUTARIES LEVEE
N	NORTHING
NO	NUMBER
NOV	NEW ORLEANS TO VENICE LEVEE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
RD	ROAD
ROW	RIGHT OF WAY
STA	STATION
TBD	TO BE DETERMINED
TYP	TYPICAL
VC	VERTICAL CURVE
VERT	VERTICAL
W	WESTING
YR	YEAR

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 2 OF 12

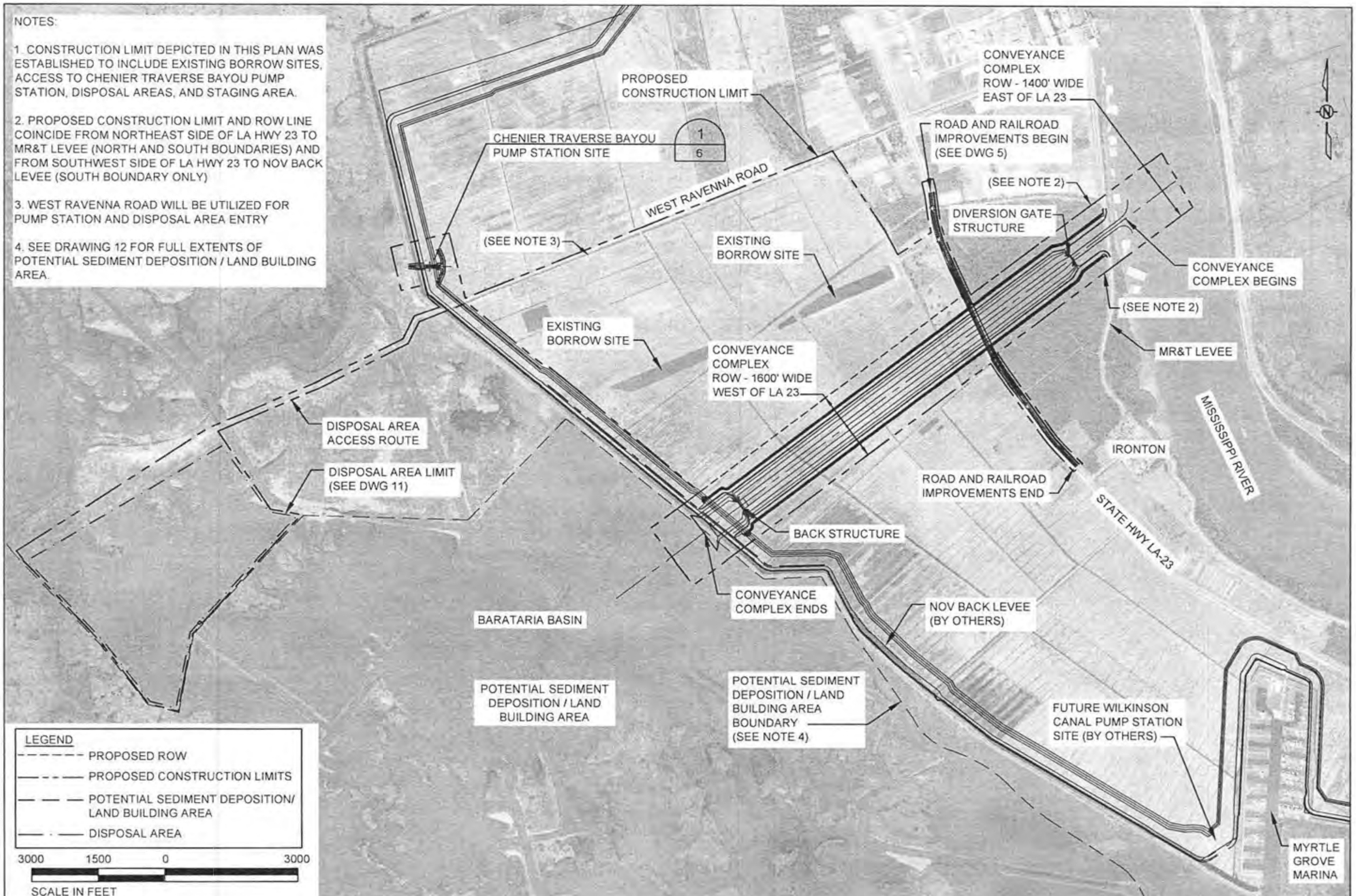
NOTES:

1. CONSTRUCTION LIMIT DEPICTED IN THIS PLAN WAS ESTABLISHED TO INCLUDE EXISTING BORROW SITES, ACCESS TO CHENIER TRAVERSE BAYOU PUMP STATION, DISPOSAL AREAS, AND STAGING AREA.

2. PROPOSED CONSTRUCTION LIMIT AND ROW LINE COINCIDE FROM NORTHEAST SIDE OF LA HWY 23 TO MR&T LEVEE (NORTH AND SOUTH BOUNDARIES) AND FROM SOUTHWEST SIDE OF LA HWY 23 TO NOV BACK LEVEE (SOUTH BOUNDARY ONLY)

3. WEST RAVENNA ROAD WILL BE UTILIZED FOR PUMP STATION AND DISPOSAL AREA ENTRY

4. SEE DRAWING 12 FOR FULL EXTENTS OF POTENTIAL SEDIMENT DEPOSITION / LAND BUILDING AREA.



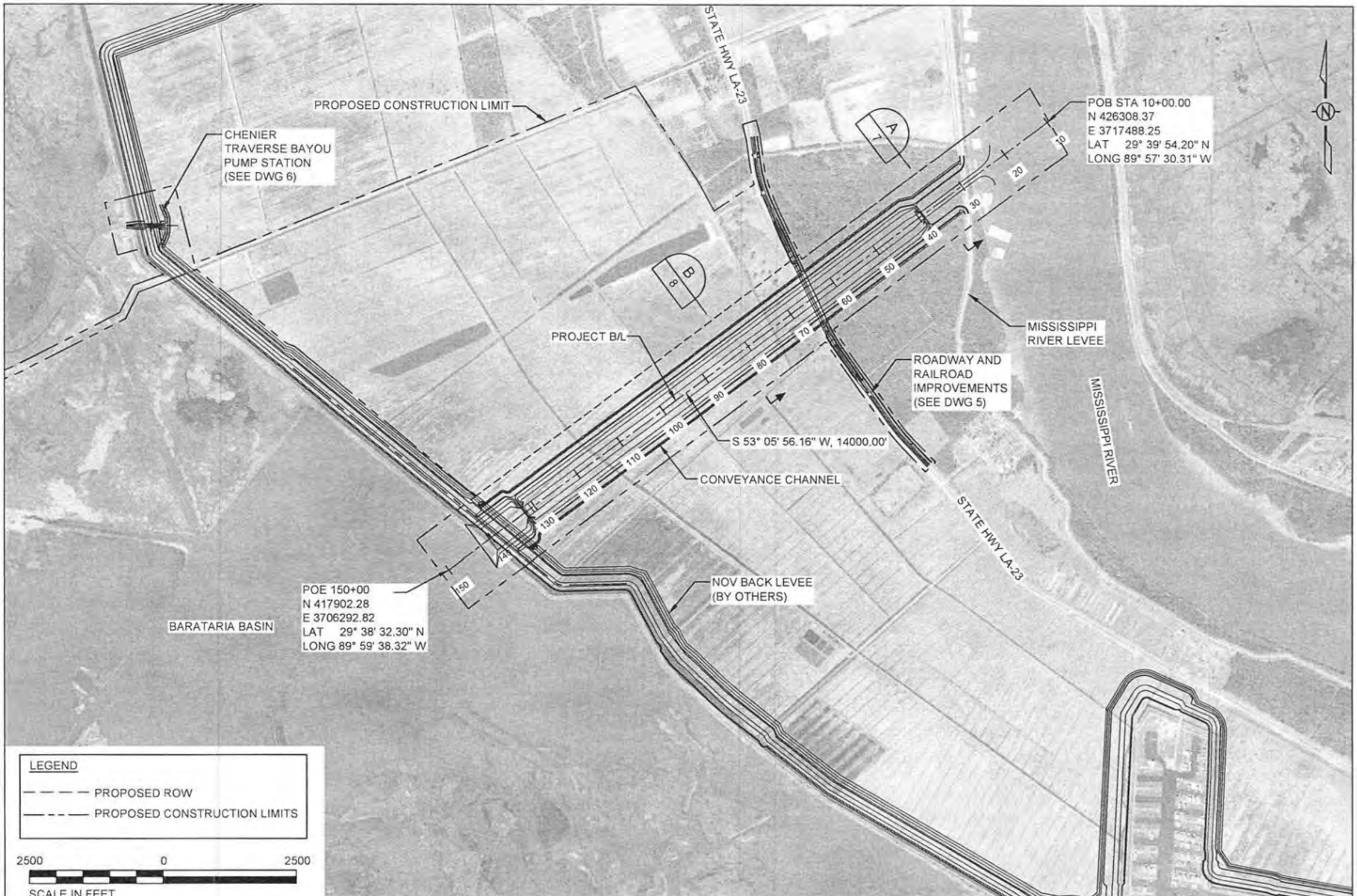
LEGEND

- PROPOSED ROW
- PROPOSED CONSTRUCTION LIMITS
- POTENTIAL SEDIMENT DEPOSITION/ LAND BUILDING AREA
- DISPOSAL AREA

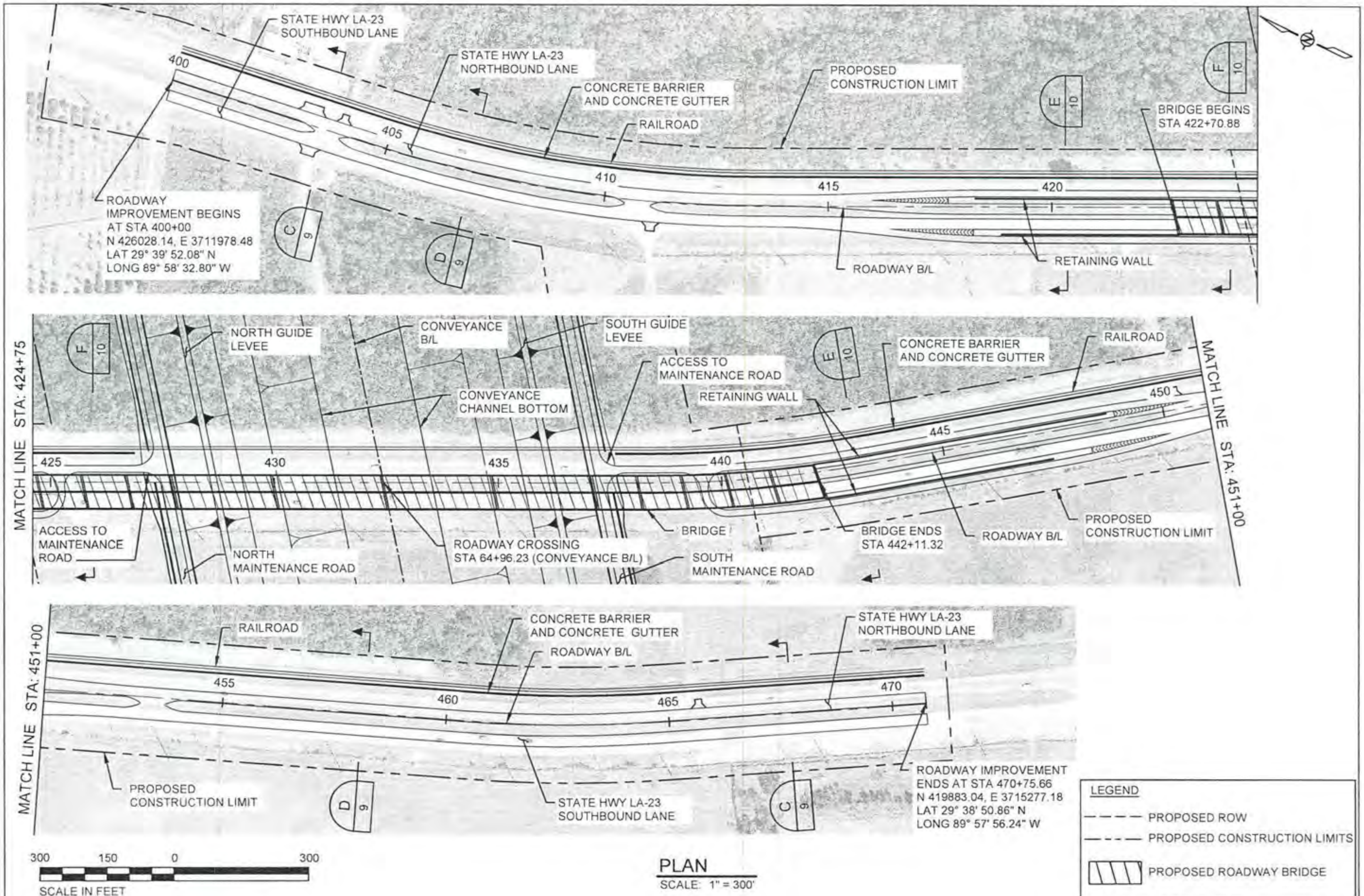
3000 1500 0 3000

SCALE IN FEET

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	PROJECT LAYOUT DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 3 OF 12



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	CONVEYANCE CHANNEL LAYOUT DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 4 OF 12



APPLICATION BY:
CPRA
P.O. BOX 44027
BATON ROUGE, LA 70804

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

MID-BARATARIA SEDIMENT DIVERSION PROJECT

OVERALL ROADWAY AND RAIL PLAN

STATE PROJECT NUMBER: BA-153

DATE: JUNE 2016

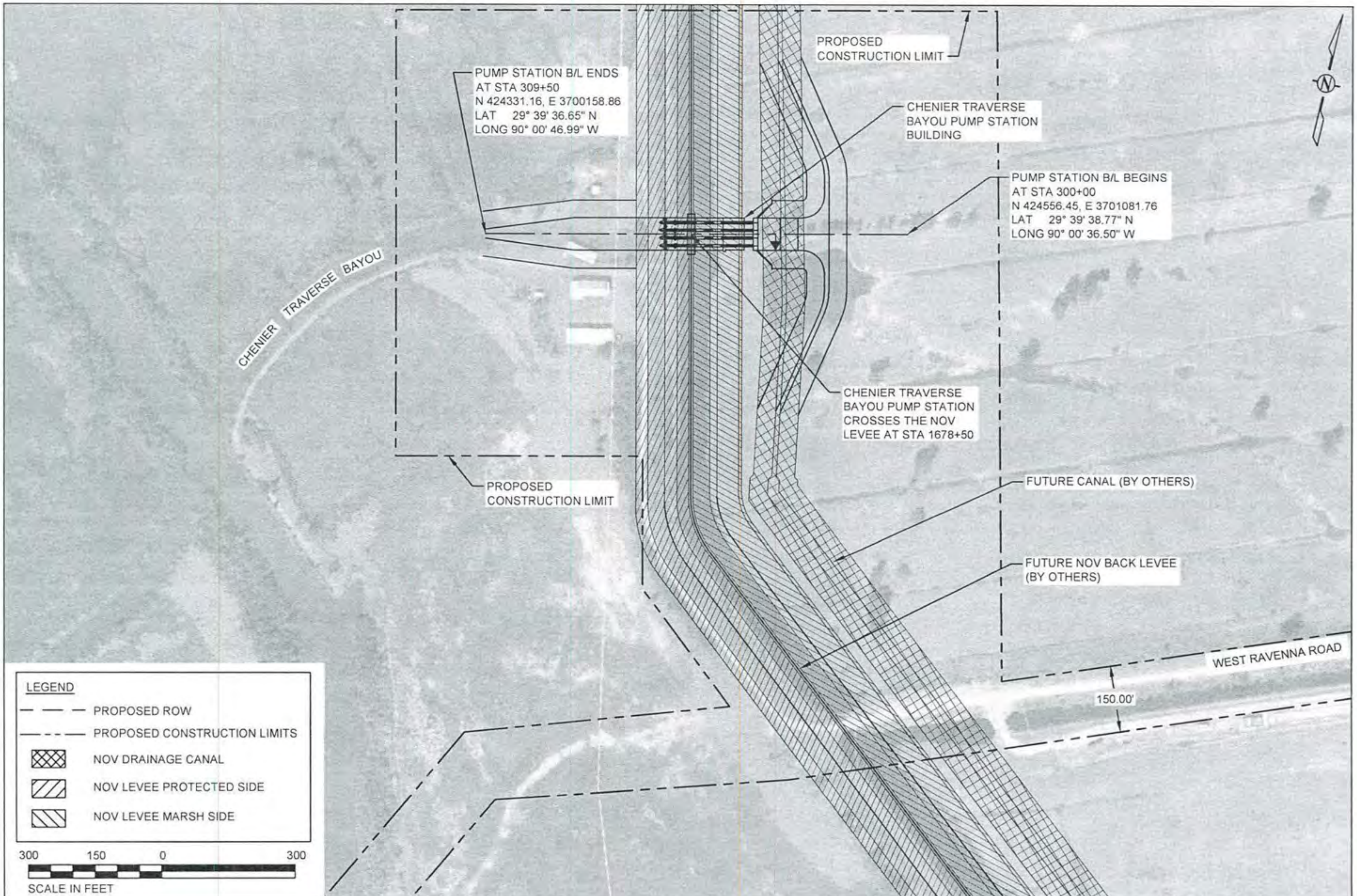
DRAWN BY: K. CANTU

DESIGNED BY: K. GUILLORY, P.E.

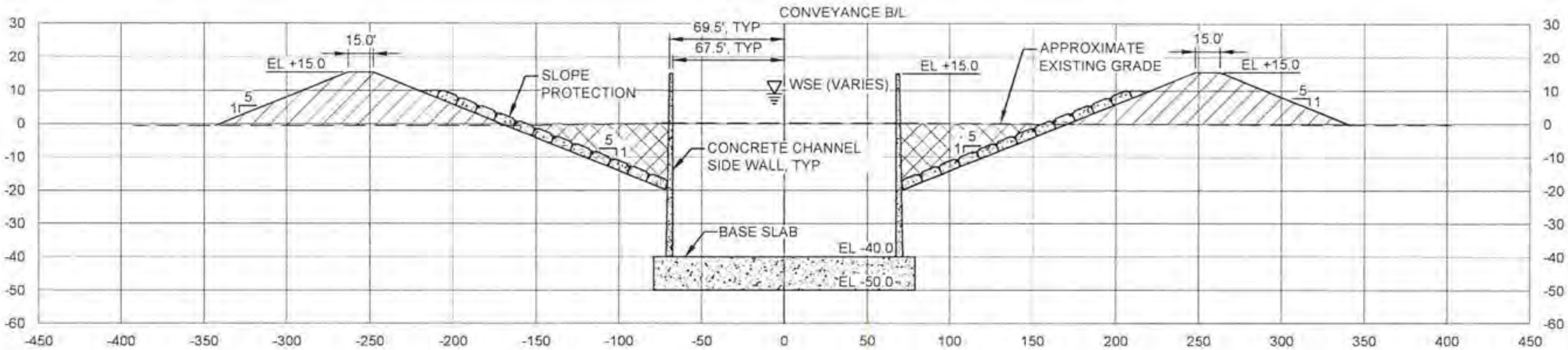
APPROVED BY: R. SIMONEAUX, P.E.

FEDERAL PROJECT NUMBER:

SHEET 5 OF 12



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	CHENIER TRAVERSE BAYOU PUMP STATION SITE
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 6 OF 12



TYPICAL SECTION (LOOKING UPSTREAM)
FROM STA 30+00 TO STA 39+00
HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 50'

A
4

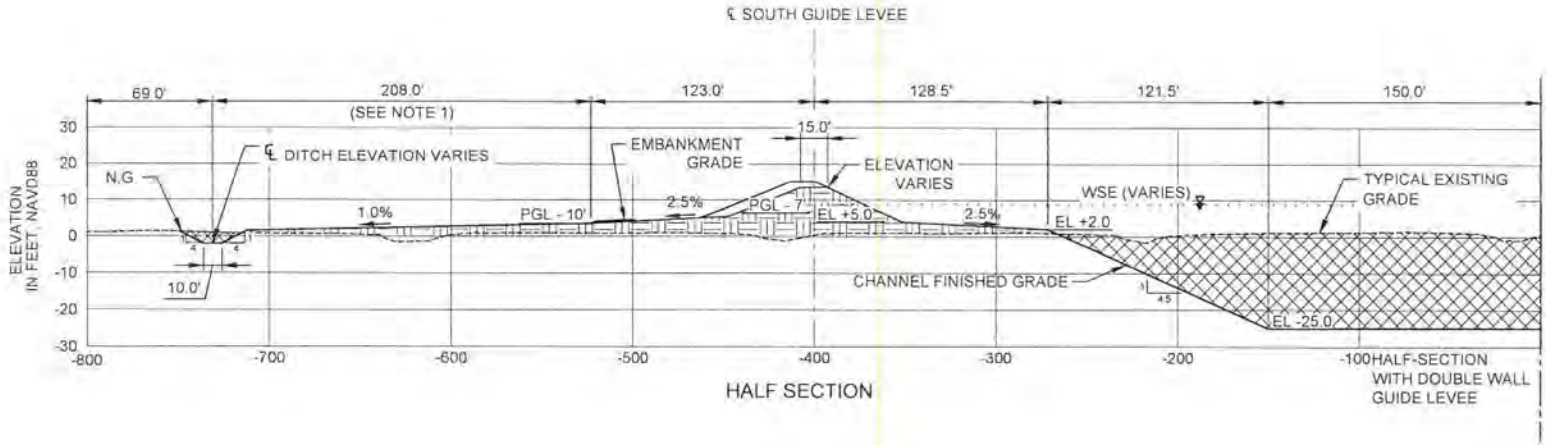
HORIZONTAL GRAPHIC SCALE
100' 50' 0 100' 200'
50' 25' 0 50' 100'
VERTICAL GRAPHIC SCALE

NOTES:

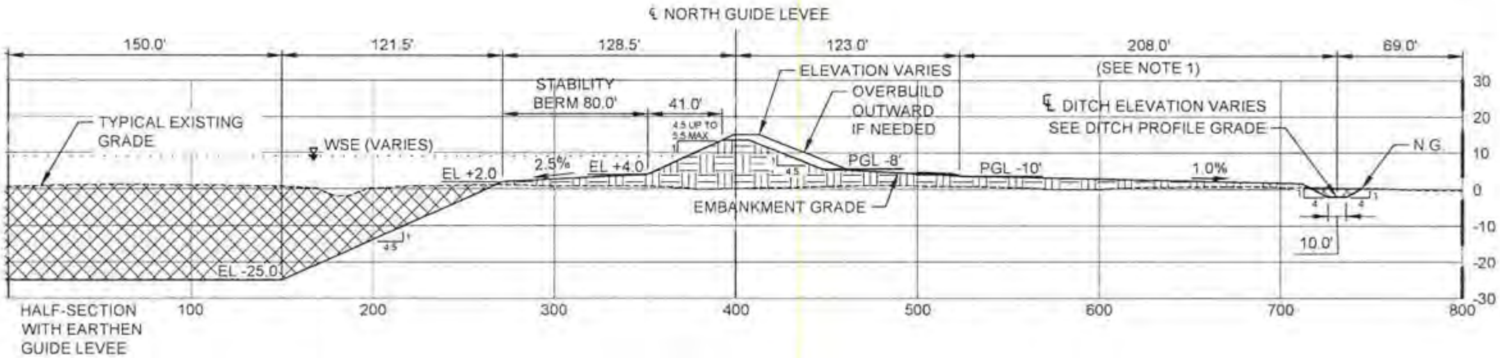
1. EXCAVATION AREA PATTERN NOT SHOWN WITHIN CONCRETE CHANNEL FOR CLARITY PURPOSES.

LEGEND
- FILL AREA
- EXCAVATION AREA
- CONCRETE

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	TYPICAL CONVEYANCE CHANNEL SECTION (1 OF 2)
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 7 OF 12



HALF SECTION



HALF SECTION

PHASE 2 TYPICAL SECTION (LOOKING DOWNSTREAM) FROM STA 42+00 TO STA 125+00

B / 4

HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 50'

HORIZONTAL GRAPHIC SCALE

100' 50' 0 100' 200'

50' 25' 0 50' 100'

VERTICAL GRAPHIC SCALE

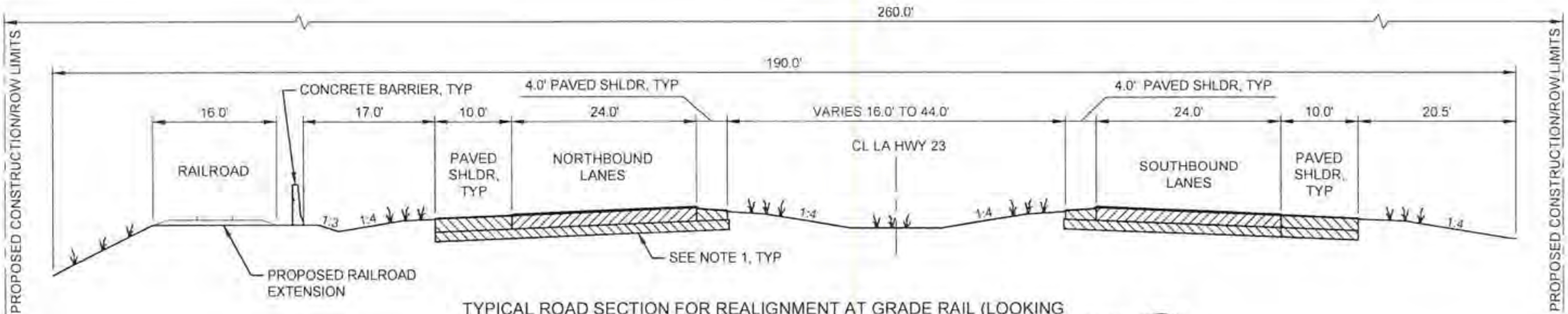
NOTES:

1. DIMENSIONS AND ROW LINE SHOWN FOR CHANNEL WEST OF LA 23. ROW LINE ±700' EAST OF LA 23.

LEGEND

- EARTHEN FILL AREA
- SAND FILL AREA
- EXCAVATION AREA

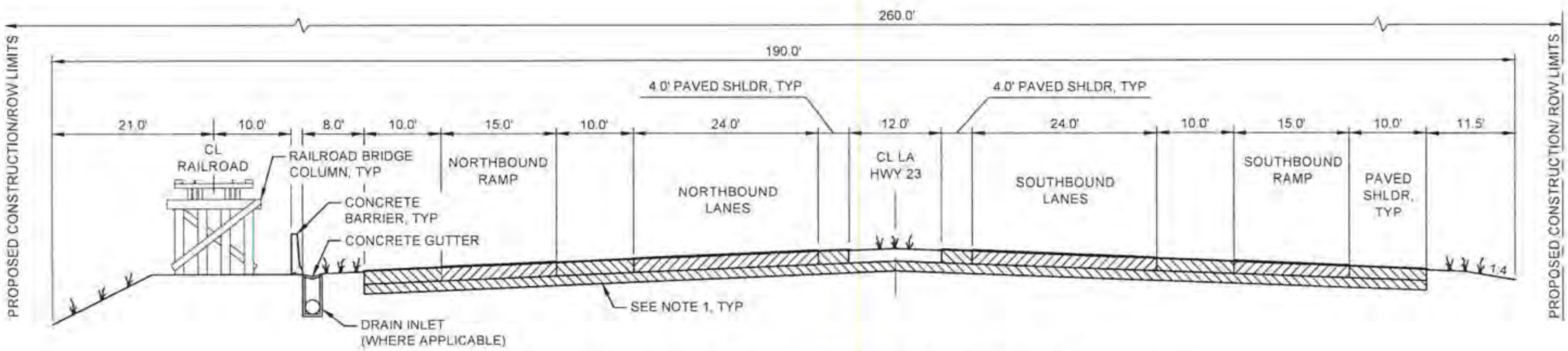
APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	TYPICAL CONVEYANCE CHANNEL SECTION (2 OF 2)
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 8 OF 12



TYPICAL ROAD SECTION FOR REALIGNMENT AT GRADE RAIL (LOOKING SOUTH) FROM STA 400+00 TO STA 403+00 AND FROM STA 462+00 TO 470+75.66

C / 5

SCALE: 1" = 20'



TYPICAL ROAD SECTION FOR REALIGNMENT WITH RAIL BRIDGE (LOOKING SOUTH) FROM STA 403+00 TO STA 416+00 AND FROM STA 450+00 TO 462+00

D / 5

SCALE: 1" = 20'

20 10 0 20

SCALE IN FEET

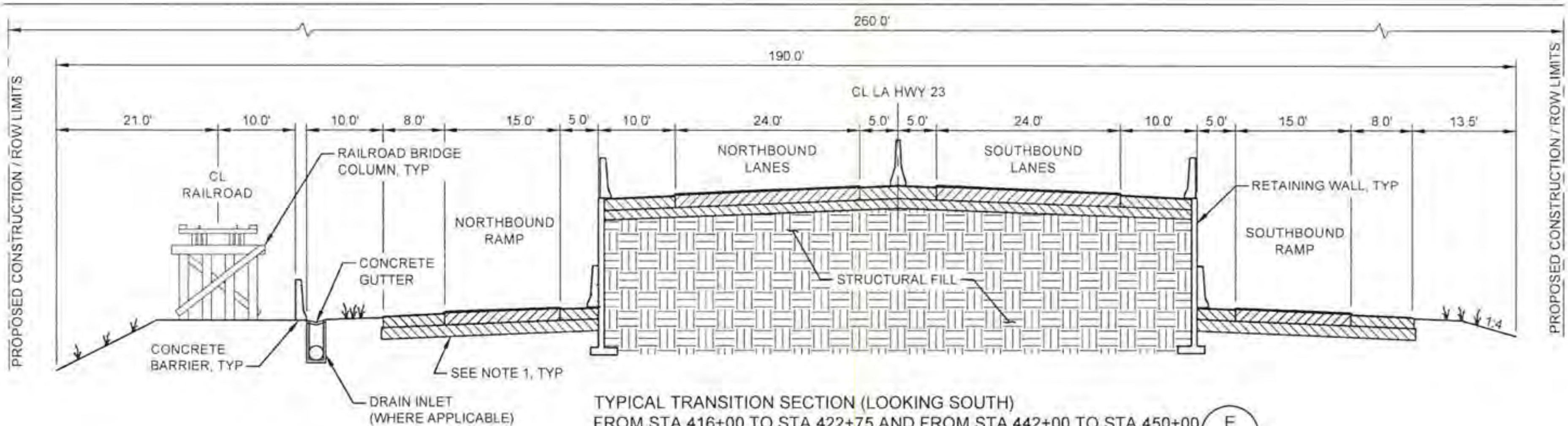
NOTES:

1. PAVEMENT SECTION TO BE DETERMINED FOR THE FINAL DESIGN

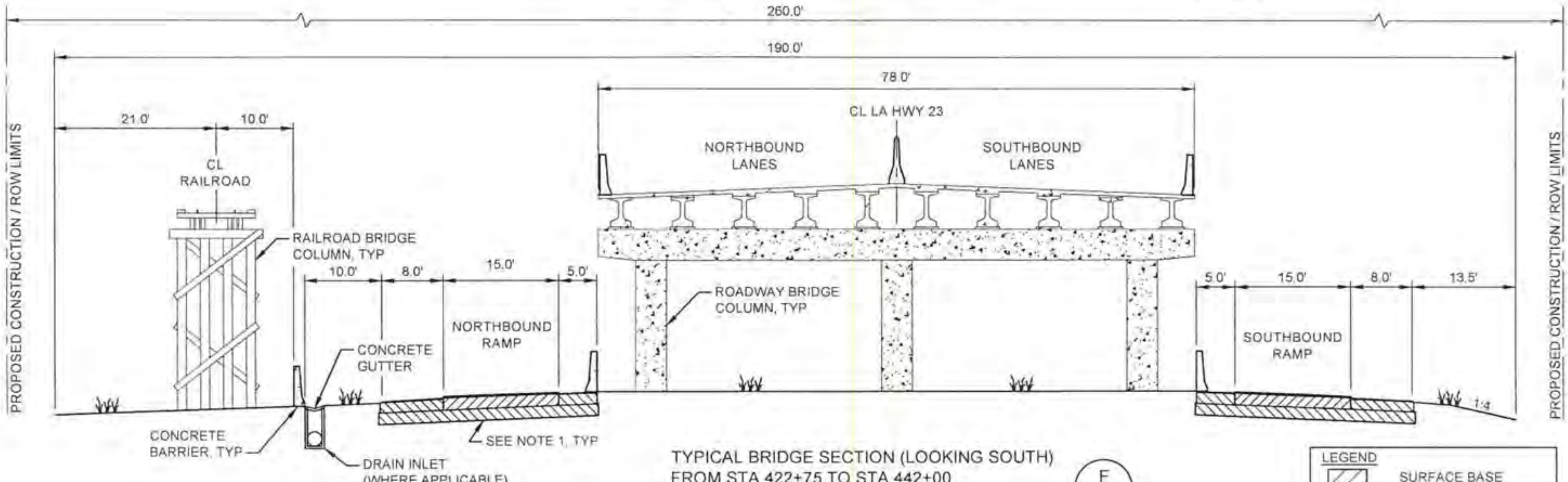
LEGEND

- SURFACE BASE
- SURFACE SUB-BASE
- ASPHALT

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	TYPICAL ROADWAY SECTIONS (1 OF 2) DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 9 OF 12



TYPICAL TRANSITION SECTION (LOOKING SOUTH)
FROM STA 416+00 TO STA 422+75 AND FROM STA 442+00 TO STA 450+00 E/5
SCALE: 1" = 20'



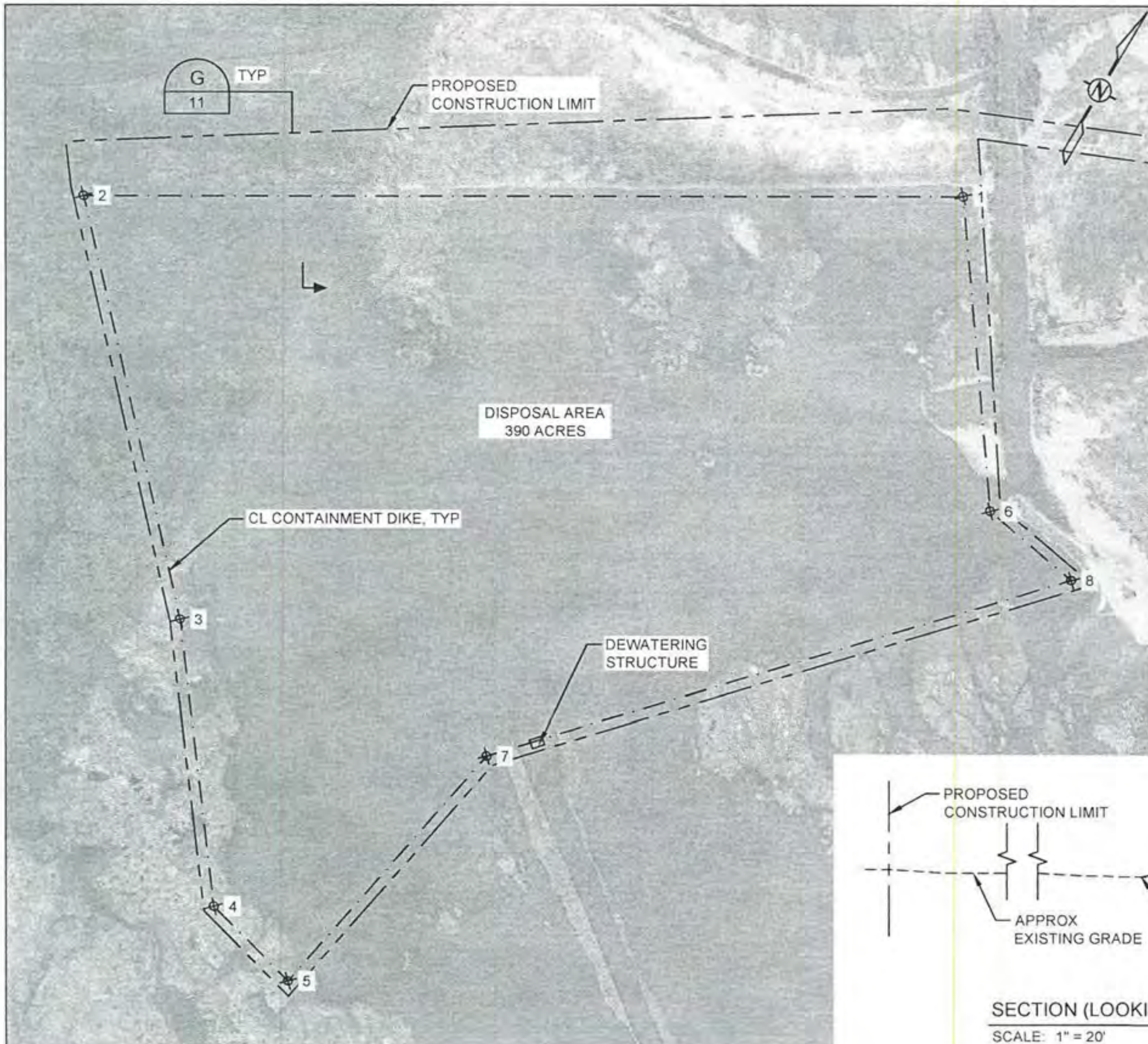
TYPICAL BRIDGE SECTION (LOOKING SOUTH)
FROM STA 422+75 TO STA 442+00 F/5
SCALE: 1" = 20'

20 10 0 20
SCALE IN FEET

NOTES:
1. PAVEMENT SECTION TO BE DETERMINED FOR THE FINAL DESIGN.

LEGEND
- SURFACE BASE
- SURFACE SUB-BASE
- CONCRETE
- STRUCTURAL FILL
- ASPHALT

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	TYPICAL ROADWAY SECTIONS (2 OF 2) DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 10 OF 12



PLAN

SCALE: 1" = 1000'

1000 500 0 1000

SCALE IN FEET

NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT EARTHEN CONTAINMENT DIKES, AS NECESSARY, ALONG THE PERIMETER OF EACH DISPOSAL AREA SHOWN. CONTAINMENT SHALL BE REQUIRED ALONG ALL DISPOSAL AREA BOUNDARIES THAT DO NOT MEET THE MINIMUM TYPICAL SECTION SHOWN ON THIS SHEET.

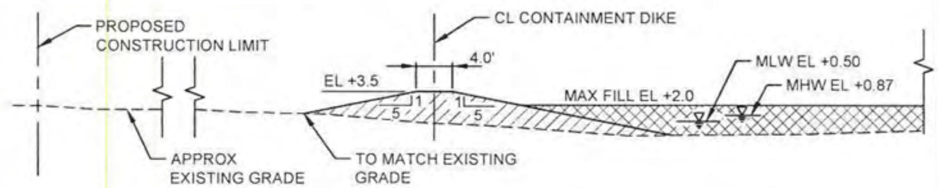
2. THE LOCATION OF THE DEWATERING STRUCTURE SHOWN ON THIS SHEET SHALL BE USED AS A GUIDE. FINAL LOCATIONS SHALL BE VERIFIED IN THE FIELD.

3. DEWATERING STRUCTURE WEIR ELEVATION SHALL MATCH DISPOSAL AREA MAXIMUM FILL ELEVATION.

4. THE CONTAINMENT DIKE WILL BE CONSTRUCTED WITH MATERIAL FROM THE INTERIOR OF THE DISPOSAL AREA.

POINT TABLE

POINT NO.	NORTHING / LATITUDE	EASTING / LONGITUDE
1	420304.07 / 29° 38' 57.25" N	3696058.60 / 90° 01' 33.98" W
2	417705.51 / 29° 38' 32.02" N	3691679.69 / 90° 02' 23.94" W
3	415878.04 / 29° 38' 13.73" N	3693412.79 / 90° 02' 04.53" W
4	414548.00 / 29° 38' 00.45" N	3694429.93 / 90° 01' 53.18" W
5	414394.88 / 29° 37' 58.87" N	3695020.34 / 90° 01' 46.51" W
6	418818.70 / 29° 38' 42.42" N	3697124.11 / 90° 01' 22.10" W
7	416103.42 / 29° 38' 15.75" N	3695342.93 / 90° 01' 42.63" W
8	418712.63 / 29° 38' 41.31" N	3697732.34 / 90° 01' 15.22" W



SECTION (LOOKING EAST) G 11

SCALE: 1" = 20'

LEGEND

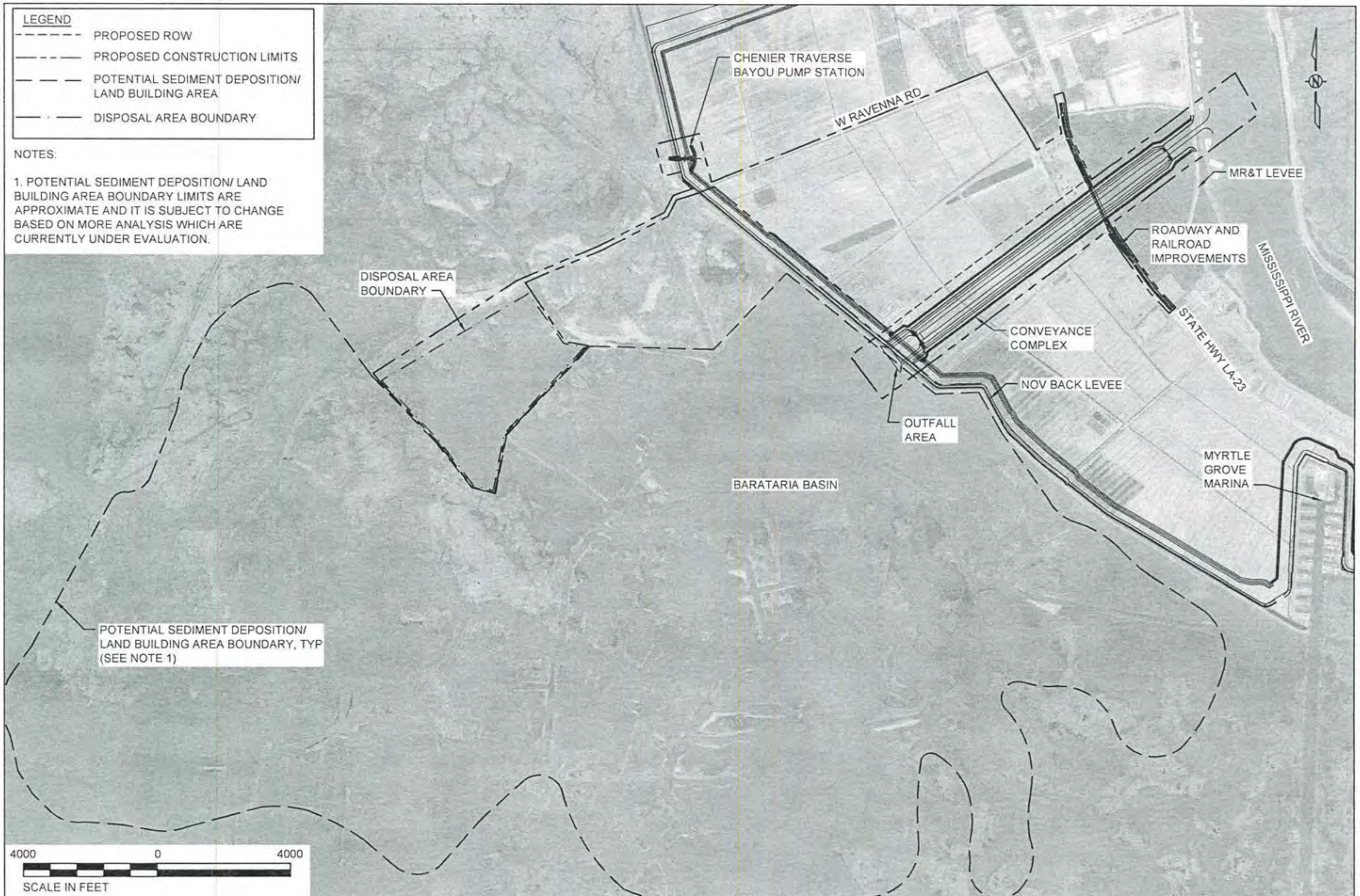
CONTAINMENT DIKE FILL

DISPOSAL AREA FILL

20 10 0 20

SCALE IN FEET

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	DISPOSAL AREA
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 11 OF 12



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	POTENTIAL SEDIMENT DEPOSITION/LAND BUILDING AREA DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 12 OF 12

2016 Joint Permit Application

Louisiana Department of Natural Resources
Office of Coastal Management

Joint Permit Application For Work Within the Louisiana Coastal Zone

U.S. Army Corps of Engineers (COE)
New Orleans District

Application Number: 15540 **Permit Number:** P20131098 **Date Received:** 05/17/2016

Step 1 of 15 - Applicant Information

Applicant Name: Coastal Protection & Restoration Authority of Louisiana (CPRA)

Applicant Type: GOVERNMENT AGENCY

Mailing Addr :
P.O. Box 44027 Capitol Station
Baton Rouge, LA 70804--4027

Contact Info: Elizabeth Davoli

Phone: (225) 342-4616 **Fax:** (225) 242-3550 **Email:** elizabeth.davoli@la.gov

Step 2 of 15 - Agent Information

Agent Name:

Mailing Addr:

,

Contact Info:
Phone: - **Fax:** - **Email:**

Step 3 of 15 - Permit Type

☒ Coastal Use Permit (CUP) ☐ Solicitation of Views (SOV) ☐ Request for Determination (RFD)

Step 4 of 15 - Pre-Application Activity

a. Have you participated in a Pre-Application or Geological Review Meeting for the proposed project?

☐ No ☒ Yes Date meeting was held: 05/19/2016

Attendees:

Elizabeth Davoli (CPRA)	Stephanie Zumo	Brad LaBorde
(Individual or Company Rep)	(OCM Representative)	(COE Representative)

b. Have you obtained an official wetland determination from the COE for the project site?

☒ No ☐ Yes **If Yes, Please upload a copy with your application.**

JD Number:

c. Is this application a mitigation plan for another CUP?

☒ No ☐ Yes OCM Permit Number:

Step 5 of 15 - Project Information

a. Describe the project.

The Mid-Barataria Sediment Diversion is a large-scale, complex civil works and ecosystem restoration project. When operated, up to 75.000 cubic feet per second (cfs) of sediment-laden water would be diverted from the Mississippi River to the mid-Barataria Basin to reconnect and re-establish the natural or deltaic sediment deposition process between the the Mississippi River and the Barataria Basin to deliver sediment, freshwater, and nutrients to reduce land loss and sustain wetlands.

b. Is this application a change to an existing permit?

☒ No ☐ Yes OCM Permit Number:

c. Have you previously applied for a permit or emergency authoriation for all or any part of the proposed project?

☐ No ☒ Yes

Agency	Contact	Permit Number	Decision Status	Decision Date
OCM	Stephanie Zumo	P20131098	Pending	
COE	Brad LaBorde	MVN-2012-02806-ETT	Pending	
Other				

Step 6 of 15 - Project Location

a. Physical Location

Street: Louisiana State Highway 23 (LA 23)

City: Ironton (vicinity) Parish: Plaquemines Zip: 70083

Water Body: Mississippi River (Mile 60.7) / Barataria Basin

b. Latitude and Longitude

Latitude: 29 39 42.5 Longitude: -89 57 48.6

c. Section, Township, and Range

Section #:	Township #:	Range #:
5 16 47 48 49	16S	25E
3 2 1 41 19	17S	24E

d. Lot, Tract, Parcel, or Subdivision Name

Lot #: Parcel #:

Tract #: Subdivision Name:

e. Site Direction

START- From I-10 in New Orleans, take US-90Bus W across Mississippi River. Continue on US-90Bus W / Westbank Expy for 4 miles. Take exit #7 for LA 23 / Lafayette St. Continue south on LA 23 for 21 miles to the project area between the Phillips 66 Alliance Refinery and the community of Ironton, near Mississippi River Mile 60.7 -END

Step 7 of 15 - Adjacent Landowners - See attached list

Step 8 of 15 - Project Specifics

a. Project Name and/or Title: Mid-Barataria Sediment Diversion (BA-153)

b. Project Type: Non-Residential

c. Source of Funding: **FEDERAL**

d. What will be done for the proposed project?

☒ Bridge/Road	☐ Home Site/Driveway	☒ Pipeline/Flow Line	☒ Rip Rap/Erosion Control
☒ Bulkhead/Fill	☒ Levee Construction	☐ Plug/Abandon	☒ Site Clearance
☒ Drainage Improvements	☒ Dredging	☐ Production Barge/ Structure	☐ Subdivision
☒ Drill Barge/ Structure	☐ Prop Washing	☐ Vegetative Plantings	☐ Wharf/Pier/Boathouse
☐ Drill Site	☒ Pilings	☒ Remove Structures	
☒ Fill	☐ Marina	☐ Major Industrial/Commercial	

☒ Other: excavation for conveyance channel / levee tie-ins

e. Why is the proposed project needed?

The impacts of coastal land loss threaten Louisiana's economy, commerce, infrastructure, and culture. The Barataria Basin is suffering from significant land loss--approximately 75,000 acres between 1985 and 2010, with projected loss by 2060 ranging from 105,000 to 150,000 acres. Historically, Mississippi River overbank flooding deposited sediment, freshwater, and nutrients in the Barataria Basin during annual flooding cycles, building land and sustaining wetland habitats. Levees and Mississippi River channelization have altered natural fluvial interaction and sediment transport from the river into the basin, removing the source of sediment and freshwater that built and maintained wetlands relative to subsidence and sea level rise. In addition, recent hurricane events and the Deepwater Horizon (DHW) oil spill have exacerbated land loss impacts in the basin. The purpose of the Mid-Barataria Sediment Diversion is to reconnect and re-establish the natural or deltaic sediment deposition process between the Mississippi River and the Barataria Basin; the project is needed as a long-term resilient, sustainable strategy to reduce land loss rates and sustain DWH injured wetlands through the delivery of sediment, freshwater, and nutrients.

Step 9 of 15 - Project Status

a. Proposed start date: 01/01/2020 **Proposed completion date:** 01/01/2025

b. Is any of the project work in progress?

☒ No ☐ Yes

c. Is any of the project work completed?

☒ No ☐ Yes

Step 10 of 15 - Structures, Materials, and Methods for the Proposed Project

a. Excavations

3,850,000 Cubic Yards 288 Acres

b. Fill Areas

4,152,001,00 Cubic Yards 554.30 Acres

c. Fill Materials

☒	Concrete:	371,293	Cubic Yards	☒	Rock:	65,676	Cubic Yards
☒	Crushed Stone or Gravel:	102,290	Cubic Yards	☐	Sand:		Cubic Yards
☒	Excavated and Placed onsite :	1,100,000	Cubic Yards	☒	Hauled in Topsoil/Dirt:	584,035	Cubic Yards
☒	Excavated and hauled offsite:	2,300,000	Cubic Yards				

☒ Other: Nourishment Disposal Area 2,300,000.00 Cubic Yards

d. What equipment will be used for the proposed project?

☒ Airboat
☒ Bulldozer/Grader
☒ Marsh Buggy
☒ Backhoe
☒ Dragline/Excavator
☒ Other Tracked or Wheeled Vehicles
☒ Barge Mounted Bucket Dredge
☐ Handjet
☐ Self Propelled Pipe Laying Barge
☐ Barge Mounted Drilling Rig
☐ Land Based Drilling Rig
☒ Tugboat
☐ Other:

Step 11 of 15 - Project Alternatives

a. Total acres of wetlands and/or waterbottoms filled and/or excavated.

484.6 acres

b. What alternative locations, methods, and access routes were considered to avoid impact to wetlands and/or waterbottoms?

As part of the engineering and design phase, construction and staging areas would consider the use of existing access roads and drives to minimize impacts to wetlands. See pp. 16-19 for additional information on alternatives (location, capacity, and structure type) analysis conducted since 1996 that resulted in the location of the Mid-Barataria Sediment Diversion at River Mile 60.7 with a capacity of 75,000 cfs.

c. What efforts were made to minimize impact to wetlands and/or waterbottoms?

The analysis of the Mid-Barataria Sediment Diversion was developed using the minimum construction footprint to maximize the conveyance of sediment-laden water from the Mississippi River to the mid-Barataria Basin. The gravity conveyance alignment was developed for efficient sediment conveyance between the river and the basin. Best Management Practices (BMPs) are being developed for access routes to minimize disturbance to wetlands between the MR&T and NOV levees.

d. How are unavoidable impacts to vegetated wetlands to be mitigated?

The project is self-mitigating. The purpose of the Project is to reconnect and re-establish the natural or deltaic sediment deposition process between the Mississippi River and the Barataria Basin as a long-term resilient, sustainable strategy to reduce land loss rates and sustain DWH injured wetlands through the delivery of sediment, freshwater, and nutrients.

Step 12 of 15 - Permit Type and Owners

a. Are you applying for a Coastal Use Permit?

☐ No ☒ Yes

b. Are you the sole landowner / oyster lease holder?

☒ No ☐ Yes

☐ The applicant is an owner of the property on which the proposed described activity is to occur.

☒ The applicant has made reasonable effort to determine the identity and current address of the owner(s) of the land on which the proposed described activity is to occur, which included, a search of the public records of the parish in which the proposed activity is to occur.

☒ The applicant hereby attests that a copy of the application has been distributed to the following landowners / oyster lease holders. See attached list.

c. Does the project involve drilling, production, and/or storage of oil and gas?

☒ No ☐ Yes **If yes, you must attach a list of all state and federal laws and rules and regulations**

Step 13 of 15 - Maps and Drawing Instructions

Note: OCM Compiled Plats consist of a complete and current set of plats that have been pieced together by OCM using only the most current portions of the plat files provided by the applicant/agent. All out-of-date plats have been excluded.

LANDOWNER_ATTACHMENTS_07-24-13.pdf	07/24/2013 01:31:42 PM
SUPP_APP_FORM_INFO_07-24-13.pdf	07/24/2013 01:33:03 PM
FEE_WAIVER_REQUEST_LETTER_07-24-13.pdf	07/24/2013 01:31:40 PM
APPLICATION_FORM_07-24-13.pdf	07/24/2013 01:30:46 PM
4686268 - APPLICATION PLATS REVISIONS - PLATS	07/24/2013 01:51:34 PM

Step 14 of 15 - Payment

The fee for this permit is: $ 100.00

Step 15 of 15 - Payment Processed

Applicant Information

Applicant Name: Coastal Protection & Restoration Authority of Louisiana (CPRA)
Address: P.O. Box 44027 Capitol Station
Baton Rouge, LA 70804--4027

To the best of my knowledge the proposed activity described in this permit application complies with, and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. If applicable, I also certify that the declarations in Step 12c, oil spill response, are complete and accurate.

Landowners List

Landowner
Phillips 66
P.O. Box 2197
Houston, TX 77252

Landowner
Ram Terminals, LLC
7733 Forsyth Blvd.
St. Louis, MO 63105-1836

Adjacent Landowner
Ameripure Processing Company, Inc.
803 Willow St.
Franklin, LA 70538

Adjacent Landowner
Benjamin X. & Gwendolyn Becnel, Jr.
16198 Highway 23
Belle Chasse, LA 70037

Adjacent Landowner
CHS-SLE Land LLC c/o Francis J. Lobrano
147 Keating
Belle Chasse, LA 70037

Adjacent Landowner
Canard Land, LLC c/o John W. Newman
605 South America Street
Covington, LA 70433

Adjacent Landowner **Entergy Louisiana c/o John A. Braymer** **639 Loyola Avenue, 26th Floor** **New Orleans, LA 70113**
Adjacent Landowner **Eugene & Jacey Linder** **119 E. St.** **A** **Belle Chasse, LA 70037**
Adjacent Landowner **Loch Leven 7 LLC c/o Michael Jeansome** **850 Engineers Road** **Belle Chasse, LA 70037**
Adjacent Landowner **Lois F. Landry** **1401 St. Andrew St.** **208** **New Orleans, LA 70130**
Adjacent Landowner **Michael A. Neeb** **221 W. 9th St.** **Rushville, IN 46173**
Adjacent Landowner **Midway Cattle Ranch LLC c/o Khai Q. Nguyen** **1051-A W, Ravenna Rd.** **Belle Chasse, LA 70037**

Adjacent Landowner Plaquemines Parish Government 106 Avenue G Belle Chasse, LA 70037
Adjacent Landowner Ralph C. Neeb, Jr. et al. 1001 Amelia St. Gretna, LA 70053
Adjacent Landowner River Rest, LLC c/o John W. Newman 605 South America Street Covington, LA 70433
Adjacent Landowner Shawn E. Dugas and Ken Dugas 515 Moncla Ave. Belle Chasse, LA 70037
Adjacent Landowner Stone Energy Corp. 625 Kaliste Saloom Road Lafayette, LA 70508
Adjacent Landowner Walter Landry 111 Landridge Dr. Belle Chasse, LA 70037

Adjacent Landowner

Woodland Borrow Pits, LLC c/o Phyllis Adams

1074A Highway 1

Thibodaux, LA 70301

5a. Describe the Project

The Mid-Barataria Sediment Diversion (MBSD) is one of 33 conceptual projects identified by CPRA for the first implementation period (2012-2031) in Louisiana's Comprehensive Master Plan for a Sustainable Coast (2012 Master Plan). The Project footprint is from the Mississippi River to the mid-Barataria Basin, just west of the back levee, spanning a length of approximately two miles and width of approximately 1600 feet for the gravity conveyance structure and appurtenant structures.

The Project consists of the construction of an intake control structure on the right descending bank of the Mississippi River at River Mile 60.7, through a section of the existing Mississippi River and Tributaries (MR&T) levee. The structure would be operated to reestablish the connection between the Mississippi River and the mid-Barataria Basin by transporting sediment, freshwater, and nutrients through the gravity conveyance structure, leading across land and through the future federal New Orleans to Venice (NOV) Hurricane Protection Levee, to an outfall or receiving area in the mid-Barataria Basin. The outfall area is located south of the Bayou Dupont Sediment Delivery Project (BA-39), the Mississippi River Long Distance Sediment Pipeline (BA-43EB), and the Bayou Dupont Marsh and Ridge Creation (BA-48). Additional Project features include relocation and replacement of segments of Louisiana Highway 23 and the New Orleans Gulf Coast Rail Road over the gravity conveyance structure.

The project also incorporates a pump station to be located in the northwestern portion of the Project area. Forced drainage is currently provided by Wilkinson Canal Pump Station located near Myrtle Grove to the south of the project area. The Project will require the modification of internal drainage collection swales and the construction of a new drainage pump station north of the conveyance channel in order to capture and convey area drainage north of the channel to the Barataria Basin. Right-of-way and road access will be required for the construction and maintenance of the pump station.

Relocations of water and electrical utility lines will be needed in order to accommodate the construction and operation of the diversion channel and the proposed LA 23 and New Orleans Gulf Coast Rail Road bridges. A 22 inch crude oil pipeline is located immediately west of the proposed channel outfall. All infrastructure and utility improvements and relocations will be based upon continued service during construction and will be designed and constructed using utility owner criteria and guidelines and addressing hurricane criteria during interim and final phases of construction.

An Operations and Maintenance Plan will be developed for the Project prior to construction.

An Adaptive Management Plan will be developed to maximize sediment transport from the Mississippi River to the mid-Barataria Basin to reduce land loss rates and sustain wetlands through the delivery of sediment, freshwater, and nutrients. The Adaptive Management Plan would monitor the diversion control structure and outfall area and allow for variable flow rates to respond to seasonal, sediment, and basin conditions, maximizing the benefits of sediment transport for restoration.

Step 8.c. Funding

CPRA anticipates construction the Mid-Barataria Sediment Diversion with Natural Resource Damage Assessment (NRDA) funds allocated to the State of Louisiana by the Deepwater Horizon BP Spill Consent Decree (dated April 2016).

Step 10a. Excavation					
Location	Habitat Type (existing)	Feature		Area (acres)	Excavation (CY)
Mississippi River	Riverine	Diversion Channel		14.0	350,000
Batture	Forested Wetlands	Diversion Channel		4.2	202,796
MR&T levee west to LA 23	Forested Wetlands	Diversion Channel		3.2	127,050
LA 23 west to back levee	Emergent Wetlands	Diversion Channel		30.9	1,247,510
	Open Water Canal I Drainage {WOTUS)	Diversion Channel		1.8	57,112
MR&T levee to back levee	Non-wetland {uplands)	Diversion Channel		230.0	1,765,532
Barataria Basin	Waterbottom	Outfall Transition Zone		4.0	100,000
Cumulative Subtotals	Riverine			14.0	350,000
	Wetlands			38.3	1,577,356
	Open Water CanalI Drainage {WOTUS)			1.8	57,112
	Waterbottom I Emergent wetlands			4.0	100,000
	Non-wetland {uplands)			230.0	1,765,532
			Total	***288.0***	***3,850,000***

Step 10b & 10c. Fill					
Location	Habitat Type (existing)	Feature	Material	Area (acres)	Fill (CY)
MR&T levee west to LA 23	Forested Wetlands	Construction access	Soil, gravel	2.4	11,568
		Guide Levees	Soil, rock, concrete	2.4	25,931
LA 23 west to back levee	Emergent Wetlands	Construction access	Soil, gravel	22.8	110,207
		Guide Levees	Soil, rock, concrete	24.7	221,031
LA 23 west to back levee	Open Water Canal I Drainage {WOTUS)	Construction access	Soil, gravel	2.1	10,261
		Guide Levees	Soil, rock, concrete	2.4	23,293
MR&T levee to back levee	Non-wetland {uplands)	Construction access	Soil, gravel	64.5	311,964
		Guide Levees	Soil, rock, concrete	41.5	1,129,746
Construction Routes	Non-wetland {uplands)	Access I Haul Roads	Soil, gravel	1.5	8,000
Barataria Basin {Benefits)	Waterbottom I Emergent wetlands	Nourishment Disposal Area	Topsoil, soil	390*	2,300,000
Cumulative Subtotals	Wetlands			52.3	368,737
	Open Water CanalI Drainage {WOTUS)			4.5	33,554
	Non-wetland {uplands)			107.5	1,449,710
	Waterbottom I Emergent wetlands	Land I marsh building		390	2,300,000
			Total	***554.3***	***4,152,001***

10b. and 10c. Supplemental Fill Information

Note: Due to preliminary design stage, the amount of fill material by type (e.g., soil, rock, concrete, etc.) is approximate.

* Excavated from channel and placed in Barataria Basin.

11a. Total acres of wetlands and/or waterbottoms filled and/or excavated:

- Wetlands excavated = 38.3 acres
- Wetlands filled = 52.3 acres
- Waterbottom excavated = 4.0 acres
- Waterbottom filled = 390 acres

P20131098 Needs and Alternatives Justification

Background

The proposed sediment diversion project was initially identified as part of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) funded Mississippi River Sediment, Nutrient and Freshwater Redistribution Study (MRSNFR) in 2000. Subsequent studies ensued relevant to the sediment diversion alternatives analysis including location, diversion flow, and ancillary features such as various combinations of marsh creation and sediment introduction. In 2001, the CWPPRA task force approved study of the Delta Building Diversion at Myrtle Grove (BA-33) with the National Marine Fisheries Service (NMFS) as the federal sponsor; a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published in the Federal Register in 2002 and the public scoping resulted in a range of diversion operation for further analysis. The project was evaluated as a near-term critical restoration feature in the U.S. Army Corps of Engineers (USACE) Louisiana Coastal Area (LCA) Final Programmatic EIS dated 2005 and included in the LCA restoration plan. The Water Resources Development Act (WRDA) of 2007 authorized USACE to carry out the Medium Diversion at Myrtle Grove in accordance with the LCA restoration plan. As a result, the CWPPRA project was de-authorized in 2008 and transferred to USACE for implementation. Also in 2007, the State of Louisiana included the CWPPRA Mississippi River Diversion at Myrtle Grove with Dedicated Dredging in the Comprehensive Master Plan for a Sustainable Coast (Master Plan). The Master Plan was updated in 2012 and the Mid-Barataria Sediment Diversion was identified as a project in the First Implementation Period (2012-2031). In 2016, the Natural Resources Damage Assessment (NRDA) Trustees established Mississippi River Diversions as an approved restoration alternative to restore resources injured by the Deepwater Horizon oil spill.

Myrtle Grove Freshwater Diversion (Siphon) (BA-24) (1996-1998)

The Myrtle Grove Freshwater Diversion was moved forward under CWPPRA for further study with NMFS as the federal sponsor. Conceptual design consisted of a multiple pipe system capable of delivering up to 2,100 cfs of water from the Mississippi River to the back marsh area west of Myrtle Grove.

Myrtle Grove Ecosystem Restoration Project—Coast 2050 (1997-1998)

The Louisiana Coastal Wetlands Conservation and Restoration Task Force (a federal-state multi-agency partnership), in partnership with the Wetlands Conservation and Restoration Authority, published *Coast 2050: Toward a Sustainable Coastal Louisiana* in December 1998. *Coast 2050* set forth a new approach to 1) sustain a coastal ecosystem with the essential functions and values of the natural ecosystem; 2) restore the ecosystem to the highest practicable acreage of productive and diverse wetlands; and 3) accomplish restoration through an integrated program that has multiple use benefits for all coastal Louisiana communities and resources.

The 15,000 cfs delta-building diversion at Myrtle Grove was identified for near-term implementation (1-5 years) following completion of the Mississippi River Sediment, Nutrient, and Freshwater Redistribution (MRSNFR) Feasibility Study. The rationale was the Myrtle Grove diversion would provide information to assist in the planning of the next Mississippi River diversion.

Mississippi River Sediment, Nutrient, and Freshwater Redistribution (MRSNFR) Study
(draft report & environmental resources document dated July 2000)
The CWPPRA Task Force funded the MRSNFR feasibility study with USACE as study lead. A Myrtle Grove Sediment Diversion with a capacity of 15,000 cfs through gated culverts at the Mississippi River was included as a major sediment diversion in the Initial Alternatives. Also included in the Initial Alternatives was a 5,000 cfs Myrtle Grove Freshwater Diversion through a siphon. The screening process resulted in both the Myrtle Grove Sediment Diversion and the Myrtle Grove Freshwater Diversion at Ironton being carried forward into the Intermediate Array of Alternatives.

The Myrtle Grove Freshwater Diversion would run at a capacity of 5,000 cfs and freshen or stabilize salinities in the Round Lake/Lake Laurier vicinity. Although not a sediment diversion, it was expected that this diversion would introduce sediment into the Barataria Basin, creating over 1,400 ac of marsh and sustaining approximately 6,500 ac of emergent wetlands over 50 years. The total cost was estimated to be $29,679,827. Located at River Mile 59 AHP, the diversion structure would consist of four 10 ft x 10 ft gated concrete box culverts approximately 400 ft long under LA 23. The highway would be relocated closer to the railroad so the culverts could be placed under both facilities. In order to efficiently capture freshwater, the invert of the entrance channel would be placed at a depth of -10 NGVD with a radius of 130 ft; the conveyance channel would run 6,000 feet from the entrance channel to the outlet channel and would be 100 feet wide. Parallel guide levees would be constructed to maintain hurricane protection and a pump station would be constructed to provide local drainage.

The Myrtle Grove Sediment Diversion would run at a capacity of 15,000 cfs to freshen the lower Barataria Basin. Located at RM 59 AHP, the diversion structure would consist of five 16 ft x 16 ft gated concrete box culverts approximately 400 feet long under LA 23. The highway would be relocated closer to the railroad so the culverts could be placed under both facilities. In order to efficiently capture sediment, the invert of the entrance channel would be placed at a depth of -15 ft NGVD with a radius of 450 feet and proceed 800 feet to 1,000 feet into the box culverts for transport to the basin. A channel with a 230 ft bottom would be dredged to Wilkinson Canal; this channel would bend with a radius of 700 feet as it approached the canal in order to provide better flow conditions. Channel closures would be placed in channels intersecting Wilkinson Canal. Approximately 6,000 ac of marsh would be created; at the end of 50 years 12% of the 1990 marsh acreage would be lost but there would still be approximately 28,000 more acres of marsh than if the diversion had not been implemented.

A diversion at Myrtle Grove with locks was also evaluated. A 15 ft long pilot channel would be excavated from the Mississippi River to Barataria Bay. The bottom width of the pilot channel would be 200 feet and the invert would be -10 ft NGVD. Two 45 ft x 130 ft x 830 ft lock chambers would be constructed in the initial project year with additional chambers constructed in years 10 and 35. Approximately 5 years after construction, a closure would be constructed across the Mississippi River channel in order to divert river flow down the pilot channel. Without locks, approximately 70% of Mississippi River flow and sediment would be diverted into the Barataria Basin.

Myrtle Grove Ecosystem Restoration Project (CWPPRA)

Primary purpose of study, conducted under MRSNFR, was identification of the recommended plan to provide maximum benefit to the study area while taking into account sustainability and cost. The project objective was creation of a sustainable, functional ecosystem with a focus on sediment delivery through the restoration of fresh and intermediate marshes in the upper, highly deteriorated portions of the study area and to restore marsh and reduce land loss rates in the southern portions of the basin and reduce average annual salinities throughout the study area. Study focused on a diversion located on the right descending bank of the Mississippi River between RM 61.3 and 60.8.

The study integrated the alternatives identified in the MRSNFR. Studied flow rates included 2,500 cfs, 5,000 cfs, and 15,000 cfs in addition to dedicated dredging.

Myrtle Grove—LCA Recommended Restoration Plan (2000-2005)

The study team defined the primary area of wetland restoration to be bounded on the east by the Citrus Lands levee, on the north by the southern extent of "The Pen," on the west by the Barataria Bay Waterway and the Bayou Grande Cheniere ridge, and on the south by the southern extents of Round Lake and Lake Laurier. The team adopted the LCA proposed alternatives for diversion capacities of 5,000 cfs and 15,000 cfs and modified an LCA proposed alternative to an operation of 5,000 cfs 4 out of 5 years and 15,000 cfs in the 5th year. The team also proposed a diversion capacity of 2,500 cfs.

As part of the LCA feasibility study, a total of five operation scenarios were evaluated for Myrtle Grove. These scenarios were: 1) a 5,000 cfs diversion; 2) a 15,000 cfs diversion; 3) a 38,000 cfs diversion with sediment enrichment; 4) a 75,000 cfs diversion with sediment enrichment; and 5) a 150,000 cfs diversion with sediment enrichment. Plan formulation resulted in a medium diversion (5,000 cfs – 15,000 cfs) and a large diversion (greater than 15,000 cfs) carried forward. Following further evaluation, the medium diversion was selected as the alternative to carry forward.

As proposed in the LCA feasibility study, the Medium Diversion at Myrtle Grove with Dedicated Dredging considered an operation range between 2,500 cfs and 15,000 cfs to create up to 19,700 new acres of wetlands. This diversion would be operated in conjunction with the Davis Pond Freshwater Diversion, which is authorized for control of salinities in the Barataria Basin; the operation of the Davis Pond project would be modified in order to achieve the goals of the Myrtle Grove project. A total of 19 to 23 sites would be selected for the placement of dredged material to create a total of 6,500 acres of marsh; approximately 2 million cubic yards of material would be dredged from the Mississippi River for the dedicated marsh creation.

CWPPRA Delta Building Diversion at Myrtle Grove (BA-33) (2001-2008)

In 2001, the CWPPRA Task Force approved feasibility study for a project titled Delta Building Diversion at Myrtle Grove with NMFS as the federal sponsor. As proposed, this project would combine a freshwater diversion of the Mississippi River in the vicinity of Myrtle Grove with dedicated dredging from borrow sites in the Mississippi River to create marsh in the vicinity of Bayou Dupont, the Bayou Barataria Waterway, and/or the Wilkinson Canal. A NOI to prepare an EIS was published in the Federal Register and the public scoping resulted in a range of diversion operations from 2,500 cfs to 15,000 cfs for further analysis.

Per the project fact sheet, the project would install five 16 ft x 16 ft gated box culverts on the right descending bank of the Mississippi River in the vicinity of Myrtle Grove. The intake structure would be set at -15 ft NGVD and convey a maximum of 15,000 cfs to the outfall at the basin. Sediment capture would be maximized through a reverse curve inflow channel. Other project features would include a conveyance channel with parallel mainline flood control levees, and outflow channel with guide levees, and, potentially, a pump station.

In 2006, the process began to de-authorize the project and transfer it from CWPPRA to USACE's LCA program. The rationale was the project was beyond traditional CWPPRA efforts in terms of scope and cost; also, a Medium Diversion at Myrtle Grove with Dedicated Dredging project was identified as a critical near-term restoration project in the LCA Chief's Report.

<u>Louisiana Master Plan for a Sustainable Coast (2007)</u>
A Technical Group of scientists evaluated conceptual scenarios for Mississippi River diversions in 2006 at the "Envisioning the Future of the Gulf Coast" symposium. A freshwater diversion at Myrtle Grove was recommended. The Mississippi River Diversion at Myrtle Grove with Dedicated Dredging was evaluated in the Master Plan; the evaluated diversion would operate at a flow between 2,500 cfs to 15,000 cfs to transport freshwater from the Mississippi River to the basin and dredged material from the river would be transported to the Barataria Basin via pipeline.

<u>Medium Diversion at Myrtle Grove with Dedicated Dredging (LCA, 2008-2014)</u>
WRDA 2007 included an authorization for USACE to prepare a feasibility study and EIS for the Medium Diversion at Myrtle Grove with Dedicated Dredging under the LCA program. This project was conditionally authorized in the 2005 LCA Chief's Report, pending the completion of a feasibility study. For the Myrtle Grove cost-shared study, the project was described as a freshwater diversion ranging from 2,500 cfs to 15,000 cfs coupled with dedicated dredging to create up to 19,700 ac of new wetlands.

The dog-legged alignment, referred to as Original USACE Alignment at RM 60.2, was designed to carry a flow of 15,000 cfs to the basin; the sediment/water ratio (SWR) was 0.26. A Modified Alignment of a straight channel from river to basin, located at RM 60.7, was modeled with capacities of 15,000 cfs, 45,000 cfs, and 75,000 cfs. The results were published in 2011 in a report titled, "Myrtle Grove Delta Building Diversion Modeling Effort in Support of the LCA Medium Diversion at Myrtle Grove with Dedicated Dredging Project Data Collection, Preliminary Design and Modeling Initiative."

<u>Louisiana Comprehensive Master Plan for a Sustainable Coast (2012)</u>
Modeling conducted for the evaluation of projects against the Future Without Action scenario showed that sediment diversions are essential to sustaining coastal Louisiana. The 2012 Master Plan focused on sediment diversions, rather than freshwater diversions, as a land-building restoration tool. A 50,000 cfs sediment diversion at Myrtle Grove was included in the First Implementation Period (2012-2031).

BA-153, State Only E&D (2012-2014)

CPRA entered into a contract with HDR Engineering in 2012 to provide services for the design of the LCA recommended 75,000 cfs diversion structure at RM 60.7 to capture and transport sediment and freshwater from the Mississippi River and convey it to the mid-Barataria Basin through a constructed channel. The project utilized the SWR results and Modified Alignment from the State-NGO modeling.

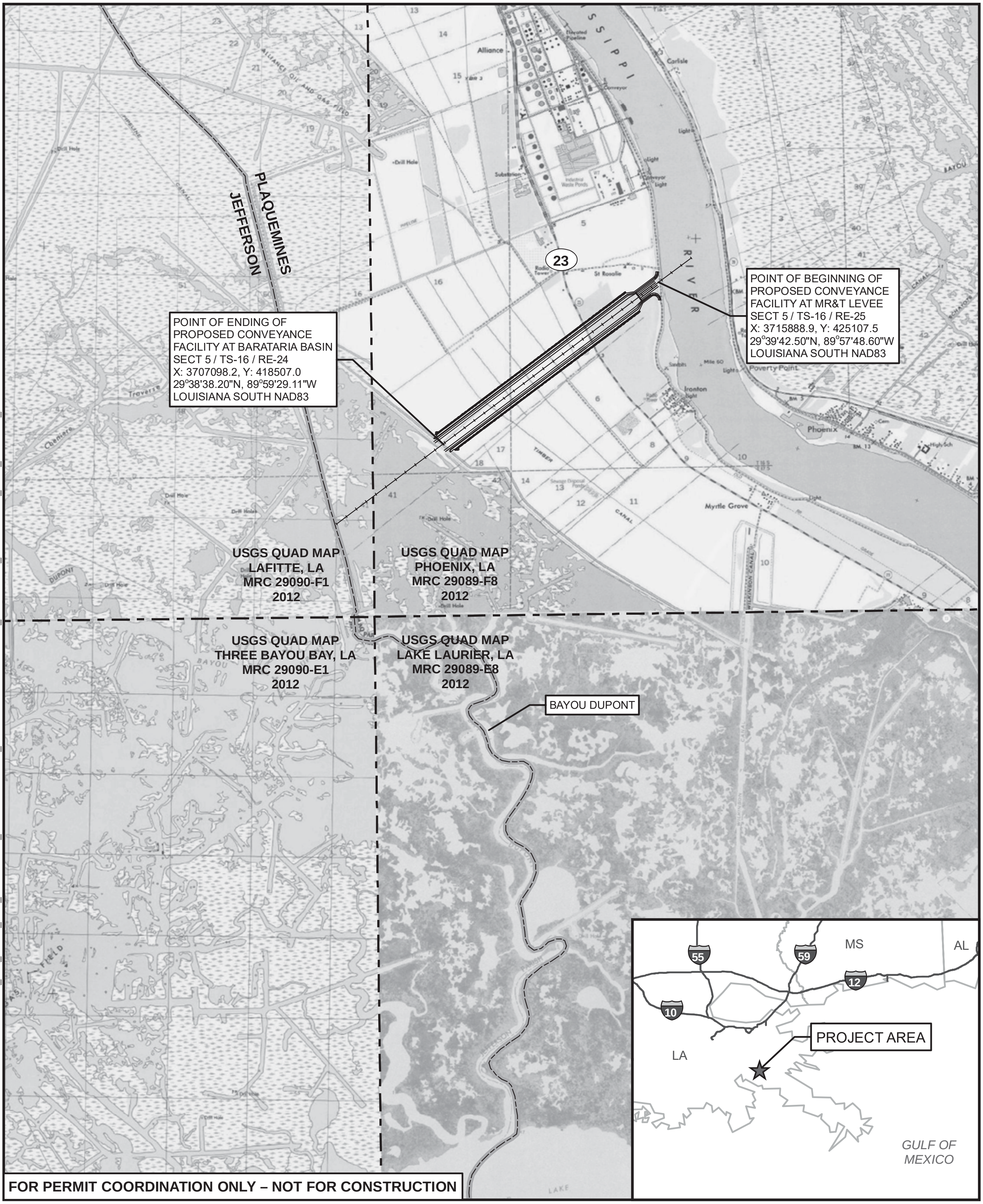
Programmatic Damage Assessment and Restoration Plan (2016)

Under the Oil Pollution Act (OPA), the Trustees evaluated injuries to natural resources and natural resource services and then identified the actions to restore, replace, or acquire natural resources or services equivalent to those injured by the Deepwater Horizon BP Spill. When implemented, the goal for these actions is to return the natural resources and natural resource services to the condition they would have been in if the incident had not occurred. OPA defines natural resource services as "the functions performed by a natural resource for the benefit of another natural resource (ecological services) and/or the public." This evaluation was documented in a Programmatic Damage Assessment and Restoration Plan (PDARP).

A total of three (3) action alternatives were evaluated along with the No Action Alternative. Alternative A, Comprehensive Integrated Ecosystem Restoration, emphasizes the broad ecosystem benefits that can be realized through coastal habitat restoration in combination with resource-specific restoration; this is the preferred alternative. Alternative B focuses on restoring as directly as practical for assessed injuries. Alternative C defers restoration plan development in favor of continued injury assessment with development of a comprehensive plan at a later date. Alternative D is the natural recovery/no-action alternative. The alternatives were evaluated under the following OPA standards: 1) cost; 2) extent to which goals and objectives are met; 3) likelihood of success; 4) extent of preventing future injury and avoiding collateral injury as a result of implementation; 5) extent to which more than one natural resource and/or service is benefitted; 6) effect on public health and safety; and 7) consistency with programmatic Trustee goals and the restoration types.

The Trustees developed four (4) programmatic goals for restoration: 1) Restore and Conserve Habitat; 2) Restore Water Quality; 3) Replenish and Protect Living Coastal and Marine Resources; and 4) Provide and Enhance Recreational Opportunities. Restoration types were developed as sub-categories to the larger programmatic goals. The two (2) restoration types under Restore and Conserve Habitat are: 1) Wetlands, Coastal, and Nearshore Habitats and 2) Habitat Projects on Federally Managed Lands. Both of these restoration types were proposed to benefit habitats as well as injured species of fish and invertebrates in the water column, marine mammals, and birds by providing food, shelter, breeding, and nursery habitat.

Goals of the Wetlands, Coastal, and Nearshore Habitats Restoration Type are to: 1) restore a variety of interspersed and ecologically connected coastal habitats to maintain ecosystem diversity with a particular focus on maximizing ecological functions for the range of resources injured by the spill; 2) restore for injuries in habitats in the geographic areas where the injuries occurred while considering approaches that provide resiliency and sustainability; and 3) restoration of habitats in appropriate combinations for any given geographic area by considering design factors such as connectivity, size, and distance between projects to address injuries to the associated living coastal and marine resources and restore the ecological functions provided by those habitats. Specific projects were not evaluated in the PDARP; however, Under Alternative A, controlled Mississippi River diversions, such as MBSD, are one such restoration approach for implementation to accomplish the goals of this restoration type.



MID-BARATARIA SEDIMENT DIVERSION (BA-153) PROJECT

VICINITY MAP

PLAQUEMINES AND JEFFERSON PARISH, LOUISIANA

LEGEND

15% PROJECT FOOTPRINT

PARISH BOUNDARY

USGS QUADS: PHOENIX, LAFITTE, THREE BAYOU BAY, LAKE LAURIER (2012)

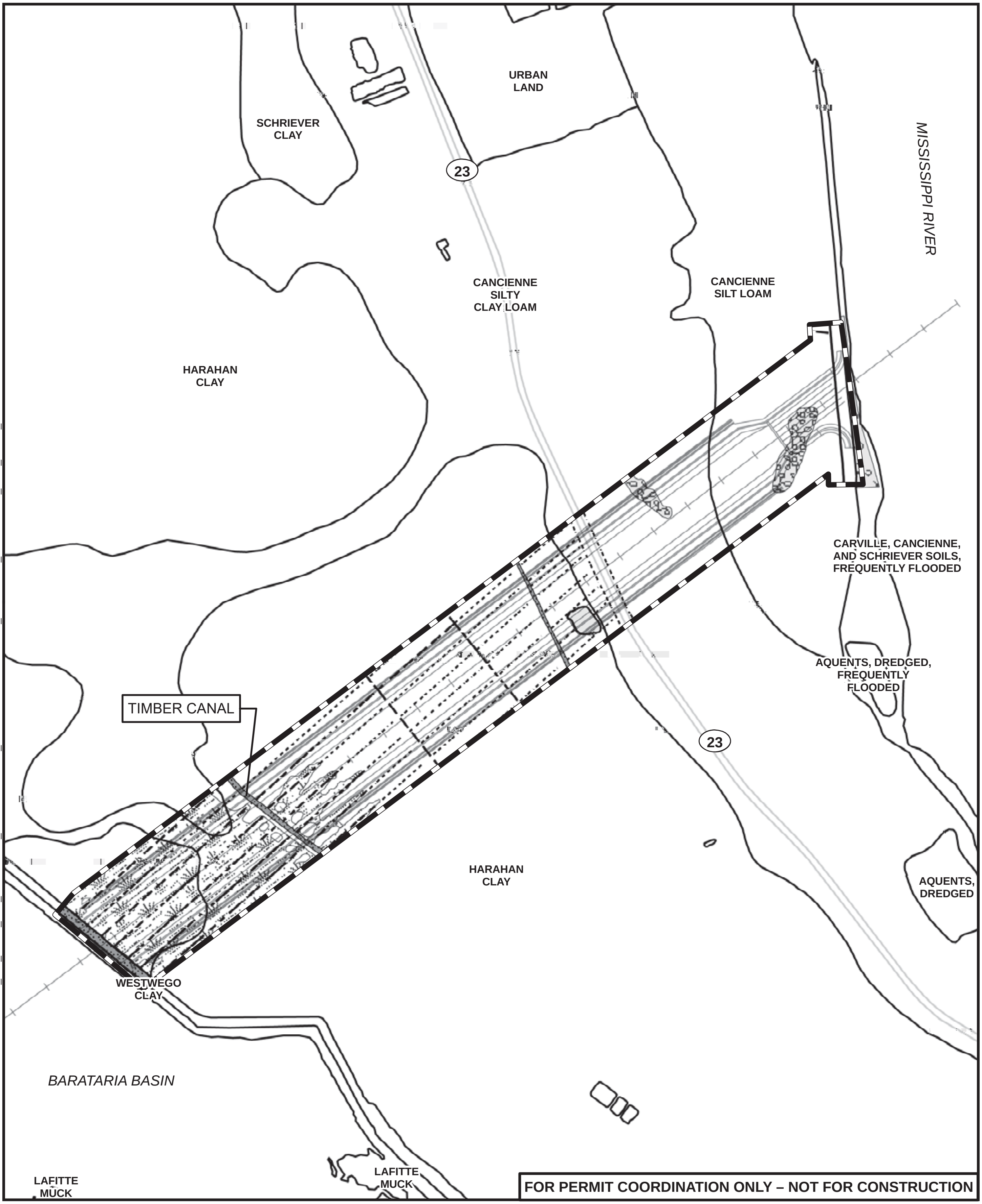
N

0 1,500 3,000

FEET

CPRA

FILE: O:\DEPT037_DALLAS\ENGINEERING\ENVSCIENCES\200965_099_CPRA_MID_BARATARIA_DIVERSION\MAP_DOCS\FIGURES\PERMIT_4345\MBSD_PERMIT4345_FIG1_VICINITY_8X11.MXD



MID-BARATARIA SEDIMENT DIVERSION (BA-153) PROJECT

DELINEATION AND PROPOSED JURISDICTIONAL DETERMINATION

PLAQUEMINES AND JEFFERSON PARISH, LOUISIANA

LEGEND

WATERS OF THE U.S.
- DRAINAGE CHANNEL (SECTION 404)
- CANAL (SECTION 404)
- FORESTED WETLAND (SECTION 10/404)
- FORESTED WETLAND (SECTION 404)
- EMERGENT WETLAND (SECTION 404)

NOT WATERS OF THE U.S.
- PRELIMINARY PROJECT FOOTPRINT
- 15% PROJECT FOOTPRINT
- NON-JURISDICTIONAL DRAINAGE FEATURE
- POND
- SOIL

N

0 500 1,000

FEET

CPRA

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INDEX TO SHEETS

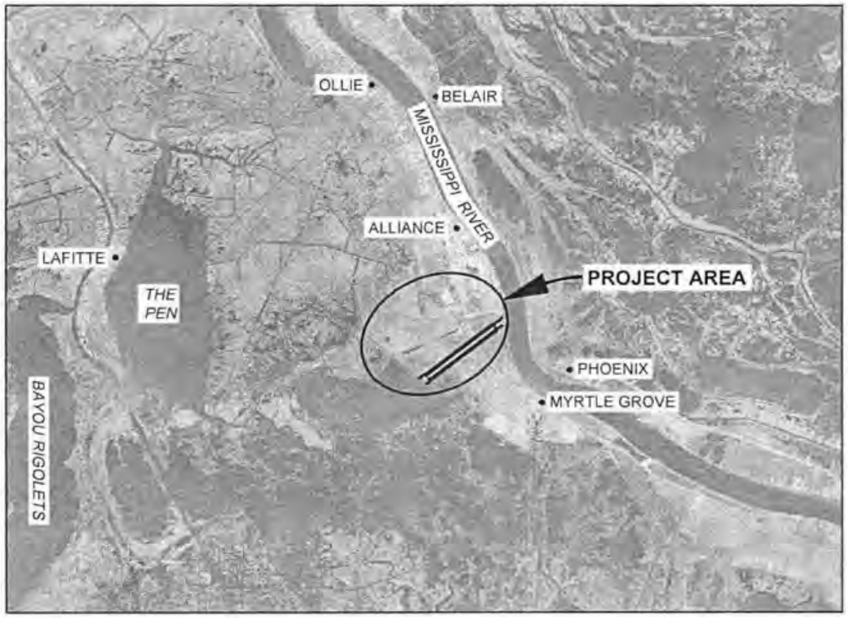
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
3	PROJECT LAYOUT
4	CONVEYANCE CHANNEL LAYOUT
5	OVERALL ROADWAY AND RAIL PLAN
6	CHENIER TRAVERSE BAYOU PUMP STATION SITE
7	TYPICAL CONVEYANCE CHANNEL SECTION (1 OF 2)
8	TYPICAL CONVEYANCE CHANNEL SECTION (2 OF 2)
9	TYPICAL ROADWAY SECTION (1 OF 2)
10	TYPICAL ROADWAY SECTIONS (2 OF 2)
11	DISPOSAL AREA
12	POTENTIAL SEDIMENT DEPOSITION/LAND BUILDING AREA

STATE OF LOUISIANA
COASTAL PROTECTION AND RESTORATION AUTHORITY

MID–BARATARIA SEDIMENT DIVERSION PROJECT

BA–153

PLAQUEMINES PARISH, LOUISIANA



N

20,000' 10,000' 0' 20,000' 40,000'

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION & RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	TITLE SHEET
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 1 OF 12

GENERAL NOTES

1. THESE PLANS WERE DEVELOPED USING 2010 AERIAL PHOTOGRAPHY, NAD83, LOUISIANA STATE COORDINATE SYSTEM, SOUTH ZONE.

2. ALL ELEVATIONS SHOWN ARE IN NAVD 88.

3. AS-BUILT DRAWINGS WILL BE SUBMITTED WITHIN 30 DAYS OF COMPLETION OF THIS PROJECT TO THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES, COASTAL MANAGEMENT DIVISION, P.O. BOX 44487, BATON ROUGE, LA 70804-4487.

4. THE PERMIT APPLICANT 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.

5. ALL NORTHING / EASTING AND LATITUDE / LONGITUDE VALUES ARE BASED ON PRELIMINARY DESIGN DATA AND ARE SUBJECT TO CHANGE.

6. ALL ELEVATIONS ARE BASED ON PRELIMINARY DESIGN DATA AND ARE SUBJECT TO CHANGE.

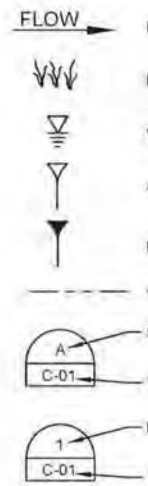
ABBREVIATIONS

APPROX	APPROXIMATE
B/L	BASELINE
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
DWG	DRAWING
E	EASTING
EL, ELEV	ELEVATION
HORIZ	HORIZONTAL
HWY	HIGHWAY
LA	LOUISIANA
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MR & T	MISSISSIPPI RIVER & TRIBUTARIES LEVEE
N	NORTHING
NO	NUMBER
NOV	NEW ORLEANS TO VENICE LEVEE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
RD	ROAD
ROW	RIGHT OF WAY
STA	STATION
TBD	TO BE DETERMINED
TYP	TYPICAL
VC	VERTICAL CURVE
VERT	VERTICAL
W	WESTING
YR	YEAR

FEATURE LOCATION TABLE

DESCRIPTION	NORTHING / LATITUDE	EASTING / LONGITUDE
POB CHANNEL BASELINE	426308.37 / 29° 39' 54.20" N	3717488.25 / 89° 57' 30.31" W
POE CHANNEL BASELINE	417902.28 / 29° 38' 32.30" N	3706292.82 / 89° 59' 38.32" W
DIVERSION GATE STRUCTURE	424567.11 / 29° 39' 37.24" N	3715169.19 / 89° 57' 56.83" W
BACK STRUCTURE	418983.06 / 29° 38' 42.84" N	3707732.23 / 89° 59' 21.86" W
POB PUMP STATION BASELINE	424556.45 / 29° 39' 38.77" N	3701081.76 / 90° 00' 36.50" W
POE PUMP STATION BASELINE	424331.16 / 29° 39' 36.65" N	3700158.86 / 90° 00' 46.99" W

SYMBOLS



FLOW DIRECTION
NATURAL GROUND
WATER SURFACE
CUT SLOPE
FILL SLOPE
CONSTRUCTION LIMIT
SECTION DESIGNATION
WHERE SECTION IS SHOWN
DETAIL DESIGNATION
WHERE DETAIL IS SHOWN

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 2 OF 12

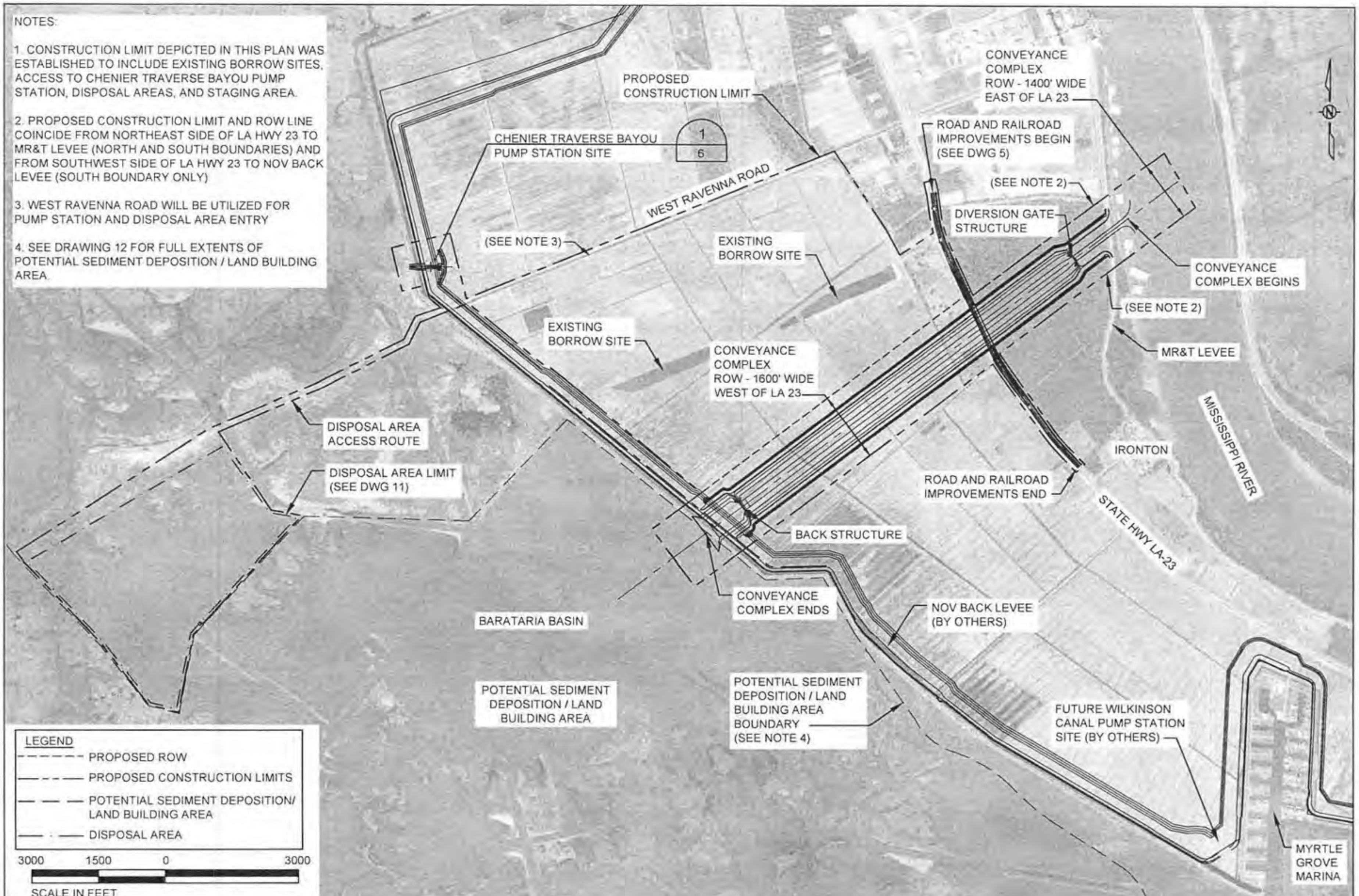
NOTES:

1. CONSTRUCTION LIMIT DEPICTED IN THIS PLAN WAS ESTABLISHED TO INCLUDE EXISTING BORROW SITES, ACCESS TO CHENIER TRAVERSE BAYOU PUMP STATION, DISPOSAL AREAS, AND STAGING AREA.

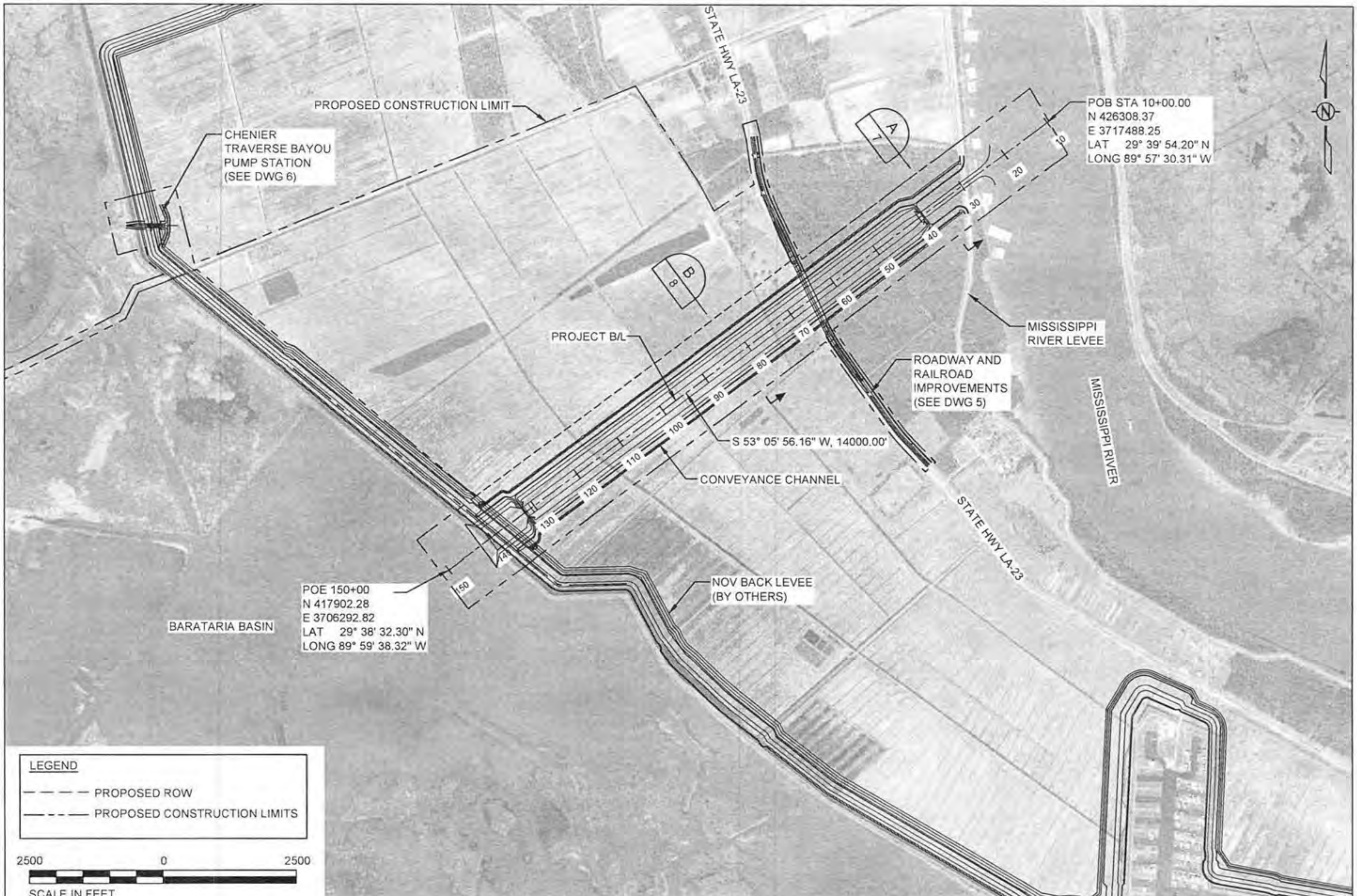
2. PROPOSED CONSTRUCTION LIMIT AND ROW LINE COINCIDE FROM NORTHEAST SIDE OF LA HWY 23 TO MR&T LEVEE (NORTH AND SOUTH BOUNDARIES) AND FROM SOUTHWEST SIDE OF LA HWY 23 TO NOV BACK LEVEE (SOUTH BOUNDARY ONLY)

3. WEST RAVENNA ROAD WILL BE UTILIZED FOR PUMP STATION AND DISPOSAL AREA ENTRY

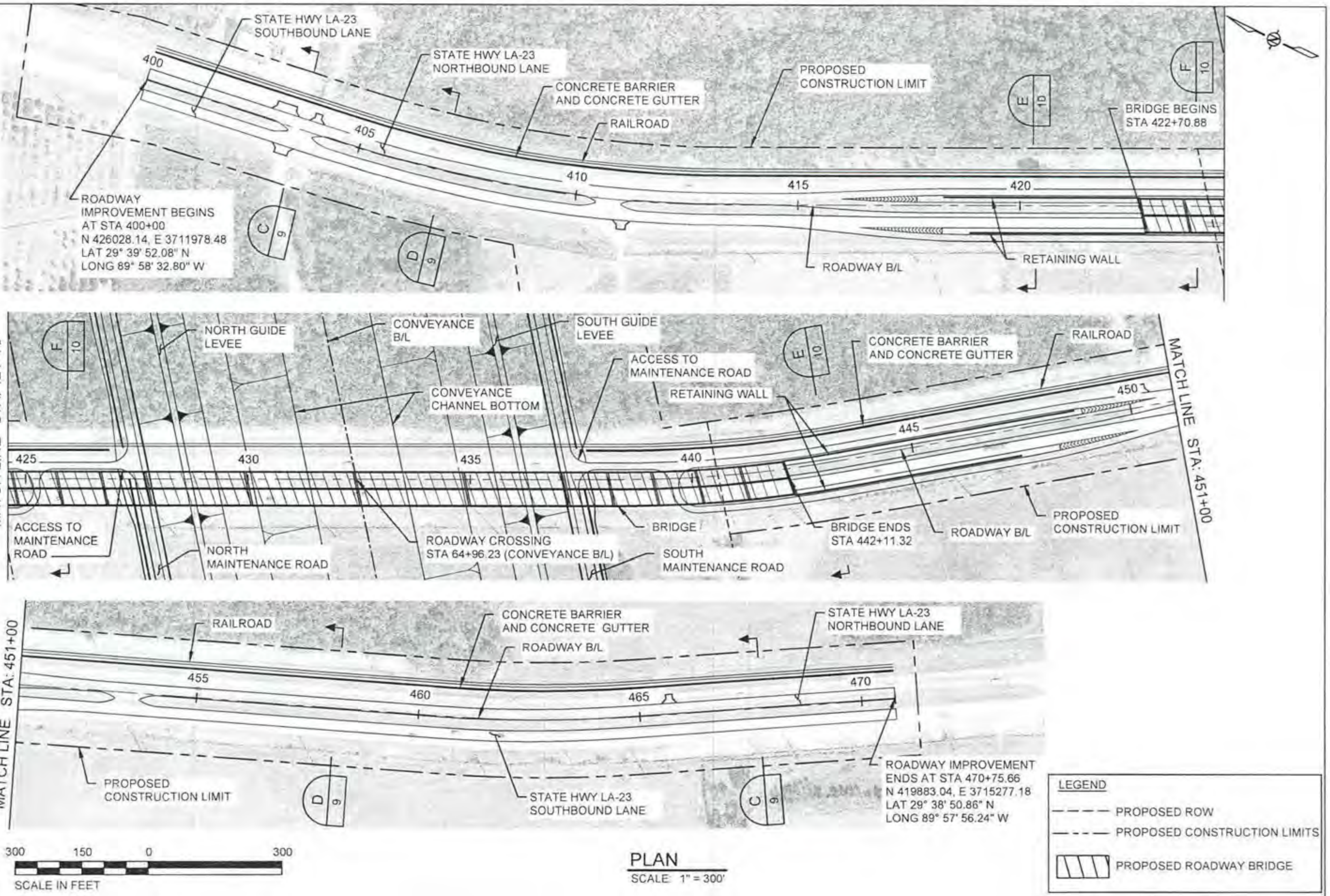
4. SEE DRAWING 12 FOR FULL EXTENTS OF POTENTIAL SEDIMENT DEPOSITION / LAND BUILDING AREA.



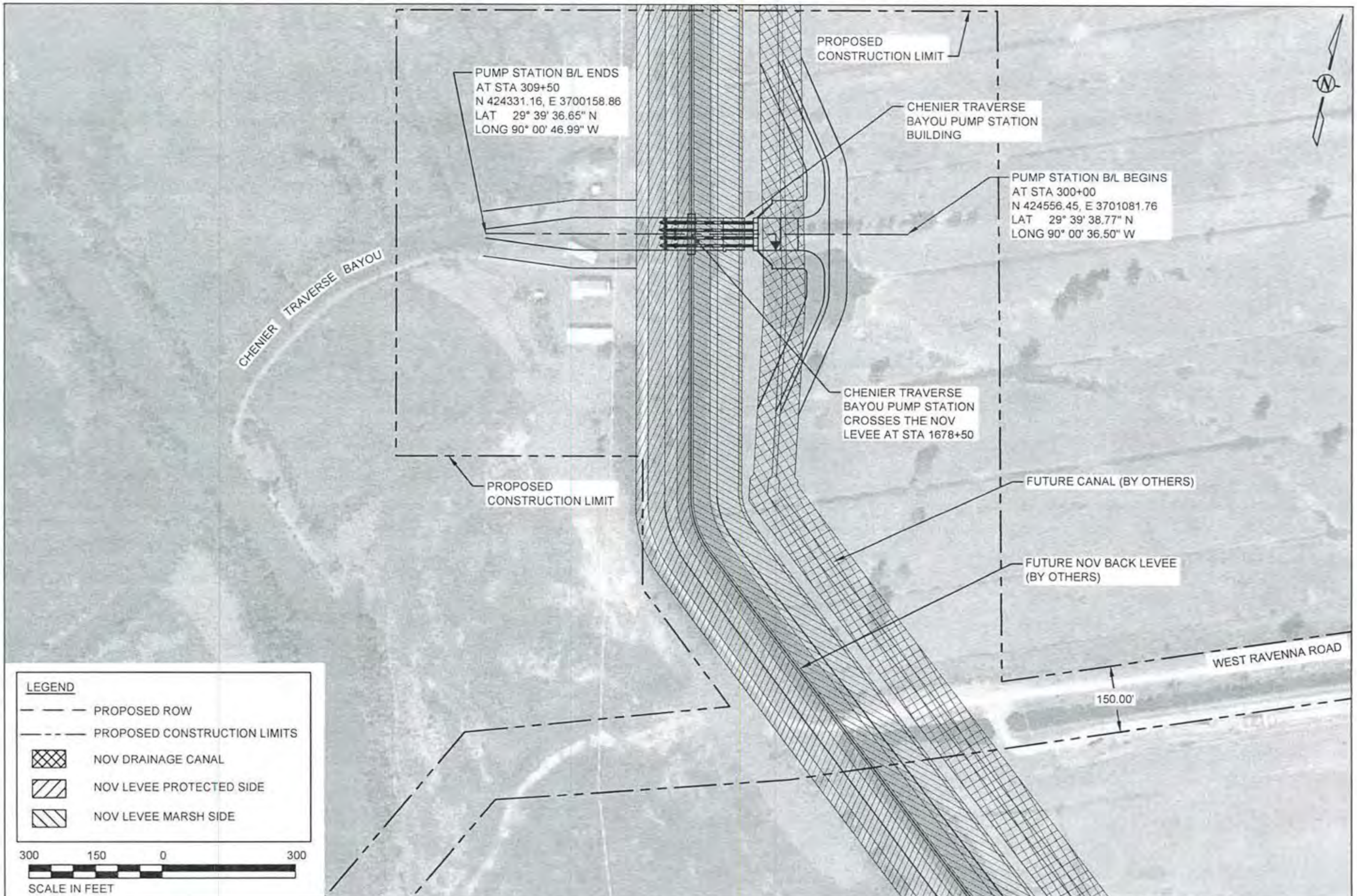
APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	PROJECT LAYOUT
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 3 OF 12



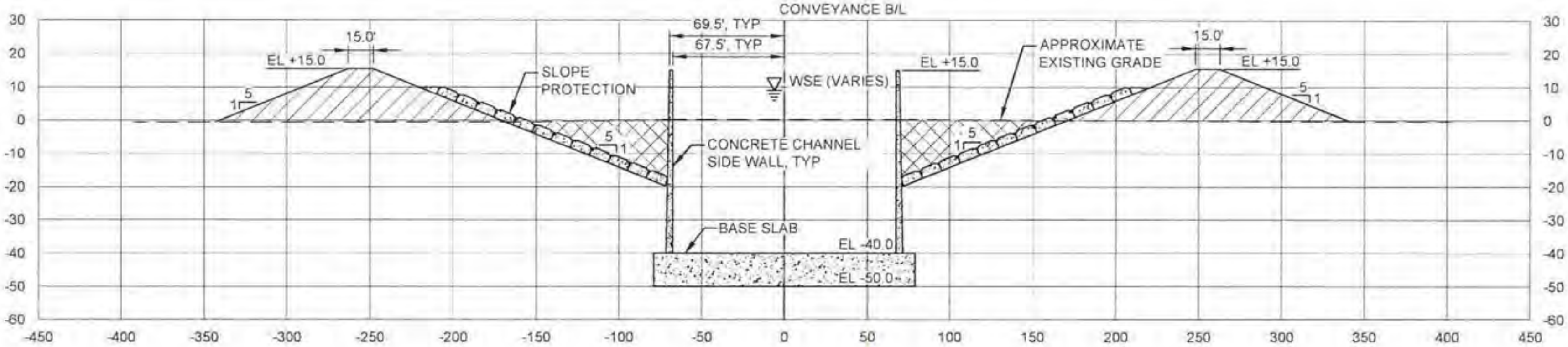
APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	CONVEYANCE CHANNEL LAYOUT
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 4 OF 12



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	OVERALL ROADWAY AND RAIL PLAN DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 5 OF 12



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	CHENIER TRAVERSE BAYOU PUMP STATION SITE DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 6 OF 12



TYPICAL SECTION (LOOKING UPSTREAM)
FROM STA 30+00 TO STA 39+00

HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 50'

A / 4

HORIZONTAL GRAPHIC SCALE: 100' 50' 0 100' 200'
VERTICAL GRAPHIC SCALE: 50' 25' 0 50' 100'

NOTES:

1. EXCAVATION AREA PATTERN NOT SHOWN WITHIN CONCRETE CHANNEL FOR CLARITY PURPOSES.

LEGEND
- FILL AREA
- EXCAVATION AREA
- CONCRETE

APPLICATION BY:
CPRA
P.O. BOX 44027
BATON ROUGE, LA 70804

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

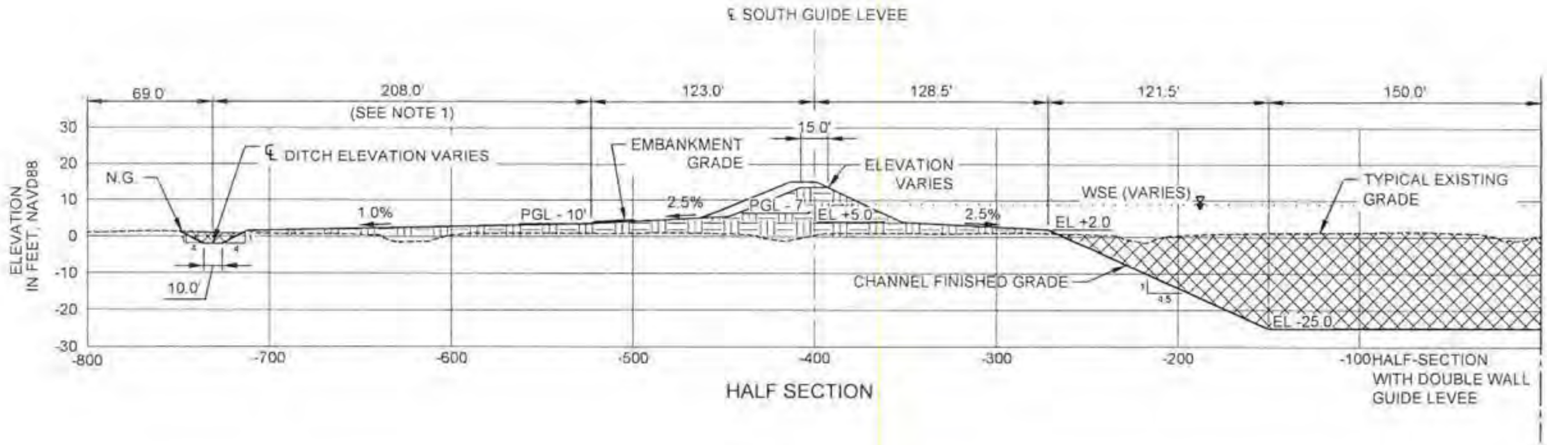
MID-BARATARIA SEDIMENT DIVERSION PROJECT

TYPICAL CONVEYANCE CHANNEL SECTION (1 OF 2)

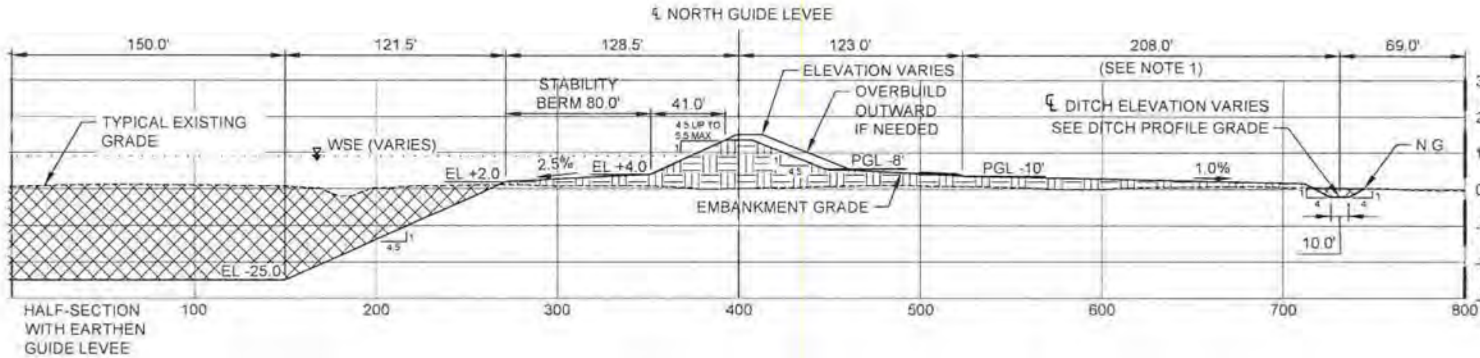
STATE PROJECT NUMBER: BA-153

DATE: JUNE 2016

DRAWN BY: K. CANTU | DESIGNED BY: K. GUILLORY, P.E. | APPROVED BY: R. SIMONEAUX, P.E. | FEDERAL PROJECT NUMBER: | SHEET 7 OF 12



HALF SECTION



HALF SECTION

PHASE 2 TYPICAL SECTION (LOOKING DOWNSTREAM) FROM STA 42+00 TO STA 125+00

B / 4

HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 50'

HORIZONTAL GRAPHIC SCALE

100' 50' 0 100' 200'

50' 25' 0 50' 100'

VERTICAL GRAPHIC SCALE

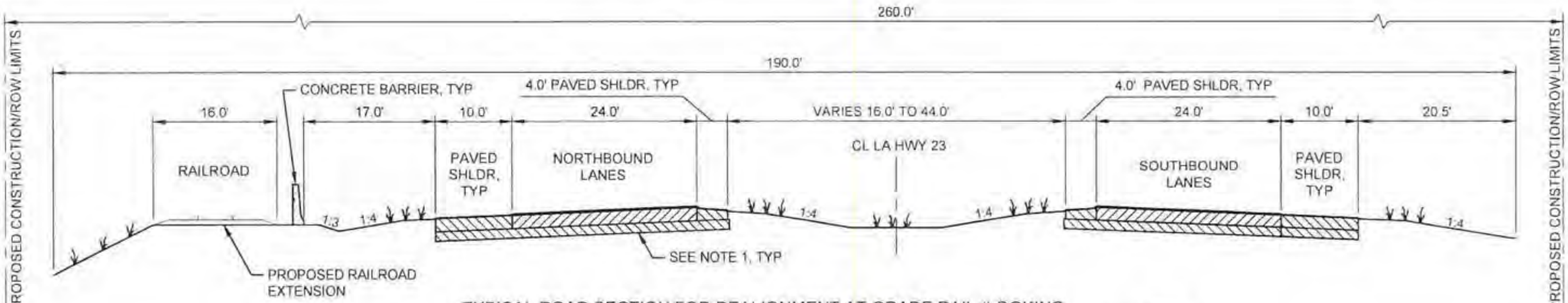
NOTES:

1. DIMENSIONS AND ROW LINE SHOWN FOR CHANNEL WEST OF LA 23. ROW LINE ±700' EAST OF LA 23.

LEGEND

- EARTHEN FILL AREA
- SAND FILL AREA
- EXCAVATION AREA

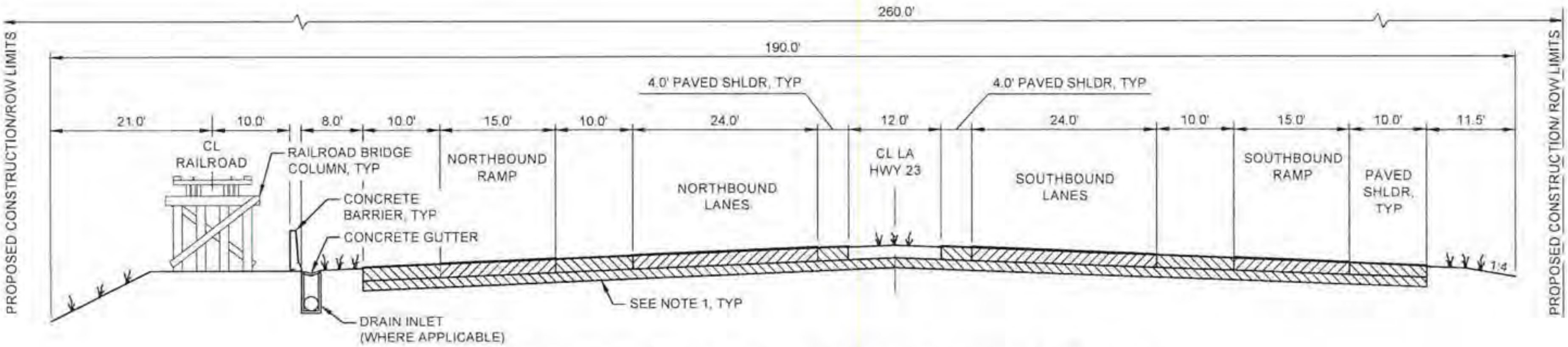
APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	TYPICAL CONVEYANCE CHANNEL SECTION (2 OF 2)
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 8 OF 12



TYPICAL ROAD SECTION FOR REALIGNMENT AT GRADE RAIL (LOOKING SOUTH) FROM STA 400+00 TO STA 403+00 AND FROM STA 462+00 TO 470+75.66

C / 5

SCALE: 1" = 20'



TYPICAL ROAD SECTION FOR REALIGNMENT WITH RAIL BRIDGE (LOOKING SOUTH) FROM STA 403+00 TO STA 416+00 AND FROM STA 450+00 TO 462+00

D / 5

SCALE: 1" = 20'

20 10 0 20

SCALE IN FEET

NOTES:

1. PAVEMENT SECTION TO BE DETERMINED FOR THE FINAL DESIGN

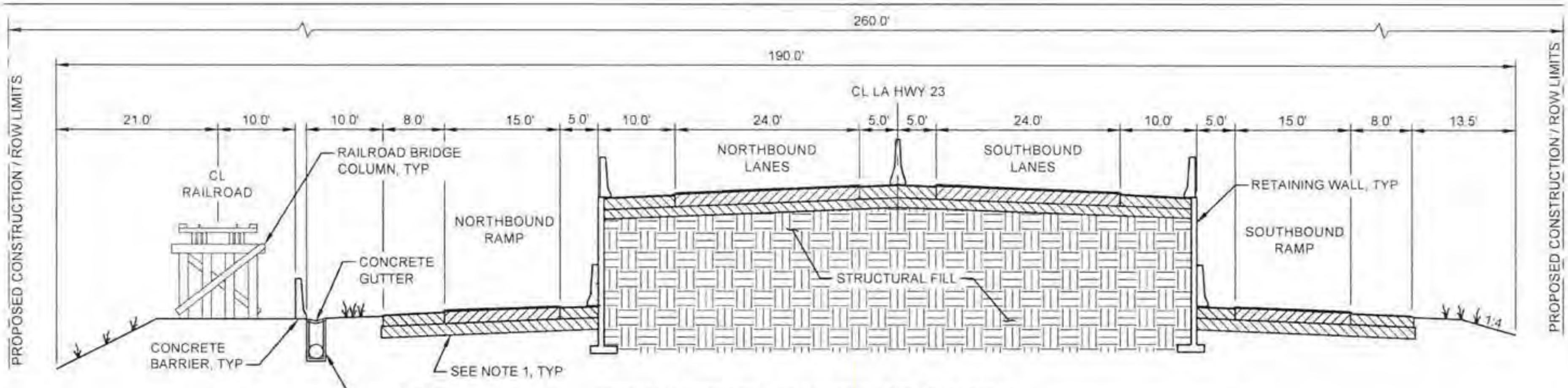
LEGEND

SURFACE BASE

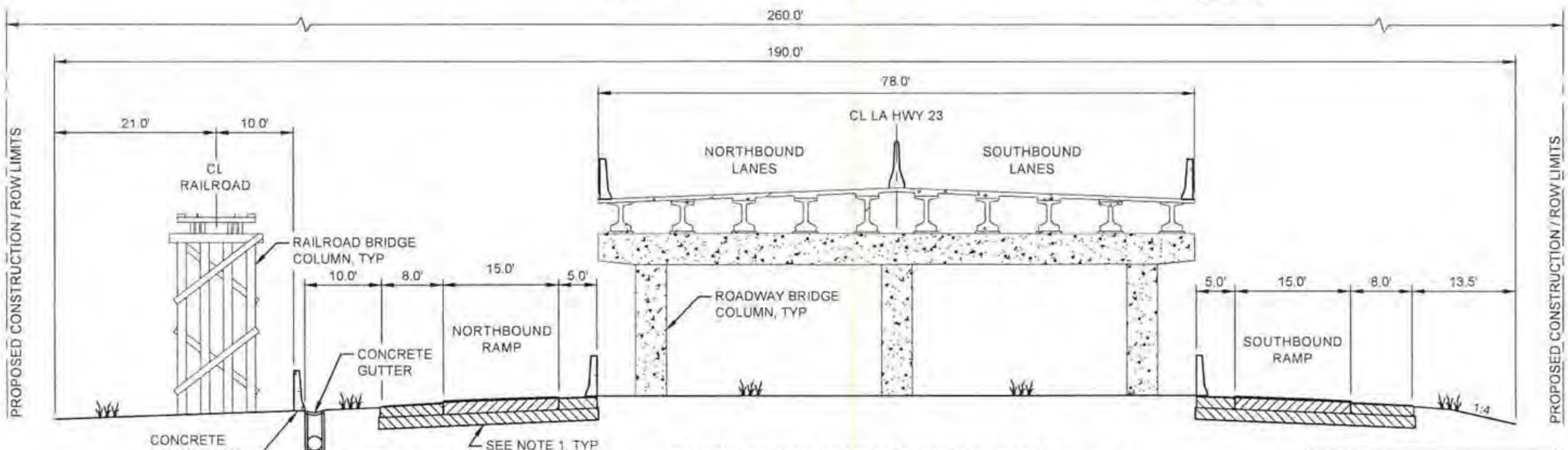
SURFACE SUB-BASE

ASPHALT

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	TYPICAL ROADWAY SECTIONS (1 OF 2)
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. — APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 9 OF 12



TYPICAL TRANSITION SECTION (LOOKING SOUTH)
FROM STA 416+00 TO STA 422+75 AND FROM STA 442+00 TO STA 450+00 E/5
SCALE: 1" = 20'



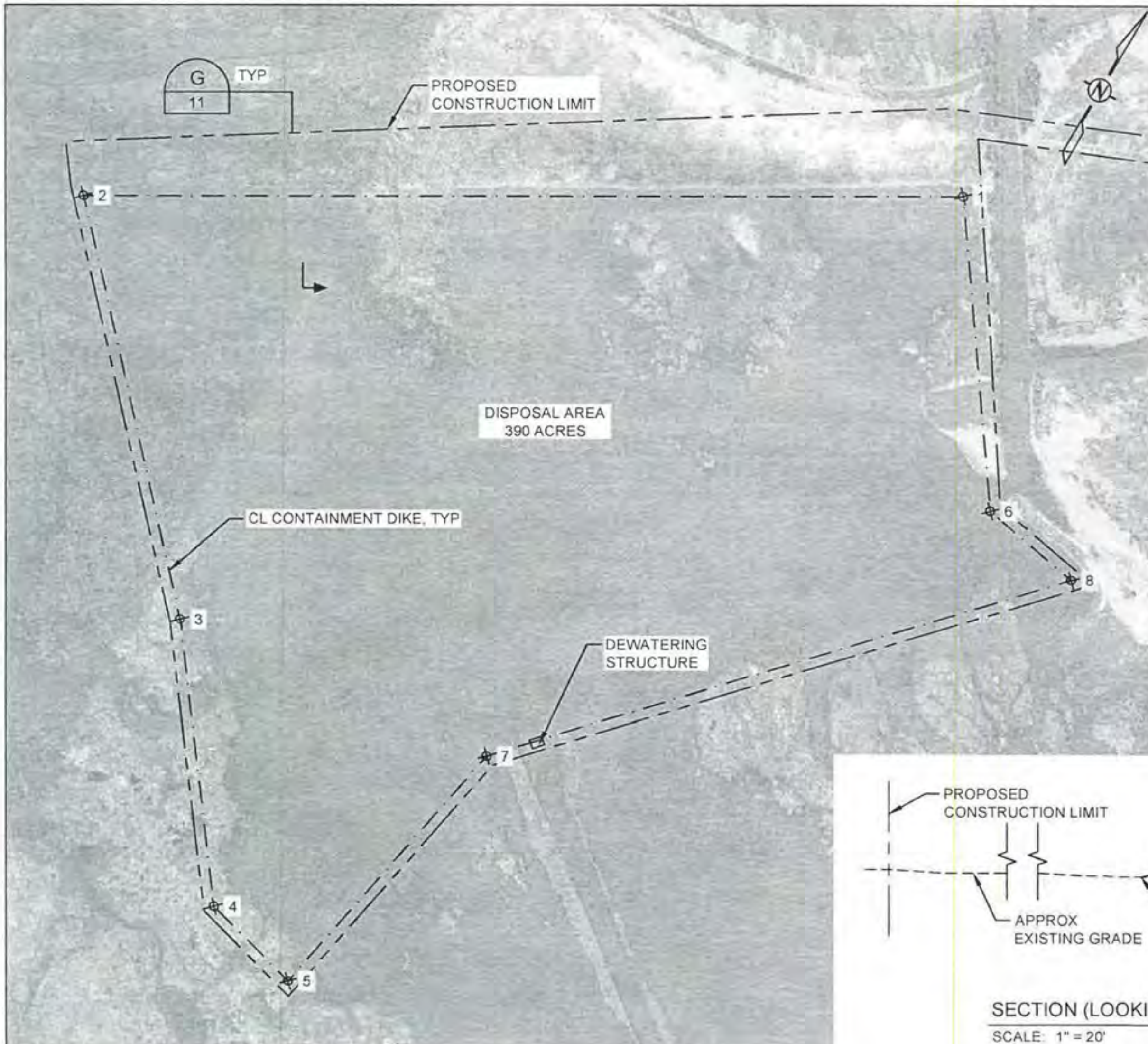
TYPICAL BRIDGE SECTION (LOOKING SOUTH)
FROM STA 422+75 TO STA 442+00 F/5
SCALE: 1" = 20'

20 10 0 20
SCALE IN FEET

NOTES:
1. PAVEMENT SECTION TO BE DETERMINED FOR THE FINAL DESIGN.

LEGEND
- SURFACE BASE
- SURFACE SUB-BASE
- CONCRETE
- STRUCTURAL FILL
- ASPHALT

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	TYPICAL ROADWAY SECTIONS (2 OF 2)
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 10 OF 12



PLAN

SCALE: 1" = 1000'

1000 500 0 1000

SCALE IN FEET

NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT EARTHEN CONTAINMENT DIKES, AS NECESSARY, ALONG THE PERIMETER OF EACH DISPOSAL AREA SHOWN. CONTAINMENT SHALL BE REQUIRED ALONG ALL DISPOSAL AREA BOUNDARIES THAT DO NOT MEET THE MINIMUM TYPICAL SECTION SHOWN ON THIS SHEET.

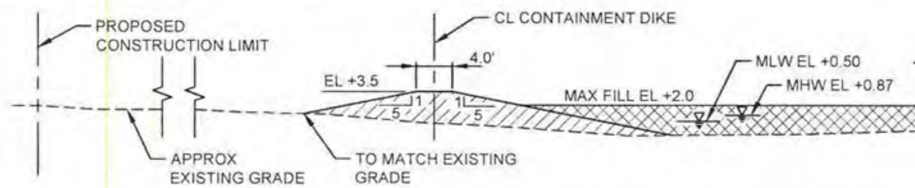
2. THE LOCATION OF THE DEWATERING STRUCTURE SHOWN ON THIS SHEET SHALL BE USED AS A GUIDE. FINAL LOCATIONS SHALL BE VERIFIED IN THE FIELD.

3. DEWATERING STRUCTURE WEIR ELEVATION SHALL MATCH DISPOSAL AREA MAXIMUM FILL ELEVATION.

4. THE CONTAINMENT DIKE WILL BE CONSTRUCTED WITH MATERIAL FROM THE INTERIOR OF THE DISPOSAL AREA.

POINT TABLE

POINT NO.	NORTHING / LATITUDE	EASTING / LONGITUDE
1	420304.07 / 29° 38' 57.25" N	3696058.60 / 90° 01' 33.98" W
2	417705.51 / 29° 38' 32.02" N	3691679.69 / 90° 02' 23.94" W
3	415878.04 / 29° 38' 13.73" N	3693412.79 / 90° 02' 04.53" W
4	414548.00 / 29° 38' 00.45" N	3694429.93 / 90° 01' 53.18" W
5	414394.88 / 29° 37' 58.87" N	3695020.34 / 90° 01' 46.51" W
6	418818.70 / 29° 38' 42.42" N	3697124.11 / 90° 01' 22.10" W
7	416103.42 / 29° 38' 15.75" N	3695342.93 / 90° 01' 42.63" W
8	418712.63 / 29° 38' 41.31" N	3697732.34 / 90° 01' 15.22" W



SECTION (LOOKING EAST) G/11

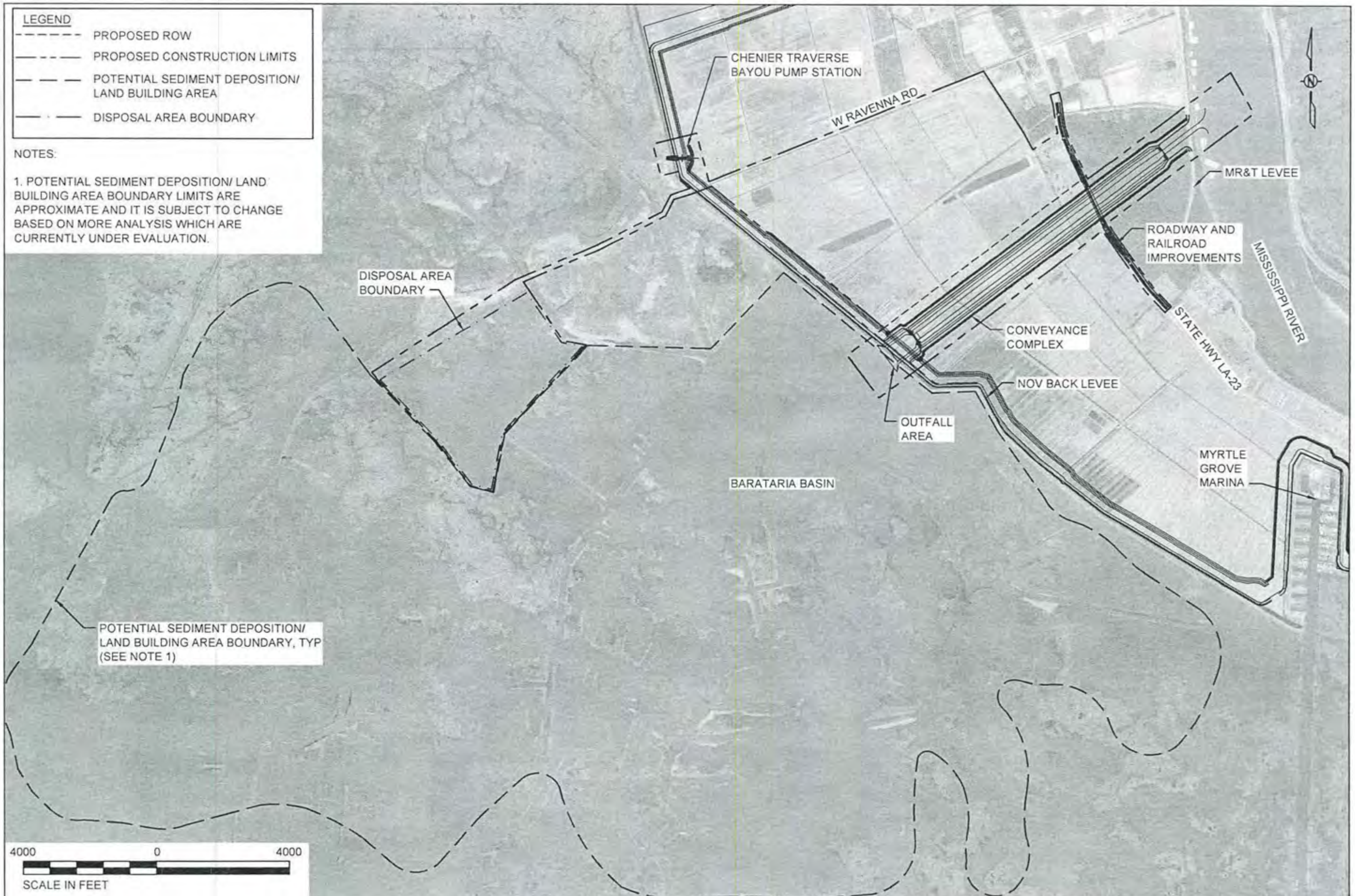
SCALE: 1" = 20'

LEGEND
- CONTAINMENT DIKE FILL
- DISPOSAL AREA FILL

20 10 0 20

SCALE IN FEET

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	DISPOSAL AREA
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 11 OF 12



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	POTENTIAL SEDIMENT DEPOSITION/LAND BUILDING AREA
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 12 OF 12

Potential Waters of the U.S., Including Wetlands Memorandum

To	Micaela Coner, Liz Davoli Coastal Protection and Restoration Authority of Louisiana		
From	Brooke Savant, James Thomas, HDR		
CC	Neil McLellan, Betty Dehoney, HDR		
Date	July 30, 2014	Job No.	BA 153-01

RE: Mid-Barataria Sediment Diversion (BA-153), Plaquemines Parish, Louisiana, Report for Delineation and Evaluation of Potential Waters of the U.S., Including Wetlands, July 2014 Amendment

Introduction

The Coastal Protection and Restoration Authority of Louisiana (CPRA) authorized HDR to perform a delineation and evaluation of waters of the U.S., including wetlands, for the proposed Mid-Barataria Sediment Diversion (MBSD, or proposed project). The intent of this memorandum is to disclose the findings of HDR's:

- on-site evaluation and delineation of waters of the U.S. as defined by the Clean Water Act, including wetlands, for the preliminary proposed channel footprint
- expanded desktop delineation of a portion of the proposed project's immediate outfall

The information included in this memorandum is considered a complete evaluation of existing wetland conditions and delineation report for waters of the U.S., including wetlands, and will be used by the U.S. Army Corps of Engineers (USACE) New Orleans District to support its jurisdictional determination, evaluation of fill impacts, and permit decision for the proposed project.

The proposed project would divert Mississippi River sediment-laden water through a new diversion structure installed in the Mississippi River and Tributary (MR&T) levee north of Ironton, Louisiana, into degraded marshes in the Barataria Basin to the west. The MBSD would provide sediment and nutrients to restore, build, and maintain wetlands. HDR completed a wetland delineation, proposed jurisdictional determination, and habitat classification of waters of the U.S., including wetlands, to assess potential impacts of dredged and fill placement activities necessary to construct the proposed project.

Methods

The evaluation included both the preliminary diversion channel footprint and an area of the immediate outfall using a combination of on-site and remote sensing methods, consistent with the flexibility allowed for conducting routine determinations in the USACE 1987 *Wetland Delineation Manual* (USACE 1987) and regional supplements. The delineation of waters of the U.S. was originally completed within the proposed project construction area limits or channel footprint (including a 200-foot construction servitude) in November 2012 for submittal to USACE as part of the Joint Application pursuant to Programmatic General Permits and Coastal Use Permits for the geotechnical investigations and as a required attachment in the Joint Application for an Individual Permit submitted on July 23, 2013.

The on-site field delineation included examination of habitats within the preliminary boundary of the proposed project's footprint (that is, an approximately 1,400-foot-wide corridor, 12,000 feet in length).

Data collected during the field visit included photographs as well as information on vegetation, soils, and hydrology as specified in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* (Version 2.0) (USACE 2010) and recorded on wetland determination data forms. These data forms and corresponding site photos are included in Attachment B. Additionally, 35,000 acres of the proposed diversion outfall area (U.S. Geological Survey [USGS] Hydrologic Unit Code [HUC] #80903010408) were evaluated through a desktop evaluation or Level 1 routine determination (USACE 1987) of existing wetland and habitat conditions for inclusion in the project's proposed jurisdictional determination.

The methods employed for the delineation and proposed jurisdictional determination of waters of the U.S. varied between the proposed diversion channel footprint—lying primarily between the MR&T levee and the Non-Federal Levee (that is, the back levee)—and the outfall area, consisting primarily of intertidal and subtidal estuarine wetlands and open water habitats, including natural sloughs, bayous, and ponds, as well as excavated channels and collapsed marsh. The following subsections describe the methods and objectives for each evaluation.

Diversion Channel Footprint

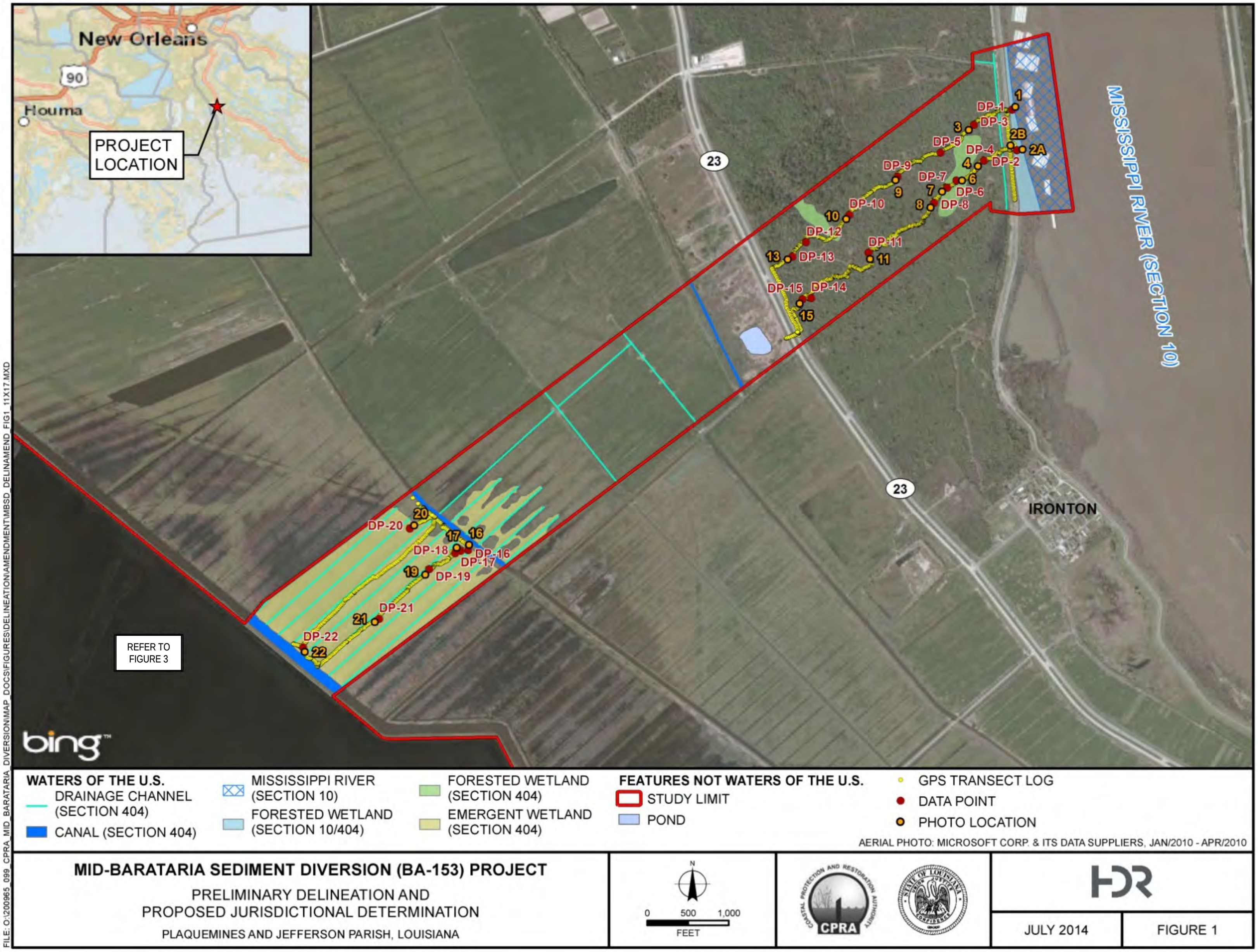
The on-site delineation and habitat evaluation of waters of the U.S., including wetlands for the proposed channel footprint (preliminary study limit) was conducted on November 12 and 13, 2012, by HDR wetland scientists and experienced delineators Joe Moake, Christine Magers, and Richard Wilson. During the field visit, HDR scientists generally walked transects (Figure 1) both north and south of the proposed project centerline to collect data on the wetland habitats present within the proposed diversion channel footprint limits. Data were collected (Attachment B) as described above for various soil, vegetation, and hydrologic conditions along these transects to evaluate habitat quality and the approximate percentage of wetland conditions. In addition, HDR noted the presence of other aquatic and excavated drainage features.

Spatial data for the evaluation of waters of the U.S., including wetlands, within the proposed channel footprint limits were collected using a 2010 Trimble GeoXT handheld Global Positioning System (GPS) unit and were post-processed using Trimble GPS Analyst for ArcGIS 10 to ensure sub-meter accuracy. Following the collection of spatial data, the preliminary extent of waters of the U.S. was mapped in ArcGIS 10 based on the field data collection and recent aerial photography.

The latest spatial soil map units for the diversion channel footprint were obtained from the Natural Resources Conservation Service (NRCS) soil survey website. Additionally, the NRCS database information for each soil map unit was evaluated to determine which soil types are listed as hydric and under what conditions. Finally, during on-site routine delineation and jurisdictional determination surveys, soil conditions were assessed at each data point (see data sheets in Attachment B) taken within wetland vegetation communities, with the exception of those exhibiting signs of sufficient hydrology indicators or prolonged inundation. For flooded or ponded areas, an aquic moisture regime and hydric soils can be inferred due to the length of inundation or saturation leading to anaerobic conditions.

The field delineation was conducted within 3 months of Hurricane Isaac, which caused substantial flooding throughout the area resulting in atypical hydrologic and vegetation indicators (rack and debris lines, water marks, vegetation modification, etc.). These indicators are typically most reliable where the soils have been heavily modified (agriculture, drainage improvements, etc.) and can present false positive indicators of wetland conditions in a major flooding event.

Figure 1. Preliminary delineation and proposed jurisdictional determination – waters of the U.S. in MBSD footprint



Consistent with the recommended methodology for atypical situations, additional data and information on the normal conditions were collected from other recent aerial photography and previous delineation and jurisdictional determination documentation. Subsequently, this delineation was updated based on information from USACE. Rob Heffner of the USACE New Orleans District, Regulatory Branch, provided information on recent, valid jurisdictional determinations (Attachment C) for the majority of the area within the limits of the diversion channel footprint (personal and electronic communications on January 18, 2013). This information was used in conjunction with recent aerial photography, including Pictometry® oblique photography taken before Hurricane Isaac, to refine the delineation boundary.

In March 2013, the proposed diversion site was revisited for the purpose of conducting geotechnical investigations. Normal site conditions observed during this field visit were consistent with the refined results of the HDR delineation report. Typical hydrologic and vegetation conditions have reestablished on the site and are consistent with the delineation and preliminary jurisdictional determination provided herein and in the Joint Permit Application submitted to the USACE and Office of Coastal Management in July 2013.

Diversion Outfall Area

Given the anticipated size of the deltaic land building restoration area for the MBSD project and the well-documented tidal marsh and elevation conditions in the Barataria Basin (U.S. Fish and Wildlife Service 2011; USGS 2011a, 2011b; U.S. Department of Agriculture 2010), HDR employed remote sensing for the evaluation of the proposed diversion outfall area using a variety of publicly available datasets and aerial photographs. The primary objective of the evaluation was to determine the spatial extent, quantity, and configuration of waters of the U.S., including wetlands, other special aquatic sites, deep water habitats (>6.6 feet deep), and uplands (not waters of the U.S.) for consideration during alternatives analysis, evaluation of project effects, and the USACE's use in the Section 404(b)(1) water dependency determination. Since a key objective of the project is to restore coastal wetlands in the Barataria Basin, and given the dynamic nature of the estuarine ecosystem, remote sensing methods were determined to be adequate for project planning and permitting activities in lieu of on-site delineations of the expansive outfall study area.

Given that delineation is needed to assess existing wetland conditions in areas where potential fill would be placed, either directly or indirectly, and because no Area of Potential Effects has been defined from sediment modeling thus far, USGS HUC #080903010408, which includes 35,000 acres of the immediate outfall area, was assumed to be a sufficient study area for delineation efforts within the Barataria Basin. HDR wetland specialists and geographic information system (GIS) analysts developed delineation maps for the outfall delineation study. This area is bounded by the Non-Federal Levee (that is, the back levee) on the east, Barataria Waterway on the west, Cheniere Traverse Bayou to the north, and Lake Judge Perez, Lake Laurier, and Round Lake to the south. The outfall limits were selected based on preliminary modeling information regarding the anticipated extent of sediment deposition in the Barataria Basin as a result of the MBSD project. At a future date, if modeling identifies a larger extent of delta/land building, the outfall area limits can be expanded for delineations of waters of the U.S., including wetlands, and the report can be amended at that time. The proposed outfall area is a portion of the Mid-Barataria Basin consisting of a complex mosaic of marshes, bayous, subtidal ponds, shallow open water areas, vegetated shallows, excavated channels, spoil banks, and a few developed upland areas featuring residential and industrial sites. For the purposes of the delineation and evaluation of the outfall area, HDR analyzed publicly available spatial datasets (Table 1) to develop an accurate depiction of the following:

- spatial location of waters of the U.S., including special aquatic sites such as wetlands, vegetated shallows, and mudflats

- differentiation of wetland types/classifications (estuarine emergent marsh, palustrine wetlands, scrub/shrub habitats, forested wetlands, etc.), to the extent practicable
- location of uplands
- differentiation of natural open water habitats, shallow subtidal areas, and excavated canals

The following matrix in Table 1 provides an overview of the key characteristics of each dataset evaluated for use in this analysis and an assessment of the applicability to achieve the objectives defined above.

Table 1. Dataset overview

Dataset	Year of imagery/ publication	Data	Constraints
Sasser et al. (2014) - USGS Marsh Vegetation Classification	2014	Includes an estimate of the extent of marsh types (that is, intermediate, brackish, saline) across the Louisiana Coastal Zone	Overestimates marsh by not accurately differentiating open water areas
USDA National Agriculture Imagery Program Satellite Imagery	2010	Most recent and detailed view of existing Basin land uses and vegetation community extents and conditions	Mosaic images create discrepancies in pixel values for similar cover types; difficult to distinguish submerged vegetation and shallows from areas of turbidity given the limitations of aerials (for example, cloud cover, signature inconsistencies)
NWI Mapping	Aerial: 1988, 1989 Publication: 2011	Comprehensive, detailed mapping of wetland and open water types (habitat classifications); provides historical context	Developed from 25-year-old image sources; not reflective of recent marsh loss or marsh creation projects; classification polygons misaligned from aerial base in some areas
USGS Land/Water Classification	2010	Most recent depiction of open water areas	30-meter resolution proved insufficient to identify localized conditions for MBSD project scale; overestimates water area by not capturing vegetated shallows and other marsh areas as land when compared with recent aerial imagery; no differentiation of wetland and open water types
USGS Land Area Change	2011	Assists with identification of marsh loss on a regional basis from 1973 to 2009	30-meter resolution proved insufficient to identify localized conditions for MBSD project scale; no differentiation of wetland types
USGS National Land Cover Database	2011	Recent land cover, including differentiation of wetland extents and types	30-meter resolution provided insufficient level of detail for MBSD project evaluation area; no differentiation of wetland types; overestimated marsh area

Notes: MBSD = Mid-Barataria Sediment Diversion, USDA = U.S. Department of Agriculture, USFWS = U.S. Fish and Wildlife Service, NWI - USFWS National Wetland Inventory , USGS = U.S. Geological Survey

For the purposes of this analysis, multiple datasets were used to support the desktop analysis to delineate jurisdictional waters and wetlands in the outfall study area. This analysis supported the differentiation between wetland and open water, as well as differentiating between different types of wetland habitats (that is, estuarine emergent marsh, palustrine wetlands, scrub/shrub habitats, forested wetlands, etc.) at a scale appropriate for the outfall study area. Although it is the most recent of datasets, the 2013 USGS marsh classification dataset does not provide the local level of mapping or differentiation detail required for the analysis. The USGS marsh classification data were collected through aerial transect surveys and photographic interpretation for the entire Louisiana coast. Although these data provide an overview of recent regional conditions, they showed inconsistencies in open water areas when compared with regional USGS 2010 land/water classification data and recent aerial photographs. For example, smaller areas in the MBSD outfall study area that have undergone marsh collapse during the past several decades are currently subtidal open water areas, but were classified in the USGS 2013 classification as brackish marsh. As a result, the USGS vegetation dataset overestimates marsh acreage in the outfall study area (HUC #080903010408) and underestimates open water areas by more than 17,000 acres. Because of these inconsistencies, the USGS marsh classification dataset was not used for the delineation and classification of marsh in the MBSD outfall study area.

Other datasets were reviewed and were not incorporated because of various constraints in the adequacy or applicability of the data. The U.S. Department of Agriculture (USDA) National Agriculture Imagery Program’s (NAIP’s) aerial imagery provides a relatively recent and detailed view of Barataria Basin conditions, but would require a substantial amount of time to develop into a classified land cover dataset given inconsistencies between photographs across the large study area. Other available datasets such as the USGS land/water classification, land area change, and land cover datasets were developed for the entire Louisiana coast at a resolution scale of 30 meters, which, as described above, proved too coarse to provide enough detail for delineation and classification. Additionally, a comparison of these spatial datasets with recent aerial photography identified substantial discrepancies in either the classification of marsh or submerged, open water habitats (Figures A-1 to A-3 in Attachment A). So while these datasets can be beneficial to estimate land to water ratios for large areas along the coast, they are too coarse to classify habitat areas and, when overlaid on top of the 2010 imagery, showed an overestimation of areas of water, which the NWI mapping accurately depicted as wetlands.

The process of overlaying the more recent datasets such as the 2010 USGS land/water classification dataset with the NWI mapping to perform spatial updates was evaluated but ultimately ruled out because of the discrepancies in mapping resolution. In other words, overlaying the USGS data that was created at a 30-meter resolution and does not adequately depict smaller areas of wetlands and marsh with the more detailed NWI mapping would have introduced a substantial amount of error.

Selected Approach for Diversion Outfall Area

Based on the evaluation of existing spatial data (USGS mapping, NWI mapping, NRCS mapping, aerial photos, Coastwide Reference Monitoring System [CRMS] data, tidal gauge data, etc.), the predominance of wetlands plant communities, and the consistency of mapping and conditions observed during a site visit to the proposed diversion outfall area in July 2012, it was determined a Level 1 (Onsite Inspection Unnecessary) Routine Determination was suitable for the outfall area. In accordance with the 1987 Wetlands Delineation Manual, a Level 1 determination is appropriate when available spatial information and supporting documentation is available to determine the presence of wetlands and upland conditions over the entire study area. This guidance was primarily written to ensure wetland areas (waters of the U.S.) were not inadvertently determined to be uplands (that is, false negatives) that would result in unpermitted fill activities. The 1987 Delineation Manual provides flexibility for the use of professional judgment for applying Level 1 methods for expansive study areas with data to support a determination that wetland conditions are highly likely to occur. Due to the high-quality aerial photography, the prevalence of open water and marsh habitats, and the detailed hydrologic and soils mapping for the area, a Level 1 determination as described in Section D, Subsection 1 of the 1987 Manual is appropriate.

Wetland Vegetation Community Analysis

The approach selected as the best method to achieve the stated objectives for the outfall area was to utilize the USFWS NWI dataset with minor modifications to include recently constructed uplands (dredge placement) and marsh creation areas not included in the NWI base mapping. The USFWS NWI dataset delineates the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979). Certain wetland habitats are excluded from the national mapping program because of the limitations of aerial imagery as the primary data source used to detect submerged wetlands types (sea grasses, submerged aquatic vegetation found in the intertidal and subtidal zones, etc.). The mapping was produced as topical overlays using USGS topographic maps as the base and stereoscopic aerial photo interpretation to determine wetland habitat types and uplands. The hard-copy product is a composite map showing topographic and planimetric features from the USGS map base and wetlands and deepwater habitats from USFWS's topical overlay. The maps were then converted to digital files. The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of collateral data, and the amount of ground verification work conducted.

Although the base imagery used for the NWI mapping is approximately 25 years old, based on a comparison with other collected publicly available datasets and recent high resolution aerial photography, it is the best available representation of the location, type, extent, and spatial configuration of wetlands and other special aquatic habitats. While more recent datasets do provide high resolution mapping to differentiate between vegetated and non-vegetated water habitats, they do not provide the differentiation needed between wetland types. These datasets were generated from imagery classification of aerial photographs at 30-meter resolution, resulting in a substantial underestimation of vegetated areas (Figures A-1 to A-3 in Attachment A). The modified NWI dataset provides the best classification of wetlands, other special aquatic sites (vegetated shallows, tidal mudflats, etc.), non-vegetated deep water habitats (natural and excavated), and uplands. To classify various types of NWI features into the groupings mentioned above for the diversion outfall limits area, HDR wetland scientists overlaid the NWI data with the more recent 2010 satellite imagery. This aided in the process of assigning both the HDR Type classification (that is, open water, wetlands and uplands) as well as the HDR subtypes (that is, forested, scrub/shrub and emergent for wetlands and vegetated shallows, natural and excavated for open water) to specific NWI classifications.

Several modifications were made to the original NWI mapping to improve its accuracy and currentness. First, gaps in the source data were reviewed on the 2010 aerials and were determined to largely be spoil banks of excavated canals that are predominantly scrub/shrub wetlands, with the possibility of minor upland inclusions. Next, minor modifications of the NWI dataset were made to account for recent human-induced land changes not captured in the base imagery, including the addition of a developed/upland map unit category for improved areas such as the Myrtle Grove Marina, which includes constructed uplands, as well as oil and gas development areas in the marsh consisting of dredged material and infrastructure. Overall, this category accounts for a very small percentage of the study area. Additionally, the data were edited to include the 2009 development of the BA-39, a marsh restoration project occurring in the northeastern portion of the proposed MBSD diversion outfall. BA-39 involves piping renewable river sediment into the area of degraded marsh to encourage sediment accretion and the establishment of marsh vegetation. Due to the operations of BA-39, this area in the upper northeastern corner of the outfall delineation area changed from a predominately subtidal, open water, degraded habitat type to emergent marsh surrounded by a low ring levee. Finally, while the majority of the NWI mapping was well-aligned to the 2010 satellite imagery, small sections of the NWI data were slightly shifted in a certain direction. These areas were adjusted to better align with the imagery.

While the modified NWI classification does overestimate the amount of emergent marsh due to the basin-wide loss of marsh through various hydrogeologic processes (e.g., tidal erosion, relative sea level rise, lack of sediment, and tropical storm surge erosion) leading to marsh collapse, it is still the most accurate representation of the spatial extent of special aquatic sites in the study area.

Upon completion of all spatial and tabular modifications to the source NWI data, acreages were calculated for all wetland types and subtypes. These acreages are summarized by both by habitat types as well as individual wetland classifications in Tables 4 and 5 in the following results section. Based on an overall spatial and visual comparison of the older NWI classifications with the more recent 2010 satellite imagery and the USGS Land/Water Classification data, the primary change in the diversion outfall delineation area has been the conversion of intertidal estuarine emergent marsh to subtidal estuarine unconsolidated bottom (submerged) areas. HDR wetland scientists and GIS analysts estimated the loss of marsh (since the base mapping was completed in 1989) to be approximately 10 to 20 percent basin-wide, but such loss is highly variable depending on site-specific conditions and varies from approximately 5 to 50 percent. Based on a site visit to the proposed MBSD immediate outfall area of the Basin in July 2012, several of the subtidal vegetated shallow areas were observed to consist of rooted and floating submergent vegetation, dominated by Eurasian watermilfoil (*Myriophyllum spicatum*) and widgeon grass (*Ruppia maritima*). Delineation of vegetated shallows is likely underestimated given substantial changes that can occur seasonally and in response to tropical storm surges.

Hydrologic Conditions Analysis

A wetland water budget is the total inflows and outflows of water from a wetland. Coastal wetlands such as those in Barataria Basin, while also receiving direct runoff, precipitation, and groundwater inflow, are strongly influenced by surface water (permanent and seasonal) and tidal cycles, particularly in areas of subsidence or lower elevations (CPRA 2011). Sufficient hydrology for the support of wetlands in the diversion channel and outfall area include surface water and streamflow from natural and artificial bayous and canals, freshwater surface flows from the Naomi siphon, Davis Pond diversion, and the Intracoastal Waterway, groundwater discharge, and tides (CPRA 2011).

Using data from a hydrologic modeling effort completed in 2014 by HDR, an elevation analysis was performed for wetland habitat types within the diversion outfall area to perform a comparison with water level and tidal elevation ranges to observe the influence hydrology sources had on ponding, flooding, and soil saturation. Conclusions and data are presented in the results section discussed further in the document.

Continuous hydrologic water surface elevation data were also collected from the CRMS. However, only four CRMS locations were within the delineation boundary for the diversion outfall area (HUC #080903010408). Given the data from only four locations (CRMS 0225, 0276, 3601, 3617) within the 35,000-acre study area, no single water surface elevation or combination of these locations can serve as a representative value for such a dynamic landscape with fluctuating service elevations and subsidence rates. Therefore, average elevation data for the outfall study area and a comparison with tidal elevation trends was conducted to evaluate the hydrologic conditions in vegetated areas.

Soils Analysis

The predominant soils found in the NRCS soils map unit spatial files and documentation were evaluated for the diversion channel footprint and the outfall area. The NRCS National Hydric Soils List was referenced to determine which soils in the study limits were on the list and under which criteria. Site conditions were assessed based on field conditions and aerial photographs for non-forested habitats to determine whether the soils were similar to the map unit descriptions and if they included hydric conditions or smaller hydric components (that is, inclusions). Hydrology and elevation data were also used in the diversion outfall delineation area to infer that soil saturation likely occurs in the upper 12 inches of the soil profile for at least 3 weeks in the majority of the study area, with the exception of those areas built up with fill, due to tidal inundation and other sources of flow.

Results

Diversion Channel Footprint

Results of the delineation and habitat evaluation for waters of the U.S., including wetlands, are presented in Figure 1 and Table 2. Representative photographs of the proposed project site are presented later in this memorandum and following corresponding wetland determination data forms in Attachment B. The diversion channel footprint of approximately 362 acres contains forested wetlands, emergent wetlands, and open water habitats considered waters of the U.S., including canals that were excavated for agriculture, drainage, and potential access. Additionally, the study area contains numerous smaller ditches excavated for drainage associated with historical agricultural practices. Drainage channels within wetlands or that have relatively permanent water and are contiguous or adjacent to traditional navigable waters (TNWs) are generally considered jurisdictional waters of the U.S., whereas other excavated ditches and an excavated pond that are not connected to other tributaries or not adjacent to waters of the U.S. are typically considered non-jurisdictional. Both circumstances occur within different portions of the diversion channel footprint.

Table 2. Aquatic habitats considered waters of the U.S. in the diversion channel footprint

Type	Acres
Forested wetland	10.0
Emergent wetland	85.2
Open water (canal)	7.3
Total	**102.5**

At the northeastern portion of the diversion channel footprint, forested wetlands occur in the batture area between the MR&T levee and the Mississippi River. The entire area appears to be seasonally flooded but well-drained due to slopes. Primary hydrology indicators present are drift deposits and inundation that can be seen on aerial photography. Supportive dominant vegetation in the overstory is primarily obligate (OBL) and facultative-wet (FACW) species including black willow (*Salix nigra*), with Chinese tallow (*Triadica sebifera*), swamp privet (*Forestiera acuminata*), smartweeds (*Polygonum* spp.), coco-yam (*Colocasia esculenta*), and peppervine (*Ampelopsis arborea*). This habitat type appears to consist of early successional vegetation, including exotic and invasive species (Chinese tallow and coco-yam).

Within the proposed footprint from the MR&T levee to Belle Chasse Highway (LA 23), a mixture of uplands and forested wetlands occurs. Within this area, three forested wetland depressions occur that appear to be seasonally inundated within their entire extent. The remaining area surrounding the wetland depressions is slightly higher uplands. For forested wetland areas, primary hydrology indicators are water marks, water-stained leaves, and inundation seen on aerial photography. These forested wetlands areas are dominated by OBL species but consist of boxelder (*Acer negundo*), Chinese tallow (exotic), red maple (*Acer rubrum*), rough-leaf dogwood (*Cornus drummondii*), and peppervine. Other non-dominant woody species present include deciduous holly (*Ilex decidua*), water oak (*Quercus nigra*), and black willow. This vegetation composition is characteristic of regrowth colonizing and non-native species rather than true bottomland hardwood forest (see data forms in Attachment B for site-specific hydrology indicators and dominant vegetation). Between LA 23 and the back levee adjacent to marsh, the proposed footprint contains pasture and numerous drainage ditches excavated for and remaining from past agricultural practices. Near LA 23 a small pond also exists that was likely excavated for livestock watering and borrow material. Three excavated canals cross the area that carry drainage to pumps at the Wilkinson Canal near Myrtle Grove to the southeast. The current use of the pasture habitat in the proposed footprint appears to be cattle grazing. To the southwest, closest to the marsh, the pasture habitat transitions from uplands primarily vegetated with bermudagrass (*Cynodon dactylon*) to wetland increasingly dominated by smartweed and cattail (*Typha* sp.). This emergent wetland appears to be the result of inundation/saturation resulting from subsidence. In this wetland, given the problematic vegetation and hydrology indicators from the recent Hurricane Isaac (late August 2012), the wetland boundary was estimated using transects and reviewing recent aerial photography.

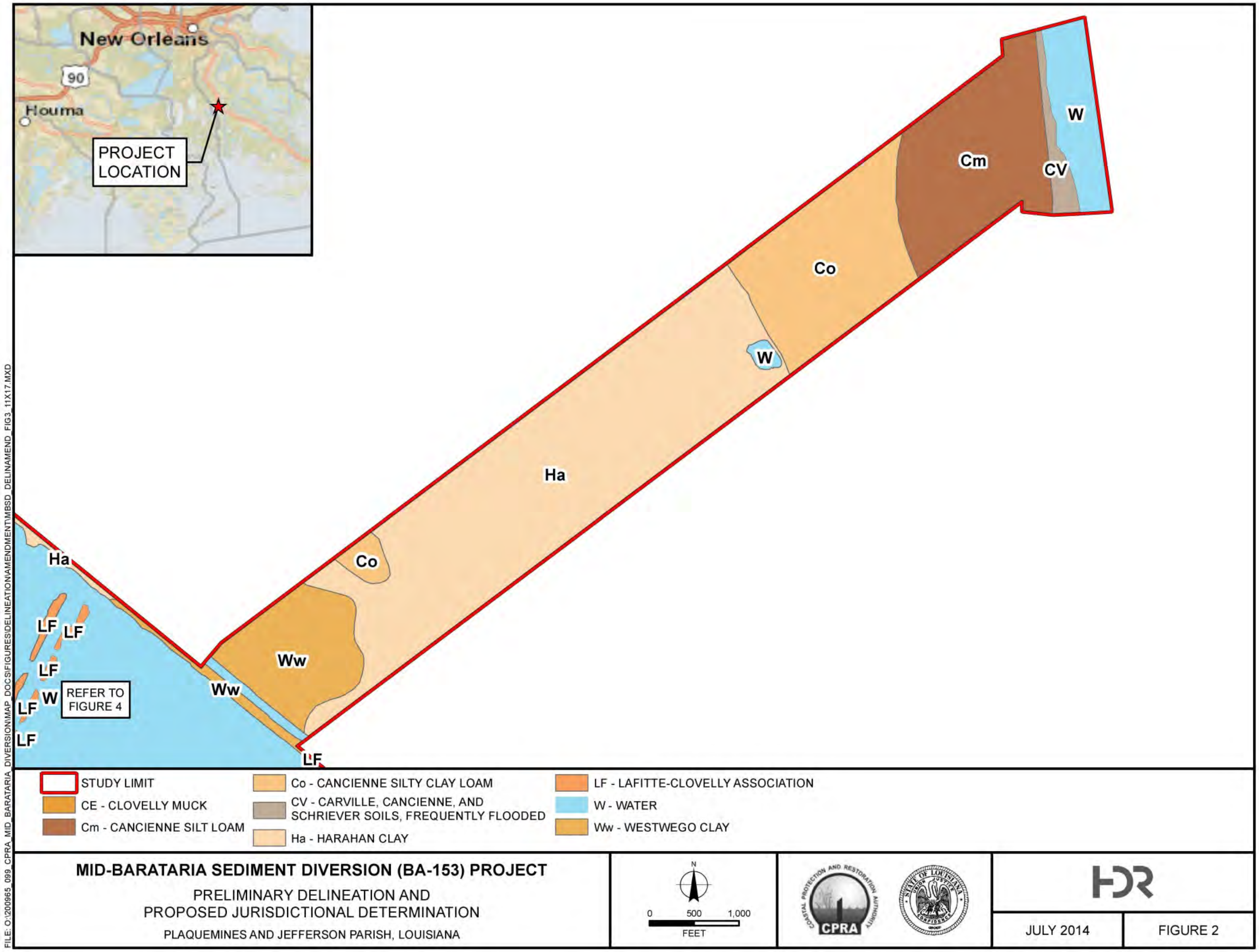
The soils within the diversion channel footprint limits are heavily modified by past agricultural, flood control, and transportation improvements. However, several of the soils within the delineation area exhibit frequently flooded characteristics or are positioned in depressional landscape areas due to the seasonal high water table and high annual precipitation and are listed on the current NRCS Hydric Soils List. The soil series and map units located within the diversion channel footprint include those listed in Table 3 with a description of each following below. Soil series descriptions and map units located within the MBSD footprint are displayed in Figure 2. Some soils, such as Cancienne Silty Clay Loam, include associated soil components or “inclusions” which occur within depressional areas and form hydric soil conditions when seasonal inundation or saturated conditions occur in the upper soil profile.

Table 3. Soil map units located within diversion channel footprint

Soil map unit	Landscape position	Hydric soil list/Component
Clovelly Muck	Marshes	Yes/Hydric
Cancienne Silt Loam	Natural levees	Yes/Hydric inclusions of Gramercy soils (10%)
Cancienne Silty Clay Loam	Natural levees	Yes/Hydric inclusions of Gramercy soils (10%)
Carville, Cancienne, & Schriever Soils, frequently flooded	Batture, natural levees, depressions and backswamps	Yes/Hydric
Harahan Clay	Backswamps	Yes/Hydric
Westwego Clay	Backswamps	Yes/Hydric

The Clovelly series consists of very deep, very poorly drained, very slowly permeable soils. These soils formed in moderately thick accumulations of herbaceous organic material overlying very fluid clayey alluvial sediments. These soils are on broad coastal marshes that are nearly continuously flooded with brackish water.

Figure 2. Preliminary delineation and proposed jurisdictional determination – soils in MBSD footprint



The Cancienne series consists of very deep, level to gently undulating, somewhat poorly drained mineral soils that are moderately slowly permeable. These soils formed in loamy and clayey alluvium. They are on high and intermediate positions on natural levees and deltaic fans of the Mississippi River and its distributaries. Cancienne series can contain hydric inclusions of Gramercy soils which do occur in the eastern portion of the diversion channel footprint between LA 23 and the MR&T Levee. The Gramercy series consists of fine, very deep, poorly drained, very slowly permeable soils that formed in clayey over fine-silty alluvium. These soils are on alluvial flats and on the lower parts of natural levees on the alluvial plain of the Mississippi River and its distributaries.

The Carville series consists of coarse-silty, very deep, somewhat poorly drained, moderately permeable soils that formed in recent loamy alluvium. These soils are on nearly level to very gently sloping natural levee positions on flood plains, mainly along the Mississippi River and its distributaries.

The Harahan series consist of very deep, poorly drained, very slowly permeable soils. They formed in moderately thick firm clayey alluvium overlying fluid clayey sediments. These soils are on broad backswamp positions on the lower Mississippi River flood plain.

The Schriever series consists of very fine, deep, poorly drained, very slowly permeable soils that formed in clayey alluvium. These soils are on the lower parts of natural levees and in backswamp positions on the lower Mississippi River alluvial plain.

The Westwego series consist of very fine, deep, poorly drained, very slowly permeable soils. They formed in semifluid clayey alluvium and organic material that dried and shrank irreversibly in the upper part as the result of artificial drainage. These soils are on broad, drained former swamps along the lower Mississippi River and its distributaries.

Diversion Outfall Area

Based on the analysis of land cover and vegetation datasets and aerial imagery, the 35,000-acre diversion outfall area studied is a mosaic of coastal habitats including palustrine wetlands; estuarine/palustrine, subtidal, and intertidal wetlands; scrub/shrub wetlands, and forested wetlands. Upland areas are mainly found near developed industrial and residential areas along excavated canals, but there is the potential for a minor component (<1 percent) of upland inclusions not readily observable using the remote sensing (Level 1) methods. Results of the delineation and habitat evaluation for waters of the U.S., including wetlands, are presented in Figure 3 (Sheets 1 to 4) and Table 4. The classifications used in Table 4 are summary categories of habitats typically depicted in delineations of waters of the U.S.

As described above, the data presented below are primarily based on detailed NWI mapping with minor modifications and likely overestimate the current extent of emergent marsh habitat types while underestimating open water (natural) and vegetated shallows. Table 5 represents the NWI habitat classification codes used to sub-categorize existing marsh types in the area of the diversion outfall.

Table 4. Aquatic habitats considered waters of the U.S. in the proposed diversion outfall area (HUC #080903010408)

Type	Acres
Waters of the U.S.	
Open water – natural	8,173
Open water – artificial (excavated)	2,175
Wetlands – vegetated shallows	1,849
Wetlands – emergent marsh	20,489
Wetlands – scrub/shrub	1,669
Wetlands – forested	532
Subtotal – waters of the U.S.	**34,887**
Uplands/dredge disposal	**189**
Total	**35,076**

Figure 3. Preliminary delineation and proposed jurisdictional determination – waters of the U.S. in outfall area (Sheet 1)

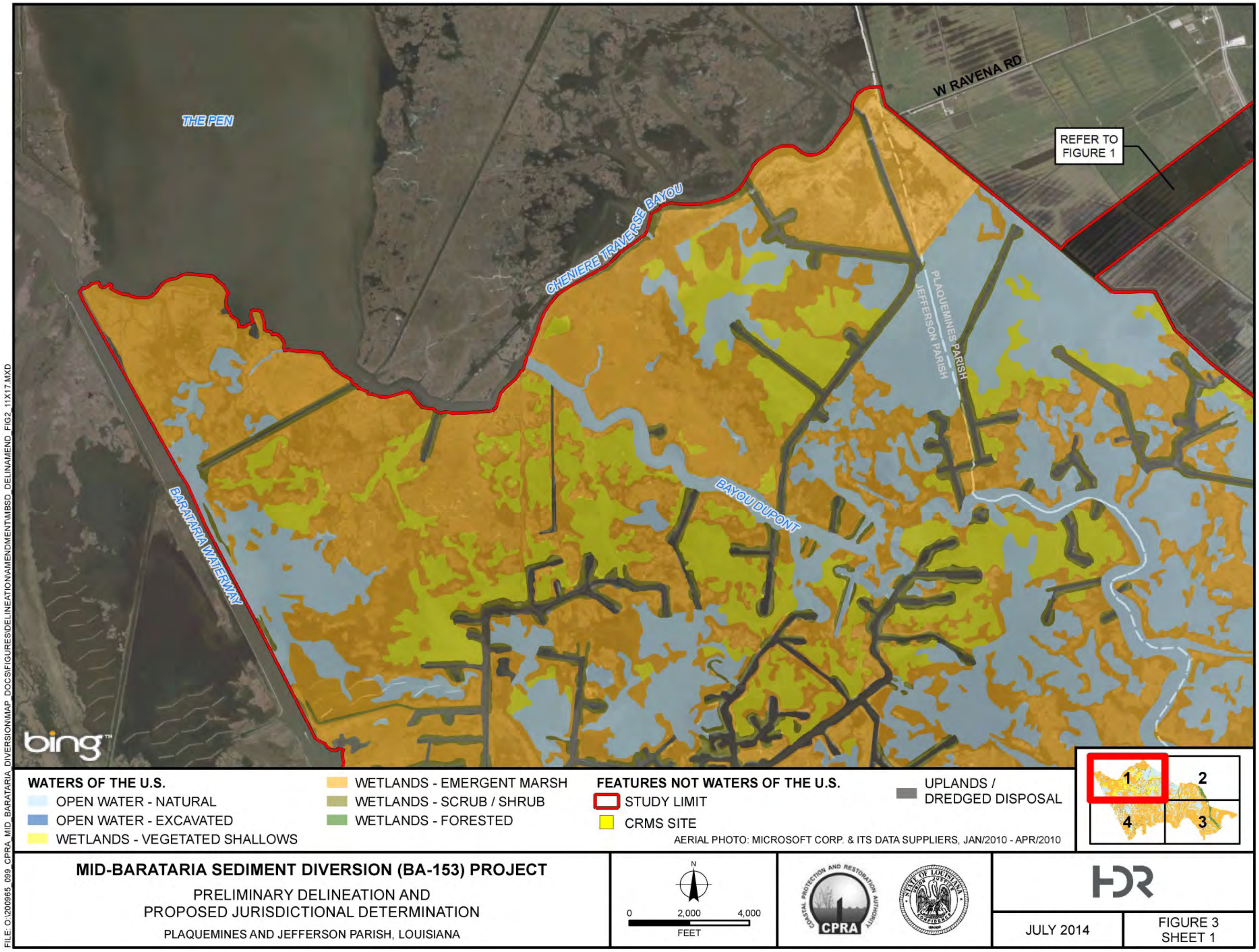


Figure 3. Preliminary delineation and proposed jurisdictional determination – waters of the U.S. in outfall area (Sheet 2)

WATERS OF THE U.S.
- OPEN WATER - NATURAL
- OPEN WATER - EXCAVATED
- WETLANDS - VEGETATED SHALLOWS
- WETLANDS - EMERGENT MARSH
- WETLANDS - SCRUB / SHRUB
- WETLANDS - FORESTED

FEATURES NOT WATERS OF THE U.S.
- STUDY LIMIT
- CRMS SITE
- UPLANDS / DREDGED DISPOSAL

AERIAL PHOTO: MICROSOFT CORP. & ITS DATA SUPPLIERS, JAN/2010 - APR/2010

MID-BARATARIA SEDIMENT DIVERSION (BA-153) PROJECT
PRELIMINARY DELINEATION AND
PROPOSED JURISDICTIONAL DETERMINATION
PLAQUEMINES AND JEFFERSON PARISH, LOUISIANA

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JULY 2014

FIGURE 3
SHEET 2

Figure 3. Preliminary delineation and proposed jurisdictional determination – waters of the U.S. in outfall area (Sheet 3)

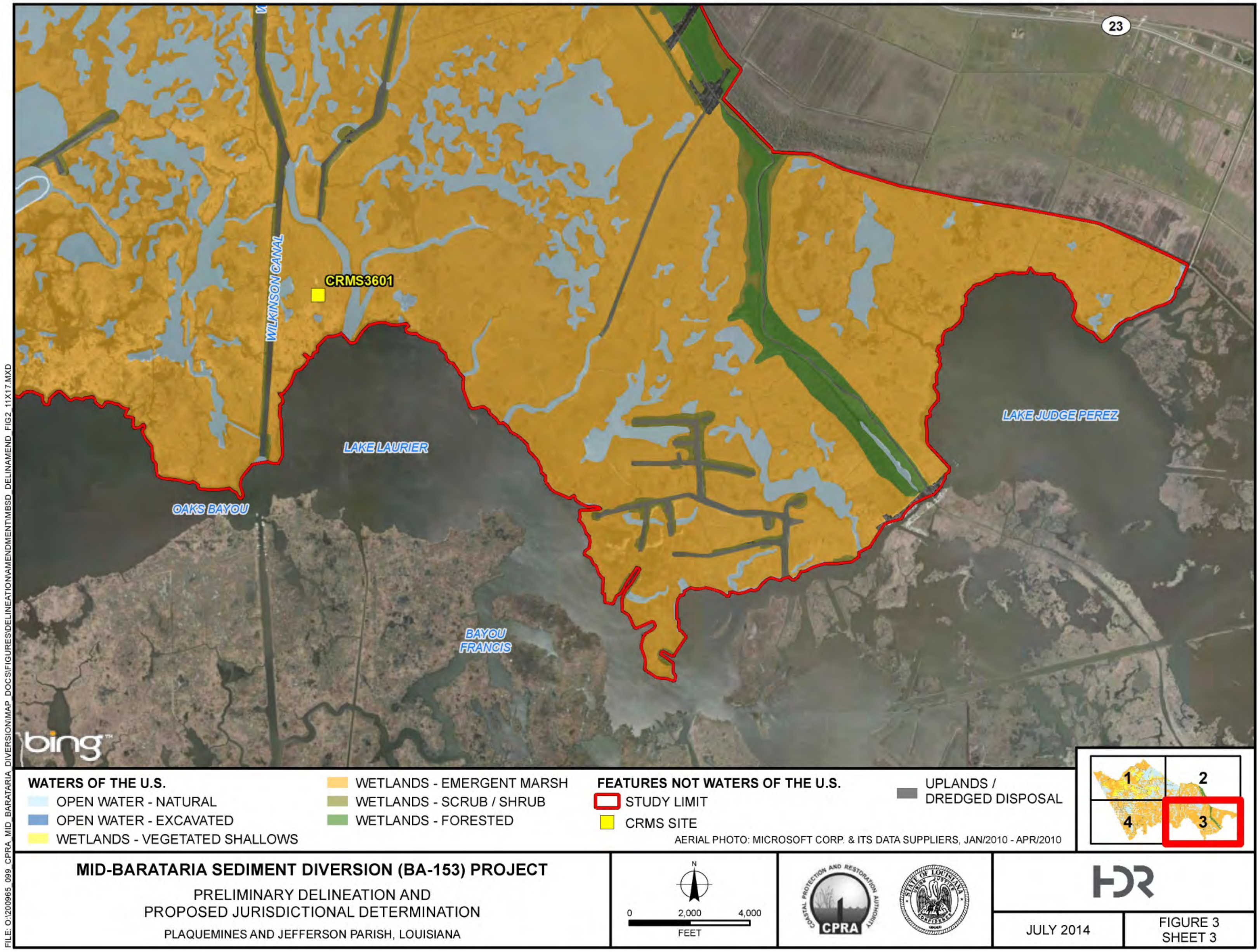


Figure 3. Preliminary delineation and proposed jurisdictional determination – waters of the U.S. in outfall area (Sheet 4)

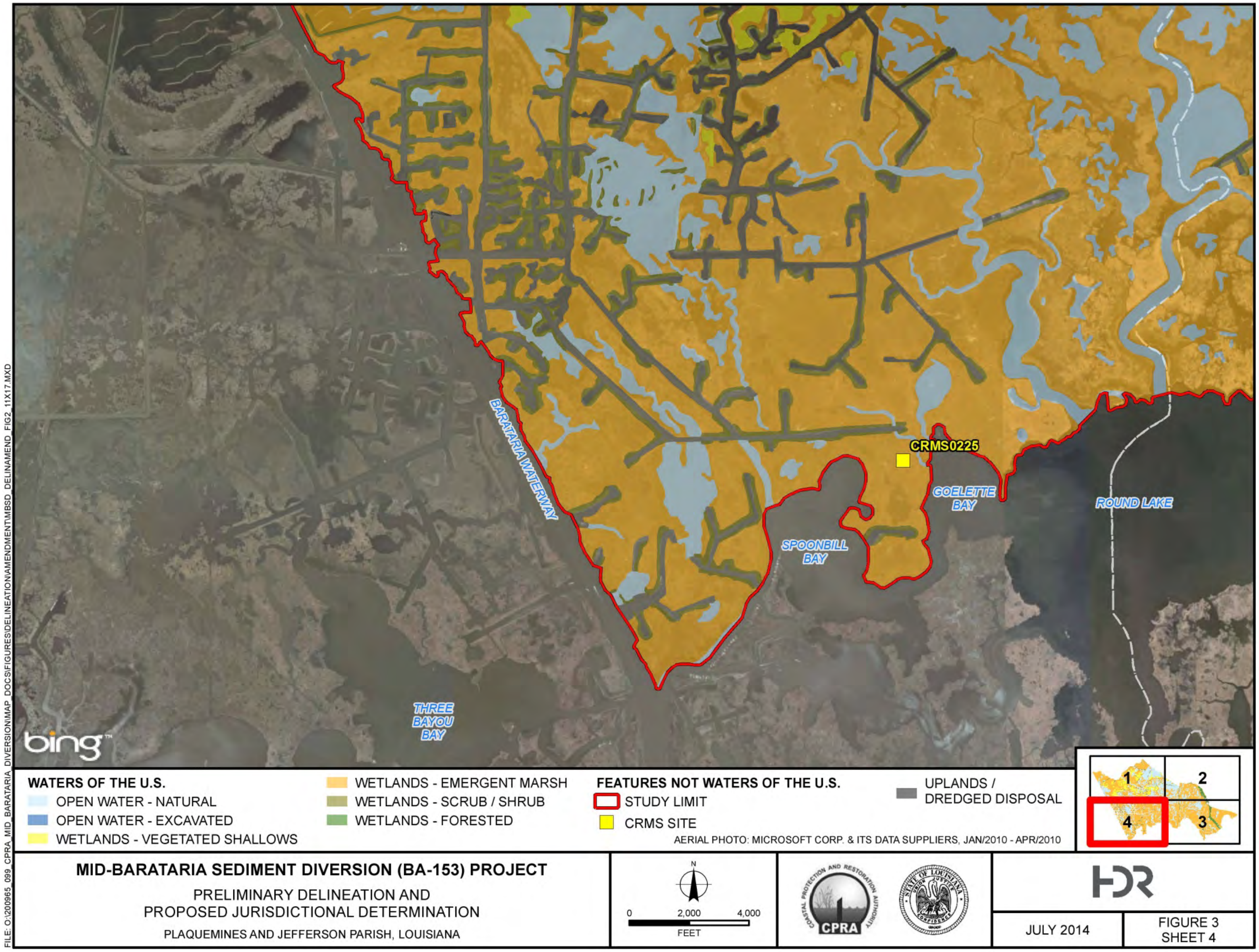


Table 5. National Wetland Inventory classifications and current habitat types in the diversion outfall study area (HUC #080903010408)

NWI code	NWI description	Updated habitat/ Land use types	Water of the U.S.
E1AB4L5	Estuarine, Subtidal, Aquatic Bed, Floating Vascular, Subtidal, Mesohaline	Emergent Marsh Wetland; Vegetated Shallows	Yes
E1AB5L5	Estuarine, Subtidal, Aquatic Bed, Unknown Submergent, Subtidal, Mesohaline	Vegetated Shallows	Yes
E1UBL	Estuarine, Subtidal, Unconsolidated Bottom, Subtidal	Open Water (natural and excavated)	Yes
E1UBL5	Estuarine, Subtidal, Unconsolidated Bottom, Subtidal, Mesohaline	Open Water (natural)	Yes
E2ABL	Estuarine, Intertidal, Aquatic Bed, Subtidal	Vegetated Shallows	Yes
E2EM1N5	Estuarine, Intertidal, Emergent, Persistent, Regularly Flooded, Mesohaline	Emergent Marsh Wetland	Yes
E2EM1P5	Estuarine, Intertidal, Emergent, Persistent, Irregularly Flooded, Mesohaline	Emergent Marsh Wetland	Yes
E2EM1Pd	Estuarine, Intertidal, Emergent, Persistent, Irregularly Flooded, Partially Drained/Ditched	Emergent Marsh Wetland	Yes
E2EM1Pd*	Estuarine, Intertidal, Emergent, Persistent, Irregularly Flooded, Partially Drained/Ditched	Uplands / Dredged Disposal	No
E2EMPh	Estuarine, Intertidal, Emergent, Irregularly Flooded, Diked/Impounded	Emergent Marsh Wetland	Yes
E2SS1P	Estuarine, Intertidal, Scrub-Shrub, Broad-Leaved Deciduous, Irregularly Flooded	Scrub/Shrub Wetland	Yes
E2SS1P5	Estuarine, Intertidal, Scrub-Shrub, Broad-Leaved Deciduous, Irregularly Flooded, Mesohaline	Scrub/Shrub Wetland	Yes
E2SSs	Scrub/Shrub	Scrub/Shrub Wetland	Yes
E2USN5	Estuarine, Intertidal, Unconsolidated Shore, Regularly Flooded, Mesohaline	Emergent Marsh Wetland; Vegetated Shallows	Yes
PEM1Cdh	Palustrine, Emergent, Persistent, Seasonally Flooded, Partially Drained/Ditched, Diked/Impounded	Emergent Marsh Wetland	Yes
PEM1Cdh*	Palustrine, Emergent, Persistent, Seasonally Flooded, Partially Drained/Ditched, Diked/Impounded	Uplands / Dredged Disposal	No
PEM1R	Palustrine, Emergent, Persistent, Seasonal-Tidal	Emergent Marsh Wetland	Yes
PEM1Rd	Palustrine, Emergent, Persistent, Seasonal-Tidal, Partially Drained/Ditched	Emergent Marsh Wetland	Yes
PEM1Rd*	Palustrine, Emergent, Persistent, Seasonal-Tidal, Partially Drained/Ditched	Uplands / Dredged Disposal	No
PEM1T	Palustrine, Emergent, Persistent, Semipermanent-Tidal	Emergent Marsh Wetland	Yes

Table 5. National Wetland Inventory classifications and current habitat types in the diversion outfall study area (HUC #080903010408)

NWI code	NWI description	Updated habitat/ Land use types	Water of the U.S.
PFO1/3R	Palustrine, Forested, Broad-Leaved Deciduous/Broad-Leaved Evergreen, Seasonal-Tidal	Forested Wetlands	Yes
PFO1Ad	Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded, Partially Drained/Ditched	Forested Wetlands	Yes
PFO1Ad*	Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded, Partially Drained/Ditched	Uplands / Dredged Disposal	No
PFO1Cd	Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched	Forested Wetlands	Yes
PFO1R	Palustrine, Forested, Broad-Leaved Deciduous, Seasonal-Tidal	Forested Wetlands	Yes
PFO1S	Palustrine, Forested, Broad-Leaved Deciduous, Temporary-Tidal	Forested Wetlands	Yes
PSS1/3R	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous/Broad-Leaved Evergreen, Seasonal-Tidal	Forested Wetlands	Yes
PSS1Cd	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched	Scrub/Shrub Wetland	Yes
PSS1Cd*	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched	Uplands / Dredged Disposal	No
PSS1Cdh	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched, Diked/Impounded	Scrub/Shrub Wetland	Yes
PSS1R	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonal-Tidal	Scrub/Shrub Wetland	Yes
PSS1T	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Semipermanent-Tidal	Scrub/Shrub Wetland	Yes
PUBH	Palustrine, Unconsolidated Bottom, Permanently Flooded	Open Water (excavated)	Yes
PUBHx	Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated	Open Water (excavated)	Yes
R1UBV	Riverine, Tidal, Unconsolidated Bottom, Permanent-Tidal	Open Water (natural)	Yes
n/a	Developed Land	Uplands / Dredged Disposal	No

Note: NWI categories classified as uplands/dredged disposal areas are based on recent (2010–2013) aerial photography or land use mapping comprising approximately 189 acres (0.5%) of the outfall study area.

Based on a site visit in July 2012 and available vegetation data in the CRMS for sites within the outfall study area, vegetative shallows are dominated by Eurasian watermoil and widgeon grass. Emergent marsh habitats are dominated by salt meadow cordgrass (*Spartina patens*), smooth cordgrass (*S. alterniflora*), and chairmaker's bulrush (*Schoenoplectus americanus*), with co-dominant species including needlegrass rush (*Juncus roemerianus*) and saltgrass (*Distichlis spicata*).

Dominant species occurring on the spoil banks parallel to the excavated channels include saltwater false willow (*Baccharis angustifolia*), and Chinese tallow, with understory herbaceous subdominants including saltgrass (*Distichlis spicata*) and saltmarsh morning glory (*Ipomoea sagittata*).

Hydrologic Conditions

In an effort to evaluate hydrologic influence to wetlands in the outfall area, baseline information was used to extract elevations for existing marsh types. Performing a GIS analysis, the latest surface elevation model from July 2014 was used to generate representative sampling locations at 20-foot increments across the delineation study area. Each data point was assigned an elevation value corresponding to that location from the model as well as corresponding marsh type information. Over 3 million individual sampling points were generated from this exercise and were subsequently summarized to obtain an average elevation (in feet) for each marsh type. The ranges derived from these values provide estimated elevations that can be used, in combination with tidal range information, to evaluate hydrologic conditions. Areas with wetland hydrology indicators in the project ecoregion would be inundated or saturated within the upper 12 inches of the soil surface for a duration of at least 3 weeks annually. Seasonally, tides tend to be highest in late summer through mid-fall (August to November) and lowest in the winter and early spring (December to March) (CPRA 2011). With typical tidal ranges of approximately 0.25 to 2.5 mean sea level (msl) within the outfall area, these habitats experience inundation or saturation for prolonged periods with a high probability of producing anaerobic soil conditions needed for hydric soil conditions to develop. The average elevations in the wetland and vegetated shallows range from -2 to 1.7 feet msl, while average depths in the open water and excavated areas are approximately -3 to -8 msl. Based on the evaluation of mean high tide in the project outfall area and the average elevations, there is evidence to indicate the majority of the outfall study limits meet the wetland hydrologic criteria. This is consistent with on-site conditions observed by the project team, NRCS soil mapping, USGS mapping, and NWI mapping.

Soils Conditions

The soils in the Louisiana Coastal Zone formed in either alluvial sediments or loess, and may have many accumulations of organic matter in the upper part. Deltaic processes have played a significant role in the types of soils present in the study area. The types of soils present today in this area are characterized by the depositional environments associated with the natural episodic deltaic cycle (CPRA 2011). Soils are a significant resource and a critical element of coastal habitat which supports vegetation growth and open water benthic productivity (CPRA 2011).

A desktop query was used to identify soils in the diversion outfall area. Several are listed as current NRCS Hydric Soils and are included in Table 6 with a description of each following below. Soil series descriptions and map units located within the MBSD outfall area are displayed in Figure 4 (Sheets 1 to 4).

Table 6. Soil map units located within study area delineation limits

Soil map unit	Landscape position	Hydric soil list/Component
Clovelly Muck	Marshes	Yes/Hydric
Cancienne Silty Clay Loam	Natural levees	Yes/Hydric inclusions of Gramercy soils (10%)
Gentilly Muck	Marshes	Yes/Hydric
Harahan Clay	Backswamps	Yes/Hydric
Lafitte – Clovelly Association	Marshes	Yes/Hydric
Lafitte Muck	Marshes	Yes/Hydric
Schriever Clay	Backswamps	Yes/Hydric
Westwego Clay	Backswamps	Yes/Hydric

The Clovelly series consists of very deep, very poorly drained, very slowly permeable soils. These soils formed in moderately thick accumulations of herbaceous organic material overlying very fluid clayey alluvial sediments. These soils are on broad coastal marshes that are nearly continuously flooded with brackish water.

The Cancienne series consists of very deep, level to gently undulating, somewhat poorly drained mineral soils that are moderately slowly permeable. These soils formed in loamy and clayey alluvium. They are on high and intermediate positions on natural levees and deltaic fans of the Mississippi River and its distributaries

The Gentilly series consists of very deep, very poorly drained, very slowly permeable slightly to moderately saline soils. These soils formed in thin accumulations of herbaceous plant remains and semifluid clayey alluvium over consolidated clayey deposits.

The Harahan series consist of very deep, poorly drained, very slowly permeable soils. They formed in moderately thick firm clayey alluvium overlying fluid clayey sediments. These soils are on broad backswamp positions on the lower Mississippi River flood plain.

Lafitte-Clovelly soils are level, poorly drained soils that have a thick or moderately thick mucky surface layer and clayey underlying material in brackish marshes. The Lafitte series consists of very deep, very poorly drained, moderately rapidly permeable organic soils formed in herbaceous plant remains over mineral sediments in intermediate and brackish marshes in the extreme lower Mississippi River Delta and coastal areas.

The Schriever series consists of very fine, deep, poorly drained, very slowly permeable soils that formed in clayey alluvium. These soils are on the lower parts of natural levees and in backswamp positions on the lower Mississippi River alluvial plain.

The Westwego series consist of very fine, deep, poorly drained, very slowly permeable soils. They formed in semifluid clayey alluvium and organic material that dried and shrank irreversibly in the upper part as the result of artificial drainage. These soils are on broad, drained former swamps along the lower Mississippi River and its distributaries.

Figure 4. Preliminary delineation and proposed jurisdictional determination – soils in outfall area (Sheet 1)

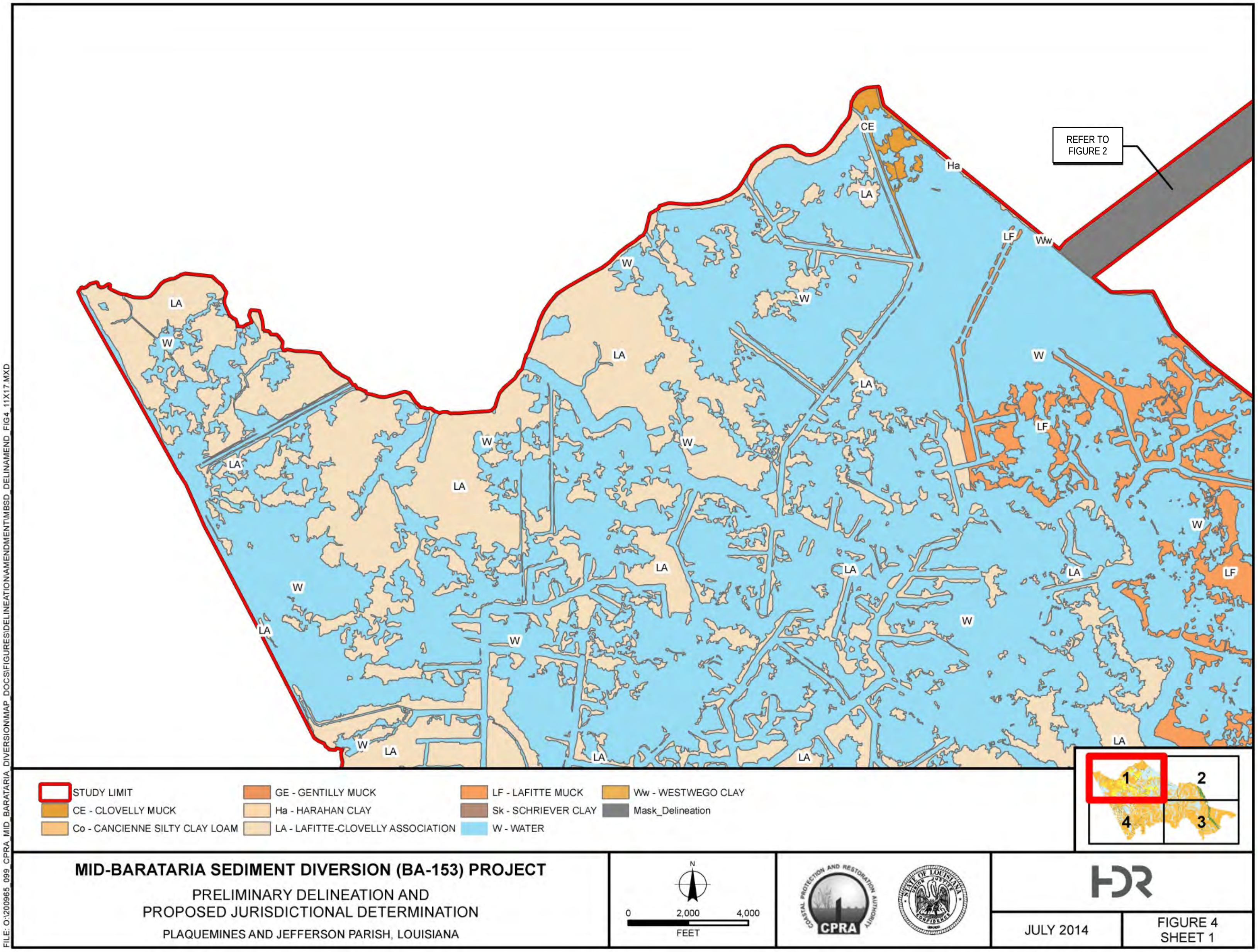


Figure 4. Preliminary delineation and proposed jurisdictional determination – soils in outfall area (Sheet 2)

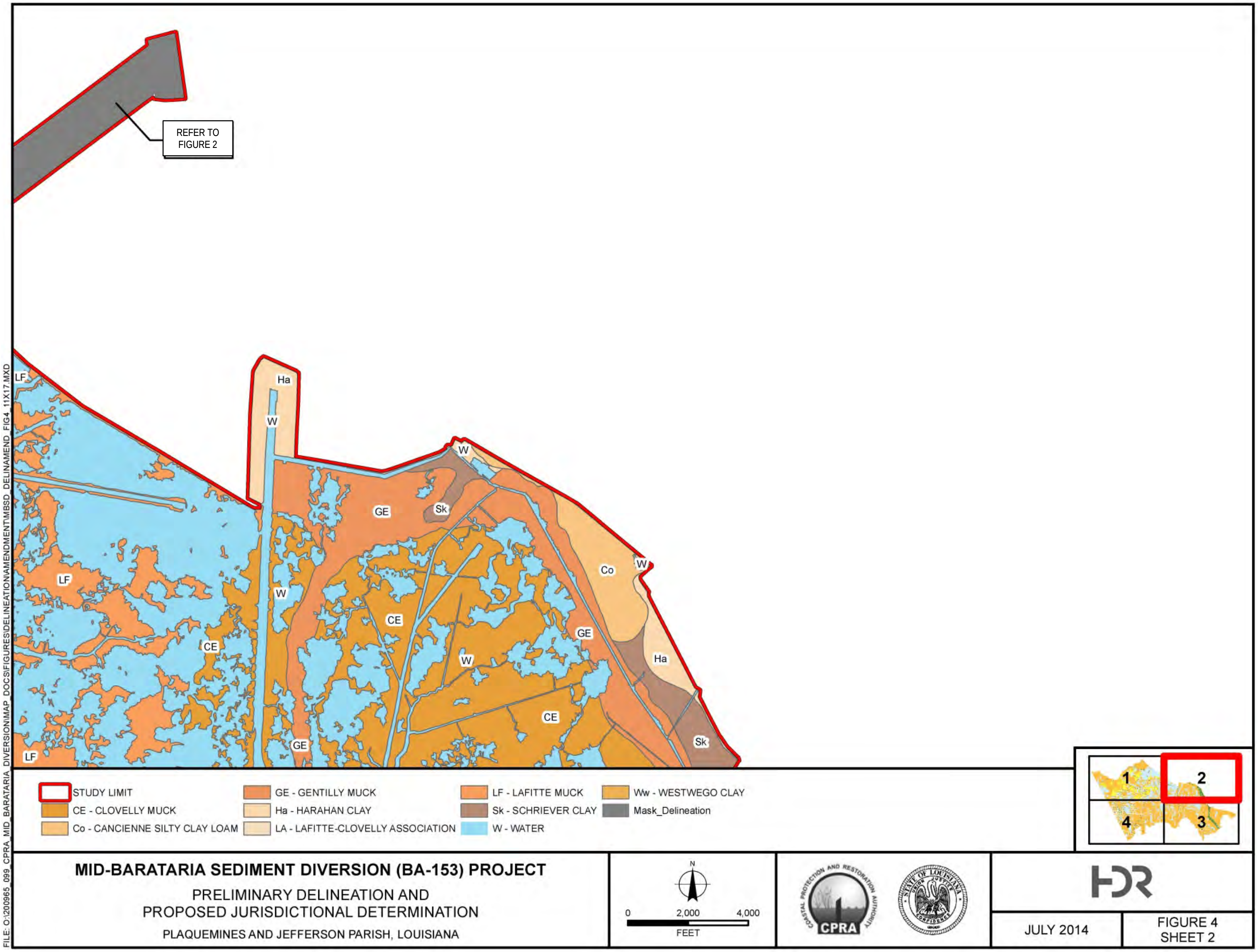


Figure 4. Preliminary delineation and proposed jurisdictional determination – soils in outfall area (Sheet 3)

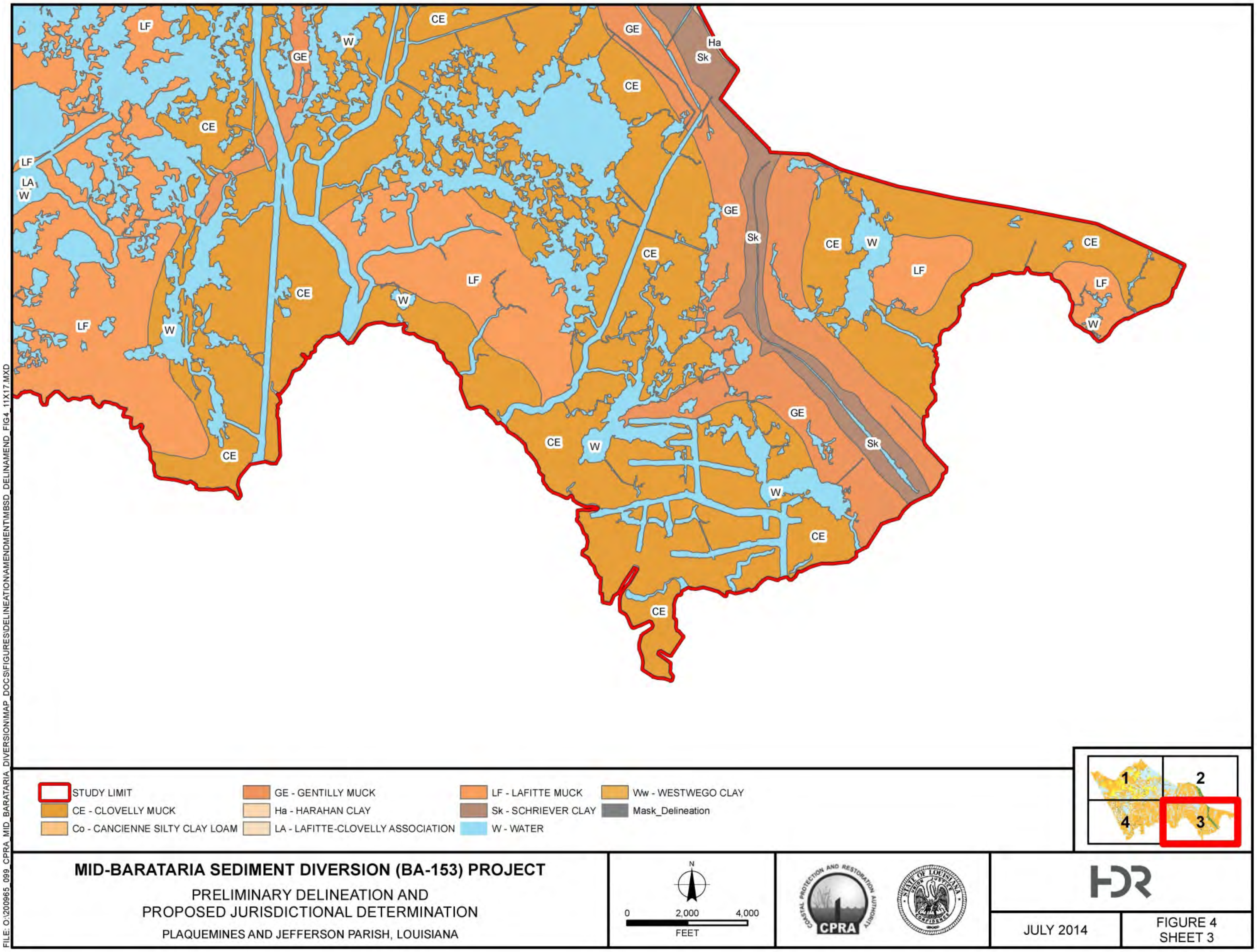
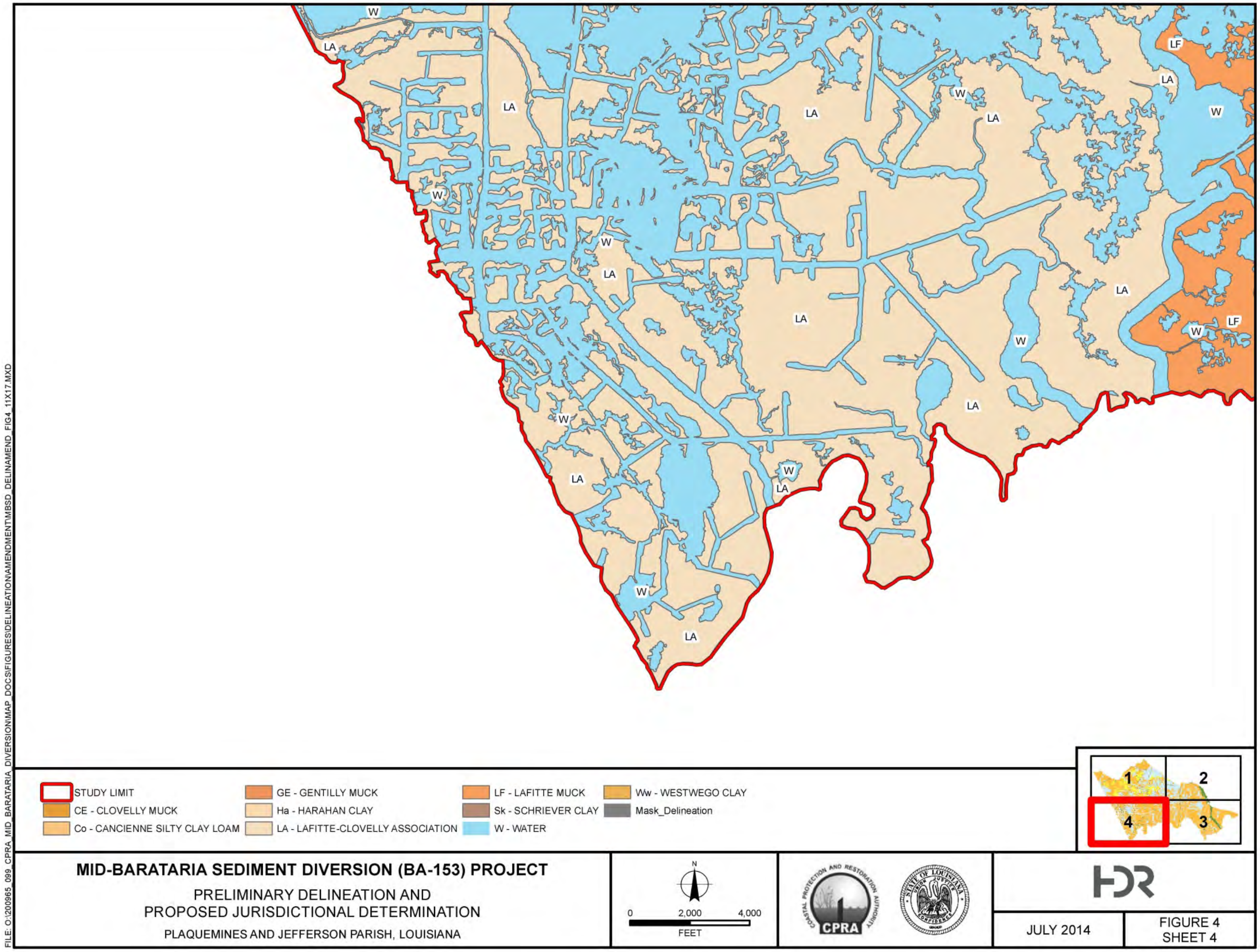


Figure 4. Preliminary delineation and proposed jurisdictional determination – soils in outfall area (Sheet 4)



Discussion

The proposed MBSD project footprint area should be monitored during the continued planning and design phases of the project to evaluate changes in infrastructure or existing drainage systems that could result in changes in the extent or type of wetlands present. Additionally, if the proposed footprint or location changes, additional delineation efforts may be required if the new right-of-way or construction servitude is not included in previously surveyed areas, or if more than 5 years have passed since the date of USACE verification.

With regard to the delineation of wetlands in the MBSD outfall area, careful evaluation of multiple spatial datasets and comparison with recent aerial photography indicate the USFWS NWI mapping provides the most accurate depiction of the types and spatial configuration of waters of the U.S. and special aquatic sites, including wetlands, in the outfall area. While other databases provide valuable information of trends (marsh loss, salinity trends, relative percentage of vegetated cover, etc.), none of the other datasets are useful for identifying the types and spatial extent of wetlands and special aquatic sites in the Barataria Basin necessary for the delineation and proposed jurisdictional determination. Also, trying to generate a combined GIS map to represent the current extent of submerged types while maintaining the NWI vegetated wetland classifications is not practicable due to the minor differences in resolution and spatial georectification between the datasets. However, as described above, given the age of the aerial imagery used as the base map for the NWI data and the continued degradation and dynamics of the system, it is likely that it overestimates the current extent of marsh habitats in the basin. Therefore, HDR recommends continued evaluation of new spatial data and mapping sources to further refine this evaluation. USGS is currently developing a 2013 land/water classification spatial database. When available, this dataset should be evaluated to determine whether the vegetated and submerged habitat areas are more accurately captured within the outfall area than under the existing mapping. If so, the 2013 data could be used to perform a GIS analysis of the previous marsh areas that have collapsed and converted to a submerged habitat type (vegetated shallows or open water).

Representative Site Photographs: Diversion Channel Footprint

1. Top of MR&T Levee. Batture area is presented on the left toe of levee and forested habitat on the right.

2. Forested wetland habitat dominated by black willow in the batture adjacent to the Mississippi River.

3. Forested wetland depression in the area between MR&T levee and LA 23.

4. Forested upland habitat in the area between MR&T levee and LA 23.

5. Upland pasture habitat with excavated pond in the background, facing southwest, from LA 23.

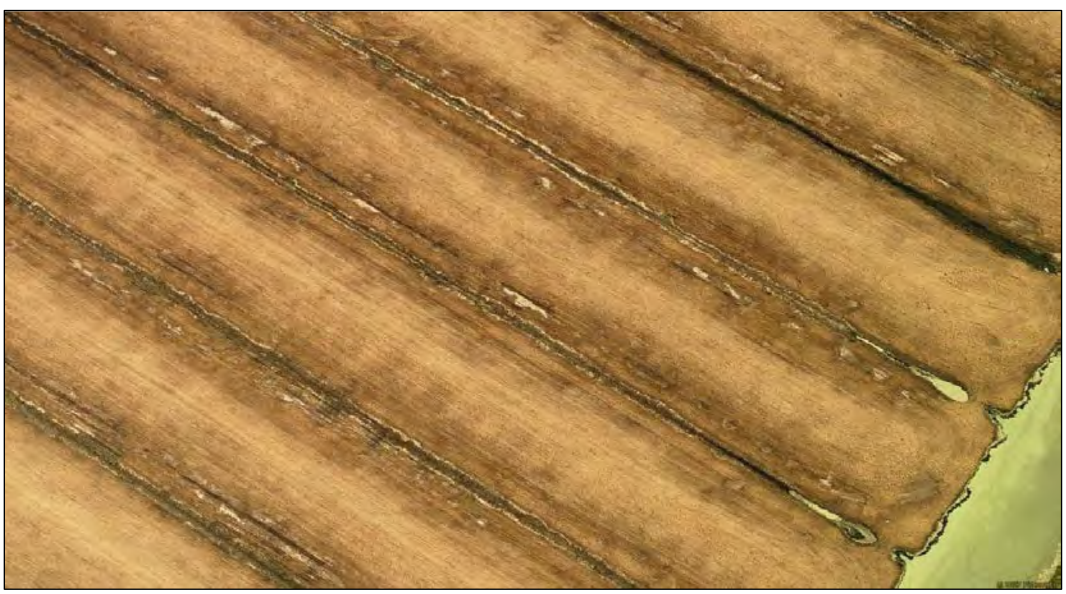
6. Pre-Isaac (July 2012 site visit): Canal and subsiding vegetation on the protected side of the Non-Federal Levee (NFL, back levee) on the background (right side).

7. Post-Isaac (2012): Emergent wetland near canal on protected side of NFL (back levee) with flooding impacts from Hurricane Isaac.

8. Aerial image of pasture (partially wetland) southwest of LA 23, with cattle and drainage ditches visible.

9. Post-Isaac (2012): Canal transecting the study area between pasture with emergent wetland to the south, nearest the NFL (back levee).

10. Aerial image of emergent wetland in subsided pasture and drainage channels near west canal by the NFL (back levee) at the southwestern end of the proposed diversion channel footprint.



11. Post-Isaac (2012): Emergent wetland in pasture with wetland conditions attributable to subsidence (note the vegetation community impacts resulting from saltwater flooding during Hurricane Isaac).

Representative Aerial Photographs: Outfall Area

12. Example of broken emergent marsh habitat near the proposed outfall with a mosaic of natural open water, submerged areas (previously marsh), excavated canals, and scrub/shrub (spoil banks).

13. Pre-Isaac (summer 2012): Emergent marsh habitat on southern edge of BA-39 marsh restoration area, submerged vegetated shallows to the left, and open water in background.

14. Previous emergent marsh habitat in north-central portion of outfall area with only remnant marsh areas, submerged areas (previously marsh), and scrub/shrub (spoil banks) along oil and gas canals.

15. Pre-Isaac (summer 2012): Natural open water area with the remnants of field structures.

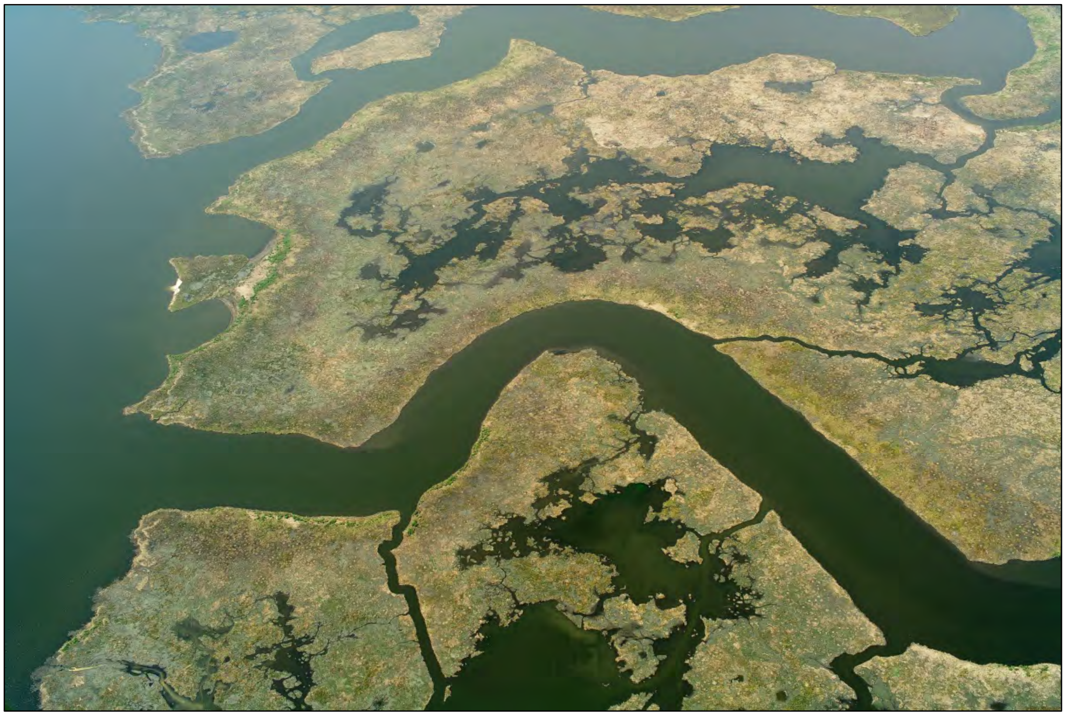
16. Pre-Isaac (summer 2012): Scrub shrub habitats on low spoil berms from excavated oil canal excavation. Typical elevation is within 12 inches of mean high tide, allowing establishment of marsh on lower intertidal elevations and shrubs in intermittently and seasonally flooded areas.

17. Emergent marsh habitat near Bayou Dupont in outfall area.

18. Emergent marsh habitat in central Barataria Basin with marsh collapse in background; natural bayous and excavated canals with scrub/shrub (bright green vegetation) along spoil banks; lighter brown vegetation in lower right quadrant of the photograph is predominantly *Spartina patens*.

19. Pre-Isaac (July 2012): Open water in collapsed marsh area consisting of both vegetated shallows and deep water habitats.

20. Emergent marsh habitat near the confluence of Bayou Dupont and Round Lake, presumably protected by natural sand deposition ridges, with marsh collapse beginning in the interior likely because of effects of saltwater intrusion and tidal erosion in areas with smaller particle and organic soils.



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Attachment A. Dataset Comparison Figures

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Figure A-1. 2010 USGS Land/Water Classification Dataset compared with 2010 aerial imagery (Microsoft Corp. and its data suppliers). Visual estimate of 25 to 30 percent of emergent marsh misclassified as open water.

Figure A-2. 2011 USGS National Land Classification Dataset compared with 2010 aerial imagery (Microsoft Corp. and its data suppliers). Visual estimate of 15 to 20 percent of emergent marsh misclassified as open water.

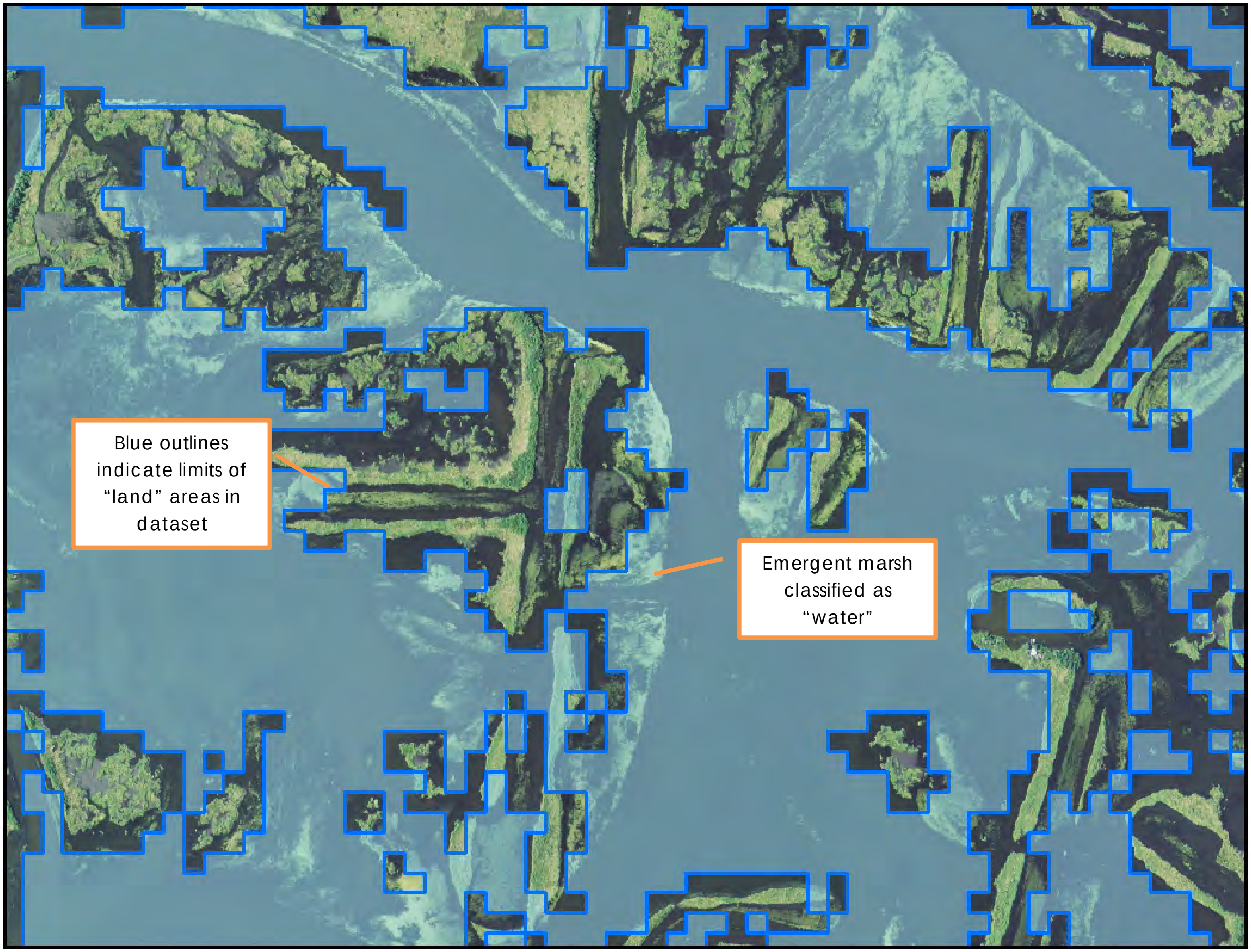
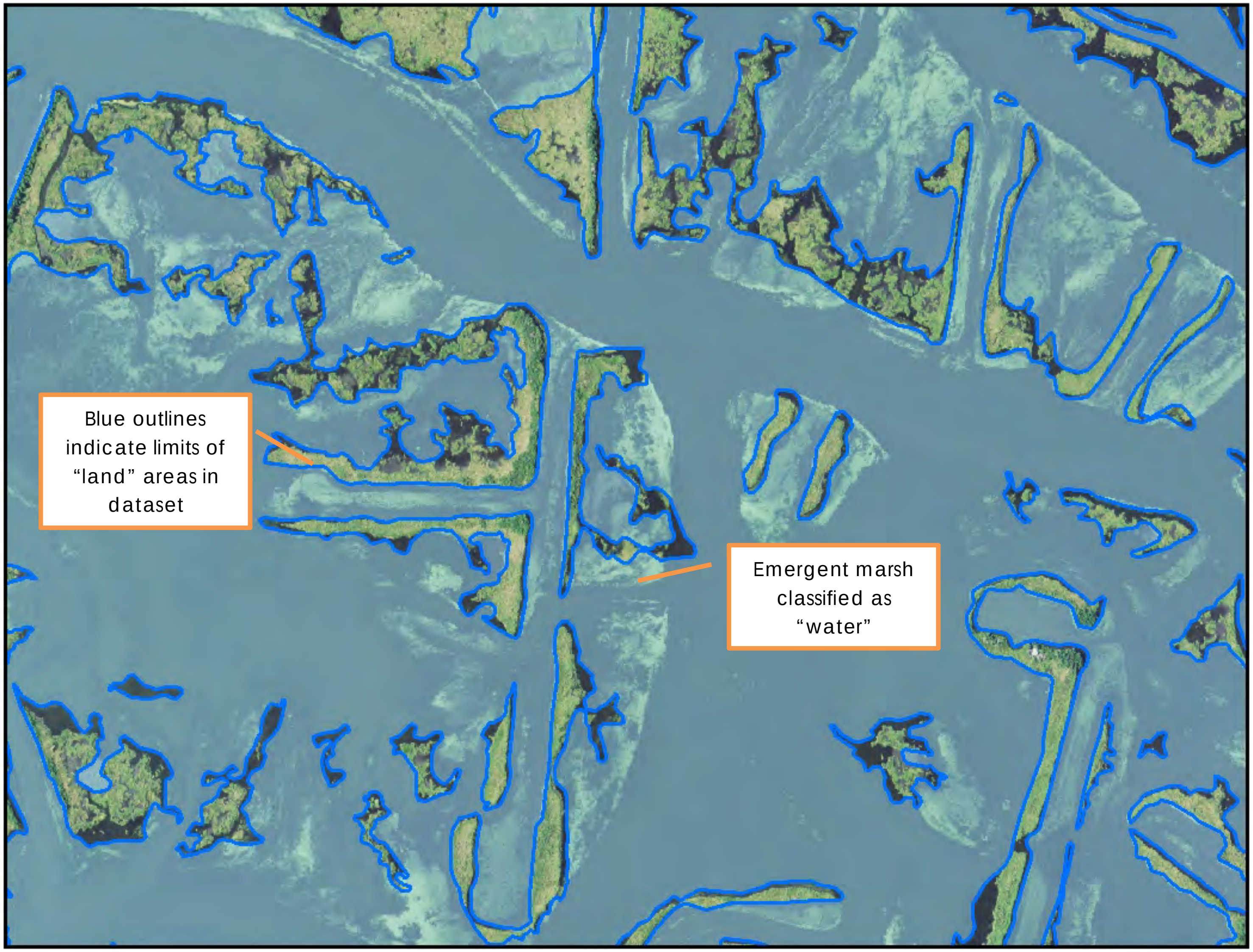


Figure A-3. 2013 NRCS Soil Mapping (web soil survey) compared with 2010 aerial imagery (Microsoft Corp. and its data suppliers). Visual estimate of 25 to 30 percent of emergent marsh misclassified as open water.



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Attachment B. Wetland Determination Data Forms and Site Photographs

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WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-1

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Batture Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.622 N Long: 89.9631 W Datum: NAD 83

Soil Map Unit Name: Carville, Cancienne, and Schriever soils, frequently flooded NWI classification: PFO1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

Between river and levee.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No X	Depth (inches): ____	
Water Table Present?	Yes ____ No X	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____ No X	Depth (inches): ____	**Wetland Hydrology Present? Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-1

Tree Stratum (Plot size: 30' radius)

#	Species	Absolute % Cover	Dominant Species?	Indicator Status
1.	Salix nigra	20	Y	OBL
2.				
3.				
4.				
5.				
6.				
7.				
8.				
		20 = Total Cover		

50% of total cover: 10 20% of total cover: 4

Sapling/Shrub Stratum (Plot size: 30' radius)

#	Species	Absolute % Cover	Dominant Species?	Indicator Status
1.	Salix nigra	10	Y	OBL
2.	Triadica sebifera	10	Y	FAC
3.				
4.				
5.				
6.				
7.				
8.				
		20 = Total Cover		

50% of total cover: 10 20% of total cover: 4

Herb Stratum (Plot size: 30' radius)

#	Species	Absolute % Cover	Dominant Species?	Indicator Status
1.	Physalis angulata	40	Y	FACU
2.	Colocasia esculenta	20	Y	FACW
3.	Persicaria hydropiperoides	20	Y	OBL
4.	Cardiospermum halicacabum	10	N	FAC
5.	Brunnichia ovata	10	N	FACW
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size: 30' radius)

#	Species	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		0 = Total Cover		

50% of total cover: ____ 20% of total cover: ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					Sandy clay loam	
5-14	10YR 4/2	95	10YR 3/6	S	C	M	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Data Point 1

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-2

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Batture Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6608 N Long: 89.9629 W Datum: NAD 83

Soil Map Unit Name: Carville, Cancienne, and Schriever soils, frequently flooded NWI classification: PFO1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

Between levee and river.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-2

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	70	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	70 = Total Cover		

50% of total cover: 35 20% of total cover: 14

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Forestiera acuminata	5	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		

50% of total cover: 2.5 20% of total cover: 1

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Persicaria hydropiperoides	30	Y	OBL
2. Ampelopsis arborea	20	Y	FAC
3. Saururus cernus	10	N	OBL
4. Colocasia esculenta	10	N	FACW
5. Hibiscus moscheutos	10	N	OBL
6. Physalis angulata	5	N	FACU
7. Boehmeria cylindrica	5	N	FACW
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		

50% of total cover: 45 20% of total cover: 18

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	10	Y	FAC
2. Campsis radicans	5	Y	FAC
3. Brunnichia ovata	5	Y	FACW
4.			
5.			
	20 = Total Cover		

50% of total cover: 10 20% of total cover: 4

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	97	10YR 4/6	3	C	M	Sandy clay loam	
8-14	10YR 5/2	95	10 YR 4/6	5	C	M	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes X **No** ____

Remarks:

Data Point 2a

Data Point 2b

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-3

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6617 N Long: 89.9645 W Datum: NAD 83

Soil Map Unit Name: Cancienne silt loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-3

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya aquatica	10	Y	OBL
2. Cornus drummondii	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	30		

50% of total cover: 15 20% of total cover: 6

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	30	Y	FAC
2. Acer rubrum	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	40		

50% of total cover: 20 20% of total cover: 8

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Saururus cernus	5	Y	OBL
2. Ampelopsis arborea	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
= Total Cover	10		

50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	5	Y	FAC
2.			
3.			
4.			
5.			
= Total Cover	5		

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ______

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/1	99	10YR 4/6	1	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

Redox concentrations not common.

Data Point 3

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-4

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6605 Long: 89.9642 Datum: NAD 83

Soil Map Unit Name: Cancienne silt loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-4

Tree Stratum (Plot size: 30' radius)

#	Species	Absolute % Cover	Dominant Species?	Indicator Status
1.	Acer negundo	35	Y	FAC
2.	Triadica sebifera	10	Y	FAC
3.				
4.				
5.				
6.				
7.				
8.				
		45 = Total Cover		

50% of total cover: 22.5 20% of total cover: 9

Sapling/Shrub Stratum (Plot size: 30' radius)

#	Species	Absolute % Cover	Dominant Species?	Indicator Status
1.	Acer negundo	15	Y	FAC
2.	Cornus drummondii	10	Y	FAC
3.	Morella cerifera	5	Y	FAC
4.				
5.				
6.				
7.				
8.				
		30 = Total Cover		

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30' radius)

#	Species	Absolute % Cover	Dominant Species?	Indicator Status
1.	Echinochloa colona	30	Y	FACW
2.	Ampelopsis arborea	5	N	FAC
3.	Acer negundo	5	N	FAC
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		40 = Total Cover		

50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum (Plot size: 30' radius)

#	Species	Absolute % Cover	Dominant Species?	Indicator Status
1.	Ampelopsis arborea	5	Y	FAC
2.				
3.				
4.				
5.				
		5 = Total Cover		

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	99	10YR 4/6	1	C	M	Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ________

Depth (inches): ________

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

Redox concentrations not common.

Data Point 4

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-1

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Batture Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.622 N Long: 89.9631 W Datum: NAD 83

Soil Map Unit Name: Carville, Cancienne, and Schriever soils, frequently flooded NWI classification: PFO1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

Between river and levee.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No X	Depth (inches): ____	
Water Table Present?	Yes ____ No X	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____ No X	Depth (inches): ____	**Wetland Hydrology Present? Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-1

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	20	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Sapling/Shrub Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	10	Y	OBL
2. Triadica sebifera	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Herb Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Physalis angulata	40	Y	FACU
2. Colocasia esculenta	20	Y	FACW
3. Persicaria hydropiperoides	20	Y	OBL
4. Cardiospermum halicacabum	10	N	FAC
5. Brunnichia ovata	10	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation
☑ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0[1]
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					Sandy clay loam	
5-14	10YR 4/2	95	10YR 3/6	S	C	M	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ______

Remarks:

Data Point 1

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-2

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Batture Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6608 N Long: 89.9629 W Datum: NAD 83

Soil Map Unit Name: Carville, Cancienne, and Schriever soils, frequently flooded NWI classification: PFO1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

Between levee and river.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-2

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	70	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	70 = Total Cover		

50% of total cover: 35 20% of total cover: 14

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Forestiera acuminata	5	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		

50% of total cover: 2.5 20% of total cover: 1

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Persicaria hydropiperoides	30	Y	OBL
2. Ampelopsis arborea	20	Y	FAC
3. Saururus cernus	10	N	OBL
4. Colocasia esculenta	10	N	FACW
5. Hibiscus moscheutos	10	N	OBL
6. Physalis angulata	5	N	FACU
7. Boehmeria cylindrica	5	N	FACW
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		

50% of total cover: 45 20% of total cover: 18

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	10	Y	FAC
2. Campsis radicans	5	Y	FAC
3. Brunnichia ovata	5	Y	FACW
4.			
5.			
	20 = Total Cover		

50% of total cover: 10 20% of total cover: 4

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	97	10YR 4/6	3	C	M	Sandy clay loam	
8-14	10YR 5/2	95	10 YR 4/6	5	C	M	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Data Point 2a

Data Point 2b

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-3

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6617 N Long: 89.9645 W Datum: NAD 83

Soil Map Unit Name: Cancienne silt loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-3

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya aquatica	10	Y	OBL
2. Cornus drummondii	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		

50% of total cover: 15 20% of total cover: 6

Sapling/Shrub Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	30	Y	FAC
2. Acer rubrum	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		

50% of total cover: 20 20% of total cover: 8

Herb Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Saururus cernus	5	Y	OBL
2. Ampelopsis arborea	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10 = Total Cover		

50% of total cover: 5 20% of total cover: 2

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	5	Y	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/1	99	10YR 4/6	1	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

Redox concentrations not common.

Data Point 3

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-4

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6605 Long: 89.9642 Datum: NAD 83

Soil Map Unit Name: Cancienne silt loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-4

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	35	Y	FAC
2. Triadica sebifera	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	45 = Total Cover		

50% of total cover: 22.5 20% of total cover: 9

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	15	Y	FAC
2. Cornus drummondii	10	Y	FAC
3. Morella cerifera	5	Y	FAC
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Echinochloa colona	30	Y	FACW
2. Ampelopsis arborea	5	N	FAC
3. Acer negundo	5	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40 = Total Cover		

50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	5	Y	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	99	10YR 4/6	1	C	M	Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No X

Remarks:

Redox concentrations not common.

Data Point 4

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12
Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-5
Investigator(s): CM, JM, RW Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): none Slope (%): 2
Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6607 N Long: 89.9659 W Datum: NAD 83
Soil Map Unit Name: Cancienne silt loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	X	
Hydric Soil Present?	X	
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-5

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	20	Y	FAC
2. Acer negundo	10	Y	FAC
3. Acer rubrum	10	Y	FAC
4. Celtis occidentalis	10	Y	FACU
5.			
6.			
7.			
8.			
	50 = Total Cover		

50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	20	Y	FAC
2. Triadica sebifera	10	Y	FAC
3. Quercus nigra	5	N	FAC
4.			
5.			
6.			
7.			
8.			
	35 = Total Cover		

50% of total cover: 17.5 20% of total cover: 7

Herb Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	5	Y	FAC
2. Ligustrum sinense	1	Y	FAC
3. Triadica sebifera	1	Y	FAC
4. Quercus nigra	1	Y	FAC
5. Sambucus nigra	1	Y	FAC
6. Acer negundo	1	Y	FAC
7. Rubus trivialis	1	Y	FACU
8.			
9.			
10.			
11.			
12.			
	11 = Total Cover		

50% of total cover: 5.5 20% of total cover: 2.2

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	5	Y	FAC
2. Toxicodendron radicans	5	Y	FAC
3.			
4.			
5.			
	10 = Total Cover		

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 13 (A)

Total Number of Dominant Species Across All Strata: 15 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/1	97	10YR 4/6	3	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? **Yes** X **No** ______

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12
Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-6
Investigator(s): CM, JM, RW Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 1
Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6598 Long: 89.9653 W Datum: NAD 83
Soil Map Unit Name: Cancienne silt loam NWI classification: PFO1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ___
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes X No ___		

Remarks:

Depression between river levee and Highway 23. Hurricane Isaac has resulted in some atypical conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___
Water Table Present? Yes ___ No X Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Duckweed (Lemna sp.) on soil surface. Although atypical situation due to hurricane, area appears to have hydrology under normal conditions.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-6

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	20	Y	OBL
2. Triadica sebifera	25	Y	FAC
3. Acer rubrum	10	N	FAC
4.			
5.			
6.			
7.			
8.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Triadica sebifera	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Herb Stratum (Plot size: 30' radius)			
1. Lemna sp.	5	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Woody Vine Stratum (Plot size: 30' radius)			
1. Ampelopsis arborea	5	Y	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	100					Clay	
2-16	10YR 5/1	90	10YR 4/6	10	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Data Point 6

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-7

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6596 Long: 89.9656 Datum: NAD 83

Soil Map Unit Name: Cancienne silt loam NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? **Yes** X **No** ___

Remarks:

Depression between river levee and Highway 23. Hurricane Isaac has resulted in some atypical conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Although atypical situation due to hurricane, area appears to have hydrology under normal conditions.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-7

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	40	Y	FAC
2. Acer negundo	10	N	FAC
3. Triadica sebifera	10	N	FAC
4. Quercus nigra	5	N	FAC
5.			
6.			
7.			
8.			
	65 = Total Cover		

50% of total cover: 32.5 20% of total cover: 13

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Triadica sebifera	20	Y	FAC
2. Acer negundo	10	Y	FAC
3. Diospyros virginiana	10	Y	FAC
4. Cornus drummondii	5	N	FAC
5.			
6.			
7.			
8.			
	45 = Total Cover		

50% of total cover: 22.5 20% of total cover: 9

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Saururus cernus	10	Y	OBL
2. Acer rubrum	5	Y	FAC
3. Rubus trivialis	5	Y	FACU
4. Ampelopsis arborea	5	Y	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25 = Total Cover		

50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Vitis rotundifolia	5	Y	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 89 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Clay	
2-16	10YR 5/1	95	10YR 4/6	5	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Data Point 7

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-8

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6591 N Long: 89.9661 W Datum: NAD 83

Soil Map Unit Name: Cancienne silt loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes X	No ___	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-8

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	10	Y	FAC
2. Acer negundo	10	Y	FAC
3. Ilex decidua	10	Y	FACW
4. Triadica sebifera	10	Y	FAC
5.			
6.			
7.			
8.			
	40 = Total Cover		

50% of total cover: 20 20% of total cover: 8

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Ilex decidua	10	Y	FACW
2. Acer negundo	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Allium canadense	5	Y	FACU
2. Viola bicolor	5	Y	FAC
3. Brunnichia ovata	5	Y	FACW
4. Rubus trivialis	5	Y	FACU
5. Quercus nigra	1	N	FAC
6. Sambucus nigra	1	N	FAC
7. Persicaria hydropiperoides	1	N	OBL
8.			
9.			
10.			
11.			
12.			
	23 = Total Cover		

50% of total cover: 11.5 20% of total cover: 4.6

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

50% of total cover: ______ 20% of total cover: ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ______

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	98	10YR 4/6	2	C	M	Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Data Point 8

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-9

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6600 N Long: 89.9675 W Datum: NAD 83

Soil Map Unit Name: Cancienne silt loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-9

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	20	Y	FAC
2. Triadica sebifera	10	Y	FAC
3. Salix nigra	10	Y	OBL
4.			
5.			
6.			
7.			
8.			
= Total Cover	40		

50% of total cover: 20 20% of total cover: 8

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Triadica sebifera	30	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	30		

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Saururus cernus	5	Y	OBL
2. Acer negundo	1	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
= Total Cover	6		

50% of total cover: 3 20% of total cover: 1.2

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Campsis radicans	5	Y	FAC
2. Ampelopsis arborea	5	Y	FAC
3.			
4.			
5.			
= Total Cover	10		

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/1	97	10YR 4/1	3	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: __________

Depth (inches): __________

Hydric Soil Present? **Yes** X **No** ____

Remarks:

Data Point 9

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-10

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6587 N Long: 89.9694 W Datum: NAD 83

Soil Map Unit Name: Cancienne silty clay loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-10

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	10	Y	FAC
2. Acer negundo	20	Y	FAC
3. Quercus virginiana	5	N	FACU
4.			
5.			
6.			
7.			
8.			
= Total Cover	35		

50% of total cover: 17.5 20% of total cover: 7

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Triadica sebifera	20	Y	FAC
2. Fraxinus pennsylvanica	5	Y	FACW
3. Quercus nigra	2	N	FAC
4. Ilex decidua	3	N	FACW
5.			
6.			
7.			
8.			
= Total Cover	30		

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	20	Y	FAC
2. Cyperus sp.	2	N	
3. Triadica sebifera	2	N	FAC
4. Commelina sp.	1	N	
5. Brunnichia ovata	1	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
= Total Cover	26		

50% of total cover: 13 20% of total cover: 5.2

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Toxicodendron radicans	10	Y	FAC
2.			
3.			
4.			
5.			
= Total Cover	10		

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/2	96	10YR 4/6	4	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes X No ______

Remarks:

Data Point 10

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-11

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6574 N Long: 89.9687 W Datum: NAD 83

Soil Map Unit Name: Cancienne silty clay loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-11

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	Y	FAC
2. Acer negundo	20	Y	FAC
3. Fraxinus pennsylvanica	5	N	FACW
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		

50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Triadica sebifera	20	Y	FAC
2. Acer negundo	10	Y	FAC
3. Cornus drummondii	5	N	FAC
4.			
5.			
6.			
7.			
8.			
	35 = Total Cover		

50% of total cover: 17.5 20% of total cover: 7

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Allium canadense	15	Y	FACU
2. Ampelopsis arborea	10	Y	FAC
3. Rubus trivialis	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 = Total Cover		

50% of total cover: 15 20% of total cover: 6

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	5	Y	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100					Silty clay	
6-16	10YR 4/2	98	10YR 4/6	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X **No** ______

Remarks:

Data Point 11

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-12

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6578 N Long: 89.9711 W Datum: NAD 83

Soil Map Unit Name: Cancienne silty clay loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicator due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-12

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	30	Y	FAC
2. Acer rubrum	10	N	FAC
3. Acer negundo	10	N	FAC
4. Melia azedarach	5	N	UPL
5.			
6.			
7.			
8.			
	55 = Total Cover		

50% of total cover: 27.5 20% of total cover: 11

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Cornus drummondii	10	Y	FAC
2. Triadica sebifera	10	Y	FAC
3. Acer negundo	5	N	FAC
4. Quercus nigra	5	N	FAC
5. Liquidambar styraciflua	5	N	FAC
6. Ligustrum sinense	5	N	FAC
7.			
8.			
	40 = Total Cover		

50% of total cover: 20 20% of total cover: 8

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	5	Y	FAC
2. Rubus trivialis	1	N	FACU
3. Quercus nigra	1	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	7 = Total Cover		

50% of total cover: 3.5 20% of total cover: 1.4

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	5	Y	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/3	100					Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-13

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6573 N Long: 89.9716 W Datum: NAD 83

Soil Map Unit Name: Cancienne silty clay loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☑ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-13

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Triadica sebifera	20	Y	FAC
2. Acer negundo	10	Y	FAC
3. Cornus drummondii	10	Y	FAC
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Sapling/Shrub Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ilex decidua	20	Y	FACW
2. Acer negundo	10	Y	FAC
3. Triadica sebifera	10	Y	FAC
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Herb Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	1	N	FAC
2. Triadica sebifera	1	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2 = Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ampelopsis arborea	10	Y	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	100					Silty clay	
2-14	10YR 4/2	96	10YR 4/6	4	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5)
- [ ] Organic Bodies (A6) **(LRR P, T, U)**
- [ ] 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- [ ] Muck Presence (A8) **(LRR U)**
- [ ] 1 cm Muck (A9) **(LRR P, T)**
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Coast Prairie Redox (A16) **(MLRA 150A)**
- [ ] Sandy Mucky Mineral (S1) **(LRR O, S)**
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Dark Surface (S7) **(LRR P, S, T, U)**
- [ ] Polyvalue Below Surface (S8) **(LRR S, T, U)**
- [ ] Thin Dark Surface (S9) **(LRR S, T, U)**
- [ ] Loamy Mucky Mineral (F1) **(LRR O)**
- [ ] Loamy Gleyed Matrix (F2)
- [x] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Marl (F10) **(LRR U)**
- [ ] Depleted Ochric (F11) **(MLRA 151)**
- [ ] Iron-Manganese Masses (F12) **(LRR O, P, T)**
- [ ] Umbric Surface (F13) **(LRR P, T, U)**
- [ ] Delta Ochric (F17) **(MLRA 151)**
- [ ] Reduced Vertic (F18) **(MLRA 150A, 150B)**
- [ ] Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- [ ] Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- [ ] 1 cm Muck (A9) **(LRR O)**
- [ ] 2 cm Muck (A10) **(LRR S)**
- [ ] Reduced Vertic (F18) **(outside MLRA 150A,B)**
- [ ] Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- [ ] Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- [ ] Red Parent Material (TF2)
- [ ] Very Shallow Dark Surface (TF12)
- [ ] Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes X **No** ______

Remarks:

Data Point 13

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-14

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6559 N Long: 89.9709 W Datum: NAD 83

Soil Map Unit Name: Cancienne silty clay loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-14

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus virginiana	40	Y	FACU
2. Acer negundo	20	Y	FAC
3. Ilex decidua	10	N	FACW
4.			
5.			
6.			
7.			
8.			
	70	= Total Cover	
50% of total cover: 35		20% of total cover: 14	
Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Ilex decidua	10	Y	FACW
2. Triadica sebifera	10	Y	FAC
3. Acer negundo	10	Y	FAC
4. Cornus drummondii	5	N	FAC
5.			
6.			
7.			
8.			
	35	= Total Cover	
50% of total cover: 17.5		20% of total cover: 7	
Herb Stratum (Plot size: 30')			
1. Acer negundo	1	N	FAC
2. Quercus virginiana	1	N	FACU
3. Brunnichia ovata	1	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	
50% of total cover:		20% of total cover:	
Woody Vine Stratum (Plot size: 30')			
1. Vitis rotundifolia	5	Y	FAC
2. Brunnichia ovata	1	N	FACW
3.			
4.			
5.			
	6	= Total Cover	
50% of total cover: 3		20% of total cover: 1.2	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	99	10YR 4/6	1	C	M	Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

Redox concentrations not common.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/13/12

Applicant/Owner: CPRA / Ram Terminals State: LA Sampling Point: DP-15

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6559 N Long: 89.9713 W Datum: NAD 83

Soil Map Unit Name: Cancienne silty clay loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

Between river levee and Highway 23. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2010 ESRI & USDA

Remarks:

Atypical situation, false positive indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-15

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Celtis occidentalis	15	Y	FACU
2. Salix nigra	10	Y	OBL
3. Cornus drummondii	20	Y	FAC
4.			
5.			
6.			
7.			
8.			
	45 = Total Cover		
50% of total cover: 23	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Acer negundo	30	Y	FAC
2. Cornus drummondii	20	Y	FAC
3. Triadica sebifera	10	N	FAC
4.			
5.			
6.			
7.			
8.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 30')			
1. Brunnichia ovata	3	Y	FACW
2. Ampelopis arborea	2	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 30')			
1. Ampelopsis arborea	5	Y	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/6	99	10YR 4/6	1	C	M	Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No X

Remarks:

Redox concentrations not common.

Data Point 15

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/12/12

Applicant/Owner: CPRA / Midway Cattle Ranch State: LA Sampling Point: DP-16

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6475 N Long: 89.9843 W Datum: NAD 83

Soil Map Unit Name: Harahan clay NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

Pasture between canal and levee adjacent to marsh. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators. Cattle trampling evident.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☑ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): -
Water Table Present?	Yes X	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 3

Wetland Hydrology Present? Yes X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2007 Pictometry, 2010 ESRI & USDA

Remarks:

Although atypical situation due to hurricane, area appears to have hydrology under normal conditions.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-16

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	0		

50% of total cover: ______ 20% of total cover: ______

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	0		

50% of total cover: ______ 20% of total cover: ______

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Cynodon dactylon	5	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
= Total Cover	5		

50% of total cover: 2.5 20% of total cover: 1

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		

50% of total cover: ______ 20% of total cover: ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☑ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (If observed, list morphological adaptations below).

Herb stratum with dead Cynodon dactylon and dead Persicaria hydropiperoides (30% cover).
Hurricane disturbed vegetation so with other indicators, hydrophytic vegetation assumed.

SOIL

Sampling Point: DP-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	100					clay	
2-6	7.5YR 2.5/2	100					clay	
6-10	10YR 4/1	100					clay	
10-14	10YR 4/1	98	10YR 3/6	2	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☑ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? Yes X No ______

Remarks:

Mapped as hydric soil. Likely past agricultural disturbance has removed typical redox concentrations for hydric soil indicators.

Data Point 16

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/12/12

Applicant/Owner: CPRA / Midway Cattle Ranch State: LA Sampling Point: DP-17

Investigator(s): RW,CM,JM Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6475 N Long: 89.9846 W Datum: NAD 83

Soil Map Unit Name: Harahan clay NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:

Pasture between canal and levee adjacent to marsh. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators. Slight high between old agricultural ditches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2007 Pictometry, 2010 ESRI & USDA

Remarks:

Atypical situation, false indicators due to hurricane.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-17

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	0		

50% of total cover: ______ 20% of total cover: ______

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	0		

50% of total cover: ______ 20% of total cover: ______

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Cynodon dactylon	2	N	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
= Total Cover	2		

50% of total cover: ______ 20% of total cover: ______

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		

50% of total cover: ______ 20% of total cover: ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ______ **No** X

Remarks: (If observed, list morphological adaptations below).

Herb stratum also with dead Cynodon dactylon (95% cover) due to hurricane disturbance.

SOIL

Sampling Point: DP-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 2/2						Organic	
1-16	10YR 4/1	95	10YR 4/6	5	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Mapped as hydric soil. Likely past agricultural disturbance.

Data Point 17

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/12/12

Applicant/Owner: CPRA / Midway Cattle Ranch State: LA Sampling Point: DP-18

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6474 W Long: 89.9848 W Datum: NAD 83

Soil Map Unit Name: Harahan clay NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:

Pasture between canal and levee adjacent to marsh. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators. Appears lower than adjacent DP-17.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☑ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): ___	**Wetland Hydrology Present? Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2007 Pictometry, 2010 ESRI & USDA

Remarks:

Although atypical situation due to hurricane, area appears to have hydrology under normal conditions.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-18

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Cynodon dactylon	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☑ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (If observed, list morphological adaptations below).

Herb stratum also with dead Cynodon dactylon and dead Persicaria hydropiperoides (60% cover). Hurricane disturbed vegetation so with other indicators, hydrophytic vegetation assumed.

SOIL

Sampling Point: DP-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/1						Clay	
2-5	7.5 YR 3/2						Clay	High Organic Matter
5-16	10 YR 4/1	95	7.5YR 3/4	5	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Mapped as hydric soil. Likely past agricultural disturbance.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/12/12

Applicant/Owner: CPRA / Midway Cattle Ranch State: LA Sampling Point: DP-19

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6469 N Long: 89.985 W Datum: NAD 83

Soil Map Unit Name: Harahan clay NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? **Yes** X **No** ___

Remarks:

Pasture between canal and levee adjacent to marsh. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators. Area adjacent to old excavated ditch.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [x] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [x] Saturation Visible on Aerial Imagery (C9)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 8

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2007 Pictometry, 2010 ESRI & USDA

Remarks:

Although atypical situation due to hurricane, area appears to have hydrology under normal conditions.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP-19

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☑ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: (If observed, list morphological adaptations below).

Herb stratum with dead Persicaria hydropiperoides (30% cover) and Typha sp. (10% cover). Hurricane disturbed vegetation so with other indicators, hydrophytic vegetation assumed.

SOIL

Sampling Point: DP-19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/1	90	7.5YR 4/6	10	C	M	Clay	
9-12	10YR 2/1	100					Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ______

Remarks:

Mapped as hydric soil. Likely past agricultural disturbance.

Data Point 19

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/12/12

Applicant/Owner: CPRA / Midway Cattle Ranch State: LA Sampling Point: DP-20

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6483 N Long: 89.9866 W Datum: NAD 83

Soil Map Unit Name: Cancienne silty clay loam NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:

Pasture between canal and levee adjacent to marsh. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [x] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [x] Saturation Visible on Aerial Imagery (C9)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2007 Pictometry, 2010 ESRI & USDA

Remarks:

Although atypical situation due to hurricane, area appears to have hydrology under normal conditions.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-20

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

50% of total cover: ____ 20% of total cover: ____

Sapling/Shrub Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

50% of total cover: ____ 20% of total cover: ____

Herb Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		

50% of total cover: ____ 20% of total cover: ____

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

50% of total cover: ____ 20% of total cover: ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☑ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (If observed, list morphological adaptations below).

Herb stratum with dead Cynodon dactylon (90% cover) and dead Persicaria hydropiperoides (10% cover). Hurricane disturbed vegetation so with other indicators, hydrophytic vegetation assumed.

SOIL

Sampling Point: DP-20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	100					Clay	Organic matter
2-14	10YR 5/1	95	10YR 4/6	5	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Likely past agricultural disturbance.

Data Point 20

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD   City/County: Plaquemines   Sampling Date: 11/12/12

Applicant/Owner: CPRA / Midway Cattle Ranch   State: LA   Sampling Point: DP-21

Investigator(s): CM, JM, RW   Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland   Local relief (concave, convex, none): concave   Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T)   Lat: 29.6452 N   Long: 89.9878 W   Datum: NAD 83

Soil Map Unit Name: Westwego clay   NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed?   Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?   (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No
Hydric Soil Present?	Yes X	No
Wetland Hydrology Present?	Yes X	No

Is the Sampled Area within a Wetland? Yes X No ___

Remarks:

Pasture between canal and levee adjacent to marsh. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [x] Saturation Visible on Aerial Imagery (C9)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes X	No	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 5

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2007 Pictometry, 2010 ESRI & USDA

Remarks:

Although atypical situation due to hurricane, area appears to have hydrology under normal conditions.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-21

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Cynodon dactylon	1	N	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	1 = Total Cover		
50% of total cover: -	20% of total cover: -		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☑ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (If observed, list morphological adaptations below).

Herb stratum with dead Cynodon dactylon and dead Typha sp. (20% cover). Hurricane disturbed vegetation so with other indicators, hydrophytic vegetation assumed.

SOIL

Sampling Point: DP-21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/1	100					Organic matter	
5-16	7.5YR 2.5/1	97	7.5YR 3/4	3	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Mapped as hydric soil. Likely past agricultural disturbance.

Data Point 21

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MBSD City/County: Plaquemines Sampling Date: 11/12/12

Applicant/Owner: CPRA / Midway Cattle Ranch State: LA Sampling Point: DP-22

Investigator(s): CM, JM, RW Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Delta / Fastland Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): Outer Coastal Plain (LRR T) Lat: 29.6443 N Long: 89.9907 W Datum: NAD 83

Soil Map Unit Name: Westwego clay NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:

Pasture between canal and levee adjacent to marsh. Hurricane Isaac has resulted in atypical conditions and hydrologic indicators. Between old excavated ditches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☑ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerials: 2007 Pictometry, 2010 ESRI & USDA

Remarks:

Although atypical situation due to hurricane, area appears to have hydrology under normal conditions due to subsidence.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-22

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Cynodon dactylon	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☑ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

Herb stratum with dead Cynodon dactylon and dead Persicaria hydropiperoides (10% cover). Hurricane disturbed vegetation so with other indicators, hydrophytic vegetation assumed.

SOIL

Sampling Point: DP-22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	97	2.5YR 2.5/3	3	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________________

Depth (inches): ______________________

Hydric Soil Present? **Yes** X **No** ______

Remarks:

Mapped as hydric soil. Likely past agricultural disturbance.

Data Point 22

Attachment C. Supplemental Preliminary Jurisdictional Determinations Provided by USACE for Reference (by others)

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DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267
MAY - 5 2009

REPLY TO
ATTENTION OF:

Operations Division
Surveillance and Enforcement Section

Mr. Barton Rogers
Gulf Engineers & Consultants
9337 Interline Ave.
Baton Rouge, Louisiana 70809

Dear Mr. Rogers:

Reference is made to your request, on behalf of Conoco-Phillips, for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Sections 5 & 16, Township 16 South, Range 11 East, Plaquemines Parish, Louisiana (enclosed map). Specifically, this property is identified as a 656 acre proposed borrow pit west of LA Highway 23 near Alliance, LA.

Based on review of maps, aerial photography, and soils data, we have determined that part of the property is wetland and may be subject to Corps' jurisdiction. The approximate limits of the wetland are designated in red on the map. A Department of the Army (DA) permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into wetlands that are waters of the United States. Additionally, a DA permit will be required if you propose to deposit dredged or fill material into the waters of the US designated in blue on the map.

You and your client are advised that this preliminary jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date or the District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

Please be advised that this property is in the Louisiana Coastal Zone. For additional information regarding coastal use permit requirements, contact Ms. Christine Charrier, Coastal Management Division, Louisiana Department of Natural Resources at (225) 342-7591.

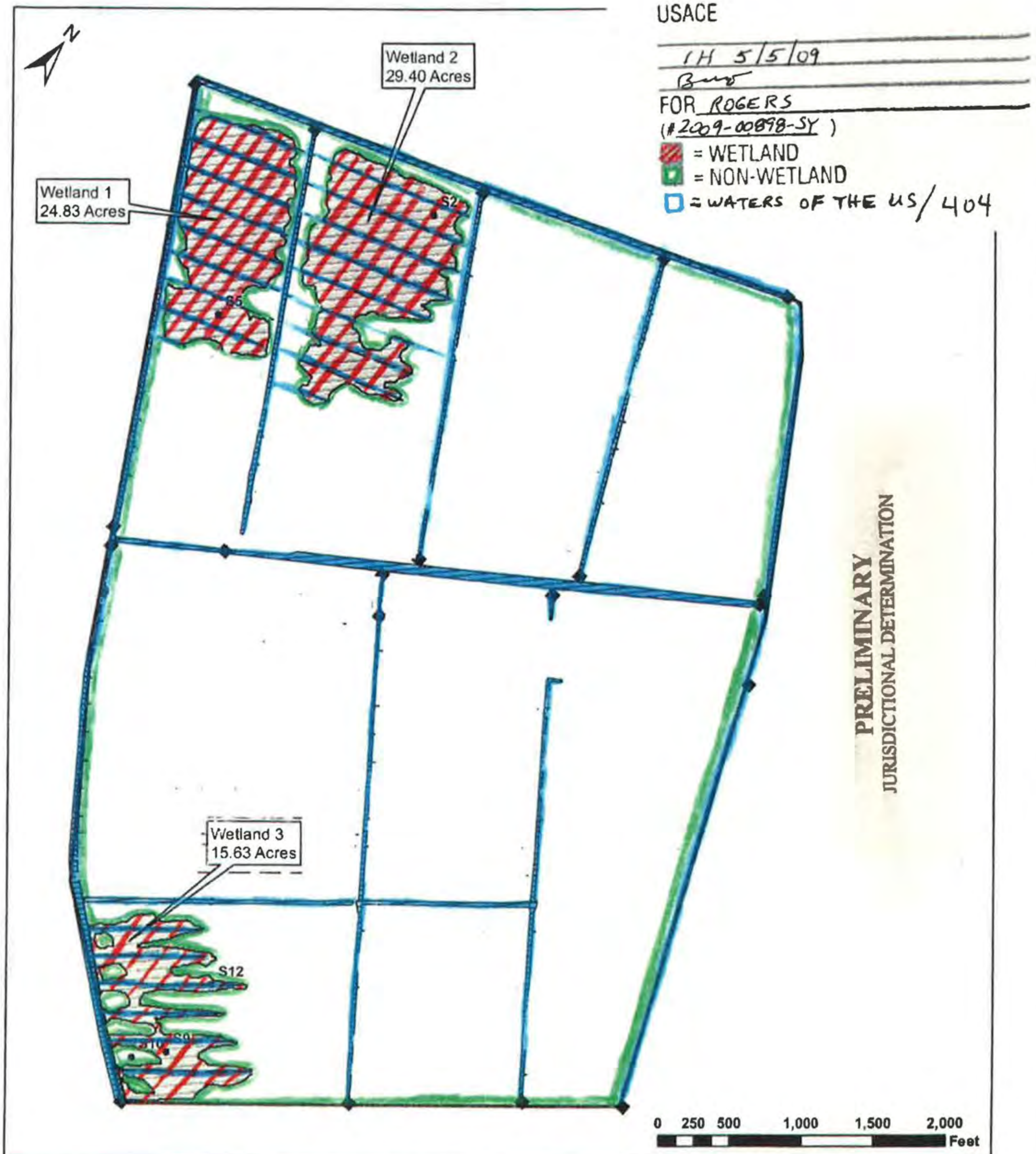
Should there be any questions concerning these matters, please contact Mr. Brian Oberlies at (504) 862-2275 and reference our Account No. MVN-2009-00898-SY. If you have specific questions regarding the permit process or permit applications, please contact our Eastern Evaluation Section at (504) 862-2766. The New Orleans District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please complete and return the enclosed Customer Service Survey or complete the survey on our web site at http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Robert A Heffner

Pete J. Serio
Chief, Regulatory Branch

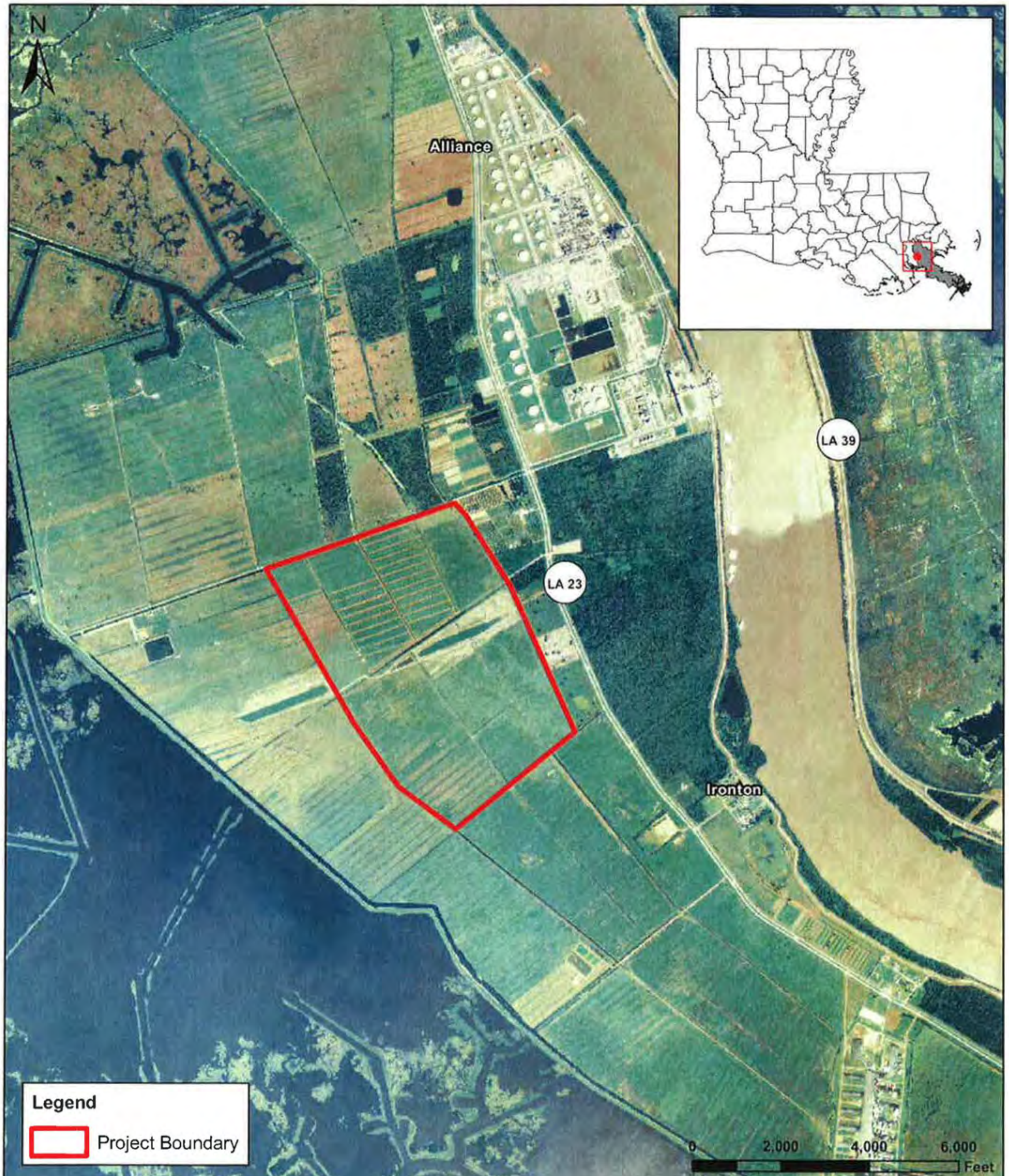
Enclosures



WETLAND DELINEATION MAP

Conoco Phillips Project
Alliance, Louisiana
Plaquemines Parish

GEC
Figure: C1
Date: April 2009
Scale: 1:11,000
Source: GEC
Map ID: 27498102-1361



SITE LOCATION

Conoco Phillips Project
Alliance, Louisiana
Plaquemines Parish

Image: 2007 Plaquemines Parish USDA-FSA-APFO NAIP MrSID Mosaic

GEC

Figure: 1	
Date: April 2009	
Scale:1:36,000	
Source: GEC/USDA	
Map ID: 27498102-1281	

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF

FEB 10 2012

Operations Division
Surveillance and Enforcement Section

Mr. Josh McEnany
Gulf South Research Corporation
8081 GSRI Avenue
Baton Rouge, Louisiana 70820

Dear Mr. McEnany:

Reference is made to your request, submitted on behalf of RAM Terminals, LLC, for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Sections 5, 6, and 7, Township 16 South, Range 25 East, Plaquemines Parish, Louisiana (enclosed map). Specifically, this property is identified as a 600 acre tract of land on and east of LA-23 along the right descending bank of the Mississippi River at river mile 61.

Based on review of recent maps, aerial photography, soils data, and the information submitted with your request, we have determined that part of the property is wetland and may be subject to Corps' jurisdiction. The approximate limits of the wetland are designated in red on the map. A Department of the Army permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into wetlands that are waters of the United States. Additionally, a DA permit will be required if you propose to deposit dredged or fill material into other waters subject to Corps jurisdiction. On the protected side of the levee, other waters that may be subject to Corps' jurisdiction are indicated in blue on the map. Furthermore, the Mississippi River and the wetlands on the river side of the levee are also subject to Corps' jurisdiction under Section 10 of the Rivers and Harbors Act. A DA Section 10 permit will be required prior to any work in this waterway or the wetlands on the river side of the levee.

You and your client are advised that this preliminary jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date or the District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

Please be advised that this property is in the Louisiana Coastal Zone. For additional information regarding coastal use permit requirements, contact Ms. Christine Charrier, Coastal Management Division, Louisiana Department of Natural Resources at (225) 342-7953.

You are advised that you must obtain a permit from a local assuring agency, usually a Levee Board or Parish Council, for any work within 1500 feet of a federal flood control structure such as a levee. You must apply by letter to the appropriate agency including full-size construction plans, cross sections, and details of the proposed work. Concurrently with your application to the assuring agency, you must also forward a copy of your letter and plans to Ms. Amy Powell, Operations Manager for Completed Works of the Corps and to the appropriate regional office of the Louisiana Department of Transportation and Development (LA DOTD) or the Office of Coastal Protection and Restoration (OCPR) for their review and comments concerning the proposed work. The assuring agency will not issue a permit for the work to proceed until they have obtained letters of no objection from both of these reviewing agencies. For additional information, please contact Ms. Amy Powell at (504) 862-2241.

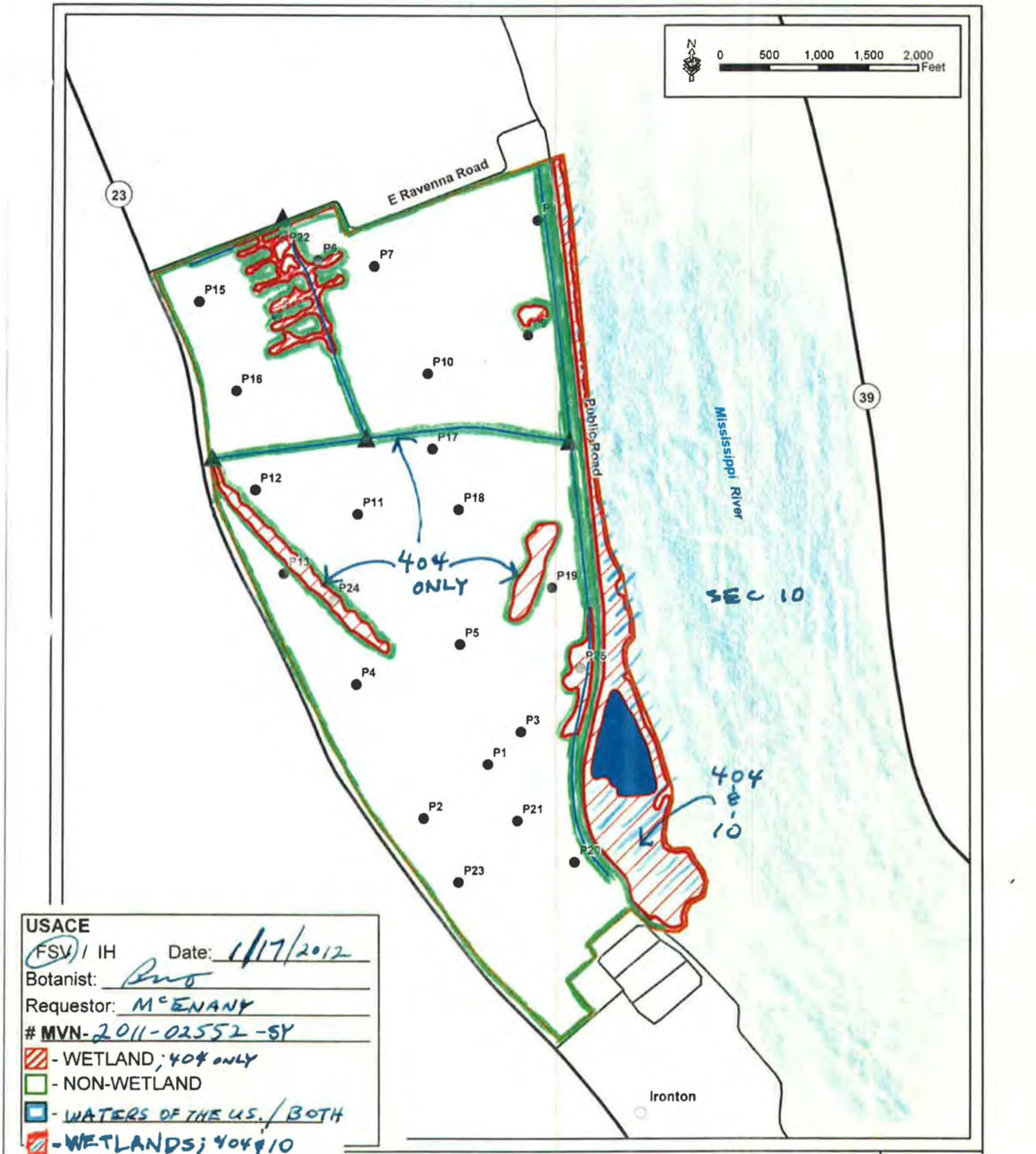
Should there be any questions concerning these matters, please contact Mr. Brian Oberlies at (504) 862-2275 and reference our Account No. MVN-2011-02552-SY. If you have specific questions regarding the permit process or permit applications, please contact our Eastern Evaluation Section at (504) 862-2766. The New Orleans District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please complete and return the enclosed Customer Service Survey.

Sincerely,

Robert A. Heffner

for Pete J. Serio
Chief, Regulatory Branch

Enclosures



PRELIMINARY

JURISDICTIONAL DETERMINATION

Figure 4: Wetland Map
Sections 5, 6, & 7, T16S, R25E

GSRC

September 2011

Figure 2: Project Location Map
Sections 5, 6, & 7, T16S, R25E

GSRC

September 2011

2013 Joint Permit Application

Joint Permit Application

For Work Within the Louisiana Coastal Zone

What is the purpose of the Joint Permit Application?

This Joint Permit Application was developed to facilitate the state and federal permit application process administered by the Louisiana Department of Natural Resources/Office of Coastal Management (OCM) and the U.S. Army Corps of Engineers (COE) for work within the Louisiana Coastal Zone.

To simplify the permit application process, the Joint Permit Application is a multi-purpose application. It may be used to apply for a Coastal Use Permit (CUP) and/or a Department of the Army Permit under Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act. This application may also be used to apply for a Solicitation of Views (SOV) or an OCM Request for Determination (RFD). Review the instructions below, then proceed to Step 1.

Instructions

How do I complete the Joint Permit Application?

There are two parts to the Joint Permit Application package:

1. Joint Permit Application, and
2. Maps and Drawings.

An accurate/complete application is required for processing; inaccurate/missing information may delay processing. Follow the instructions below to complete the application. Specific instructions are provided with each step.

- Type or print clearly using black or blue ink;
- Steps 1 through 16 must be completed; write “N/A” if information does not apply to your proposed project. It is not necessary to write “N/A” on the Steps that you have been asked to skip;
- When additional space is needed, include an 8½ x 11 sheet of paper identifying the Step number.

When you have questions or need assistance in completing the application package:

- Refer to the “Glossary of Terms” (See page 10.);
- Refer to “Frequently Asked Questions” (See page 11.);
- Contact the Office of Coastal Management at 1-800-267-4019 or 225-342-7591; or
- Contact your local coastal parish program (See page 11.). (http://dnr.louisiana.gov/CRM/coastmgt/interagencyaff/lcp/lcp.asp)

Step 1 of 16

Who is the applicant for the proposed project?

Note: *Applicants may be either the landowner, person or company that is responsible for the proposed project.*

Complete the following information about the applicant.

Applicant/Company Name: Coastal Protection & Restoration Authority of Louisiana (CPRA)
Individual Person or Corporation/Company

Mailing Address:
P.O. Box 44027 Capitol Station
Street Address or P.O. Box
Unit/Apartment #

Baton Rouge — City
LA — State
70804-4027 — Zip

Contact Information:
Micaela Coner — Name of Contact Person *(not the agent)*
Micaela.Coner@la.gov — E-Mail Address

(225) 342-2799 — Area Code, Daytime Telephone Number
(225) 242-3555 — Area Code, Fax Number

Continue to page 2 for step 2.

Internal Office Use Permit #

Step 2 of 16	
Is an agent being used for the proposed project? ***Note****: An agent is not required.*	**Is an agent being used for the proposed project?** ☐ **NO** (If NO, proceed to Step 3.) ☑ **YES** (If YES, complete the following information.) **Company Name:** HDR Engineering, Inc. (Corporation/Company) **Mailing Address:** 201 Rue Iberville (Street Address or P.O. Box) — Suite 115 (Unit/Apartment #) Lafayette (City) — LA (State) — 70508-3281 (Zip) **Contact Information:** Brooke Savant (Name of Contact Person) — brooke.savant@hdrinc.com (E-Mail Address) (337) 347-5606 (Area Code, Daytime Telephone Number) — (337) 347-5601 (Area Code, Fax Number)

Step 3 of 16	
What type of permit or action would you like to request? ***Note:*** *You may need the approval of other federal, state or local agencies for your project.* ***Note:*** *For questions concerning the CUP, SOV or RFD, call OCM at:* • *1-800-267-4019* *or* • *225-342-7591*	**Check ☑ the appropriate box(es) to indicate the type of permit or action that you would like to request.** ☑ **Coastal Use Permit (CUP), Clean Water Act Permit (Section 404), Rivers and Harbors Act (Section 10)** The purpose of the CUP is to ensure that any activity affecting the Coastal Zone is completed in a manner that is consistent with the Louisiana Coastal Resource Program. The purpose of the Department of the Army permit program under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act is to review and evaluate proposals for dredging, filling, and/or placement of structures in waterways and wetlands in order to determine whether a permit should be granted or denied based on expected impacts to the overall public interest. ☐ **Solicitation of Views (SOV) – OCM only** If you wish to find out if your project is in the Coastal Zone or if you wish to determine if there are special features of the area that may impact your project design you may request a SOV. No application fee is assessed for SOV requests. The following Steps must be completed to obtain an informal determination. • Step 1, Step 2, Step 6, Step 14, Step 16; and • Step 13 - (Vicinity plat showing project location and extent is required; cross section and plan views are useful, if available.) ☐ **Request for Determination (RFD)** If you wish to obtain a formal determination as to whether or not a CUP would be required for a particular activity, you may submit a RFD. The appropriate application fee will be assessed for RFD requests. The following Steps must be completed to obtain a RFD. • Step 1, Step 2, Step 5, Step 6, Step 8, Step 10, Step 14, Step 16; and; • Step 13 - (Vicinity plat showing project location and extent is required; cross section and plan views are useful, if available.) • If you think that no permit is required, you must provide a statement explaining why you think a permit is not required.

Step 4 of 16	
Have you participated in a Pre-Application or Geological Review Meeting or obtained a wetland determination? ***Note:*** *To schedule a Pre-Application and/or a Geological Review Meeting, call OCM at 1-800-267-4019.* ***Note:*** *To apply for a wetland determination, call the COE at 504-862-1627.*	**a. Have you participated in a Pre-Application or Geological Review Meeting for the proposed project?** ☐ **NO** (If NO, proceed to Step 4b.) (If you would like to schedule a pre-application meeting, please call 1-800-267-4019) ☑ **YES** (If YES, complete the following information.) Date meeting was held: 12 / 5 / 2012 Attendees: James Thomas / Liz Davoli (Individual or Company Representative) — Karl Morgan / Chris Melton (OCM Representative) — Mike Farabee (12/6/2012) (COE Representative) **b. Have you obtained an official wetland determination from the COE for the project site?** ☑ **NO** (If NO, proceed to Step 4c.) ☐ **YES** (If YES, include a copy with this application.) JD Number: (See Page 13 for additional info) **c. Is this application a mitigation plan for another CUP?** ☑ **NO** (If NO, proceed to Step 5.) ☐ **YES** (If YES, identify the permit number of the project requiring mitigation.) OCM Permit Number: P

Continue to page 3 for step 5.

Step 5 of 16

What permits/ certifications have you previously requested for the proposed project?

Note: Additional sheets may be required for agency name, permit number and status information.

a. Describe the project.

The MBSD is a large and complex civil works and restoration project with a diversion complex composed of many different features and elements. The MBSD, when in operation, would divert up to 75,000 cubic feet per second (cfs) of sediment-laden water from the Mississippi River through a self- contained channel with guide levees roughly 1.5 miles long, before outfalling past the back levee into the mid-Barataria Basin. (See additional Pages 13-14)

b. Is this application a change to an existing permit?

☑ **NO** (If NO, proceed to Step 5c.)
☐ **YES** (If YES, identify the existing permit number.)

OCM Permit Number: P

Please explain

c. Have you previously applied for a permit or emergency authorization for all or any part of the proposed project?

☑ **NO** (If NO, proceed to Step 6.)
☐ **YES** (If YES, complete the following information for the proposed project.)

Agency Name	Permit Number	Decision Status: Approved	Denied	Pending	Decision Date
OCM		☐	☐	☐	
COE		☐	☐	☐	
Other		☐	☐	☐	

Step 6 of 16

Where will the proposed project be located?

Note: The following websites may provide assistance in completing the latitude/longitude and directions:

- *Sonris on OCM website*
- *MapQuest.com*
- *Topozone.com.*

Note: Directions may include the following:

- *Nearest town/city*
- *Highways*
- *Intersections*
- *Street names*
- *Landmarks*
- *Start/end point*

Complete the following information to identify the exact location of the proposed project.

a. Physical Location:

Parish: Plaquemines / Jefferson
City: Ironton (vicinity)
Zip: 70083
Street Address (If known): Louisiana State Highway 23 (LA 23)
Water Body (if known): Mississippi River (Mile 60.7) / Barataria Basin

b. Latitude and Longitude:

Must be included in all applications.

Latitude: 29 Degrees 39 Minutes 42.500 Seconds
Longitude: 89 Degrees 57 Minutes 48.600 Seconds

c. Section, Township, Range: *(if available)*

Section #(s)	Township # (Specify North or South)	Range # (Specify East or West)
5,16,47,48,49	16S	25E, 24E
3,2,1,41,19	17S	24E

d. Lot #, Tract #, Parcel # or Subdivision Name: *(if known)*

Lot #

Parcel #

Tract #

Subdivision Name

e. Site Directions: Directions to the proposed project site must be identified in order to process the application.

Example: **START - I-10 toward Baton Rouge. Exit #153 toward Port Allen. US-190 West/LA-1 North ramp. RIGHT onto LA-987 1/Bridge Side Road. RIGHT onto LA-986/North River Road to Popular Grove Plantation directly behind guest parking lot in rear. –END**

START- From I-10 in New Orleans, take US-90Bus W across Mississippi River. Continue on US-90Bus W / Westbank Expy for 4 miles. Take exit #7 for LA 23 / Lafayette St. Continue south on LA 23 for 21 miles to the project area between the Phillips 66 Alliance Refinery and the community of Ironton, near Mississippi River Mile 60.7 -END

Continue to page 4 for step 7.

Step 7 of 16

Complete the following information to notify adjacent landowners whose property adjoins the proposed project site.

Who are the adjacent landowners?

Note: Adjacent landowner information is usually available through the office of the tax assessor in the parish where the project is to be developed.

Note: Additional information may be included in the area provided on page12. Also, extra sheets may be required if there are more than eight adjacent landowners.

Adjacent Landowner #1: River Rest, LLC (Name of Adjacent Landowner)

Mailing Address:

Address	Unit/Apartment #	City	Parish	State	Zip
820 Fairfield Avenue		Gretna	Jefferson	LA	70056

Adjacent Landowner #2: Woodland Borrow Pits, LLC. (Name of Adjacent Landowner)

Mailing Address:

Address	Unit/Apartment #	City	Parish	State	Zip
401 Westbank Expy.		Gretna	Plaquemines	LA	70053

Adjacent Landowner #3: Canard Land, LLC. (Name of Adjacent Landowner)

Mailing Address:

Address	Unit/Apartment #	City	Parish	State	Zip
605 South America Street		Covington	Plaquemines	LA	70433

Adjacent Landowner #4: Entergy Louisiana (Name of Adjacent Landowner)

Mailing Address:

Address	Unit/Apartment #	City	Parish	State	Zip
P.O. Box 61000		New Orleans	Plaquemines	LA	70113

Step 8 of 16

Complete the following information to identify the purpose and need for the proposed project.

What is the purpose of the proposed project?

Note: We are required to review the justifications and needs for your project. Providing detailed information at the time of application may expedite processing of your proposal.

Note: Additional sheets may be required to explain why the proposed project is needed.

a. Project Name and/or Title: Mid-Barataria Sediment Diversion (BA-153)

b. Project Type: *(Check ☑ the appropriate box. See the "Glossary" on page 10 for the definitions of terms.)*

- ☐ **Non-Residential**
- ☐ **Residential**

c. Source of Funding ☐ ***Federal*** ☑ ***State*** ☐ ***Local*** ☐ ***Private***

d. Check ☑ the appropriate box(es) to identify what will be done for the proposed project.

☑ Bridge/Road	☐ Drill site	☑ Pilings	☑ Riprap/Erosion Control
☑ Bulkhead/Backfill	☑ Fill	☑ Pipeline/Flow line	☑ Site Clearance
☑ Drainage Improvements	☐ Home Site/Driveway	☐ Plug/Abandon	☐ Subdivision
☑ Dredging	☑ Levee Construction	☐ Production Barge/Structure	☐ Vegetative Plantings
☑ Drill Barge/Structure	☐ Major Industrial Commercial	☐ Prop Washing	☐ Wharf/Pier/Boathouse
☑ Other	☐ Marina	☑ Remove Structures	

↘ (Please specify) excavation for conveyance channel / levee tie-ins

e. Why is the proposed project needed?

The project is needed to restore the connection between the Mississippi River and mid-Barataria Basin, to divert sediment- laden water into the Basin to build land. Coastal Louisiana has lost 1,883 square miles of land in the last 80 years, with an additional 1,756 square miles at risk for disappearance over the next 50 years. The impacts of coastal land loss threaten Louisiana's economy, commerce, infrastructure, and culture.

Continue to page 5 for step 9.

Step 9 of 16

What is the status of the proposed project?

Note: Show and identify planned, in progress, completed work and dimensions for excavations and fill on the Plan View and Cross Section Drawings.

Complete the following information to indicate the start/end dates and the current status of the proposed project.

a. Proposed project start date: 8 / 15 / 2015 **Proposed project completion date:** 8 / 15 / 2019

b. Is any of the project work in progress?

☑ **NO** (If NO, proceed to Step 9c.)

☐ **YES** (If YES, show and identify the work in progress on the Plan View and Cross Section Drawings.)

↘ Please explain

c. Is any of the project work complete?

☑ **NO** (If NO, proceed to Step 10.)

☐ **YES** (If YES, show and identify the work completed on the Plan View and Cross Section Drawings.)

↘ Please explain

Step 10 of 16

How would you describe the proposed project?

Note: To apply for a wetland determination, call the COE at 504-862-1627.

Note: Information provided in this Step must be consistent with Maps and Drawings.

Note: For any equipment used, show the access route and construction right of way on the Maps and Drawings.

Complete the following information to describe structures, materials and methods for the proposed project.

Cubic yards are determined by using this formula. *(Length (ft.)* ***X*** *Width (ft.)* ***X*** *Depth (ft.) divided by 27 = Cubic Yards)*

Example: **25 ft. X 25 ft. X 5 ft. divided by 27 = 115.7 Cubic Yards**

Acres are determined by using this formula. *(Length (ft.)* ***X*** *Width (ft.) divided by 43,560 = Acres)*

Example: **250 ft. X 250 ft. divided by 43,560 = 1.43 Acres**

a. Excavation: 3,850,000.00 **Cubic Yards** 288.00 **Acres**

b. Fill: 59,151,999.00 **Cubic Yards** 10,554.00 **Acres**

c. What fill materials will be used for the proposed project?

(Check ☑ the appropriate box(es) and indicate the cubic yards for each type of fill material.)

☑ Concrete	371,293.00 Cubic Yards	☑ Rock (rip/rap)	65,676.00 Cubic Yards
☑ Crushed Stone or Gravel	102,290.00 Cubic Yards	☐ Sand	Cubic Yards
☑ Excavated & Placed on site	1,100,000.00 Cubic Yards	☑ Hauled in Topsoil/Dirt	584,035.00 Cubic Yards
☑ Excavated & Hauled off site	2,300,000.00 Cubic Yards		

☑ Other *(Please specify)*: Riverine Sources (See Pages 15-16) 55,000,000.00 Cubic Yards

d. What equipment will be used for the proposed project? *(Check ☑ the appropriate box(es).)*

☑ Airboat	☑ Bulldozer/Grader	☑ Marsh Buggy
☑ Backhoe	☑ Dragline/Excavator	☑ Other Tracked or Wheeled Vehicles
☑ Barge Mounted Bucket Dredge	☐ Handjet	☐ Self Propelled Pipe Laying Barge
☐ Barge Mounted Drilling Rig	☐ Land Based Drilling Rig	☑ Tugboat

☐ Other (Please specify.) _____

Continue to page 6 for step 11.

Step 11 of 16

What impact will the proposed project have?

Note: *You will be notified by OCM if a field investigation is required to determine if the proposed project will impact wetlands.*

Note: *Additional sheets may be required to adequately respond to 11b, 11c, 11d and/or 11e.*

Note: *Providing detailed information at the time of application may expedite processing of your proposal.*

a. Total acres of wetlands and/or waterbottoms filled and/or excavated: 10,505.00

b. What alternative locations, methods and access routes were considered to avoid impact to wetlands and/or waterbottoms?

As part of the engineering and design phase, alternatives are selected considering the use of existing access roads and drives to minimize impacts to wetlands. The following alternatives analysis represents the cumulative descriptions of decisions and efforts that support the selected alternative location for the MBSD project. (See Pages 16-19 for additional information)

c. What efforts were made to minimize impact to wetlands and/or waterbottoms?

The analysis and design of the MBSD was developed using the minimum channel width and guide levee footprint practicable to maximize conveyance of sediment- laden water to the mid-Barataria Basin. The channel alignment was developed for efficient sediment conveyance from the river to the mid-Barataria Basin. Best Management practices (BMPs) are being developed for access routes to minimize disturbance to wetlands between the MR&T levee and the back levee.

d. How are unavoidable impacts to vegetated wetlands to be mitigated? (Please note that a willingness to perform mitigation does not relieve the applicant from adequately addressing justification for (step 8e) and alternatives to (step 11b & 11c) the proposed activity)

This project is self-mitigating. The project's purpose is to divert sediment- laden water from the Mississippi River to mid-Barataria Basin (Basin), which will mimic historic deltaic sediment deposition and build land. Based upon previous completed modeling for land building analysis, it is anticipated that over 10,000 acres of wetlands will be created in Barataria Basin over a 50 year horizon. This equates to 100:1 acres of wetlands created for restoration to acres of wetlands impacted for the project construction and operation.

Landowner Rights

- The affected landowner(s) whose property may be impacted by the proposed project has (have) the option of requesting that compensatory mitigation be done on their property.
- Once OCM determines that mitigation is required, they will notify the applicant and all affected landowners of the extent and type of habitat impacted. The landowner(s) will be given thirty (30) days to formally request or waive their mitigation option. (This can cause substantial delays in processing of the application.)

Applicant Responsibilities

- Coordinate with the affected landowner(s) to develop a conceptual compensatory mitigation plan. This plan should be designed to offset the adverse impacts to vegetated wetlands which will occur from the proposed project. (This can also cause substantial delays in processing of the application.)
- To avoid delays, it is recommended that, prior to sending the application to OCM, you contact affected landowner(s) to:

  – Inform them of possible wetland impacts and discuss their compensatory mitigation rights; and
  –Ask them to indicate their intentions regarding compensatory mitigation on the form.

- Submit the Landowner Compensatory Mitigation Request/Waiver form along with your application.

Continue to page 7 for step 12.

Step 12 of 16

What are the requirements for notification of landowners and oyster lease holders of the proposed project site?

Note: OCM and COE both have mitigation requirements under different laws, rules and regulations; therefore, specific agency requirements may vary.

Note: If a property has multiple owners with undivided interest in the property, each person owning an interest is considered to be a landowner and must be notified.

Note: Additional sheets may be required if there are more than two landowners.

Note: Compensatory mitigation is not a monetary settlement to be used at the discretion of the landowner(s).

Note: A copy of the "Landowner Compensatory Mitigation Request/ Waiver" form is included with this application. To obtain additional copies, visit the OCM website or call:
•1-800-267-4019
Or
•225-342-7591

a. Are you applying for a Coastal Use Permit?

☐ **NO** (If NO, proceed to Step 12b.)
☑ **YES** (If YES, read the following information.)

Requirements for Notification of Landowners

It is the responsibility of the applicant to notify the landowner(s) of the property about this proposed project. Notification must include providing each impacted landowner with a copy of the permit application (form and plats) at the time the application is submitted to the Office of Coastal Management.

Requirements for Notification to Oyster Lease Holders

It is the responsibility of the applicant to notify all affected oyster lease holders about this proposed project. Notification must include providing each affected oyster lease holder with a copy of the permit application (form and plats) at the time the application is submitted to the Office of Coastal Management. The location of leases, and the name and contact information of the lessee can be obtained by contacting the LDWF Oyster Lease Survey Section at 504-284-5279. You also can use the OCM GIS interactive map on our website at http://sonris-www.dnr.state.la.us/www_root/sonris_portal_1.htm. Please note that copies of the lease holder notification letters must be included with your application packet at the time of submittal. For more information regarding notification requirements please contact the Oyster Lease Survey Section or visit our website at http://dnr.louisiana.gov/crm/coastmgt/permitsmitigation/oyster.asp.

While these are legal requirements to ensure that property owners/oyster lease holders are aware of proposals which might impact their land/oyster lease, it also serves as a proactive measure to initiate communication between the applicant and the landowner(s)/lease holders, especially when mitigation might be necessary. Since mitigation can be a lengthy process, taking proactive steps early in the process may significantly reduce the time necessary to receive an authorization.

b. Are you the sole owner of the property on which the proposed activity is to occur?

☐ **YES** (If YES, proceed to Step 12c.)
☑ **NO** (If NO, follow the instructions below.)

Check ☑ the appropriate box(es) and complete the landowner information to attest to OCM that a copy of this application has been sent to all landowners whose property will be impacted by the project.

☐ The applicant is an owner of the property on which the proposed described activity is to occur.
☐ The applicant has made every reasonable effort to determine the identity and current address of the owner(s) of the land on which the proposed described activity is to occur, which included, if necessary, a search of the public records of the parish in which the proposed activity is to occur.
☑ The applicant hereby attests that a copy of the application has been distributed to the following landowners.

Landowner/Lease Holder #1: Ram Terminals, LLC.
Name of Landowner / Lease Holder

Mailing Address: 7733 Forsyth Blvd.
Street Address or P.O. Box | Unit/Apartment #

St. Louis | | MO | 63105-1836
City | Parish | State | Zip Code

Landowner/Lease Holder #2: Phillips 66
Name of Landowner / Lease Holder

Mailing Address: P.O. Box 2197
Street Address or P.O. Box | Unit/Apartment #

Houston | | TX | 77252
City | Parish | State | Zip Code

c. Does the project involve drilling, production, and/or storage of oil and gas?

Note: See our FAQ for a list of regulations that may be applicable. Be aware that this list is for example proposes and does not purport to be complete or indicate applicability in any particular situation or project. It is the applicant's responsibility to be fully aware of all regulatory requirements, to list those requirements and certify that thy will be in compliance.

☑ **NO** (If NO, proceed to Step 13.)
☐ **YES** (If YES, review and complete the certification below. You must attach a list of all state and federal laws and rules and regulations dealing with spill prevention and containment. Your signature on step 14 certifies that you are aware of the terms and conditions of each requirement and that you will remain in compliance at all times.)

I, ______________________ hereby certify that I am the ______________________ of
(Name of officer) *(Name of Office)*
______________________, hereinafter referred to as the Applicant and that I have authority to
(Full legal name of the entity seeking a permit)
act on behalf of and bind that legal entity, and by my signature below I certify that the information in the application is true and correct to the best of my knowledge, that Applicant has provided a complete list of the requirements for protection of health, safety and the environment, and that Applicant is in full compliance with all applicable safety and environmental regulations as listed on the attached sheet, specifically including when applicable, LAC 43:XIX.111 Diverter Systems and Blowout Preventers.

Continue to page 8 for step 13.

Step 13 of 16

Why are Maps and Drawings required to obtain a permit?

Note: *The following websites may provide assistance in completing the Vicinity Map:*
•Sonris on OCM website
•MapQuest.com
•Topozone.com

Note:
For additional assistance with specific requirements, refer to the samples provided in this application package.

Quality Maps and Drawings are required to process the Joint Permit Application and for Public Notice. They must visually reflect what will be done in the proposed project and are key to the overall evaluation.

The following Maps and Drawings must be submitted with the Joint Permit Application and must show both existing and proposed conditions.

- **Vicinity Map** - Illustrates access to and the location of the proposed project relative to surrounding areas;
- **Plan View Drawing** - Illustrates an overhead view of the proposed project; and
- **Cross Section Drawing** - Illustrates a side view of the proposed project.

In general, all Maps and Drawings should be:

- Legible and clearly labeled on single sided 8½ x 11 size paper; (large drawings that are reduced in size to fit the 8½ x 11 format are not acceptable if the scale is no longer accurate and if the dimensions and details are not clear and easy to read after reproduction in the Public Notice);
- Drawn to scale with the scale identified graphically on each drawing; (if you cannot provide Maps and Drawings to scale, you may submit the dimensions of the proposed and existing features of the work area displayed);
- Black and white **ONLY** (Colored Maps and Drawings will **NOT** be accepted);
- Accurate and reproducible;
- Placement of the north arrow, title, legend and scale bar must be consistent on Maps and Drawings; and
- Information provided in Steps 1 through 12 must be consistent with the Maps and Drawings.

Inadequate or poor Maps and Drawings are the primary reason for delays in the permitting process.
Sample Maps and Drawings are provided with this Joint Permit Application package for your assistance.
Link to sample plats:
http://dnr.louisiana.gov/crm/coastmgt/cup/sampleplats.asp

Step 14 of 16

Who needs to certify and sign this application?

Note:
The application must be signed and dated by the applicant who desires to undertake the proposed activity.

Read the following information. Print your name, sign and date to certify this application for processing.

- Application is hereby made for a permit or permits to authorize the work described in this application.
- To the best of my knowledge the proposed activity described in this permit application complies with and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program.
- I certify that the information in this application is complete and accurate.
- If applicable, I also certify that the declarations in Step 12, notification to landowner(s), are complete and accurate.
- If applicable, I also certify that the declarations in Step 12c, oil spill response, are complete and accurate.
- I will abide by the conditions of the permit or license if issued and will not begin work without the appropriate authorization.
- Permission is granted to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the property site during working hours for inspection purposes.
- If applicable, I authorize the agent identified in Step 2 to act in my behalf as agent for this application and the agent will furnish, upon request, information in support of this application.

Note: *If an agent is being used, the applicant and agent must sign and date this application.*

________________________	________________________	____/____/____
Clearly Print Name of Applicant	Applicant Signature	Date

- As the agent, I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

________________________	________________________	____/____/____
Clearly Print Name of Authorized Agent	Authorized Agent Signature	Date

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than 5 years or both.

Continue to page 9 for step 15.

Step 15 of 16	

What fees are required for permit processing and what methods are available for payment?

The following fees apply and must be received in order to process the application.

a. **Check ☑ the appropriate box to indicate the fee type:** *(See the "Glossary" on page 10 for the definitions of terms.)*

☐ **$100.00 - Non-Residential**
☐ **$ 20.00 - Residential**

- If your activity involves dredging or filling, OCM will bill you on the basis of $.04 per cubic yards for residential uses and $.05 per cubic yards for all other uses.
- Fees may not apply if the Joint Permit Application is being processed by the local Parish.
- Additional fees may be assessed for mitigation processing.

COE and Local Parish Program fees will be assessed separately at the end of the process.

b. **Check ☑ the appropriate box to indicate payment method:**

☐ **Check/Money Order** ☐ **Electronic Transfer**
☐ **Credit Card (Visa or MasterCard only)** ☐ **Escrow Account**

- Make Check/Money Order payable to the Office of Coastal Management.
- To pay by Credit Card, Electronic Transfer or Escrow Account, call OCM at 1-800-267-4019 to provide specific account information or provide account information on a separate sheet of paper and include with application.
- Cash is not accepted.

Step 16 of 16	

How do I submit the Joint Permit Application and Maps and Drawings for processing?

If your project is in the Galveston or Vicksburg District of the Corps of Engineers, please see page 12.

Note: *Please keep a copy of the completed application for your records.*

To submit this permit application, Maps and Drawings and all supporting documentation, select an option below.

MAIL:

Office of Coastal Management
P.O. Box 44487
Baton Rouge, LA 70804-4487

If you select the MAIL option, submit the original Joint Permit Application, Maps and Drawings and supporting documentation.

EXPRESS MAIL:

Office of Coastal Management
617 North 3rd Street,
Suite 1078
Baton Rouge, LA 70802
Phone: 225-342-7591

If you select the EXPRESS MAIL option, submit the original copies of the Joint Permit Application, Maps and Drawings and supporting documentation.

FAX:

225-342-6760
Attention: Office of Coastal Management, Joint Permit Application Processing

- Include a cover sheet with the total number of pages; and
- If you select the FAX option, follow-up with one of the mail options to prevent delay if the fax is not legible.
- Payment arrangements should be made prior to faxing your application by calling OCM at 1-800-267-4019.

Continue to page 10 for "Glossary of Terms".

Glossary of Terms

The following information may provide a better understanding of terms that are used throughout this application.
If the terms defined in this section do not help you, please contact OCM at one of the following, 1-800-267-4019 or 225-342-7591.

Adjacent Landowner
Property owners or lessees whose property is contiguous or shares a common border with that being developed.

Affected Landowner
The owner of the land on which a proposed activity will occur. If a property has multiple owners with undivided interest, each person owning an interest is considered to be an affected landowner.

Coastal Use Permit
A permit required by 214.30 of the SLCRMA. The term does not mean or refer to, and is in addition to, any other permit or approval required or established pursuant to any other constitutional provision or statute.

Compensatory Mitigation
As defined by OCM, replacement, substitution, enhancement, or protection of ecological values to offset anticipated losses of ecological values caused by a permitted activity.
As defined by the COE, compensating for unavoidable adverse impacts to wetlands by restoring areas to wetlands, creating wetlands, or enhancement of wetlands. Most compensatory mitigation involves purchase of mitigation credits in a private mitigation bank. The amount of credits purchased is dependent on the amount of wetland values that would be lost because of the permitted project.

Cross Section
A side view of a project area illustrating elevations of features such as natural ground; buildings; bulkheads; piers; and depressions such as waterways, ditches, ponds, etc. Cross sections also show side views of proposed work such as dredging and filling.

Discharge
The placement or movement of fill or excavated material using methods including, but not limited to dragline or backhoe buckets, bulldozers, front loaders, dump trucks, hydraulic dredge pipes, wheel-washing or prop-washing, jetting, etc.

Dredged Material (Spoil)
Material that is excavated as part of a specific project.

Ecological Value
The ability of an area to support vegetation, fish and wildlife populations.

Excavate
To dig out, remove or move earthen material, or to form a cavity or hole including linear features. Methods include, but are not limited to, draglines, backhoes, bulldozers, front loaders, hydraulic dredges, wheel-washing or prop-washing, jetting, etc.

Fastlands
Lands surrounded by publicly-owned, maintained, or otherwise validly existing levees or natural formations as of January 1, 1979, or as may be lawfully constructed in the future, which levees or natural formations would normally prevent activities, not to include the pumping of water for drainage purposes, within the surrounded area from having direct and significant impacts on coastal waters.

Fill Material
Any material including, but not limited to, soil, rocks, sand, clay, construction debris, trees, wood chips, broken concrete and asphalt, etc., whose placement replaces any portion of a waterbottom or wetland with dry land or changes the elevation of wetlands or waterbottoms. This material may come from on-site or be imported from an off-site source.

Mean High Water
The average position (elevation) of the high water mark.

Mean Low Water
The average position (elevation) of the low water mark.

Mitigation
All actions taken by a permittee to avoid, minimize, restore, and compensate for ecological values lost due to a permitted activity.

Non-Residential
Includes all actions that do not meet the requirements for the Residential category.

Non-Vegetated Waterbottoms
Waterbottoms that lack the presence of rooted vegetation.

Non-Wet Areas
Any area that has sufficiently dry conditions that indicate hydrophytic vegetation, hydric soils, and/or wetland hydrology are lacking.

Off-site
Not within or adjoining the area directly modified by the permitted activity and not directly related to implementation of the permitted activity.

On-site
Within or adjoining the area directly modified by the permitted activity or directly related to implementation of the permitted activity.

Residential
Any coastal use associated with the construction or modification of one single-family, duplex, or triplex residence or camp. It shall also include the construction or modification to any outbuilding, bulkhead, pier, or appurtenance on a lot on which there exists a single-family, duplex, or triplex residence or camp or on a water body which is immediately adjacent to such lot. Uses which do not fit this definition are non-residential. The Coastal Use Permit application fee for residential projects is $20.

Unavoidable Net Loss of Ecological Values
The net loss of ecological value that is anticipated to occur as the result of a permitted/authorized activity, despite all efforts, required by the guidelines, to avoid, minimize, and restore the permitted/authorized impacts.

Vegetated Waterbottoms
Waterbottoms that exhibit the presence of rooted vegetation.

Wetlands
For the purposes of §724 (as defined in R.S. 49:21.41), Open water areas or areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions.

Continue to page 10 for "Frequently Asked Questions".

Frequently Asked Questions

The following questions and answers may assist you during the application process. For an expanded version of frequently asked questions, visit our website at http://dnr.louisiana.gov/CRM/faq.asp

What gives the Office of Coastal Management (OCM) the right to regulate private property?

OCM does not regulate private property. OCM regulates activities that have a direct and significant impact on state public resources. OCM's authority derives from Louisiana Revised Statute 49:214.21 et seq. Visit the legislative website for additional information at http://www.legis.state.la.us/lss/tsrssearch.htm.

How does the Joint Permit Application process work?

In general, an application is submitted which details the location and scope of the proposed work. OCM – Permits & Mitigation Division, which serves as a central collection point for the applications, distributes the applications to interested parties for their review and comment. OCM - Permits & Mitigation Division and the commenting agencies review the application for conformance with programmatic requirements and look for ways of minimizing impacts to coastal resources (e.g., vegetated wetlands, bird rookeries, endangered species, etc.). If necessary, negotiations are entered into to find locations, technologies or methods of implementing the project which will accommodate the needs of the permit applicant while conforming with the mandates of the various state and federal agencies. Once consensus is reached an appropriately conditioned permit is issued.

Who receives a copy of my Joint Permit Application?

The following agencies/offices receive a copy of your application:

- OCM Permit Section;
- Local Programs Section, (if necessary);
- OCM Support Services Staff;
- OCM Field Investigator;
- The Army Corps of Engineers; and
- State Land Office.

How long does it take to obtain a permit?

The following schedules are offered with the assumption that all of the information required by OCM is included in the application and the plats are adequate, clear and legible. For activities that are exempt from permit requirements, the determination is normally issued in under seven days. Projects that are determined to have no direct or significant impacts to coastal resources are issued in 4 to 10 days depending on location. Authorizations for activities that qualify for a General Permit are issued in 10 to 15 days. For those activities that require full public notice, a minimum of 45 days is required. During review of the permit application, for more complex activities, additional information may be requested. The more promptly the applicant can furnish this information the less time it will require to issue the authorization. The requirement for mitigation of wetland impacts is one of the factors that increases the time required for permit application review, as does coordination with other State agencies for activities affecting resources of concern to that agency

How do I check the status of a submitted Joint Permit Application?

Information regarding submitted permits may usually be obtained on the OCM website: http://sonris.com/direct.asp?server=sonris-www&path=/sonris/cmdPermit.jsp%3Fsid%3DPROD.

How does OCM protect the information that I provide throughout this application?

Information provided on the application is used to evaluate the activity that is proposed for permitting, and this information is generally available for inspection and copying by the public, pursuant to the Louisiana Public Records act. There are some limited exceptions to the public records laws to protect certain types of records or information from public inspection. Please contact our office, **before** you submit any records or information that you would prefer not be available for public inspection or copying. In any case, simply marking a document "CBI" or "confidential business information" will not guarantee that the records or information will be protected from public inspection and copying.

May I submit a Joint Permit Application to the Parish instead of OCM?

Yes, if your project is located in a parish with an approved Local Coastal Program (Calcasieu, Cameron, Jefferson, Lafourche, Orleans, Plaquemines, St. Bernard, St. James, St. Tammany or Terrebonne) then you may submit your application to either the approved local program or the state office. If you submit the application to the state office, it will be input into the system and reviewed at that time. If you submit your application to the local parish office, then that office will forward the application to the state office to be input into the system and reviewed. Please allow additional time to receive a response if you choose the latter option.

What other permits may be required?

If your project involves dredging or filling of wetlands you may need a Water Quality Certification from the Department of Environmental Quality.
Other approvals may be required but are not limited to the following:

- State Land Office;
- Department of Wildlife and Fisheries;
- Department of Culture, Recreation and Tourism;
- Department of Transportation and Development; and/or
- Department of Health and Hospitals.

These agencies will notify you of their requirements as part of the Joint Public Notice process.

When I receive my permit from OCM, may I begin work?

Following the determination from OCM, work may begin only after obtaining any necessary permit(s) from the COE, including any required mitigation, and any approvals or permits required any local authority or agency or by any state or federal agency, as may be required by law for said activity or the construction of the referenced project.

How may I receive an extension for a permit?

If you have not begun work on your project within two years of the date of permit issuance, the initiation period can be extended for an additional two years if you submit a request to OCM no less than sixty days and no more than one-hundred and eighty days before the initial two year period expires. The expiration date can be extended. Follow the same rules. There is an $80.00 extension fee.

If I began my project without a permit, what will happen?

OCM processing of any pending Joint Permit Application for the project will be suspended until the violation is resolved. You may be required to remove any structures installed and restore any impacted habitat. You may be subject to fines of up to $12,000and may be jailed up to six months. The penalties assessed by the Army Corps of Engineers may be significantly more expensive and more complicated.

Did I break the law if I have already done some clearing?

A representative from LDNR will perform a field investigation and project evaluation in order to determine the extent of any impacts and if you have violated any laws.
Contact OCM at 1-800-267-4019 for assistance.

What is Section 10 of the Rivers and Harbors Act?

Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable water of the United States without a permit from the U.S. Army Corps of Engineers.

What is Section 404 of the Clean Water Act?

Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into waters of the United States without a permit from the U.S. Army Corps of Engineers.

How do I receive additional information on the Joint Permit Application process?

For additional information regarding the Joint Application Process, contact OCM at 1-800-267-4019 or visit the website at: http://dnr.louisiana.gov/crm/. You may also contact the Army Corps of Engineers at 504-862-2766 or visit the website at: www.mvn.usace.army.mil/ops/regulatory.

Continue to page 12 for "Contacts and Additional Landowner Information".

Contacts and Additional Landowner Information

If your project is in the Galveston or Vicksburg COE District, submit your application directly to them. See addresses listed below.

COE District Contact Information:

U.S. Army Corps of Engineers
Galveston District
Attention: CESWG-PE-R
P.O. Box 1229
Galveston, TX 77553-1229
Phone:409-766-3930
Fax:409-766-3931

U.S. Army Corps of Engineers
Vicksburg District
Attention: CEMVK-OD-F
4155 Clay Street
Vicksburg, MS 39183-3435
Phone:601-631-5276
Fax:601-631-5459

Additional Landowner Information (if necessary):

Adjacent Landowner #5: See additional landowner information attached
Name of Adjacent Landowner

Mailing Address: ______________________
Street Address or P.O. Box | Unit/Apartment #

City | Parish | State | Zip

Adjacent Landowner #6: ______________________
Name of Adjacent Landowner

Mailing Address: ______________________
Street Address or P.O. Box | Unit/Apartment #

City | Parish | State | Zip

Adjacent Landowner #7: ______________________
Name of Adjacent Landowner

Mailing Address: ______________________
Street Address or P.O. Box | Unit/Apartment #

City | Parish | State | Zip

Adjacent Landowner #8: ______________________
Name of Adjacent Landowner

Mailing Address: ______________________
Street Address or P.O. Box | Unit/Apartment #

City | Parish | State | Zip

Additional Project Information - Mid-Barataria Sediment Diversion (BA-153)

4b. Have you obtained an official wetland determination from the COE for the project site?

No official wetland determination has been obtained specifically for the entire footprint of the MBSD project. A field visit for delineation and habitat evaluation of waters of the U.S., including wetlands, was conducted on November 12 and 13, 2012, by HDR wetland scientists and experienced delineators. The field evaluation was confined to the 1400-foot width of the preliminary project footprint. It is worth noting that the field investigation was conducted within three months of Hurricane Isaac which caused substantial flooding throughout the study area resulting in atypical hydrologic and vegetation indicators. Therefore, the preliminary delineation was considered a conservative evaluation and likely overestimates the extent of wetland conditions in the project area.

Consistent with the recommended methodology for atypical situations, additional data and information on the normal conditions was collected from recent aerial photography and previous delineation and jurisdictional determination documentation. Rob Heffner of the USACE New Orleans District, Regulatory Branch, provided information on recent preliminary jurisdictional determinations (PJD # MVN-2009-00898-SY and # MVN-2011-02552-SY) covering approximately seventy (70) percent of the MBSD project footprint. No official jurisdictional determination has been received specific to the entire footprint of MBSD project. The Preliminary Jurisdictional Determinations provided for portions of the project area, in combination with recent aerial photography and field data collected by HDR wetland scientist, were used in the wetland calculations presented in step 11a.

5a. Describe the Project.

In order to maximize sediment capture, the diversion would be operated when the Mississippi River flows above 600,000 cfs at the Belle Chasse gauge. Anticipated project benefits include building, sustaining, and maintaining land. Secondary long-term project benefits include minimizing flooding risks to coastal communities and both restoring and preserving critical coastal ecosystems.

The main elements of the project are the diversion structure and the conveyance channel. The channel will be located at River Mile 60.7, south of the Phillips 66 Alliance Refinery and north of the community of Ironton, and it will consist of a gated intake structure approximately 800 feet west of the Mississippi River and Tributaries (MR&T) levee. The design of the structure will allow for adaptability in controlling flows and the capture of sediment. The conveyance channel will cross the back levee and outfall into the Basin. Guide levees will be constructed parallel to the conveyance channel and will tie into the MR&T levee and the back levee systems. Construction will be sequenced so that the MR&T Levee will continually provide protection. The back levee is currently being brought into the Federal protection system under the USACE New Orleans to Venice (NOV) Hurricane Protection Project. The MBSD may include a surge protection structure east of the NOV Hurricane Protection Levee right-of-way which will be designed to tie into the levee.

Railroad, roadway, and drainage infrastructure improvements are included as part of the MBSD Project because they are needed to accommodate the construction and operation of the diversion structure and the diversion channel. The New Orleans & Gulf Coast Railway (NOGC RR) will require a bridge crossing over the conveyance channel as well as track realignment into the eastern most portion of the LA 23 right- of -way north of the conveyance channel for approximately two (2) miles. LA 23 is a four-lane divided state highway that serves as the hurricane evacuation route for lower Plaquemines

Parish. A four-lane highway bridge will span the conveyance channel and would be located within the existing LA 23 right-of-way just west of the existing highway alignment to accommodate lane transitions. During construction, LA 23 will remain open to traffic through the construction of a temporary detour route that will be located west and outside of the existing LA 23 right-of-way within temporary construction servitude.

The diversion channel will bifurcate existing drainage and isolate properties north of the project area, including drainage for LA 23. Forced drainage is currently provided by Wilkinson Canal Pump Station located near Myrtle Grove to the south for the project area. The MBSD will require the modification of internal drainage collection swales and the construction of a new drainage pump station north of the conveyance channel in order to capture and convey area drainage north of the channel to the Basin. Construction and operational benefits have been analyzed for the proposed pump station. The current selected alternative from the drainage study places the proposed pump station at Chenier Traverse Bayou, north of West Ravenna Road where an aggraded channel intercepts the back levee. A pump station at this location would provide a more centralized drainage outfall location for the newly created north forced drainage area. Right-of-way and road access will be required for the construction and maintenance of the proposed pump station.

Relocations of water and electrical utility lines will be needed in order to accommodate the construction and operation of the diversion channel and the proposed LA 23 and NOGC RR bridges. A 22 inch crude oil pipeline is located immediately west of the proposed channel outfall. Alternatives for protection and/or relocation will be evaluated. All infrastructure and utility improvements and relocations will be based upon continued service during construction and will be designed and constructed using utility owner criteria and guidelines and addressing hurricane criteria during interim and final phases of construction.

An Operations and Maintenance Plan will be developed for the MBSD prior to construction. The currently anticipated operations plan includes opening the diversion structure when the Mississippi River flows above 600,000 cfs at the Belle Chasse gauge, diverting up to 75,000 cfs of sediment- laden water. The MBSD structure will be closed during extreme weather events and hurricanes.

An Adaptive Management Plan will be developed to maximize sediment transport from the Mississippi River to the Basin to build, sustain, and maintain land. The Adaptive Management Plan would monitor the diversion control structure and outfall area and allow for variable flow rates to respond to seasonal, sediment, and Basin conditions, maximizing the benefits of sediment transport for restoration. Monitoring stations will be placed in the Mississippi River at RM 60.7 (and other locations, as well as in the Basin at the channel outfall and other areas, to be determined).

Step 10a. Excavation					
Location	**Habitat Type (existing)**	**Feature**		**Area (acres)**	**Excavation (CY)**
Mississippi River	Riverine	Diversion Channel		14.0	350,000
Batture	Forested Wetlands	Diversion Channel		4.2	202,796
MR&T levee west to LA 23	Forested Wetlands	Diversion Channel		3.2	127,050
LA 23 west to back levee	Emergent Wetlands	Diversion Channel		30.9	1,247,510
	Open Water Canal/ Drainage (WOTUS)	Diversion Channel		1.8	57,112
MR&T levee to back levee	Non-wetland (uplands)	Diversion Channel		230.0	1,765,532
Barataria Basin	Waterbottom	Outfall Transition Zone		4.0	100,000
Cumulative Subtotals	Riverine			14.0	350,000
	Wetlands			38.3	1,577,356
	Open Water Canal/ Drainage (WOTUS)			1.8	57,112
	Waterbottom / Emergent wetlands			4.0	100,000
	Non-wetland (uplands)			230.0	1,765,532
			Total	***288.0***	***3,850,000***

Step 10b & 10c. Fill					
Location	**Habitat Type (existing)**	**Feature**	**Material**	**Area (acres)**	**Fill (CY)**
MR&T levee west to LA 23	Forested Wetlands	Construction access	Soil, gravel	2.4	11,568
		Guide Levees	Soil, rock, concrete	2.4	25,931
LA 23 west to back levee	Emergent Wetlands	Construction access	Soil, gravel	22.8	110,207
		Guide Levees	Soil, rock, concrete	24.7	221,031
LA 23 west to back levee	Open Water Canal/ Drainage (WOTUS)	Construction access	Soil, gravel	2.1	10,261
		Guide Levees	Soil, rock, concrete	2.4	23,293
MR&T levee to back levee	Non-wetland (uplands)	Construction access	Soil, gravel	64.5	311,964
		Guide Levees	Soil, rock, concrete	41.5	1,129,746
Construction Routes	Non-wetland (uplands)	Access / Haul Roads	Soil, gravel	1.5	8,000
Barataria Basin (Benefits)	Waterbottom / Emergent wetlands	Nourishment Disposal Area	Topsoil, soil	390*	2,300,000
	Waterbottom / Emergent wetlands	Barataria Basin land building	River sediment	10,000†	55,000,000.00
Cumulative Subtotals	Wetlands			52.3	368,736
	Open Water Canal/ Drainage (WOTUS)			4.5	33,553
	Non-wetland (uplands)			107	1,449,710
	Waterbottom / Emergent wetlands	Land / marsh building		10,390	57,300,000
			Total	***10,554.2***	***59,151,999***

10b & 10c. Supplemental Fill information to Table on Page 16.

Note: Due to preliminary design stage, the amount of fill material by type (e.g., soil, rock, concrete, etc.) is approximate.

* Earthen fill - excavated from channel and placed in Barataria Basin as Nourishment Disposal.

† Sediment - Riverine Sources, via the diversion channel. CY based on preliminary modeling over a 45 year period.

11a. Total acres of wetlands and/or waterbottoms filled and/or excavated:

- Wetlands excavated = 38.3 acres
- Wetlands filled = 52.3 acres
- Waterbottom excavated = 19.8 acres
- Waterbottom filled = 10,395 acres

11b. What alternative locations, methods and access routes were considered to avoid impact to wetlands and/or waterbottoms?

The MBSD alternatives analysis consists of alternative evaluations from the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Program, Louisiana Coastal Area (LCA) Ecosystem Restoration Study, LCA Medium Diversion at Myrtle Grove with Dedicated Dredging Feasibility Study, the State/NGO Myrtle Grove Delta Building Diversion Modeling Effort in Support of LCA Medium Diversion at Myrtle Grove with Dedicated Dredging, the 2012 Louisiana Coastal Master Plan, and MBSD engineering and design.

<u>Alternative Analysis</u>

<u>CWPPRA and the LCA Ecosystem Restoration Study</u>

As indicated in the LCA Ecosystem Restoration Study Main Report, the development of alternative configurations for this restoration feature stretches over a number of years. The CWPPRA planning process identified and approved investigation of a number of possible projects at various sites in the vicinity of Myrtle Grove. The potential projects included management of the existing Naomi siphon, construction of an additional siphon, creation of wetlands through dedicated dredging, and others. CWPPRA provided funding for the Mississippi River Sediment, Nutrient, and Freshwater Redistribution study (MRSNFR) to investigate and optimize the reintroduction of river resources into coastal wetlands and initiated a comprehensive evaluation study to coordinate all CWPPRA efforts as well as possible larger-scale diversion opportunities.

Originally, the MRSNFR study identified and developed two scales of diversion, 5,000 and 15,000 cfs, in the vicinity of Myrtle Grove. A draft report was developed for the MRSNFR study and adopted by the CWPPRA Task Force as the basis for a number of diversion projects that were approved for detailed design. Several locations for a diversion were assessed, and the primary area of impact varied slightly. According to the report, "the findings of this overarching assessment of riverine potential lead to the initiation of the comprehensive evaluation study in the Myrtle Grove area."

In 2001, the CWPPRA Task Force approved the Delta Building Diversion at Myrtle Grove detailed design study. The initial federal sponsor of the study was the National Marine Fisheries Service (NMFS); however, the Federal sponsorship of the study was later transferred to the U.S. Army Corps of Engineers (USACE), New Orleans District, under the Louisiana Coastal Area program.

The second, comprehensive CWPPRA study of Myrtle Grove was initiated in March 2002 with the issuance of a Notice of Intent (NOI) to complete an EIS; a series of four public scoping meetings were conducted focusing on the specific problems, needs, and opportunities of the Barataria Basin in the vicinity of Myrtle Grove. An interagency Plan Development Team (PDT) reviewed and screened the public input from the scoping meetings, identifying and formulating alternative restoration plans. These plans incorporated the previously identified CWPPRA and MRSNFR projects, as well as new feature ideas, combinations, and scales developed from the scoping input. A key commonality between all of the previously identified alternatives was their basic fit within a local ecosystem. The nature of the marsh in the vicinity of Myrtle Grove was broken and was continuing to deteriorate rather than being completely open or nearly lost. As such, the alternatives developed in the previous CWPPRA and MRSNFR efforts capitalized on synergistically working with the remaining wetlands.

The result of the 2002 scoping effort was a range of diversion options between 2,000 and 15,000 cfs in combination with the direct creation of marsh using dredged sediments. From this scoping effort, hydraulic and salinity modeling of the immediate Myrtle Grove outfall area was completed along with the development of potential marsh creation sites.

The scoping and formulation effort for the LCA Ecosystem Restoration study was undertaken two to three months subsequent to scoping for the Myrtle Grove CWPPRA comprehensive study effort. The LCA effort also considered possible features near Myrtle Grove but did so in a larger context of restoration for an entire province, or designated area within the Chenier or Deltaic Plain. As a result, the LCA formulation, while identifying alternatives similar to the CWPPRA study, also identified large to extremely large diversions as possible alternatives. The alternative frameworks for Subprovince 2, consisting of the hydrologic boundary for the Barataria Basin, included potential diversions in the Myrtle Grove vicinity ranging from 5,000 – 150,000 cfs with various combinations of marsh creation, and sediment introduction to the diversions. Hydraulic and ecological modeling of the subprovince frameworks and a cost effectiveness analysis to develop the complete range of possible coastwide frameworks were performed.

Through the LCA plan, the a Medium Diversion at Myrtle Grove with Dedicated Dredging project was conditionally authorized for construction by Congress in the Water Resources Development Act of 2007 as a near-term, critical restoration feature. The alternative selection was based on the premise that construction for restoration features could begin within 5 to 10 years, subject to approval of feasibility-level decision documents by the Secretary of the Army.

The Medium Diversion at Myrtle Grove with Dedicated Dredging was authorized in Title VII Louisiana Coastal Area of the Water Resources Development Act of 2007 section 7006 entitled, "Construction." WRDA 2007, section 7006(c)(3) requires a construction report submitted by the Secretary of the Army documenting any modifications to the project prior to the construction of the project.

Louisiana State/NGO effort

In 2008, the State entered into an agreement with the Environmental Defense Fund and its partner, the National Wildlife Federation and the National Audubon Society, to complete the Myrtle Grove Delta Building Diversion Modeling Effort. It was the intent of EDF and CPRA to utilize the modeling effort to initiate the process of satisfying the WRDA requirements in order to hasten construction of a diversion at Myrtle Grove. A multi-disciplinary team was established to conduct extensive riverine and basin data collection, sediment transport analyses, numerical and physical modeling, and additional conceptual design.

Investigative and screening level modeling was conducted to evaluate design flows; explore river side concerns (sediment load changes, velocity, and downstream effects); identify the optimal location and size to maximize sediment capture; explore bay side impacts (salinity, water elevation, and velocity); and evaluate geomorphology of the receiving basin and assess the land building potential.

Completed in December 2011, the Myrtle Grove Delta Building Diversion Modeling Effort in Support of the LCA Project evaluated alternative alignments (USACE Alignment and Modified Alignment) and alternative locations (RM 60.2 and RM 60.7) for flows of 15,000 cfs to 45,000 cfs, along with larger flows of up to 250,000 cfs to examine optimum diversion designs, land building potential and ecosystem impacts. Numerical modeling results were used to quantify the anticipate volume of sediment deposition, with and without consolidation, over a 10, 25 and 45 year period. Bayside hydrodynamic modeling was performed to evaluate the upper limit of feasible diversion flows. Six diversion flow scenarios of 15,000 cfs, 45,000 cfs, 75,000 cfs, 150,000 cfs, 240,000 cfs and 300,000 cfs were modeled in combination with a nominal flow rate for the Davis Pond Diversion. Model results provided an estimate of the anticipated effects within the Basin due to changes in water surface elevation and velocity from the diversion.

Design features for the conveyance channel were refined to increase the diversions ability to capture sediment and to improve the sediment to water ratio. The diversion structures investigated included the original USACE Alignment and Modified Alignment, with intake structures located RM 60.2 and RM 60.7. Simulations for three diversion sizes (15,000 cfs, 45,000 cfs and 75,000 cfs) were performed. The model results showed that the larger 75,000 cfs diversion would intercept more sediment, resulting in higher sediment to water ratios while conversely leaving a higher percentage of water in the River, thereby minimizing potential river and bayside effects. The preferred alternative for engineering and design was a diversion with a capacity up to 75,000 cfs located at RM 60.7 with a straight alignment.

<u>LCA Medium Diversion at Myrtle Grove with Dedicated Dredging Feasibility Study</u>

The ongoing State/USACE Federal feasibility level study effort for the MDMG Project (2010-present) is evaluating diversion alternatives ranging from 15,000 cfs to 125,000 cfs, with varying scales of dedicated dredging. The feasibility analysis considered a range of locations for placing the diversion at Myrtle Grove from RM 49.3 – 61.5. Supported by work from the State/NGO effort, along with additional alternatives analysis criteria, the Project Delivery Team is currently in support of the Modified Alignment at RM 60.7 AHP. The recommended diversion size has not yet been determined.

<u>Louisiana State Master Plan</u>

As part of Louisiana’s Comprehensive Master Plan for a Sustainable Coast 2012 (2012 Master Plan), the land building potential for the MDSD Project was further evaluated for three diversion flow regimes (5,000 cfs, 50,000 cfs, and 250,000 cfs) under various future environmental scenarios which varied factors such as Mississippi River discharge, subsidence, and sea level rise. Historic Mississippi River flow data from 1990 to 2009 were used to establish river flow thresholds. Near-term land building (20 year horizon) and long-term land building (50 year horizon) model results concluded that a 50,000 cfs Mid-Barataria diversion has the potential to build and maintain 50 square miles of land over 50 years depending on future environmental conditions. Based on these results, the MBSD Project was selected to address long-term land building and coastal sustainability needs. The project was recommended for first period implementation (2012 to 2031) within the 2012 Master plan. Various data sets are available on project level and Master Plan level, including accretion, water level, salinity, elevation, percent land, vegetation, and ecosystem services.

MBSD Detailed Design

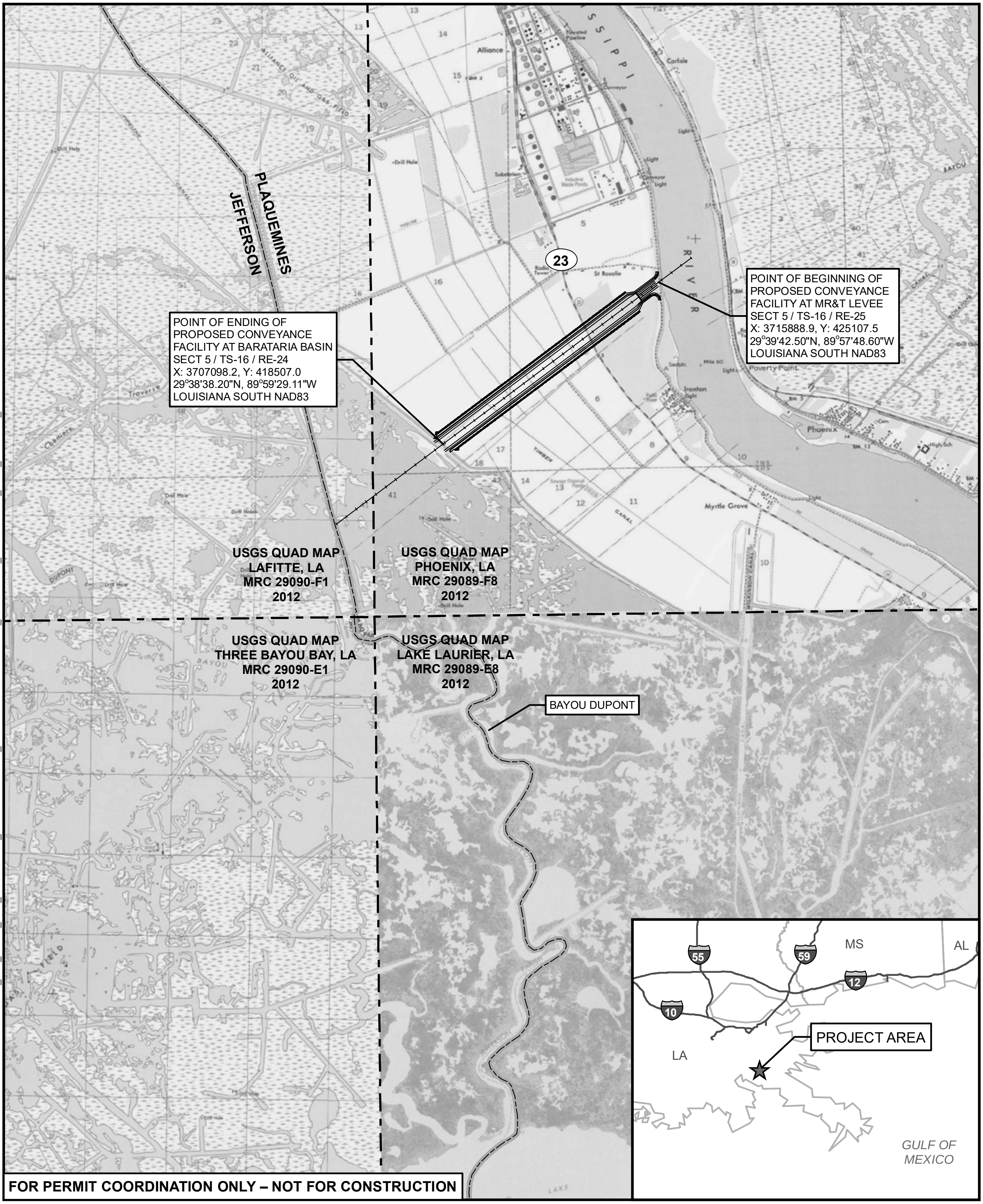
As part of the current analysis for CPRA's MBSD engineering and design, hydraulic and sediment modeling will be conducted to refine the design of the following features: conveyance channel width, side slope and invert, channel typical section transitions; guide levee geometry; revetment/channel protection; intake structure (type, size and location); back structure/surge protection (type, size and location); outfall treatment/transition; guide levee tie-in to MR&T and NOV levee systems; and railroad and roadway alignments and their associated bridge structure types and locations. Each of these features will be evaluated to determine the optimal flow regime necessary to maximize sediment capture and minimize impacts. Modeling will be conducted to determine optimum land building scenarios including the cumulative effects with recently constructed marsh creation projects as well as those near-term authorized projects.

12b. – MBSD LANDOWNER/ LEASE HOLDERS

1)	Ram Terminals, LLC. Attn: Gary Voiron/Charlie Wesley 7733 Forsyth Blvd. St. Louis, MO 63105-1836 Gary Voiron: (504)430-0268 Charlie Wesley: (720)883-2966	6)	River Rest, LLC. Attn: John Newman 820 Fairfield Avenue Gretna, LA 70056 (504) 393-1024 Jefferson Parish
2)	Phillips 66 Attn: Arthur Pollock/Dennis Nuss P.O. Box 2197 Houston, TX 77252 Arthur Pollock: 504-656-3171 or 504-656-7711 Dennis Nuss: (504)373-3092	7)	Woodland Borrow Pits, LLC. Attn: Terry White (previously CLL Limited Partnership, Ltd.) 401 Westbank Expy. Gretna, LA 70053 Plaquemines Parish (504)616-7787
3)	Midway Cattle Ranch, LLC. Attn: Khai Nguyen 707 Jump Basin Rd. Venice, LA 70091 (504)534-9577 Plaquemines Parish	8)	Entergy Louisiana (previously LP&L) Attn: Clint Capdepon PO Box 61000 New Orleans, LA 70113 **Physical :** 1001 Harimaw Court W Metairie, LA 70001 office: 504-576-4207 cell: (505)495-6179
4)	Canard Land, LLC. Attn: John Newman 605 South America St. Covington, LA 70433 (985)801-4300	9)	CHS, Inc. of Minnesota (f/k/a Harvest States Cooperatives) Attn: Steve Talbot 550 Cenex Dr. Inver Grove Heights, MN 55077-1733 (504)235-8128
5)	Wildlife Lands, LLC. Attn: Shawn Killeen/Christian T. Brown 5100 Jourdan Road New Orleans, LA 70126 (504) 275-4222	10)	New Orleans & Gulf Coast Railway Company Attn: Bob Howery 9387 Highway 23 Belle Chasse, LA 70037-2149 (504)347-8237 x3

11)	Plaquemines Parish Government Attn: Blair Rittiner 8056 Hwy. 23 Ste. 200 Belle Chasse, LA 70037 (504)297-5577	18)	BNB Partners, LLC P.O. Box 531 Belle Chasse, LA 70037-0531 Plaquemines Parish
12)	Plaquemines Holdings, LLC. Attn: Janet Cagley PO Box 336 Livingston, LA 70754-0336 (225)686-2252	19)	Lafitte Area Independent Levee District Attn: Nicole Cooper 2654 Jean Lafitte Blvd. Lafitte, LA 70067 (504)689-2208
13)	Lena Curol Est. c/o Mrs. John A. Rojas, Sr. Attn: Gwen 819 Barbe Street Westwego, LA 70094 (504)458-2390 Jefferson Parish	20)	Leon, Rojas and John Estate, et al c/o Wayne J. Nolan 4517 Loveland Street Metairie, LA 70006 Plaquemines Parish
14)	Fabre, Alton S., Jr. et al 2597 Privateer Blvd. Barataria, LA 70036 Plaquemines Parish	21)	LeBlanc, Loretta R. et al 2497-A Jean Lafitte Blvd. Lafitte, LA 70067-5210 Jefferson Parish
15)	Rivet, Genice R. et al 5214 Jean Lafitte Blvd. Lafitte, LA 70067-5210 Plaquemines Parish	22)	Rojas, Beatrice Est. et al. c/o Carissima Fisher 5024 Jean Lafitte Blvd. Lafitte, LA 70067 Jefferson Parish
16)	William Adam P.O. Box 141 5135 William Adam St. Lafitte, LA 70067 Jefferson Parish	23)	Knuppel, Anestize PO Box 294 Lafitte, LA 70067
17)	Richard, Adam B., Jr., et al P.O. Box 123 5030 Jean Lafitte Blvd. Lafitte, LA 70067	24)	Rojas, Doris M. PO Box 209 Venice, LA 70091

25)	Whittington, Warren D., Jr. 3608 Lake Michel CT Gretna, LA 70056 (504)621-2148 Jefferson Parish	29)	Elliot, William H. 4000 Westbank Expressway Apt. 68 Marrero, LA 70072
26)	Decamp, Aletha C. c/o Ann Ford 5116 Highland Drive Marrero, LA 70072	30)	Coulon, Gervin 4820 Jean Lafitte Blvd. Apt. C Lafitte, LA 70067 (504)689-2040
27)	Jackie A. Trachant, et al 2921 Doreen Lane Marrero, LA 70072 Plaquemines Parish	31)	Defelice Family Corp. Attn: Savare J. Defelice Sr. P.O. Box 696 Belle Chasse, LA 70037 (504)394-4728
28)	Nunez, Jules L. et al P.O. Box 126 Lafitte, LA 70067 (504)689-2389 Plaquemines Parish	32)	



FOR PERMIT COORDINATION ONLY – NOT FOR CONSTRUCTION

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MID-BARATARIA SEDIMENT DIVERSION (BA-153) PROJECT

VICINITY MAP

PLAQUEMINES AND JEFFERSON PARISH, LOUISIANA

LEGEND

15% PROJECT FOOTPRINT

PARISH BOUNDARY

USGS QUADS: PHOENIX, LAFITTE, THREE BAYOU BAY, LAKE LAURIER (2012)

N

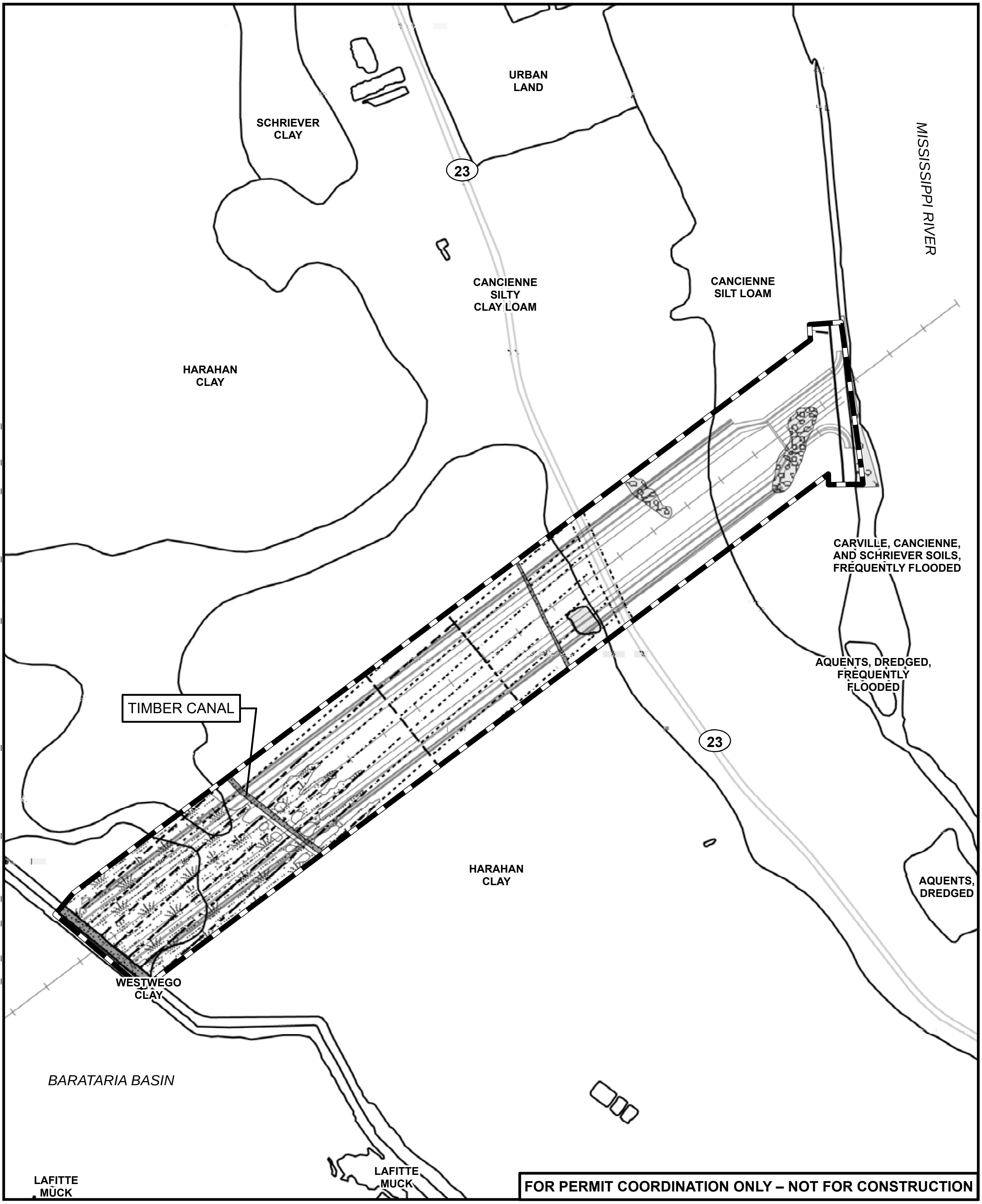
0 1,500 3,000
FEET

CPRA

HDR ENGINEERING, INC.
201 RUE IBERVILLE, SUITE 115
LAFAYETTE, LA 70508
(337) 347-5600

JULY 2013

FIGURE 1



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MID-BARATARIA SEDIMENT DIVERSION (BA-153) PROJECT

DELINEATION AND PROPOSED JURISDICTIONAL DETERMINATION

PLAQUEMINES AND JEFFERSON PARISH, LOUISIANA

LEGEND

WATERS OF THE U.S.

- DRAINAGE CHANNEL (SECTION 404)
- CANAL (SECTION 404)
- FORESTED WETLAND (SECTION 10/404)
- FORESTED WETLAND (SECTION 404)
- EMERGENT WETLAND (SECTION 404)

NOT WATERS OF THE U.S.

- PRELIMINARY PROJECT FOOTPRINT
- 15% PROJECT FOOTPRINT
- NON-JURISDICTIONAL DRAINAGE FEATURE
- POND
- SOIL

N

0 500 1,000

FEET

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LAFAYETTE, LA 70508
(337) 347-5600

JULY 2013

FIGURE 2

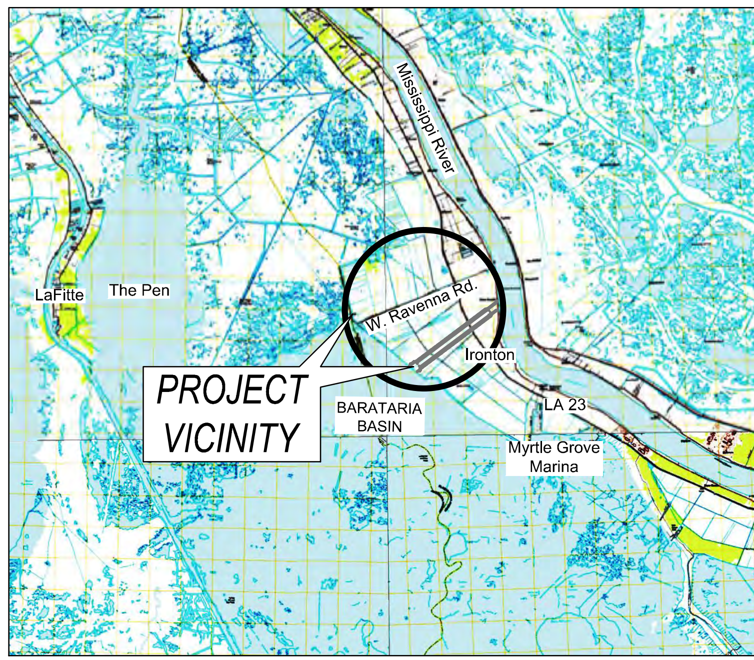
FILE: O:\DEPT037_DALLASENGINEERING\ENVSCIENCES\200965_099_CPRA_MID_BARATARIA_DIVERSION\MAP_DOCS\FIGURES\PERMIT_4345\MBSD_PERMIT4345_FIG2_DELIN_8X11.MXD

STATE OF LOUISIANA
COASTAL PROTECTION AND RESTORATION AUTHORITY ENGINEERING DIVISION

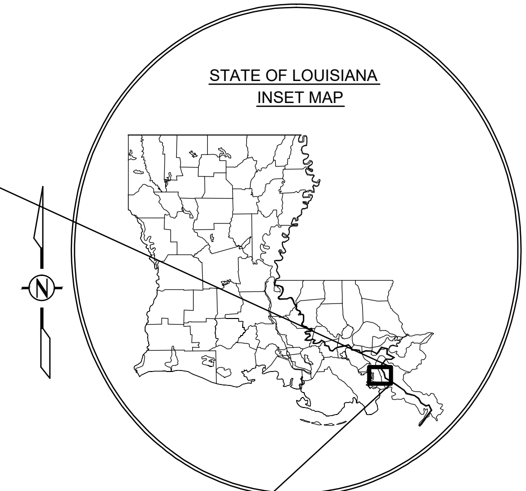
MID-BARATARIA SEDIMENT DIVERSION

STATE PROJECT NO. BA-153
PLAQUEMINES PARISH, LOUISIANA

INDEX OF DRAWINGS



20,000' 10,000' 0' 20,000' 40,000'



PERMIT SUBMITTAL

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HDR Engineering, Inc.

COASTAL PROTECTION AND RESTORATION AUTHORITY CPRA

STATE OF LOUISIANA UNION JUSTICE CONFIDENCE

COASTAL PROTECTION & RESTORATION AUTHORITY
ENGINEERING DIVISION
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

MID-BARATARIA SEDIMENT DIVERSION

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

COVER SHEET

DATE: JULY 2013

DRAWN BY: HDD | DESIGNED BY: PGG | APPROVED BY: PAMELA GONZALES-GRANGER, P.E. | DRAWING G-01 | SHEET 1 of 19

GENERAL NOTES

1. THESE PLANS WERE DEVELOPED USING 2010 AERIAL PHOTOGRAPHY, NAD83, LOUISIANA STATE COORDINATE SYSTEM, SOUTH ZONE.

2. ALL ELEVATIONS SHOWN ARE IN NAVD 88.

3. AS-BUILT DRAWINGS WILL BE SUBMITTED WITHIN 30 DAYS OF COMPLETION OF THIS PROJECT TO THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES, COASTAL MANAGEMENT DIVISION, P.O. BOX 44487, BATON ROUGE, LA 70804-4487.

4. THE PERMIT APPLICANT 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.

5. ALL NORTHING / EASTING AND LATITUDE / LONGITUDE VALUES ARE BASED ON PRELIMINARY DESIGN AND ARE SUBJECT TO CHANGE DURING FINAL DESIGN.

6. ALL ELEVATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE.

ABBREVIATIONS

APPROX	APPROXIMATE
B/L	BASELINE
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
DWG	DRAWING
E	EASTING
EL, ELEV	ELEVATION
HORIZ	HORIZONTAL
HWY	HIGHWAY
LA	LOUISIANA
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MR & T	MISSISSIPPI RIVER & TRIBUTARIES LEVEE
N	NORTHING
NO	NUMBER
NOV	NEW ORLEANS TO VENICE LEVEE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
RD	ROAD
ROW	RIGHT OF WAY
STA	STATION
TBD	TO BE DETERMINED
TYP	TYPICAL
VC	VERTICAL CURVE
VERT	VERTICAL
W	WESTING
YR	YEAR

FEATURE LOCATION TABLE

DESCRIPTION	NORTHING / LATITUDE	EASTING / LONGITUDE
POB CHANNEL BASELINE	426308.37 / 29° 39' 54.20" N	3717488.25 / 89° 57' 30.31" W
POE CHANNEL BASELINE	417902.28 / 29° 38' 32.30" N	3706292.82 / 89° 59' 38.32" W
DIVERSION GATE STRUCTURE	424567.11 / 29° 39' 37.24" N	3715169.19 / 89° 57' 56.83" W
BACK STRUCTURE	418983.06 / 29° 38' 42.84" N	3707732.23 / 89° 59' 21.86" W
POB PUMP STATION BASELINE	424556.45 / 29° 39' 38.77" N	3701081.76 / 90° 00' 36.50" W
POE PUMP STATION BASELINE	424331.16 / 29° 39' 36.65" N	3700158.86 / 90° 00' 46.99" W

SYMBOLS

FLOW — FLOW DIRECTION

NATURAL GROUND

WATER SURFACE

CUT SLOPE

FILL SLOPE

CONSTRUCTION LIMIT

A / C-01 — SECTION DESIGNATION / WHERE SECTION IS SHOWN

1 / C-01 — DETAIL DESIGNATION / WHERE DETAIL IS SHOWN

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HDR Engineering, Inc.

COASTAL PROTECTION AND RESTORATION AUTHORITY — CPRA

STATE OF LOUISIANA — UNION JUSTICE CONFIDENCE

COASTAL PROTECTION & RESTORATION AUTHORITY
ENGINEERING DIVISION
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

MID-BARATARIA SEDIMENT DIVERSION

GENERAL NOTES, ABBREVIATIONS AND SYMBOLS

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

DATE: JULY 2013

DRAWN BY: HDD | DESIGNED BY: PGG | APPROVED BY: PAMELA GONZALES-GRANGER, P.E. | DRAWING G-02 | SHEET 2 of 19

Date: Jul 18, 2013 Time: 5:53pm File Name: C:\pwworking\dal\d0445297\01G-02.dwg Printed By: ecolchad

NOTES:

1. CONSTRUCTION LIMIT DEPICTED IN THIS PLAN WAS ESTABLISHED TO INCLUDE EXISTING BORROW SITES, ACCESS TO CHENIER TRAVERSE BAYOU PUMP STATION, DISPOSAL AREAS AND FOR STAGING AREA.

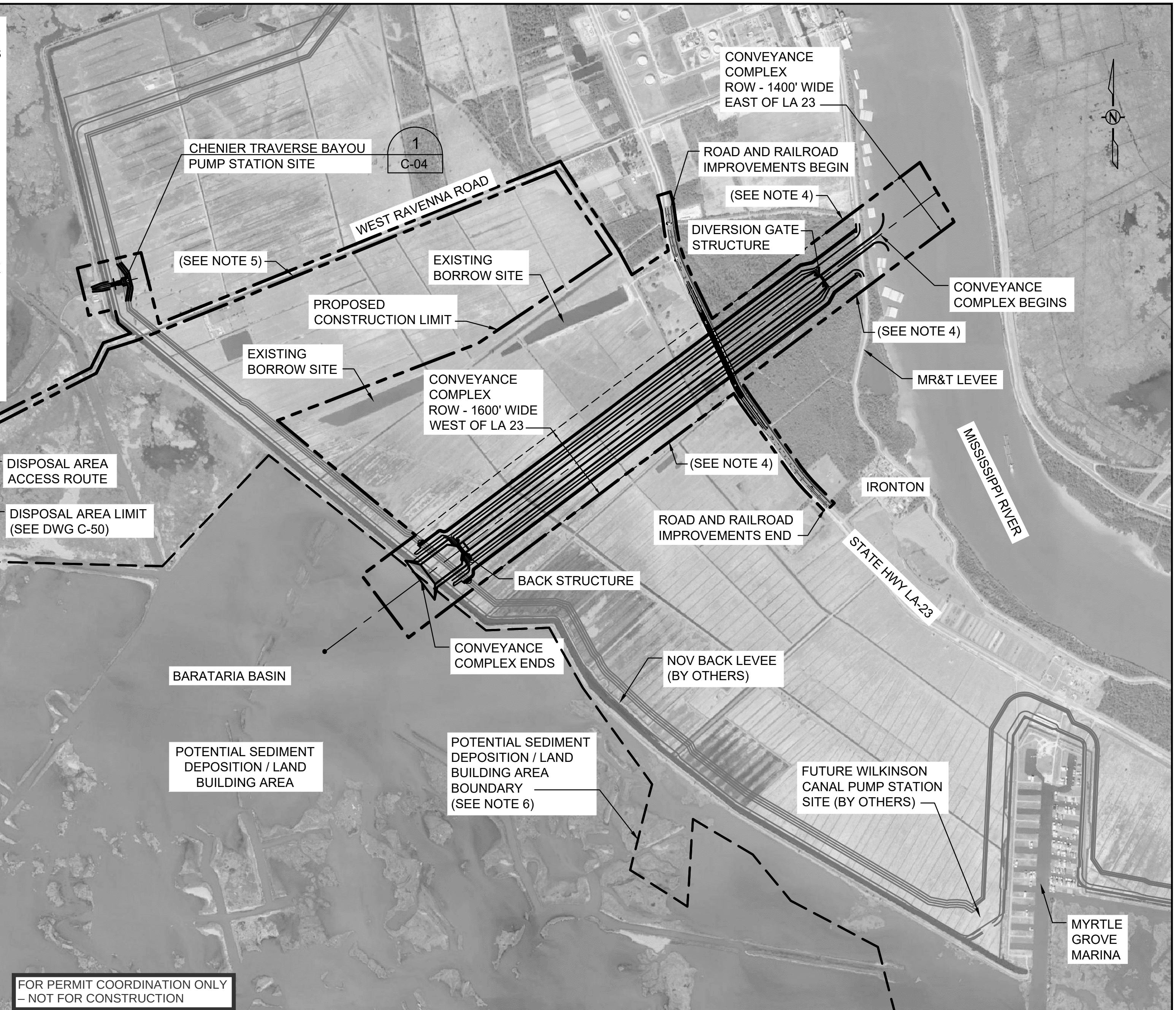
2. REFER TO DRAWING C-02 FOR CONVEYANCE COMPLEX ALIGNMENT (CONVEYANCE BASELINE).

3. REFER TO DRAWING C-03 FOR ROADWAY AND RAILROAD ALIGNMENT (ROADWAY BASELINE).

4. PROPOSED CONSTRUCTION LIMIT AND ROW LINE COINCIDE FROM NORTHEAST SIDE OF LA HWY 23 TO MR&T LEVEE (NORTH AND SOUTH BOUNDARIES) AND FROM SOUTHWEST SIDE OF LA HWY 23 TO NOV BACK LEVEE (SOUTH BOUNDARY ONLY)

5. WEST RAVENNA ROAD WILL BE UTILIZED FOR PUMP STATION AND DISPOSAL AREA ENTRY

6. SEE DRAWING C-51 FOR FULL EXTENTS OF POTENTIAL SEDIMENT DEPOSITION / LAND BUILDING AREA.



LEGEND
- PROPOSED ROW
- PROPOSED CONSTRUCTION LIMITS
- POTENTIAL SEDIMENT DEPOSITION/ LAND BUILDING AREA

3000 0 3000

SCALE IN FEET

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COASTAL PROTECTION & RESTORATION AUTHORITY
ENGINEERING DIVISION
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

MID-BARATARIA SEDIMENT DIVERSION

STATE PROJECT NUMBER: BA-153

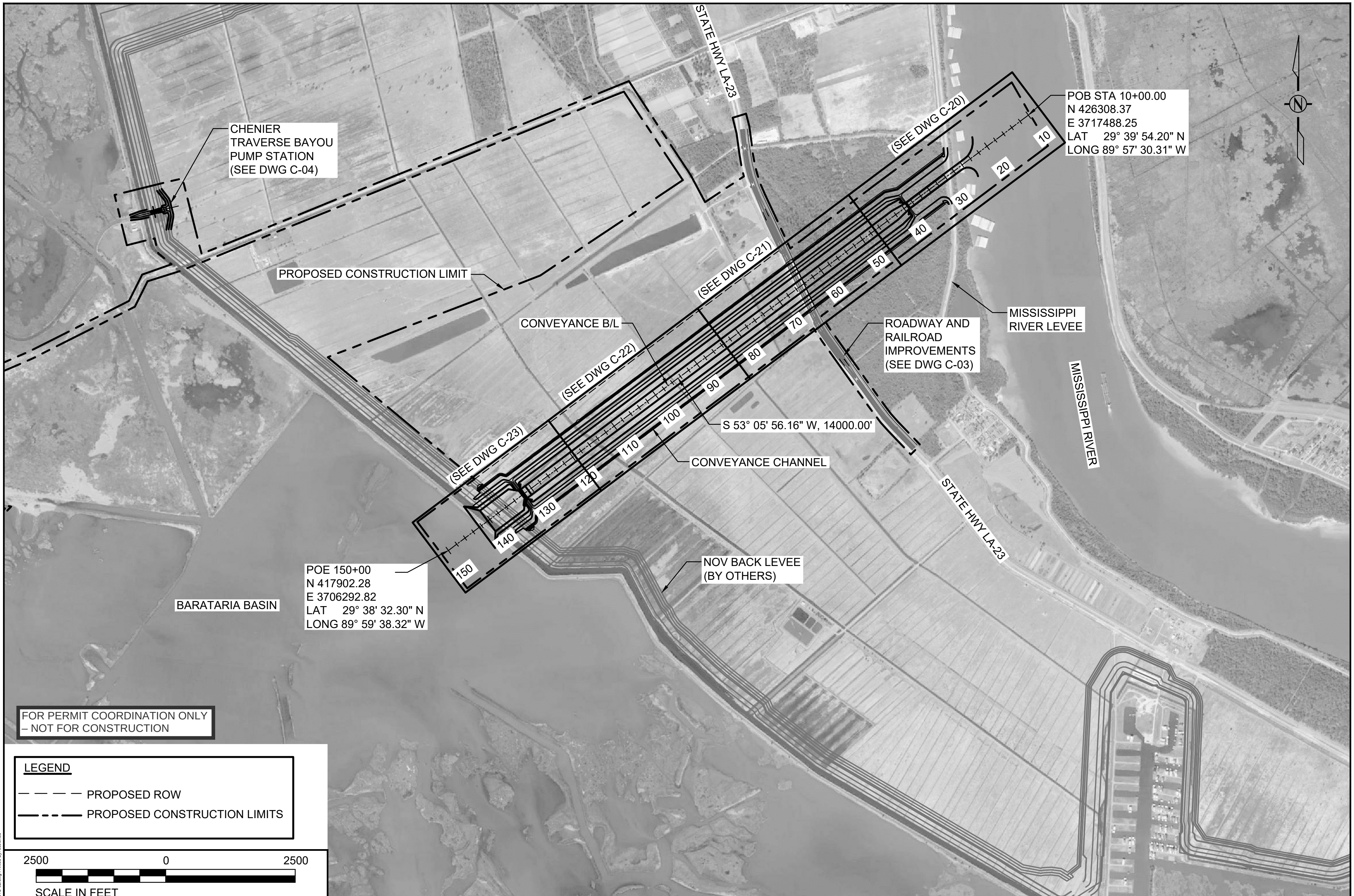
FEDERAL PROJECT NUMBER: BA-153

SITE OVERVIEW

DATE: JULY 2013

DRAWN BY: HDD | DESIGNED BY: PGG | APPROVED BY: PAMELA GONZALES-GRANGER, P.E. | DRAWING C-01 | SHEET 3 of 19

Date: Jul 16, 2013 Time: 5:07pm File Name: C:\pwworking\dal\d0445297\01C-01.dwg Printed By: jbeaugh



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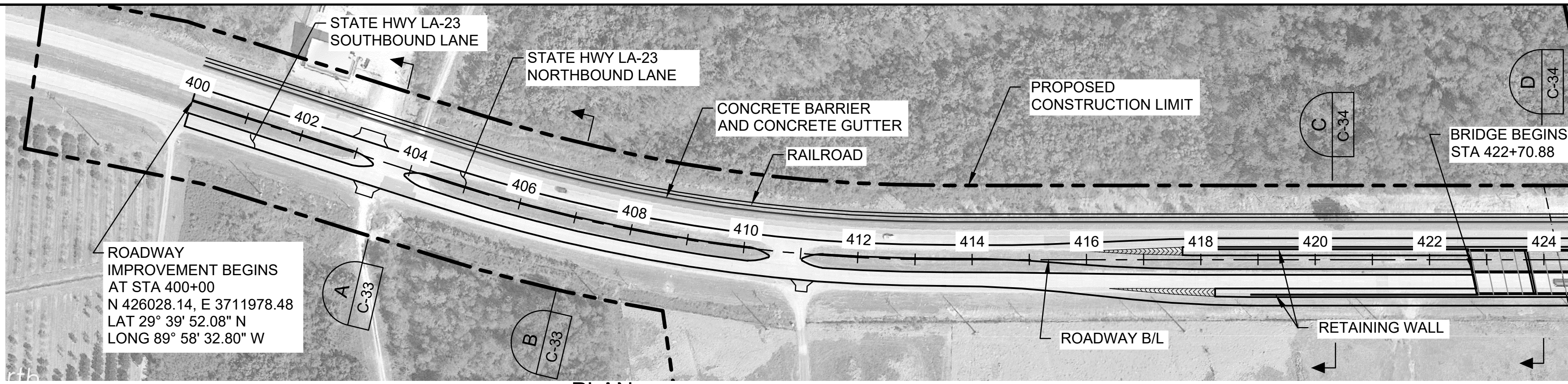
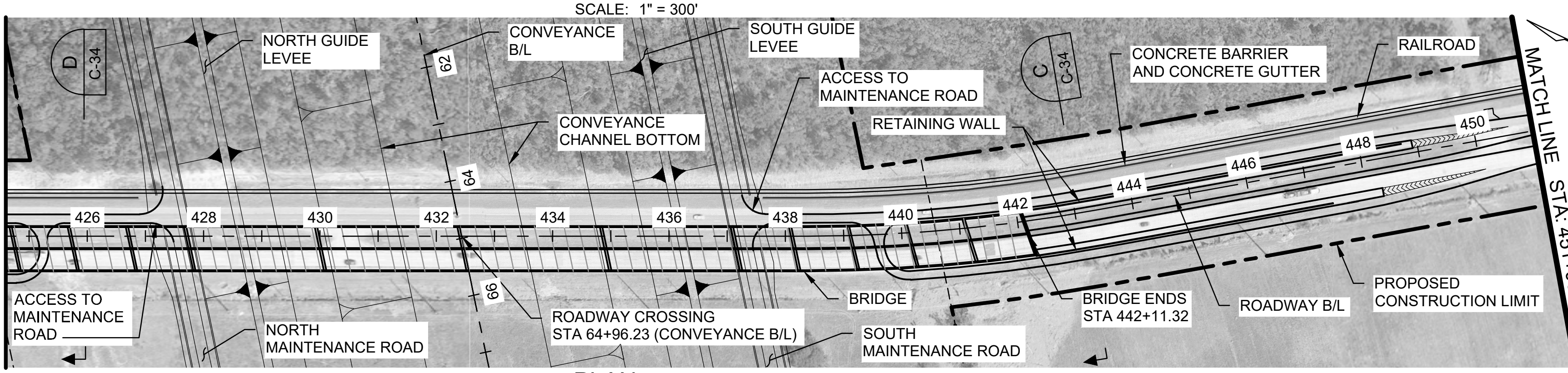
MID-BARATARIA SEDIMENT DIVERSION		CONVEYANCE CHANNEL SHEET LAYOUT
STATE PROJECT NUMBER: BA-153		
FEDERAL PROJECT NUMBER: BA-153		DATE: JULY 2013
DRAWN BY: HDD	DESIGNED BY: PGG	
APPROVED BY: PAMELA GONZALES-GRANGER, P.E.	DRAWING C-02	SHEET 4 of 19



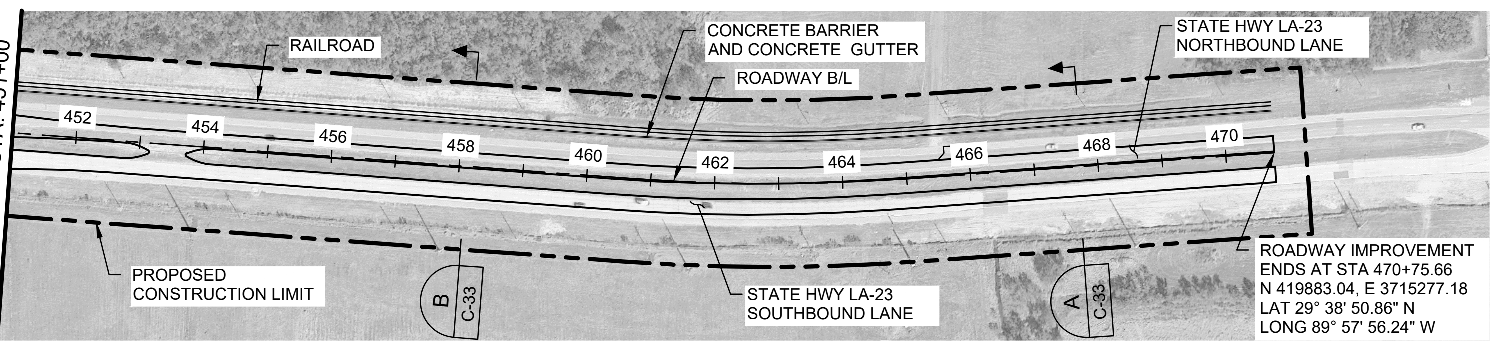
PLAN

SCALE: 1" = 300'



PLAN

SCALE: 1" = 300'



300 150 0 300

SCALE IN FEET

PLAN

SCALE: 1" = 300'

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LEGEND

- PROPOSED ROW
- PROPOSED CONSTRUCTION LIMITS
- PROPOSED ROADWAY BRIDGE

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BATON ROUGE, LOUISIANA 70801

MID-BARATARIA SEDIMENT DIVERSION

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

OVERALL ROADWAY AND RAIL PLAN

DATE: JULY 2013

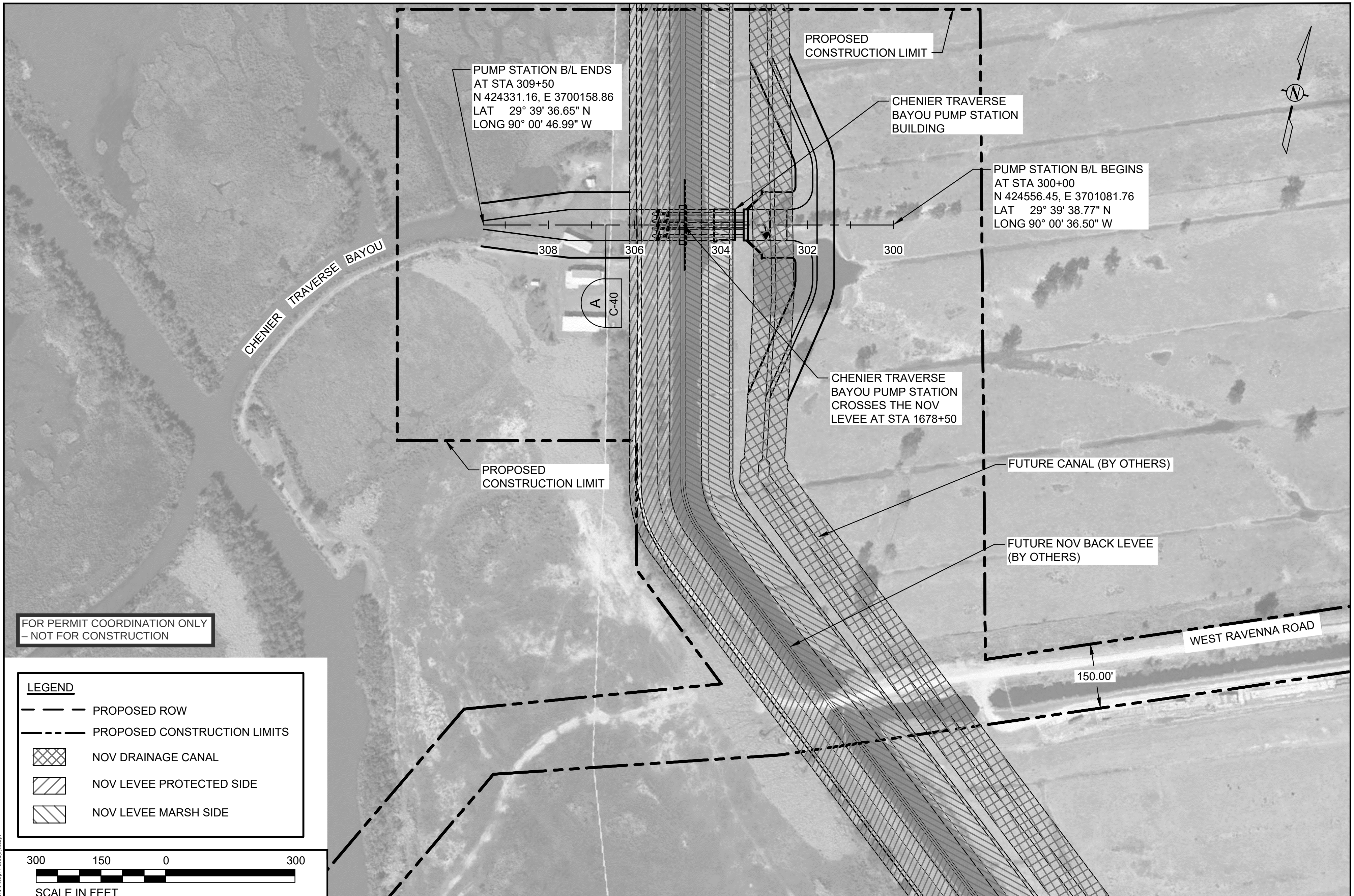
DRAWN BY: HDD

DESIGNED BY: PGG

APPROVED BY: PAMELA GONZALES-GRANGER, P.E.

DRAWING C-03

SHEET 5 of 19



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MID-BARATARIA SEDIMENT DIVERSION

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

CHENIER TRAVERSE BAYOU PUMP STATION SITE

DATE: JULY 2013

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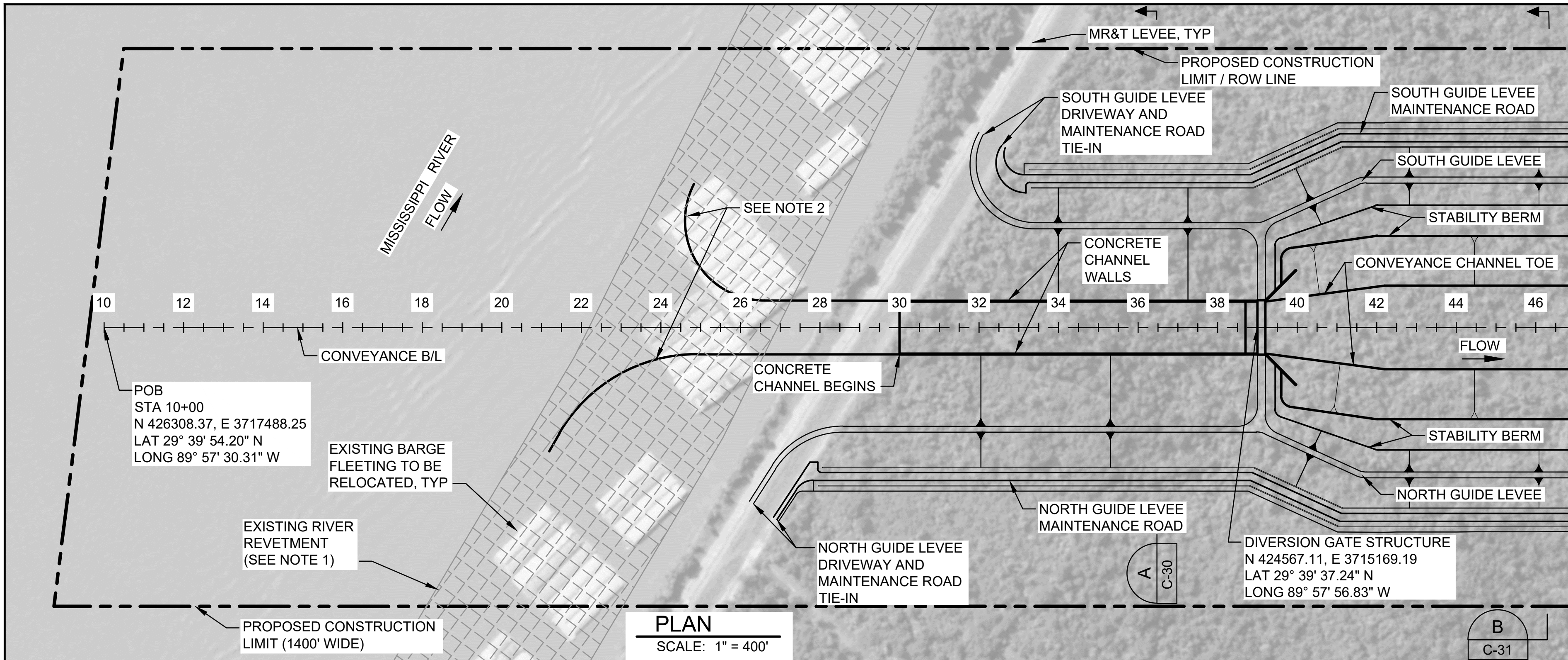

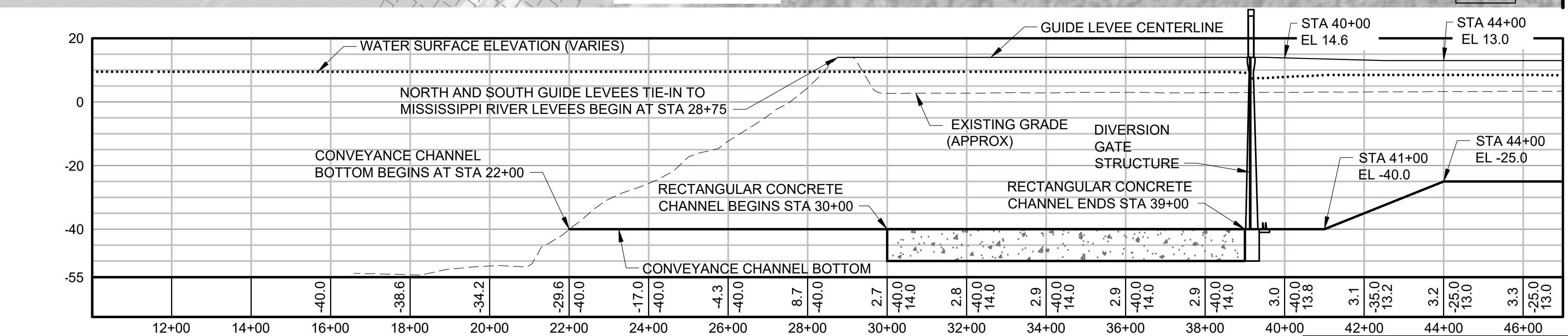

50 0 50
SCALE IN FEET

400 200 0 400
SCALE IN FEET

PROFILE

HORIZ SCALE: 1" = 400'
VERT SCALE: 1" = 50'

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NOTES:

1. CONTRACTOR TO REPLACE EXISTING RIVER REVETMENT IMPACTED BY CONSTRUCTION ACTIVITIES.

2. CONVEYANCE CHANNEL TOE TO TIE-IN WITH MISSISSIPPI RIVER BANK AT EL -40.0.

LEGEND

APPROX EXISTING GRADE EL — -4.2
CONVEYANCE CHANNEL EL — -25.0
GUIDE LEVEE EL — 13.0
STATION VALUE — 47+00

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ENGINEERING DIVISION
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

MID-BARATARIA SEDIMENT DIVERSION PROJECT

CONVEYANCE CHANNEL PLAN AND PROFILE (1 OF 4)

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

DATE: JULY 2013

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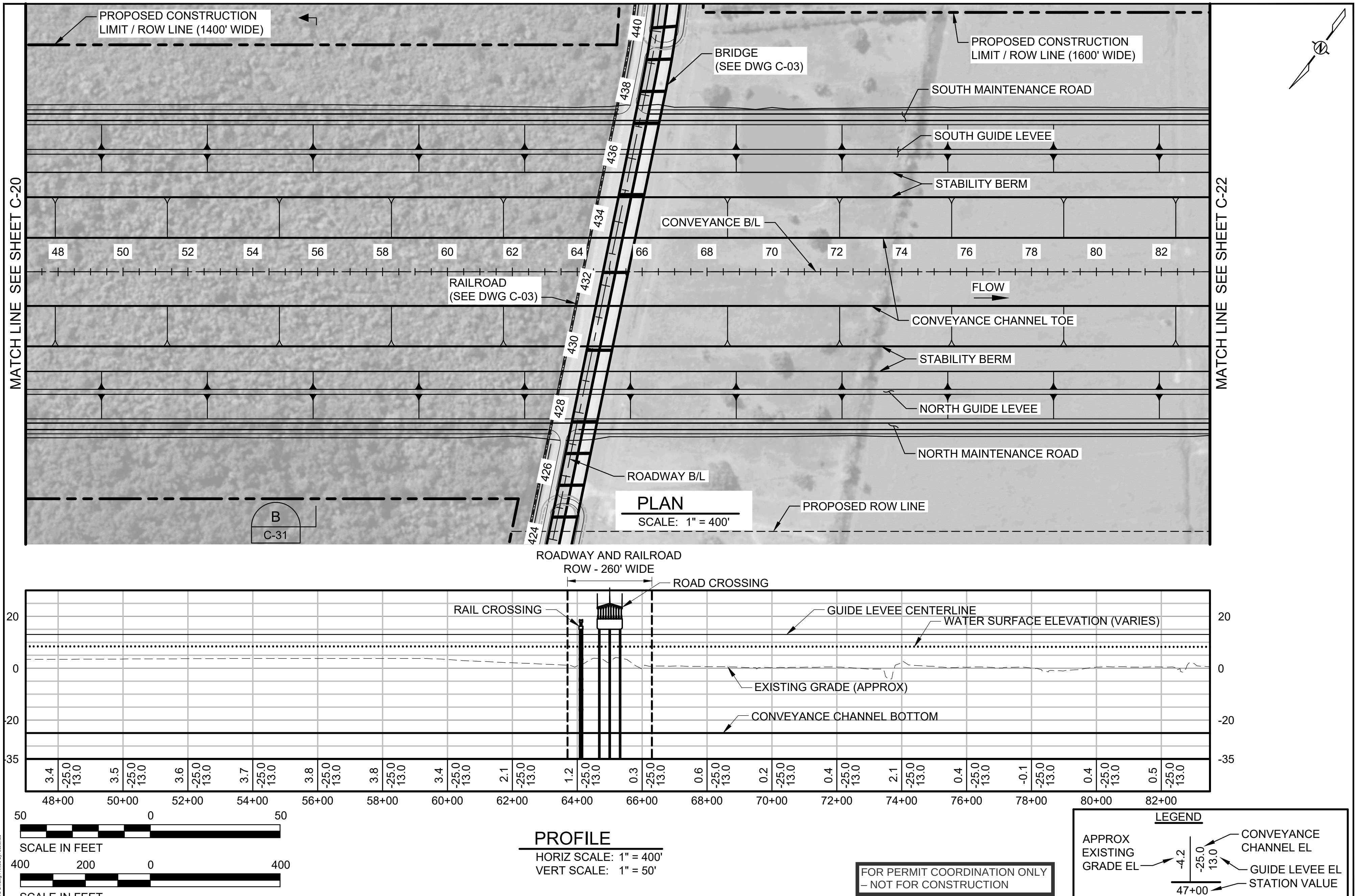

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MID-BARATARIA SEDIMENT DIVERSION

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

CONVEYANCE CHANNEL PLAN AND PROFILE (2 OF 4)

DATE: JULY 2013

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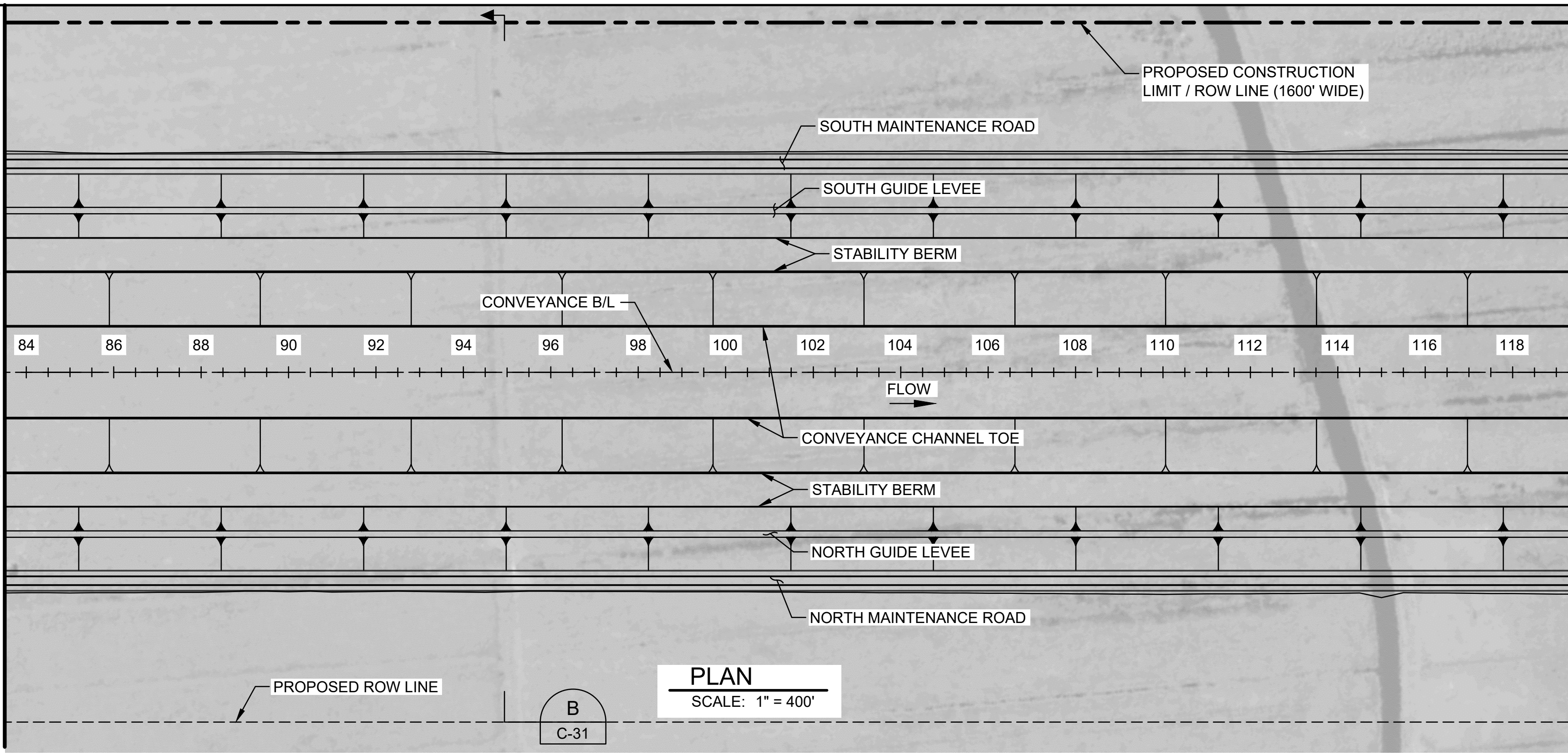
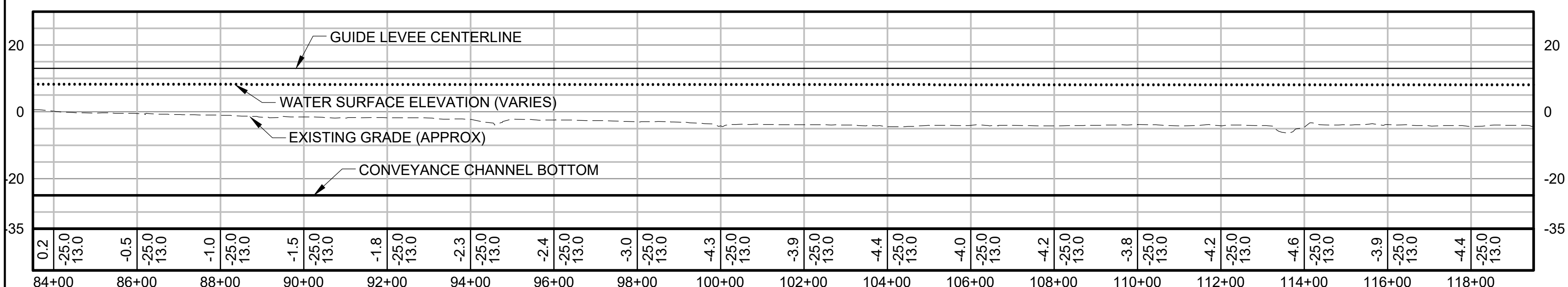


PLAN

SCALE: 1" = 400'



50 0 50
SCALE IN FEET

400 200 0 400
SCALE IN FEET

PROFILE

HORIZ SCALE: 1" = 400'
VERT SCALE: 1" = 50'

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LEGEND

APPROX EXISTING GRADE EL — -4.2
CONVEYANCE CHANNEL EL — -25.0
GUIDE LEVEE EL — 13.0
STATION VALUE — 47+00

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MID-BARATARIA SEDIMENT DIVERSION

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

CONVEYANCE CHANNEL PLAN AND PROFILE (3 OF 4)

DATE: JULY 2013

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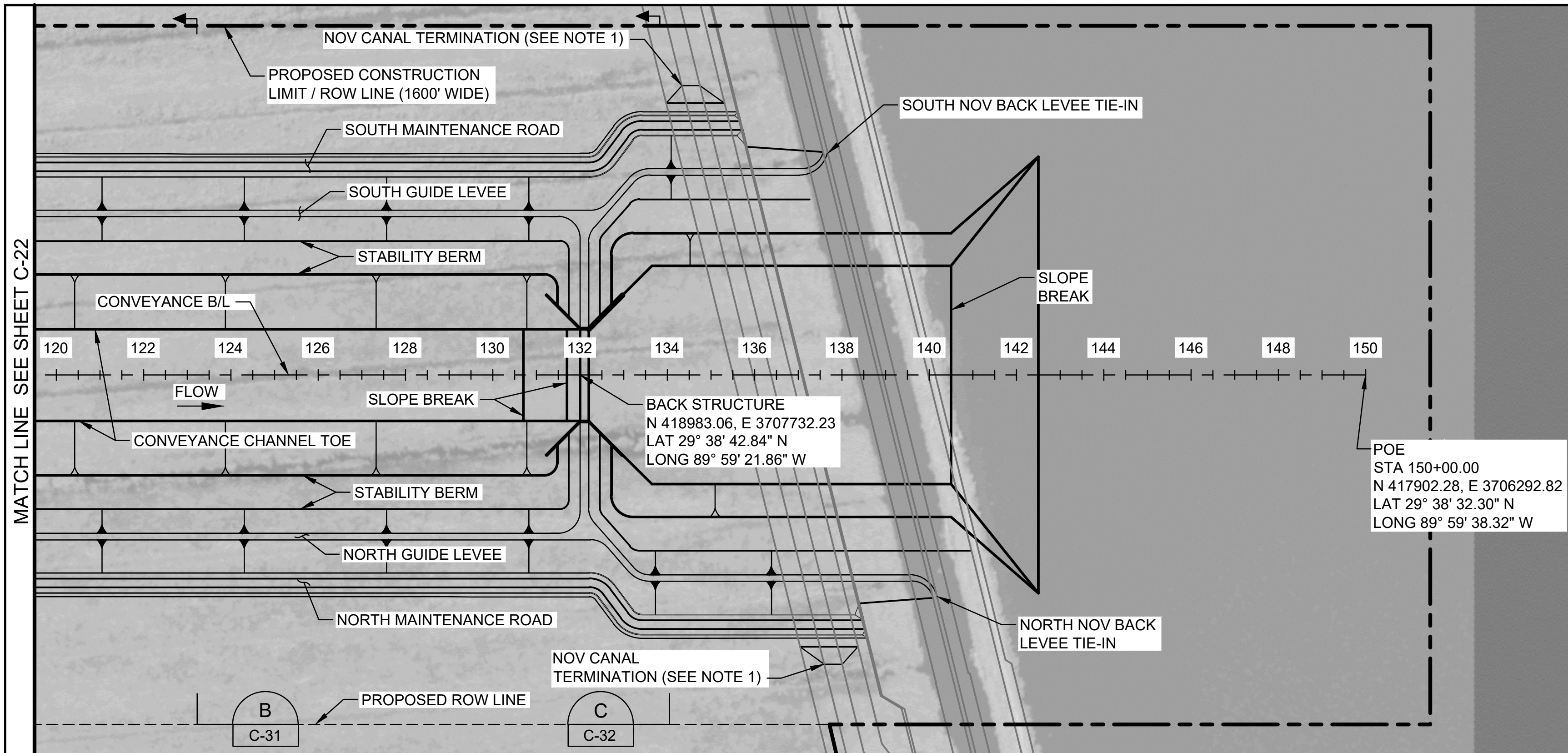
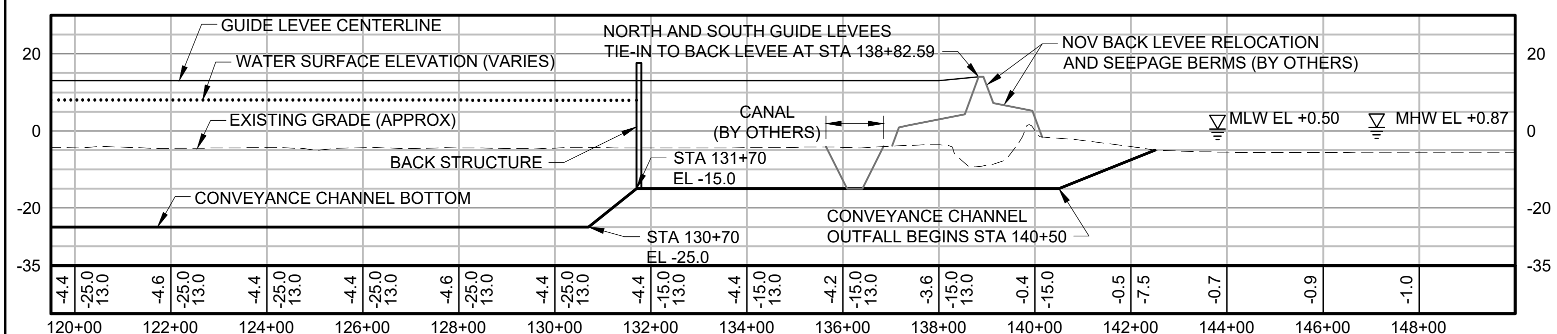


PLAN

SCALE: 1" = 400'



PROFILE

HORIZ SCALE: 1" = 400'
VERT SCALE: 1" = 50'

400 200 0 400
SCALE IN FEET

50 0 50
SCALE IN FEET

NOTE:

1. BULKHEADS TO BE INSTALLED AT NOV CANAL TERMINATION (TWO REQUIRED). ACCESS AND DRAINAGE FEATURES AT NOV CANAL TERMINATION TO BE PROVIDED IN THE FINAL DESIGN.

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LEGEND

APPROX EXISTING GRADE EL — -4.2
CONVEYANCE CHANNEL EL — -25.0
GUIDE LEVEE EL — 13.0
STATION VALUE — 47+00

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MID-BARATARIA SEDIMENT DIVERSION

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

CONVEYANCE CHANNEL PLAN AND PROFILE (4 OF 4)

DATE: JULY 2013

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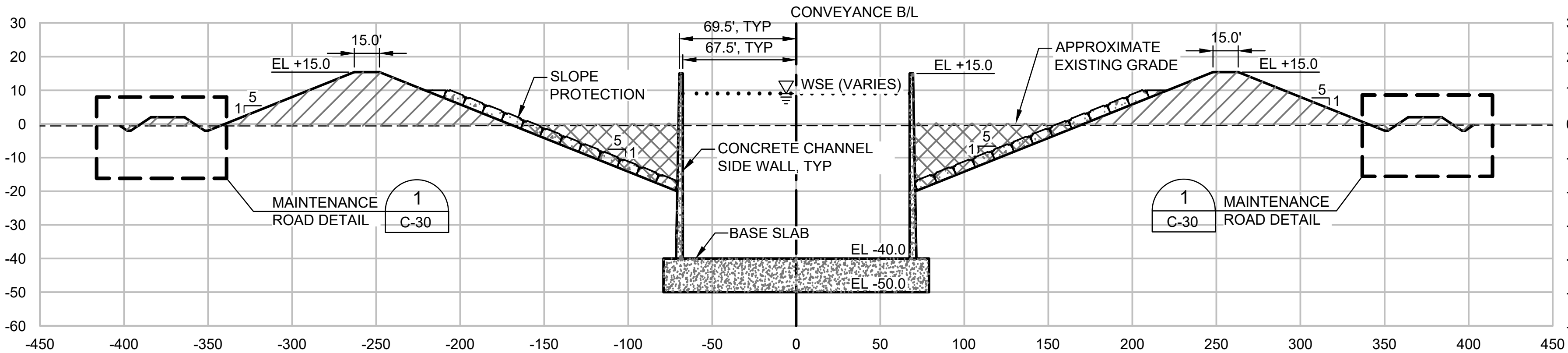


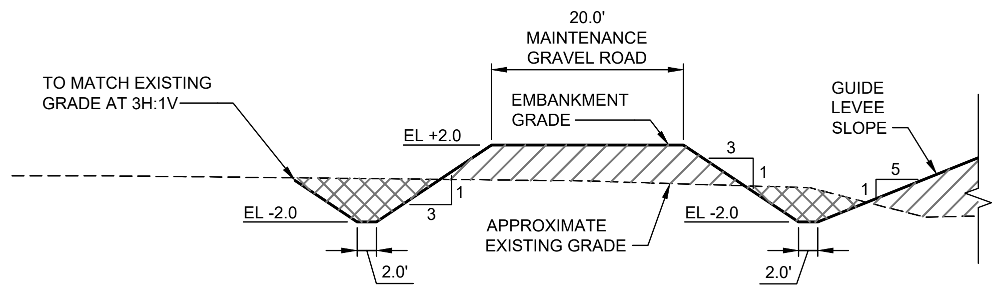
TYPICAL SECTION (LOOKING UPSTREAM)
FROM STA 30+00 TO STA 39+00

A
C-20

HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 50'

NOTES:

1. EXCAVATION AREA PATTERN NOT SHOWN WITHIN CONCRETE CHANNEL FOR CLARITY PURPOSES.



MAINTENANCE ROAD DETAIL

1
C-30

HORIZ SCALE: 1" = 20'
VERT SCALE: 1" = 10'

LEGEND
- FILL AREA
- EXCAVATION AREA
- CONCRETE

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100 50 0 100
SCALE IN FEET

20 10 0 20
SCALE IN FEET

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MID-BARATARIA SEDIMENT DIVERSION

TYPICAL SECTIONS (1 OF 3)

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

DATE: JULY 2013

DRAWN BY: HDD

DESIGNED BY: PGG

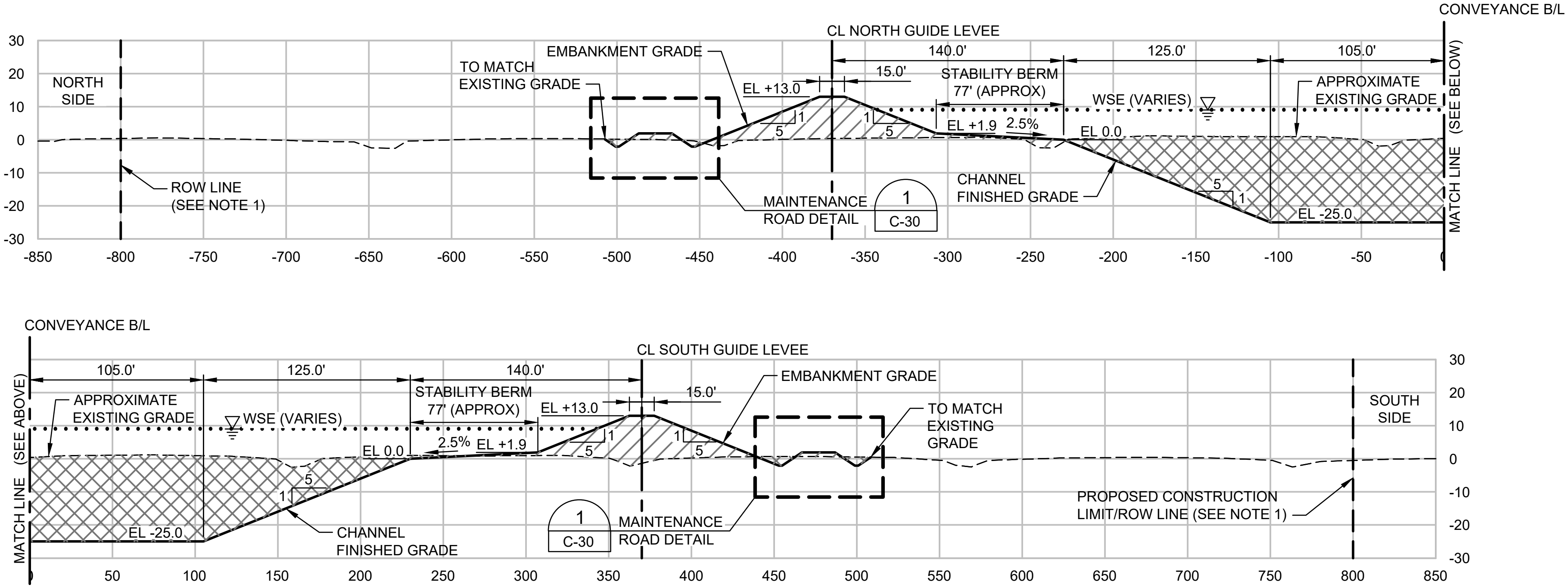
APPROVED BY: PAMELA GONZALES-GRANGER, P.E.

DRAWING C-30

SHEET 11 of 19

NOTES:

1. CONVEYANCE CHANNEL ROW IS 1,600 FT WIDE ON THE WEST SIDE OF HIGHWAY 23 AND 1,400 FT WIDE ON THE EAST SIDE OF HIGHWAY 23.



TYPICAL CHANNEL SECTION (LOOKING UPSTREAM)
FROM STA 42+00 TO STA 130+70

B
C-31

SCALE: 1" = 100'

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LEGEND

FILL AREA

EXCAVATION AREA

100 50 0 100

SCALE IN FEET

50 0 50

SCALE IN FEET

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ENGINEERING DIVISION
450 LAUREL STREET
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MID-BARATARIA SEDIMENT DIVERSION

TYPICAL SECTIONS (2 OF 3)

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

DATE: JULY 2013

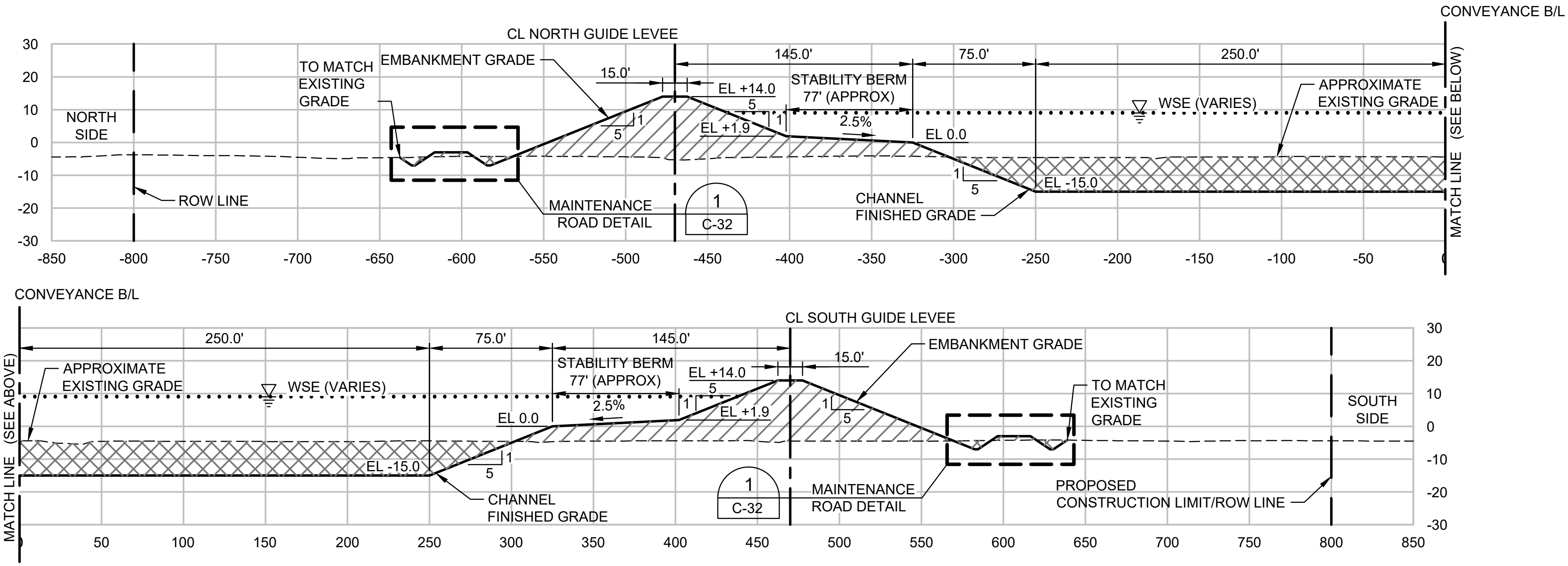
DRAWN BY: PGG

DESIGNED BY: PGG

APPROVED BY: PAMELA GONZALES-GRANGER, P.E.

DRAWING C-31

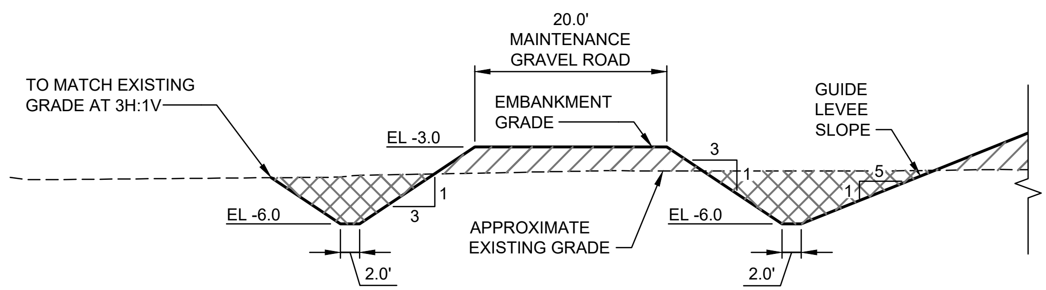
SHEET 12 of 19



TYPICAL CHANNEL SECTION (LOOKING UPSTREAM)
FROM STA 133+65 TO STA 140+50

C
C-23

HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 50'



MAINTENANCE ROAD DETAIL

1
C-32

HORIZ SCALE: 1" = 20'
VERT SCALE: 1" = 10'

20 10 0 20
SCALE IN FEET

100 50 0 100
SCALE IN FEET

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LEGEND
FILL AREA
EXCAVATION AREA

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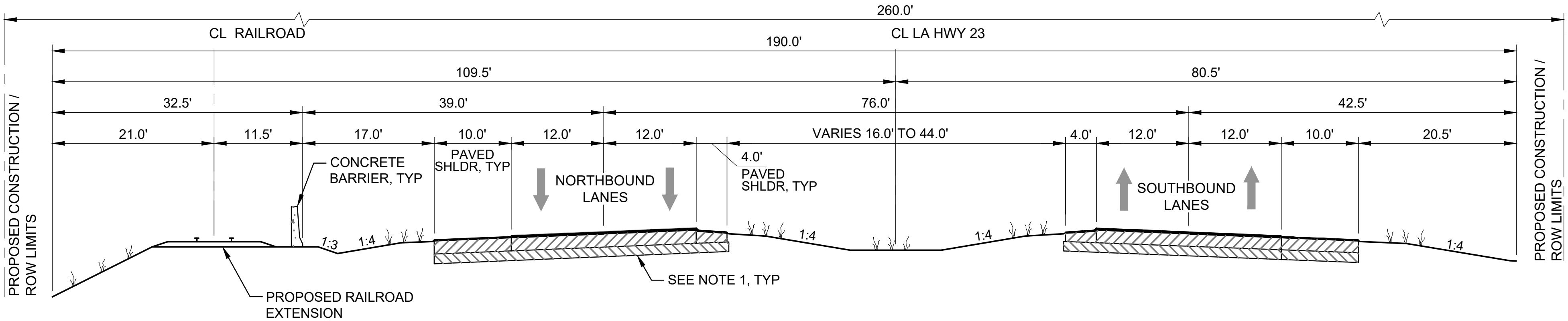
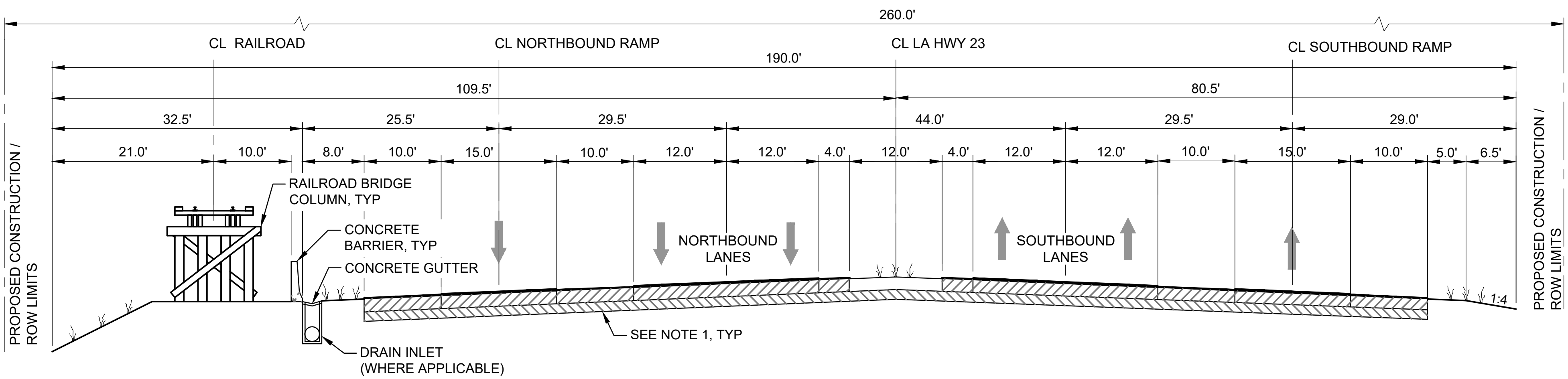
MID-BARATARIA SEDIMENT DIVERSION		TYPICAL SECTIONS (3 OF 3)	
STATE PROJECT NUMBER: BA-153			
FEDERAL PROJECT NUMBER: BA-153		DATE: JULY 2013	
DRAWN BY: HDD	DESIGNED BY: PGG	APPROVED BY: PAMELA GONZALES-GRANGER, P.E.	DRAWING C-32 SHEET 13 of 19



TYPICAL ROAD SECTION FOR REALIGNMENT AT GRADE RAIL (LOOKING SOUTH)
FROM STA 400+00 TO STA 403+00 AND FROM STA 462+00 TO 470+75.66

SCALE: 1" = 20'

A
C-04



TYPICAL ROAD SECTION FOR REALIGNMENT WITH RAIL BRIDGE (LOOKING SOUTH)
FROM STA 403+00 TO STA 416+00 AND FROM STA 450+00 TO 462+00

SCALE: 1" = 20'

B
C-04

NOTES:

1. PAVEMENT SECTION TO BE DETERMINED FOR THE FINAL DESIGN.

LEGEND

- SURFACE BASE
- SURFACE SUB-BASE
- ASPHALT

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20 10 0 20

SCALE IN FEET

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MID-BARATARIA SEDIMENT DIVERSION

TYPICAL ROADWAY SECTIONS (1 OF 2)

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

DATE: JULY 2013

DRAWN BY: HDD

DESIGNED BY: PGG

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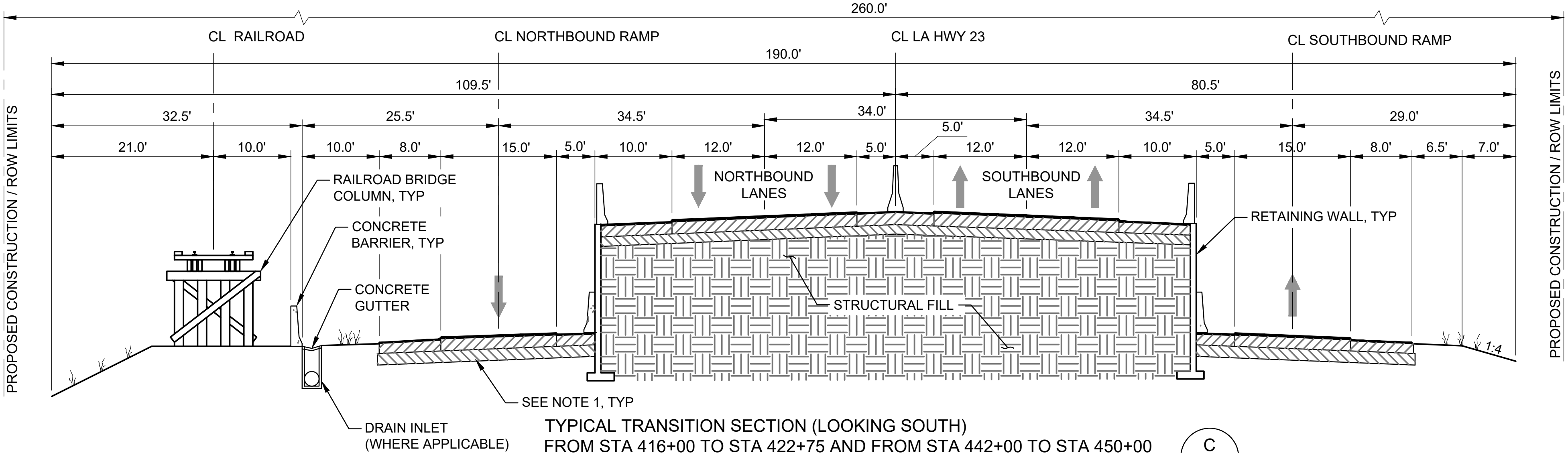
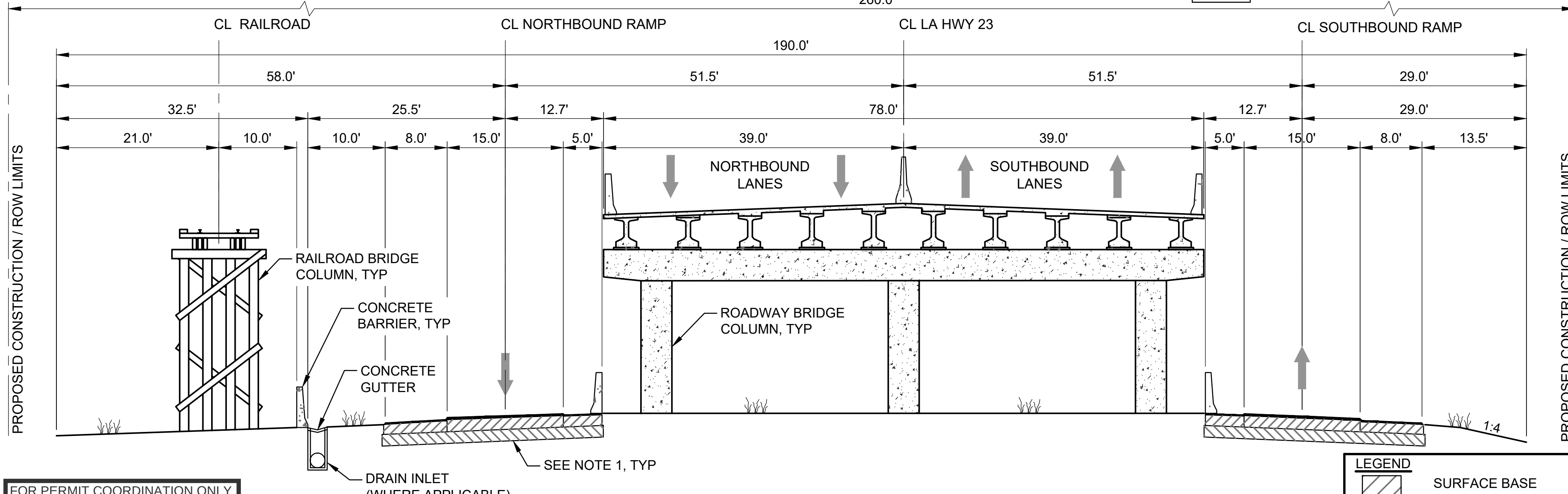
DRAWING C-33

SHEET 14 of 19



TYPICAL TRANSITION SECTION (LOOKING SOUTH)
FROM STA 416+00 TO STA 422+75 AND FROM STA 442+00 TO STA 450+00
SCALE: 1" = 20'

C
C-04



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20 10 0 20
SCALE IN FEET

TYPICAL BRIDGE SECTION (LOOKING SOUTH)
FROM STA 422+75 TO STA 442+00
SCALE: 1" = 20'

D
C-04

NOTES:

1. PAVEMENT SECTION TO BE DETERMINED FOR THE FINAL DESIGN.

LEGEND
- SURFACE BASE
- SURFACE SUB-BASE
- CONCRETE
- STRUCTURAL FILL
- ASPHALT

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MID-BARATARIA SEDIMENT DIVERSION

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

TYPICAL ROADWAY SECTIONS (2 OF 2)

DATE: JULY 2013

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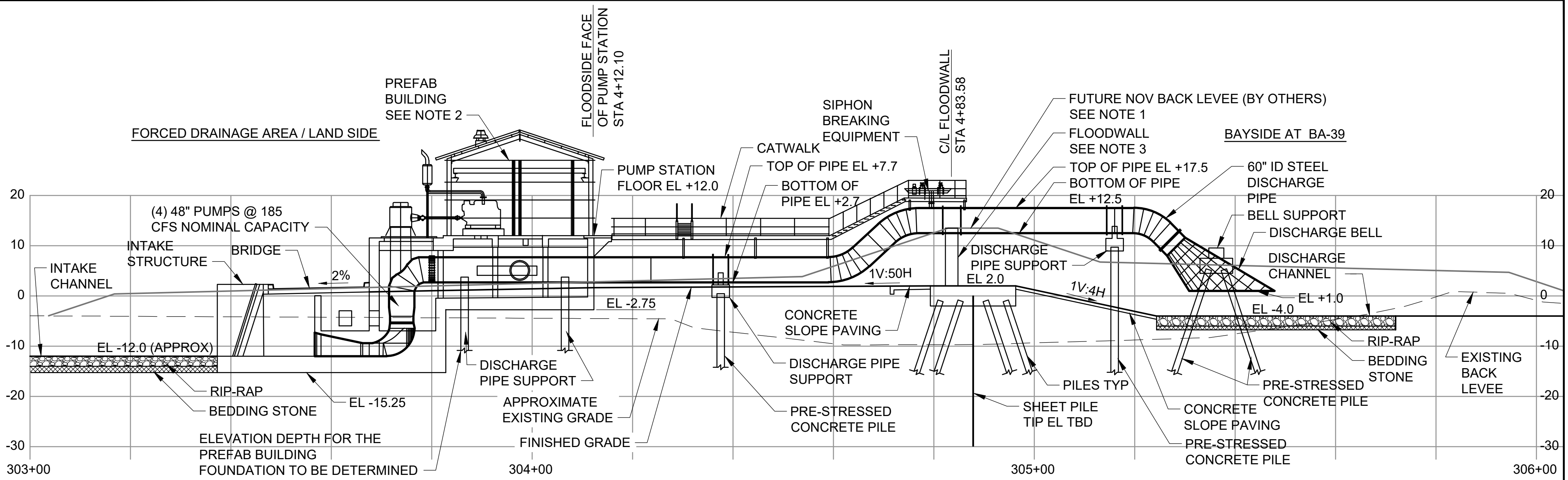

PUMP INFORMATION

PUMP 1 ON ELEV -4.0'
PUMP 2 ON ELEV -3.5'
PUMP 3 ON ELEV -3.0'
PUMP 4 ON ELEV -2.5'

CRITICAL ELEVATIONS FOR BAYSIDE

50-YR STILL WATER LEVEL +10.4'
100-YR STILL WATER LEVEL +13.0'
500-YR STILL WATER LEVEL +18.5'

BFE PROPOSED AT CTB STATION +11.0'
NOV LEVEE CONSTRUCTION GRADE +13.5'

PROFILE - PROPOSED PUMP STATION AT NORTH FORCED DRAINAGE AREA CHENIER TRAVERSE BAYOU OUTFALL

SCALE: 1" = 30'

A
C-04

NOTES:

1. FUTURE NOV LEVEE TO BE CONSTRUCTED BY OTHERS PRIOR TO CONSTRUCTION OF PUMP STATION. FUTURE NOV BACK LEVEE TO BE DEGRADED AS PART OF CHENIER TRAVERSE PUMP STATION WORK ACTIVITIES AND A FLOODWALL TO BE INSTALLED IN LIEU OF INSTALLING PUMP DISCHARGE PIPES OVER THE NOV BACK LEVEE.

2. PUMP STATION BUILDING TO BE SIMILAR TO THAT OF THE WILKINSON CANAL PUMP STATION.

3. FLOODWALL TO BE DETERMINED BASED UPON FINAL NOV BACK LEVEE (BY OTHERS) AND MODELING RESULTS.

4. ALL ELEVATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE.

30 15 0 30
SCALE IN FEET

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STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

CHENIER TRAVERSE PUMP STATION PROFILE

DATE: JULY 2013

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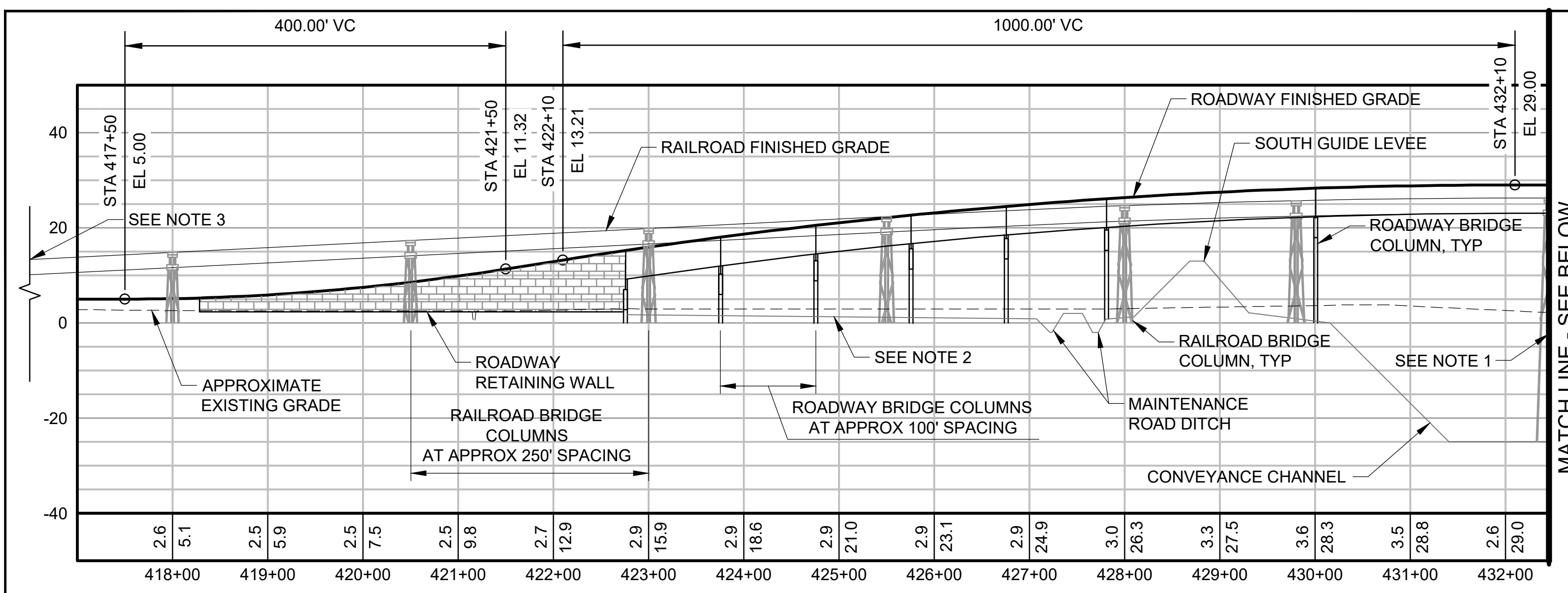


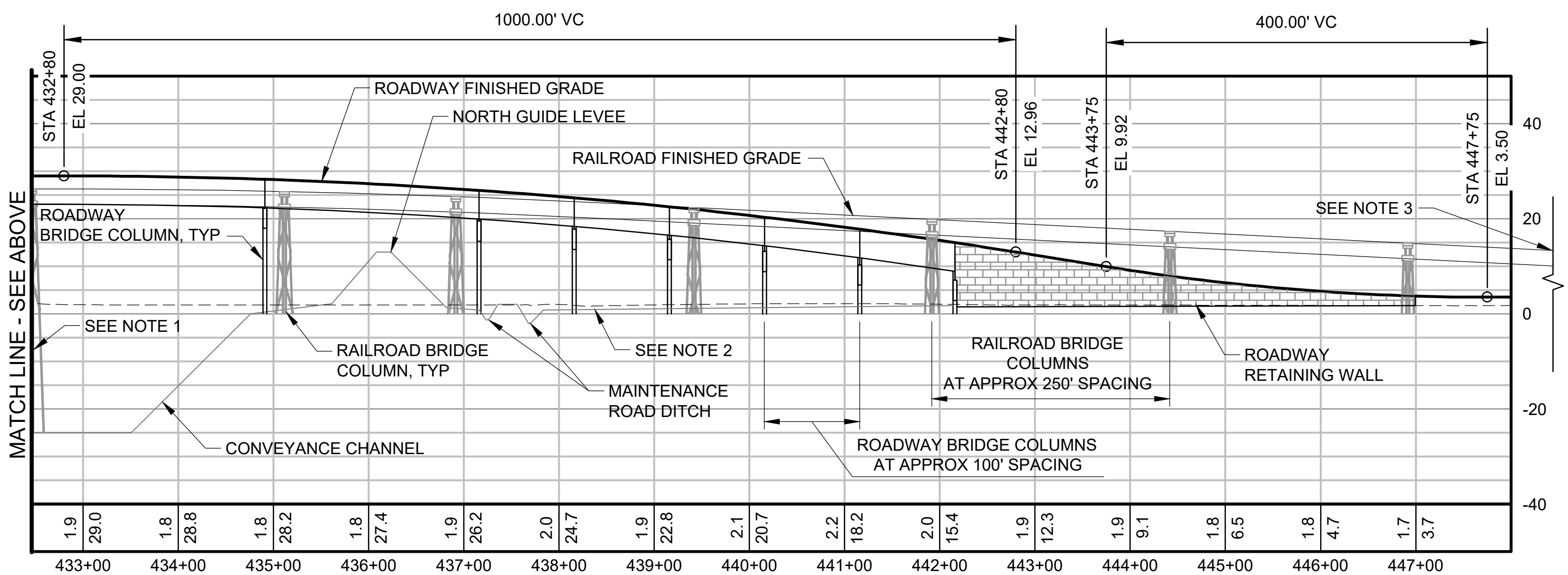
NOTES:

1. RAILROAD AND ROADWAY BRIDGE COLUMNS TO BE INSTALLED AT CENTERLINE OF CONVEYANCE CANAL CROSSING (CONVEYANCE B/L).

2. AREA LOCATED BETWEEN END OF RETAINING WALL AND MAINTENANCE ROAD DITCH TO BE GRADED TO DRAIN TOWARDS MAINTENANCE ROAD DITCH.

3. RAILROAD PROFILE TO MATCH EXISTING GRADE AT A MAXIMUM 1% SLOPE.

4. RAILROAD BRIDGE COLUMNS AND CONVEYANCE CANAL CROSSING HAVE BEEN GRAYED OUT FOR CLARITY PURPOSES.



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PROFILE - ROADWAY AND RAILROAD CROSSING AT CONVEYANCE CHANNEL (LOOKING EAST)

HORIZ SCALE: 1" = 200'
VERT SCALE: 1" = 40'

200 100 0 200
SCALE IN FEET

40 20 0 40
SCALE IN FEET

LEGEND

APPROX EXISTING GRADE EL — 3.8
29.0 — ROADWAY FINISHED GRADE
432+00 — STATION VALUE

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MID-BARATARIA SEDIMENT DIVERSION

ROADWAY AND RAILROAD PROFILES

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

DATE: JULY 2013

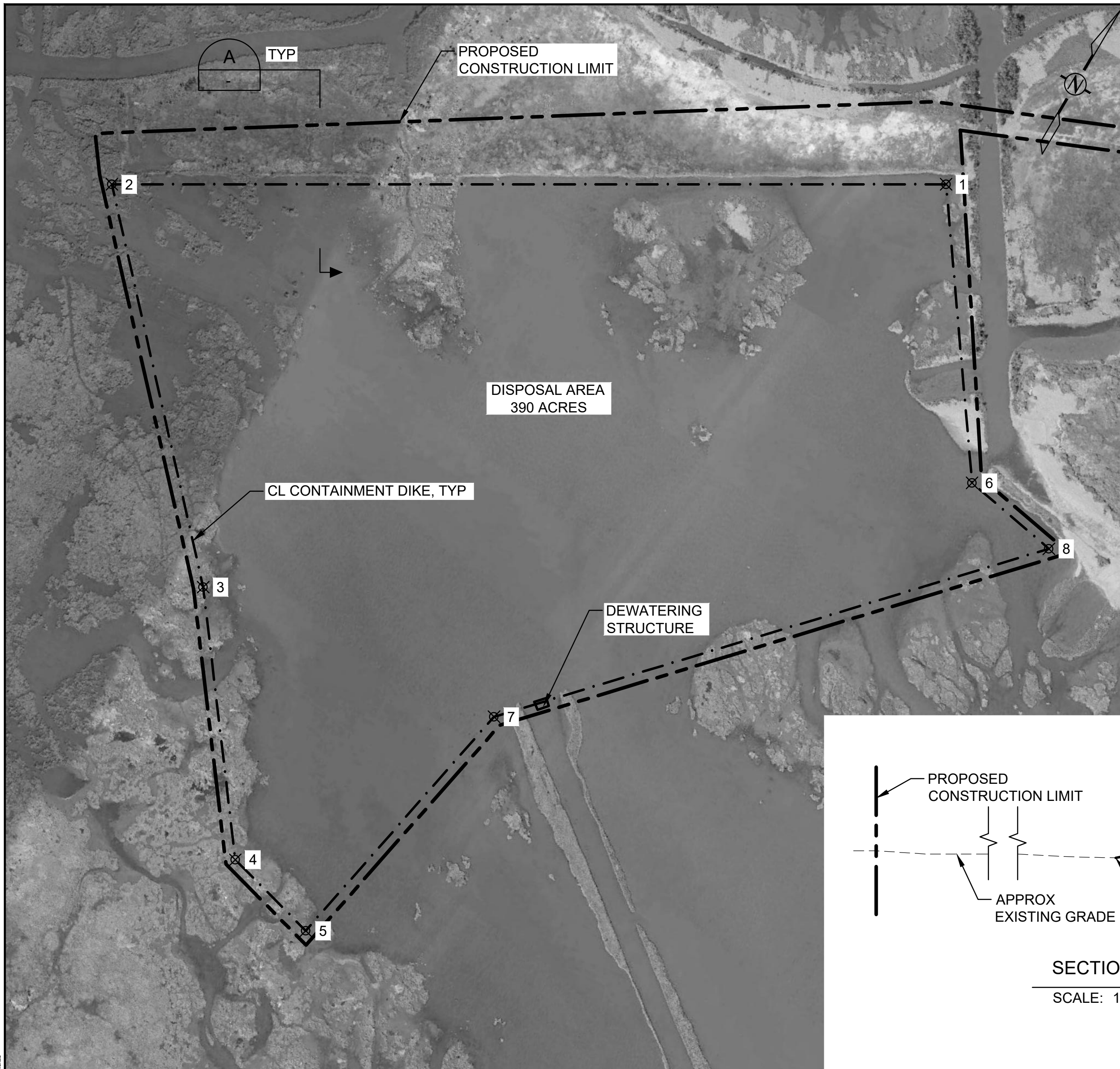
DRAWN BY: EJC

DESIGNED BY: PGG

APPROVED BY: PAMELA GONZALES-GRANGER, P.E.

DRAWING C-41

SHEET 17 of 19



PLAN

SCALE: 1" = 1000'

NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT EARTHEN CONTAINMENT DIKES, AS NECESSARY, ALONG THE PERIMETER OF EACH DISPOSAL AREA SHOWN. CONTAINMENT SHALL BE REQUIRED ALONG ALL DISPOSAL AREA BOUNDARIES THAT DO NOT MEET THE MINIMUM TYPICAL SECTION SHOWN ON THIS SHEET.

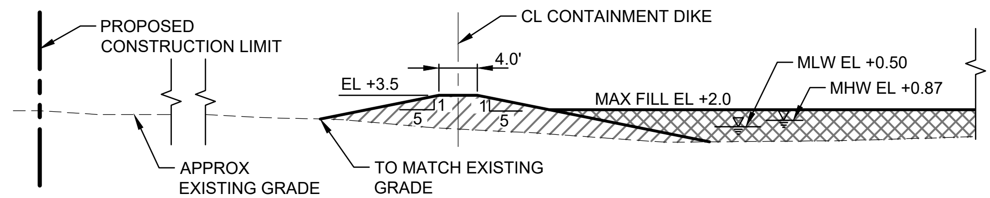
2. THE LOCATION OF THE DEWATERING STRUCTURE SHOWN ON THIS SHEET SHALL BE USED AS A GUIDE. FINAL LOCATIONS SHALL BE VERIFIED IN THE FIELD.

3. DEWATERING STRUCTURE WEIR ELEVATION SHALL MATCH DISPOSAL AREA MAXIMUM FILL ELEVATION.

4. THE CONTAINMENT DIKE WILL BE CONSTRUCTED WITH MATERIAL FROM THE INTERIOR OF THE DISPOSAL AREA.

POINT TABLE

POINT NO.	NORTHING / LATITUDE	EASTING / LONGITUDE
1	420304.07 / 29° 38' 57.25" N	3696058.60 / 90° 01' 33.98" W
2	417705.51 / 29° 38' 32.02" N	3691679.69 / 90° 02' 23.94" W
3	415878.04 / 29° 38' 13.73" N	3693412.79 / 90° 02' 04.53" W
4	414548.00 / 29° 38' 00.45" N	3694429.93 / 90° 01' 53.18" W
5	414394.88 / 29° 37' 58.87" N	3695020.34 / 90° 01' 46.51" W
6	418818.70 / 29° 38' 42.42" N	3697124.11 / 90° 01' 22.10" W
7	416103.42 / 29° 38' 15.75" N	3695342.93 / 90° 01' 42.63" W
8	418712.63 / 29° 38' 41.31" N	3697732.34 / 90° 01' 15.22" W



SECTION (LOOKING EAST)

A
-

SCALE: 1" = 20'

LEGEND
- CONTAINMENT DIKE FILL
- DISPOSAL AREA FILL

FOR PERMIT COORDINATION ONLY – NOT FOR CONSTRUCTION

1000 500 0 1000
SCALE IN FEET

20 10 0 20
SCALE IN FEET

HDR Engineering, Inc.

COASTAL PROTECTION & RESTORATION AUTHORITY
ENGINEERING DIVISION
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

MID-BARATARIA SEDIMENT DIVERSION

DISPOSAL AREA SITE

STATE PROJECT NUMBER: BA-153

FEDERAL PROJECT NUMBER: BA-153

DATE: JULY 2013

DRAWN BY: EJC | DESIGNED BY: PGG | APPROVED BY: PAMELA GONZALES-GRANGER, P.E. | DRAWING C-50 | SHEET 18 of 19

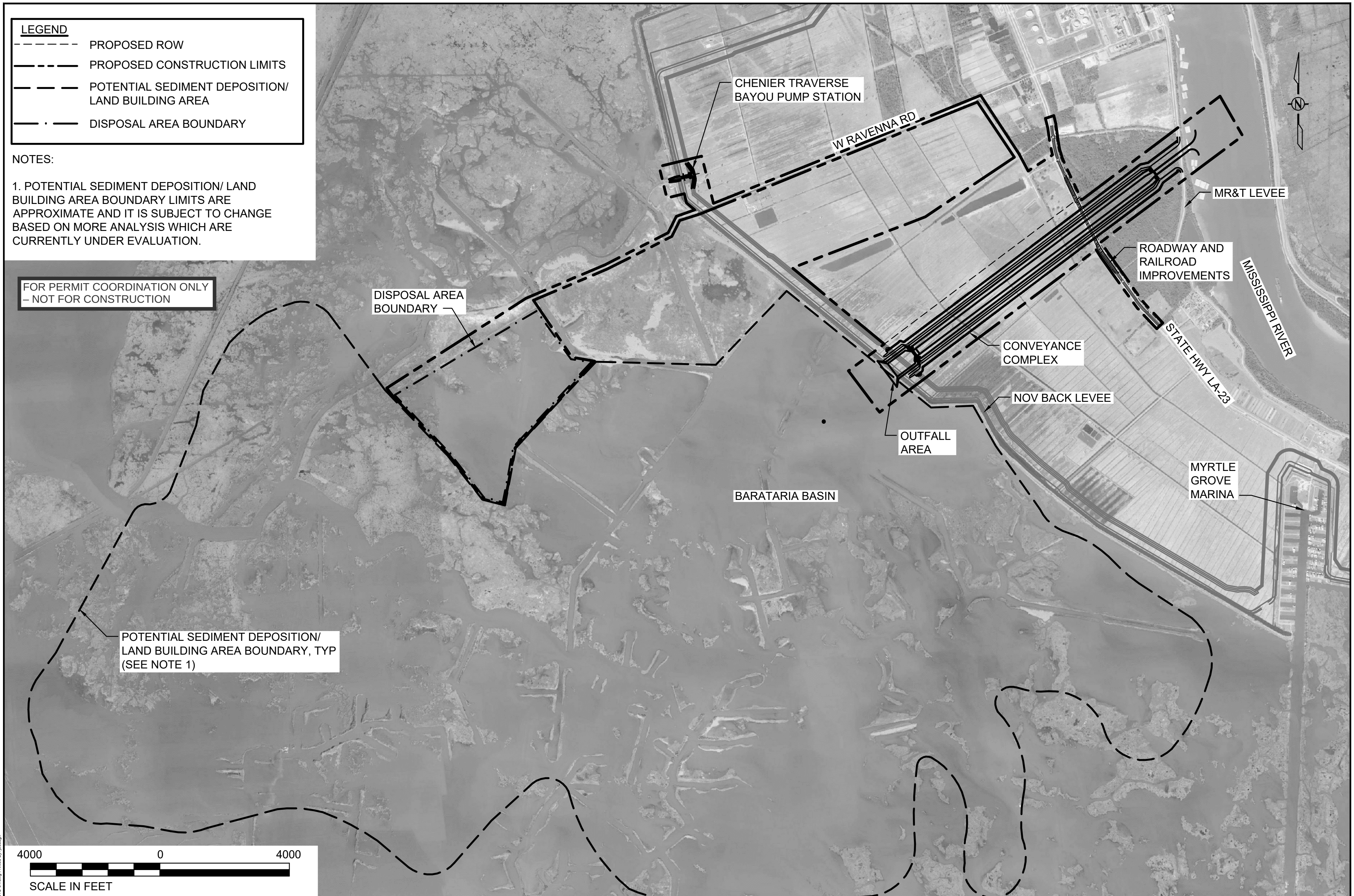
LEGEND

- - - - - - PROPOSED ROW
PROPOSED CONSTRUCTION LIMITS
POTENTIAL SEDIMENT DEPOSITION/ LAND BUILDING AREA
DISPOSAL AREA BOUNDARY

NOTES:

1. POTENTIAL SEDIMENT DEPOSITION/ LAND BUILDING AREA BOUNDARY LIMITS ARE APPROXIMATE AND IT IS SUBJECT TO CHANGE BASED ON MORE ANALYSIS WHICH ARE CURRENTLY UNDER EVALUATION.

FOR PERMIT COORDINATION ONLY – NOT FOR CONSTRUCTION



HDR Engineering, Inc.	COASTAL PROTECTION & RESTORATION AUTHORITY ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION	POTENTIAL SEDIMENT DEPOSITION/ LAND BUILDING AREA
		STATE PROJECT NUMBER: BA-153	
		FEDERAL PROJECT NUMBER: BA-153	DATE: JULY 2013
DRAWN BY: HDD	DESIGNED BY: PGG	APPROVED BY: PAMELA GONZALES-GRANGER, P.E.	DRAWING C-51 — SHEET 19 of 19

A2: Section 408 Permissions Request

State of Louisiana

JOHN BEL EDWARDS
GOVERNOR

January 13, 2017

Colonel Michael N. Clancy
District Commander
U.S. Army Corps of Engineers
7400 Leake Ave.
New Orleans, LA 70160-0267

Certified Mail No. 7010 0290 0003 5243 7704

SUBJECT: 33 U.S.C. 408 Request to alter the Mississippi River Ship Channel (MRSC) Baton to the Gulf, Mississippi River and Tributaries (MR&T) and New Orleans to Venice (NOV), Louisiana Projects with **Mid-Barataria Sediment Diversion**
Step 2: Written Request

Dear Col. Clancy:

As you are aware, the State of Louisiana through the Coastal Protection and Restoration Authority (CPRA) re-submitted a permit application in accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344) (hereinafter "Section 404") and Section 10 of the Rivers and Harbors Appropriation Act of 1899, as amended (33 U.S.C. 403) (hereinafter "Section 10") for the Mid-Barataria Sediment Diversion (MBSD) Project. CPRA further understands that a permission application will also be required by the United States Army Corps of Engineers (USACE) as defined in Section 14 of the Rivers and Harbors Appropriation Act of 1899, as amended (33 U.S.C. 408) (hereinafter "Section 408"). The Coastal Protection and Restoration Authority Board of Louisiana (CPRAB), the co-non-Federal sponsor for the New Orleans to Venice, Louisiana Project (NOV) Project in accordance with Section 408, requests permission to permanently alter the MRSC, MR&T and NOV Projects with the MBSD project.

The MBSD Project consists of the construction of an intake control structure ("structure") on the right descending bank of the Mississippi River, at approximate MRSC River Mile 60.7, through a section of the existing MR&T Project's Mississippi River Levee (MRL). The structure would be operated by CPRA to reestablish the connection between the Mississippi River and the mid-Barataria Basin by transporting sediment, freshwater, and nutrients through the structure into an approximate 2-mile long and 1,600 foot wide gravity conveyance structure, leading across land and through the future federal NOV Hurricane Protection Levee, to an outfall or receiving area in the mid-Barataria Basin. The proposed MBSD Project will intersect the MR&T within the MRL near MRSC River Mile 60.7 between Stations 1090+00 to 1120+00. The proposed MBSD Project will intersect the NOV project NOV-NF-W-05a.1 between Stations 328+00 to 352+00. Written statements from Plaquemines Parish Government (PPG) per EC 1165-2-216 for both federal projects will be provided under separate cover.

The following list addresses the minimum requirements of Procedures Step 2: Written Request of Engineering Circular 1165-2-216 (Water Resource Policies and Authorities: Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408) (30 Sep 15):

Post Office Box 44027 • Baton Rouge, Louisiana 70804-4027 • 150 Terrace Avenue • Baton Rouge, Louisiana 70802
(225) 342-7308 • Fax (225) 342-9417 • http://www.coastal.la.gov
An Equal Opportunity Employer

i. A complete description of the Mid-Barataria Sediment Diversion project is enclosed within CPRA's Section 10/404 Department of the Army (DA) and a Louisiana Department of Natural Resources (LDNR) Coastal Use Permit (CUP), Permit DA No. MVN 2012-02806-EOO dated June 22, 2016.

ii. CPRA is pursuing authorizations pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), Section 404 of the Clean Water Act (33 U.S.C. 1344), and the Louisiana Department of Natural Resources Coastal Use Permit (CUP). The 10/404/CUP permit, DA No. MVN 2012-02806-EOO was resubmitted on June 22, 2016 (Enclosure 1).

iii. At this time CPRA does not desire to preserve its eligibility to seek credit for this alteration under Section 221 of the Flood Control Act of 1970, as amended, by executing an In-Kind Memorandum of Understanding, prior to the construction of the alteration being initiated. CPRA may, at a later date, seek to preserve it's eligibility to seek In-Kind credit.

iv. This alteration will not require the use of federally-owned real property. The State of Louisiana, the Coastal Protection and Restoration Authority (CPRA) the CPRA Board, or Plaquemines Parish Government (PPG) have care, custody, control, or sufficient property interests therein for construction and operation, maintenance, repair, rehabilitation, and replacement of this alteration. This alteration to MR&T and NOV Levee segment will require the acquisition of new property interests (permanent or temporary).

v. A written statement of concurrence from the NOV co-non-federal sponsor, Plaquemines Parish Government (PPG) is attached (Enclosure 2).

vi. Written statements of endorsement, from the non-federal sponsors, PPG for the MR&T, and Louisiana Department of Transportation and Development (LaDOTD) Mississippi River Ship Channel Project, Gulf to Baton Rouge are attached (Enclosure 3).

It is the understanding of CPRA that the alteration, as described in Section 10/404 Department of the Army (DA) and a Louisiana Department of Natural Resources (LDNR) Coastal Use Permit (CUP) Permit, DA No. MVN 2012-02806-EOO dated June 22, 2016 (Enclosure), complies with the 408 initiation requirements in accordance with Engineering Circular 1165-2-216 (30 Sep 15). CPRA requests early involvement and coordination with USACE-MVN beginning prior to the 35 percent design level. Approval of this alteration requires satisfactory USACE District technical reviews, an Agency Technical Review, and an Independent External Peer Review – Safety Assurance Reviews demonstrating the alteration will "not be injurious to the public interest or affect the USACE project's ability to meet its authorized purpose." This review process and alteration approval shall be accomplished through the implementation of a USACE/CPRA mutually agreed to 408 Review Plan. The 408 Review Plan will outline the milestone reviews, review schedules, review process, and the vertical review and approval process to receive the Section 10/404 permit and the Section 408 permission for construction of the Mid-Barataria Sediment Diversion.

All correspondence concerning this request should be directed to the following:

For CPRA Board:
Executive Director
Coastal Protection and Restoration
Authority of Louisiana
150 Terrace Avenue
Baton Rouge, LA 70802
(225) 342-5362

Respectfully,

Michael Ellis
Executive Director
Coastal Protection and Restoration Authority of Louisiana

Enclosure 1: Section 10/404 Department of the Army (DA) and a Louisiana Department of Natural Resources (LDNR) Coastal Use Permit (CUP) Permit DA No. MVN 2012-02806-EOO, dated June 22, 2016

Enclosure 2: Written Statement of concurrence from PPG for the NOV Project

Enclosure 3: Written Statement of endorsement from LaDOTD for the Mississippi River Ship Channel and PPG for the MR&T Project

cc: Johnny Bradberry, Chairman, CPRA Board
Brad Barth, CPRA, Program Director
Brad Inman, USACE, 408 Coordinator
Jeffery Varisco, USACE, Project Manager
Amos Cormier III, President, PPG
L.V. Cooley, Special Assistant Parish Attorney, PPG
Vince Frelich, Director of Coastal Restoration, PPG

Louisiana Department of Natural Resources
Office of Coastal Management

Joint Permit Application For Work Within the Louisiana Coastal Zone

U.S. Army Corps of Engineers (COE)
New Orleans District

Application Number: 15540 **Permit Number:** P20131098 **Date Received:** 06/22/2016

Step 1 of 15 - Applicant Information

Applicant Name: Coastal Protection & Restoration Authority of Louisiana (CPRA)

Applicant Type: GOVERNMENT AGENCY

Mailing Addr : P.O. Box 44027 Capitol Station
Baton Rouge, LA 70804--4027

Contact Info: Elizabeth Davoli

Phone: (225) 342-4616 **Fax:** (225) 242-3550 **Email:** elizabeth.davoli@la.gov

Step 2 of 15 - Agent Information

Agent Name:

Mailing Addr:

,

Contact Info:
Phone: - **Fax:** - **Email:**

Step 3 of 15 - Permit Type

☒ Coastal Use Permit (CUP) ☐ Solicitation of Views (SOV) ☐ Request for Determination (RFD)

Step 4 of 15 - Pre-Application Activity

a. Have you participated in a Pre-Application or Geological Review Meeting for the proposed project?

☐ No ☒ Yes Date meeting was held: 05/19/2016

Attendees:

Elizabeth Davoli (CPRA)	Stephanie Zumo	Brad LaBorde
(Individual or Company Rep)	(OCM Representative)	(COE Representative)

b. Have you obtained an official wetland determination from the COE for the project site?

☒ No ☐ Yes **If Yes, Please upload a copy with your application.**

JD Number:

c. Is this application a mitigation plan for another CUP?

☒ No ☐ Yes OCM Permit Number:

Step 5 of 15 - Project Information

a. Describe the project.

The Mid-Barataria Sediment Diversion is a large-scale, complex civil works and ecosystem restoration project. When operated, up to 75.000 cubic feet per second (cfs) of sediment-laden water would be diverted from the Mississippi River to the mid-Barataria Basin to reconnect and re-establish the natural or deltaic sediment deposition process between the the Mississippi River and the Barataria Basin to deliver sediment, freshwater, and nutrients to reduce land loss and sustain wetlands.

b. Is this application a change to an existing permit?

☒ No ☐ Yes OCM Permit Number:

c. Have you previously applied for a permit or emergency authoriation for all or any part of the proposed project?

☐ No ☒ Yes

Agency	Contact	Permit Number	Decision Status	Decision Date
OCM	Stephanie Zumo	P20131098	Pending	
COE	Brad LaBorde	MVN-2012-02806-ETT	Pending	
Other				

Step 6 of 15 - Project Location

a. Physical Location

Street: Louisiana State Highway 23 (LA 23)

City: Ironton (vicinity) Parish: Plaquemines Zip: 70083

Water Body: Mississippi River (Mile 60.7) / Barataria Basin

b. Latitude and Longitude

Latitude: 29 39 42.5 Longitude: -89 57 48.6

c. Section, Township, and Range

Section #:	5 16 47 48 49	Township #:	16S	Range #:	25E
Section #:	3 2 1 41 19	Township #:	17S	Range #:	24E

d. Lot, Tract, Parcel, or Subdivision Name

Lot #: Parcel #:

Tract #: Subdivision Name:

e. Site Direction

START- From I-10 in New Orleans, take US-90Bus W across Mississippi River. Continue on US-90Bus W / Westbank Expy for 4 miles. Take exit #7 for LA 23 / Lafayette St. Continue south on LA 23 for 21 miles to the project area between the Phillips 66 Alliance Refinery and the community of Ironton, near Mississippi River Mile 60.7 -END

Step 7 of 15 - Adjacent Landowners - See attached list

Step 8 of 15 - Project Specifics

a. Project Name and/or Title: Mid-Barataria Sediment Diversion (BA-153)

b. Project Type: Non-Residential

c. Source of Funding: **FEDERAL**

d. What will be done for the proposed project?

- [x] Bridge/Road
- [ ] Home Site/Driveway
- [x] Pipeline/Flow Line
- [x] Rip Rap/Erosion Control
- [x] Bulkhead/Fill
- [x] Levee Construction
- [ ] Plug/Abandon
- [x] Site Clearance
- [x] Drainage Improvements
- [x] Dredging
- [ ] Production Barge/ Structure
- [ ] Subdivision
- [x] Drill Barge/ Structure
- [ ] Prop Washing
- [ ] Vegetative Plantings
- [ ] Wharf/Pier/Boathouse
- [ ] Drill Site
- [x] Pilings
- [x] Remove Structures
- [x] Fill
- [ ] Marina
- [ ] Major Industrial/Commercial
- [x] Other: excavation for conveyance channel / levee tie-ins

e. Why is the proposed project needed?

The impacts of coastal land loss threaten Louisiana's economy, commerce, infrastructure, and culture. The Barataria Basin is suffering from significant land loss--approximately 75,000 acres between 1985 and 2010, with projected loss by 2060 ranging from 105,000 to 150,000 acres. Historically, Mississippi River overbank flooding deposited sediment, freshwater, and nutrients in the Barataria Basin during annual flooding cycles, building land and sustaining wetland habitats. Levees and Mississippi River channelization have altered natural fluvial interaction and sediment transport from the river into the basin, removing the source of sediment and freshwater that built and maintained wetlands relative to subsidence and sea level rise. In addition, recent hurricane events and the Deepwater Horizon (DHW) oil spill have exacerbated land loss impacts in the basin. The purpose of the Mid-Barataria Sediment Diversion is to reconnect and re-establish the natural or deltaic sediment deposition process between the Mississippi River and the Barataria Basin; the project is needed as a long-term resilient, sustainable strategy to reduce land loss rates and sustain DWH injured wetlands through the delivery of sediment, freshwater, and nutrients.

Step 9 of 15 - Project Status

a. Proposed start date: 01/01/2020 **Proposed completion date:** 01/01/2025

b. Is any of the project work in progress?

☒ No ☐ Yes

c. Is any of the project work completed?

☒ No ☐ Yes

Step 10 of 15 - Structures, Materials, and Methods for the Proposed Project

a. Excavations

3,850,000 Cubic Yards 288 Acres

b. Fill Areas

4,152,001,00 Cubic Yards 554.30 Acres

c. Fill Materials

☒	Concrete:	371,293	Cubic Yards	☒	Rock:	65,676	Cubic Yards
☒	Crushed Stone or Gravel:	102,290	Cubic Yards	☐	Sand:		Cubic Yards
☒	Excavated and Placed onsite :	1,100,000	Cubic Yards	☒	Hauled in Topsoil/Dirt:	584,035	Cubic Yards
☒	Excavated and hauled offsite:	2,300,000	Cubic Yards				

☒ Other: Nourishment Disposal Area 2,300,000.00 Cubic Yards

d. What equipment will be used for the proposed project?

☒ Airboat	☒ Bulldozer/Grader	☒ Marsh Buggy
☒ Backhoe	☒ Dragline/Excavator	☒ Other Tracked or Wheeled Vehicles
☒ Barge Mounted Bucket Dredge	☐ Handjet	☐ Self Propelled Pipe Laying Barge
☐ Barge Mounted Drilling Rig	☐ Land Based Drilling Rig	☒ Tugboat
☐ Other:		

Step 11 of 15 - Project Alternatives

a. Total acres of wetlands and/or waterbottoms filled and/or excavated.

484.6 acres

b. What alternative locations, methods, and access routes were considered to avoid impact to wetlands and/or waterbottoms?

As part of the engineering and design phase, construction and staging areas would consider the use of existing access roads and drives to minimize impacts to wetlands. See pp. 16-19 for additional information on alternatives (location, capacity, and structure type) analysis conducted since 1996 that resulted in the location of the Mid-Barataria Sediment Diversion at River Mile 60.7 with a capacity of 75,000 cfs.

c. What efforts were made to minimize impact to wetlands and/or waterbottoms?

The analysis of the Mid-Barataria Sediment Diversion was developed using the minimum construction footprint to maximize the conveyance of sediment-laden water from the Mississippi River to the mid-Barataria Basin. The gravity conveyance alignment was developed for efficient sediment conveyance between the river and the basin. Best Management Practices (BMPs) are being developed for access routes to minimize disturbance to wetlands between the MR&T and NOV levees.

d. How are unavoidable impacts to vegetated wetlands to be mitigated?

The project is self-mitigating. The purpose of the Project is to reconnect and re-establish the natural or deltaic sediment deposition process between the Mississippi River and the Barataria Basin as a long-term resilient, sustainable strategy to reduce land loss rates and sustain DWH injured wetlands through the delivery of sediment, freshwater, and nutrients.

Step 12 of 15 - Permit Type and Owners

a. Are you applying for a Coastal Use Permit?

☐ No ☒ Yes

b. Are you the sole landowner / oyster lease holder?

☒ No ☐ Yes

☐ The applicant is an owner of the property on which the proposed described activity is to occur.

☒ The applicant has made reasonable effort to determine the identity and current address of the owner(s) of the land on which the proposed described activity is to occur, which included, a search of the public records of the parish in which the proposed activity is to occur.

☒ The applicant hereby attests that a copy of the application has been distributed to the following landowners / oyster lease holders. See attached list.

c. Does the project involve drilling, production, and/or storage of oil and gas?

☒ No ☐ Yes **If yes, you must attach a list of all state and federal laws and rules and regulations**

Step 13 of 15 - Maps and Drawing Instructions

Note: OCM Compiled Plats consist of a complete and current set of plats that have been pieced together by OCM using only the most current portions of the plat files provided by the applicant/agent. All out-of-date plats have been excluded.

MBSDBA-153PermitSet.pdf	06/22/2016 03:29:40 PM
P20131098NeedsandAlternativesJustification.pdf	06/22/2016 03:29:40 PM
FEE_WAIVER_REQUEST_LETTER_07-24-13.pdf	07/24/2013 01:31:40 PM
Supplementalfigures2.pdf	06/22/2016 03:29:41 PM
RevisedP20131098_MVN-2012-02806-ETTSupplementInfo.pdf	06/22/2016 03:29:41 PM

Step 14 of 15 - Payment

The fee for this permit is: $ 100.00

Step 15 of 15 - Payment Processed

Applicant Information

Applicant Name: Coastal Protection & Restoration Authority of Louisiana (CPRA)
Address: P.O. Box 44027 Capitol Station
Baton Rouge, LA 70804--4027

To the best of my knowledge the proposed activity described in this permit application complies with, and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. If applicable, I also certify that the declarations in Step 12c, oil spill response, are complete and accurate.

Landowners List

Landowner **Phillips 66** **P.O. Box 2197** **Houston, TX 77252**
Landowner **Ram Terminals, LLC** **7733 Forsyth Blvd.** **St. Louis, MO 63105-1836**
Adjacent Landowner **Ameripure Processing Company, Inc.** **803 Willow St.** **Franklin, LA 70538**
Adjacent Landowner **Benjamin X. & Gwendolyn Becnel, Jr.** **16198 Highway 23** **Belle Chasse, LA 70037**
Adjacent Landowner **CHS-SLE Land LLC c/o Francis J. Lobrano** **147 Keating** **Belle Chasse, LA 70037**
Adjacent Landowner **Canard Land, LLC c/o John W. Newman** **605 South America Street** **Covington, LA 70433**

Adjacent Landowner
Entergy Louisiana c/o John A. Braymer
639 Loyola Avenue, 26th Floor
New Orleans, LA 70113

Adjacent Landowner
Eugene & Jacey Linder
119 E. St.
A
Belle Chasse, LA 70037

Adjacent Landowner
Loch Leven 7 LLC c/o Michael Jeansome
850 Engineers Road
Belle Chasse, LA 70037

Adjacent Landowner
Lois F. Landry
1401 St. Andrew St.
208
New Orleans, LA 70130

Adjacent Landowner
Michael A. Neeb
221 W. 9th St.
Rushville, IN 46173

Adjacent Landowner
Midway Cattle Ranch LLC c/o Khai Q. Nguyen
1051-A W, Ravenna Rd.
Belle Chasse, LA 70037

Adjacent Landowner

Plaquemines Parish Government

106 Avenue G

Belle Chasse, LA 70037

Adjacent Landowner

Ralph C. Neeb, Jr. et al.

1001 Amelia St.

Gretna, LA 70053

Adjacent Landowner

River Rest, LLC c/o John W. Newman

605 South America Street

Covington, LA 70433

Adjacent Landowner

Shawn E. Dugas and Ken Dugas

515 Moncla Ave.

Belle Chasse, LA 70037

Adjacent Landowner

Stone Energy Corp.

625 Kaliste Saloom Road

Lafayette, LA 70508

Adjacent Landowner

Walter Landry

111 Landridge Dr.

Belle Chasse, LA 70037

Adjacent Landowner

Woodland Borrow Pits, LLC c/o Phyllis Adams

1074A Highway 1

Thibodaux, LA 70301

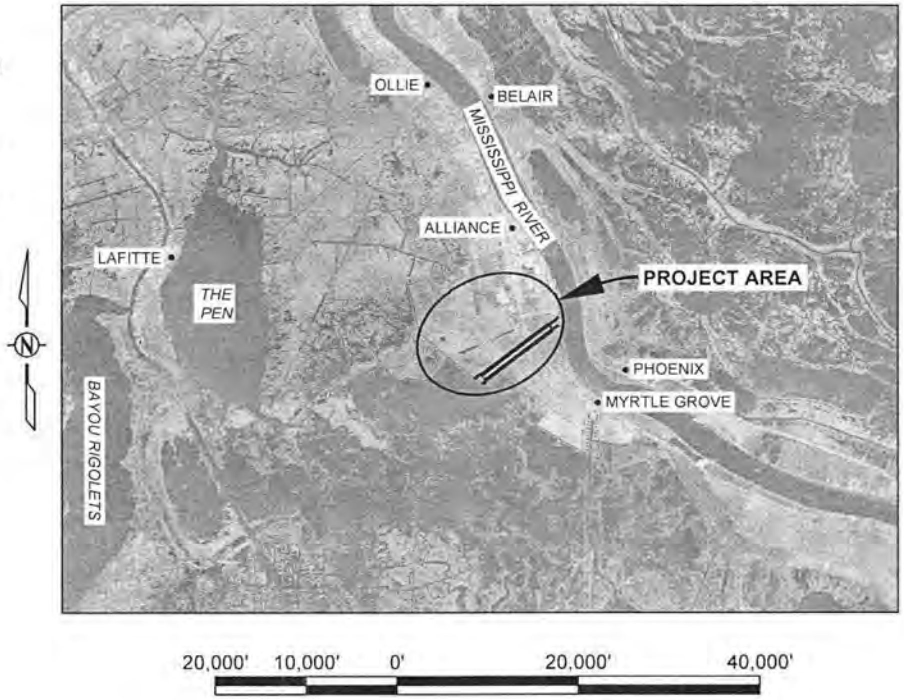
INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
3	PROJECT LAYOUT
4	CONVEYANCE CHANNEL LAYOUT
5	OVERALL ROADWAY AND RAIL PLAN
6	CHENIER TRAVERSE BAYOU PUMP STATION SITE
7	TYPICAL CONVEYANCE CHANNEL SECTION (1 OF 2)
8	TYPICAL CONVEYANCE CHANNEL SECTION (2 OF 2)
9	TYPICAL ROADWAY SECTION (1 OF 2)
10	TYPICAL ROADWAY SECTIONS (2 OF 2)
11	DISPOSAL AREA
12	POTENTIAL SEDIMENT DEPOSITION/LAND BUILDING AREA

STATE OF LOUISIANA
COASTAL PROTECTION AND RESTORATION AUTHORITY

MID-BARATARIA SEDIMENT DIVERSION PROJECT

BA-153
PLAQUEMINES PARISH, LOUISIANA



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION & RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	TITLE SHEET
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 1 OF 12

GENERAL NOTES

1. THESE PLANS WERE DEVELOPED USING 2010 AERIAL PHOTOGRAPHY, NAD83, LOUISIANA STATE COORDINATE SYSTEM, SOUTH ZONE.

2. ALL ELEVATIONS SHOWN ARE IN NAVD 88.

3. AS-BUILT DRAWINGS WILL BE SUBMITTED WITHIN 30 DAYS OF COMPLETION OF THIS PROJECT TO THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES, COASTAL MANAGEMENT DIVISION, P.O. BOX 44487, BATON ROUGE, LA 70804-4487.

4. THE PERMIT APPLICANT 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.

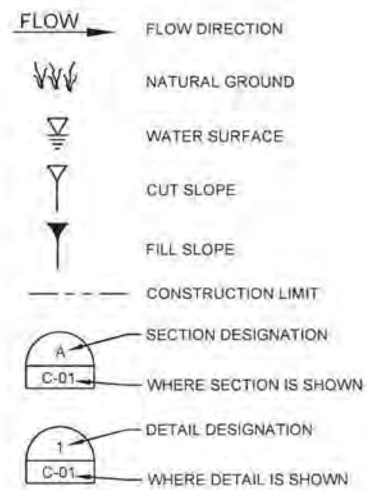
5. ALL NORTHING / EASTING AND LATITUDE / LONGITUDE VALUES ARE BASED ON PRELIMINARY DESIGN DATA AND ARE SUBJECT TO CHANGE.

6. ALL ELEVATIONS ARE BASED ON PRELIMINARY DESIGN DATA AND ARE SUBJECT TO CHANGE.

FEATURE LOCATION TABLE

DESCRIPTION	NORTHING / LATITUDE	EASTING / LONGITUDE
POB CHANNEL BASELINE	426308.37 / 29° 39' 54.20" N	3717488.25 / 89° 57' 30.31" W
POE CHANNEL BASELINE	417902.28 / 29° 38' 32.30" N	3706292.82 / 89° 59' 38.32" W
DIVERSION GATE STRUCTURE	424567.11 / 29° 39' 37.24" N	3715169.19 / 89° 57' 56.83" W
BACK STRUCTURE	418983.06 / 29° 38' 42.84" N	3707732.23 / 89° 59' 21.86" W
POB PUMP STATION BASELINE	424556.45 / 29° 39' 38.77" N	3701081.76 / 90° 00' 36.50" W
POE PUMP STATION BASELINE	424331.16 / 29° 39' 36.65" N	3700158.86 / 90° 00' 46.99" W

SYMBOLS



ABBREVIATIONS

APPROX	APPROXIMATE
B/L	BASELINE
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
DWG	DRAWING
E	EASTING
EL, ELEV	ELEVATION
HORIZ	HORIZONTAL
HWY	HIGHWAY
LA	LOUISIANA
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MR & T	MISSISSIPPI RIVER & TRIBUTARIES LEVEE
N	NORTHING
NO	NUMBER
NOV	NEW ORLEANS TO VENICE LEVEE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
RD	ROAD
ROW	RIGHT OF WAY
STA	STATION
TBD	TO BE DETERMINED
TYP	TYPICAL
VC	VERTICAL CURVE
VERT	VERTICAL
W	WESTING
YR	YEAR

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY:CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 2 OF 12

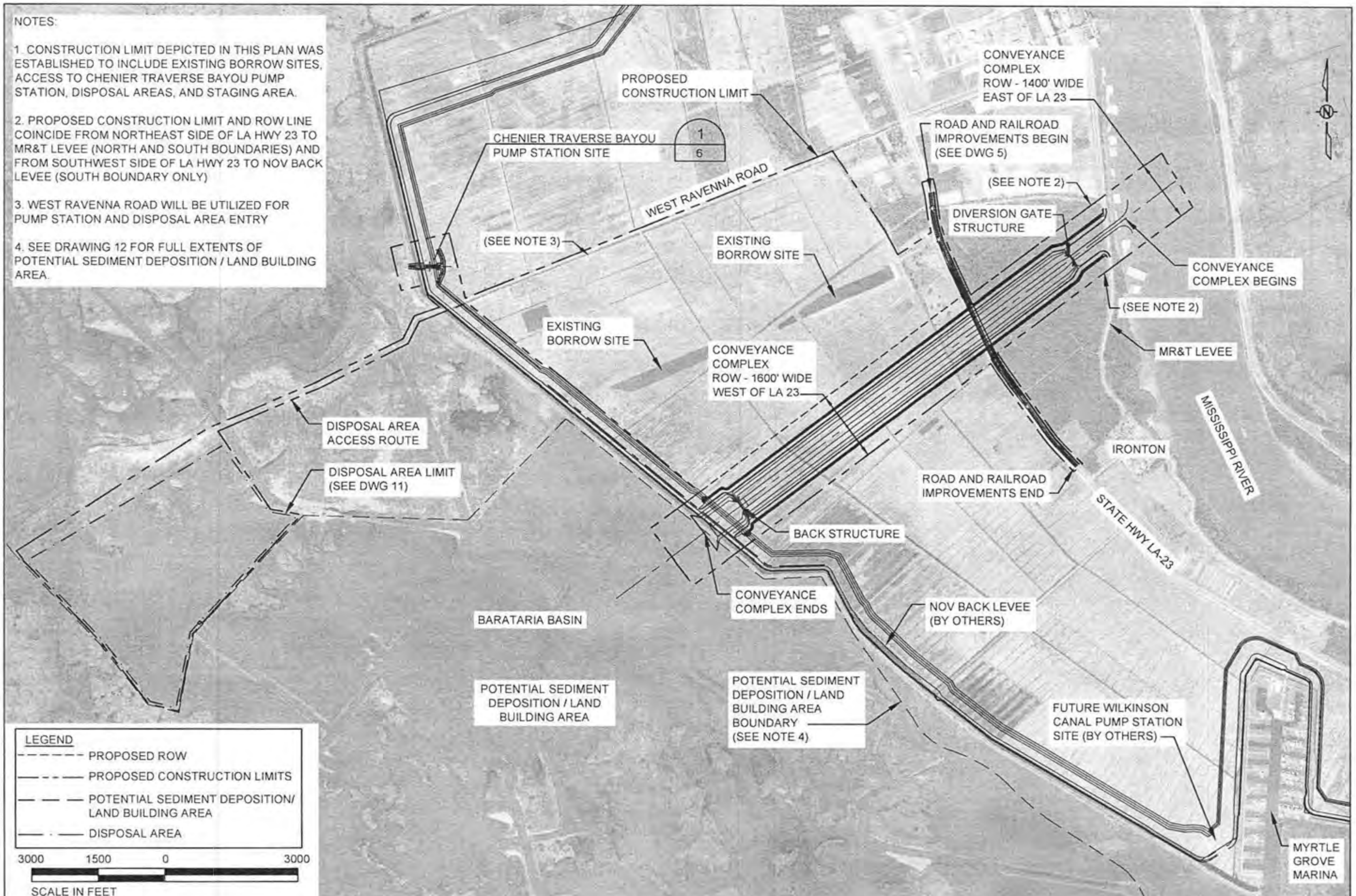
NOTES:

1. CONSTRUCTION LIMIT DEPICTED IN THIS PLAN WAS ESTABLISHED TO INCLUDE EXISTING BORROW SITES, ACCESS TO CHENIER TRAVERSE BAYOU PUMP STATION, DISPOSAL AREAS, AND STAGING AREA.

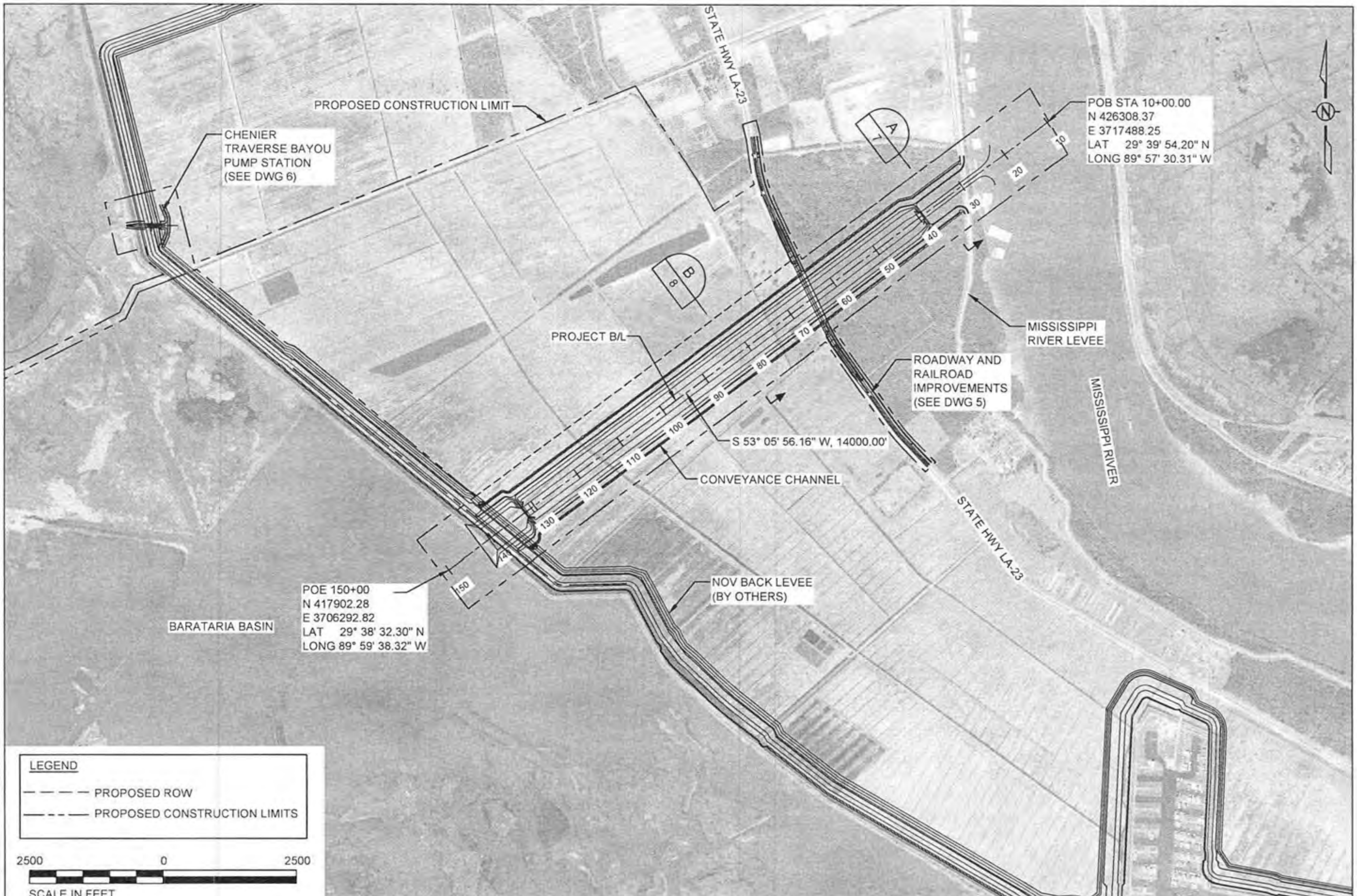
2. PROPOSED CONSTRUCTION LIMIT AND ROW LINE COINCIDE FROM NORTHEAST SIDE OF LA HWY 23 TO MR&T LEVEE (NORTH AND SOUTH BOUNDARIES) AND FROM SOUTHWEST SIDE OF LA HWY 23 TO NOV BACK LEVEE (SOUTH BOUNDARY ONLY)

3. WEST RAVENNA ROAD WILL BE UTILIZED FOR PUMP STATION AND DISPOSAL AREA ENTRY

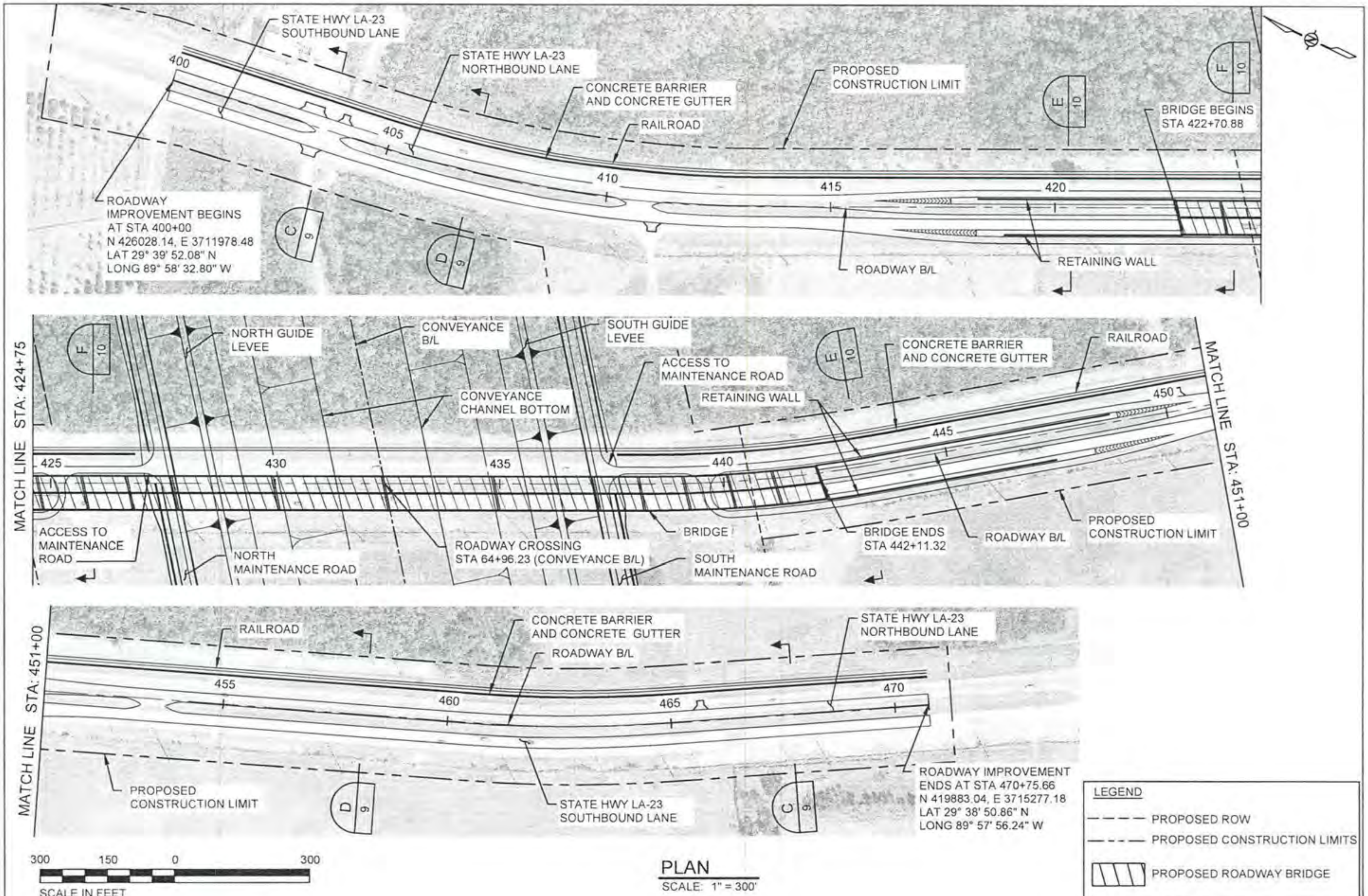
4. SEE DRAWING 12 FOR FULL EXTENTS OF POTENTIAL SEDIMENT DEPOSITION / LAND BUILDING AREA.



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	PROJECT LAYOUT DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 3 OF 12

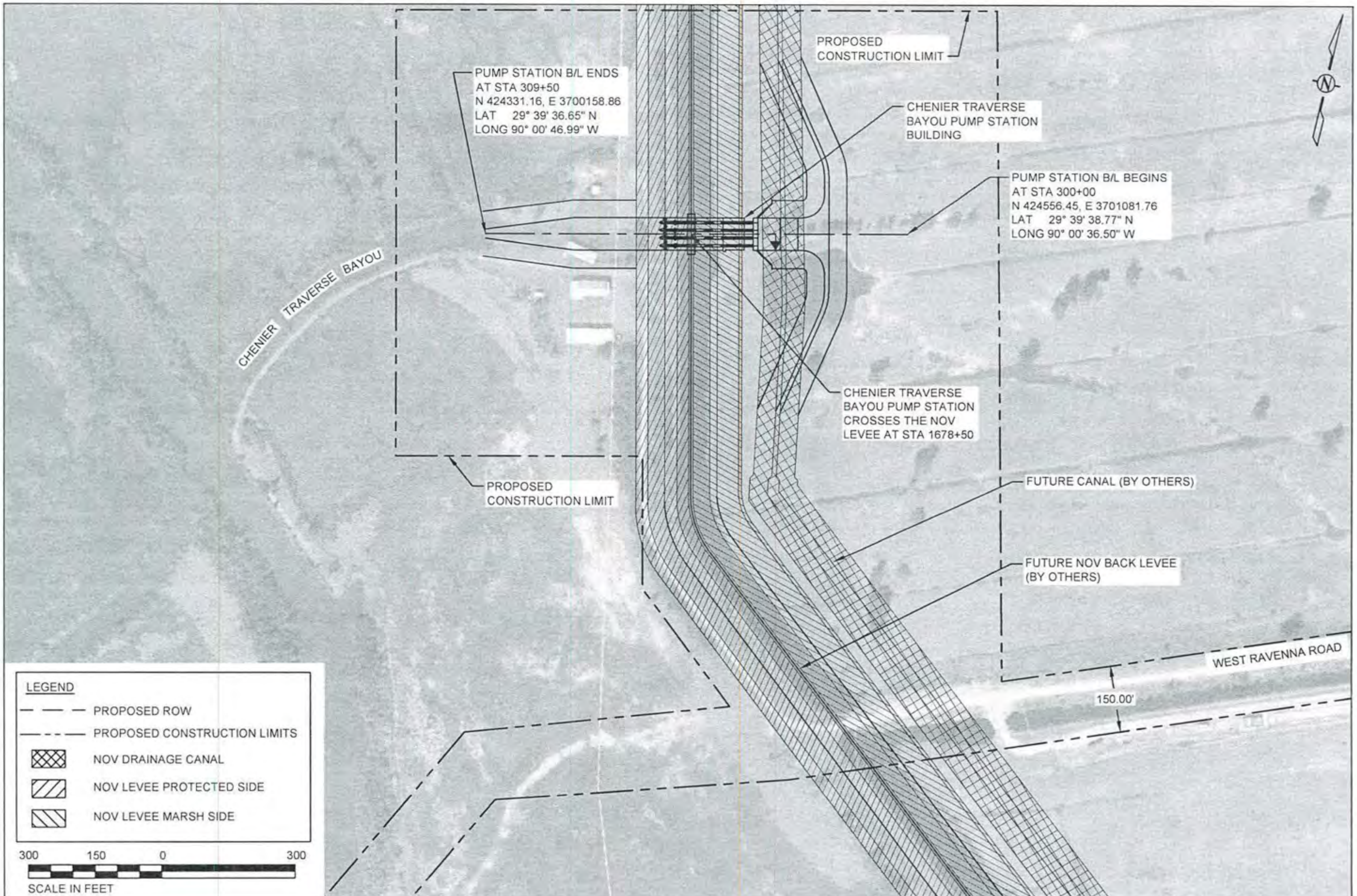


APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	CONVEYANCE CHANNEL LAYOUT
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 4 OF 12

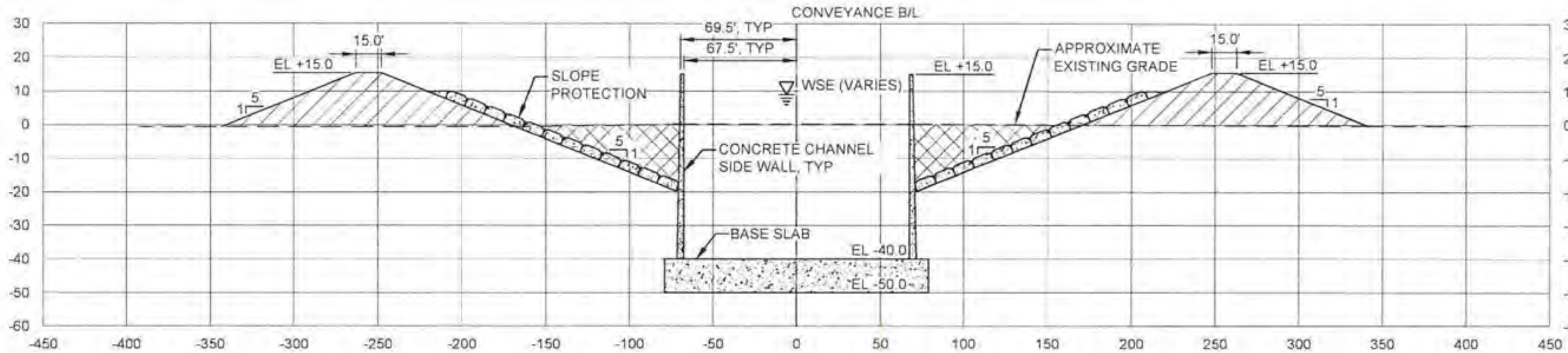


PLAN
SCALE: 1" = 300'

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	OVERALL ROADWAY AND RAIL PLAN DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 5 OF 12



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT STATE PROJECT NUMBER: BA-153	CHENIER TRAVERSE BAYOU PUMP STATION SITE DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 6 OF 12



TYPICAL SECTION (LOOKING UPSTREAM)
FROM STA 30+00 TO STA 39+00

A
4

HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 50'

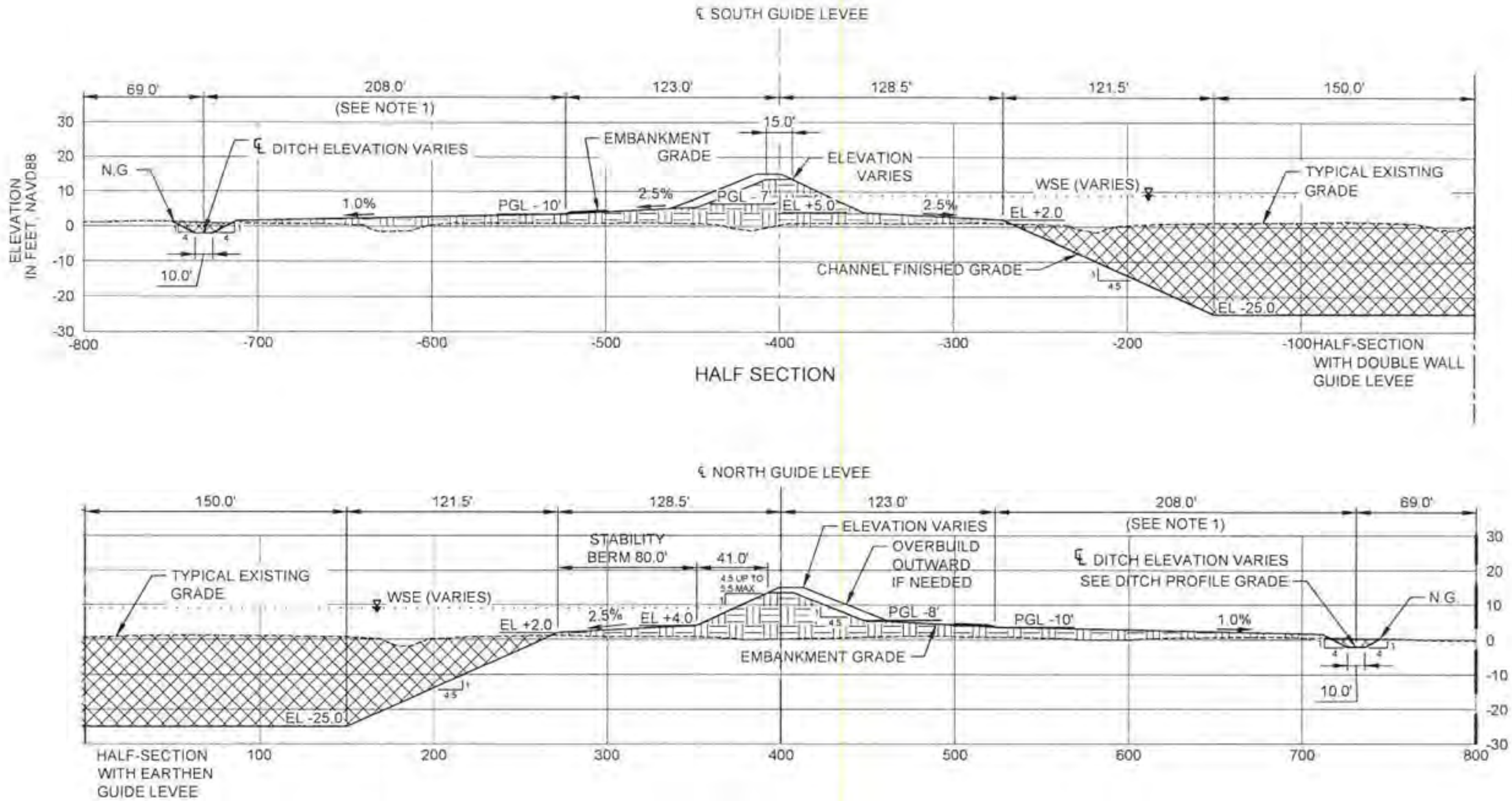
HORIZONTAL GRAPHIC SCALE
100' 50' 0 100' 200'
50' 25' 0 50' 100'
VERTICAL GRAPHIC SCALE

NOTES:

1. EXCAVATION AREA PATTERN NOT SHOWN WITHIN CONCRETE CHANNEL FOR CLARITY PURPOSES.

LEGEND
- FILL AREA
- EXCAVATION AREA
- CONCRETE

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	TYPICAL CONVEYANCE CHANNEL SECTION (1 OF 2)
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 7 OF 12



PHASE 2 TYPICAL SECTION (LOOKING DOWNSTREAM) FROM STA 42+00 TO STA 125+00

B / 4

HORIZ SCALE: 1" = 100'
VERT SCALE: 1" = 50'

HORIZONTAL GRAPHIC SCALE
100' 50' 0 100' 200'
50' 25' 0 50' 100'
VERTICAL GRAPHIC SCALE

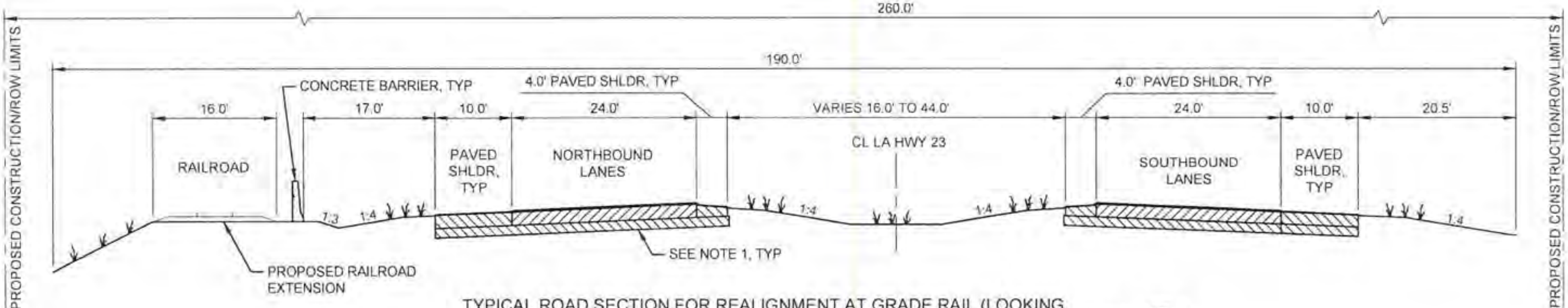
NOTES:

1. DIMENSIONS AND ROW LINE SHOWN FOR CHANNEL WEST OF LA 23. ROW LINE ±700' EAST OF LA 23.

LEGEND

- EARTHEN FILL AREA
- SAND FILL AREA
- EXCAVATION AREA

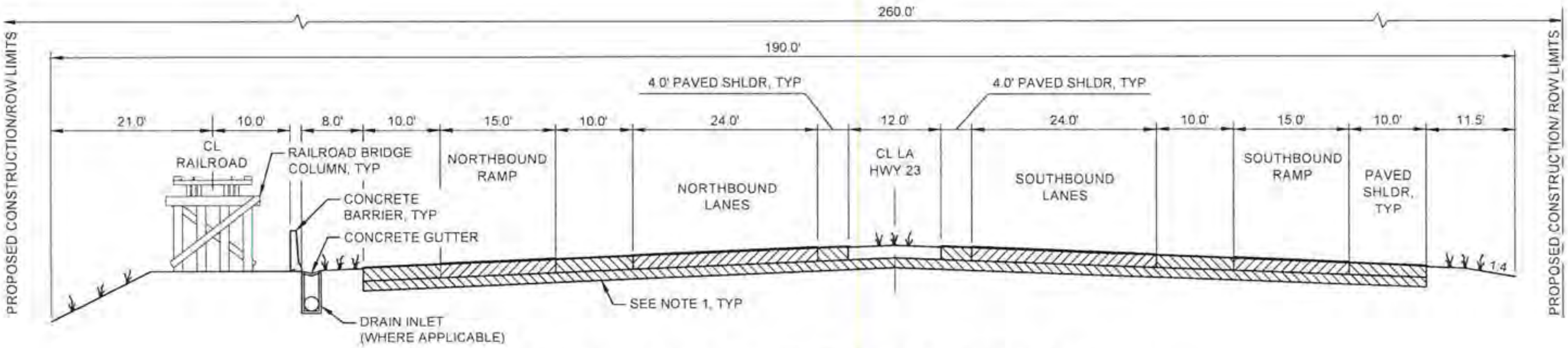
APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	TYPICAL CONVEYANCE CHANNEL SECTION (2 OF 2)
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 8 OF 12



TYPICAL ROAD SECTION FOR REALIGNMENT AT GRADE RAIL (LOOKING SOUTH) FROM STA 400+00 TO STA 403+00 AND FROM STA 462+00 TO 470+75.66

C / 5

SCALE: 1" = 20'



TYPICAL ROAD SECTION FOR REALIGNMENT WITH RAIL BRIDGE (LOOKING SOUTH) FROM STA 403+00 TO STA 416+00 AND FROM STA 450+00 TO 462+00

D / 5

SCALE: 1" = 20'

20 10 0 20

SCALE IN FEET

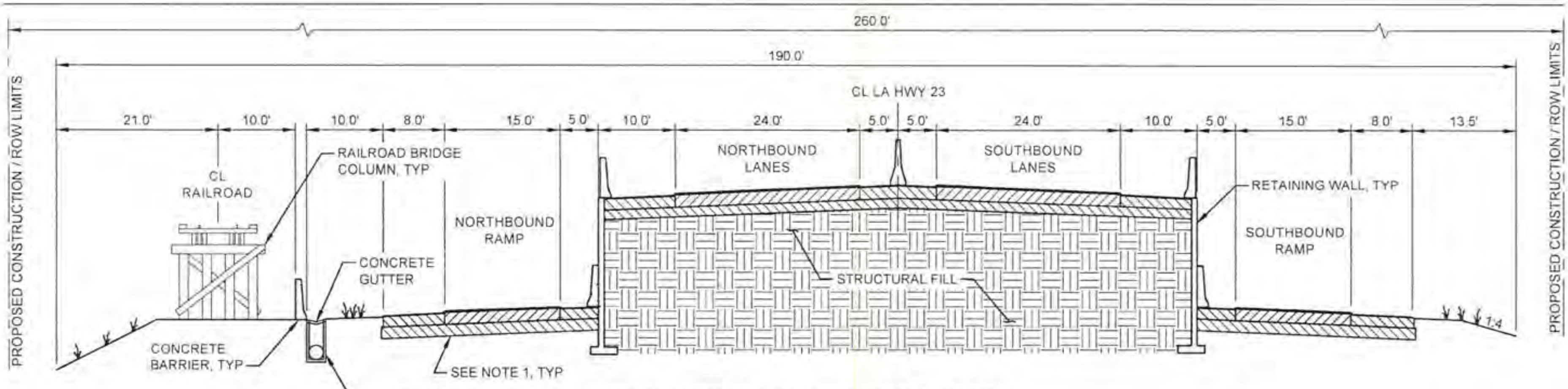
NOTES:

1. PAVEMENT SECTION TO BE DETERMINED FOR THE FINAL DESIGN

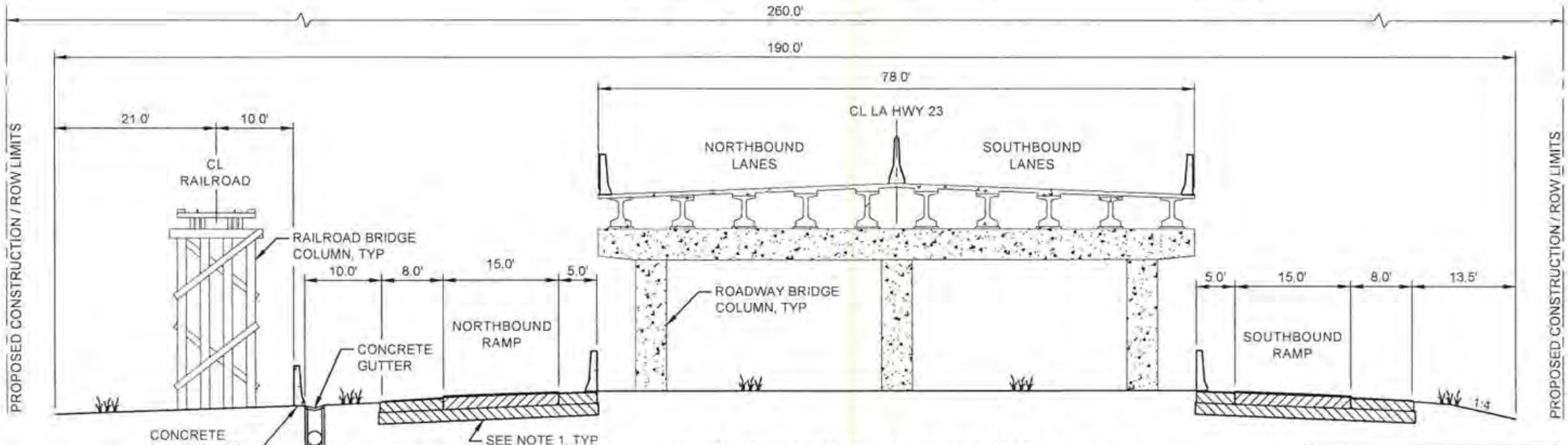
LEGEND

- SURFACE BASE
- SURFACE SUB-BASE
- ASPHALT

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	TYPICAL ROADWAY SECTIONS (1 OF 2)
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 9 OF 12



TYPICAL TRANSITION SECTION (LOOKING SOUTH)
FROM STA 416+00 TO STA 422+75 AND FROM STA 442+00 TO STA 450+00 E/5
SCALE: 1" = 20'



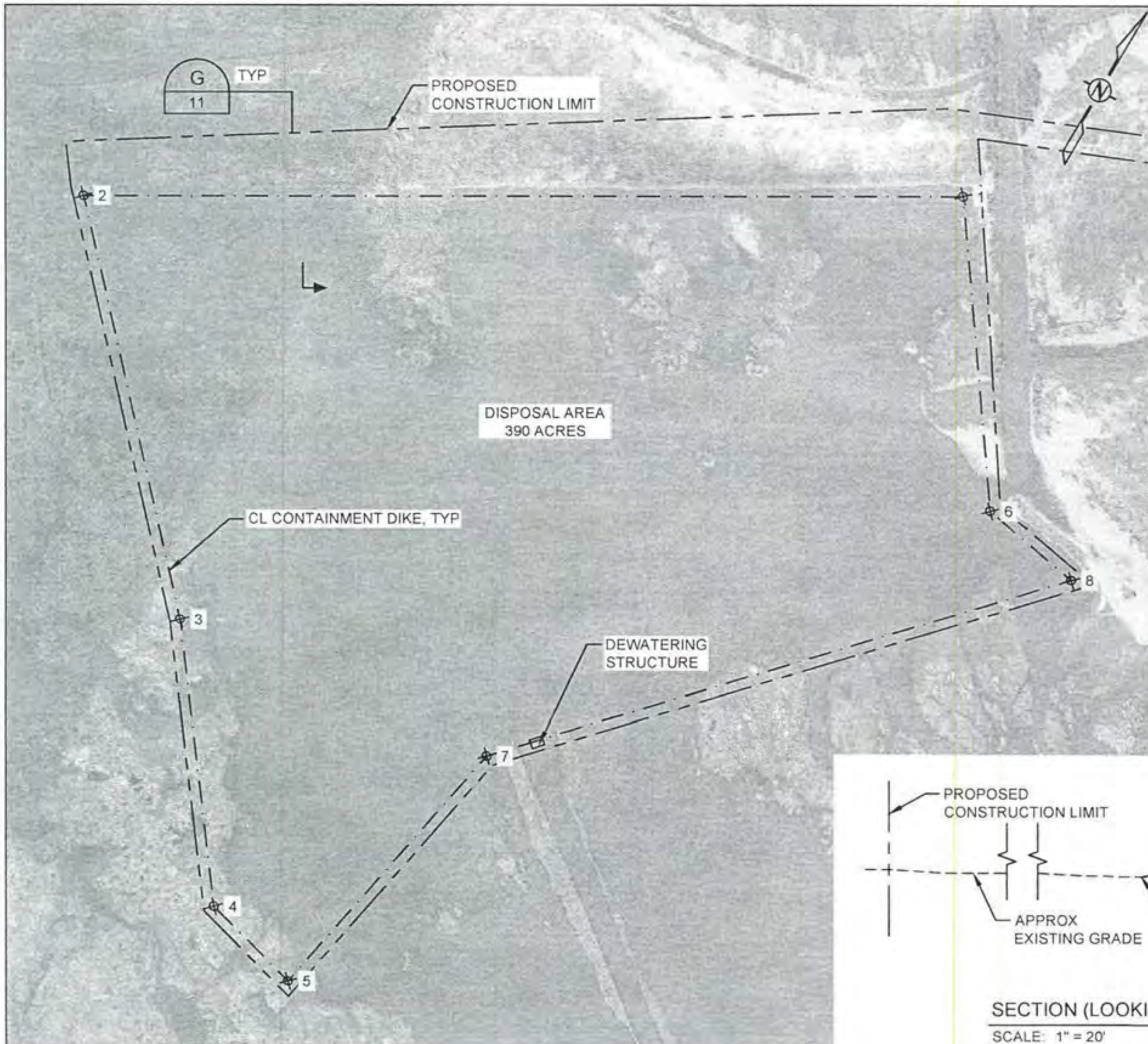
TYPICAL BRIDGE SECTION (LOOKING SOUTH)
FROM STA 422+75 TO STA 442+00 F/5
SCALE: 1" = 20'

20 10 0 20
SCALE IN FEET

NOTES:
1. PAVEMENT SECTION TO BE DETERMINED FOR THE FINAL DESIGN.

LEGEND
- SURFACE BASE
- SURFACE SUB-BASE
- CONCRETE
- STRUCTURAL FILL
- ASPHALT

APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	**COASTAL PROTECTION AND RESTORATION AUTHORITY** 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	MID-BARATARIA SEDIMENT DIVERSION PROJECT	TYPICAL ROADWAY SECTIONS (2 OF 2)
		STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E. / APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 10 OF 12



PLAN

SCALE: 1" = 1000'

1000 500 0 1000

SCALE IN FEET

NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT EARTHEN CONTAINMENT DIKES, AS NECESSARY, ALONG THE PERIMETER OF EACH DISPOSAL AREA SHOWN. CONTAINMENT SHALL BE REQUIRED ALONG ALL DISPOSAL AREA BOUNDARIES THAT DO NOT MEET THE MINIMUM TYPICAL SECTION SHOWN ON THIS SHEET.

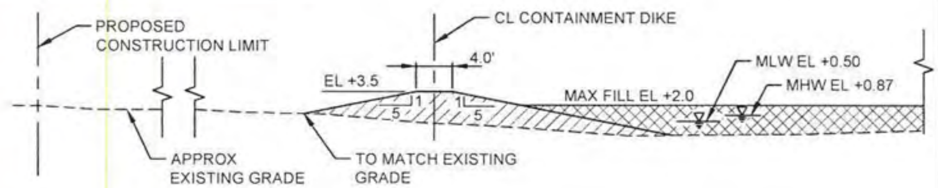
2. THE LOCATION OF THE DEWATERING STRUCTURE SHOWN ON THIS SHEET SHALL BE USED AS A GUIDE. FINAL LOCATIONS SHALL BE VERIFIED IN THE FIELD.

3. DEWATERING STRUCTURE WEIR ELEVATION SHALL MATCH DISPOSAL AREA MAXIMUM FILL ELEVATION.

4. THE CONTAINMENT DIKE WILL BE CONSTRUCTED WITH MATERIAL FROM THE INTERIOR OF THE DISPOSAL AREA.

POINT TABLE

POINT NO.	NORTHING / LATITUDE	EASTING / LONGITUDE
1	420304.07 / 29° 38' 57.25" N	3696058.60 / 90° 01' 33.98" W
2	417705.51 / 29° 38' 32.02" N	3691679.69 / 90° 02' 23.94" W
3	415878.04 / 29° 38' 13.73" N	3693412.79 / 90° 02' 04.53" W
4	414548.00 / 29° 38' 00.45" N	3694429.93 / 90° 01' 53.18" W
5	414394.88 / 29° 37' 58.87" N	3695020.34 / 90° 01' 46.51" W
6	418818.70 / 29° 38' 42.42" N	3697124.11 / 90° 01' 22.10" W
7	416103.42 / 29° 38' 15.75" N	3695342.93 / 90° 01' 42.63" W
8	418712.63 / 29° 38' 41.31" N	3697732.34 / 90° 01' 15.22" W



SECTION (LOOKING EAST) G 11

SCALE: 1" = 20'

LEGEND

CONTAINMENT DIKE FILL

DISPOSAL AREA FILL

20 10 0 20

SCALE IN FEET

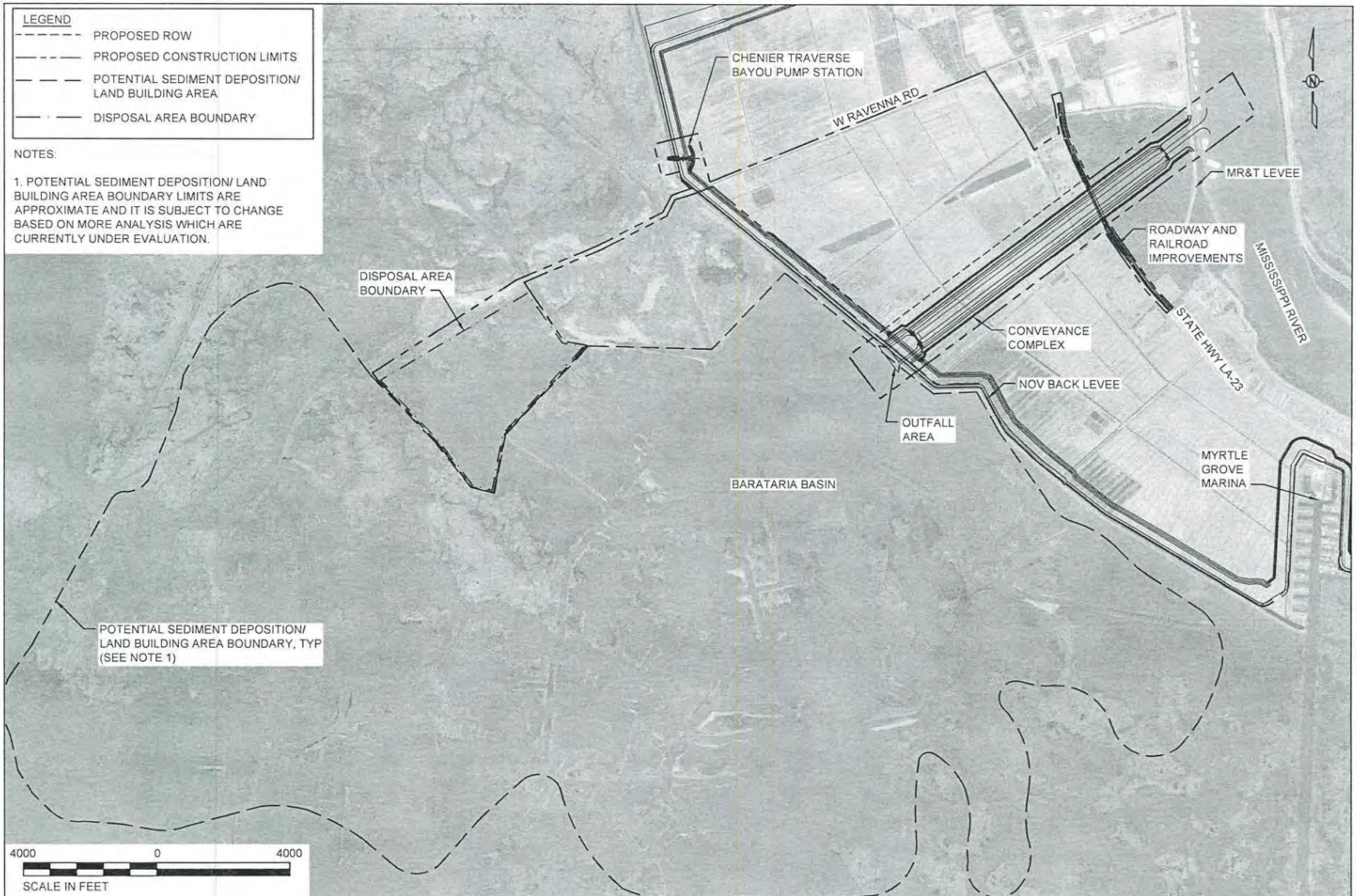
APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	DISPOSAL AREA
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 11 OF 12

LEGEND

- - - - - - PROPOSED ROW
——— - - ——— PROPOSED CONSTRUCTION LIMITS
— — — POTENTIAL SEDIMENT DEPOSITION/ LAND BUILDING AREA
——— · ——— DISPOSAL AREA BOUNDARY

NOTES:

1. POTENTIAL SEDIMENT DEPOSITION/ LAND BUILDING AREA BOUNDARY LIMITS ARE APPROXIMATE AND IT IS SUBJECT TO CHANGE BASED ON MORE ANALYSIS WHICH ARE CURRENTLY UNDER EVALUATION.



APPLICATION BY: CPRA P.O. BOX 44027 BATON ROUGE, LA 70804	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		MID-BARATARIA SEDIMENT DIVERSION PROJECT	POTENTIAL SEDIMENT DEPOSITION/LAND BUILDING AREA
			STATE PROJECT NUMBER: BA-153	DATE: JUNE 2016
DRAWN BY: K. CANTU	DESIGNED BY: K. GUILLORY, P.E.	APPROVED BY: R. SIMONEAUX, P.E.	FEDERAL PROJECT NUMBER:	SHEET 12 OF 12

P20131098 Needs and Alternatives Justification

Background

The proposed sediment diversion project was initially identified as part of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) funded Mississippi River Sediment, Nutrient and Freshwater Redistribution Study (MRSNFR) in 2000. Subsequent studies ensued relevant to the sediment diversion alternatives analysis including location, diversion flow, and ancillary features such as various combinations of marsh creation and sediment introduction. In 2001, the CWPPRA task force approved study of the Delta Building Diversion at Myrtle Grove (BA-33) with the National Marine Fisheries Service (NMFS) as the federal sponsor; a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published in the Federal Register in 2002 and the public scoping resulted in a range of diversion operation for further analysis. The project was evaluated as a near-term critical restoration feature in the U.S. Army Corps of Engineers (USACE) Louisiana Coastal Area (LCA) Final Programmatic EIS dated 2005 and included in the LCA restoration plan. The Water Resources Development Act (WRDA) of 2007 authorized USACE to carry out the Medium Diversion at Myrtle Grove in accordance with the LCA restoration plan. As a result, the CWPPRA project was de-authorized in 2008 and transferred to USACE for implementation. Also in 2007, the State of Louisiana included the CWPPRA Mississippi River Diversion at Myrtle Grove with Dedicated Dredging in the Comprehensive Master Plan for a Sustainable Coast (Master Plan). The Master Plan was updated in 2012 and the Mid-Barataria Sediment Diversion was identified as a project in the First Implementation Period (2012-2031). In 2016, the Natural Resources Damage Assessment (NRDA) Trustees established Mississippi River Diversions as an approved restoration alternative to restore resources injured by the Deepwater Horizon oil spill.

Myrtle Grove Freshwater Diversion (Siphon) (BA-24) (1996-1998)

The Myrtle Grove Freshwater Diversion was moved forward under CWPPRA for further study with NMFS as the federal sponsor. Conceptual design consisted of a multiple pipe system capable of delivering up to 2,100 cfs of water from the Mississippi River to the back marsh area west of Myrtle Grove.

Myrtle Grove Ecosystem Restoration Project—Coast 2050 (1997-1998)

The Louisiana Coastal Wetlands Conservation and Restoration Task Force (a federal-state multi-agency partnership), in partnership with the Wetlands Conservation and Restoration Authority, published *Coast 2050: Toward a Sustainable Coastal Louisiana* in December 1998. *Coast 2050* set forth a new approach to 1) sustain a coastal ecosystem with the essential functions and values of the natural ecosystem; 2) restore the ecosystem to the highest practicable acreage of productive and diverse wetlands; and 3) accomplish restoration through an integrated program that has multiple use benefits for all coastal Louisiana communities and resources.

The 15,000 cfs delta-building diversion at Myrtle Grove was identified for near-term implementation (1-5 years) following completion of the Mississippi River Sediment, Nutrient, and Freshwater Redistribution (MRSNFR) Feasibility Study. The rationale was the Myrtle Grove diversion would provide information to assist in the planning of the next Mississippi River diversion.

Mississippi River Sediment, Nutrient, and Freshwater Redistribution (MRSNFR) Study
(draft report & environmental resources document dated July 2000)
The CWPPRA Task Force funded the MRSNFR feasibility study with USACE as study lead. A Myrtle Grove Sediment Diversion with a capacity of 15,000 cfs through gated culverts at the Mississippi River was included as a major sediment diversion in the Initial Alternatives. Also included in the Initial Alternatives was a 5,000 cfs Myrtle Grove Freshwater Diversion through a siphon. The screening process resulted in both the Myrtle Grove Sediment Diversion and the Myrtle Grove Freshwater Diversion at Ironton being carried forward into the Intermediate Array of Alternatives.

The Myrtle Grove Freshwater Diversion would run at a capacity of 5,000 cfs and freshen or stabilize salinities in the Round Lake/Lake Laurier vicinity. Although not a sediment diversion, it was expected that this diversion would introduce sediment into the Barataria Basin, creating over 1,400 ac of marsh and sustaining approximately 6,500 ac of emergent wetlands over 50 years. The total cost was estimated to be $29,679,827. Located at River Mile 59 AHP, the diversion structure would consist of four 10 ft x 10 ft gated concrete box culverts approximately 400 ft long under LA 23. The highway would be relocated closer to the railroad so the culverts could be placed under both facilities. In order to efficiently capture freshwater, the invert of the entrance channel would be placed at a depth of -10 NGVD with a radius of 130 ft; the conveyance channel would run 6,000 feet from the entrance channel to the outlet channel and would be 100 feet wide. Parallel guide levees would be constructed to maintain hurricane protection and a pump station would be constructed to provide local drainage.

The Myrtle Grove Sediment Diversion would run at a capacity of 15,000 cfs to freshen the lower Barataria Basin. Located at RM 59 AHP, the diversion structure would consist of five 16 ft x 16 ft gated concrete box culverts approximately 400 feet long under LA 23. The highway would be relocated closer to the railroad so the culverts could be placed under both facilities. In order to efficiently capture sediment, the invert of the entrance channel would be placed at a depth of -15 ft NGVD with a radius of 450 feet and proceed 800 feet to 1,000 feet into the box culverts for transport to the basin. A channel with a 230 ft bottom would be dredged to Wilkinson Canal; this channel would bend with a radius of 700 feet as it approached the canal in order to provide better flow conditions. Channel closures would be placed in channels intersecting Wilkinson Canal. Approximately 6,000 ac of marsh would be created; at the end of 50 years 12% of the 1990 marsh acreage would be lost but there would still be approximately 28,000 more acres of marsh than if the diversion had not been implemented.

A diversion at Myrtle Grove with locks was also evaluated. A 15 ft long pilot channel would be excavated from the Mississippi River to Barataria Bay. The bottom width of the pilot channel would be 200 feet and the invert would be -10 ft NGVD. Two 45 ft x 130 ft x 830 ft lock chambers would be constructed in the initial project year with additional chambers constructed in years 10 and 35. Approximately 5 years after construction, a closure would be constructed across the Mississippi River channel in order to divert river flow down the pilot channel. Without locks, approximately 70% of Mississippi River flow and sediment would be diverted into the Barataria Basin.

Myrtle Grove Ecosystem Restoration Project (CWPPRA)

Primary purpose of study, conducted under MRSNFR, was identification of the recommended plan to provide maximum benefit to the study area while taking into account sustainability and cost. The project objective was creation of a sustainable, functional ecosystem with a focus on sediment delivery through the restoration of fresh and intermediate marshes in the upper, highly deteriorated portions of the study area and to restore marsh and reduce land loss rates in the southern portions of the basin and reduce average annual salinities throughout the study area. Study focused on a diversion located on the right descending bank of the Mississippi River between RM 61.3 and 60.8.

The study integrated the alternatives identified in the MRSNFR. Studied flow rates included 2,500 cfs, 5,000 cfs, and 15,000 cfs in addition to dedicated dredging.

Myrtle Grove—LCA Recommended Restoration Plan (2000-2005)

The study team defined the primary area of wetland restoration to be bounded on the east by the Citrus Lands levee, on the north by the southern extent of "The Pen," on the west by the Barataria Bay Waterway and the Bayou Grande Cheniere ridge, and on the south by the southern extents of Round Lake and Lake Laurier. The team adopted the LCA proposed alternatives for diversion capacities of 5,000 cfs and 15,000 cfs and modified an LCA proposed alternative to an operation of 5,000 cfs 4 out of 5 years and 15,000 cfs in the 5th year. The team also proposed a diversion capacity of 2,500 cfs.

As part of the LCA feasibility study, a total of five operation scenarios were evaluated for Myrtle Grove. These scenarios were: 1) a 5,000 cfs diversion; 2) a 15,000 cfs diversion; 3) a 38,000 cfs diversion with sediment enrichment; 4) a 75,000 cfs diversion with sediment enrichment; and 5) a 150,000 cfs diversion with sediment enrichment. Plan formulation resulted in a medium diversion (5,000 cfs – 15,000 cfs) and a large diversion (greater than 15,000 cfs) carried forward. Following further evaluation, the medium diversion was selected as the alternative to carry forward.

As proposed in the LCA feasibility study, the Medium Diversion at Myrtle Grove with Dedicated Dredging considered an operation range between 2,500 cfs and 15,000 cfs to create up to 19,700 new acres of wetlands. This diversion would be operated in conjunction with the Davis Pond Freshwater Diversion, which is authorized for control of salinities in the Barataria Basin; the operation of the Davis Pond project would be modified in order to achieve the goals of the Myrtle Grove project. A total of 19 to 23 sites would be selected for the placement of dredged material to create a total of 6,500 acres of marsh; approximately 2 million cubic yards of material would be dredged from the Mississippi River for the dedicated marsh creation.

CWPPRA Delta Building Diversion at Myrtle Grove (BA-33) (2001-2008)

In 2001, the CWPPRA Task Force approved feasibility study for a project titled Delta Building Diversion at Myrtle Grove with NMFS as the federal sponsor. As proposed, this project would combine a freshwater diversion of the Mississippi River in the vicinity of Myrtle Grove with dedicated dredging from borrow sites in the Mississippi River to create marsh in the vicinity of Bayou Dupont, the Bayou Barataria Waterway, and/or the Wilkinson Canal. A NOI to prepare an EIS was published in the Federal Register and the public scoping resulted in a range of diversion operations from 2,500 cfs to 15,000 cfs for further analysis.

Per the project fact sheet, the project would install five 16 ft x 16 ft gated box culverts on the right descending bank of the Mississippi River in the vicinity of Myrtle Grove. The intake structure would be set at -15 ft NGVD and convey a maximum of 15,000 cfs to the outfall at the basin. Sediment capture would be maximized through a reverse curve inflow channel. Other project features would include a conveyance channel with parallel mainline flood control levees, and outflow channel with guide levees, and, potentially, a pump station.

In 2006, the process began to de-authorize the project and transfer it from CWPPRA to USACE's LCA program. The rationale was the project was beyond traditional CWPPRA efforts in terms of scope and cost; also, a Medium Diversion at Myrtle Grove with Dedicated Dredging project was identified as a critical near-term restoration project in the LCA Chief's Report.

<u>Louisiana Master Plan for a Sustainable Coast (2007)</u>

A Technical Group of scientists evaluated conceptual scenarios for Mississippi River diversions in 2006 at the "Envisioning the Future of the Gulf Coast" symposium. A freshwater diversion at Myrtle Grove was recommended. The Mississippi River Diversion at Myrtle Grove with Dedicated Dredging was evaluated in the Master Plan; the evaluated diversion would operate at a flow between 2,500 cfs to 15,000 cfs to transport freshwater from the Mississippi River to the basin and dredged material from the river would be transported to the Barataria Basin via pipeline.

<u>Medium Diversion at Myrtle Grove with Dedicated Dredging (LCA, 2008-2014)</u>

WRDA 2007 included an authorization for USACE to prepare a feasibility study and EIS for the Medium Diversion at Myrtle Grove with Dedicated Dredging under the LCA program. This project was conditionally authorized in the 2005 LCA Chief's Report, pending the completion of a feasibility study. For the Myrtle Grove cost-shared study, the project was described as a freshwater diversion ranging from 2,500 cfs to 15,000 cfs coupled with dedicated dredging to create up to 19,700 ac of new wetlands.

The dog-legged alignment, referred to as Original USACE Alignment at RM 60.2, was designed to carry a flow of 15,000 cfs to the basin; the sediment/water ratio (SWR) was 0.26. A Modified Alignment of a straight channel from river to basin, located at RM 60.7, was modeled with capacities of 15,000 cfs, 45,000 cfs, and 75,000 cfs. The results were published in 2011 in a report titled, "Myrtle Grove Delta Building Diversion Modeling Effort in Support of the LCA Medium Diversion at Myrtle Grove with Dedicated Dredging Project Data Collection, Preliminary Design and Modeling Initiative."

<u>Louisiana Comprehensive Master Plan for a Sustainable Coast (2012)</u>

Modeling conducted for the evaluation of projects against the Future Without Action scenario showed that sediment diversions are essential to sustaining coastal Louisiana. The 2012 Master Plan focused on sediment diversions, rather than freshwater diversions, as a land-building restoration tool. A 50,000 cfs sediment diversion at Myrtle Grove was included in the First Implementation Period (2012-2031).

BA-153, State Only E&D (2012-2014)
CPRA entered into a contract with HDR Engineering in 2012 to provide services for the design of the LCA recommended 75,000 cfs diversion structure at RM 60.7 to capture and transport sediment and freshwater from the Mississippi River and convey it to the mid-Barataria Basin through a constructed channel. The project utilized the SWR results and Modified Alignment from the State-NGO modeling.

Programmatic Damage Assessment and Restoration Plan (2016)
Under the Oil Pollution Act (OPA), the Trustees evaluated injuries to natural resources and natural resource services and then identified the actions to restore, replace, or acquire natural resources or services equivalent to those injured by the Deepwater Horizon BP Spill. When implemented, the goal for these actions is to return the natural resources and natural resource services to the condition they would have been in if the incident had not occurred. OPA defines natural resource services as "the functions performed by a natural resource for the benefit of another natural resource (ecological services) and/or the public." This evaluation was documented in a Programmatic Damage Assessment and Restoration Plan (PDARP).

A total of three (3) action alternatives were evaluated along with the No Action Alternative. Alternative A, Comprehensive Integrated Ecosystem Restoration, emphasizes the broad ecosystem benefits that can be realized through coastal habitat restoration in combination with resource-specific restoration; this is the preferred alternative. Alternative B focuses on restoring as directly as practical for assessed injuries. Alternative C defers restoration plan development in favor of continued injury assessment with development of a comprehensive plan at a later date. Alternative D is the natural recovery/no-action alternative. The alternatives were evaluated under the following OPA standards: 1) cost; 2) extent to which goals and objectives are met; 3) likelihood of success; 4) extent of preventing future injury and avoiding collateral injury as a result of implementation; 5) extent to which more than one natural resource and/or service is benefitted; 6) effect on public health and safety; and 7) consistency with programmatic Trustee goals and the restoration types.

The Trustees developed four (4) programmatic goals for restoration: 1) Restore and Conserve Habitat; 2) Restore Water Quality; 3) Replenish and Protect Living Coastal and Marine Resources; and 4) Provide and Enhance Recreational Opportunities. Restoration types were developed as sub-categories to the larger programmatic goals. The two (2) restoration types under Restore and Conserve Habitat are: 1) Wetlands, Coastal, and Nearshore Habitats and 2) Habitat Projects on Federally Managed Lands. Both of these restoration types were proposed to benefit habitats as well as injured species of fish and invertebrates in the water column, marine mammals, and birds by providing food, shelter, breeding, and nursery habitat.

Goals of the Wetlands, Coastal, and Nearshore Habitats Restoration Type are to: 1) restore a variety of interspersed and ecologically connected coastal habitats to maintain ecosystem diversity with a particular focus on maximizing ecological functions for the range of resources injured by the spill; 2) restore for injuries in habitats in the geographic areas where the injuries occurred while considering approaches that provide resiliency and sustainability; and 3) restoration of habitats in appropriate combinations for any given geographic area by considering design factors such as connectivity, size, and distance between projects to address injuries to the associated living coastal and marine resources and restore the ecological functions provided by those habitats. Specific projects were not evaluated in the PDARP; however, Under Alternative A, controlled Mississippi River diversions, such as MBSD, are one such restoration approach for implementation to accomplish the goals of this restoration type.

5a. Describe the Project

The Mid-Barataria Sediment Diversion (MBSD) is one of 33 conceptual projects identified by CPRA for the first implementation period (2012-2031) in Louisiana's Comprehensive Master Plan for a Sustainable Coast (2012 Master Plan). The Project footprint is from the Mississippi River to the mid-Barataria Basin, just west of the back levee, spanning a length of approximately two miles and width of approximately 1600 feet for the gravity conveyance structure and appurtenant structures.

The Project consists of the construction of an intake control structure on the right descending bank of the Mississippi River at River Mile 60.7, through a section of the existing Mississippi River and Tributaries (MR&T) levee. The structure would be operated to reestablish the connection between the Mississippi River and the mid-Barataria Basin by transporting sediment, freshwater, and nutrients through the gravity conveyance structure, leading across land and through the future federal New Orleans to Venice (NOV) Hurricane Protection Levee, to an outfall or receiving area in the mid-Barataria Basin. The outfall area is located south of the Bayou Dupont Sediment Delivery Project (BA-39), the Mississippi River Long Distance Sediment Pipeline (BA-43EB), and the Bayou Dupont Marsh and Ridge Creation (BA-48). Additional Project features include relocation and replacement of segments of Louisiana Highway 23 and the New Orleans Gulf Coast Rail Road over the gravity conveyance structure.

The project also incorporates a pump station to be located in the northwestern portion of the Project area. Forced drainage is currently provided by Wilkinson Canal Pump Station located near Myrtle Grove to the south of the project area. The Project will require the modification of internal drainage collection swales and the construction of a new drainage pump station north of the conveyance channel in order to capture and convey area drainage north of the channel to the Barataria Basin. Right-of-way and road access will be required for the construction and maintenance of the pump station.

Relocations of water and electrical utility lines will be needed in order to accommodate the construction and operation of the diversion channel and the proposed LA 23 and New Orleans Gulf Coast Rail Road bridges. A 22 inch crude oil pipeline is located immediately west of the proposed channel outfall. All infrastructure and utility improvements and relocations will be based upon continued service during construction and will be designed and constructed using utility owner criteria and guidelines and addressing hurricane criteria during interim and final phases of construction.

An Operations and Maintenance Plan will be developed for the Project prior to construction.

An Adaptive Management Plan will be developed to maximize sediment transport from the Mississippi River to the mid-Barataria Basin to reduce land loss rates and sustain wetlands through the delivery of sediment, freshwater, and nutrients. The Adaptive Management Plan would monitor the diversion control structure and outfall area and allow for variable flow rates to respond to seasonal, sediment, and basin conditions, maximizing the benefits of sediment transport for restoration.

Step 8.c. Funding

CPRA anticipates construction the Mid-Barataria Sediment Diversion with Natural Resource Damage Assessment (NRDA) funds allocated to the State of Louisiana by the Deepwater Horizon BP Spill Consent Decree (dated April 2016).

Step 10a. Excavation					
Location	Habitat Type (existing)	Feature		Area (acres)	Excavation (CY)
Mississippi River	Riverine	Diversion Channel		14.0	350,000
Batture	Forested Wetlands	Diversion Channel		4.2	202,796
MR&T levee west to LA 23	Forested Wetlands	Diversion Channel		3.2	127,050
LA 23 west to back levee	Emergent Wetlands	Diversion Channel		30.9	1,247,510
	Open Water Canal I Drainage {WOTUS)	Diversion Channel		1.8	57,112
MR&T levee to back levee	Non-wetland {uplands)	Diversion Channel		230.0	1,765,532
Barataria Basin	Waterbottom	Outfall Transition Zone		4.0	100,000
Cumulative Subtotals	Riverine			14.0	350,000
	Wetlands			38.3	1,577,356
	Open Water Canall Drainage {WOTUS)			1.8	57,112
	Waterbottom I Emergent wetlands			4.0	100,000
	Non-wetland {uplands)			230.0	1,765,532
			Total	***288.0***	***3,850,000***

Step 10b & 10c. Fill					
Location	Habitat Type (existing)	Feature	Material	Area (acres)	Fill (CY)
MR&T levee west to LA 23	Forested Wetlands	Construction access	Soil, gravel	2.4	11,568
		Guide Levees	Soil, rock, concrete	2.4	25,931
LA 23 west to back levee	Emergent Wetlands	Construction access	Soil, gravel	22.8	110,207
		Guide Levees	Soil, rock, concrete	24.7	221,031
LA 23 west to back levee	Open Water Canal I Drainage {WOTUS)	Construction access	Soil, gravel	2.1	10,261
		Guide Levees	Soil, rock, concrete	2.4	23,293
MR&T levee to back levee	Non-wetland {uplands)	Construction access	Soil, gravel	64.5	311,964
		Guide Levees	Soil, rock, concrete	41.5	1,129,746
Construction Routes	Non-wetland {uplands)	Access I Haul Roads	Soil, gravel	1.5	8,000
Barataria Basin {Benefits)	Waterbottom I Emergent wetlands	Nourishment Disposal Area	Topsoil, soil	390*	2,300,000
Cumulative Subtotals	Wetlands			52.3	368,737
	Open Water Canall Drainage {WOTUS)			4.5	33,554
	Non-wetland {uplands)			107.5	1,449,710
	Waterbottom I Emergent wetlands	Land I marsh building		390	2,300,000
			Total	***554.3***	***4,152,001***

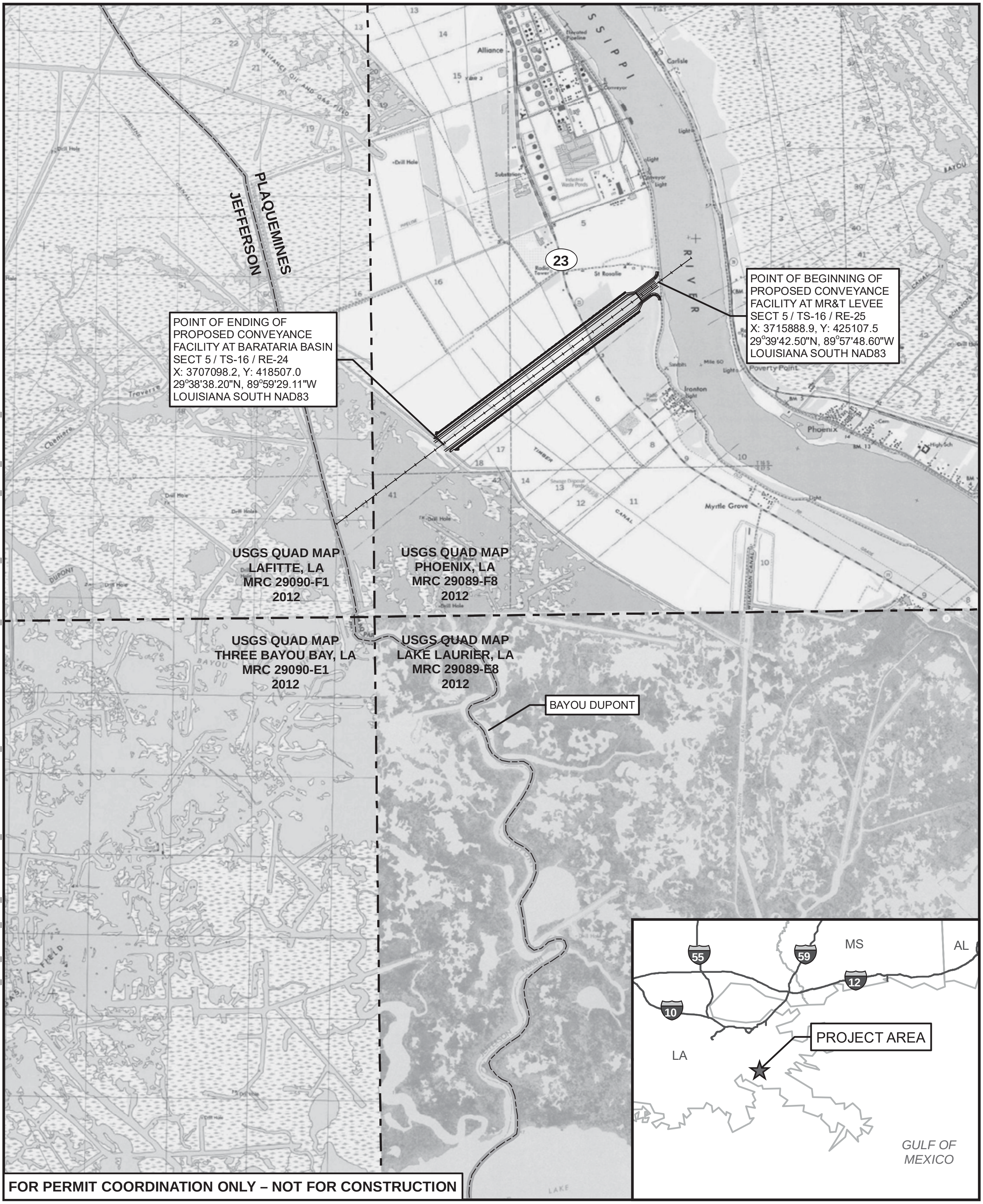
10b. and 10c. Supplemental Fill Information

Note: Due to preliminary design stage, the amount of fill material by type (e.g., soil, rock, concrete, etc.) is approximate.

* Excavated from channel and placed in Barataria Basin.

11a. Total acres of wetlands and/or waterbottoms filled and/or excavated:

- Wetlands excavated = 38.3 acres
- Wetlands filled = 52.3 acres
- Waterbottom excavated = 4.0 acres
- Waterbottom filled = 390 acres



FOR PERMIT COORDINATION ONLY – NOT FOR CONSTRUCTION

MID-BARATARIA SEDIMENT DIVERSION (BA-153) PROJECT

VICINITY MAP

PLAQUEMINES AND JEFFERSON PARISH, LOUISIANA

LEGEND

15% PROJECT FOOTPRINT

PARISH BOUNDARY

USGS QUADS: PHOENIX, LAFITTE, THREE BAYOU BAY, LAKE LAURIER (2012)

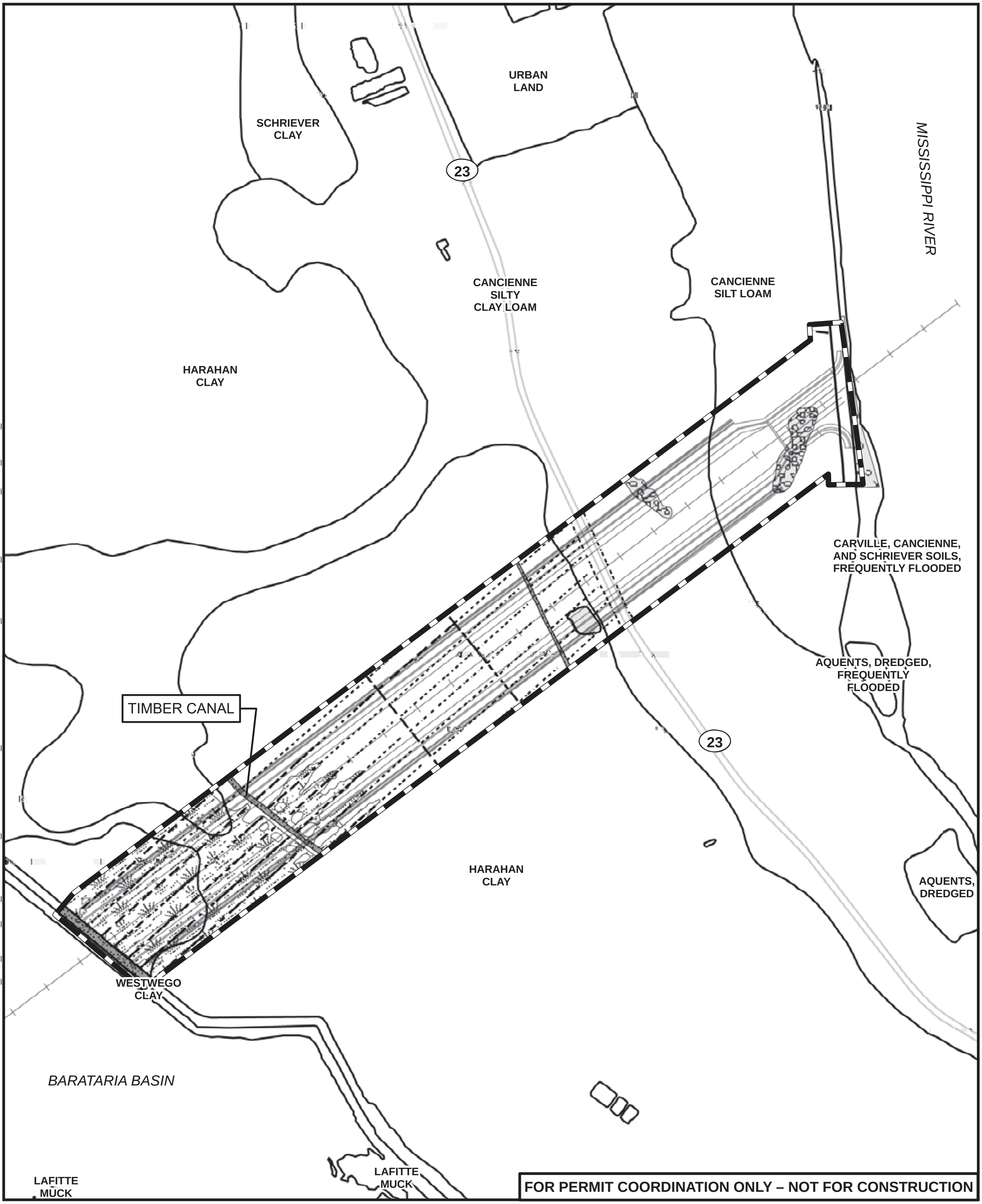
N

0 1,500 3,000

FEET

CPRA

FILE: O:\DEPT037_DALLASENGINEERING\ENVSCIENCES\200965_099_CPRA_MID_BARATARIA_DIVERSION\MAP_DOCS\FIGURES\PERMIT_4345\MBSD_PERMIT4345_FIG1_VICINITY_8X11.MXD



FOR PERMIT COORDINATION ONLY – NOT FOR CONSTRUCTION

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MID-BARATARIA SEDIMENT DIVERSION (BA-153) PROJECT

DELINEATION AND PROPOSED JURISDICTIONAL DETERMINATION

PLAQUEMINES AND JEFFERSON PARISH, LOUISIANA

LEGEND

WATERS OF THE U.S.
- DRAINAGE CHANNEL (SECTION 404)
- CANAL (SECTION 404)
- FORESTED WETLAND (SECTION 10/404)
- FORESTED WETLAND (SECTION 404)
- EMERGENT WETLAND (SECTION 404)

NOT WATERS OF THE U.S.
- PRELIMINARY PROJECT FOOTPRINT
- 15% PROJECT FOOTPRINT
- NON-JURISDICTIONAL DRAINAGE FEATURE
- POND
- SOIL

N

0 500 1,000

FEET

CPRA

Coastal Protection and
Restoration Authority of Louisiana

State of Louisiana

BOBBY JINDAL
GOVERNOR

July 23, 2013

Louisiana Department of Natural Resources
Office of Coastal Management
617 North Third Street
Baton Rouge, LA 70802

Re: Mid-Barataria Sediment Diversion (BA-153)
Application Fee Waiver

To Whom It May Concern:

Attached is the Joint Permit Application for the Mid-Barataria Sediment Diversion (BA-153), a coastal restoration project in Plaquemines Parish. This project is part of, or complementary to, the CPRA's Annual Plan and, therefore, the State's Comprehensive Master Plan, pursuant to R.S. 49: 213.6. Therefore, the CPRA is requesting an exemption from application and processing fees for the enclosed application as per R.S. 49: 214.30.

Should you have any questions or need additional information, please call me at (225)342-2799.

Sincerely,

Micaela M. Coner

Micaela Coner

Enclosures

Plaquemines Parish Government

Directors
Administration - To Be Announced
Operations - Stanley Wallace
Public Service - Michael W Jiles

INTERIM PARISH PRESIDENT
Edward P Theriot
8056 Hwy. 23, Suite 213
Belle Chasse, Louisiana 70037
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Council Members
District 1 - John L Barthelemy Jr.
District 2 - William "Beau" Black
District 3 - Kirk M Lepine
District 4 - Irvin Juneau Jr.
District 5 - Benedict "Benny" Rousselle
District 6 - Charlie Burt
District 7 - Audrey Trufant-Salvant
District 8 - Jeff E Edgecombe
District 9 - Nicole Williams

November 28, 2016

Colonel Michael N. Clancy
District Commander
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

SUBJECT: Written Statement from Plaquemines Parish Government per EC 1165-2-216
33 U.S.C. 408 Request to alter the New Orleans to Venice (NOV), Louisiana Project with **Mid-Barataria Sediment Diversion**

Dear Col. Clancy:

The Plaquemines Parish Government (PPG), the co-non-Federal sponsor with the Coastal Protection and Restoration Authority Board (CPRA Board), for the New Orleans to Venice (NOV) Project, in accordance with Section 14 of the Rivers and Harbors Act of 1899 (codified at 33 U.S.C. 408), and further in accordance with EC 1165-2-216 (Water Resource Policies and Authorities Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408), Section 7c(2)(b)v (Procedures), submits this letter of "No Objections" in response to the CPRA Board's request for permission to permanently alter the NOV Project with the Mid-Barataria Sediment Diversion project. PPG has "No Objection" to CPRA Board's proposed project.

PPG understands this written request as a requirement to initiate the 408 review process, and further understands that this letter of concurrence does not further obligate PPG for Operation Maintenance Repair, Rehabilitation, and Replacement (OMRR&R) or funding responsibilities related to this project. PPG understands that the CPRA Board is responsible for the OMRR&R of this alteration at no cost to the PPG or the Government. Nonetheless, PPG acknowledges that it is not prevented from entering into separate agreements with the CPRA Board for the performance of the OMRR&R of the NOV Project as it relates to this alteration.

PPG looks forward to the delivery of this project to restore our working coast.

Respectfully,

Edward P. Theriot

Edward Theriot
President

Plaquemines Parish Government

Directors
Administration - To Be Announced
Operations - Stanley Wallace
Public Service - Michael W Jiles

INTERIM PARISH PRESIDENT
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November 28, 2016

Colonel Michael N. Clancy
District Commander
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

SUBJECT: Written Statement from Plaquemines Parish Government per EC 1165-2-216 33 U.S.C. 408 Request to alter the Mississippi River and Tributaries (MR&T), Louisiana Project with **Mid-Barataria Sediment Diversion**

Dear Col. Clancy:

The Plaquemines Parish Government (PPG), the non-Federal sponsor for the Mississippi River and Tributaries, Louisiana Project (MR&T), in accordance with Section 14 of the Rivers and Harbors Act of 1899 (codified at 33 U.S.C. 408), and further in accordance with EC 1165-2-216 (Water Resource Policies and Authorities Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408), Section 7c(2)(b)v (Procedures), submits this letter of "No Objections" in response to the Coastal Protection and Restoration Authority Board's (CPRA Board) request for permission to permanently alter the MR&T Levee with the Mid-Barataria Sediment Diversion project.

PPG understands this written request as a requirement to initiate the 408 review process, and further understands that this letter of "No Objections" does not further obligate PPG for Operation Maintenance, Repair, Rehabilitation, and Replacement (OMRR&R) or funding responsibilities related to this project. PPG understands that the CPRA Board is responsible for the OMRR&R of this alteration at no cost to the PPG or the Government. Nonetheless, PPG acknowledges that it is not prevented from entering into separate agreements with the CPRA Board for the performance of the OMRR&R of the MR&T as it relates to this alteration.

PPG looks forward to the delivery of this project to restore our working coast.

Respectfully,

Edward P. Theriot

Edward Theriot
President

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Office of Multimodal Commerce
PO Box 94245 | Baton Rouge, LA 70804-9245
ph: 225-379-3038 | fx: 225-379-3070

John Bel Edwards, Governor
Thomas M. Clark, Commissioner

December 28, 2016

Colonel Michael N. Clancy
District Commander
U.S. Army Corps of Engineers
7400 Leake Ave.
New Orleans, LA 70118-3651

SUBJECT: Written Statement from LaDOTD per EC 1165-2-216
33 U.S.C. 408 Request to alter the Mississippi River Ship Channel (MRSC) Project Gulf to Baton Rouge, Plaquemines Parish Louisiana with Mid-Barataria Sediment Diversion

Dear Colonel Clancy:

The Louisiana Department of Transportation and Development (LaDOTD), the non-Federal sponsor for the Mississippi River Ship Channel Project, Gulf to Baton Rouge, in accordance with Section 14 of the Rivers and Harbors Act of 1899 (codified at 33 U.S.C. 408), and further in accordance with EC 1165-2-216 (Water Resource Policies and Authorities Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408), Section 7c(2)(b)v (Procedures), submits this Written Statement of "No Objection" in response to the Coastal Protection and Restoration Authority Board's (CPRA Board) request to document the initiation of the Section 408 process for the Mid-Barataria Sediment Diversion (MBSD) project.

LaDOTD understands this written request is a requirement to initiate the 408 review process (Step 2. of EC 1110-2-216) for the MBSD, and further understands that CPRA will be required to obtain a letter of "No Objection" from LaDOTD once USACE has approved the 408 permission for construction of the MBSD.

This letter does not obligate LaDOTD for Operation Maintenance, Repair, Rehabilitation, and Replacement (OMRR&R) or obligate DOTD to funding responsibilities related to this project. LaDOTD understands that the CPRA Board is responsible for the OMRR&R of this alteration at no cost to the LaDOTD or the Government.

If you have any questions, please contact Phil Jones at 225-379-3030 or Phil.Jones@la.gov.

Respectfully,

Thomas M. Clark

Thomas M. Clark
Commissioner of Multimodal Commerce