

Appendix D
Site Construction Plans

DRAFT

TEXAS

MISSISSIPPI

BATON
ROUGE

NEW
ORLEANS

PROJECT LOCATION

PLAQUEMINES PARISH



APPLICATION BY:
PLAQUEMINES PARISH

ALEXIS BAY TERRACING PROJECT
CONSTRUCTING ADDITIONAL TERRACES

FILE NAME:
0619-PER-01.DWG



PROFESSIONAL
ENGINEERING AND
ENVIRONMENTAL
CONSULTANTS, INC.

DATE: 10/07

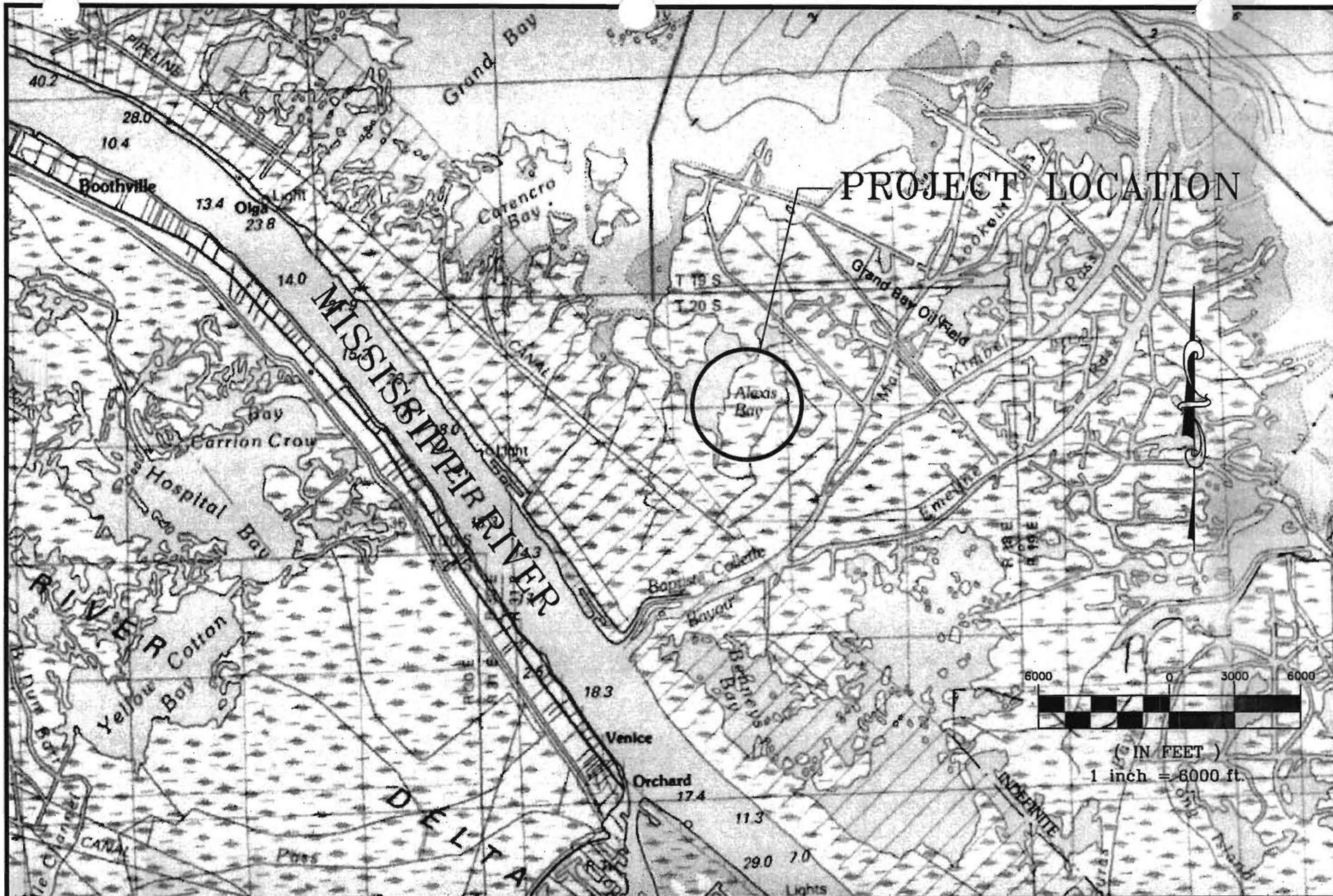
REV.
NO.
0

LOCATION MAP

PLAQUEMINES PARISH
29° 19' 09" N
89° 19' 45" W.

ENGINEERS, PLANNERS AND ENVIRONMENTAL CONSULTANTS
1065 MULLER PARKWAY, SUITE B, WESTWEGO, LA. 70094

SHEET 1 OF 5



APPLICATION BY:
PLAQUEMINES PARISH

ALEXIS BAY TERRACING PROJECT
CONSTRUCTING ADDITIONAL TERRACES

FILE NAME:
0619-PER-02.DWG



PROFESSIONAL
ENGINEERING AND
ENVIRONMENTAL
CONSULTANTS, INC.

DATE: 10/07

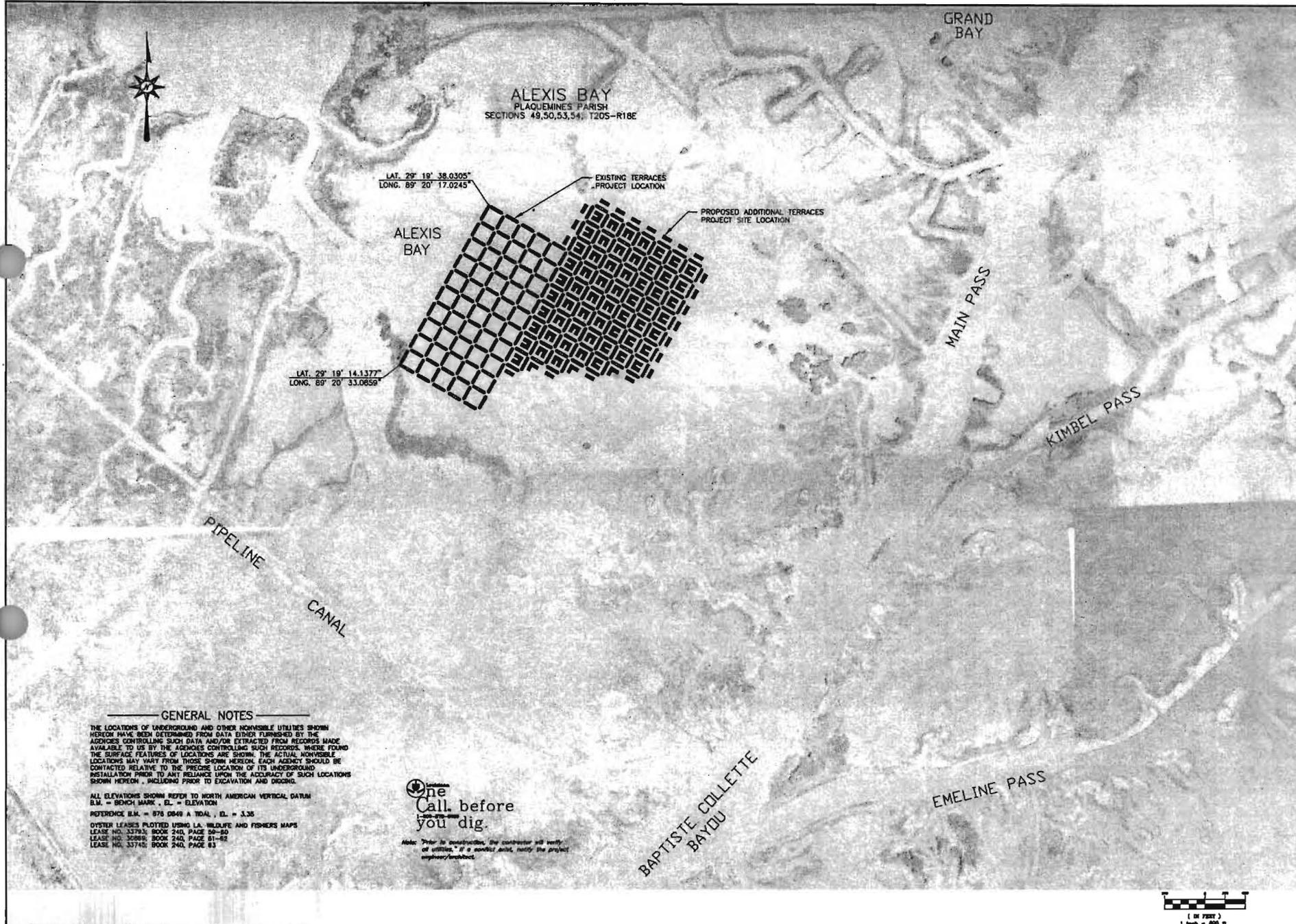
REV.
NO.
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VICINITY MAP

PLAQUEMINES PARISH
29° 19' 09" N
89° 19' 45" W

ENGINEERS, PLANNERS AND ENVIRONMENTAL CONSULTANTS
1065 MULLER PARKWAY, SUITE B, WESTWEGO, LA. 70094

SHEET 2 OF 5



ALEXIS BAY
PLAQUEMINES PARISH
SECTIONS 49,50,53,54; T205-R18E

LAT. 29° 19' 38.0305"
LONG. 89° 20' 17.0245"

ALEXIS BAY

LAT. 29° 19' 14.1377"
LONG. 89° 20' 33.0659"

EXISTING TERRACES
PROJECT LOCATION

PROPOSED ADDITIONAL TERRACES
PROJECT SITE LOCATION

PIPELINE
CANAL

GRAND BAY

MAIN PASS

KIMBEL PASS

EMELINE PASS

BAPTISTE COLLETTE
BAYDU

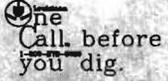
GENERAL NOTES

THE LOCATIONS OF UNDERGROUND AND OTHER NONVISIBLE UTILITIES SHOWN HEREON HAVE BEEN DETERMINED FROM DATA EITHER FURNISHED BY THE AGENCIES CONTROLLING SUCH DATA AND/OR EXTRACTED FROM RECORDS MADE AVAILABLE TO US BY THE AGENCIES CONTROLLING SUCH RECORDS. WHERE FOUND THE SURFACE FEATURES OF LOCATIONS ARE SHOWN. THE ACTUAL NONVISIBLE LOCATIONS MAY VARY FROM THOSE SHOWN HEREON. EACH AGENCY SHOULD BE CONTACTED RELATIVE TO THE PRECISE LOCATION OF ITS UNDERGROUND INSTALLATION PRIOR TO ANY RELIANCE UPON THE ACCURACY OF SUCH LOCATIONS SHOWN HEREON, INCLUDING PRIOR TO EXCAVATION AND DIGGING.

ALL ELEVATIONS SHOWN REFER TO NORTH AMERICAN VERTICAL DATUM
B.M. = BENCH MARK, E.L. = ELEVATION

REFERENCE B.M. = 876 0849 A TIDAL, E.L. = 3.35

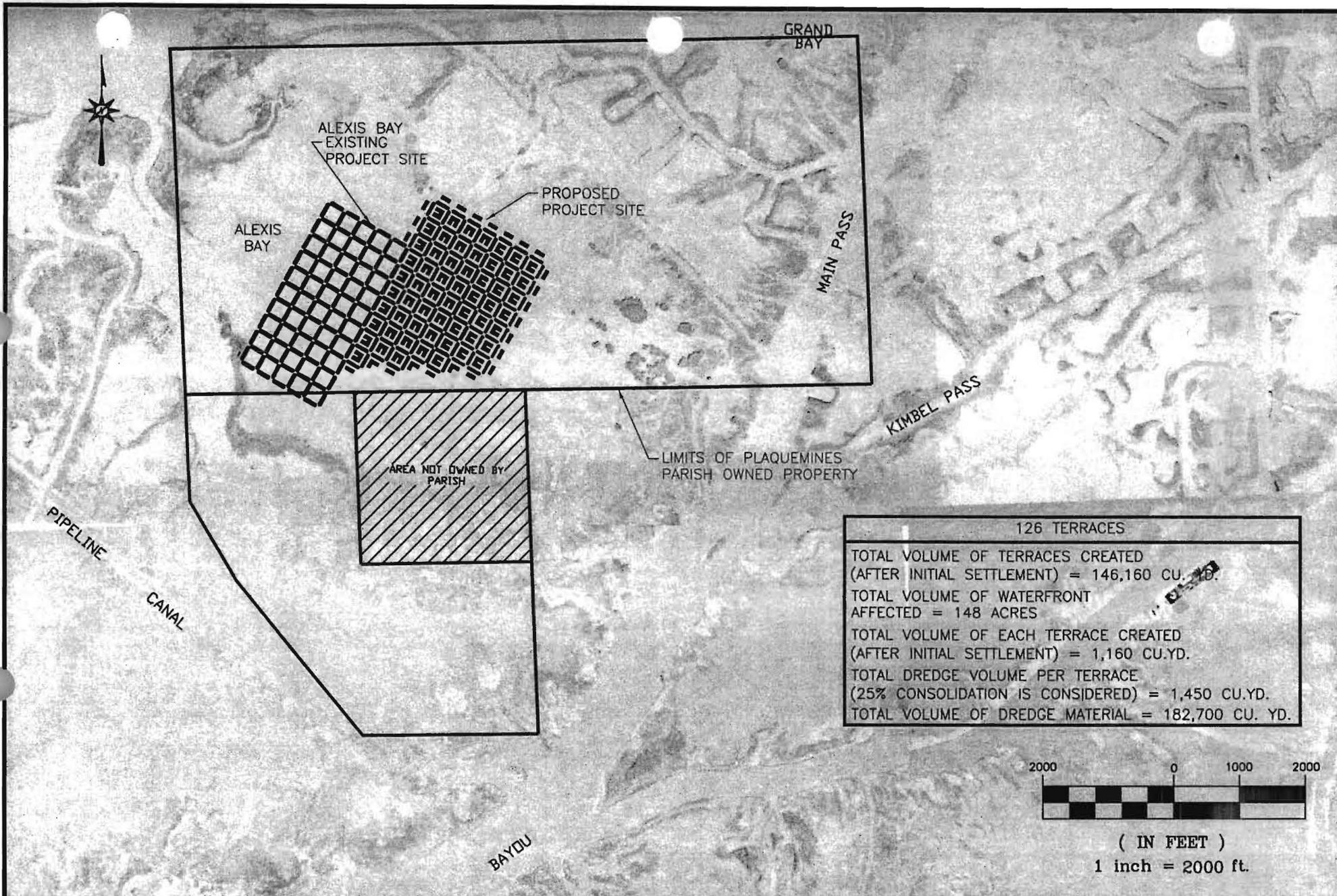
OYSTER LEASES PLOTTED USING LA. WILDLIFE AND FISHERS MAPS
LEASE NO. 3374A; BOOK 240, PAGE 59-60
LEASE NO. 3288; BOOK 240, PAGE 61-62
LEASE NO. 3374B; BOOK 240, PAGE 63



Alert: "Prior to construction, the contractor will verify all utilities." If a conflict arises, notify the project engineer/contractor.



ALEXIS BAY TERRACING PROJECT			PROFESSIONAL ENGINEERING AND ENVIRONMENTAL CONSULTANTS, INC. ENGINEERS, PLANNERS AND ENVIRONMENTAL CONSULTANTS DESIGNER: CTB DRAWN: CTB CHECKED: ud REV. DATE:	BY
MARSH CREATION PROJECT LOCATION PLAQUEMINES PARISH GOVERNMENT				
SCALE:	1" = 500'			
DATE:	02/08			
PROJECT NO.:	0619			
DRAWING FILE NO.:	0619-DRO-3			
SHEET NO.:	3 OF 5			

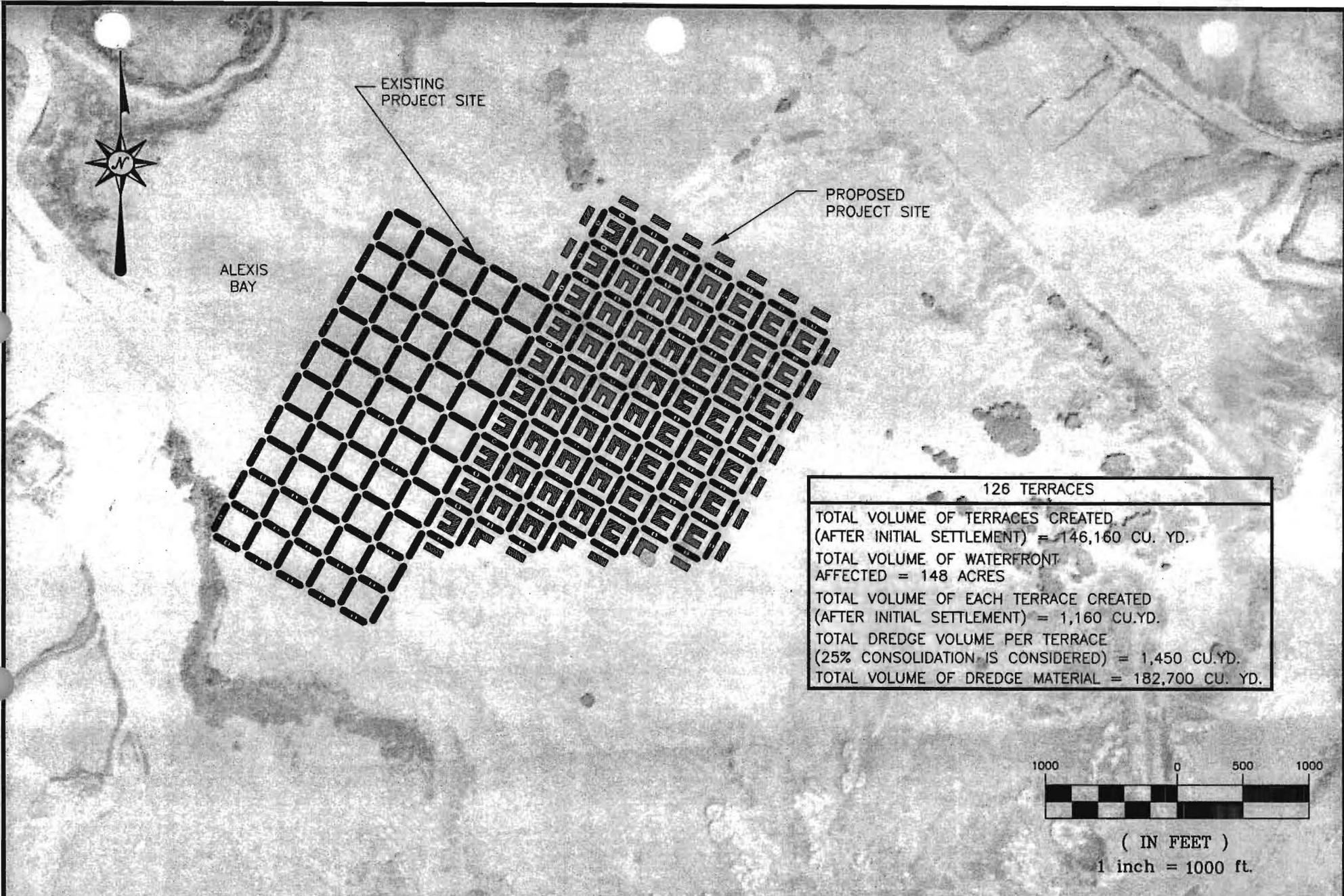


126 TERRACES
TOTAL VOLUME OF TERRACES CREATED (AFTER INITIAL SETTLEMENT) = 146,160 CU. YD.
TOTAL VOLUME OF WATERFRONT AFFECTED = 148 ACRES
TOTAL VOLUME OF EACH TERRACE CREATED (AFTER INITIAL SETTLEMENT) = 1,160 CU.YD.
TOTAL DREDGE VOLUME PER TERRACE (25% CONSOLIDATION IS CONSIDERED) = 1,450 CU.YD.
TOTAL VOLUME OF DREDGE MATERIAL = 182,700 CU. YD.



(IN FEET)
1 inch = 2000 ft.

APPLICATION BY: PLAQUEMINES PARISH	ALEXIS BAY TERRACING PROJECT CONSTRUCTING ADDITIONAL TERRACES		FILE NAME: 0619-PER-03.DWG	 <p>PROFESSIONAL ENGINEERING AND ENVIRONMENTAL CONSULTANTS, INC. ENGINEERS, PLANNERS AND ENVIRONMENTAL CONSULTANTS 1065 MULLER PARKWAY, SUITE B, WESTWEGO, LA. 70094</p>
DATE: 10/07	REV. NO.	PROPERTY OWNERSHIP	PLAQUEMINES PARISH	
SHEET 3 OF 5	0		29° 19' 09" N 89° 19' 45" W	



ALEXIS BAY

EXISTING PROJECT SITE

PROPOSED PROJECT SITE

126 TERRACES

TOTAL VOLUME OF TERRACES CREATED (AFTER INITIAL SETTLEMENT) = 146,160 CU. YD.
 TOTAL VOLUME OF WATERFRONT AFFECTED = 148 ACRES
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(IN FEET)
1 inch = 1000 ft.

APPLICATION BY: PLAQUEMINES PARISH		ALEXIS BAY TERRACING PROJECT CONSTRUCTING ADDITIONAL TERRACES		FILE NAME: 0619-PER-04.DWG		 <p>PROFESSIONAL ENGINEERING AND ENVIRONMENTAL CONSULTANTS, INC. ENGINEERS, PLANNERS AND ENVIRONMENTAL CONSULTANTS 1065 MULLER PARKWAY, SUITE B, WESTWEGO, LA. 70094</p>
DATE: 10/07		REV. NO.	MARSH CREATION	PLAQUEMINES PARISH 29° 19' 09" N 89° 19' 45" W		
SHEET 4 OF 5		0				

Appendix E
Floodplain and Wetlands
8-Step Planning Document

DRAFT

**PLAQUEMINES PARISH
ALEXIS BAY MARSH TERRACING PROJECT
Change of Location and Reconstruction in the
Coastal High Hazard Area of the 100-Year Floodplain
Project Worksheet 2345
FEMA Disaster 1603-DR-LA**

Executive Order 11988 - FLOODPLAIN MANAGEMENT
Executive Order 11990 - WETLAND PROTECTION

8-STEP DECISION MAKING PROCESS

Date: 11/01/2011

Prepared By: John D. Renne' (CTR), CFM, CHMM, Floodplain Specialist

Project:

Hurricane Katrina made landfall on August 29, 2005, in southeast Louisiana near Buras-Triumph, Plaquemines Parish as a Category 3 storm. Maximum sustained winds at landfall were estimated at 120 miles per hour and were accompanied by strong and damaging storm surge well above normal high tide. President George W. Bush declared a major disaster for the State of Louisiana and signed a disaster declaration (FEMA-1603-DR-LA) on August 29, 2005, authorizing the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to provide federal assistance in designated areas of Louisiana.

Plaquemines Parish requested through the State of Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) that FEMA provide disaster assistance through the provision of federal grant funding pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), PL 93-288, as amended. Section 406 of the Stafford Act authorizes FEMA's Public Assistance Program to fund projects to repair, restore, and replace facilities damaged as a result of the declared event.

The parish was deemed eligible by FEMA for federal disaster public assistance as an eligible applicant serving the needs of the general public. Before Hurricane Katrina, the Alexis Bay marsh terraces, a water control facility, consisted of 157 engineered earthen terraces covered with cord grass designed and constructed to gather sediment, thereby re-establishing wetlands. As a result of Hurricane Katrina, 141 of the earthen terraces were deemed to be destroyed.

The damaged marsh terraces are located in Alexis Bay in southeast Plaquemines Parish Louisiana. Plaquemines Parish determined that reconstruction of the marsh terraces in the substantially same location to its predisaster configuration was technically infeasible and would not best meet the needs of the community. Therefore, Plaquemines Parish requested approval and federal grant funds for a change of location project to replace the eligible facilities with new facilities providing the same functions at an alternate location adjacent to the northeast edge of the damaged facility.

Terracing is a relatively new wetland-restoration technique used to convert shallow subtidal water bottom to marsh. This method uses existing bottom sediments to form terraces or ridges at marsh elevation. Marsh terraces have been shown to increase nursery habitat and support higher densities of most fishery species. This earthen terrace facility is determined by FEMA Public Assistance to be an engineered facility constructed for land reclamation and coastal erosion defense. The terraces are intended to restore lost wetlands, trap sediment, reduce open water fetch, and provide improved essential fish habitat.

Hurricane Katrina severely damaged the marsh terraces. The strong storm surge and its associated destructive waves caused significant facility damage and contributed to substantial scour and erosion of the terraces. Storm surge reported at nearby Buras in Plaquemines Parish was estimated between 20 and 25 feet mean sea level above the North American Vertical Datum (NAVD). Average water depths in the area of the proposed marsh terrace reconstruction range up to 5 feet deep. Land surface elevation nearest Alexis Bay are less than approximately 2 feet above mean sea level (above the NAVD), and therefore, the water depth at the site during peak storm surge was likely in excess of 20 feet deep with associated waves.

A terrace field composed of these ridges arranged in a pattern that maximizes intertidal edge and minimizes fetch between ridges is constructed and the intertidal area is planted with marsh vegetation. The proposed terraces have been designed to be planted with native smooth cordgrass, *Spartina alterniflora*, a perennial deciduous grass which is found in intertidal wetlands, especially estuarine salt marshes. It grows 1-1.5 m tall, and has smooth, hollow stems which bear leaves up to 20-60 cm long and 1.5 cm wide at their base. They are sharply tapered and bend down at their tips. This plant is noted for its capacity to act as an environmental engineer. It grows out into the water at the seaward edge of a salt marsh and accumulates sediment enabling other habitat-engineering species, such as mussels, to settle. This accumulation of sediment and other substrate-building species gradually builds up the level of the land at the seaward edge and other higher-marsh species move onto the new land.

This project must be conducted in accordance with conditions for federal actions in the floodplain as set forth in presidential Executive Order (EO) 11988, *Floodplains* and presidential Executive Order 11990, *Wetlands* and the implementing regulation found at 44 Code of Federal Regulations (CFR) Part 9, *Floodplain Management and Protection of*

Wetlands. These regulations apply to all direct and indirect Agency actions which have the potential to affect floodplains or wetlands or their occupants, or which are subject to potential harm by location in floodplains.

Public Assistance grant funded projects carried out in the floodplain or affecting the floodplain must be coordinated with the local floodplain administrator for a floodplain development permit prior to the undertaking and the action must be carried out in compliance with relevant, applicable and required local codes and standards and thereby, will reduce the risk of future flood loss, minimize the impacts of floods on safety, health, and welfare, and preserve and possibly restore beneficial floodplain values as required by Executive Order 11988.

Restoration projects conducted with Public Assistance grant funds must be carried out in accordance with the local floodplain management plan and ordinance and shall utilize the current Draft Preliminary Digital Flood Insurance Rate Maps as the “best available data” as a minimum standard. Exceptions to this requirement shall be reported to the Governor’s Office of Homeland Security and Emergency Preparedness (GOHSEP), FEMA Environmental, and the local floodplain manager before undertaking the action.

STEP 1

Determine whether the proposed actions are located in a wetland and/or the 100-year floodplain (500-year floodplain for critical actions [44 CFR 9.4]), or whether they have the potential to affect or be affected by a floodplain or a wetland (see 44 CFR 9.7).

The project is located in relation to floodplains as mapped by:

Latitude: 29.76983 **Longitude:** -93.70065

Preliminary DFIRM Panel: 22 075C 1000 D **Flood Zone:** VE***

Base Flood Elevation: 17-18 feet above the NAVD

The project site is not located in a regulated floodway but is located in an area of coastal flooding with primary flood hazards associated with tidal storm surge and associated waves. Tides can intrude into the nearby areas of the proposed action and water levels in past floods have been documented in excess of 20 feet above the land surface elevation. Inspection of the damaged facility also indicated damages from erosion and scour of the ground around the building foundation.

The project is located in a wetland as identified by:

A review of the U.S. Fish and Wildlife National Wetland Inventory indicates the proposed site is within a mapped wetland and U.S. waters. A jurisdictional determination was conducted by the U.S. Army Corps of Engineers and findings indicated that the site is located within or affecting USACE regulated wetlands. Proposed activities likely have the potential to affect wetlands by contributing to sedimentation and intrusion by equipment and activities associated with site construction.

STEP 2

Notify the public at the earliest possible time of the intent to carry out an action in a floodplain or wetland, and involve the affected and interested public in the decision making process (see 44 CFR 9.8).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Notice will be or has been provided by:

In general, FEMA has an obligation to provide adequate information to enable the public to have impact on the decision outcome for all actions having the potential to affect, adversely, or be affected by floodplains or wetlands that it proposes. FEMA shall provide the public with adequate information and opportunity for review and comment at the earliest possible time and throughout the decision-making process; and upon completion of this process, provide the public with an accounting of its final decision (see §9.12). A Cumulative Initial Public Notice was published statewide 11/7/2005-11/9/2005. Additional public notice shall be provided as required by the Executive Order.

Furthermore, a National Environmental Policy Act (NEPA) Environmental Assessment (EA) has been drafted to determine if the reconstruction of the marsh terraces, as described, will have the potential for significant adverse effects on the quality of the human and natural environment. The results of the investigation are being used to make a decision whether to initiate preparation of an Environmental Impact Statement or to prepare a Finding of No Significant Impact. The availability of the Draft EA was advertised in the Advocate, a statewide publication, from November 20 to December 5, 2011. The Draft EA was provided to the Belle Chasse Branch Library and made available for public inspection and invited comments to be submitted with instructions for submission.

STEP 3

Identify and evaluate practicable alternatives to locating the proposed action in a floodplain or wetland (including alternative sites, actions and the "no action" option) [see 44 CFR 9.9]. If a practicable alternative exists outside the floodplain or wetland, FEMA must locate the action at the alternative site.

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Alternatives identified as described below:

The marsh terraces provide water control functions to the local community, which depends on the location of the resource and proper construction to meet its needs effectively. In order to meet these needs it is imperative that the facility be “local” to area intended for coastal defense. This water control facility is “functionally dependent” upon its proximity to water and there is no practicable alternative outside the floodplain.

- **Alternative 1: No Action** – No action would leave the community without the function of the damaged marsh terraces.
- **Alternative 2: - Reconstruction at the original location with mitigation** (all steps necessary to minimize the potential adverse effects of the action) – This alternative would reconstruct the marsh terrace water control facility at its original location in substantially the same footprint, including applicable codes and standards and conditions to comply with requirements of EO 11988 and the implementing regulations at 44 CFR Part 9.

Plaquemines Parish and its architect/engineer have determined that there is insufficient sediment available at the site of the original marsh terraces to effectively reconstruct the terraces to predisaster condition. Therefore, due to this lack of suitable sediment at the original location, reconstruction of the facility at its original location is not a practicable option because it has been determined by the applicant as an infeasible alternative that is not the best choice, economically feasible, socially acceptable, and has been determined by the community leaders to not serve the best interests of the entire community.

- **Alternative 3 (Chosen Alternative): - Reconstruction at a new location within the floodplain with mitigation** (all steps necessary to minimize the potential adverse effects of the action) – This alternative would reconstruct the marsh terrace water control facility at a new location at the northeast edge of the damaged facility, including applicable codes and standards and conditions to comply with requirements of EO 11988 and the implementing regulations at 44 CFR Part 9. This alternative would reconstruct the facility in an area chosen for coastal flood defense and the re-establishment of wetlands.

Reconstruction of the marsh terrace facility at the new location has been determined by the applicant and GOHSEP to be a practicable option because it is a viable alternative that is economically feasible, socially acceptable, and has been determined by the community leaders to meet their needs and serve the best interests of the community.

STEP 4

Identify the potential direct or indirect impacts associated with, the occupancy or modification of floodplains and wetlands and the potential direct and indirect support of floodplain and wetland development that could result from the proposed action (see 44 CFR 9.10).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Alternatives identified as described below:

Alternative 4: Reconstruction at the new location with mitigation results in restoration of the lost functions of the damaged infrastructure.

This alternative enables Plaquemines Parish to rebuild in an area that has been identified for coastal flood defense and wetlands restoration.

This action represents a significant investment in the floodplain that will be at risk in future flood events.

Siting of the facility within the floodplain near the shoreline restores beneficial floodplain values such as natural flood and erosion control, enhancement of biological productivity and diversity, and the societal benefits of food production, recreational opportunities, and scientific knowledge gained from studying them.

Reconstructing this public facility supports existing development and structures that may be subject repetitive flooding and loss.

The provision of high quality public services in the floodplain may lead to new development at risk of flood loss.

A review of the natural environment, social concerns, and the economic aspects of the proposed project indicates that reconstruction of the marsh terraces at the new location is a practicable alternative. No other practicable alternative to this investment in the floodplain has been identified outside the special flood hazard area.

STEP 5

Minimize the potential adverse impacts and support to or within floodplains and wetlands to be identified under step # 4, restore and preserve the natural and beneficial values served by floodplains, and preserve and enhance the natural and beneficial values served by wetlands (see 44 CFR 9.11).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Mitigation measures identified in the EA Document or as described below:

Alternative 4: Reconstruction shall be in accordance with local floodplain ordinances with applicable codes and standards applied to mitigate and minimize adverse effects (compliance with minimum National Flood Insurance Program standards and requirements).

STEP 6

Reevaluate the proposed action to determine first, if it's still practicable in light of its exposure to flood hazards, the extent to which it will aggravate the hazards to others and its potential to disrupt floodplain and wetland values and second, if alternatives preliminarily rejected at step # 3 are practicable in light of the information gained in steps # 4 and # 5. FEMA shall not act in a floodplain or wetland unless it's the only practicable location.

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Action proposed is located in the only practicable location as described below:

The proposed action is the chosen practicable alternative based upon a review of possible adverse effects on the floodplain, the inclusion of measures to mitigate and minimize harm from floods, and community socioeconomic expectations.

STEP 7

Prepare and provide the public with a finding and public explanation of any final decision that the floodplain or wetland is the only practicable alternative (see 44 CFR 9.12).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Finding is or will be prepared as described below:

Reconstruction of the marsh terraces in the floodplain has been determined to be a practicable alternative with significant benefits to the community which override the prudence of location outside the floodplain. This review and analysis of this proposed action was documented through the required 8-step public participation and decision-making process. A NEPA EA is being drafted that includes a Solicitation of Views from potentially affected parties and a public notice was prepared and advertised that presented these findings (Public Notice attached herein).

STEP 8

Review the implementation and post-implementation phases of the proposed action to ensure that the requirements of the order are fully implemented. Oversight responsibility shall be integrated into existing processes.

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Approval conditioned on review of implementation and post-implementation phases to ensure compliance with the order(s).

Project shall be reviewed by FEMA at grant closeout to ensure the project was completed in accordance with all relevant and applicable floodplain ordinances, codes and standards and that all project actions were undertaken in accordance with terms and conditions stipulated to mitigate and minimize adverse effects in or to the floodplain and wetlands.

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Louisiana State Plane, south zone (FIPS ZONE 1702). The horizontal datum is NAD 83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSM-C, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov/>.

Base map information for this study was provided in digital format by the USACE, New Orleans District. This data was created in State Plane NAD 83 Coordinates, U.S. Survey Feet and was produced at scales 1:1,200 (1"=100'); 1:4,800 (1"=400'). Aerial photography of the area was captured during 2005.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

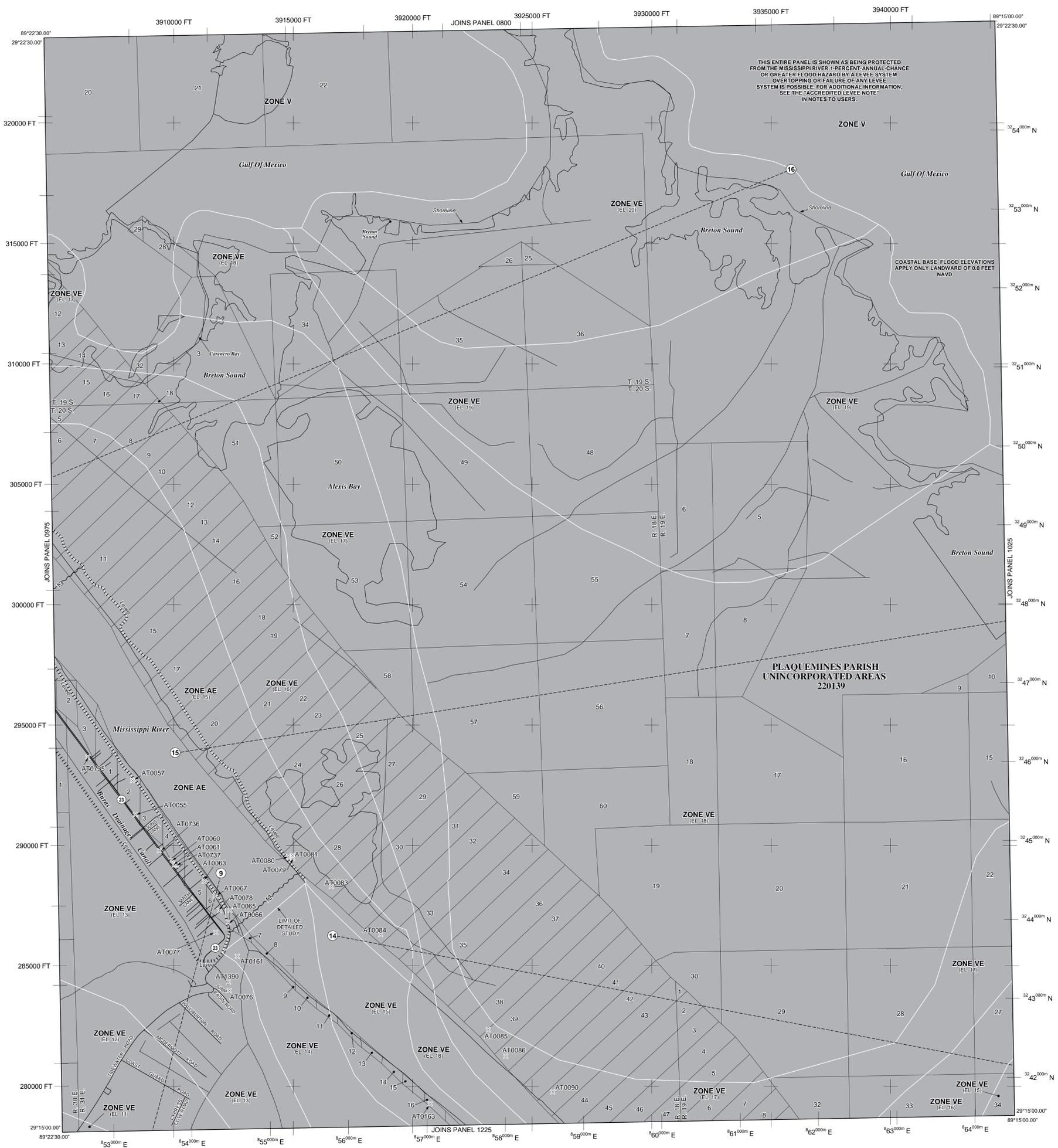
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov/>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/>.

Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at <http://www.fema.gov/business/nfp/index.shtm>.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A Cross section line
A-A
Transect line
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
1000-meter Universal Transverse Mercator grid ticks, zone 15
5000-foot grid ticks: Louisiana State Plane coordinate system, south zone (FIPS ZONE 1702), Lambert Conformal Conic
Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile
MAP REPOSITORIES
Refer to Map Repositories list on Map Index
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
to reflect the effects of coastal erosion, to reflect revised shoreline, to update corporate limits, to add Base Flood Elevations, to change zone designations, to change Base Flood Elevations, to reflect updated topographic information, to update the effects of wave action, to change Special Flood Hazard Areas, and to add road names.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'

1000 0 2000 4000
3000 0 600 1200
FEET METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1000D

FIRM FLOOD INSURANCE RATE MAP

PLAQUEMINES PARISH, LOUISIANA AND INCORPORATED AREAS

PANEL 1000 OF 1550
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
PLAQUEMINES PARISH 220139 1000 D

PRELIMINARY
Oct 30, 2008

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 22075C1000D
MAP REVISED

Federal Emergency Management Agency