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US Army Corps
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New Orleans District

# CULTURAL RESOURCES INVESTIGATIONS FOR THE WESTBANK HURRICANE PROTECTION PROJECT, PLAQUEMINES AND JEFFERSON PARISHES, LOUISIANA

September 1991

## FINAL REPORT



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## PREPARED FOR:

U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267



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Archeological investigations of three parcels and two previously recorded archeological sites (16PL40 and 16PL41) were conducted in Westbank Metropolitan New Orleans, in Plaquemines and Jefferson Parishes, Louisiana. These investigations were conducted by R. Christopher Goodwin & Associates, Inc., for the U.S. Army Corps of Engineers, New Orleans District, as part of the Westbank Hurricane Protection Project. Approximately 350 acres were surveyed for cultural resources.

The three previously unsurveyed parcels included Area A, a parcel adjacent to the Harvey Canal, Area B, a planned borrow area north of Hero Canal, and, Area C, a proposed levee alignment near Oakville. Areas A and B were located within drained backswamp, while Area C was situated at the distal edge of the Mississippi River natural levee, adjacent to swamp. No archeological sites or historic standing structures were located within any of these three areas. The two tested archeological sites, 16PL40 and 16PL41, were located adjacent to the Alternate Route of the Gulf Intracoastal Waterway (Algiers Canal). Field investigations demonstrated that both sites consisted of modern shell deposits associated with construction of the Algiers Canal. Neither site is an archeological resource. Based on field investigations, no archeological sites or historic standing structures that possess the quality of significance are located in the five project areas. No additional archeological testing is recommended for these areas.


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REPLY TO
ATTENTION OF:

August 22, 1991

Planning Division
Environmental Analysis Branch

To The Reader:

The investigation reported in this volume was funded and guided by the U.S. Army Corps of Engineers, New Orleans District. The work was performed to provide information needed to assess cultural resource impacts which could result from construction of part of the West Bank Hurricane Protection Project.

This report has been reviewed and accepted by the New Orleans District. We commend the Contractor's efforts and careful scholarship.

Van Tries Button
Authorized Representative
of the Contracting Officer

R. H. Schroeder, Jr.
Chief, Planning Division





# CULTURAL RESOURCES INVESTIGATIONS FOR THE WESTBANK HURRICANE PROTECTION PROJECT, PLAQUEMINES AND JEFFERSON PARISHES, LOUISIANA

FINAL REPORT

By

R. Christopher Goodwin, Ph.D.
Principal Investigator

With

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Susan Barrett Smith, and Paul Heinrich

R. Christopher Goodwin & Associates, Inc.
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September 1991

For

U.S. Army Corps of Engineers
New Orleans District
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## ACKNOWLEDGMENTS

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At R. Christopher Goodwin & Associates, Inc., Dr. R. Christopher Goodwin served as Principal Investigator and supervised all aspects of this study. William P. Athens served as Project Manager. Stephen Hinks directed field investigations, and David Courington, James A. Green, Charlotte Donald, James Wojtala, and Gregory Lambousy provided archeological assistance. Dr. Ralph Draughon and Susan Barrett Smith conducted historical research and title search. Shirley J. Rambeau prepared graphic materials. Nancy Marshall edited the report and Christine Herman produced it.

# CHAPTER I

# INTRODUCTION

This report presents the results of Phase I/Level II cultural resources investigation of a portion of the Westbank Hurricane Protection Project in Plaquemines and Jefferson Parishes, Louisiana. The project area is situated on the west (right descending) bank of the Mississippi River, near the northern end of the Barataria Basin. This survey was conducted in April 1990, by R. Christopher Goodwin & Associates, Inc., for the U.S. Army Corps of Engineers, New Orleans District, pursuant to Delivery Order 02, Contract DACW29-90-D-0018. This project was undertaken in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

The Westbank Hurricane Protection Project is designed to protect a portion of the New Orleans metropolitan area (the developed Westbank) from hurricane storm surges. The current investigations encompass three survey areas (Figures 1 and 2). Area A, the Harvey Canal, represents the proposed route of the sector gate bypass channel; Area B is a large borrow area; and, Area C is the proposed alignment of the Oakville levee. As part of this study, two previously recorded sites, 16PL40 and 16PL41, both situated along the Gulf Intracoastal Waterway (Alternate Route), also were evaluated (Figures 1 and 2).

Field investigations were designed to identify and to evaluate all archeological sites and all pre-1945 historic standing structures in the project areas. Archival research focused on development of land tenure histories for each of the three survey areas. In addition, archival data were collected to aid in interpretation and evaluation of identified historic archeological sites.

Fieldwork consisted of intensive pedestrian survey, as well as systematic shovel and auger testing in areas not previously tested for archeological resources. Sufficient data were collected at Sites 16PL40 and 16PL41 to evaluate their significance applying the National Register criteria. During survey, approximately 350 ac were examined for cultural resources. No new archeological sites were located within the three survey areas. Site testing at 16PL40 and 16PL41 suggests that these two sites consist of modern shell deposits that were used for bankline stabilization; neither constitutes an archeological resource.

## Organization of the Report

Chapter II describes the natural setting of the area under investigation, including its geomorphological development. Chapter III reviews previous archeological investigations in the vicinity. Chapter IV contains a prehistoric overview of the region; land tenure histories of the three survey areas are discussed in Chapter V. Finally, field methods, results of field investigations, a summary, and management recommendations are presented in Chapter VI.

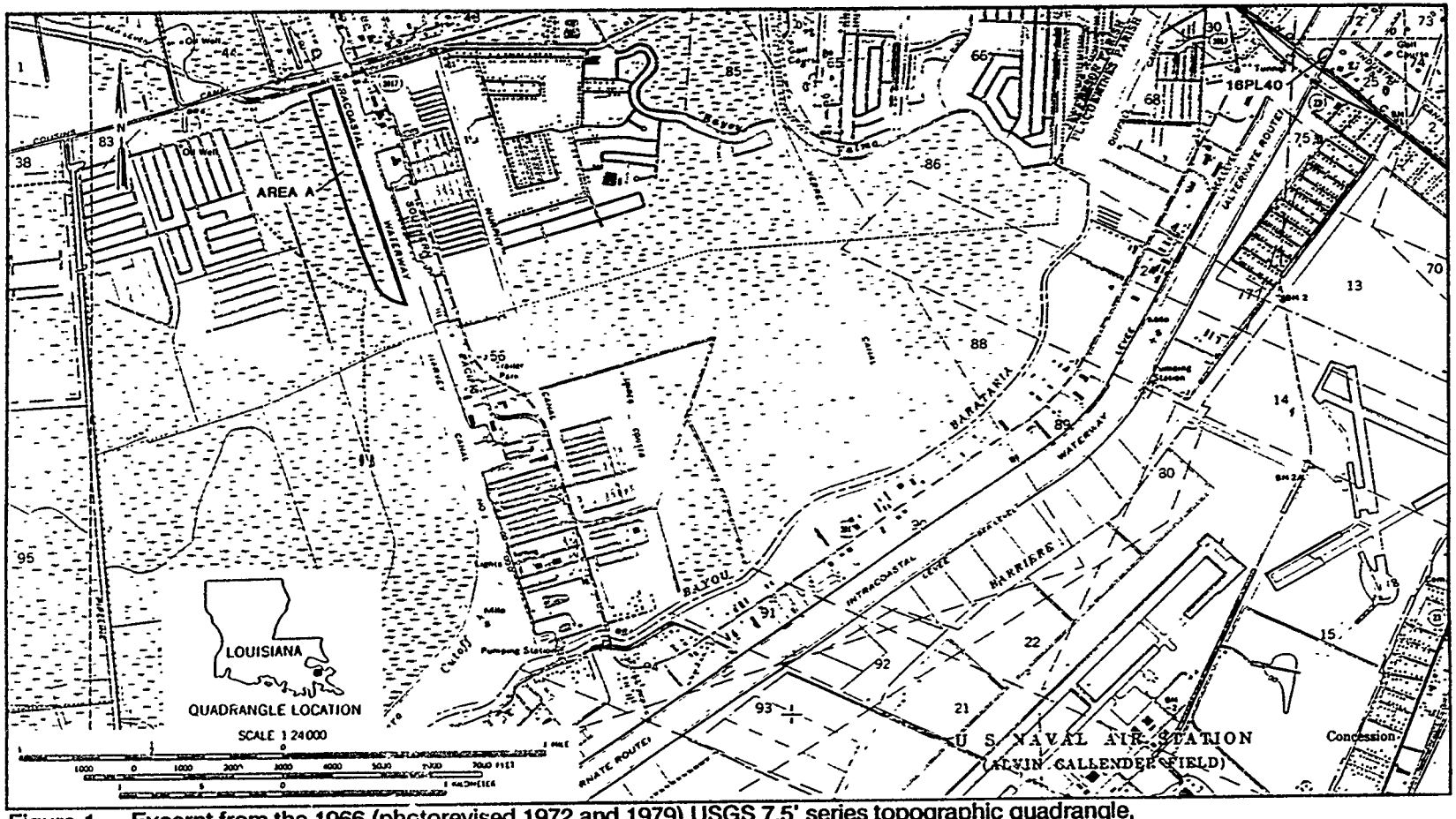



Figure 1. Excerpt from the 1966 (photorevised 1972 and 1979) USGS 7.5' series topographic quadrangle, Bertrandville, Louisiana, showing Area A and Site 16PL40.

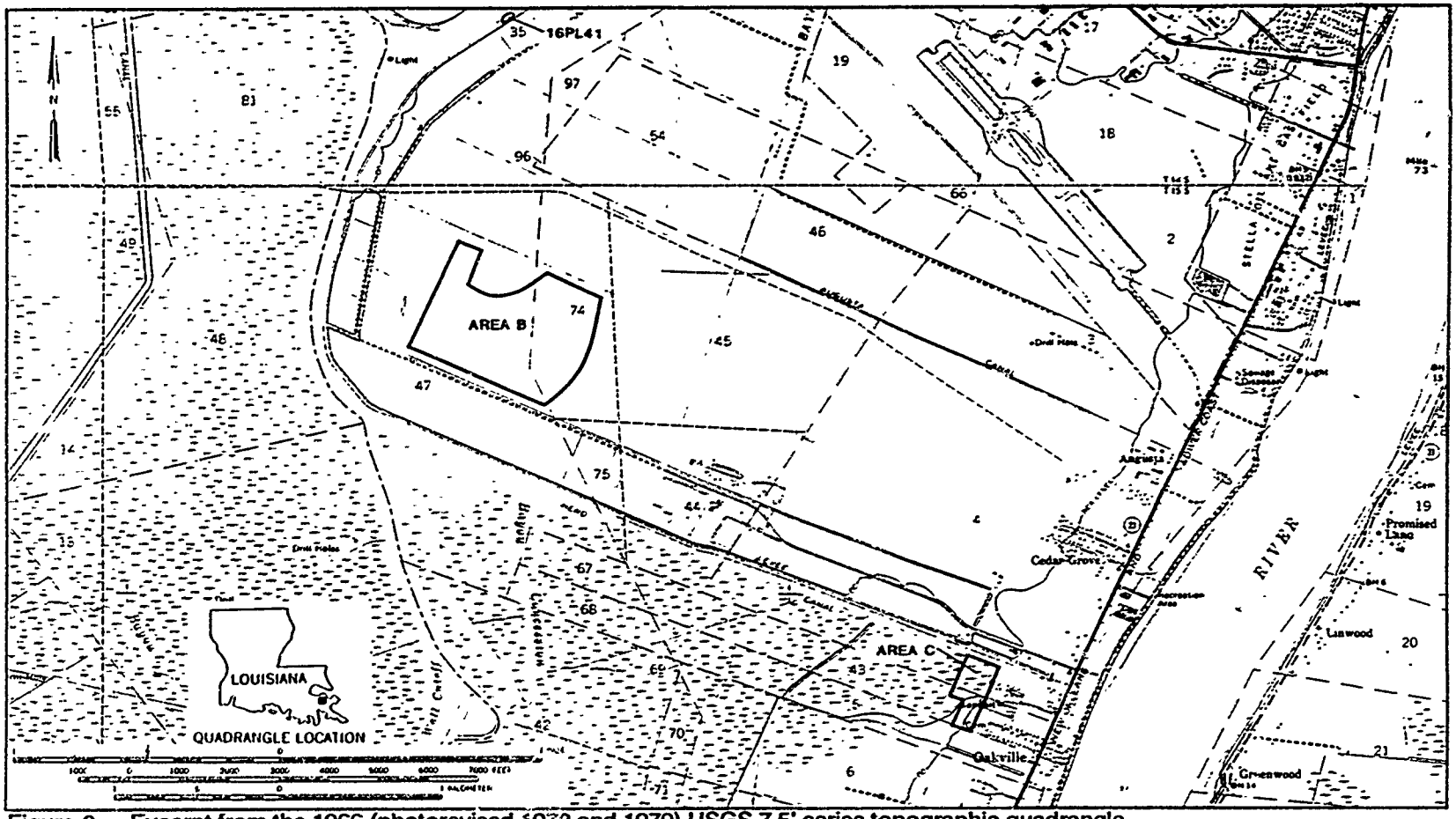



Figure 2. Excerpt from the 1966 (photorevised 1972 and 1979) USGS 7.5' series topographic quadrangle, Bertrandville, Louisiana, showing Areas B and C, and Site 16PL41.

## CHAPTER II

## NATURAL SETTING

The Westbank survey comprises three survey areas in eastern Jefferson Parish and northern Plaquemines Parish. The survey areas are: Area A, a proposed route for the sector gate bypass channel of the Harvey Canal; Area B, a proposed borrow pit; and, Area C, a proposed segment of the Oakville levee section alignment. Two archeological sites located along Algiers Canal also were investigated during this study. These areas lie within the Westbank area of greater metropolitan New Orleans. This chapter examines the geomorphology of the region, as well as the potential for encountering archeological deposits. Soils, climate, and the major floral and faunal communities in the region also are described in this chapter.

### Geomorphology

The survey areas all lie within or adjacent to a partially enclosed, elongated interdistributary basin called, for the purposes of this report, the "Westbank basin." The western boundary of this basin is formed by the abandoned trunk distributary of the Bayou des Familles Delta Lobe defined by Frazier (1967:307). The northern and eastern boundaries of the Westbank basin are formed by the natural levees of the modern Mississippi River. To the south, the Westbank basin opens into the Barataria Interlobe Basin (Kolb and Van Lopik 1958:Plate 1; U.S. Geological Survey 1891).

The Westbank basin is situated in the northeastern portion of the Barataria Interlobe Basin, a 150 km (93 mi) long basin lying between the natural levees of Bayou Lafourche to the southwest and the natural levees of the Mississippi River to the northeast. This basin is 52 km (32 mi) wide where it opens onto Barataria Bay at its southeastern end. Its upper third includes Lac Des Allemands; this portion of the basin is covered by forested freshwater swamp. Fresh and intermediate (brackish) swamp covers the middle third of the basin except for those areas covered by the open waters of Lake Salvador. The remaining gulfward third consists of brackish and saline marsh (Kosters 1987; 1989).

#### Bayou des Familles Delta Lobe

The trunk distributary channel of the Bayou des Familles Delta Lobe consists of a partially-filled channel and partially-submerged natural levees. Bayou des Familles occupies this abandoned distributary between Gretna and Cross Point, Louisiana. South of Cross Point, the primary distributary channel of this delta lobe is occupied by Bayou Barataria. North of Cross Point, the natural levees of the distributary rise only 1.5 to 1.8 m above mean sea level and extend approximately 0.25 to .75 km from the banks of the channel. South of Cross Point, the natural levees slowly decrease in elevation and lie beneath the bays and marshes of the Barataria Interlobe Basin south of Laffite, Louisiana (Kolb and Van Lopik 1958:Plate 1; U.S. Geological Survey 1891, 1979a, 1979b).

#### Mississippi River Course

The course and natural levees of the Mississippi River constitute the most prominent landforms within the project region. In the New Orleans area, the natural levees of the Mississippi River are 1.5 to 2.0 km wide, and about 2.5 to 3.0 m above mean sea level. Further downstream, both the width and the elevation of the Mississippi River decrease considerably. For example, the widths of the natural levees vary from 0.5 to 1.5 km within the Concession - Sarah, Louisiana area near Areas B and C. In this vicinity, the

natural levees rise only 2.0 to 2.5 m above mean sea level (Kolb and Van Lopik 1958:Plate 1, U.S. Geological Survey 1891, 1979a, 1979b).

Westbank Basin

The area between the Mississippi River and the Bayou des Familles Delta Lobe consists of relatively flat wetlands. The undrained portion of these wetlands typically lies at 30 cm mean sea level. In the project region, the wetlands consist of forested freshwater swamps, small ponds and lakes; and, drainage channels. Prior to historic development, the most prominent geomorphic feature was the large basin drainage channel of Bayou Barataria that extended into this basin from Crown Point, Louisiana (Matthews 1983; U.S. Geological Survey 1891, 1979a, 1979b).

Kolb and Van Lopik (1958:Plate 2) mapped numerous, almost completely buried relict deltaic distributary ridges within this basin. The most prominent of these ridges crosses immediately north of the Industrial Canal. Fragments of these partially buried relict distributary ridges can be observed within Sections 3 and 4, T 15 S, R 24 E. (U.S. Geological Survey 1950). The relict distributary ridges belong to a relict deltaic plain that has been partially-to-completely buried by the accumulation of organic swamp and clastic overbank sediments. Work by Britsch and Dunbar (1990) and Goodwin, Heinrich et al. (1991) demonstrates that the natural levee deposits forming these ridges have a high potential for containing well-preserved, stratified, multicomponent sites.

Geomorphic History

About 20,000 years B.P., at the start of the Late Wisconsinan substage, relative sea level was about 120 m below present sea level. As a result, the shoreline of the Gulf of Mexico lay along the edge of the continental shelf, and the project area consisted of exposed coastal plain. Exposure of these sediments resulted in development of weathering horizons. The upper part of these sediments have an oxidized tan, yellow, or greenish gray color; a low water content; a stiff to very stiff consistency; and, concretions. The exposed coastal plain consisted of deltaic and fluvial sediments, that probably accumulated about 30,000 years B.P, when the sea level was at approximately 40 m below present sea level (Britsch and Dunbar 1990:25; Miller 1983; Suter et al. 1987:216-217).

By the start of the Holocene Epoch, 10,000 years B.P., sea level had risen to 30 m below present sea level. The average rate of eustatic sea level rise was about 8 mm per year from 10,500 to 6400 years B.P., and less than 1 mm per year from 6400 years B.P. to the present within the Gulf of Mexico. Sea level rose faster within the Mississippi Delta region than in other parts of the Gulf of Mexico, because the rate of relative sea level rise in the Delta area resulted from both regional subsidence and eustatic sea level rise (Frazier 1967; Coulombe and Bloom 1983; Suter et al. 1987:210-214).

The rising sea level flooded the eastern portion of the Mississippi River Alluvial Valley. This flooding resulted in movement of the shoreline up the Mississippi Alluvial Valley to the latitude of Baton Rouge. As a result, a brackish-water embayment occupied this part of the Mississippi River Valley about 6000 to 5000 years B.P. (Saucier 1963:44-46). During this period of rising sea level, the Mississippi River formed the Maringouin, Teche, and older delta complexes west of the project region (Figure 3) (Frazier 1967; Goodwin, Heinrich, et al. 1991).

About 4800 years B.P., a new delta complex called the "early St. Bernard Delta Complex" by Frazier (1967) and the "Metairie Delta Complex" by Weinstein and Gagliano (1985.122-123) prograded through the New Orleans area. The main delta lobe of this complex prograded about 70 km southeast of New Orleans into the Gulf of Mexico. Another small delta of this complex prograded northeast to connect with the New

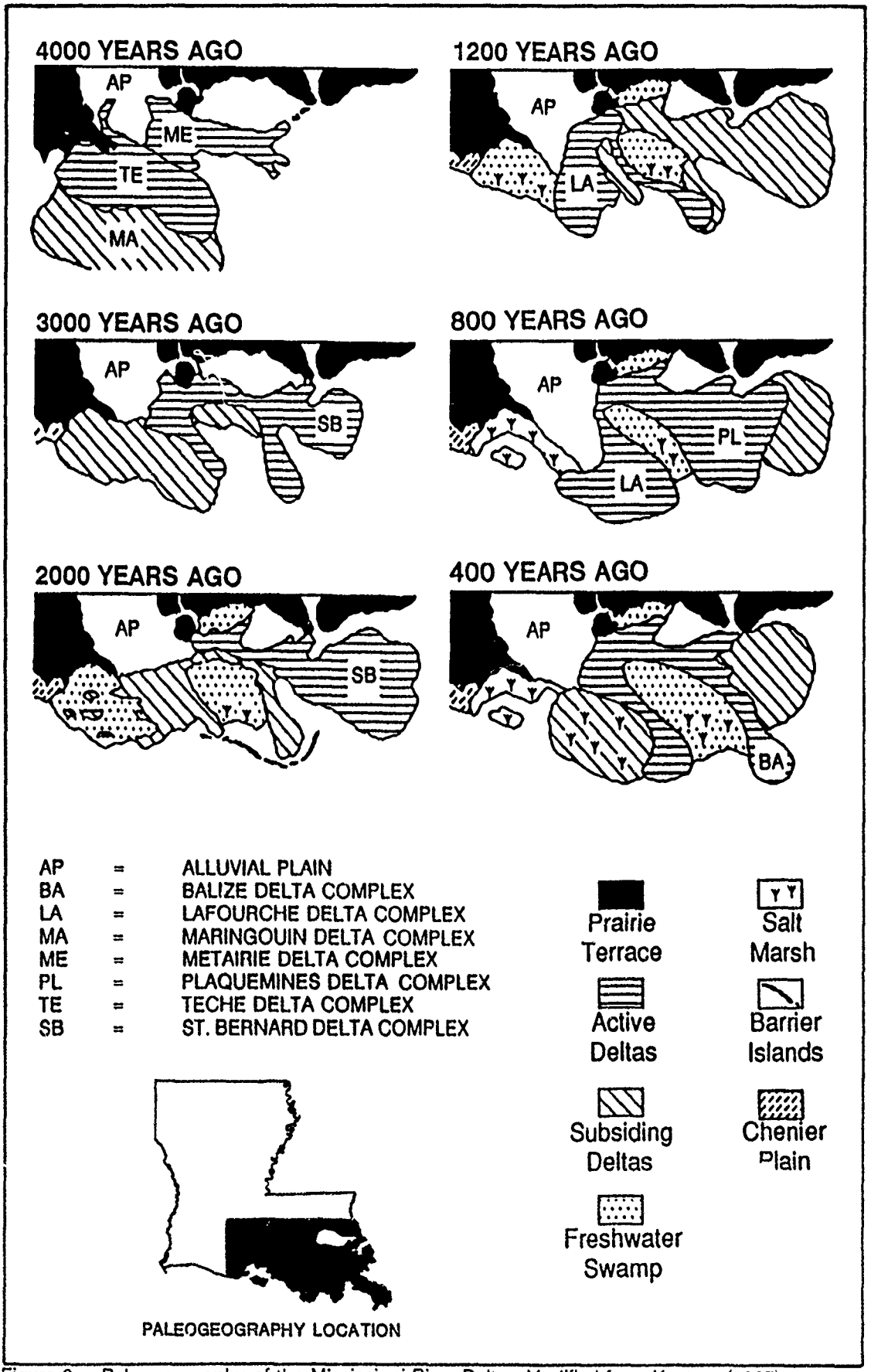



Figure 3. Paleogeography of the Mississippi River Delta. Modified from Kosters (1987).

Orleans Barrier Island Trend, a chain of southwest-trending barrier islands attached to the mouth of the Pearl River. This joining created a brackish-water bay ancestral to Lake Pontchartrain (Figure 3) (Saucier 1963:56-59; Goodwin, Heinrich et al. 1991).

From about 3400 to 1600 years B.P., the Metairie Delta Complex developed into the La Loutre Delta Complex of Weinstein and Gagliano (1985:123) (also known as the St. Bernard Delta Complex of Frazier [1967]). This delta complex formed two major delta lobes that prograded from the New Orleans area. The larger delta lobe, the La Loutre Delta Lobe, prograded eastward to form most of St. Bernard Parish. By 3000 years B.P., this delta lobe buried the Pine Island Trend creating Lake Pontchartrain. A smaller delta, the Des Familles Delta Lobe, prograded southward from the New Orleans region. The delta plain of this lobe subsided beneath the swamps and marshes of Barataria Interlobe Basin. Within the Westbank basin, only the natural levees of the primary distributary channel and occasional deltaic distributary ridges remained above sea level (Figure 3) (Frazier 1967; Weinstein and Gagliano 1985:123).

Between 4800 to 2000 years B.P., Bayou Lafourche slowly prograded southward from the New Orleans region. Between 4800 to 3500 years ago, Bayou Lafourche formed and began to prograde slowly southward. By 2000 years B.P., the Lafourche Delta Complex handled its peak discharge. The Lafourche Delta Complex consisted of two delta lobes between which the flow of the Mississippi River was equally divided (Weinstein and Gagliano 1985:142-144).

About 1000 years B.P., the relict feeder channel of the St. Bernard (La Loutre) Delta complex was partially reoccupied by the Mississippi River. The delta of the Plaquemines Delta Complex prograded through an interlobe basin between the Des Familles and La Loutre Deltas of the St. Bernard Delta Complex. As the shoal-water Plaquemines Delta Complex prograded to the shelf edge, the shelf-margin Balize Delta formed (Figure 3) (Weinstein and Gagliano 1985:125 and 143).

**Soils**

The soils of the natural levees of the Mississippi River and Bayou des Familles, and of the freshwater swamps that lie between them differ greatly in character. The soils of the natural levees are typically well-consolidated mineral soils that contain minor amounts of organics. In contrast, the soils in the freshwater swamps generally are poorly consolidated, often semifluid soils that are either muck or organic-rich. The lengthy exposure of the natural levee deposits between floods allows these sediments to dewater and consolidate by desiccation. Exposure also allows the oxidation of these sediments, which destroys most if not all of the organic matter deposited, and allows the formation of iron sesquioxide cements and nodules. The constantly waterlogged condition of soils within freshwater swamps prohibits consolidation of these sediments by desiccation. As a result, the sediments remain semifluid. The high percentage of organic matter in the soils of freshwater swamps results from the continual addition of organic material to these soils by the native flora, and from the preservation of the organic matter by the eutrophic conditions typical of freshwater swamps (Kosters 1987, 1989; Matthews 1983).

Natural Levees

Sharkey - Commerce soils characterize the natural levees of the Mississippi River and the Bayou des Familles trunk distributary. This group of soils consists of Commerce silt loam and silty clay loam and Sharkey silty clay loam and clay. The Commerce silt loam and silty clay loam are level, somewhat poorly-drained, stiff to firm soils. These soils are developed within alluvial sediments that form the crests and the upper slopes of the natural levees of the Mississippi River, Bayou des Familles trunk distributary, and some crevasse distributaries. The Sharkey silty clay loam and clay are level, poorly-drained, firm soils. These soils are developed within clayey alluvial sediments that form the intermediate and lower slopes of the natural

levees of the Mississippi River, the Bayou des Familles trunk distributary, and some crevasse distributaries (Matthews 1983; U.S. Soil Conservation Service 1969).

### Freshwater Swamps

Two main soil associations occur within the former and extant wetlands of the project region. The first group, Allemands, Barbary, and Kenner soils, consist of soils that occur within undrained swamps that are frequently flooded. A final group--Allemands, drained; Harahan; Kenner, drained; and, Westago soils--consists of soils that occur within drained swamps that are currently protected from flooding by artificial levees and pumping (Matthews 1983:6-8).

Undrained Swamp. Undrained swamp soils such as Allemands, Barbary, and Kenner soils are characterized by a surface layer of muck underlain by mucky, clayey, or mixed subsoils that are typically either semifluid or very soft. The mucky surface layer of Barbary soils is thinner than the moderately thick surface layer of Allemands. Also, the subsoil of Barbary soils consists of clayey clastic sediments, while the subsoils of Allemands soils consist of semifluid clay, mucky clay, or muck. Kenner soils consist of interstratified semifluid muck and semifluid clay (Matthews 1983:6).

The distribution of the different soils crudely reflects various depositional environments. Barbary soils occur within wetlands adjacent to the edges of natural levees. Apparently, these soils consist of a thin layer of swamp-derived organic matter overlying clastic overbank deposits. The overbank sediments could represent either the depositional fringe of active natural levees or a formerly subaerial natural levee that has subsided beneath the swamp. The semifluid, mucky, and clayey Allemand and Kenner sediments comprise material that has accumulated in a freshwater swamp environment.

Drained Swamp. Two groups of soils occur in the wetland areas that have been drained and currently are protected from flooding. The first group consists of Allemands and Kenner drained soils. These soils were formed by the draining of Allemands and Kenner soils; they are characterized by a thick or moderately thick surface layer of muck. A second group consists of Westago-Harahan soils which are formed when Barbary soils are drained. Because drainage and resulting exposure has destroyed the thin surface layer, Westago-Harahan soils consist only of a clayey surface layer and subsoil (Matthews 1983:8).

## Biogeography

The flora and fauna of the project area vary greatly between the natural levees and the adjacent freshwater swamps. Differences in fauna and flora result from distinct differences in the drainage of each area (Penfound and Hathaway 1938).

### Natural Levees

Little is known about the native vegetation community that existed on the natural levees of the New Orleans area prior to occupation by European settlers. Presumably, the native vegetation is conveniently similar to vegetation communities still found on natural levees of distributaries elsewhere in the Mississippi Delta Plain. If so, then the natural levees were covered by an oak forest floral assemblage. The principle trees within the oak forest would have been water oak (*Quercus nigra*), Eastern cottonwood (*Populus deltoides*), sweetgum (*Liquidambar styraciflua*), American sycamore (*Platanus occidentalis*), black willow (*Salix nigra*), hackberry (*Celtis laevigata*), swamp-privet (*Forestiera acuminata*), honey locust (*Gleditsia triacanthos*), water locust (*Gleditsia aquatica*), and silver maple (*Acer saccharinum*). The flora of these forests probably included shrubs, e.g. buttonbush (*Cephalanthus occidentalis*), wax myrtle (*Myrica cerifera*),

palmetto (*Sabal minor*), and elderberry (*Viburnum nudum*); and, vines, e.g. poison ivy (*Rhus radicans*) and ratten vines (Penfound and Hathaway 1938).

Similarly, little is known about the fauna that inhabited the areas surrounding the natural levees of the Mississippi River and Bayou des Familles. However, as elsewhere in the Mississippi River Delta, these forests supported a variety of mammals, birds, and reptiles. The animals present within the forests of the natural levees included opossums (*Didelphis virginiana*), raccoons (*Procyon lotor*), rabbits (*Sylvilagus* sp.), white-tail deer (*Odocoileus virginianus*), weasels (*Mustela* sp.), tree frogs (*Hyla* sp.), and various snakes (Penfound and Hathaway 1938).

Large farms and plantations replaced the oak forests of the natural levees. As a result, these levees became covered with large tracts of sugarcane, cotton, rice, tobacco, indigo, and citrus trees. During the last 50 years, development of the New Orleans area for industrial, business, and residential purposes has erased the former agricultural landscape. Currently, only a few small, isolated patches of cropland, woodland, and pastureland remain (Matthews 1983:1).

Swamps and Marshes

As typical of any interdistributary basin within the Mississippi Delta, freshwater swamps and a variety of marshes cover the Westbank basin. South of the constriction in the Westbank basin at Crown Point, Louisiana, the delta plain consists of freshwater marsh that grades southward into intermediate ("brackish") marsh, and eventually into saltwater marsh. The Westbank basin is covered by forested, freshwater swamp north of the constriction (the study region) (Kosters 1989:101).

Prior to historic drainage and other disturbance, the northern part of the basin consisted entirely of wetland covered by water-tolerant trees and aquatic understory plants. Shallow water covered this area during most or all of the growing season. Some of the trees common to undrained freshwater swamp are bald cypress (*Taxodium distichum*), tupelo gum (*Nyssa aquatica*), black willow (*Salix nigra*), swamp red maple (*Acer rubrum* var. *drummondi*), water ash (*Fraxinum caroliniana*), and water oak (*Quercus nigra*). In addition, shrubs such as palmetto (*Sabal minor*), and snowbell (*Styrax americana*) are present. Numerous grasses also are present, with the most common being alligatorweed (*Alternanthera philoxeroides*), maidencane (*Panicum hemitomon*), pickerelweed (*Pontederia cordata*), bulltongue (*Sagittaria falcata*), and cattail (*Typha* sp.) (Kosters 1989:99 and 101; Matthews 1983:80-81; Penfound and Hathaway 1938).

The rich flora of an undrained freshwater swamp supports a rich fauna. It provides habitat for large numbers of crawfish, bull frogs (*Rana catesbeiana*), leopard frogs (*Rana* sp.), water snakes (*Nerodia* sp.), ducks, squirrels (*Spermophilus* sp.), alligators (*Alligator mississippiensis*), wading birds, raccoons (*Procyon lotor*), mink (*Mustela vison*), and otter (*Lutra canadensis*). When the freshwater swamp is dry, it is used by swamp rabbits, nutria, turkeys, and white-tailed deer. Within the freshwater swamp, small ponds and perennial streams contain an abundance of freshwater fish (Matthews 1983).

**Climate**

The project area has a humid subtropical climate with prevailing southerly winds. The long summers are hot and humid, and the winters are warm. The winters occasionally are interrupted by incursions of cool air from the north (Matthews 1983:2).

The average annual rainfall in Jefferson Parish is 59 in (150 cm). July, August, and September are the wettest months; average precipitation varies from 15.7 to 16.0 cm (6.19 to 6.32 in). October is the driest month, with an average precipitation of 7.21 cm (2.84 in). The heaviest one-day rainfall during the period

of record was 24.9 cm (9.8 in) at New Orleans on May 31, 1959. Rainfall and hurricane storm surge are the main causes of flooding within the project area. Rainfall-associated flooding results from either near-stationary cold fronts or from hurricanes. Both causes can produce rainfall at a rate of one or more inches per hour (Matthews 1983:2).

Movement of Maritime Tropical Air Masses from the Gulf of Mexico prevents temperatures in the project area from varying greatly. The average maximum annual temperature is 77.4°. In winter, the average maximum annual temperature is 54°. January is the coldest month, with an average maximum temperature of 61.5°. The average normal maximum annual temperature in summer is 90° Fahrenheit. July is the hottest month, with an average maximum temperature of 90.4°. The lowest recorded temperature, which occurred in New Orleans on February 13, 1899, was 6.8°. The highest recorded temperature, which occurred in New Orleans on June 27, 1967, was 98° (Matthews 1983:2; Magill 1990:6).

**Survey Areas**

Various areas were examined for archeological deposits. Area A, along the Harvey Canal, consists of a strip of former freshwater swamp situated adjacent to an artificial channel. Area B, a borrow pit west of Oakville, as well as two previously investigates sites, 16PL40 and 16PL41, are situated in drained freshwater swampland. Area C, the Oakville levee section, consists of a narrow strip that lies on a lower slope of the natural levee of the Mississippi River.

Harvey Canal Survey Area (Area A)

This project area consists of a narrow strip of freshwater swamp. The Harvey Canal is an artificial channel dredged from what was formerly swampland. A comparison of U.S. Geological Survey (USGS) maps (1891, 1950, 1979a) does not indicate the existence of any preexisting natural channel along the course of Harvey Canal.

The southern third Area A is mapped as Barbary muck; the remainder is Sharkey clay. This mapping indicates that the sediments within Area A consist of clastic organic and organic-rich clastics typically deposited within a freshwater swamp (Matthews 1983). Apparently, the project area fails to cross any of the deltaic distributary ridges mapped by Kolb and Van Lopik (1958:Plate 2). The origin of the Harvey Canal and the origin of the sediments from which it has been dredged indicate that the probability of finding in situ archeological deposits is extremely low.

Borrow Pit Survey Area (Area B)

Area B consists of approximately 175 acres occupying the northeastern part of Section 47 and the central portion of Section 74 of T 15 S, R 24 E. It consists entirely of formerly forested swampland that has been drained and cleared to form dry land (Kosters 1989:Figure 2; Matthews 1983; U.S. Geological Survey 1979a). This area is underlain by thin peat or muck covering soft clays and mucky clays (mostly within Section 74) and thick salty peat or muck covering very soft clays and mucky clays (primarily within Section 47) (U.S. Soil Conservation Service 1969). These drained swamp soils are probably equivalent to the Barbary and Kenner-Allemands soils described by Matthews (1983:6).

Concession Bayou, which extends as a bifurcating drainage along the southeastern end of the borrow area, probably is one of several partially-buried deltaic distributaries mapped by Kolb and Van Lopik (1958: Plate 2). One of these deltaic distributary ridges may underlie the borrow pit area. Beneath the swamp and other overbank deposits covering these drainages, thick natural levee deposits may be present

Such deposits have been shown by Britsch and Dunbar (1990:53 and 62) and by Goodwin, Heinrich et al. (1991) to have a high potential for containing buried archeological resources. Weinstein and Gagliano (1985) and Britsch and Dunbar (1990:60) indicate that the earliest archeological deposits that could be present would be those of the Tchefuncte or Marksville cultures.

Oakville Survey Area (Area C)

Area C consists of a short strip of the natural levee of the Mississippi River within Sections 4 and 43 of T 14 S, R 24 E. The project area lies within the Commerce-Sharkey-Mhoon soil association (USSCS 1969) at the distal edge of the natural levee. This soil association consists of poorly-drained clayey soils, e.g. Sharkey soils developed within overbank sediments (Matthews 1983:59). The western portion of the area lies within former freshwater swampland. Since this project area lies away from any known natural channels or deltaic distributary ridges, and since the environmental conditions are low and swampy, in situ archeological deposits are not anticipated in this area.

Site 16PL40

The immediate area of Site 16PL40 consists of formerly-permanent freshwater swamp that has been drained. The adjacent Alternative Route of the Intercoastal Waterway is an artificial channel dredged from the former freshwater swamp. A comparison of USGS 1891, 1950, and 1979a maps reveals no preexisting natural channels along this segment of the Intercoastal Waterway. Apparently, this site lies away from any of the deltaic distributary ridges mapped by Kolb and Van Lopik (1958:Plate 2).

The area of Site 16PL40 has been mapped as drained swampland by the U.S. Soil Conservation Service (1969). Drained swampland is described as having soils with either thin or thick peat and muck, underlain by gray clay. The adjacent part of Jefferson Parish is mapped by Matthews as Westwego Clay (1983). These soils consist of clastic organic and organic-rich clastics deposited beneath the waters of a freshwater swamp and altered by subaerial exposure. Because of the lack of an associated natural channel, and, because of the swampy environment of deposition, the presence of in situ archeological deposits at Site 16PL40 would be unusual for the Mississippi Delta region (Goodwin, Heinrich et al. 1991).

Site 16PL41

The immediate area of Site 16PL41 consists of what formerly was permanent freshwater swampland that has been drained. The site lies about 2 m above the level of the adjacent drained backswamp on the left descending bank of the Alternative Route of the Intercoastal Waterway, on the toe of the artificial levee that borders the Intercoastal Waterway.

The Intercoastal Waterway is an artificial channel dredged from the former freshwater swamp. An examination of USGS 1891, 1950, and 1979a maps reveals no preexisting natural channels along this segment of the Intercoastal Waterway. Apparently, this site lies away from any of the deltaic distributary ridges mapped by Kolb and Van Lopik (1958:Plate 2).

The area consists of soils associated with undrained swamp. However, examination of the U.S. Geological Survey 1979a map and of aerial photography from Matthews (1983) indicates that this area has been converted to drained swampland. The soils of drained swampland consist of either thin or thick peat and muck underlain by gray clay. These soils consist of clastic organic and organic-rich clastics deposited beneath the waters of a freshwater swamp and altered by subaerial exposure (Matthews 1983).

Because of the absence of an associated natural channel, and because of the swampy environment of deposition, the occurrence of in situ archeological deposits at Site 16LA41 would be unusual for the Mississippi Delta region (Goodwin, Heinrich et al. 1991).

## CHAPTER III

## PREVIOUS INVESTIGATIONS

Several archeological investigations have been conducted in the vicinity of the project area, i.e., within the area encompassed by the USGS 7.5' series Bertrandville, Louisiana topographic quadrangle, excluding the Bayou des Familles natural levee. Coastal Environments, Inc. (Gagliano et al. 1975) conducted an archeological survey along the length of the Coastal Louisiana portion of the Gulf Intracoastal Waterway. This survey was performed for the U.S. Army Corps of Engineers, New Orleans District. During survey, two archeological sites were identified in the project area vicinity. GIWW Alternate (16PL40) was described as a 1.5 m (5 ft) long *Ostrea* and *Rangia* shell midden with an unknown prehistoric cultural affiliation; no cultural materials were recovered from the shell midden. Bayou Barataria (16PL41) consisted of a thin oyster and *Rangia* shell midden exposed on the south bank of the Gulf Intracoastal Waterway. As with 16PL40, this site was described as a probable unknown prehistoric extractive locale; no artifacts were recovered from the midden. Gagliano et al. (1975) did not evaluate either site, but recommended that both sites be examined by qualified archeologists. The current investigations included examination of these two sites.

In 1981, Iroquois Research Institute conducted two archeological surveys along the Mississippi River near the project area. Both studies were undertaken for the U.S. Army Corps of Engineers, New Orleans District. The first survey (Iroquois Research Institute 1982) consisted of 14 survey items located from Iberville Parish to southern Plaquemines Parish. Survey items situated along the right descending bank of the river near the current project area included the Concession Levee Enlargement, the Live Oak Levee Enlargement, and the Alliance Revetment; one survey item, the Scarsdale Revetment, is located along the left descending bank. Three historic archeological sites were located within these survey items: 16PL85, 16PL86, and 16PL87. Site 16PL85 (Star Plantation) consisted of foundation remains of a possible nineteenth century structure. Site 16PL86 consisted of a sparse scatter of historic artifacts located during auger testing within the Live Oak item. Sea Train Terminal (16PL87) consisted of the deteriorating remains of a twentieth century railroad wharf. Additional testing was recommended at Site 16PL85 to evaluate its significance. That additional testing, conducted by R. Christopher Goodwin & Associates, Inc. in 1983 (Goodwin, Yakubik, and Gendel 1984), determined that Star Plantation (16PL85) lacked archeological integrity and was not a significant cultural resource.

The second Iroquois Research Institute study (Garson and Poirier 1982) contained three survey items. The two survey items located near the project area included the Scarsdale-Stella Levee Setback and the Linwood Levee Setback and Borrow; both were situated on the left descending bank of the Mississippi River. Two historic standing structures were recorded in these areas: St. Luke's Baptist Church (16PL88) and Palazzo's Grocery Store (16PL89).

Shafer et al. (1984) surveyed the proposed Linwood-Scarsdale Revetment project on the left descending bank of the Mississippi River for the U.S. Army Corps of Engineers, New Orleans District. During their reconnaissance, they located one unspecified "isolated occurrence" and two historic standing structures. While the architectural aspects of the two buildings did not possess the quality of significance, the authors recommended additional research to evaluate the historic context and significance of the structures.

Exnicios and Guevin (1985) surveyed the proposed Bertrandville Levee Setback for the U.S. Army Corps of Engineers. Field survey resulted in identification of two historic archeological sites: Exile Plantation (16PL124) and Bertrandville (16PL129). Exile Plantation consisted of the remains of a nineteenth century plantation big house and associated refuse deposit, as well as an early twentieth century farmhouse and

cistern. Bertrandville consisted of the remains of a one-story double-pen Creole house and adjacent local grocery store. Of these two sites, only the nineteenth century component at Exile Plantation, located outside the proposed impact area, was recommended as potentially eligible for the National Register. No additional testing was recommended within the project area.

R. Christopher Goodwin & Associates, Inc. (Goodwin, Hinks et al. 1989) surveyed the V-levee portion of the Westbank Hurricane Protection Project, located a short distance west of the current project area. During survey, two archeological sites (16JE217 and 16JE218) were located on the Bayou des Familles natural levee. In addition, three loci of modern refuse were observed in the drained backswamp between the Des Familles and Bayou Barataria natural levees. Additional testing was recommended at Site 16JE218, an intact prehistoric shell midden; subsequent project design modifications resulted in site avoidance.

Five additional archeological studies have been conducted within the project area vicinity. Shenkel (1977) surveyed the Scarsdale Revetment along the left descending bank of the Mississippi River. Flayharty et al. (1983) investigated the Stella-Belair Levee Enlargement and the batture portions of the Bertrandville Setback. Davis (1977) examined the planned Amax Copper Processing Facility tract prior to its construction. Beavers (1978) surveyed a small tract on the U.S.C.G. Alvin Callender Field prior to erection of a building. Finally, Beavers (1981) conducted a reconnaissance of eight tracts of land in Westbank, Jefferson Parish during the planning stages for several sewage treatment facilities. One of the locations examined during his reconnaissance included the northern half of Area A, which was surveyed during these investigations. The earlier investigations did not record any archeological sites or historic standing structures.

Seven archeological sites have been recorded within the vicinity of the project area (Table 1). These include two modern shell deposits (16PL40 and 16PL41) recorded by Coastal Environments, Inc., and tested during the current investigations, and five historic sites. The historic sites include the early twentieth century Palazzo's Grocery Store (16PL89), which was razed subsequent to recordation. Three of the historic sites are associated with nineteenth and early twentieth century plantations: Idlewild Plantation site (16PL115), Greenwood Plantation (16PL116), and a portion of Exile Plantation (16PL124); none of these resources has been evaluated. Finally, a portion of Exile Plantation includes a twentieth century farmhouse and cistern, while Bertrandville (16PL129) consists of the remains of a house and local grocery store. These resources do not possess the quality of significance as defined by the National Register criteria [36 cfr 60.4 (a-d)].

Table 1. Previously recorded archeological sites near the project area[1].

| NUMBER | NAME | SITE DESCRIPTION | CULTURAL AFFILIATION | TESTING | NRHP ELIGIBILITY |
|---|---|---|---|---|---|
| 16PL40 | GIWW Alternate | Deposit of shell mixed with riprap, on the bank of the Gulf Intracoastal Waterway (Alternate Route) | Mid twentieth century | Reconnaissance; surface collection; auger testing | Not eligible; 16PL40 consists of modern bankline erosion control shell; it should not be considered an archeological resource. |
| 16PL41 | Bayou Barataria | Deposit of shell mixed with riprap, on the bank of the Gulf Intracoastal Waterway (Alternate Route) | Mid twentieth century | Reconnaissance; surface collection; auger testing | Not eligible; 16PL41 consists of modern bankline erosion control shell; it should not be considered an archeological resource. |
| 16PL89 | Palazzo's Grocery Store | Early twentieth century frame construction grocery store and associated buildings. The store closed in 1958. The building purportedly was destroyed in the early 1980s prior to a setback of the levee. | The grocery store was built ca. 1910s - 1920s | Reconnaissance; recordation of the grocery store structure | Not eligible |
| 16PL115 | Idlewild Plantation Site | Remains associated with a sugar and rice plantation located adjacent to the Mississippi River | Nineteenth and early twentieth centuries | Unknown | Unknown; the site may have been destroyed by riverine cutting and bankline erosion. |
| 16PL116 | Greenwood Plantation Site | Remains associated with a sugar and rice plantation located adjacent to the Mississippi River | Nineteenth and early twentieth centuries | Unknown | Unknown; the site has been damaged by riverine cutting. |

Table 1, continued

| NUMBER | NAME | SITE DESCRIPTION | CULTURAL AFFILIATION | TESTING | NRHP ELIGIBILITY |
|---|---|---|---|---|---|
| 16PL124 | Exile Plantation | Remains of a plantation big house and associated refuse deposit. An early twentieth century farmhouse and cistern also is located within the site. | Nineteenth and twentieth centuries | Reconnaissance; probing; shovel testing | The plantation big house and associated refuse deposit have not been evaluated; the farmhouse and cistern are not eligible. |
| 16PL129 | Bertrandville | Remains of a one-story double-pen Creole house and adjacent local grocery store. Observed features included brick foundation pilings, a cistern, and a walkway. | Postbellum and twentieth centuries | Reconnaissance; probing; shovel testing | Not eligible |

[1]Data obtained from the State Site Files, Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism, Baton Rouge.

# CHAPTER IV

# PREHISTORIC SETTING

## Introduction

*Louisiana's Comprehensive Archaeological Plan* (Smith et al. 1983) divides the state into six management units. The project area is situated at the north end of Plaquemines Parish and at the northeastern end of Westbank Jefferson Parish, within Management Unit V. Six cultural units form the prehistoric sequence of this management unit: Poverty Point, Tchefuncte, Marksville, Troyville-Coles Creek, Plaquemine, and Mississippian. While some Poverty Point sites are recorded in the vicinity of Lake Pontchartrain, there are no recorded Poverty Point sites in the survey area. This lack of Poverty Point sites reflects the recency of the project area landform. This chapter discusses Tchefuncte through Mississippian cultural units, as well as the Historic Contact period. Information about earlier occupations within Louisiana is available elsewhere (Neuman 1984; Smith et al. 1983; Webb et al. 1971; Muller 1983; Neitzel and Perry 1978; Jenkins 1974; and, Walthall 1980).

## Tchefuncte Culture (500 B.C. - A.D. 100)

The Tchefuncte culture (Tchula period) is characterized by the first widespread use of pottery, albeit within the context of a Late Archaic-like hunting and gathering tradition, and with a Late Archaic-like tool inventory (Neuman 1984; Smith et al. 1983). During this period, the expansive intra-regional trade networks that flourished during the preceding Poverty Point culture apparently collapsed. However, population increased and inter-regional relationships intensified

The Tchefuncte culture was identified at the Tchefuncte Site (16ST1) on the north shore of Lake Pontchartrain in St. Tammany Parish (Ford and Quimby 1945; Weinstein and Rivet 1978). Most Tchefuncte sites are classified as coastal middens, or as inland villages or hamlets. Settlement usually occurred along slack-water environments of slow, secondary streams that drained bottomlands, floodplain lakes, and littoral zones (Neuman 1984; Smith et al. 1983). While the Tchefuncte culture apparently was centered in Louisiana, Tchefuncte-like sites have been located from the Mobile Bay area of Alabama westward to eastern Texas, and as far north as southeastern Missouri (Smith et al. 1983).

Ceramics first appeared in the Lower Mississippi Valley during the early Tchula period (Ford and Quimby 1945). No local antecedents have been found in Louisiana; Tchefuncte ceramics may have developed out of the Orange and Stalling Island complexes of the Georgia-Florida coast (Ford 1969). Tchefuncte ceramics generally have a soft and chalky paste tempered with sand or clay (Phillips 1970). Vessel forms consist of bowls, cylindrical and shouldered jars, and globular pots. Some Tchefuncte vessels include feet or other types of vessel supports. Many vessels are plain; some are decorated with punctations, incisions, simple stamping, drag and jab, and rocker stamping. Punctated types appear to have been more popular than stamped types. Parallel and zoned banding, stippled triangles, chevrons, and nested diamonds were popular motifs. Red ochre also was used to decorate some vessels (Speaker et al. 1986; Smith et al. 1983; Phillips 1970). Common soft-paste Tchefuncte wares include Tchefuncte Plain, Tchefuncte Incised, Tchefuncte Stamped, Lake Borgne Incised, Orleans Punctated, and Tammany Punctated. Alexander Incised and Alexander Pinched are two common types of sandy wares (Toth 1988).

For the most part, the stone and bone tool subassemblages remained nearly unchanged from the preceding Poverty Point culture. Projectile points characteristic of Tchefuncte culture include Gary, Ellis, Delhi, Motley, Pontchartrain, Macon, and Epps. Stone tools included scrapers, boatstones, bar weights,

grooved plummets, chipped celts, and sandstone saws; bone tools included awls, fish hooks, socketed antler points, and ornaments. In addition, some tools such as chisels, containers, punches, and ornamental artifacts were manufactured from shell (Ford and Quimby 1945; Smith et al. 1983).

Tchefuncte burials and artifacts suggest egalitarian social organization. The population probably was at the band level, with as many as 25 to 50 individuals per band. The widespread distribution of similar pottery types and motifs suggests a patrilocal residence with exogamous band marriage (Speaker et al. 1986).

Examination of faunal and floral remains from Morton Shell Mound (16IB3), a coastal Tchefuncte shell midden, suggests that some coastal sites were occupied on a seasonal basis, usually during the summer and autumn, and possibly during the spring (Byrd 1976). The preponderance of freshwater fish remains at sites such as Big Oak Island (16OR6) and Little Oak Island (16OR7) indicates a reliance on aquatic resources (Shenkel and Gibson 1974). Recognized Tchefuncte phases in the region include the Pontchartrain phase, which is centered around Lake Pontchartrain, and the Beau Mire phase identified by Weinstein and Rivet (1978) west of Gonzales.

**Marksville Culture (A.D. 100 - 400)**

Marksville culture, named for the Marksville site (16AV1) in Avoyelles Parish, often is viewed as a localized hybridization of the elaborate midwestern Hopewellian culture. The Marksville culture subsistence strategy probably emphasized hunting, fishing, and gathering, much like the preceding Tchefuncte culture. There is some evidence that limited cultivation of maize also occurred during the period (Walthall 1980). Maize and previously domesticated plant varieties, particularly pioneer annuals and other tropical cultigens such as squash and gourd, supplemented intensive riverine-oriented subsistence pursuits (Struever and Vickery 1973).

The complex geometric earthworks, the conical burial mounds for the elite, and the distinctive mortuary ritual system that characterize Marksville imply that the culture exhibited a more highly organized social structure than the Tchefuncte culture. Items manufactured primarily for inclusion in burials included elaborately decorated ceramics, pearl beads, carved stone effigy pipes, copper ear spools, copper tubes, galena beads, and carved coal objects. Towards the end of the Marksville period, Hopewellian influences declined, and mortuary practices became less complex (Smith et al. 1983; Speaker et al. 1986).

Marksville and Hopewell cultures shared a variety of ceramic decorative motifs, including cross-hatching, U-shaped incised lines, zoned dentate rocker stamping, cord-wrapped stick impressions, stylized birds, and bisected circles (Smith et al. 1983). Typical Marksville artifact assemblages include chipped stone knives, scrapers, celts, drills, and medium to large-stemmed projectile points, especially Gary points. Groundstone atlatl weights and plummets, bone awls and fishhooks, and baked clay balls also have been recovered from Marksville sites. The variety of exotic artifacts commonly found at Marksville sites suggests extensive trade networks and possibly a ranked, non-egalitarian society. Some commonly-found exotic items include imported copper earspools, panpipes, platform pipes, figurines, and beads (Smith et al. 1983; Neuman 1984). The utilitarian material culture remained essentially unchanged, reflecting an overall continuity in subsistence systems (Smith et al. 1983).

**Troyville-Coles Creek Culture (A.D. 400 - 1100)**

Troyville culture, called Baytown elsewhere, was named after the mostly-destroyed Troyville mound group (16CT7) near Jonesville. Troyville represents a transitional culture that culminated in Coles Creek culture around A.D. 700 (Smith et al. 1983). Two technological advances that date from the early part of

the period radically altered prehistoric lifeways: subsistence agriculture, and the bow and arrow. During Troyville, maize, bean, and squash agriculture became widespread, leading to more complex settlement and subsistence patterns and social organization.

The Coles Creek culture emerged from Troyville around A.D. 700. Coles Creek sites apparently are larger, more numerous, and more complex than those of their predecessors. The platform and ceremonial mound construction, as well as the complex layout of some Coles Creek sites imply the emergence of a chiefdom-like society, and a complex social structure (Muller 1983; Smith et al. 1983). A centralized authority and sizable labor force must have existed to build, maintain, and utilize these mounds. The centralized authority probably was of a special religious class; the general population occupied the region surrounding the large ceremonial centers (Smith et al. 1983; Neuman 1984).

Several ceramic types utilized during Troyville continued in use during the Coles Creek culture. The Churupa Punctate and Mazique Incised designs, both of which are characteristic of the Troyville culture, were used by both Coles Creek and Plaquemine pottery makers (McIntire 1958). Similarly, French Fork Incised, which formed the basis for many Troyville classifications, continued to be used well into the Coles Creek period (Phillips 1970).

Coles Creek peoples developed a new ceramic complex that included larger vessels and a wider range of decorative motifs, usually placed on the upper half of the vessel (Neuman 1984). Coles Creek pottery is characterized by Coles Creek Incised, Beldeau Incised, Mazique Incised, and Pontchartrain Check Stamped. The distinctive Coles Creek Incised contains a series of incised lines near the rim of the vessel, often accompanied underneath by a row of triangular impressions (Smith et al. 1983). Some ceramic motifs suggest outside cultural influences. For example, zoned rocker stamping, incised lines, and curvilinear motifs are representative of decorative styles associated with the Florida Gulf Coast; cord marking and red filming were popular traits commonly used in the central Mississippi area (Smith et al. 1983).

Coles Creek sites primarily were situated along stream systems where soil composition and fertility were favorable for agriculture. Natural levees, particularly those situated along old cutoffs and inactive channels, appear to have been the most desirable locations (Neuman 1984).

Most large Coles Creek sites contain one or more earthen mounds. These mounds typically are larger and exhibit more building episodes than earlier Marksville burial mounds. While burials occasionally are recovered from Coles Creek mounds, the primary function of these mounds appears to have been ceremonial. At some Coles Creek sites, mounds are connected by low, narrow causeways; plazas are associated with some multiple mound sites.

Small Coles Creek sites consist mostly of hamlets and shell middens that normally do not contain earthen mounds. Coles Creek shell middens commonly occur in the coastal region on higher portions of natural levees (Springer 1974).

**Plaquemine Culture (A.D. 1100 - 1600)**

The Plaquemine culture represents an indigenous development that emerged from Coles Creek. The culture was defined at the type site, Medora (16WBR1), in West Baton Rouge Parish (Quimby 1951). Plaquemine peoples continued the settlement patterns, economic organization, and religious practices established during the Coles Creek period; however, agriculture, sociopolitical structure, and religious ceremonialism intensified. Plaquemine sites are characterized by ceremonial centers with multiple mounds surrounding a central plaza, and dispersed villages and hamlets (Smith et al. 1983).

While derived from the Coles Creek tradition, Plaquemine pottery displays distinctive features that mark the emergence of a separate culture. Even though incising and punctating of pottery continued through the period, brushing emerged as the dominant decorative technique. Some vessels also were engraved after firing (Smith et al. 1983). Plaquemine Brushed appears to have been the most widespread ceramic type. Other types include Harrison Bayou Incised, Manchac Incised, Mazique Incised, Leland Incised, Hardy Incised, L'Eau Noire Incised, and Evansville Punctate. Decorated wares and plain wares (e.g., Anna Burnished Plain and Addis Plain) were well-made. Tempering, paste, and vessel shape are similar to earlier ceramic types.

**Mississippian Culture (A.D. 1100 - 1700)**

Late in the prehistoric period, the indigenous Plaquemine culture was influenced by Mississippian culture. Mississippian culture emerged in the central Mississippi Valley, near St. Louis, Missouri, and radiated southward to southern Louisiana, eastward into central North Carolina, and northward into the Great Lakes region (Haag 1971). The majority of Mississippian sites in Louisiana are located along the coast and in the northeastern corner of the state. Mississippian culture continued to influence lifeways in southern Louisiana into the early historic period.

Mississippian subsistence was based on cultivation of maize, beans, squash, and pumpkins; gathering of local plants, nuts, and seeds; and, fishing and hunting of local faunal species. Major Mississippian sites were located in major river valleys, on the sandy and light loam soils of fertile bottomlands. A typical Mississippian settlement consisted of an orderly arrangement of houses surrounding a truncated pyramidal mound. Mounds served as platforms for temples or as houses for the elite. The complexity of larger Mississippian villages implies a highly organized and complex social and political system.

Mississippian pottery is characterized by shell tempering, an innovation that enabled potters to create larger and more complex vessels (Smith et al. 1983). These vessels included globular jars, plates, and bottles, as well as loop- and strap-handled pots. Decorative techniques include engraving, negative painting, and incising; modelled animal heads and anthropomorphic images also adorned some ceramic vessels. Other Mississippian artifacts include chipped and ground stone tools; shell items such as hairpins, beads, and gorgets; and, mica and copper items.

**Historic Contact**

DeSoto's expedition (1541 - 1542) represents the first recorded European contact with the Indians of Louisiana. However, little substantive data about Indian lifeways was recorded during the expedition (Kniffen et al. 1987). In 1682, Rene Robert Cavelier (Sieur de La Salle) recorded tribal identities of Louisiana Indians during his explorations of the Mississippi River Valley from Canada to Louisiana. In 1699, Pierre Le Moyne (Sieur d'Iberville), explored the Mississippi River; the following year, he established a fort along the river. The Washa were first encountered by Iberville on Bayou Lafourche. The Chawasha (Chaouacha), identified as a small group living in the area, apparently took part in a raid on an English vessel docked at English Turn in 1699 (Goodwin, Jeter et al. 1986). By the time Charlevoix passed in 1722, the Chawasha lived on the east bank of the Mississippi, and farther downriver.

When Europeans arrived in Louisiana, the local Indians were characterized as semi-sedentary agriculturalists who lived in is small villages, and who continued to hunt, fish, and gather floral resources. European colonization rapidly altered their culture. Disease killed large numbers of Indians. Some tribes relocated in other states. Some remnants of tribes joined together to form assimilated tribes (Smith et al. 1983). However, by the mid eighteenth century, no Indian tribes remained in the project area vicinity.

# CHAPTER V

# HISTORIC OVERVIEW

## Introduction

The three project areas are located in Jefferson and Plaquemines Parishes, west of the Mississippi River, between the communities of Harvey and Oakville, Louisiana. Natural and manmade waterways were of great importance to the economic development of this region, from plantation life to modern industry. Therefore, this chapter emphasizes settlement and land use along the Mississippi River, Bayou Barataria (or Bayou Ouacha, as it once was known), and the Harvey Canal, as well as the lesser canals connecting the network of navigational waterways below New Orleans. This chapter also includes land tenure histories of all three project areas.

## Early Exploration

Spain was the first European country to claim this region. Panfilo de Narvaez led an expedition of 600 men from Spain in 1527 to take possession of Florida and its adjacent lands. One of the five survivors of this disastrous exploration, Alvar Nunez Cabeza de Vaca, wrote an account of the expedition, which included a description of the mouth of the Mississippi River and the southern Louisiana coastline. De Narvaez was followed a few years later by Hernando de Soto, who reached the Mississippi River near the present Tennessee/Mississippi border. After De Soto's death in 1542, his men, led by Luis de Moscoso de Alvarado, continued their exploration, eventually returning to the Mississippi River, which they traveled down to the Gulf of Mexico, on the way to their final destination at the Spanish settlements in Mexico (Davis 1970:27-28).

In 1682, René Robert Cavelier, Sieur de la Salle, led a French expedition down the Mississippi River, reaching its mouth on April 6. They camped approximately three leagues away and explored the river outlets for the next two days. On April 9, La Salle claimed "the country of Louisiana" in the name of Louis, King of France (Davis 1970:29).

## Colonial Period

### French Era

Colonization efforts did not begin in earnest until 1698, when Pierre le Moyne, Sieur d'Iberville, set sail from France with four ships and about 200 settlers. In March of 1699, Iberville located the mouth of the Mississippi, but established his base of operations, Fort Maurepas, to the east at Biloxi Bay. Iberville returned to France for additional supplies and colonists, leaving his brother, Jean Baptiste le Moyne, Sieur de Bienville, in charge of explorations along the Mississippi. Returning downriver from an exploratory trip in September of 1699, Bienville met a British ship commanded by Captain Lewis Banks. Banks had been sent to explore the lower Mississippi River and to choose a site for British settlement. Banks sailed about 25 leagues upriver (approximately 12 miles below present-day New Orleans) before being challenged by Bienville, who convinced the British captain that he led an advance party for a French fleet heading downriver. Banks sailed back down the Mississippi, and since then, that bend in the river has been known as *Detour des Anglais,* or English Turn. When Iberville learned of the incident, he ordered the immediate construction of a fort on the first elevated, solid ground above the mouth of the river. A site was chosen about 18 leagues, or 54 miles, upriver on the east bank of the Mississippi, near the present location of the

town of Phoenix in Plaquemines Parish. The fortifications were completed in 1700, making Fort Mississippi, more commonly known as Fort de la Boulaye, the first European settlement in the lower Mississippi Valley. The fort was manned officially until 1707, although a few men remained at the settlement until 1715. With the founding of New Orleans, traditionally dated February 1718, and the subsequent granting of concessions along both sides of the river above and below New Orleans, Fort de la Boulaye was abandoned, and then destroyed by a hurricane in 1722 (Davis 1970:39-42,55-56; Meyer 1981:32-35,94-95).

Between 1718 and 1732, agricultural concessions were granted along the Mississippi River in the area that would become Jefferson and Plaquemines Parishes; however, the study areas were not included in the initial grants. A 1723 map of the Mississippi River concessions (*Carte Particuliere Du Flevue* [sic] *St. Louis*) depicted those areas as vacant lands (Goodwin, et al. 1990:17-18). In addition, the parish courthouse records and township surveys reflected later acquisitions of those properties.

Spanish Era

France ceded the Isle of Orleans and Louisiana west of the Mississippi River to Spain on November 3, 1762, in the secret Treaty of Fontainebleau. However, it wasn't until 1769 that Governor Alejandro O'Reilly actually annulled the French colonial government and established the Spanish province of Louisiana (Davis 1970:70,105). In 1789, during the Spanish period, the area containing the borrow site above the Hero Canal in Plaquemines Parish was granted by the Spanish government to Francisco Bouligny.

In order to clear their lands for cultivation, early westbank settlers had to remove the cypress stands covering the area, and then drain the property. The simplest solution was to use slave labor to dig transport/drainage canals from the Mississippi River inland. It wasn't long before sawmills and brickyards were built along the canals. In addition to these legitimate activities, smuggling operations became common along the network of canals connecting the Mississippi with the Barataria region (Goodwin et al. 1990:19).

According to family tradition, the original Destrehan Canal (upriver from the present Harvey Canal and above the project item) was constructed in 1722 by Jean Baptiste Destrehan de Beaupre for land drainage and as access to the southern swamplands and the Gulf of Mexico. As canal traffic increased, Destrehan hired German immigrants to enlarge the canal, which was completed in 1739. Destrehan settled these laborers and their families on land that became the community of New Mechanicham, now known as Gretna, in Jefferson Parish (D'Oliveira, et al. 1983:16-17). However, other sources dispute this information, stating that the Destrehan family did not acquire land in Jefferson Parish until the early nineteenth century, and that the plan for Mechanick's Village, or Mechanikham, was ordered by Nicolas [sic] Noel Destrehan in 1836 (Swanson 1975:89,116).

**Antebellum Period**

The Harvey Canal project vicinity did not become part of the Destrehan property until 1835, when Nicholas Noel Destrehan acquired the land south of and adjacent to the family property. Zimpel's map of 1834 depicted the original Destrehan Canal, indicating that Destrehan probably did not begin the downriver canal until after his 1835 purchase of the tract in Section 56, which would connect his Mississippi River property (formerly his brother-in-law Stephen Henderson's Section 44) with Bayou Ouacha, or Barataria (Figure 4). Destrehan's daughter, Louisa Destrehan Harvey, purchased the canal and property through a series of succession sales of her father's estate in 1848. By this time, the new canal was described as "a navigable Canal about five miles long commencing at about two hundred yards from the Mississippi & falling into . . . Bayou Ouachas" (COB 16, Folio 165, Jefferson Parish Clerk of Court).


Figure 4. [1834] Excerpt from Charles Zimpel's *Topographical Map of New Orleans and Its Vicinity*, showing the Destrehan and Foucher properties. Map Division, Library of Congress.

Nicholas Noel Destrehan was a prominent sugar planter in Jefferson Parish, as were his contemporaries, Jean Baptiste Degruy and the Guerin family, owners of the Plaquemines Parish project areas during the early nineteenth century. By 1846, however, Destrehan had turned from sugar cultivation to other industries, including brickmaking. After the Harvey acquisition of the Destrehan canal and properties, the area along the Mississippi was further industrialized; it was subdivided during the late 1850s (Furman 1904:54; Goodwin, et al. 1990:25,28).

Further down the canal, away from the river, the Destrehan/Harvey property probably was left undeveloped, although it was subdivided into large tracts. To the south was the Degruy property in Plaquemines Parish, which was still cypress swamp subject to tidal overflow in 1835. By the middle of the Civil War, new owners of this Plaquemines land had taken advantage of the timber resources, building a steam-operated sawmill on the property. Lumber and trapping were very important to the economy of this marshy, inland region. The swamplands provided the natural resources, while the bayou and canal network supplied transportation corridors for timber and furs to New Orleans, where they were processed and shipped.

**The Civil War**

Jefferson and Plaquemines Parishes suffered more economic than physical devastation from the Civil War. The early surrender of New Orleans to Federal troops in April of 1862 prevented military action in the surrounding area; however, west bank defense works were strategically important, initially to the Confederates, and then to the occupying Union forces. These fortifications lay outside of the project areas under consideration here (Goodwin et al. 1985:85,87; Goodwin et al. 1990:31,36).

The riverfront sugar plantations were particularly affected by wartime conditions. Plantations belonging to Confederate sympathizers were confiscated, and many plantations were looted by both sides. Slaves deserted their work for protection with the Union army, leaving plantations vulnerable to ruin from neglect and floods. In 1862, the editor of the New Orleans *Daily True Delta* stated, "The difficulty of the Louisiana sugar planter will not be found in the imposition of a tax upon his product, but in depriving him of his labor . . ." (Roland 1957:68-73,101).

**Postbellum Period**

Of the three project areas, only the Plaquemines property near Oakville was designated a sugar plantation, New Hope, during the Civil War. By the 1880s, New Hope Plantation was known as Cedar Grove, "formerly cultivated as a sugar plantation," and it had been subdivided among several owners. The fate of New Hope/Cedar Grove Plantation reflected what befell many sugar plantations in southeastern Louisiana after the Civil War. Ownership became "corporate" rather than one-family; property was subdivided for development or for smaller farms; and, the agricultural emphasis shifted away from the one-crop sugar base.

The lumber industry became increasingly important to the area's economy after the Civil War. Thomas Friend and other owners operated a steam sawmill in the project vicinity above the Hero Canal in Plaquemines Parish from 1863 into the postwar years. The success of this venture probably was overshadowed by the establishment in 1889 of the Louisiana Cypress Company, downriver from the Harvey Canal. The Louisiana Cypress Company was rated the world's largest cypress mill in 1897, and it ranked prominently in the lumber industry until closing in 1929 following depletion of the Barataria swamp forest (Goodwin et al. 1990:36-37).

Railroads played an important role in industrial growth along the Mississippi west bank. The New Orleans, Fort Jackson and Grand Isle Railroad, parallel to the west bank of the Mississippi River, was

constructed in 1889 by Henry Clay Warmoth, former governor of Louisiana (1868-1872). Warmoth owned several properties below New Orleans (including the Oakville levee project area from 1898 to 1911), and he was said to have built the railroad because his wife disliked traveling by steamboat. That line became the New Orleans and Lower Coast Railroad, which became part of the Missouri Pacific Railroad system (Meyer 1981:62,79-80). Intersecting the Harvey Canal to the north was the New Orleans, Opelousas, and Great Western Railroad, first established in the 1850s, which later became a link in the New Orleans and Texas Railroad and Steamship line, and which eventually was absorbed by the Southern Pacific Railroad Company (Goodwin, et al. 1985:294-297).

Also important to economic growth in the area was the Harvey Canal, which was enlarged and improved as the west bank of the Mississippi River became more industrialized. In 1854, the Louisiana Legislature authorized construction of a lock system to connect the canal with the Mississippi River; however, that project was not successfully completed by the Harvey family until 1907. Until the locks were constructed, boats had to be hauled over the levee by mules on to a submerged railway and then towed to the river (Goodwin, et al. 1990:37; D'Oliveira, et al. 1983:98; Swanson 1975:90).

The Harvey Canal also was used to boost Jefferson Parish's brief postbellum tourist industry. In the late 1860s, Joseph Hale Harvey and Benjamin Marhot converted Grand Isle's former plantation structures into the island's first resort, the Grand Isle Hotel. Harvey advertised a steamer excursion from the river wharf at the Harvey Canal, through Barataria (Ouacha) Bayou, to Grand Isle - all for a grand total of $7.50 per passenger for steamer fare and weekend room and board. Other hotels were built, and Grand Isle soon became a summer escape for New Orleans families seeking relief from the city's heat and disease. This "grand resort" period ended with the devastating hurricane of 1893, which sent a 30 foot tidal wave over Grand Isle, killing over half the island residents and destroying all island structures (Goodwin, et al. 1985:99-101,175; D'Oliveira 1983:99).

**Twentieth Century**

Industrialization has continued along the Harvey Canal. The town of Harvey was established at the Mississippi River end of the canal after the Civil War. The riverfront community developed as brickyards, lumber mills, and other industries were established along the river and canal. In 1924, the Harvey family, through the Harvey Canal Land and Improvement Company, sold the canal to the federal government. The Harvey Canal became a link in the Intracoastal Waterway System, and was enlarged and improved in the 1930s (Goodwin, et al. 1990:31,37; Swanson 1975:90-91).

The project item along the Harvey Canal does not appear to have been developed. The area immediately adjacent to the canal probably has existed as a maintenance right-of-way, with restricted land use in anticipation of future canal development. Any other activity in the project item probably has been limited to fishing and trapping.

The borrow site above the Hero Canal also is considered fishing and trapping territory. This swampy terrain is well-suited for those activities, and no other enterprise has been recorded in the area since the mid-nineteenth century steam sawmill. Any activity along the Hero Canal no doubt has paralleled twentieth century development of the connecting Harvey Canal/Intracoastal Waterway.

The Oakville project item appears to be a buffer-zone between the community of Oakville and the inland swamplands. Any twentieth century activity in the area probably has been limited to development of the Hero Canal and company ownership of the Badalamenti property. Land use would have been affected by the community development of Oakville, as well.

## Land Title History

The following discussion reviews the land tenure history of the three survey areas and assesses the probability for cultural resources in each area.

### Navigation Structure and Pumping Station, Harvey Canal

This survey lies in Section 56, T14S, R24E, along the Harvey Canal in Jefferson Parish, Louisiana. A public survey of land during the early nineteenth century indicated Antoine Foucher as claimant in 1816 to this section, which occupied a considerable acreage within a bend of the Bayou Barataria (or Ouacha River) (Figure 5). Figure 6 schematically portrays land ownership for the project item, from Foucher's claim through the early twentieth century.

According to an act filed in May of 1835, the sheriff of Jefferson Parish seized and sold the extensive properties of Antoine Foucher, Jr., including Section 56, for non-payment of taxes. At the sale, Nicholas Noel Destrehan, a planter and entrepreneur, acquired the project item as part of a large tract he purchased on the west bank of the Mississippi (COB 4, Folios 352, 355, Jefferson Parish Clerk of Court).

The scion of a leading Creole family of Louisiana, Destrehan began developing, on Foucher's former property, a canal to connect Bayou Barataria with the Mississippi River. This canal was constructed along the property line between Destrehan's tract and Foucher's tract, designated on Zimpel's 1834 map (Figure 4). When Destrehan died in 1848, both the canal and the project item were included in his succession. A survey prepared by Benjamin Buisson in October 1848 provided a point of reference. Although Buisson's map has been removed from the Jefferson Parish records, his survey indicated that Lot 6, extending from the Mississippi River to Bayou Barataria, included Destrehan's canal. As a document of 1848 explained:

> There is on this tract [lot 6] a navigable Canal about five miles long commencing at about two hundred yards from the Mississippi & falling into ... Bayou Ouachas [Bayou Barataria] (COB 16, Folio 165, Jefferson Parish Clerk of Court).

According to the same document, Lot 12, which included the project item, had an irregular form and contained about 1,000 arpents of land. The lot had the following boundaries: to the north, Lots 7 through 11; to the south, a line perpendicular to the canal; to the east, Lot 6 (containing the canal); and, to the west, a line parallel to the canal, fronting on the Barataria Road (COB 16, Folio 165, Jefferson Parish Clerk of Court).

In a series of purchases, Nicholas Noel Destrehan's daughter, Louisa Destrehan Harvey, acquired the canal and most of the property surrounding it from her father's estate (COB 16, Folios 165, 168; COB 17, Folios 103, 104, 105, Jefferson Parish Clerk of Court). Her husband, Joseph Hale Harvey, further developed the canal; the waterway has been known as the Harvey (rather than the Destrehan Canal) ever since. However, in 1849, Mrs. Harvey sold some of the land adjoining the canal, including Lot 12, to John McDonogh, probably the preeminent entrepreneur in antebellum New Orleans (COB 17, Folio 258, Jefferson Parish Clerk of Court).

An elderly and eccentric bachelor, McDonogh died in 1850. As philanthropic in death as he was miserly in life, he bequeathed his considerable estate to his native city of Baltimore and to his adopted city of New Orleans for the aid of orphans and for the promotion of public schools. An enormous legal tangle ensued. Nevertheless, in 1860 the city of Baltimore conveyed, in an almost completely illegible document,

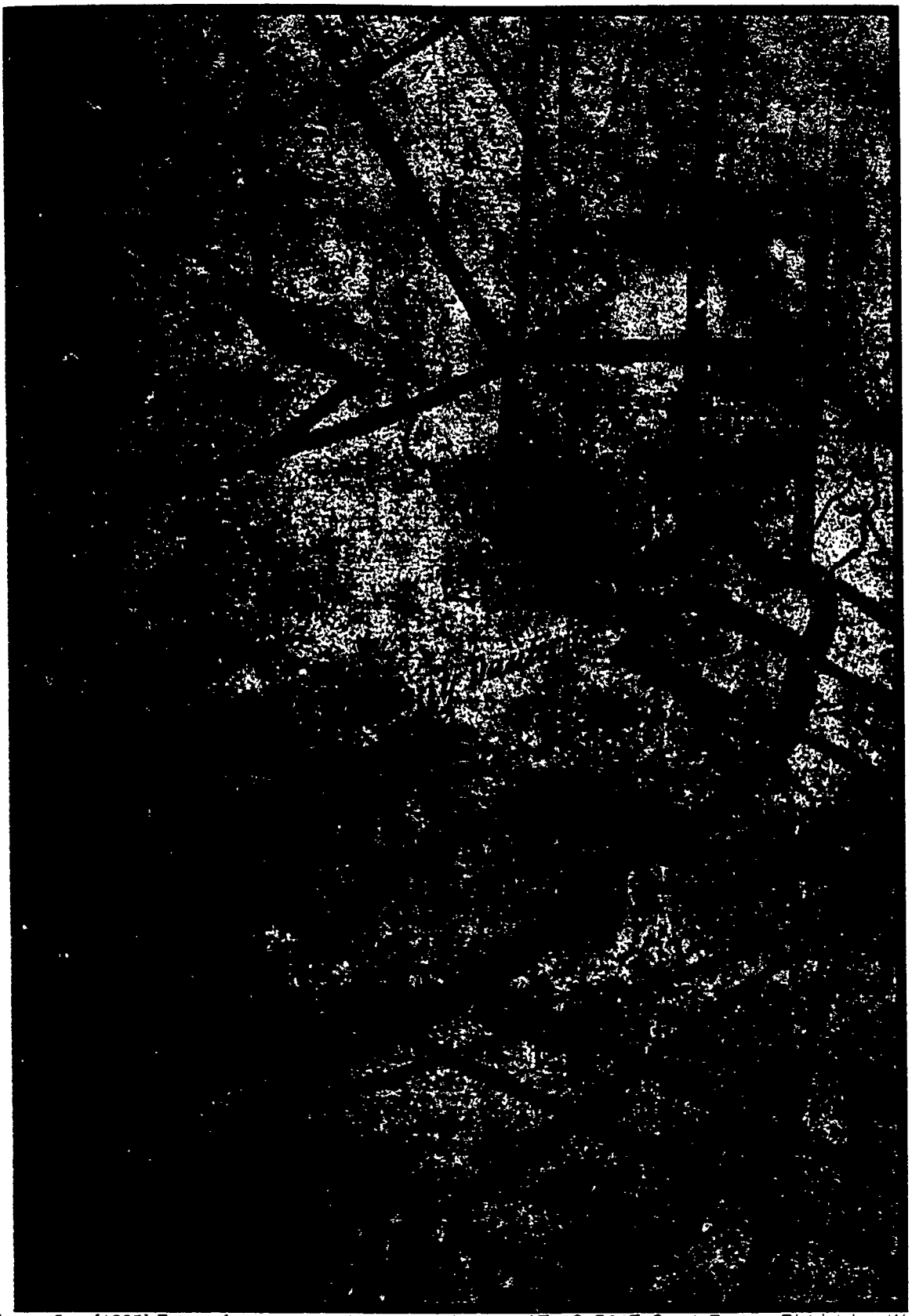


Figure 5. [1885] Extract from approved township diagram of T14S, R24E, South Eastern District, La., West of the Mississippi River, showing Antoine Foucher's claim to Section 56. Township Plat Book 9 Map Room, Clerk of Court's Archives, Jefferson Parish.

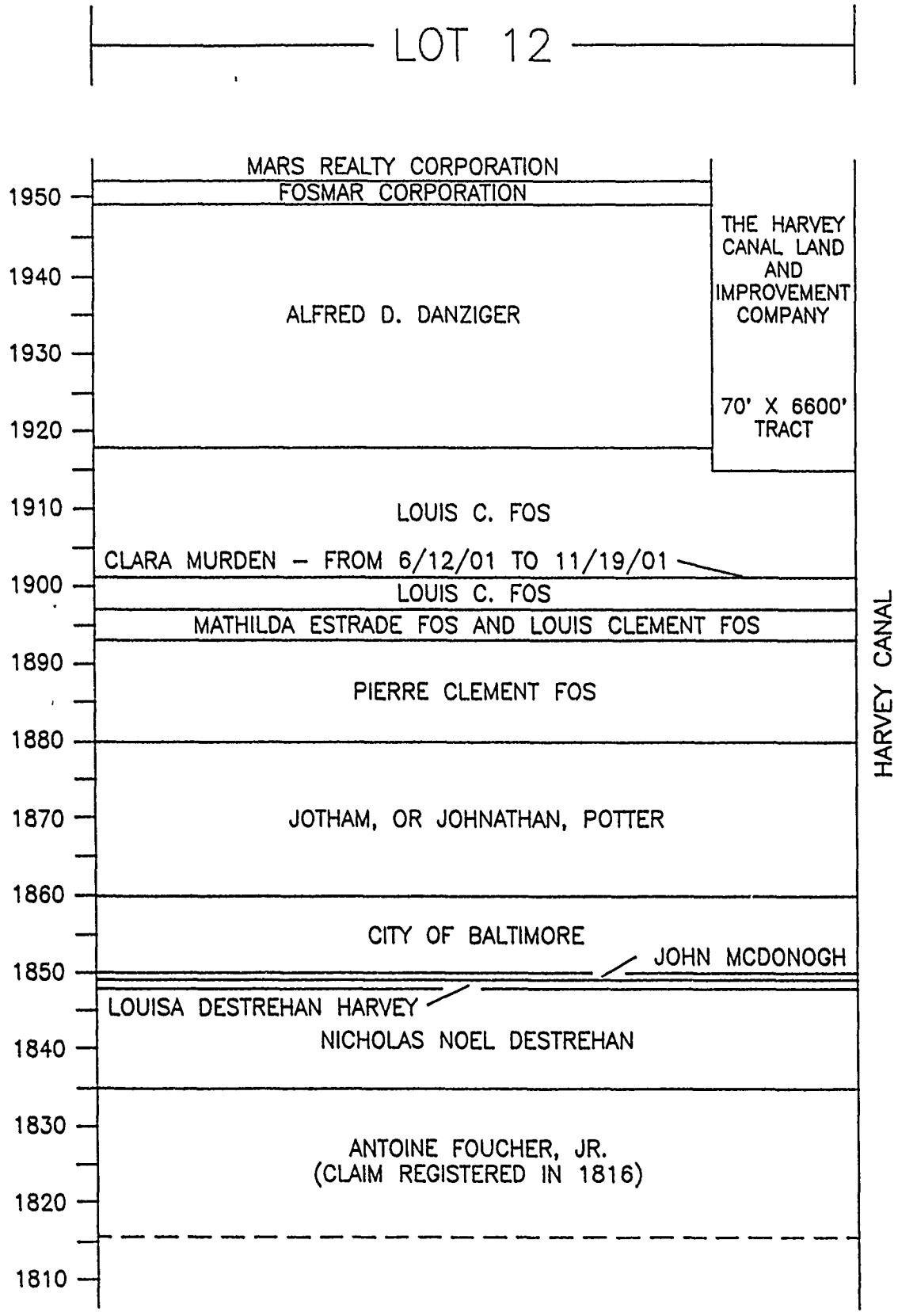



Figure 6. Schematic representation of land tenure for the Harvey Canal study area, Jefferscn Parish, from the early nineteenth century to the early twentieth century.

Lot 12 from McDonogh's estate to Johnathan [sic] Potter (COB H, Folio 20, Jefferson Parish Clerk of Court). Potter retained the land for 20 years; in 1880, he sold it to Clement Fos (COB O, Folio 273, Jefferson Parish Clerk of Court).

Through the successions of Clement Fos and his wife Mathilda, Louis C. Fos acquired Lot 12 in 1897 (COB Y, Folio 709). In 1915, Louis Fos and his wife sold 10.66 acres of Lot 12 to the Harvey Canal Land and Improvement Company. This acreage, measuring 70 x 660 ft, lay adjacent to the west side of the Harvey Canal (COB 35, Folio 509, Jefferson Parish Clerk of Court).

In 1918, Fos sold the remainder of Lot 12 to Alfred D. Danziger (COB 42, Folio 209, Jefferson Parish Clerk of Court). Danziger retained this acreage until his death. However, in 1949, his succession sold this portion of Lot 12 to the Fosmar Corporation (COB 278, Folio 201, Jefferson Parish Clerk of Court). In 1952, that corporation sold the land to the Mars Realty Corporation (COB 324, Folio 84, Jefferson Parish Clerk of Court). In 1954, Mars Realty Company granted to the United States a perpetual right-of-way to maintain the Harvey Canal as part of the Gulf Intracoastal Waterway (COB 366, Folio 682, Entry 42770, Jefferson Parish Clerk of Court).

Evidence in the legal records gives no indication of structures or improvements in the project item. Unrecorded activities such as fishing and trapping probably took place in the area. Nevertheless, the archeologist should find few cultural resources in a survey of this site.

Borrow Site Above Hero Canal

Although the project item is located in Sections 47 and 74, T15S, R24E, in Plaquemines Parish, its owners believed the tract to be in Jefferson Parish until a twentieth century survey established more definitely the boundaries between the two jurisdictions (COB 109, Folio 366, Plaquemines Parish Clerk of Court). The Hero Company and its subsidiaries hold most of Section 47 today; the Jefferson-Plaquemines Drainage District occupies Section 74. Figure 7 charts the chain of title for the study area from its earliest claim to these present owners.

During the eighteenth century, the project item was situated in a remote portion of a vast land grant made on August 12, 1789, by Estevan Miro, the Spanish Governor of Louisiana, to Francisco Bouligny, an Italian-born adventurer who had become a leader in the military and political affairs of the colony. By this grant, Bouligny received acreage extending about 20 arpents down the right descending bank of the Mississippi River. Bouligny sold this land on March 8, 1792 to Francois Mayronne and Jean Baptiste Degruy. The joint purchasers partitioned their property on April 9, 1807; Degruy acquired sole title to the lands along Bayou Barataria. The project item under consideration became the property of Degruy by this transaction, which ownership was noted on the original township survey as registered in 1833 (Figure 8).

In his old age, Degruy became so burdened with debt that a syndic of his creditors, Sosthéné Roman of St. James Parish, forced the sale of his lands. On December 24, 1835, Allou D'Hemecourt, a surveyor from New Orleans, prepared a map of Degruy's acreage. The map, which has been an important point of reference until the present day, divided most of Degruy's property into lots. Lots 9 and 10, which encompass Section 47, T15S R24E, in the project item, consisted of a growth of cypress on Bayou Barataria, with a small area of prairie to the rear. The remainder of the project item, in Section 74, consisted of lands subject to tidal overflow; this area was not divided into lots.

The syndic of Jean Baptiste Degruy's creditors sold Lots 9 and 10 on June 9, 1837 to Honoré F. Deblieux and to Antoine O. Degruy, the son of Jean Baptiste (COB 46, Folio 772, Entry 211, Plaquemines Parish Clerk of Court). These joint purchasers held the land until the Civil War. In the midst of that conflict, on November 4, 1863, Deblieux and Antoine Degruy sold Lots 9 and 10 to Thomas Friend and Marius

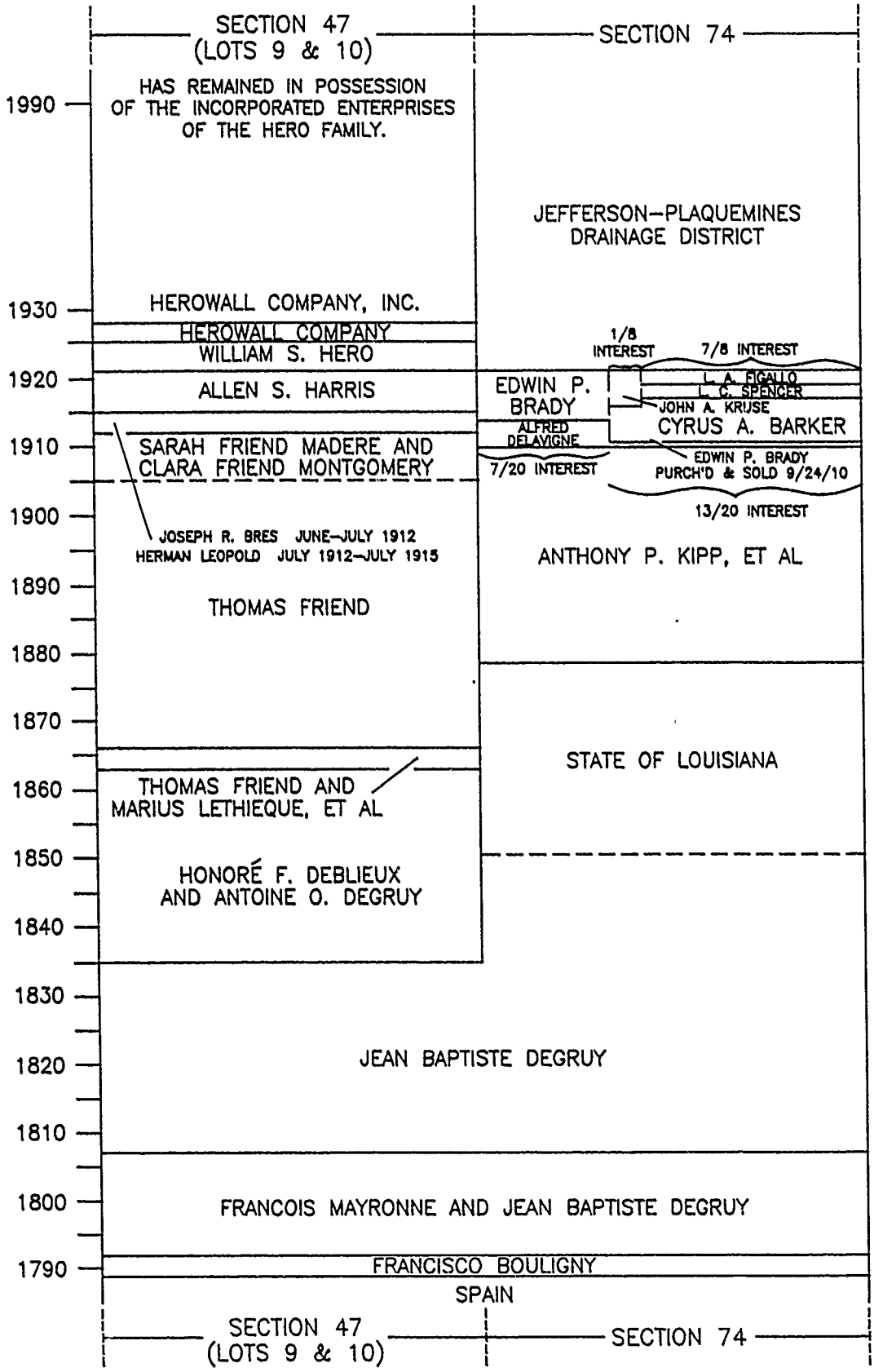



Figure 7. Schematic representation of land tenure for the borrow site study area above the Hero Canal, Plaquemines Parish.

Figure 8 [1885] Extract from approved township diagram of T15S, R24E, South Eastern District, La., West of the Mississippi River, showing DeGruy's ownership of Sections 47 and 74, and the Guerin and Douet claims to Sections 43, 5, and unlabeled Section 4 (immediately above Section 43) Township Plat Book 11, Map Room, Clerk of Court's Archives, Jefferson Parish.

Lethieque (COB 46, Folio 772, Entry 212, Plaquemines Parish Clerk of Court). The new purchasers became involved in the development of a steam sawmill in Lot 9.

In the three years from 1863 to 1866, no fewer than five different men joined Thomas Friend as part owners of Lots 9 and 10 and of the sawmill. Seven conveyances of property took place in the project item during this time (COB 46, Folio 772, Entries 212, 213, 214, 215, 216, 217, 218, Plaquemines Parish Clerk of Court). Ultimately, on December 10, 1866, Thomas Friend became the sole proprietor of Lots 9 and 10, and of the sawmill.

The sawmill apparently did not prosper during the postbellum era. There was little interest in the property until early in the twentieth century, when speculators began to buy up claims of long-neglected lands and to put together packages that might yield rich mineral rights.

In June 1912, a speculator named Joseph R. Bres purchased the interest of Friend's two surviving daughters in Lots 9 and 10 (COB 46, Folio 732, Entry 198; COB 46, Folio 734, Entry 199, Plaquemines Parish Clerk of Court). Bres immediately resold the daughters' interest in these two lots to Herman Leopold (COB 46, Folio 814, Entry 222, Plaquemines Parish Clerk of Court). Leopold failed to pay taxes on Friend's former property, and in 1915 lost it by Sheriff's Sale to Allen J. Harris (COB 50, Folio 175, Entry 41, Plaquemines Parish Clerk of Court). In 1917 and 1918, there were a series of legal challenges to Harris's ownership, but he successfully defended his title to the lands; the courts of Plaquemines Parish awarded him the sole proprietorship of Lots 9 and 10. In these suits, no reference was made to the former sawmill or to any improvements on the property (COB 51, Folio 454, Entry 187; COB 52, Folio 44, Entry 18; COB 52, Folio 128, Entry 50; COB 52, Folio 464, Entry 170, Plaquemines Parish Clerk of Court).

Oddly enough, considering his legal difficulties in defending his claim, Harris failed to pay taxes on Lot 10. Consequently, in 1921, William S. Hero acquired this lot at a Sheriff's Sale for $24.11 (COB 56, Folio 776, Entry 336, Plaquemines Parish Clerk of Court). To quiet Harris's claims to the property, Hero made a legal agreement with Harris on October 28, 1925. For $5,000.00, Harris sold Hero Lot 9, and renounced title to Lot 10 (COB 109, Folio 453, Entry 141, Plaquemines Parish Clerk of Court).

On that same day, William S. Hero sold Lots 9 and 10 to the Herowall Company (COB 109, Folio 455, Entry 142, Plaquemines Parish Clerk of Court). Three years later, in 1928, the Herowall Company transferred Lots 9 and 10 to the Herowall Company, Inc. (COB 109, Folio 457, Entry 143, Plaquemines Parish Clerk of Court). Since that time, Lots 9 and 10 have remained in the ownership of the incorporated enterprises of the Hero family.

The portion of the project item in Section 74, now held by the Jefferson-Plaquemines Drainage District, had a different history of ownership. Subject to tidal overflow, these lands evoked little interest during the nineteenth century. Government survey of the land by the United States indicated that Section 74 remained unclaimed (Figure 8). Ultimately, the state of Louisiana received this swampy land for resale.

On September 26, 1878, Anthony P. Kipp and four other men purchased from the state, by Certificate 2634 the title to 768.16 acres of land subject to tidal overflow in Sections 44, 45, 74, and 75, T15S R24E (Certified copy of Patent Book, vol. 19, p. 298, in COB 43, Folio 859, Entry 189, Plaquemines Parish Clerk of Court). Nevertheless, Kipp and his co-owners seem to have paid little attention to the land after purchasing it.

However, in 1910, an energetic speculator named Alfred Delavigne began acquiring title to this swampland from the five co-owners and their heirs. Delavigne eventually acquired the complete title to the 768.16 acres. In 1910 and in 1914, Delavigne sold the title in two fractional packages to Edwin P. Brady (COB 46, Folio 552, Entry 150; COB 48, Folio 1297, Entry 290, Plaquemines Parish Clerk of Court).

In 1910, after receiving title to 13/20 or 54% of the 768.16 acres, Edwin Brady resold the fractional claim to Cyrus A. Barker (COB 46, Folio 562, Entry 152, Plaquemines Parish Clerk of Court). Six years later, in 1916, Barker included this percentage of the 768.16 acres as part of a larger real estate package he put together for John A. Kruse of Chicago (COB 50, Folio 1234, Plaquemines Parish Clerk of Court). Kruse and his heirs often neglected to pay taxes on the property; intermittently, during the next half-century, they would be in the Louisiana courts, in litigation about the legal rights to the land Kruse purchased from Barker.

In Plaquemines Parish during the early twentieth century, it was not difficult to redeem property after it had been seized by the sheriff for non-payment of taxes. All the owner of the confiscated property had to do was to pay the overdue taxes and seek recovery in the parish court. However, in 1936, the legislature of Louisiana intervened and passed stringent laws making recovery of confiscated property much more difficult.

Cyrus Barker, a local land speculator, retained title to the remaining fraction of the 768.16 acres not sold to John A. Kruse of Chicago. Barker did not pay taxes on the land. As a result, L. C. Spencer acquired Barker's claim at a tax sale in 1917. Barker attempted to redeem the property in 1919, but by that time the land was in Spencer's name. Meanwhile, Spencer also failed to pay taxes on the 768.16 acres. Consequently, in 1919, L. A. Figallo acquired the property at yet another Sheriff's Sale. In 1920, Barker tried for the second time to redeem his title. To complicate matters even further, Figallo neglected to pay his taxes on the property. In 1921, the sheriff confiscated the acreage for the third time in four years.

In the Sheriff's Sale of 1921, the Jefferson-Plaquemines Drainage District acquired the 768.16 acres. Since that time, the Drainage District has successfully retained its title to the property against challenges from former owners who lost it to confiscation for nonpayment of taxes. One such suit, instituted by the heirs of John A. Kruse of Chicago, went all the way to the Louisiana Supreme Court. By the time the court reached its decision in 1953, the legislative restrictions on recovery of property had long been in effect. Consequently, the Kruse heirs and their lawyers lost their case and had to pay court costs.

Legal records reveal little economic activity in the project item during the nineteenth century. A "steam saw mill, mules, carts, tool, etc." in Lot 9 during the Civil War era seems to be the only recorded enterprise (COB 46, Folio 796, Entry 218, Plaquemines Parish Clerk of Court). Obviously, the land was suited to individual, unrecorded enterprises such as fishing, hunting, and trapping. Since 1921, activities associated with the Hero family, their canal, and the Herowall Company have been evident in Section 47, T15S R24E.

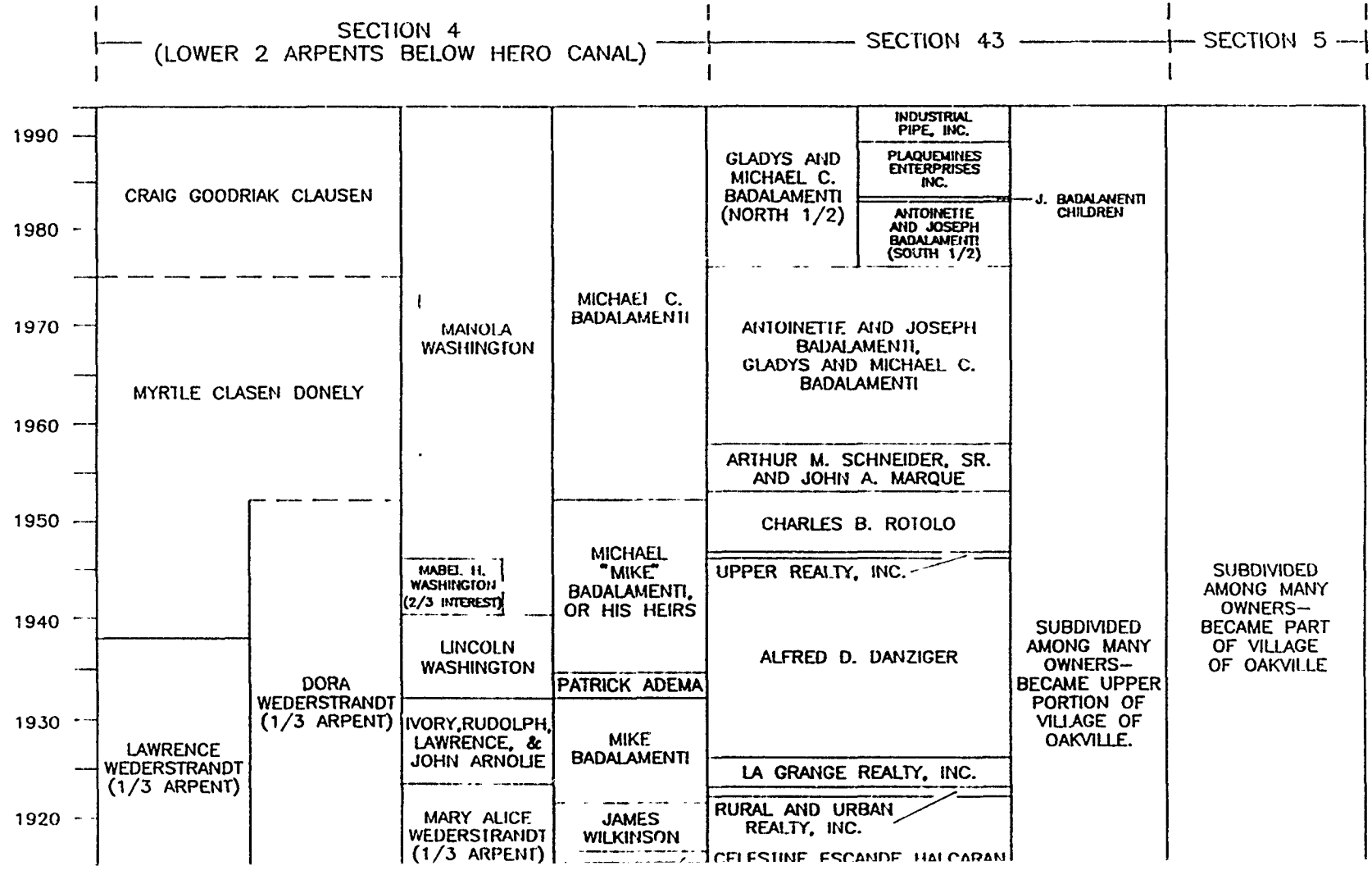
The Jefferson-Plaquemines Drainage District has retained ownership of the land in Section 74, T15S R24E, since 1921. Judging from the evidence in the legal records, an archeologist should expect to find few artifacts of importance in a cultural resources survey of the project item in Sections 47 and 74, T15S R24E.

Proposed Oakville Levee Section Alignment

The Oakville project area is west of the Mississippi River in Sections 4, 43, and 5, T15S, R24E, of Plaquemines Parish, Louisiana. The property consists primarily of marshland bounded above by the Hero Canal and southeast by the community of Oakville. Figure 9 schematically portrays the land title history for the project area.

These sections were considered a part of Jefferson Parish at one time, according to the township plat extract recorded in the Jefferson Parish Courthouse. This survey copy, dated 1885, listed Auguste Francois (A. F.) Guerin and Jean Jules (J. J.) Guerin as owners of Section 43 (Receiver's Receipt No. B. 25); the survey also listed the heirs of Guillaume Douet as owners of Section 5 (Receiver's Receipt No. B. 24)

BELLE CHASSE – BURAS HIGHWAY, OR HIGHWAY 23



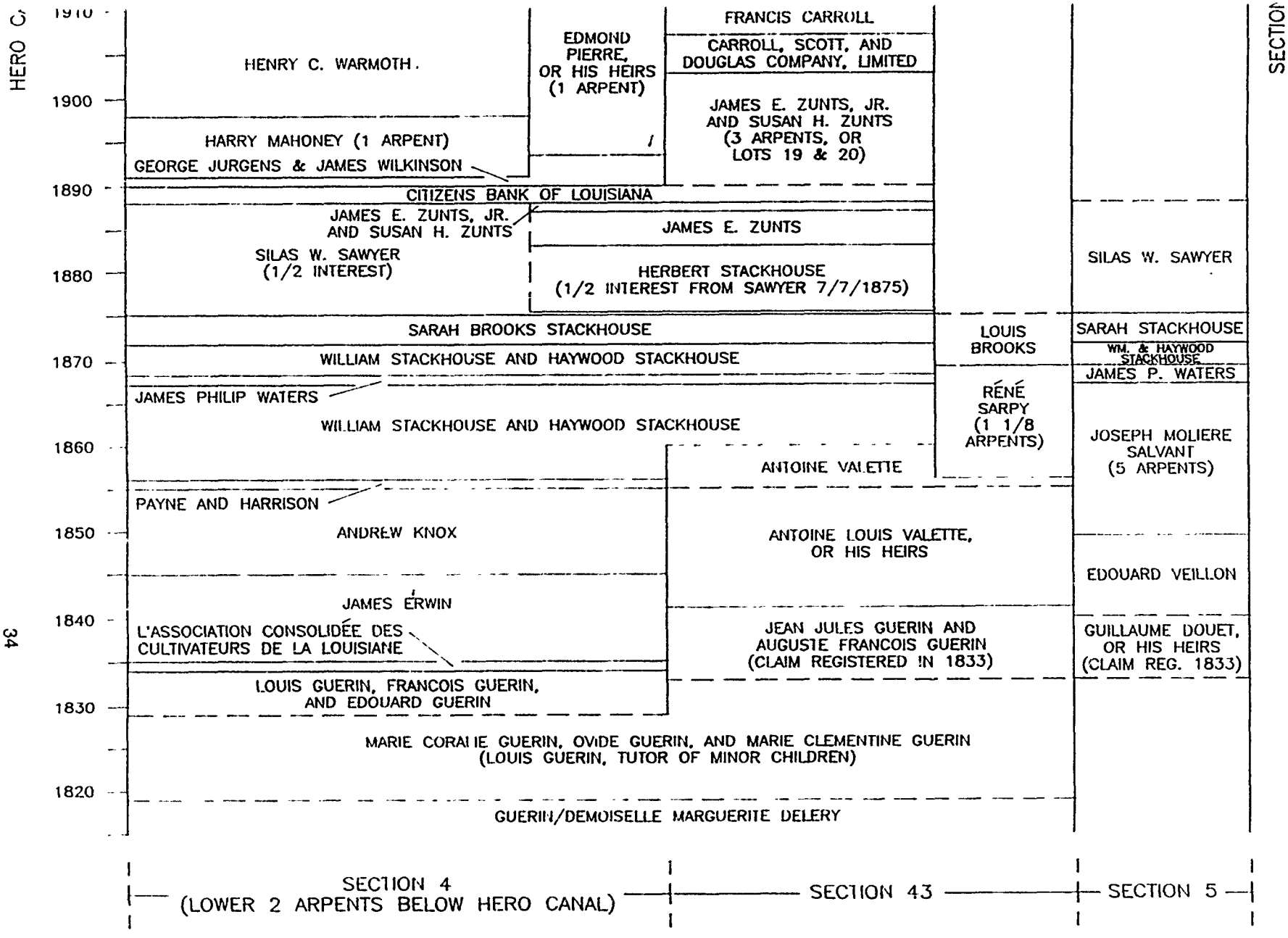



Figure 9 Schematic representation of land tenure for the proposed Oakville levee section alignment study area, Plaquemines Parish. Please note that section widths are not proportionate on this chart.

both claims registered in 1833. This ownership information was outdated by 1885, but apparently the extract simply copied the original confirmed listings. Section 4 was delineated on the plat, but was neither labelled nor recorded on the list of property owners and public lands (Figure 8).

The lands in Section 4 were planted in sugar cane at least as early as 1829. On March 6 of that year, Louis Guerin, as tutor, filed a minor's mortgage in favor of the children of Demoiselle Marguerite Delery, who died in July of 1819. The minors were Marie Coralie Guerin, Ovide Guerin, and Marie Clementine Guerin, and, although not stated, were possibly the children of Auguste, Jean, or Louis Guerin As stated previously, Section 43 was the confirmed claim of A. F. and J. J. Guerin; it is highly likely that they, or another family member, also may have acquired the adjacent Section 4. The *Act Hypothecaire* described the mortgaged property as a sugar plantation with 32 slaves, bounded above by lands belonging to N. [Nicolas] Reggio, and below by the property of Thomas Pepe, previously U. Guillaume (possibly a reference to Guillaume Douet's Section 5) (Notarial Book 4, Folio 180, Act No. 679, Plaquemines Parish Clerk of Court).

By 1834, the *sucrerie*, or sugar-works, was owned by Louis, Francois, and Edouard Guerin, and was defined more clearly as a tract situated seven leagues below New Orleans, measuring 31 arpents front on the Mississippi River by a depth of 40 arpents, bounded above by N. Reggio and below by Auguste Guerin. The Guerins' property, along with its slaves, English and Creole horses, cattle, carts, and farming implements was adjudicated at public sale on September 20, 1834, to *L'Association Consolidée des Cultivateurs de la Louisiane,* or the Consolidated Association of the Planters of Louisiana. The Association then sold the property in May of 1835 to James Erwin, who conveyed it ten years later to Andrew Knox, with mansion, sugar house, sugar huts, and stables included (Notarial Book 5, Folio 433, Act No. 1,093; Notarial Book 6, Folio 90, Act No. 1,188; Notarial Book 6, Folio 172, Act No. 1,215; Notarial Book 10, Folio 409, Act No. 2,179, Plaquemines Parish Clerk of Court).

On June 23, 1855, Andrew Knox lost his sugar plantation, now called New Hope Plantation, to Jacob U. Payne, representing the firm of Payne and Harrison of New Orleans. The property inventory at this time listed the sugar house with all machinery and apparatus necessary for making sugar, dwelling houses, Negro quarters, cooper sheds, stables and various outhouses, 22 mules, three horses, carriage and buggy, cane carts, drays, ploughs, and other utensils, plus a number of employed slaves. The only reservation from sale was the sugar to be made from the growing cane, "of which sufficient will be saved to the purchaser to plant the whole place." Gilson P. Harrison and Jacob U. Payne sold New Hope, with all buildings, appurtenances, and slaves (33 named, plus several others), to William Stackhouse and Haywood Stackhouse on October 15, 1856. The Stackhouses sold New Hope Plantation and the 3 x 40 arpent tract adjoining its lower boundary line (which appears to be the upper portion of Section 43) with attached mortgage, to James Philip Waters on November 18, 1867. Waters reconveyed the two properties to the Stackhouses two months later, in January of 1868. From this point forward, several conveyance property descriptions appear to have included the lower three-arpent tract as a part of New Hope, increasing the plantation dimensions to 34 arpents (fronting the Mississippi River) by 40 arpents (COB 9, Folio 471, Act No. 1,665; COB 10, Folio 396, Act No. 1,777; COB 16, Folio 444, Act No. 2,482; COB 17, Folio 113, Act No. 2,586, Plaquemines Parish Clerk of Court).

Haywood Stackhouse died prior to May 7, 1872. At that time, William Stackhouse and Haywood's widow and children partitioned all the properties owned by the two men. The Stackhouses owned, managed, and cultivated several plantations in Plaquemines Parish, including New Hope, Belle Chasse, Live Oak Grove, the Villere Place, and the Moliere Tract. This partition was drawn up in order to settle the Stackhouse commercial partnership. Haywood's widow, Sarah F. Brooks Stackhouse, was given New Hope Plantation and the Molliere [sic] Tract with all appurtenances. This tract appears to have been situated in Section 5, which will be discussed later. Although she owned New Hope, Mrs. Stackhouse actually lived at Live Oak Grove Plantation (southeast of the project area, below Sarah Plantation), which was conveyed in the partition to William Stackhouse (COB 18, Folio 645, Act No. 2,964, Plaquemines Parish Clerk of Court).

In 1872, Mrs. Sarah Stackhouse sold a five-acre riverfront tract from Cedar Grove Plantation, formerly known as New Hope, to Dr. D. R. Fox. This parcel of land formed part of the plantation's front and lower line, and was situated within the three-arpent annexed tract in upper Section 43. This location was east of the project area; however, notation of the sale is made here because many pertinent conveyances refer to the Fox boundary line (COB 18, Folio 757, Act No. 2,990, Plaquemines Parish Clerk of Court).

On March 6, 1875, Mrs. Stackhouse and her children lost title to New Hope Plantation, its sugar house, machinery, livestock, and equipment, when the property was sold at Sheriff's Sale to Silas W. Sawyer. Four months later, in July of 1875, Sawyer sold an undivided one-half interest in the sugar plantation and its appurtenances back to Herbert Stackhouse, emancipated minor son of Haywood Stackhouse. That one-half interest was lost again at Sheriff's Sale in 1883, when the property was adjudicated to James E. Zunts as the result of a civil suit filed by Zunts and R. S. Morse against Herbert Stackhouse. On January 29, 1887, all co-owners of New Hope, now known as Cedar Grove Plantation, partitioned the 34 1/2 x 40 arpents into 20 lots of equal value. Upper Lots 1 through 10, all above the project area, were divided among Richard R. Montgomery, the firm of Long and Ogden (John S. Long and Jonathan Ogden), Blanche Stackhouse Valette, Mrs. Sarah F. Stackhouse (also representing minor children, Maude and Mabel Stackhouse), and Lila Stackhouse Bryant. Title to lower Lots 11 through 20 was assigned to James E. Zunts, Jr., and to Miss Susan H. Zunts, probably heirs of James E. Zunts (COB 20, Folio 5, Act No. 3,297; COB 20, Folio 207, Act No. 3,352; COB 24, Folio 616, Act No. 5,472; COB 27, Folio 197, Act No. 6,049, Plaquemines Parish Clerk of Court).

The preceding partition was nullified when the property of Silas W. Sawyer was adjudicated in 1888 to The Citizens Bank of Louisiana as a result of Sawyer's unpaid mortgage against New Hope Plantation, a 34 x 40 arpent tract "formerly cultivated as a sugar plantation." The bank then sold Cedar Grove (or New Hope) Plantation to George Jurgens and James Wilkinson on November 17, 1890. The plantation was described in this document as a 31 x 40 arpent tract fronting along the Mississippi River, and bounded above by the plantation formerly belonging to Octave Riggio [sic] (and now belonging to D. A. Thibaut [Augusta Plantation]), and below by Dr. D. R. Fox (COB 27, Folio 713, Act No. 6,209; COB 28, Folio 694, Act No. 6,490, Plaquemines Parish Clerk of Court).

Jurgens and Wilkinson sold tracts of Cedar Grove Plantation to a number of people. The upper portion of the Section 4 project area, immediately below the present-day Hero Canal, was sold in 1891 to Harry Mahoney. This tract was described as a 1 x 40 arpent parcel fronting along the Mississippi River, bounded above by the vendee, and below by Jurgens and Wilkinson (later, Edmond Pierre), which lower boundary line was situated one arpent above the upper line of the former Dr. D. R. Fox property (Figure 10). On January 3, 1898, Mahoney sold this tract to Henry C. Warmoth. Warmoth sold the topmost 1/3 arpent of the one-arpent tract to Lawrence Wederstrandt (or Wederstrand) and the middle 1/3 arpent to Dora Wederstrandt on June 6, 1911. Dora's parcel was bounded above by the property of L. Wederstrandt and below by the property of A. Wederstrandt, indicating that Warmoth previously sold the lower 1/3 arpent to the Wederstrandts' sister, Mary Alice. On May 7, 1938, Lawrence Weatherstrand [sic] sold his 1/3 arpent tract to Myrtle Clasen [sic] Donely, who was listed on the Tobin ownership plat as late as 1952. According to the 1952 Tobin plat, she also owned the former Dora Wederstrandt parcel. By 1975, the Plaquemines Parish *Assessor's Ownership Map* recorded Craig Goodriak Clausen as owner of the 128-foot tract (approximately 2/3 arpent -- one lineal arpent is equivalent to 192.06 feet) just below the Hero Canal (COB 33, Folio 360, Act No. 9,304; COB 45, Folio 604, Act No. 191; COB 87, Folio 707, Act No. 199, Plaquemines Parish Clerk of Court; Tobin 1952:T15S, R24E; Plaquemines Parish Tax Assessor 1975:Oakville area, Plaquemines Parish Clerk of Court).

Mary Alice Wederstrandt's lower 1/3 arpent parcel of the former Warmoth one-arpent tract presents a problem for the historian, because its chain of title as tracked through the property descriptions of the conveyance records and tax rolls actually is that of a tract located approximately six arpents above the Hero Canal. According to the 1952 Tobin survey, the 1975 *Assessor's Ownership Map*, and project area

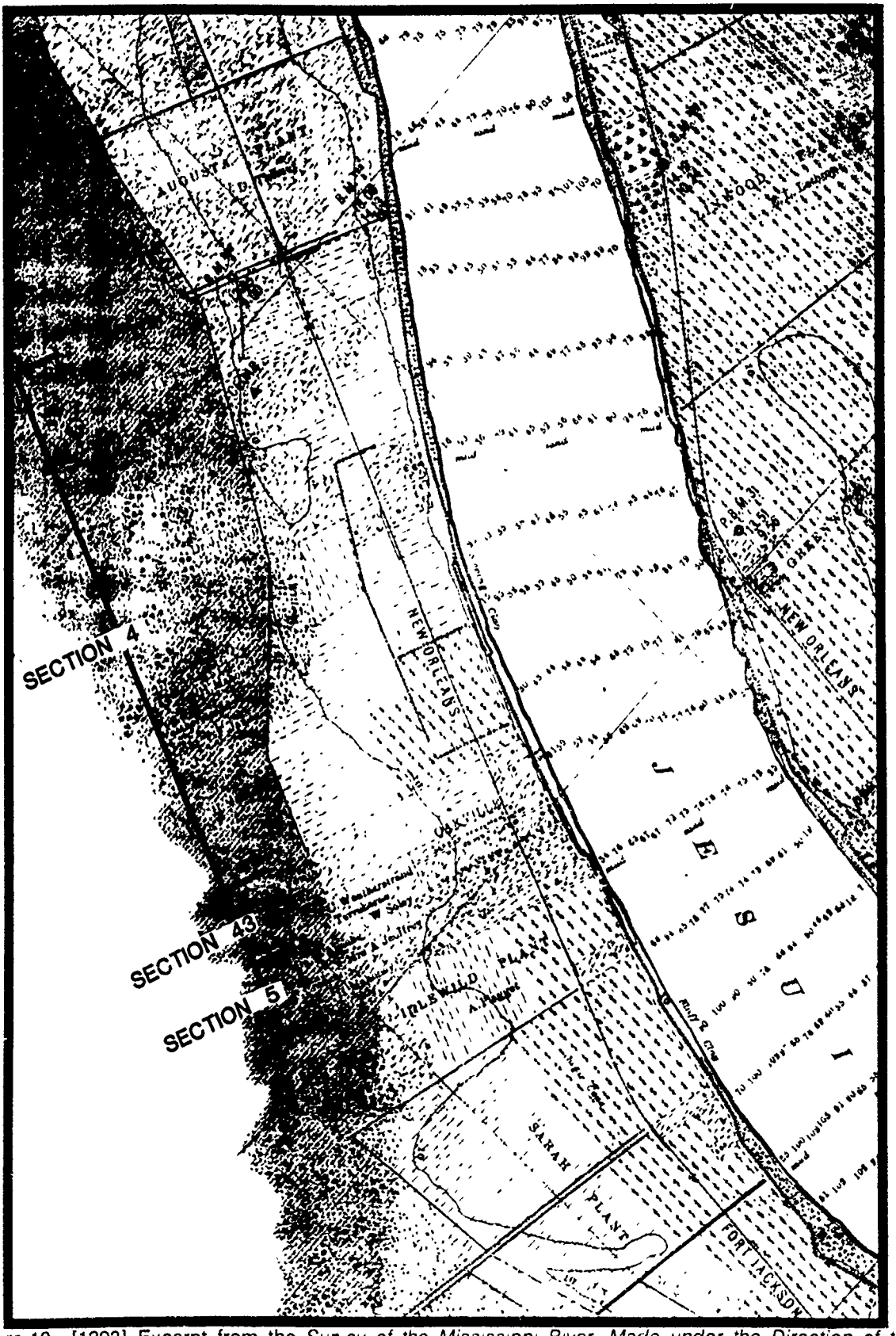



Figure 10. [1893] Excerpt from the *Survey of the Mississippi River, Made under the Direction of the Mississippi River Commission*, Chart No 78, showing the Cedar Grove/Oakville project vicinity. Louisiana Collection, Howard-Tilton Memorial Library, Tulane University, New Orleans.

information supplied by the U.S. Army Corps of Engineers, New Orleans District, that property, measuring 64 feet, or 1/3 arpent, along the Mississippi River, belongs to Manola Washington (formerly Lincoln Washington). Washington currently is assessed with only one riverfront tract, which is recorded in the 1990 Tax Roll with the correct dimensions and present-day bounding parties, but its acquisition information (the succession of Lincoln Washington) traces back to a 1 x 40 arpent tract that has been owned by the George Alfred Hero family and related companies since at least 1915. The Wederstrandt family did own that Hero tract during the late nineteenth and early twentieth centuries, along with other properties. Apparently, property descriptions became confused at some time during the numerous transactions of the Wederstrandt tracts, and the information never was corrected in the Plaquemines Parish public records. The following paragraph relates the chain of title as followed in the conveyance records.

In January of 1894, George Jurgens and James Wilkinson sold a tract from Cedar Grove Plantation to Cephas Wederstrandt (or Wederstrand). This property measured one arpent front along the Mississippi River by a depth of 40 arpents, and was bounded above by land belonging to the vendors and below by F. (Frederick) James; the tract was recorded on the Mississippi River Commission survey in that year (Figure 10). Wederstrandt sold the property to Marie Leonce (who later married Wederstrandt's son, Lawrence) on June 12, 1905. She then sold the tract back to Cephas Wederstrandt on October 12, 1908. On the same day, Wederstrandt donated the lower 48' (1/4 linear arpent) x 40 arpent parcel to his daughter, Mary Alice Wederstrandt, and the immediately adjacent 48' x 40 arpent tract above to Dora Wederstrandt. Mary Alice died prior to September 10, 1923, and her property was inherited by her children, Ivory, Rudolph, Lawrence, and John Arnolie. Her original Judgment of Possession was amended in 1932, changing the property description to read, "1/3 arpent, or 64 feet front on said river [Mississippi], by 40 arpents, instead of 48 feet front on said river, by 40 arpents." The Arnolies sold the tract on May 25, 1932, to Lincoln Washington. Following his death, his widow, Mabel Hamilton Washington, and child, Manola Washington, filed his Judgment of Possession on April 26, 1946, with Mabel receiving 2/3 interest and Manola receiving 1/3 interest in the property, which was the only riverfront property listed. On May 1 of the same year, Mabel Washington sold to Manola her interest in the 1/3-arpent tract. From the date of the original sale to Cephas Wederstrandt in 1894, through the 1946 sale to Manola Washington, the property boundaries were listed as Jurgens and Wilkinson (later Cephas Wederstrandt) on the upper line, and Frederick James on the lower line. The 1990 Tax Roll recorded one riverfront tract in Manola Washington's name: 1/3 x 40 arpents of marshland acquired through the succession of Lincoln Washington, bounded above by Myrtle C. Donely, and below by Michael C. Badalamenti (COB 31, Folio 529, Act No. 8,962; COB 39, Folio 547, Act No. 110; COB 42, Folio 378, Act No. 65; COB 42, Folio 382, Act No. 66; COB 42, Folio 386, Act No. 67; COB 72, Folio 416, Act No. 131; COB 72, Folio 488, Act No. 152; COB 118, Folio 335, Act No. 86; COB 118, Folio 336, Act No. 87, Plaquemines Parish Clerk of Court; Plaquemines Parish Tax Assessor 1990).

The 1 x 40 arpent tract immediately below Manola Washington's property was sold by Jurgens and Wilkinson on December 23, 1893, to Edmond Pierre. This tract was known then as the lower arpent of the former Cedar Grove Plantation (apparently the lower arpent of Section 4, as well) and was bounded above by Harry Mahoney and below by Dr. D. R. Fox. This property was inherited by the six children of Edmond and Rose Pierre through Judgment of Possession filed April 15, 1915. The tract was adjudicated three months later to Oliver S. Livaudais, who sold it back to James Wilkinson on March 22, 1916. Wilkinson sold the parcel on January 31, 1921, to Mike Badalamenti. Badalamenti lost the property through a 1932 tax sale (for unpaid 1931 taxes) to Patrick M. Adema, and then redeemed it in 1934. Michael Badalamenti died prior to September 11, 1952, when his widow and heirs sold this property to his son, Michel [sic] C. Badalamenti. Badalamenti's Judgment of Possession was not filed until 1956, but his surviving children quitclaimed their interest in 1963, and confirmed the 1952 sale to Michael C. Badalamenti. According to the 1990 Tax Roll, Badalamenti still owns this lower arpent of the former Cedar Grove Plantation (COB 31, Folio 525, Act No. 8,961; COB 49, Folio 1,316, Act No. 277; COB 50, Folio 877, Act No. 253; COB 50, Folio 881, Act No. 254; COB 56, Folio 454, Act No. 204; COB 77, Folio 150, Act No. 49; COB 168, Folio 105, Act No. 44; COB 191, Folio 74, Act No. 18; COB 267, Folio 902, Act No. 197, Plaquemines Parish Clerk of Court; Plaquemines Parish Tax Assessor 1990).

The three-arpent tract immediately below and adjoining Badalamenti's preceding property was included in the 1888 Sheriff's Sale of New Hope (Cedar Grove) Plantation to The Citizen's Bank of Louisiana, but was not sold to Jurgens and Wilkinson in 1890 with the rest of the plantation. Apparently, this tract was reconveyed to James and Susan Zunts; perhaps it had not been intended for inclusion with the "original plantation (31 x 40 arpents)" in that Sheriff's Sale. As stated previously, James E. Zunts acquired Herbert Stackhouse's undivided half interest in the 34 1/2 x 40 arpent plantation in 1883. Susan and James E., Jr., acquired Lots 11 through 20 of the 1887 partition as their share of Cedar Grove Plantation. Part of the project area is included within Lots 19 and 20, measuring 334'3" x 40 arpents each, less and except Dr. D. R. Fox's five acres along the riverfront. Lots 19 and 20 also appear to have formed the upper portion of Section 43. Section 43, as noted earlier, was originally claimed by A. [Auguste] E. Guerin and J. J. Guerin. By 1855, this lower boundary of New Hope Plantation was owned by Antoine Valette, and by 1867, it belonged to William and Haywood Stackhouse (COB 9, Folio 471, Act No. 1,665; COB 16, Folio 444, Act No. 2,482, Plaquemines Parish Clerk of Court).

On May 22, 1903, James E. Zunts (known as James E. Zunts, Jr. prior to 1888) and Susan H. Zunts sold Lots 19 and 20 (less and except the Fox acreage) of the 1887 Cedar Grove/New Hope partition to Carroll, Scott and Douglas Company Limited. In 1907, Francis Carroll and Mary A. Carroll, liquidators of the company, sold the two lots to Francis Carroll, who then sold them to Mrs. Celestine Escande, widow of John Halcaran, on December 30, 1911. Mrs. Halcaran held title to Lots 19 and 20 until August 15, 1922, when she sold them to the Rural and Urban Realty Co., Inc., which conveyed them a few months later to La Grange Realty, Inc., in June of 1923. La Grange sold Lots 19 and 20, less and except a 2.295 acre sell-off east of the project area (and, of course, the Fox property), to Alfred D. Danziger on June 8, 1926. From this point forward, the conveyance property descriptions listed the lower boundary of Lots 19 and 20 as the Village of Oakville (COB 37, Folio 453, Act No. 98; COB 41, Folio 319, Act No. 70; COB 46, Folio 262, Act No. 68; COB 57, Folio 389, Act No. 139; COB 58, Folio 586, Act No. 263; COB 63, Folio 252, Act No. 85, Plaquemines Parish Clerk of Court).

Alfred Danziger retained ownership of the balance of Lots 19 and 20 for nearly 20 years, then sold the tract on July 25, 1946, to Upper Realty Inc., which sold the property three months later to Charles B. Rotolo. On September 17, 1953, he sold the "Rotolo Farm at Oakville" to Arthur M. Schneider, Sr., and John A. Marque. From this transaction in 1953 through modern land records, Lots 19 and 20 were described as property situated 12 [sic] miles below the city of New Orleans, fronting 573.80' (286.90'each) along the Belle Chasse-Buras Highway, now Highway 23, and bounded above by property belonging to Mike, or Michael, Badalamenti and below by the Village of Oakville. The proximity to New Orleans, as stated in those descriptions, is incorrect; the property location is actually 24 miles below the city. Apparently, this 1953 document was filed with the distance error, and later conveyances simply copied the incorrect information (COB 119, Folio 453, Act No. 114; COB 121, Folio 171, Act No. 58; COB 162, Folio 92, Act No. 21; COB 170, Folio 494, Act No. 125, Plaquemines Parish Clerk of Court).

Schneider and Marque sold Lots 19 and 20 on June 27, 1958, to Antoinette Catalano, wife of/and Joseph A. Badalamenti, and Gladys E. Lucas, wife of/and Michael C. Badalamenti. On March 23, 1976, the Badalamentis partitioned their portion of original Lots 19 and 20, Gladys and Michael taking the northern half, Antoinette and Joseph the southern half. Michael Badalamenti has retained title to and currently is assessed with his northern portion of Lots 19 and 20, which lie immediately below and adjoining the 1 x 40 arpent tract acquired from his mother and siblings in 1952 (COB 168, Folio 105: discussed earlier in this chapter) (COB 207, Folio 827, Act No. 207; COB 432, Folio 211, Act No. 43, Plaquemines Parish Clerk of Court; Plaquemines Parish Tax Assessor 1990).

Antoinette and Joseph A. Badalamenti donated their southern half of the Lot 19/20 tract to their children, Joseph M. Badalamenti, Adeline Badalamenti Balestra, and Antoinette Badalamenti Marciante, on January 19, 1983. One month later, the three donees transferred the real estate to Plaquemines Enterprises, Inc. (company president: Joseph M. Badalamenti), in exchange for company stock. On October 30, 1989,

Plaquemines Enterprises sold the southern portion of original Lots 19 and 20 to Industrial Pipe, Inc.; Industrial Pipe, Inc. currently is assessed with the property (COB 558, Folio 954, Act No. 177; COB 559, Folio 201, Act No. 42; COB 719, Folio 314, Act No. 76, Plaquemines Parish Clerk of Court; Plaquemines Parish Tax Assessor 1990).

The lower portion of Section 43, bounding the Industrial Pipe, Inc., tract discussed in the preceding paragraphs, comprises part of the village of Oakville. As noted previously, Section 43 was the original confirmed claim of A. E. and J. J. Guerin. J. J. Guerin sold a portion of Section 43 to Antoine Louis Valette, Jr., on September 20, 1841. Antoine Valette, apparently an heir of Valette, Jr., sold a tract from this 1841 acquisition to Réné Sarpy in October of 1856. This parcel of land fronted 1 1/8 arpents on the Mississippi River, by a depth of 60 arpents (may have included a portion of adjacent Section 67), and was bounded above by the property of Célestin Escande (possibly a Valette heir), and below by property apportioned among the heirs of Antoine Louis Valette, Jr. (COB 10, Folio 377, Act No. 1,774, Plaquemines Parish Clerk of Court).

Réné Sarpy was a major landholder in Plaquemines Parish, and appeared to have accumulated a large number of tracts in the Oakville area. According to the Plaquemines Parish conveyance vendor index, Sarpy sold many of his properties in 1869, including the Oakville property. C. Uncas Lewis surveyed the Oakville land on May 5, 1869, and Louis Brooks purchased the property from Sarpy on May 22 of that year. Many Oakville village lot transactions through the years have referred acquisition back to that 1869 sale and plan. As late as 1888, Réné Sarpy still was named lower bounding party of New Hope Plantation; the 1894 *Survey of the Mississippi River* recorded R. L. Sarpy as uppermost owner of the Oakville area, as well. Other property owners listed in 1894 were C. Weatherstrand [Cephas Wederstrandt] and A. Terrebonne; Oakville was depicted as a very small riverfront community (Figure 10) (Conveyance records; COB 42, Folio 382, Act No. 66; COB 171, Folio 424, Act No. 121; COB 27, Folio 713, Act No. 6,209, Plaquemines Parish Clerk of Court).

By 1925, lower Section 43 was called the Village of Oakville in conveyance property descriptions. In 1952, the Tobin survey of T15S, R24E listed the following property owners in that part of Oakville situated in lower Section 43: Mrs. Celestine Sarpy, et al., Pine Grove Realty Co., and the Stanville Simmons Estate. The 1975 Plaquemines Parish *Assessor's Ownership Map* recorded the Village of Oakville below the Badalamenti/Plaquemines Enterprises, Inc., properties. Other owners named were Eckard Johnson, Sarpy (adjacent to the cemetery), and Clovis J. Julian (COB 62, Folio 129, Act No. 44, Plaquemines Parish Clerk of Court; Tobin 1952:T15S, R24E; Plaquemines Parish Tax Assessor 1975:Oakville area).

The project area extends down into upper Section 5. This section was the original confirmed claim of Guillaume Douet, or his heirs (Figure 8). By 1849, the property belonged to the estate of Edouard Veillon, and was sold to Joseph Moliere Salvant on August 2 of that year. Salvant sold his 5 x 40 arpent riverfront parcel to James P. Waters on January 17, 1867. Waters then sold the property to William and Haywood Stackhouse on September 10, 1869. The "Molliere [sic] Tract" was included in the 1872 Stackhouse partition following Haywood's death, and was assigned to Sarah Brooks Stackhouse, Haywood's widow. Mrs. Stackhouse and her children lost title to the Moliere Tract when it was adjudicated at Sheriff's Sale to Silas W. Sawyer on March 6, 1875. At that time, the tract was divided into five lots, each fronting on the Mississippi River and measuring 1 x 40 arpents (COB 16, Folio 29, Act No. 2,386; COB 18, Folio 645, Act No. 2,964; COB 20, Folio 19, Act No. 3,299, Plaquemines Parish Clerk of Court).

As recorded on the 1894 *Survey of the Mississippi River*, property owners of the former Moliere Tract appeared to be W. Soley, Mrs. D. Arnone, Mrs. A. Jeoffrey, P. Crouere, and H. Mahoney, in descending order on the Mississippi River (Figure 10). Fifty-eight years later, the 1952 Tobin listed Edward McCurdy, Eulleia Dobbard, Calvin R. Barrios, and Mrs. C. E. P. Barrios as property owners in Section 5. The 1975 *Assessor's Ownership Map* depicted Section 5 as part of the Village of Oakville (Tobin 1952:T15S, R24E; Plaquemines Parish Tax Assessor 1975:Oakville area).

The Oakville project area crosses marshland that has been owned by a number of parties through the years, but it does not appear that there has been much activity that would be reflected in the archeological record. Sections 4 and 43 were once part of the thriving New Hope/Cedar Grove Plantation, which was a working sugar plantation during most of the nineteenth century. According to land records, the sugar house was standing as late as 1888, and machinery, agricultural implements, and livestock also were kept on the property then. According to the 1894 *Survey of the Mississippi River*, the Cedar Grove plantation structures were located upriver in central Section 4, above the present-day Hero Canal. A portion of the project area appears to have been planted in sugar cane, but much of the land is pastureland and marshland, with no structures depicted other than those in nearby Oakville. Today's community of Cedar Grove is above the Hero Canal in mid-Section 4, with very little but marsh between that village and Oakville. These facts indicate the probability that Cedar Grove grew up around the old plantation community in Section 4, and that farmland gave way to marshland over the years. Therefore, it is highly unlikely that the archeologist will find evidence of structural remains in the project area.

## CHAPTER VI

## FIELD METHODS, RESULTS, AND RECOMMENDATIONS

### Field Methods

Cultural resources survey and evaluation of three areas and two sites within the Westbank Hurricane Protection Project were designed to locate, inventory, and assess the significance of all sites and structures found within each area. Three areas, designated Areas A, B, and C (Figures 1 and 2) had not been surveyed previously for cultural resources. Survey of these areas consisted of intensive pedestrian reconnaissance supplemented by systematic shovel and auger testing. During survey, the ground surface was examined carefully for evidence of cultural resources. Linear survey transects were spaced 20 m apart. Shovel tests were placed at 50 m intervals along each transect; shovel tests along adjacent transects were offset to maximize coverage. Each shovel test measured approximately 30 cm in diameter, and was excavated into culturally sterile subsoil. Excavated soils were screened through 0.6 cm (0.25 in) wire mesh to ensure artifact recovery; clays and excessively wet soils were hand-sifted. Recovered artifacts were bagged and labeled by provenience. A stratigraphic record was made of each shovel test; all shovel tests were backfilled immediately upon completion of the archeological recordation process. Shovel tests were not excavated in areas containing standing water, or in areas containing extensively disturbed deposits. A total of 770 shovel tests were excavated in conjunction with this survey.

Limited auger testing with a two-inch Dutch auger was conducted within each project area. Auger tests were excavated to a depth of 1 m below surface to record stratigraphic sequences and to test for buried archeological deposits. Excavated soils were hand-sifted and examined for cultural material. In addition, a stratigraphic soil profile of each auger test was recorded utilizing Munsell Soil Color Charts and a textural triangle. The location of each auger test was plotted on the appropriate survey plan; a total of 31 auger tests were excavated within the various project areas.

Two previously recorded sites (16PL40 and 16PL41) were examined through visual reconnaissance, recordation of site data, and excavation of a small number of auger tests. A scale drawing was prepared of each site using pacing and a compass. In addition, a bisection of Site 16PL41 area was prepared using measuring tapes, a compass, and a level line. Both sites, as well as each survey area, were photographed.

### Results

#### Area A

Area A is situated within wooded drained backswamp along the west bank of the Harvey Canal, immediately south of the Lapalco Bridge (Figure 1). Located at the Navigation Structure and Pumping Station Plan Alternative 3A, Area A forms part of the proposed route of the sector gate bypass channel. The 1932 edition USGS topographic quadrangle (Figure 11) depicts the area as backswamp; no standing structures are depicted in the vicinity of Area A.

During survey, six transects were examined along the length of Area A (Figure 12). Transects 1 - 5 were placed west of the existing levee; Transect 6 was placed along the marshy, very disturbed strip of land lying between the existing levee and the Harvey Canal. A total of 121 shovel tests were excavated along Transects 1 - 5. Two artifacts were recovered west of the existing levee during survey of Area A. A whiteware spout fragment was recovered from Shovel Test 1, Transect 2, in an area exhibiting considerable

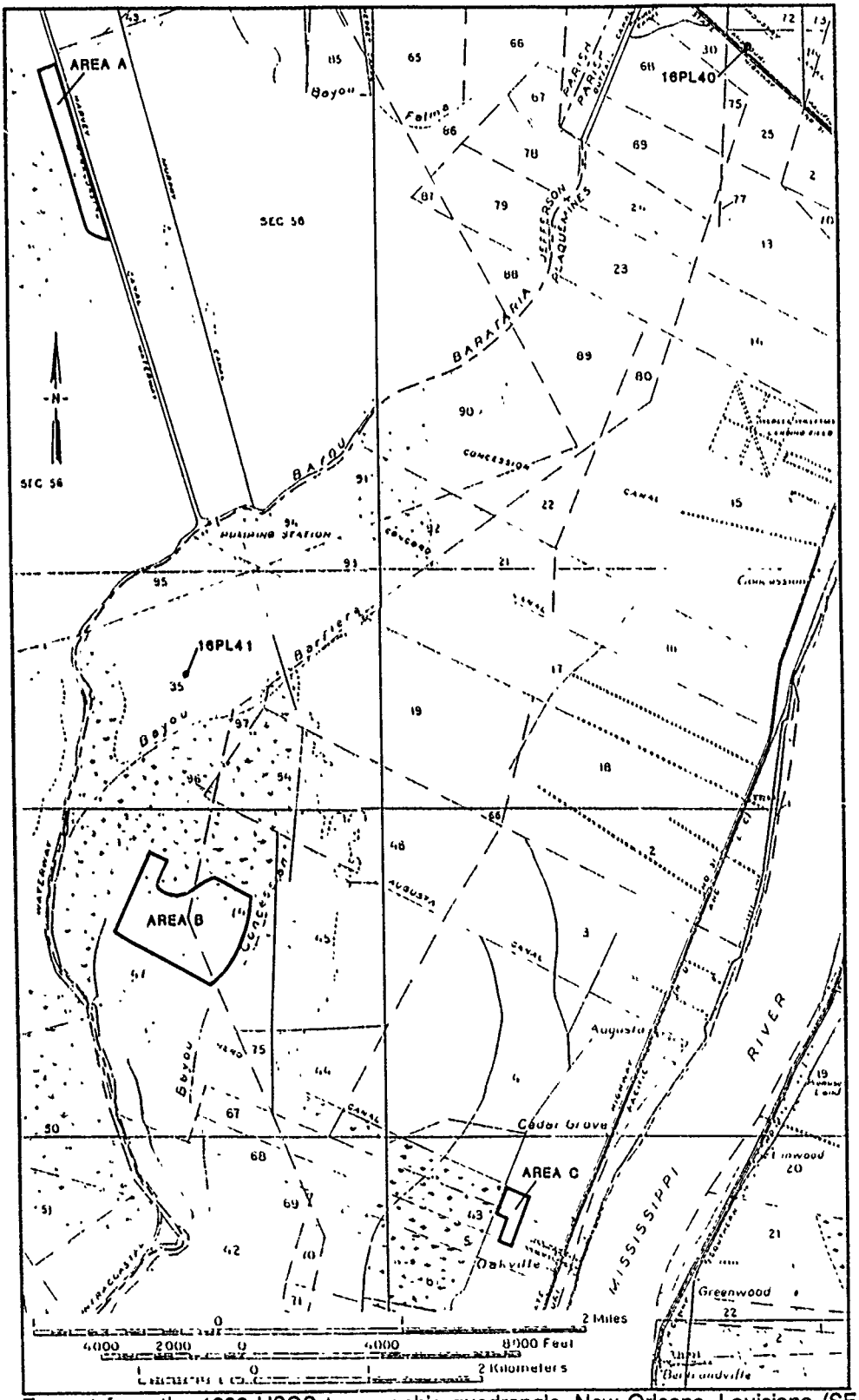



Figure 11. Excerpt from the 1932 USGS topographic quadrangle, New Orleans, Louisiana (SE quarter), showing locations of the project areas.

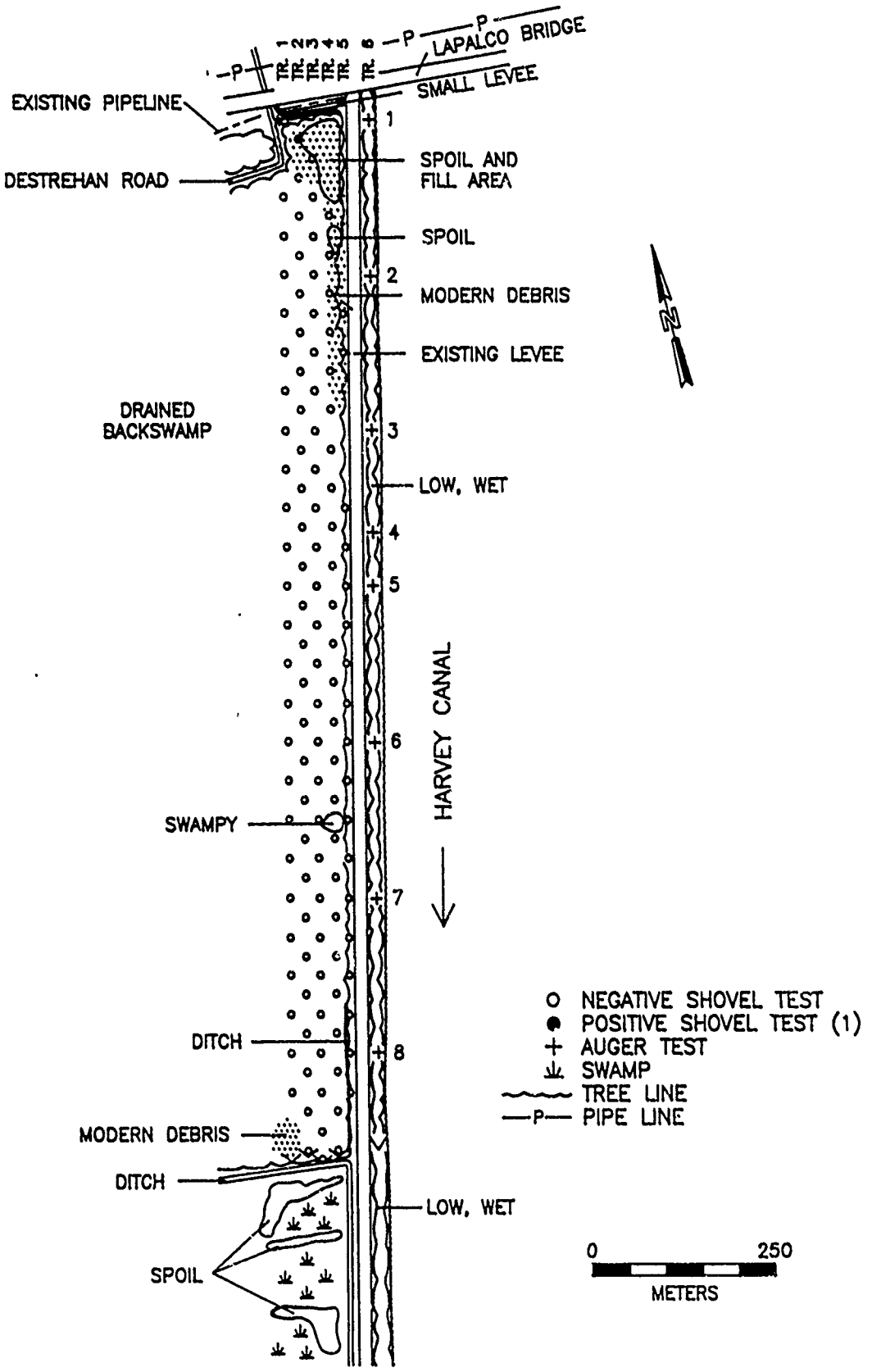



Figure 12. Plan of Area A, along the Harvey Canal.

modern disturbance and debris. In addition, a portion of an iron trap was surface collected from Transect 1.

The entire length of Transect 6 consisted of low marshy woods covered with considerable modern debris, primarily flotsam. The bankline adjacent to the Harvey Canal was slightly higher; it was covered with scattered riprap and *Rangia* shell deposits. The shell deposits were concentrated along the southern half of the bankline, and were mixed with modern refuse including nearly buried large objects such as plastic buckets and milk crates. Exposed shell deposits were examined carefully for both prehistoric and historic (i.e., pre - 1940s) cultural materials; none were observed. A total of eight auger tests also were placed along Transect 6, in order to determine whether or not in situ shell deposits extended westward from the bank. The auger test profiles varied considerably from test to test, demonstrating the mixed nature of the soil deposits. These auger tests provided no evidence of buried archeological deposits. No archeological sites or historic standing structures were located within Area A.

Area B

Area B consists of a planned borrow area located north of Hero Canal and a short distance west of Bayou Concession (Figure 2). The 1932 USGS 7.5' topographic quadrangle depicts the entire planned borrow area as backswamp (Figure 11); the area has been drained. The drained backswamp currently is in pasture, and is used as a recreational shooting club (High Point Shooting Grounds).

During survey, 37 survey transects were placed across Area B (Figure 13). Excavated shovel tests typically contained 12 - 20 cm of 10YR2/1 black loamy peat overlying a 10YR5/2 grayish brown to 10YR6/2 light brownish gray loamy clay subsoil. A total of 628 shovel tests were excavated along the 37 survey transects. Other than a small amount of modern debris found scattered in the area of the shooting club, no artifacts were recovered from any of the shovel tests, or from the ground surface.

Eight auger tests spaced at 200 m intervals were excavated across the project area to locate buried archeological deposits, and to define the stratigraphic sequence. Auger Test 5 contained a typical stratigraphic soil profile. In this auger test, the upper 18 cm consisted of 10YR2/1 black peat. The soil between 18 and 82 cm was a 10YR6/2 light brownish gray silty clay loam. The bottom stratum, between 82 and 100 cm, consisted of 10YR5/3 brown silty clay. None of the auger tests exhibited any evidence of buried cultural deposits.

An additional nine shovel tests and six auger tests were excavated on two low rises situated at the east edge of the project area, to determine whether or not these rises contained cultural resources. Stratigraphic profiles on these rises were consistent with those observed elsewhere within Area B. No evidence of cultural deposits was located; no archeological sites or historic standing structures were located within Area B.

Area C

Area C consists of a portion of the planned Oakville levee alignment. It is located a short distance northeast of Oakville, Louisiana, at the edge of the Mississippi River natural levee, and adjacent to swampland (Figure 2). The 1932 USGS 7.5' topographic quadrangle depicts no structures or cultural features within this survey area other than Hero Canal, located at its northern edge (Figure 11). Area C is a 460 m long segment lying within Sections 43 and 4, south of Hero Canal. Area C begins approximately 70 m west of the road adjacent to the Oakville settlement cemetery, and extends along a 28° orientation. During survey, six transects (Transects 1 - 6) were placed within Section 43, south of the modern sandpits and landfill. These transects extended along the 28° orientation approximately 150 m to a canal adjacent

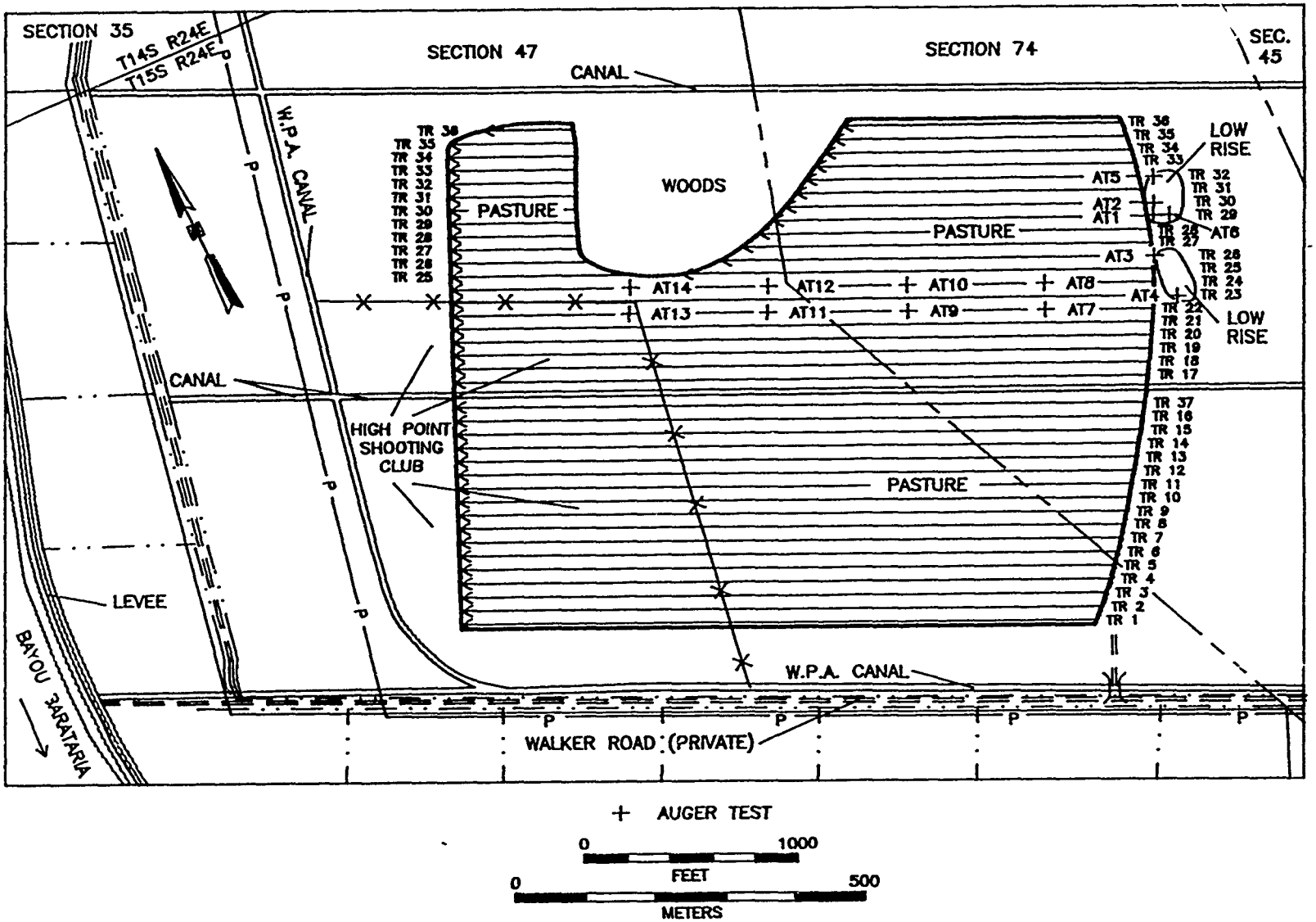



Figure 13. Plan of proposed borrow area, Area B, showing the location of shovel test transects.

to the sandpits and landfill (Figure 14). Much of Transects 1 - 3 passed through a playground/ballfield. Considerable modern debris was observed at the south end of Transects 3 and 4.

Three additional transects, Transects 7 through 9, were placed parallel to Hero Canal and north of the active sandpit and landfill area. Almost all of the area encompassed by these three transects either was located within an old water-filled sandpit, or it was covered with considerable dredged material. Finally, the periphery of the landfill area was examined visually to collect data on disturbance and on the extent of existing swampland. Twenty-one shovel tests and three auger tests were excavated within Area C.

During survey, a number of observations were made. The existing Oakville Levee was located approximately 145 m west/northwest of Transect 6, terminating at the canal adjacent to the landfill area (Figure 14). The entire central portion of the survey area, including parts of both Sections 43 and 4, is disturbed entirely by extensive sandpits and by a landfill. This disturbance continues west/northwestward into previously existing swampland. A former dirt road, built on a tongue of fill, extends westward from the landfill area into the swamp. This road currently is cut by a series of wide canals, forming a linear series of "islands" within the swamp. Three auger tests were excavated on two of these islands. These auger tests contained between 1.3 and 1.4 m 10YR3/1 very dark gray silty clay loam mixed with modern trash and construction debris. The underlying stratum consisted of culturally sterile 10YR2/1 black silty clay. Several additional auger tests were attempted in the area, but these were rejected between 10 and 30 cm by fill debris such as concrete. Based on these auger tests, the roadway fill is approximately 1.4 m thick, and overlies compressed swamp deposits. No archeological sites or standing structures were located within Area C.

Site 16PL40

Site 16PL40 is located along the east bank of the Gulf Intracoastal Waterway (Alternate Route), i.e., the Algiers Canal. The site lies a short distance north of Belle Chasse Highway (LA 23) (Figure 1). The 1932 USGS 7.5' topographic quadrangle of the area depicts the site area as undeveloped land between the Missouri Pacific Railroad and Industry Canal (Figure 11). The Algiers Canal was not constructed until the 1950s. Although the waterway was opened for navigation in 1956, it was not completed until 1962 (U.S. Army Corps of Engineers 1987:124).

The original Louisiana state site form described the site as a 1.5 m (5 ft) long *Ostrea* and *Rangia* shell deposit eroding into the waterway; no cultural materials were reported from the site. During the current investigations, the site was relocated and the surrounding bankline was examined for evidence of cultural deposits (Figure 15). The bankline surrounding the observed 25 - 30 cm thick, 1.5 m long shell deposit was surrounded by considerable riprap and a moderate scatter of small *Rangia* shells. A few small fragments of riprap were observed within the packed shell deposit, and a 15 cm long piece of riprap was observed underlying the shell. While not measured, the average size of the observed shell was noticeably smaller than typically occurs within prehistoric shell middens.

Four auger tests were excavated in the vicinity of the shell deposit. Two of these tests were impeded by rock, while the other two provided no evidence of in situ shell midden deposits. Finally, an additional deposit of packed *Rangia* shells was observed under the eroded bank at the waterline, approximately 40 m northeast of the site area; a small brick fragment was observed in the middle of this shell deposit. Based on collected data and on the placement of this site away from a natural watercourse, 16PL40 is not an archeological site; rather, it represents modern shell deposited to control bankline erosion.

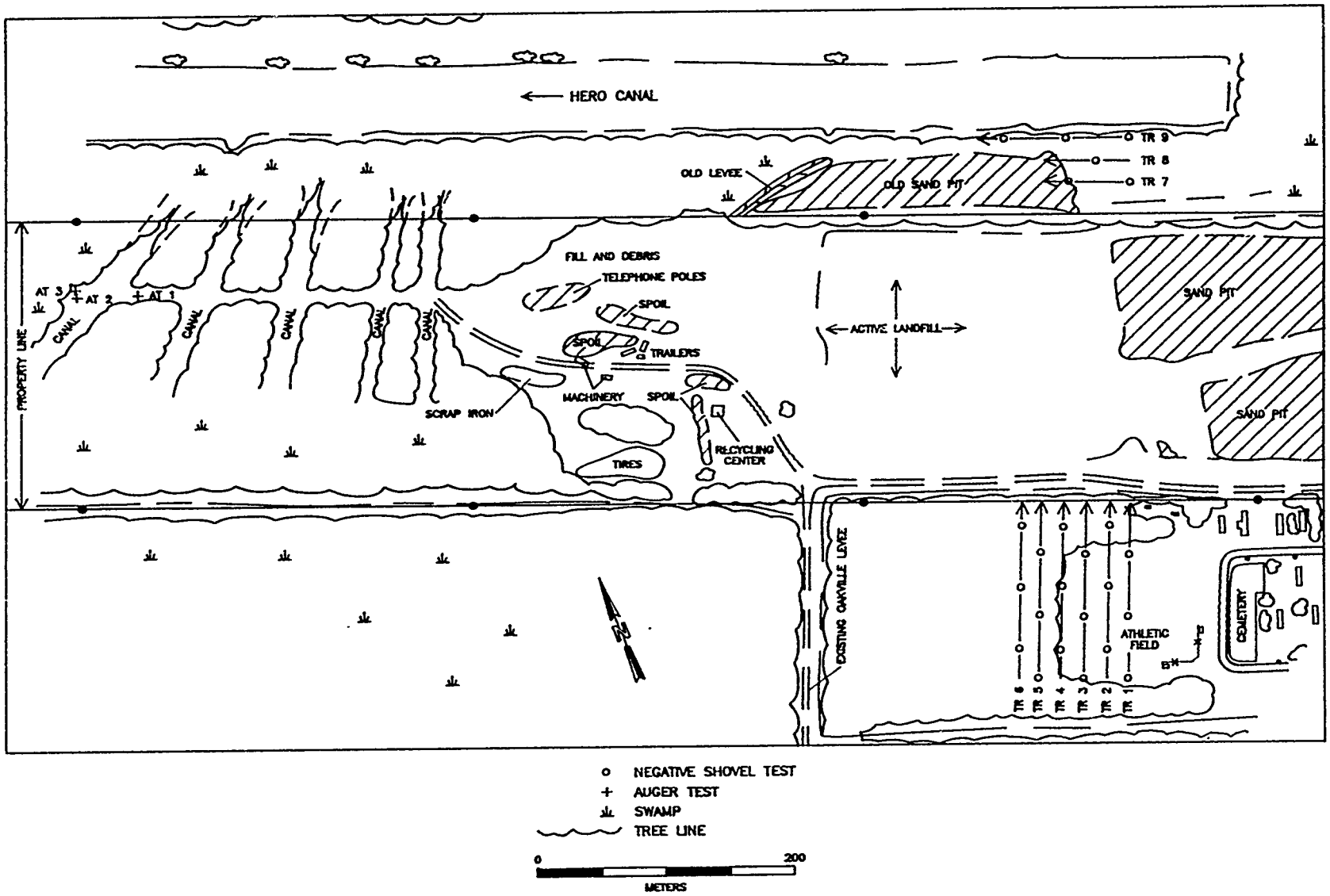



Figure 14. Plan of Area C showing survey transects and modern land use.

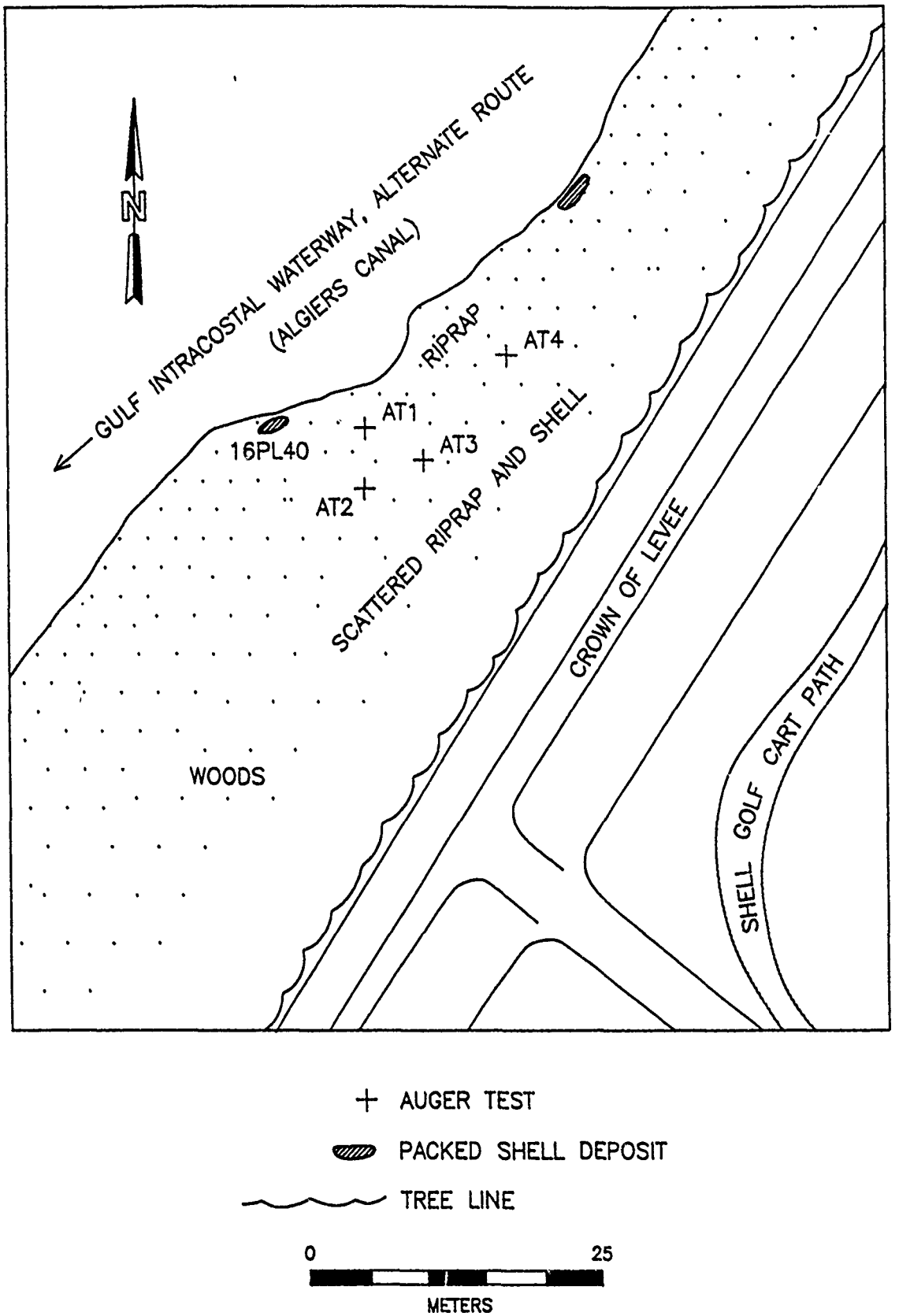



Figure 15. Plan of Site 16PL40.

Site 16PL41

Site 16PL41 is located along the east bank of the Algiers Canal, a short distance northeast of its confluence with Bayou Barataria. The 1932 USGS 7.5' topographic quadrangle depicts the site area as undeveloped land between Bayou Barataria and Bayou Barriere. As mentioned previously, the Algiers canal was constructed in the 1950s, and was completed in 1962.

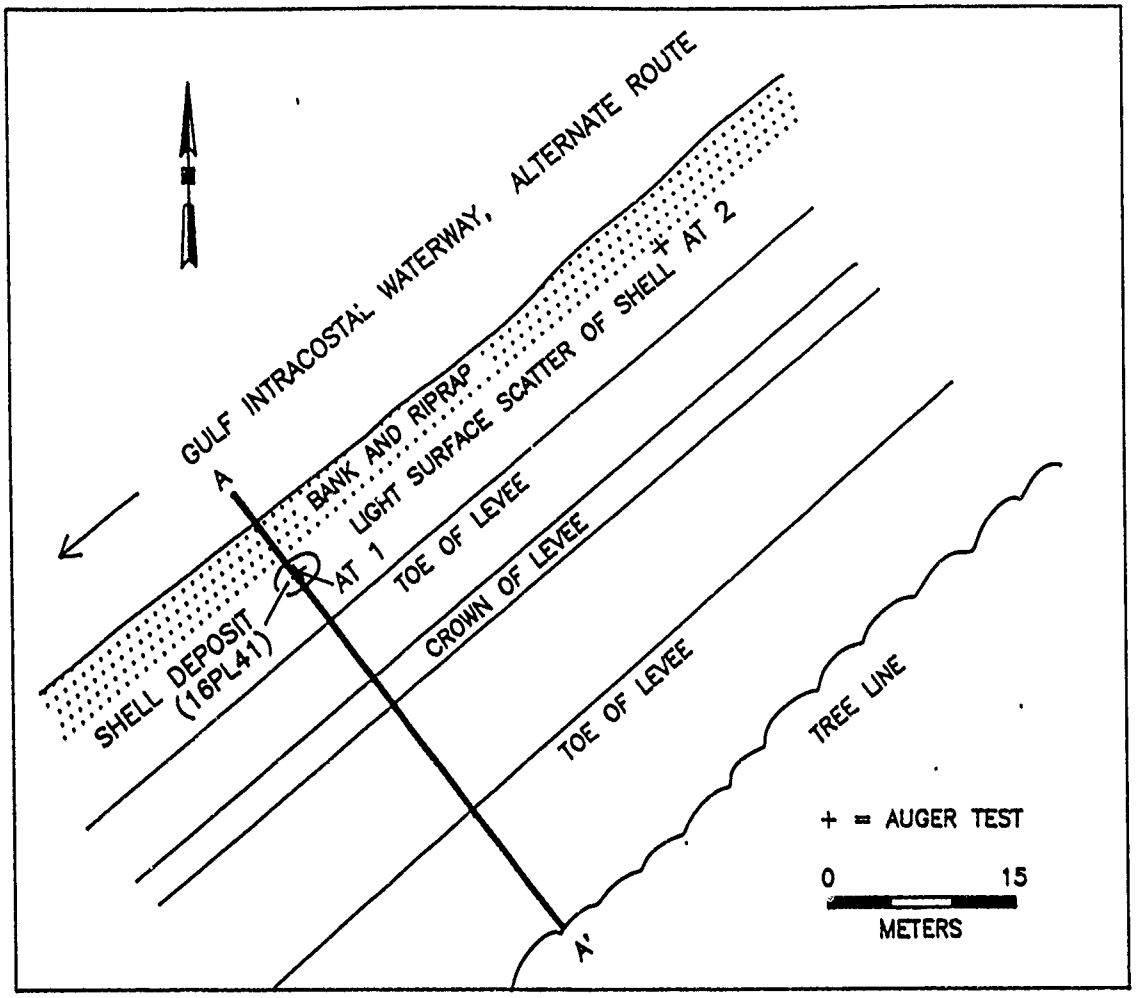
The original Louisiana state site form described the site as a thin layer of oyster and *Rangia* shell aligning the cut bank of the waterway. No cultural materials were located in the site area at that time. During the current survey, the site was relocated between the existing levee and the bankline (Figure 16). It consisted of a 2 - 3 m long shell deposit located immediately behind the riprap aligning the waterway. The surrounding bankline also is covered with a moderate scatter of *Rangia* shell. Two auger tests were excavated within the site area: Auger Test 1 was excavated within the shell concentration, and Auger Test 2 was excavated approximately 40 m to the northeast. These auger tests demonstrated that the 20 cm thick shell concentration was mixed with modern debris, and that the underlying soils consisted of various sands, silty sands, and silty clays. No non-modern cultural materials were observed in the site area.

A cross-section of the site area was drawn extending from the waterway southeastward across the modern artificial levee into the drained backswamp (Figure 16). This cross-section demonstrates that 16PL41, along with the surface of the waterway, was between 1.5 to 2 m higher in elevation than the drained backswamp located immediately southeast of the levee. Therefore, the entire area between the levee and the waterway is comprised of modern fill. The shell at 16PL41, along with the riprap, was deposited to inhibit erosion of the bankline. Based on field observations, 16PL41 is not an archeological site.

**Recommendations**

Intensive pedestrian survey and systematic shovel testing augmented by limited auger testing within Areas A, B, and C, failed to produce any evidence of archeological deposits. Only two artifacts were recovered: an iron trap and a whiteware spout fragment. The trap was surface collected from within former backswamp. The spout fragment was recovered in the vicinity of modern debris near Destrehan Road. These negative archeological results demonstrate that the various survey areas were not developed extensively during the Historic period. Areas A and B remained swampland well into the twentieth century, while Area C was at the distal edge of the Mississippi River natural levee. No further archeological testing is recommended in Areas A, B, and C.

Archeological testing at Sites 16PL40 and 16PL41, the two shell deposits located along the Algiers Canal, demonstrated that these sites consisted of shell deposited to combat bankline erosion following construction of the waterway during the 1950s. The shell was mixed with modern debris and fragments of riprap; no historic (pre - 1940s) or prehistoric materials were located in the site areas. Based on data collected during this study, it is apparent that 16PL40 and 16PL41 do not constitute archeological sites. No additional archeological work is recommended at these two sites.



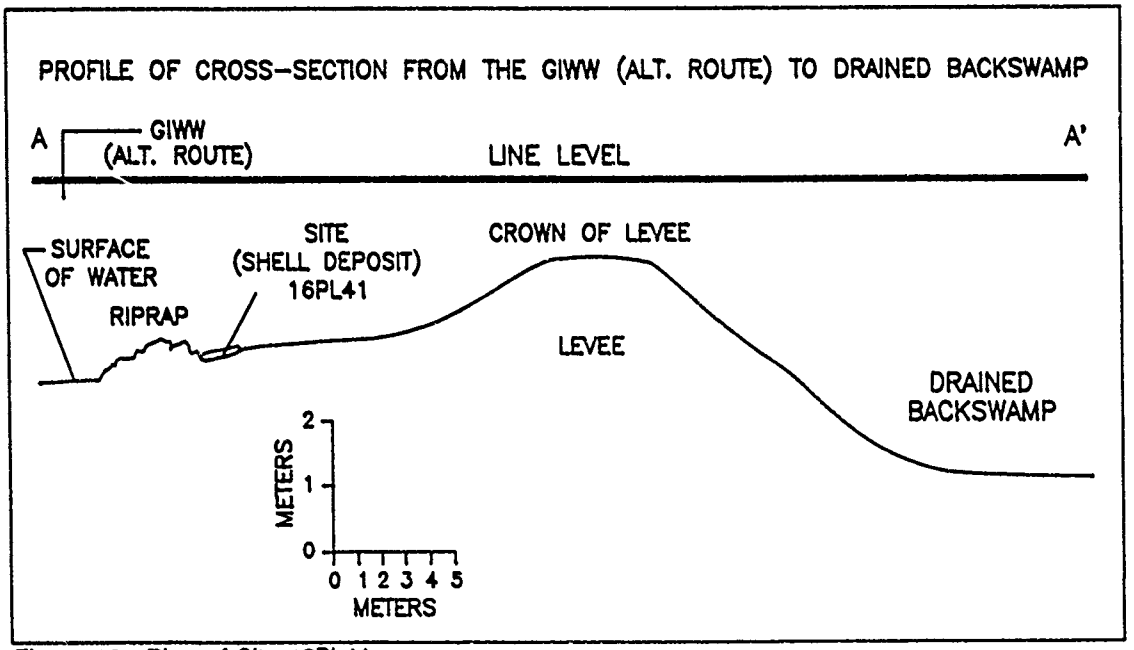




Figure 16. Plan of Site 16PL41.

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# APPENDIX I

# SCOPE OF WORK

Contract DACW29-90-D-0018

# SCOPE OF SERVICES

## CULTURAL RESOURCES INVESTIGATIONS FOR THE WESTBANK HURRICANE PROTECTION PROJECT, LOUISIANA

### 1. Introduction

The U.S. Army Corps of Engineers, New Orleans District (NOD), is completing plans for the Westbank Hurricane Protection Project in the Westbank area of greater metropolitan New Orleans, Louisiana. Most of the Project impact area has either already been subjected to archeological survey or has been determined to be low site probability not requiring such survey. However, the final plans do include several land parcels which require evaluation of possible cultural resource impacts. These areas cover about 350 acres and will be addressed by this delivery order.

This delivery order calls for a cultural resources investigation of about 350 acres. The contract period for this work is 193 days.

### 2. Study Area

The project is located in the Westbank of the New Orleans metropolitan area along the right descending bank of the Mississippi River. The areas are generally on top of Mississippi River natural levee formations. The areas to be assessed include: 1)Proposed Oakville levee section alignment, 2)evaluation of archeological sites 16PL40 and 16PL41 along the Algiers Canal, 3) a borrow area, and 4) part of the route proposed for the sector gate bypass channel. See attached maps for location of items above.

### 3. Background Information

General overview level information is available for the project vicinity as a result of cultural resources studies done in the general area for various federally funded/permitted actions. With the exception of the sites 16PL40 and 16PL41 areas, the project areas do not, however, fall within areas previously subjected to archeological survey. No standing structures appear on aerial photographs. No properties currently listed in or determined eligible for inclusion in the NRHP are recorded in the project areas.

The natural levee of the Mississippi, where the project areas are located, may incorporate both historic and prehistoric archeological sites. No sites earlier than Coles Creek are predicted.

### 4. General Nature of the Work to be Performed.

Five discrete land parcels totaling approximately 350 acres within Westbank of the metropolitan New Orleans area of Louisiana, will be addressed under this delivery order. The work will be divided into three phases :

(1) Mobilization and Background Search
(2) Intensive Cultural Resources Survey
(3) Data Analysis and Report Preparation

## 5. Study Requirements

### Phase 1: Mobilization and Background Search

Background literature and record search will provide context for the evaluation of archeological sites which may be found by the survey.

### Phase 2: Intensive Cultural Resources Survey

Upon completion of Phase 1, the contractor will conduct an intensive pedestrian survey augmented with systematic shovel testing. No excavation will be permitted within any existing levee. A 20-meter transect width, and a shovel-testing interval of 50 meters in an offset pattern are suggested. Shovel tests will be approximately 30x30 cm in the horizontal plane down to sterile subsoil. All excavated soil will be screened through 1/4 inch wire mesh. All shovel tests will be backfilled. This systematic procedure will be supplemented with judgmental shovel testing based upon the background research and surface artifacts which may be observed. The work at Sites 16PL40 and 16PL41 will consist of locating the mapped site locations and shovel testing as needed to assess the current condition of each site.

State site forms will be completed and state-assigned site numbers will be utilized for all archeological sites located by the survey. All sites located in the survey area will be mapped, photographed, and defined using shovel, auger, and limited surface collection to *characterize* depth of deposit, site boundaries, stratigraphy, cultural association, and possible activity areas. All cultural resources located by the survey will be evaluated against the National Register criteria contained in Title 36 CFR Part 60.4 and within the framework of the historic setting to assess the potential eligibility for inclusion in the National Register.

Upon completion of the Phase 2 field work, a management summary succinctly reporting the results of the title search and the field survey shall be submitted to the COR within 5 days (see section 6).

### Phase 3: Data Analysis and Report Preparation

All data will be analyzed using currently acceptable scientific methodology. The Contractor shall catalogue all artifacts, samples, specimens, photographs, drawings, etc., utilizing the format currently employed by the Louisiana State Archeologist. The catalogue system will include site and provenience designations.

The Contractor shall prepare brief descriptions of the geomorphology, ecology, and cultural history of the area, and summarize previous research. This information shall be integrated with the title search and survey results, and analyses to produce an appropriately illustrated, scientifically acceptable draft report.

## 6. Reports

### Management Summary

Four copies of the management summary, one set of U.S.G.S. quadrangle maps accurately delineating site locations, and one set of site forms for any sites located will be submitted to the COR within 5 days after completion of field work (60 days after date of order). The management summary will succinctly report the results of the field investigations, i.e. number, type, brief description and assessment of project impacts for all cultural resources located and preliminary assessments of site significance. If cultural resources are identified during the survey, the report will recommend which (if any) of them should be avoided by redesigning the project. The summary report is not intended to be a lengthy interim report, but shall contain enough information to serve as a planning aid and a means of informing the COR .

### Monthly Progress Reports

Throughout the duration of the delivery order, one copy of a brief and concise statement of progress shall be submitted with and for the same period as the monthly billing voucher. These reports, which may be in letter form, should summarize all work performed, all information gained, or any problems encountered during the preceding month. A concise statement and graphic presentation of the Contractor's assessment of the monthly and cumulative percentage of total work completed by task shall be included. The monthly report should also note difficulties, if any, in meeting the contract schedule.

### Draft and Final Reports

Five copies of the draft report integrating all phases of this investigation will be submitted to the COR for review and comment 90 days after date of date of order. The Contractor shall submit state site forms for sites discovered in the course of work under this delivery order as an appendix to the draft report.

The written report shall follow the format set forth in MIL-STD-847A with the following exceptions: (1) separate, soft, durable, wrap-around covers will be used instead of self covers; (2) page size shall be 8-1/2 x 11 inches with 1-inch margins; (3) the reference format of American Antiquity will be used. Spelling shall be in accordance with the U.S. Government Printing Office Style Manual dated January 1973.

The COR will provide all review comments to the Contractor within 42 days after receipt of the draft reports (132 days after date of order). Upon receipt of the review comments on the draft report, the Contractor shall incorporate or resolve all comments and submit one preliminary copy of the final report to the COR within 21 days (153 days after date of order). Upon approval of the preliminary final report by the COR, the Contractor will submit ; one reproducible master copy, one copy on floppy diskette as required in the Contract, and 30 copies of the final report to the COR within 193 days after date of order. Included as an appendix to the Final Report will be a complete and accurate listing of cultural material and associated documentation recovered and/or generated.

A copy of the Delivery Order Scope-of-Services shall be bound with the Final Report.

In order to preclude vandalism, the final report shall not contain specific locations of archeological sites. Site specific information, including one set of project maps accurately delineating site locations, site forms, black and white photographs and maps, shall be included in an appendix separate from the main report.

## 7. References

The study will be conducted utilizing current professional standards and guidelines including, but not limited to:

-The National Park Service's draft standards entitled, "How to Apply the National Register Criteria for Evaluation," dated June 1, 1982;

-The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation as published in the Federal Register on September 29, 1983;

-Louisiana's Comprehensive Archeological Plan dated October 1, 1983;

-The Advisory Council on Historic Preservation's regulation 36 CFR Part 800 entitled, "Protection of Historic Properties."

-The Advisory Council on Historic Preservation's Section 106, Update/3 entitled, "Manual of Mitigation Measures (MOMM)" dated October 12, 1982.

-Agency for Conservation Archeology, Eastern New Mexico University Southeast Louisiana Cultural Resource Management Plan.

## 8. Attachments

Map of Project Area

## 9. Disposal of Records and Artifacts

All records, photographs, artifacts, and other material data recovered under the terms of this delivery order shall be recorded and catalogued in a manner compatible with those systems utilized by the Louisiana SHPO and by State and Federal agencies which store archeological data. They shall be held and maintained by the Contractor until completion of the delivery order. Final disposition of the artifacts and records will be in accordance with applicable Federal and State laws. Unless otherwise specified, artifacts will be returned to the landowner or permanently housed with the Louisiana Division of Archaeology and Historic Preservation or in a repository selected by the State Archeologist. The Principal Investigator shall inform the COR in writing when the transfer of data has been completed and shall forward to the COR a catalogue of items entered into curation. The location of any notes, photographs or artifacts which are separated from the main collections from the project area which are used in data analyses will remain in private ownership. The Contractor shall be responsible for delivery of the analyzed archeological material to the individual landowners, the Louisiana SHPO's office, or any other repository designated by the Government following acceptance of the final report. All artifacts to be permanently curated will be cleaned, stabilized, labeled, catalogued on typed State curation forms, and placed in sturdy bags and boxes which are labeled with site, excavation unit or survey collection unit provenience.

10. Schedule

Initiate Phase 1 (Background Search)-14 days after date of order

Initiate Phase 2 (Field Survey)-30 days after date of order

Submit Management Summary- 60 days after date of order

Submit Draft Report-90 days after date of order

Receive NOD comments-132 days after date of order

Provide Preliminary Copy of Final Report-153 days after date of order

Submit Final Reports-193 days after date of order