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US Army Corps of Engineers
New Orleans District

A RESEARCH DESIGN FOR ARCHAEOLOGICAL INVESTIGATIONS AND ARCHITECTURAL EVALUATIONS WITHIN THE PROPOSED UPPER SITE, NEW LOCK AND CONNECTING CHANNELS, INNER HARBOR NAVIGATION CANAL, NEW ORLEANS, LOUISIANA

FINAL REPORT

FEBRUARY 1991

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Louisiana State University
Baton Rouge

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) This report assesses impacts to National Register and potential National Register properties in the vicinity of the Inner Harbor Navigation Canal, New Orleans. Impacts might result from modification to the canal. Geomorphology and the natural setting are reviewed. Prehistoric and historic period culture histories are presented. Detailed information is presented concerning the Ursuline Convent, the Jourdan Brick Yard, and late-nineteenth-century residential development. A research design for archaeological test excavations is based on the above. Three bridges that may be impacted are evaluated. Two of these, the St. Claude and Florida Avenue Bridges, are recommended eligible for the NRHP because they are Strauss Bascule Bridges. Direct and indirect impacts to the Holy Cross National Historic District are discussed in detail. Potential impacts include destruction or removal of structures and the introduction of visual intrusions. Recommendations are made concerning mitigation of such impacts.

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NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

October 3, 1990

REPLY TO
ATTENTION OF

Planning Division
Environmental Analysis Branch

To The Reader,

This cultural resources effort was designed, funded, and guided by the U.S. Army Corps of Engineers, New Orleans District as part of our cultural resources management program. The work documented in this report was a multi-disciplinary investigation of the potential impacts of replacement of the present Inner Harbor Navigation Canal Lock on historic properties. The primary tasks assigned to the contractor were the preparation of an archeological research design, an architectural assessment of the affected bridges and National Register districts, and a visual impacts assessment.

The mitigation recommendations contained in this report are considered preliminary. Additional studies to supplement the work reported herein are underway or planned in the near future. Also, consultation pursuant to the Advisory Council's regulations, 36 CFR Part 800, will soon be initiated. The anticipated result of this consultation will be a Memorandum of Agreement which specifies the mitigation measures to be implemented for this project.

The analyses presented in this report are thorough and of high quality. We compliment the contractor on a job well done.

Edwin A. Lyon, Ph. D.
Technical Representative

Michael E. Stout
Authorized Representative
of the Contracting Officer

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

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FINAL REPORT

Prepared by
Museum of Geoscience
Louisiana State University
Baton Rouge, LA

Prepared for
U.S. Army Corps of Engineers
New Orleans District
New Orleans, LA

February, 1990

Dr. Malcolm Shuman, Principal Investigator
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With Contributions by
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Mr. Jeffrey Treffinger, and Mr. Donald Gaztzke

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CHAPTER 1
INTRODUCTION

This report was prepared by the Louisiana State University Museum of Geoscience pursuant to a delivery order issued under contract DACW29-88-D-0123 by the U.S. Army Corps of Engineers, New Orleans District.

The New Orleans District anticipates replacement of the present lock system at the Inner Harbor Navigation Channel located between the Bywater National Historic District and the Holy Cross National Historic District. The project area (Figure 1) under discussion in this report may be subjected to impacts related to construction.

Chapter 2 of this report presents an overview of the geology and geomorphology of the project area, and Chapter 3 summarizes the environmental setting. Chapter 4 summarizes the prehistory of southeastern Louisiana. Chapter 5 is an overview of the growth and development of New Orleans. Chapter 6 summarizes previous archaeological investigations within the city. Chapter 7 is a history of ownership of the project area. Chapter 8 presents a detailed history of land use from the 1720s through the 1920s. Chapter 9 reviews census and City Directory data for residents of the study area between 1880 and 1910. Chapter 10 presents a research design for archaeological investigations necessary to assess NRHP status of the project area.

Chapter 11 presents an NRHP evaluation of three bridges that may be impacted by project construction. Chapter 12 is an architectural overview of the entire project area. Chapter 13 focuses on possible impacts to the Holy Cross National Historic District should project construction result in the loss of structures within the portion of the district within the study area. Mitigation of these impacts is also discussed. Chapter 14 presents the results of an assessment of possible visual impacts on both the Holy Cross and Bywater National Historic Districts. Chapter 15 discusses other potential impacts to those districts.

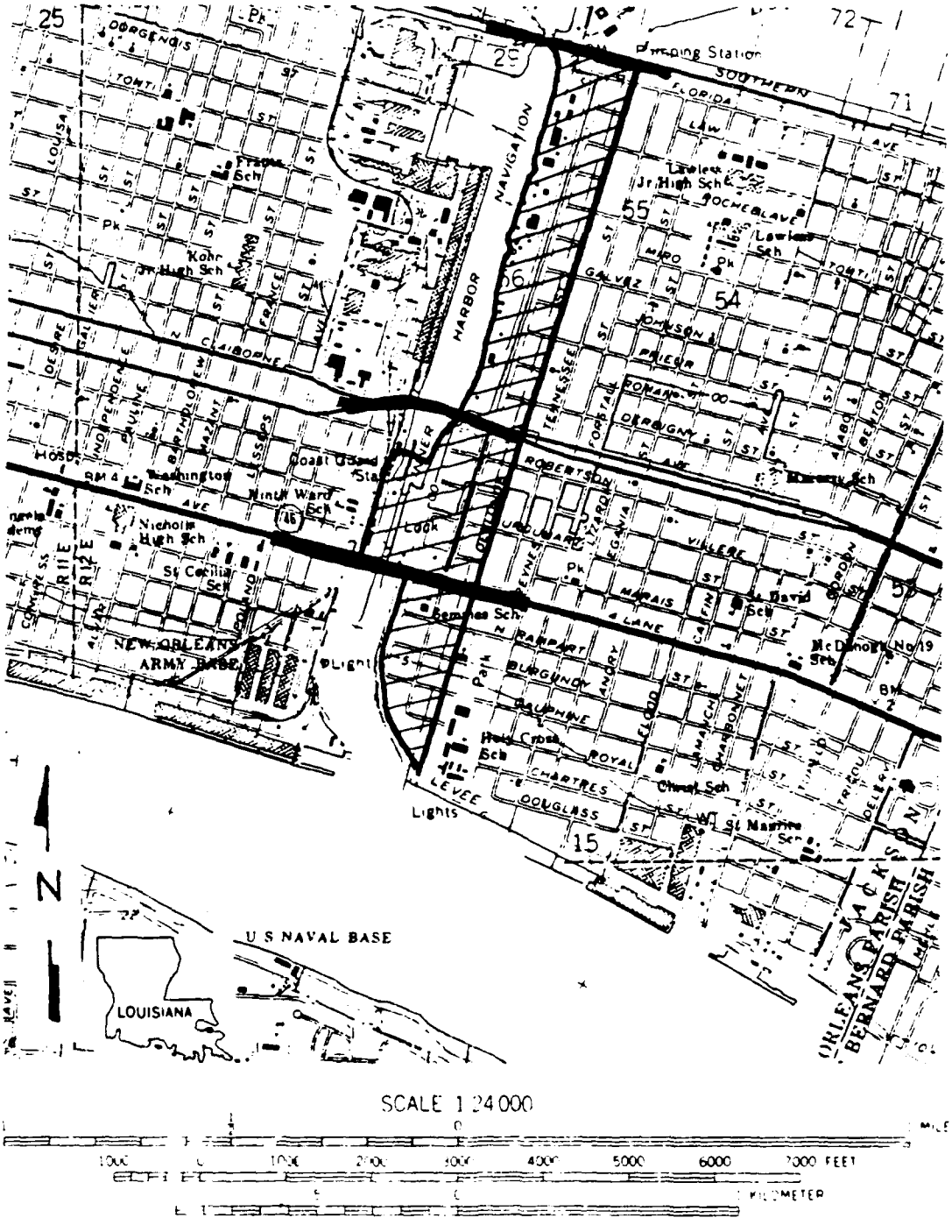


Figure 1. Excerpt from the East New Orleans USGS quadrangle delineating the study area.

CHAPTER 2
GEOLOGY AND GEOMORPHOLOGY OF THE PROPOSED UPPER SITE, NEW LOCK AND CONNECTING CHANNELS, ORLEANS PARISH, LOUISIANA

by Dr. Joann Mossa

Introduction

This chapter focuses on the geomorphology of the proposed Upper Site, New Lock and Connecting Channels, Orleans Parish, Louisiana. The project area (Figure 1) is located adjacent to the Mississippi River near the east or left descending bank in a section of the Mississippi River delta plain which was deposited only a few thousand to a few hundred years ago. Since human settlement and resource utilization are related to landform distribution and geomorphic processes, the regional and site geology and geomorphology of this area forms an important component for more detailed assessments of the archeology and cultural resources of the proposed project area.

Four major stages of human activities, which are interrelated with the processes and landforms, have occurred in the project area as follows: 1) initial occupation by Indians; 2) initial occupation by European settlers who utilized this area for agriculture, fishing, and timber; 3) development of transportation networks in the basin interior, allowing for improved navigation of steamships and major railroad routes; and 4) modification of the basin to alleviate the effects of floods in response to the major flood of 1927. Specific sites in the proposed project area where human settlement and resources should be concentrated, particularly prior to development of major flood control projects in the basin, include the modern natural levees of the Mississippi River, along distributary natural levees, and along the lakes and other minor water bodies. Initial human occupation could occur once the levees developed sufficient subaerial expression, although these areas would still be subject to periodic overbank flooding and storm surges. Human settlement and resource utilization in the Mississippi River delta plain have followed changes in the geomorphic systems (McIntire 1958). When river diversion built a new system of levees, thereby causing reduction of fresh water and sediment supply in older courses, human habitation on the older levees became undesirable and the settlement was abandoned. The humans then migrated to the new, active river system.

Modern geomorphic processes have also destroyed or disturbed undocumented sites and several of the prehistoric and historic sites recognized in previous studies. McIntire (1958) reports that many sites surveyed by Kniffen (1936) in coastal Louisiana parishes have long since been destroyed by human activities such as road construction and natural processes such as burial by sedimentation, or erosion into lakes, bayous, and the Gulf of Mexico. Many of the middens and artificial mounds in south Louisiana are presently below the high water mark because of subsidence. The bases of some sites in coastal Louisiana have subsided to a depth of twenty feet due to local consolidation (McIntire 1958). An understanding of spatial and temporal variations in geomorphic processes is therefore an important component for assessing the location of buried sites and cultural resources, and for determining the preservation potential of archaeological sites in a given area.

Geomorphic Processes of the Mississippi River Alluvial Valley

The Mississippi River alluvial valley extends from Cairo, Illinois to an arbitrary location upstream of the Gulf of Mexico where the delta plain originates. The alluvial valley contains distinctive meander belts, and the delta plain contains corresponding delta complexes and lobes that are the product of shifting of the Mississippi River during the Holocene. Geologic environments in the Mississippi River alluvial valley and in the proposed project area that were recognized by Fisk (1947) are meander belt deposits including point bar environments, topstratum and slough, abandoned channel environments including chute cut-offs and neck cut-offs, natural levee deposits, and backswamp deposits.

Deposition associated with meander belts takes place by two major mechanisms. One mechanism is by downstream migration of meander bends which builds lateral accretion topography on the floodplain. The second major depositional mechanism is vertical accretion, whereby the meander belt grows upward due to sedimentation associated with overbank flooding. Visher (1965), Wolman and Leopold (1957), and Nordin and Beverage (1964) indicated that deposits of lateral accretion comprise eighty to ninety percent of normal floodplains with the remaining ten to twenty percent representing overbank deposits. Geomorphic features

associated principally with lateral accretion of the floodplain include point bars, mid-channel islands, ridges and swales, oxbow lakes, chute and neck cut-offs, and other features. Geomorphic features associated principally with vertical accretion of the floodplain are natural levees, crevasses and crevasse splays, and backswamps.

Lateral accretion deposits are directly related to processes associated with meander bend deposition and migration. Meander bends have a concave bank or cut bank which is steep and a convex bank or gently-sloping point bar, typically formed of sandy material deposited during recent floods. The concave bank becomes oversteepened by the deep scouring action of the stream in bendways, and caves into the river. As the caving bank retreats, the opposite convex bank advances by accretion of sand, derived partly from upstream scouring and deposited as point bars in the slackwaters within the bend. As the meander bend enlarges, it may form a loop which may be shortened or cut off at the neck of the loop or at a chute channel. Most point bars during low stage have a submerged arcuate ridge-like extension attached at the downstream end, which separates a slackwater portion of the stream from the deep part of the channel near the opposite shore. During high water, deposition takes place on the bar area and a ridge is developed. Vegetation growth stabilizes this bar, and decreases the flow velocity such that it may trap more sediment. During the following low stage, the slackwater slough receives some filling of fine sediments carried in migration. As channel migration continues, sand accretion progresses and the slough may become blocked off from the river by bar growth and then becomes a lake. As the bar grows, a series of alternating arcuate ridges and intervening swales is developed. The bar ridge gradually builds to flood stage height and as the accretions become further removed from the river, the sloughs fill with fine floodwater sediments. Some mid-channel islands are separated from one bank of the river merely by a chute channel which is dry, or nearly so, at low water.

Vertical accretion deposits and geomorphic features are associated principally with overbank flooding of the channel. Partial sorting of alluvium takes place when the stream overtops its banks. As this occurs, there is a decrease in velocity and transporting capability of the water which result in rapid deposition of sediment. As the velocity of the water decreases, sand, being coarsest, is deposited initially and then is followed by

silt and clay. The clayey backswamp sediment is deposited from still or slowly moving water in low areas in back of the natural levees. The natural levee is typically best-developed on the outside of river bends as a low, sloping, wedge-like ridge of sediments over a mile in average width, tapering into the adjacent lowlands. These levees are being constructed above the general level of the floodplain basins and are the topographic forms which cause the meander belt to stand up as an alluvial ridge. Levee crevassing and splay development generally occur on the concave part of the meander bend. The crevasse channels are in most cases incised and flow into the distal drainage networks which parallel the slope of the flood basin floor.

Other geomorphic features in the alluvial valley are associated with mass wasting or gravitational, such as bank failures, and hillslope processes. The alluvial banks of the lower Mississippi River are subject to continual erosion and migration. River bends normally tend to move downstream as the result of the progressive effects of bank erosion. Cutoffs occur as a result of the gradual erosion at and over the necks of bends. The rate and amount of bank caving in the lower river decreases as the mouth of the river is approached. The present meander belt shifts rapidly downstream if it cuts into deposits of sandy point bars which offer little resistance (Fisk 1947). It encounters more resistance when it cuts into fine-grained deposits. Fine-grained bed and bank materials slow down the rate of meander migration. Bank recession of sandy deposits is a continual movement associated with a rapidly and regularly retreating bank with smooth shorelines. Fine-grained deposits recede by slumping, which results in irregularly scalloped banklines characterized by riverward-tilted blocks. Hillslope processes are most active where bluffs are present, and are therefore secondary in the vicinity of the project area.

From upstream to downstream, the banks of the lower Mississippi River are composed of progressively finer deposits; meanders decrease in number; and the channel becomes narrower, straighter, and deeper. The straightening of the river has been attributed to the increase in the amount of backswamp clay in the delta plain. The river thalweg shows a series of alternating riffles and pools that range from 15 to over 100 ft (5 to 30 m) in relief (Figure 2). The pools and riffles show progressively lower elevations downstream to New

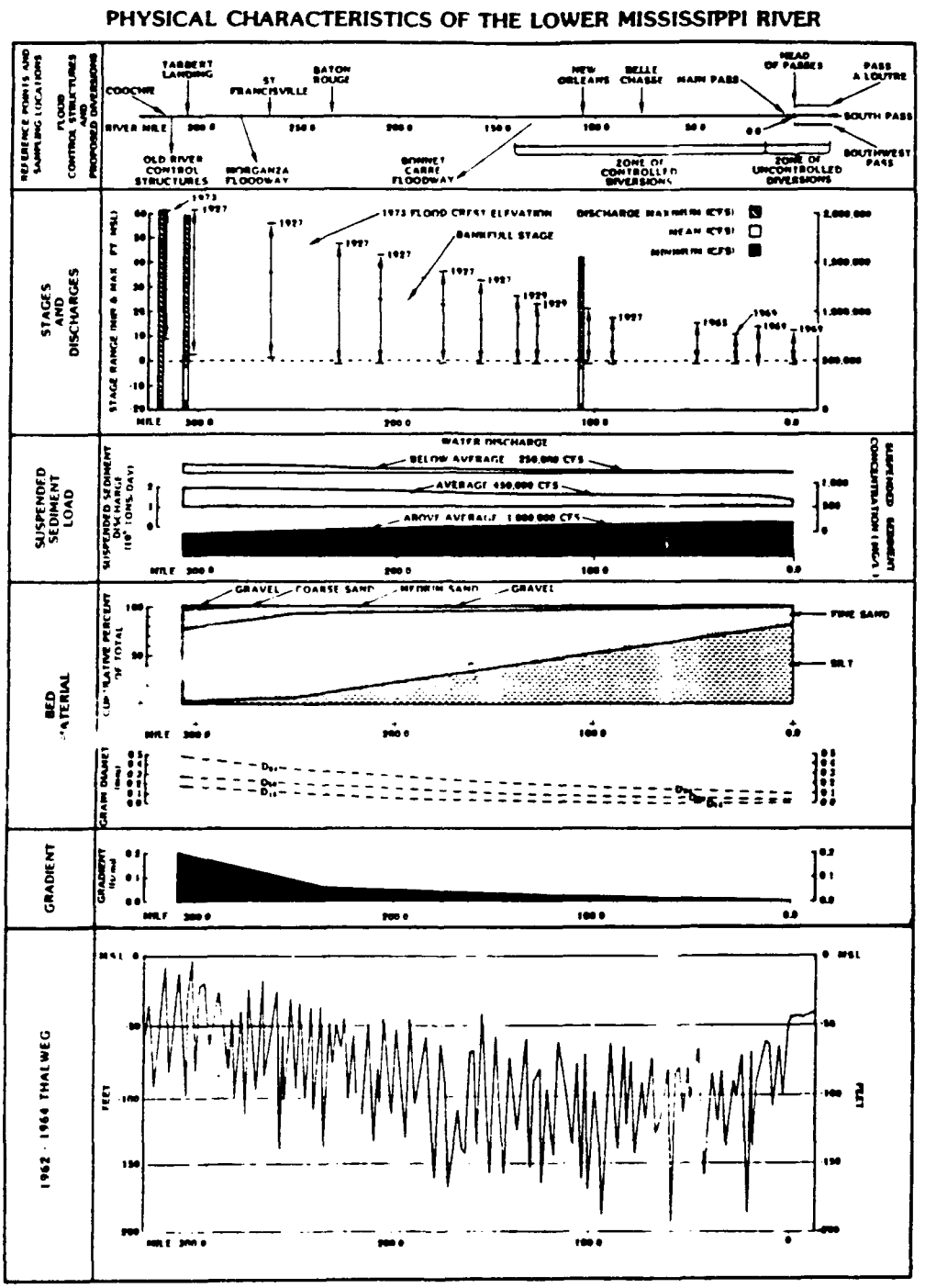


Figure 2. Physical characteristics of the lower Mississippi River. Data sources on miles and structures include Keown et al. (1977), USACE (1984a, 1984b); stages and discharges from USACE (1985), where dates indicate year of peak stage; suspended-sediment discharge from Everett (1971), Wells (1980), and Meade (1987); bed material data from Keown et al. (1986); and, thalweg elevations from USACE (1971) (from Mossa 1988).

Orleans. Some evidence shows that the bed of the lower Mississippi River has been aggrading in recent years (Watson 1982).

Mineralogical studies of the Mississippi River alluvium indicate that smectite minerals are predominant in the clay-size fraction, with secondary amounts of micaceous clays (Brown et al. 1970). Associated with these are lesser amounts of kaolinite, chlorite-vermiculite intergrade, and quartz minerals. The sand and silt-sized fractions are made up largely of quartz with a sizeable component of feldspars and weatherable minerals including biotite and hornblende. Mississippi River sediment also does not have detectable quantities of calcium carbonate when it is deposited.

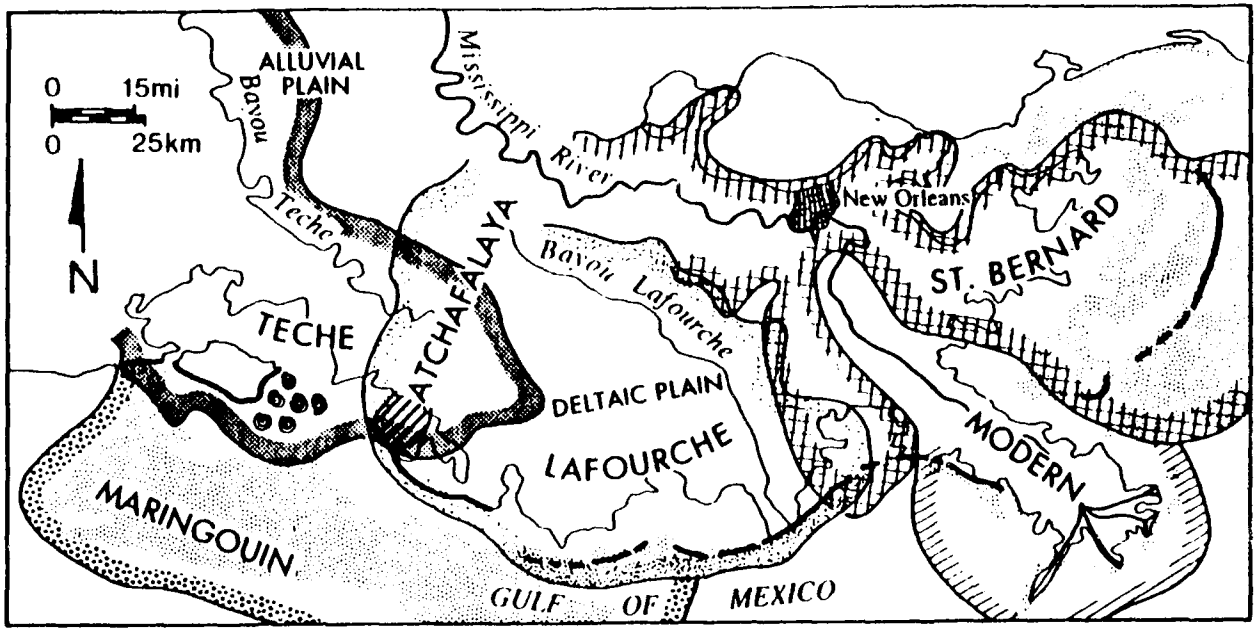
Geomorphic Processes of the Mississippi River Delta Plain and Project Area

The Mississippi River delta plain consists of deposits of abandoned and active deltas and channels of the Mississippi River. These partially-overlapping delta complexes and lobes are the product of shifting of the Mississippi River during the Holocene. The Mississippi River alluvial valley contains distinctive meander belts that correspond to the delta complexes. The delta plain is characterized by elevations near sea level, by lakes and lake systems, by active and ancient distributary channels of the river, by numerous tidal bayous, and by numerous islands. Some islands are evidence of the deterioration of broad marsh areas into isolated remnants, and others are transgressive sandy barrier islands located at the seaward edge of the delta plain and in the Gulf of Mexico.

The geologic history of the project area has been strongly influenced by sea level fluctuations in the Gulf of Mexico and the shifting of the Mississippi River and its distributaries. Sea level fluctuations influenced the slopes, and therefore the load and channel characteristics, of rivers draining into the oceans. During lowering of sea level, the streams cut deep trench-like valleys; during the succeeding rising sea level, these valleys were alluviated. About 35,000 to 40,000 years ago, the environment of the project area was similar to that a few miles offshore the modern Louisiana shoreline in the Gulf of Mexico, and thus was characterized as nearshore marine. When sea level was approximately 300 ft (90 m) below present, during the Wisconsinan or latest Pleistocene deglaciation, the

Mississippi valley became deeply incised within coastal plain sediments (Fisk 1944). The mid-Wisconsinan nearshore zone and seafloor were exposed to subaerial weathering and developed well-oxidized and consolidated soils. During the glacial maximum, between 20,000 and 17,000 years before present, the Mississippi River north of the proposed project area had a braided pattern. A braided stream regimen may have persisted as far south as the Gulf coast, but this has not been established with certainty (Saucier 1974). Sea level began to rise persistently after the glacial maximum, and the alluvial sequence shows an upward decrease in particle size, resulting, in part, from the progressive decrease in slope brought about by rising sea level and consequent filling of the valley. The deposits provide evidence of a gradational reduction in the carrying capacity of the master stream (Fisk 1947), and they reflect a great wave of alluviation which slowly spread upstream. Approximately 100 ft (30 m) of overbank clays and silts overlie an undifferentiated sand and gravel unit of late Pleistocene age. The clays of the Holocene section are divisible into a stack of alternating poorly-drained swamp, well-drained swamp, and lacustrine facies (Krinitzsky and Smith 1969; Coleman 1966).

Since sea level reached its present stand approximately 5000 years ago, there has been little effective change in valley slope and no apparent change in the size of particles carried by the lower Mississippi River (Fisk 1947). Deltaic development of the Holocene Mississippi River began when sea level rise began to slow. The delta plain consists of six major Holocene delta complexes, each initially experiencing a constructive phase and then undergoing a destructive phase. Some evidence indicates that older complexes and lobes are also buried by these six younger delta complexes. Four of these complexes, namely, the Maringouin, Teche, St. Bernard, and Lafourche, are in various stages of deterioration. Two of these complexes, the Modern and Atchafalaya, are actively prograding or outbuilding (Figure 3). Each major course or belt of the Mississippi River, which shifted to a channel with a steeper gradient every 1000 to 1500 years during the Holocene, is associated with a delta complex. The early Holocene meander belts of the Mississippi River occupied courses in the western portion of the delta plain, and later meander belts have occupied courses in the eastern part of the delta plain. The individual lobes within each complex are the products of distributary networks (Frazier 1967). Subdeltas are important components of the delta lobes which in turn



KEY

- Shell Reef
- Barrier Shoreline
- Sand

DELTA COMPLEX	AGE (YEARS BP)
Maringouin	7250-6200
Teche	5700-3900
St. Bernard	4600-1800
Lafourche	3500-400
Modern	Active
Atchafalaya	Active

Figure 3. Holocene delta complexes of the Mississippi River delta plain (after Frazier 1967).

are the components of delta complexes. Subdelta deposits vary in areal extent from small splays to minor subdeltas to major subdeltas.

The constructive phase begins when a platform is developed as sediments are dispersed and deposited onto the inner continental shelf. The platform is built up by flooding, with flood deposition being thickest adjacent to the channel or distributary. Sediments deposited during overbank stages on the outside of bends form natural levees. These are alluvial ridges composed principally of fine sand and silt which slope away from the river. Natural levees coalesce and increase in elevation with increased time of meander belt occupation. As the natural levees build up, they confine increasingly higher amounts of water until only high floods are capable of overtopping the levees and providing flow to backswamp areas. Vegetation growth increases in backswamp areas once the floodplain stabilizes, and organic peats accumulate more rapidly. Fine sand and silt may also accumulate in crevasse splays. These are deposited in clayey or mucky backswamp and marshes when levees are breached during floods.

Upstream diversion will eventually occur when the channel shifts to a shorter course. The destructive phase of the delta complex is initiated because of lack of sediment supply, when increased subsidence occurs from compaction and dewatering. Marine processes rework the seaward edge of the abandoned delta complex, concentrating the sand-sized sediments into a transgressive barrier shoreline (Kwon 1969; Penland et al. 1981). The transgressive barrier shoreline consists of an erosional headland of barrier beaches and marginal spits that are typically flanked by barrier islands. With increased subsidence and erosion in the backbarrier region, the barrier shorelines may become disconnected from the headland and form barrier island chains. Ultimately, these may become submerged, forming inner shelf shoals.

Geologic environments in the Mississippi River delta plain and in the project area that were recognized by Fisk (1947) are meander belt deposits including point bar environments, topstratum and slough, abandoned channel environments including chute cut-offs and neck cut-offs, natural levee deposits, and backswamp deposits. Environments mapped by Kolb (1962) include natural levee, inland swamp, fresh water marsh, fresh to brackish water marsh, saline to brackish water marsh,

floating marsh or flotant, abandoned course or distributary, recent point bar consisting of predominantly sandy deposits, ancient point bar consisting of predominantly silty deposits.

Engineering Modification in the Vicinity of the Project Area

The history of man-made structures in the Mississippi River valley dates back several centuries, beginning with artificial levee construction. According to Elliott (1932), New Orleans was the location of the first artificial levee on the Lower Mississippi River. The city was founded in 1717 by Bienville who selected the site despite the objections of his engineer, De La Tour, who predicted periodic inundation during floods. De La Tour undertook construction of the first levee and completed the project in 1727. The levee was 5400 ft long, 3 ft high, and 18 ft wide at the top with a roadway on its crown.

By 1735, as settlements developed, the levee lines on both sides of the river extended from about 30 miles upstream of New Orleans to about 12 miles downstream of the city. By 1812, the levee system on both sides of the river had been extended to Baton Rouge on the left bank, and to the vicinity of Morganza on the right. Crevasses through these levees were a common occurrence during these earlier years. With the completion of more and larger levees, flood stages reached new heights. New Orleans was inundated several times, and there was considerable concern that the river bed was being silted in between the levees. It was soon recognized, however, that these new flood heights were a natural result of confining the river between levees. Where the river had formerly been allowed to spread out across the floodplain, thereby lowering stages, it was now confined to a narrow zone between the artificial levees.

By 1851, the west bank was protected almost continuously with levees from New Orleans to the Arkansas River. The east bank was protected as far north as Memphis (Elliott 1932). The levees have been raised repeatedly with successive floods. The present levee system in the vicinity of New Orleans is in some places 25 ft high and close to 5000 ft in cross-sectional area. It has been quite effective during the 20th century in preventing flooding and eliminating overbank deposition. The New Orleans area has since been altered from a predominantly wetland to an increasingly terrestrial environment. This alteration

is due largely to human activities including construction of ring levees and the development of drainage pumping systems to reduce the effects of floods and storm surges.

Sediment supply to wetland areas has diminished due to the construction of artificial levees along the Mississippi River. Sediment load has decreased in the Mississippi River because of increased diversion of flow into the Atchafalaya River, the construction of reservoirs, and increased use of soil conservation practices upstream (Keown et al. 1986). Shoreline erosion is largely influenced by storm impacts in much of coastal Louisiana. Canals constructed for oil and gas recovery, navigation, and drainage contribute to land loss because of changes in hydrology and sedimentation, and because of saltwater intrusion which may damage vegetation.

Geology and Geomorphology of the Proposed Project Area

The proposed project area is located across from Algiers near river mile 92.5 on the east or left descending bank of the Mississippi River in Orleans Parish, Louisiana near the Inner Harbor Navigation Canal. In the proposed project area, elevations range from over 20 ft (6 m) on the crests of artificial levees to below sea level both in urban areas surrounded by hurricane protection levees and on land exposed only during extreme low water stages along the Mississippi River.

Near-surface deposits in the project area are a product of the St. Bernard and Plaquemines-Balize or Modern delta complexes and the corresponding meander belts of the Mississippi River (Figure 3). The St. Bernard complex ranges in age from 4500 years B.P. to about 1800 years B.P. (Frazier 1967). The Plaquemines-Balize delta complex initiated approximately 950 years B.P., and is actively prograding at present. Although much of the St. Bernard and Plaquemines-Balize delta complexes and the modern Mississippi delta have been deposited in a subdelta environment, the project area has principally been influenced by deposition adjacent to the Mississippi River channel. The area of proposed construction consists of natural levee deposits (Kolb 1962). Abandoned distributaries occur in the vicinity of mile 94.5, 89.5, mile 85.8, and mile 82.0 on the left bank (Figure 4); the distributary at mile 82.0 is associated with one of the more prominent delta lobes of the St. Bernard delta complex (Saucier 1963). A

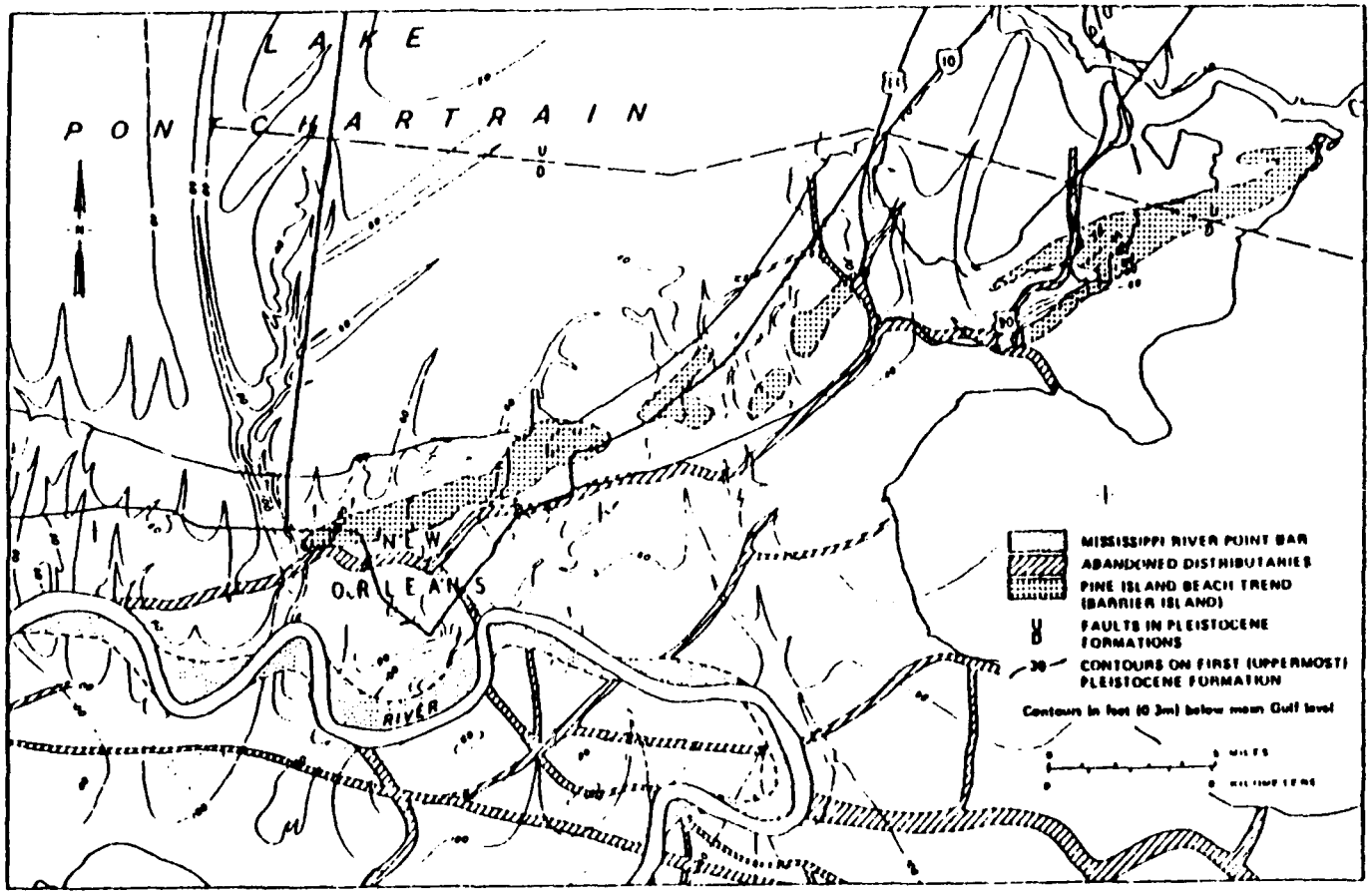


Figure 4. Generalized geology of New Orleans and the project area (from Kolb et al. 1975; Kolb and Saucier 1982).

comparison of the paleogeography in the vicinity of the project area from about 3500 to 4000 years before present (Figure 5), 2600 to 2800 years before present (Figure 6), 2000 to 2400 years before present (Figure 7), 1400 to 1800 years before present (Figure 8), 600 to 1400 years before present (Figure 9), and 300 to 600 years before present (Figure 10) shows the geomorphic changes in the vicinity of the project area (Saucier 1963).

The principal soil map unit in the project area is the Sharkey-Commerce association (USDA in press). These soils are developed on natural levees adjacent to the lower Mississippi River in the delta plain. The Sharkey series consist of poorly-drained soils formed in clayey alluvium on low and intermediate positions on natural levees. The Commerce series consist of somewhat poorly-drained soils that formed in loamy alluvial sediments developed on intermediate and high positions on natural levees. The Sharkey soils are Vertic Haplaquepts with very fine textures (>60% clay) and montmorillonitic mineralogy, with more than half of the clay fraction by weight being made up of expanding-lattice clays. The Commerce series are Aeric Fluvaquents with fine-silty textures (<35% clay and <15% sand), and mixed mineralogy, where no one clay mineral dominates the clay-size fraction. In Orleans Parish, the Sharkey-Commerce map unit consists of about 70% Sharkey soils, 21% Commerce soils, and 9% soils of minor extent.

A transect perpendicular to the river near the study area along the Intracoastal Waterway in the project area shows natural levee deposits as thick as 15 ft (4.5 m). These thin with increasing distance from the river. Beneath natural levee deposits are interdistributary deposits that are more than 30 ft (9 m) thick, followed by prodelta and nearshore gulf deposits, each with thicknesses of about 15 ft (4.5 m) adjacent to the Mississippi River. Depths to the Pleistocene near the river at this transect are about 80 ft or -70 ft m.s.l. (24 m or 21 m below m.s.l.), and are in excess of 150 ft (45 m) in places in the project area (Figure 11). The river thalweg has depths of 70 to 200 ft below m.s.l. (20 to 60 m below m.s.l.) in the project area and the river is well-entrenched into the highly erosion-resistant Pleistocene deposits (Kolb 1962).

Radiocarbon (C-14) dates of peat and organic deposits collected in the vicinity of the project area are considered by Saucier (1963) to be indicative of the age of this final course of the river. Four dates

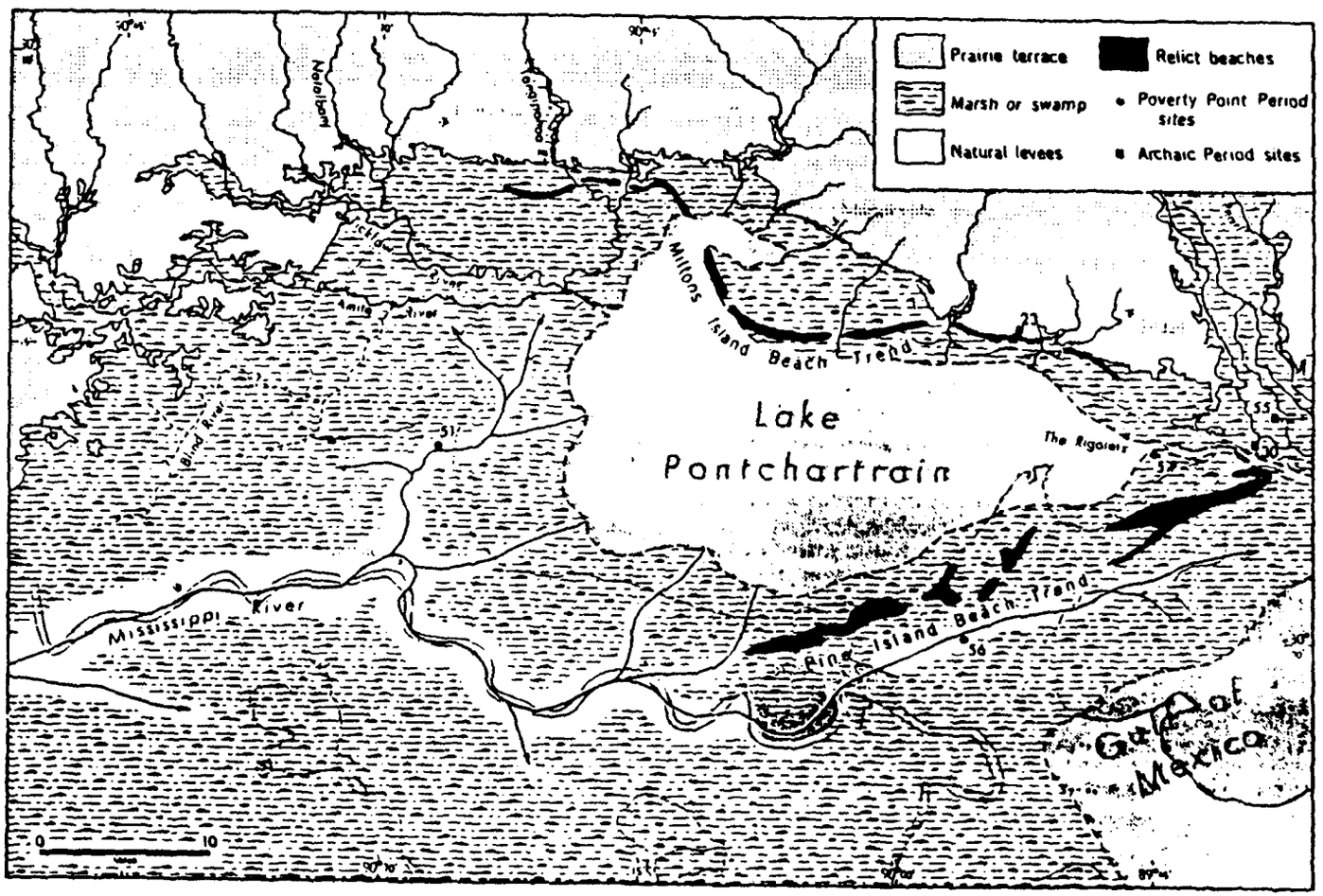


Figure 5. Paleogeography of the project area, about 3500 to 4000 years before present, showing maximum extent of the early St. Bernard delta and locations of Poverty Point and Archaic period sites (from Saucier 1963).

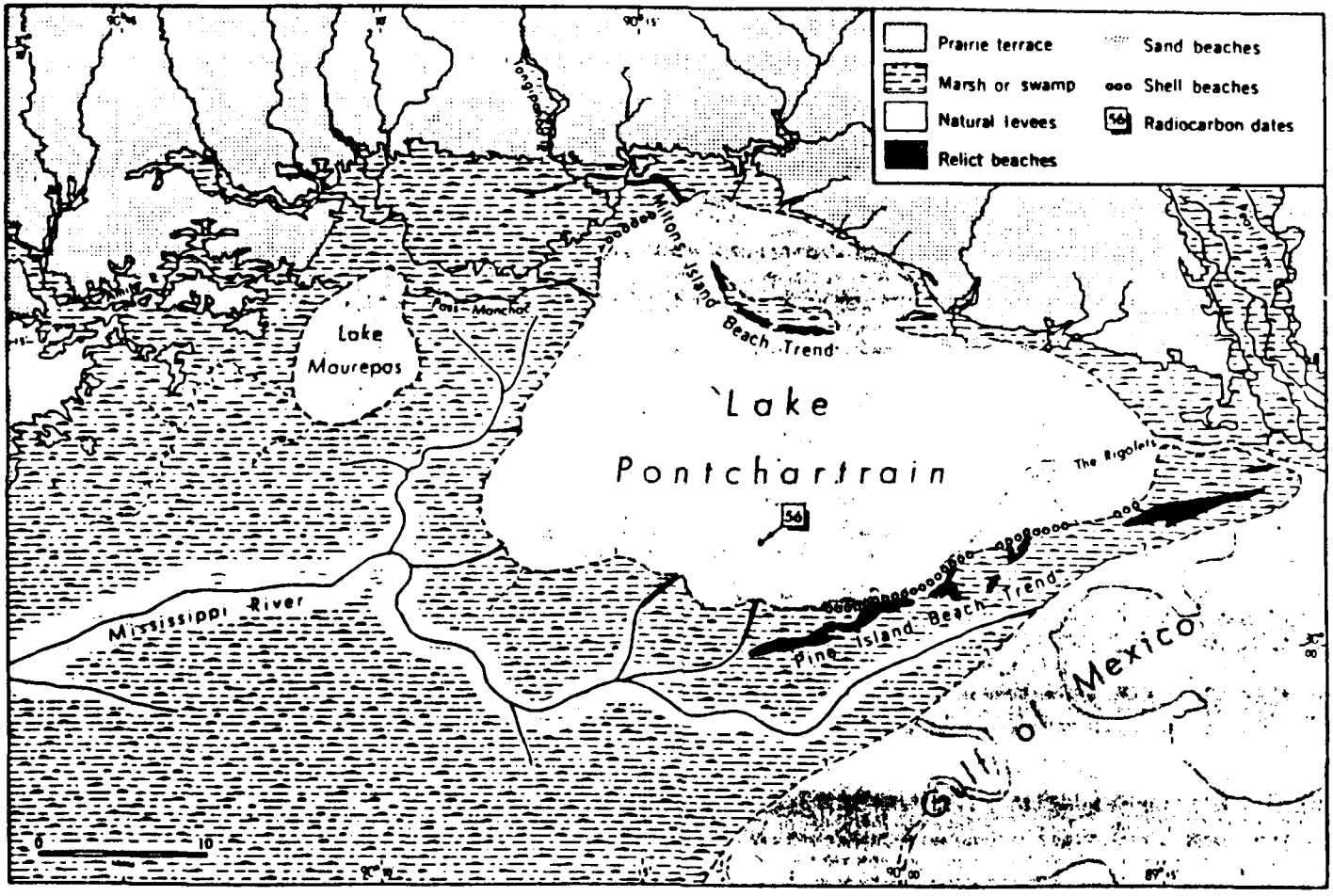


Figure 6. Paleogeography of the project area, about 2600 to 2800 years before present, showing maximum deterioration of the early St. Bernard delta (from Saucier 1963).

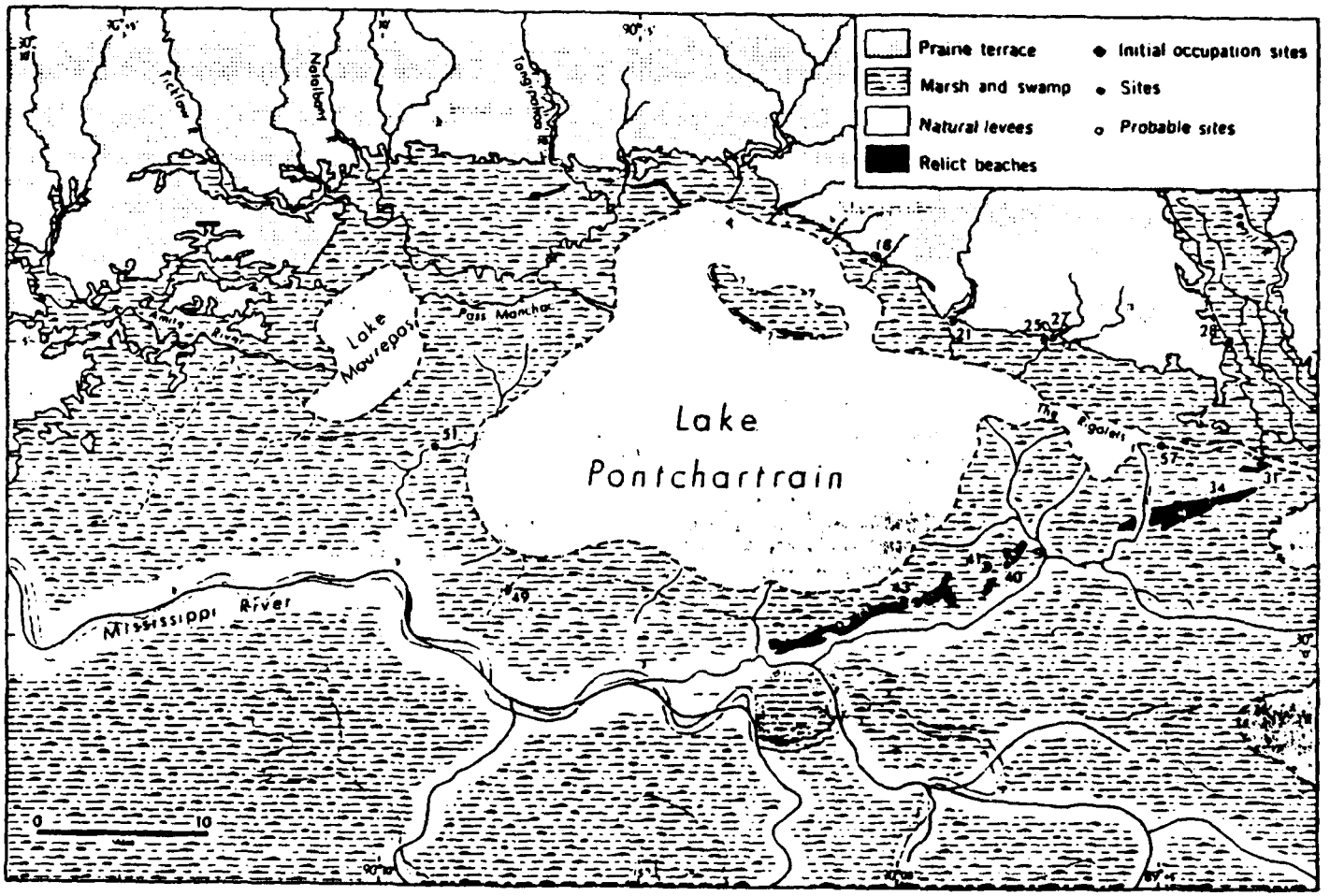


Figure 7. Paleogeography of the project area, about 2000 to 2400 years before present, showing maximum extent of the late St. Bernard delta and locations of Tchefuncte period sites (from Saucier 1963).

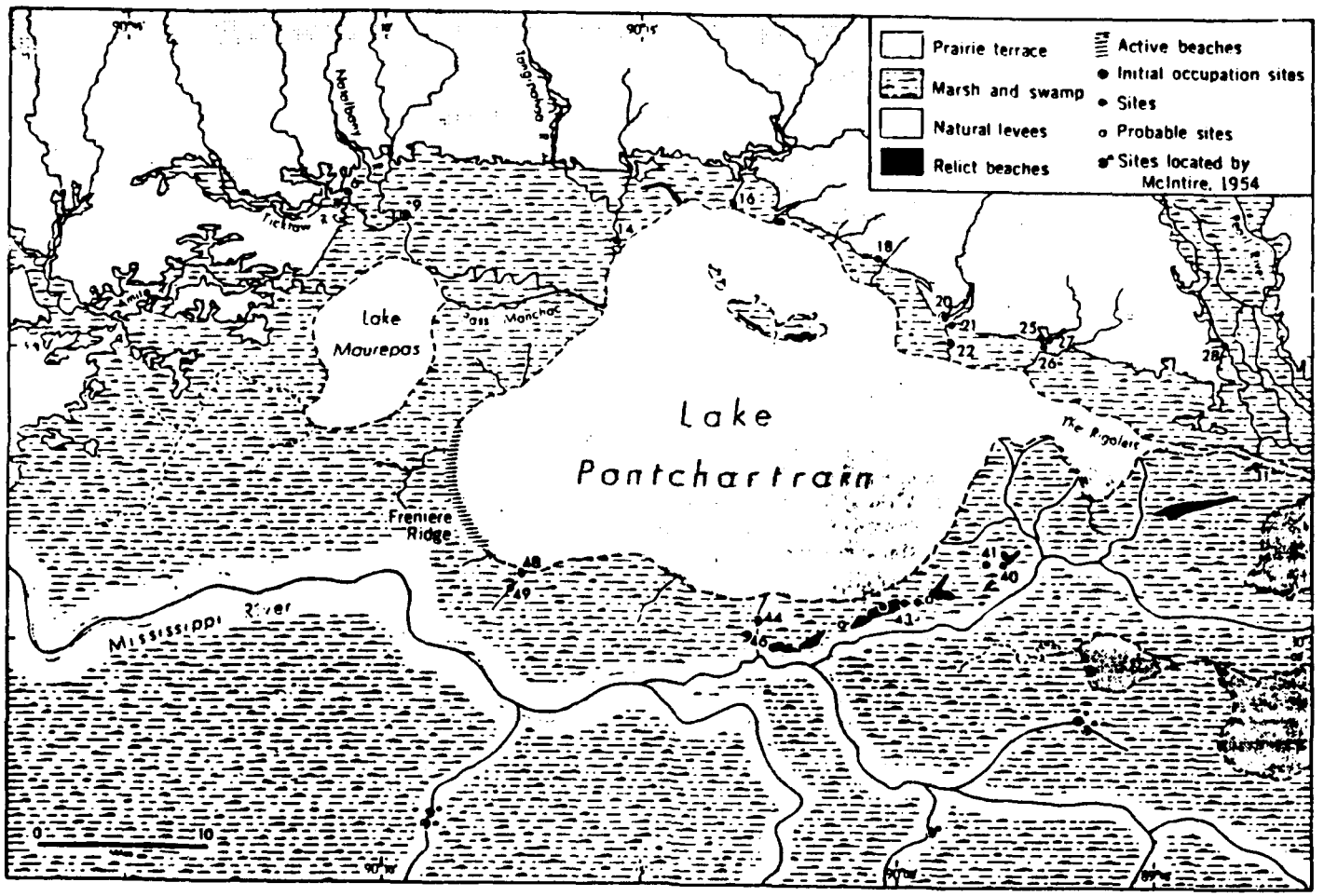


Figure 8. Paleogeography of the project area, about 1400 to 1800 years before present, including locations of Marksville period sites (from Saucier 1963).

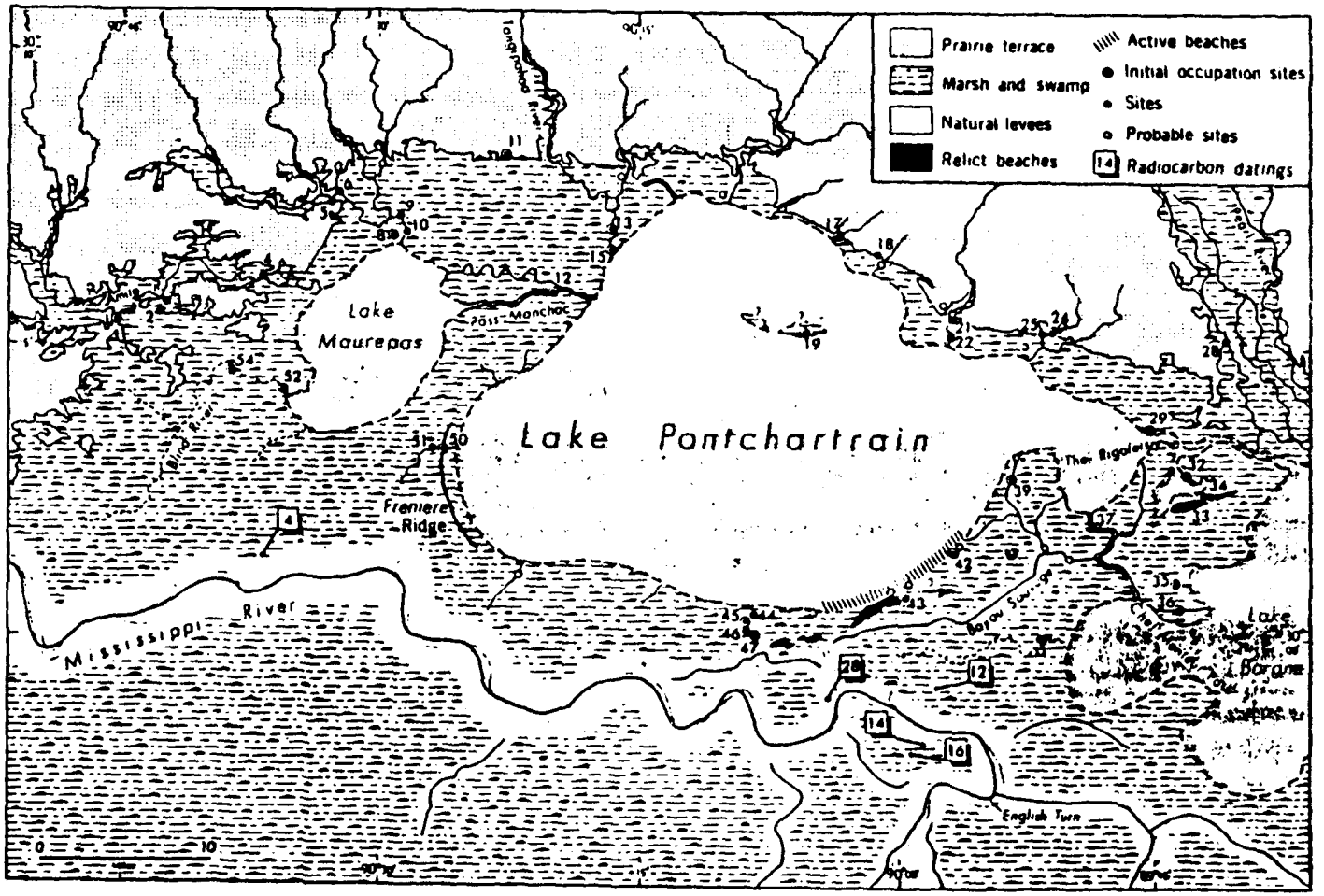


Figure 9. Paleogeography of the project area, about 600 to 1400 years before present, including locations of Troyville- Coles Creek period sites (from Saucier 1963).

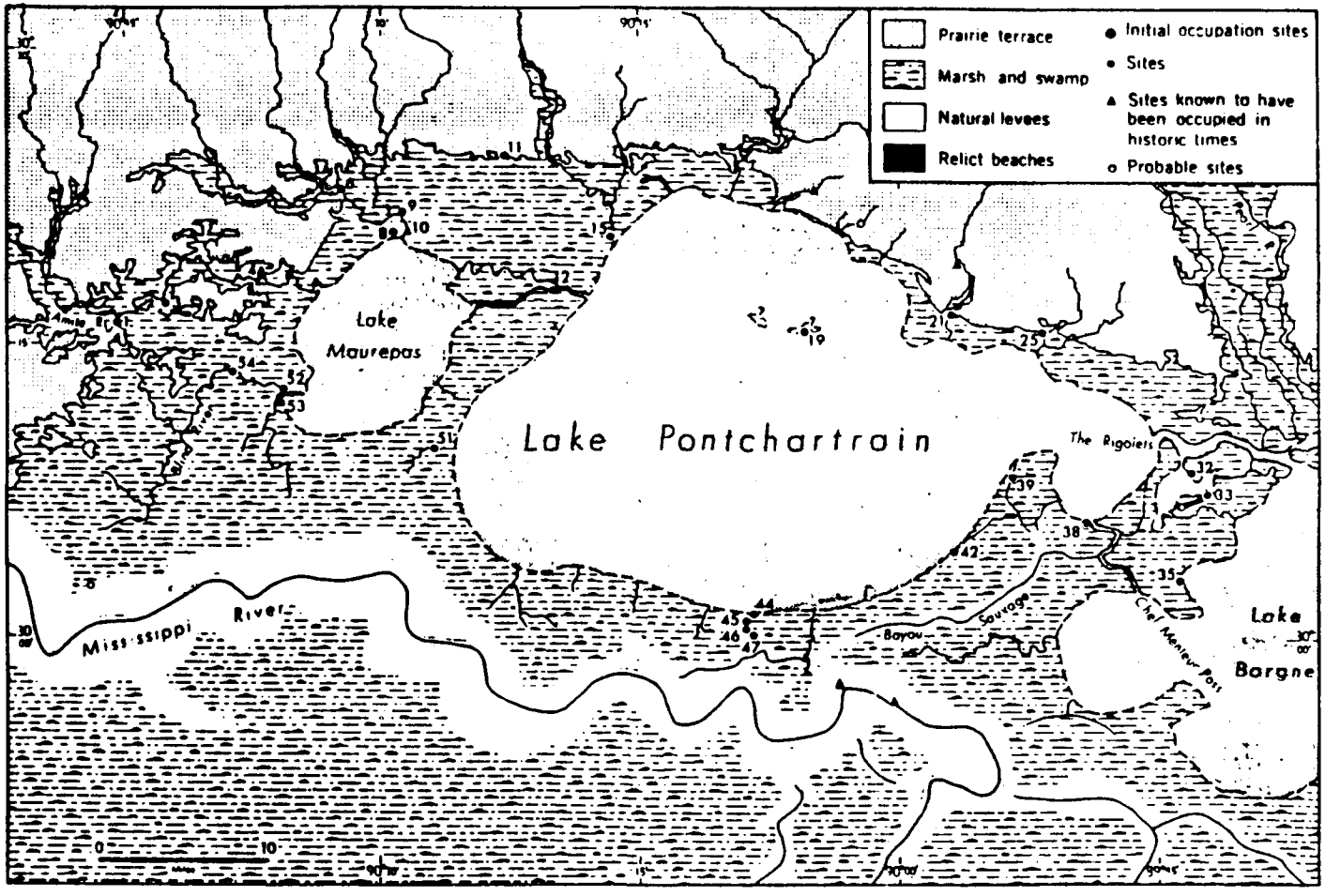


Figure 10. Paleogeography of the project area, about 300 to 600 years before present, including locations of Plaquemines-Historic period sites (from Saucier 1963).

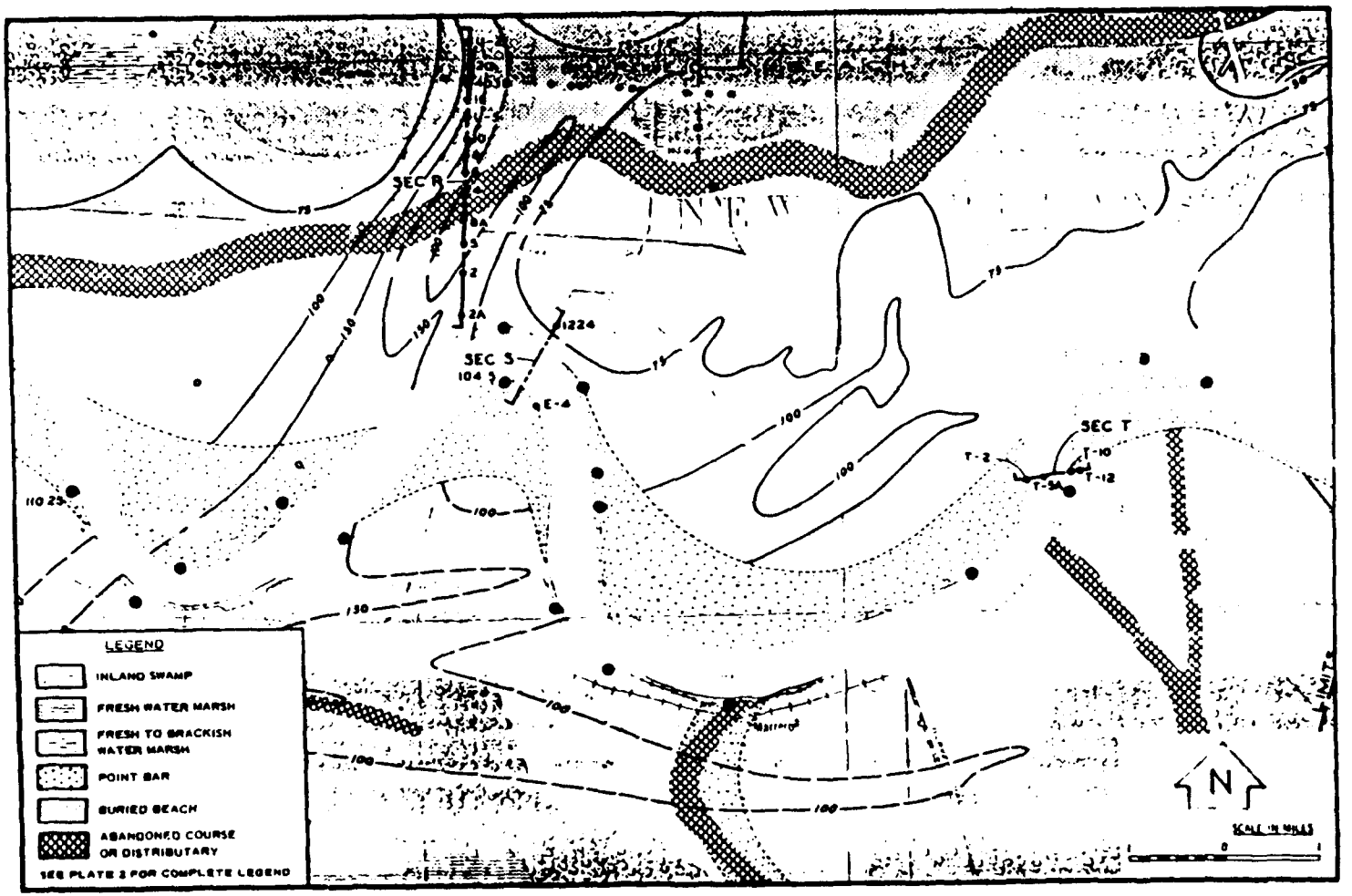


Figure 11. Geomorphic environments of the Mississippi River in the vicinity of the project area (after Kolb 1962).

associated with the bases of the natural levees (hence maximum dates) or from wood fragments from within the levee itself (sample no. 28), with locations shown in Figure 9, have produced the following dates:

Location	Carbon-14 Date	Sample Type and Depth		Number
New Orleans	1000 ±100	Peat	-6 ft m.s.l.	14
New Orleans	1100 ±105	Peat	-4 ft m.s.l.	16
New Orleans	1200 ±100	Wood	-10 ft m.s.l.	28
New Orleans	1450 ±105	Peat	-4.5 ft m.s.l.	12

The average of these dates, approximately 1200 years B.P., is believed to date the establishment of the modern river course (Saucier 1963).

In the vicinity of the project area, natural levees, which are created by near-channel deposition of suspended sediment during overbank flow, are approximately 5 to 10 ft in elevation and 1 mile in width (Kolb and van Lopik 1958; Kolb 1962; Saucier 1963). Geologic cross-sections show that the base of the natural levee adjacent to the river in the vicinity of the project area is about -7 ft m.s.l. to -10 ft (Section T; Figure 12) (Kolb 1962). Sediments at these depths should thus date to about 1200 years B.P. and decrease in age with decreasing depth. Since the crest elevation of the natural levees at these locations are about 10 ft and 4 ft (Section T), if sedimentation throughout this period were uniform, deposition in places where levee thickness was a maximum would average between 1 and 1.5 ft (30 to 45 cm) per century. Sedimentation rates were probably high during the early stages of levee development, subsequently decreased as the elevation grew higher, and then increased again once these areas were confined by artificial levees. Away from the crests of the natural levees, sedimentation rates would be lower, and would be proportional to the thickness of levee deposits at that location.

Although the proposed project area is not subject to overbank sedimentation presently, it was subject to overbank sedimentation prior to major levee construction. Recent studies have shown that overbank sedimentation in unconfined reaches of the Mississippi River, i.e. that without artificial levees that would confine floodwaters, can be appreciable during high discharge years. In the flood of 1973, sedimentation averaged 34 in (86 cm) on point bars, 21 in (53 cm) on natural levees, and 0.43 in (1.1 cm) in the backswamp (Kesel et al. 1974). Sedimentation in confined reaches

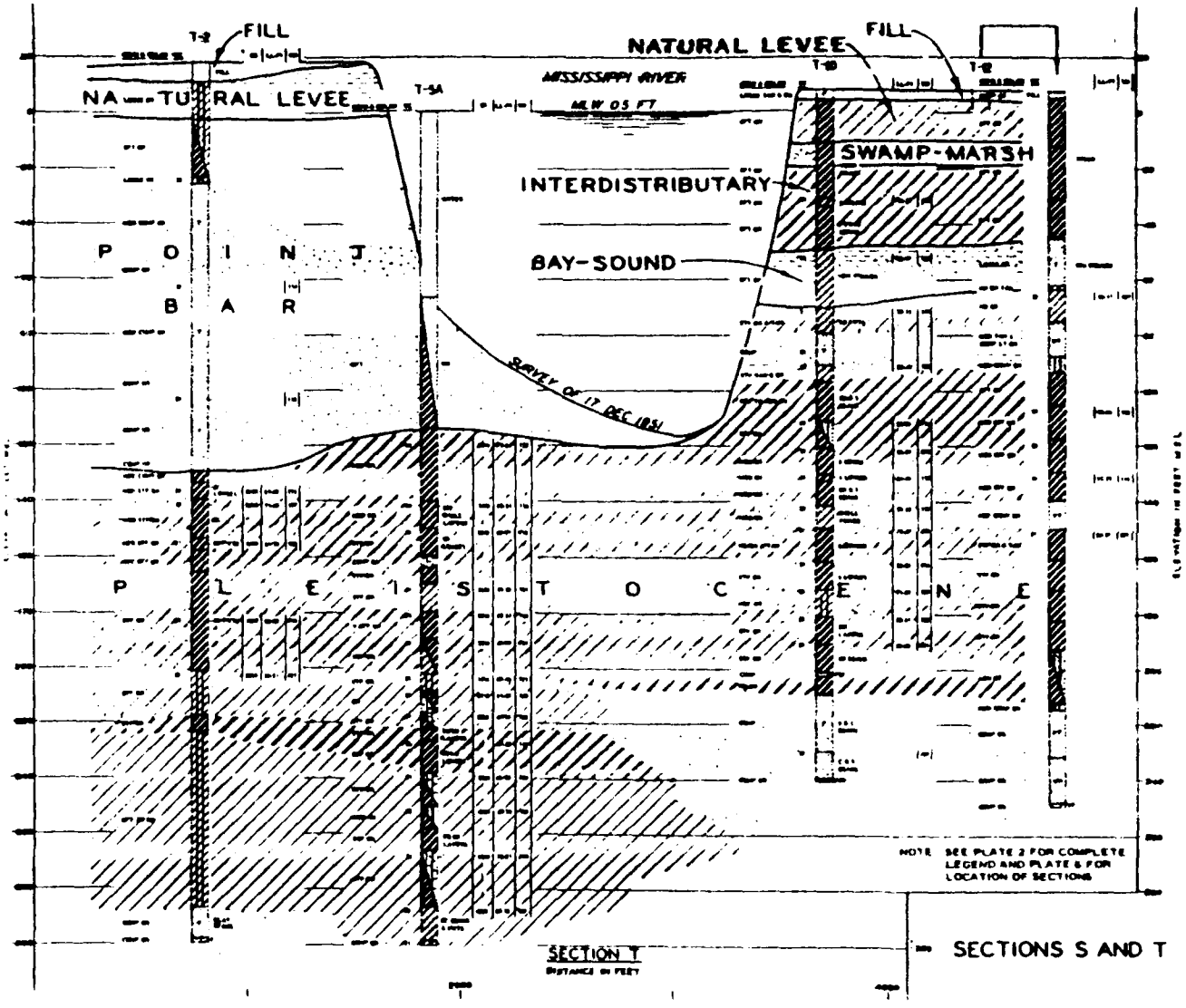


Figure 12. A geologic cross-section of environments along the Mississippi River in the vicinity of the project area (from Kolb 1962).

could possibly exceed that of unconfined reaches because they are subject to flooding on a more frequent basis.

Channel discharge and stage in the lower Mississippi River are markedly seasonal, with low flow occurring in the summer and fall, and high flow during the winter and spring. In the vicinity of the project area, the maximum discharge of record (1872 to present) at Carrollton (mile 102.8) is 1,557,000 cfs (May 18, 1927) with a corresponding stage of 20.5 ft (6.7 m). Mean discharge over this period is 425,000 cfs, and minimum discharge is 49,200 cfs (November 1, 1939) (Keown et al. 1977; USACE 1985) (Figure 2). The effect of tides increases downstream and is noticeable as far upstream as 35 mi (56 km) above Baton Rouge during extreme low water (Kolb 1962). During historic times, the Mississippi River has approached the crest of the artificial levee on several occasions. Stage elevations in the vicinity of the project area at Chalmette (mile 91.0) exceed 7 ft (2.1 m) on an annual basis, and the highest recorded stages were 19.8 ft (6.04 m) during the flood of 1927 on April 25 and 26 (Figure 13).

Land loss in the vicinity of the proposed project area has occurred in recent years, particularly along the Mississippi River Gulf Outlet. Saltwater intrusion and the impact of ships traveling through the area are contributing factors (Howard et al. 1984). Land loss includes the area of the outlet itself and erosion in excess of 100 ft along sections of its banks since construction. Several "hot spots", or areas of extensive land loss, without obvious causal explanation occur in the vicinity of the project area (May and Britsch 1987).

Relative sea level has risen since the late Wisconsinan deglaciation, and subsidence has been an active process since abandonment of the St. Bernard delta. These factors have undoubtedly led to the destruction, burial, or submergence of a number of archaeological sites. Depth of burial of archaeological sites would be dependent upon their age and the elevation of the surface at the time of burial. Subsidence in the project area is caused by a variety of processes including relative sea level rise, sinking of Pleistocene and older sediments, compaction of deltaic sediments through dewatering, and consolidation of near-surface sediments from the weight of natural levees (Kolb and van Lopik 1958; Adams et al. 1976).

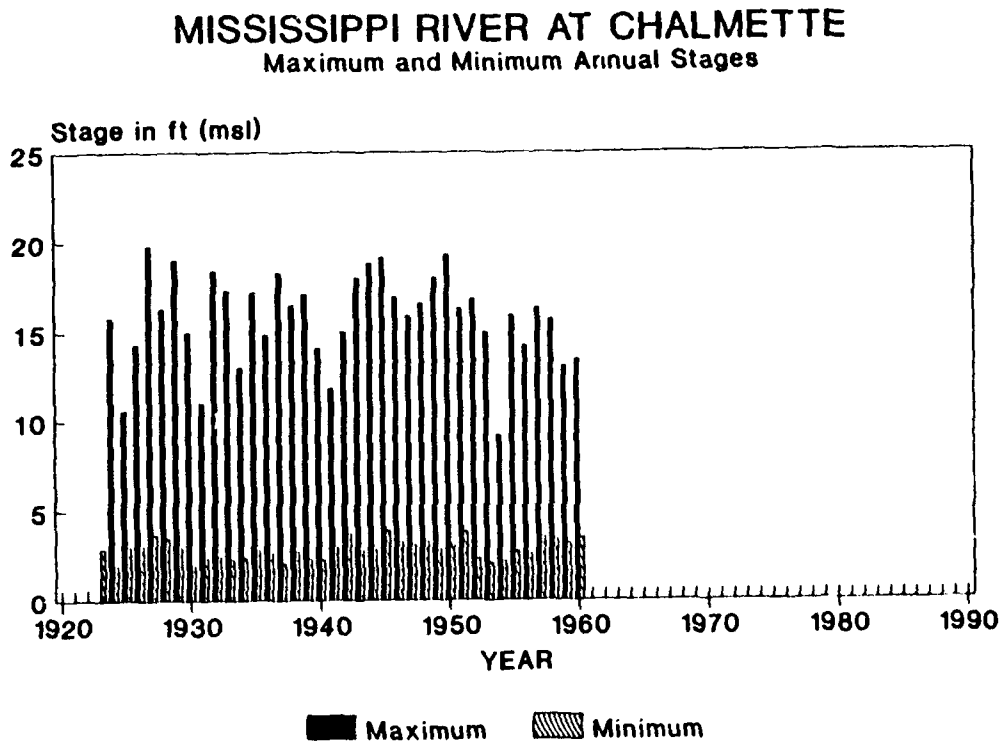


Figure 13. Highest and lowest stages on the Mississippi River at Chalmette: 1923 to 1960 (data source: Mississippi River Commission 1941).

Kolb (1958) suggests that the single most important cause of subsidence in this region is the consolidation of high-water content prodelta clays. In recent years, numerous scientific investigations have attempted to quantify subsidence and sea level rise rates. Kolb and van Lopik (1958) suggest a combined subsidence and sea level rise of 0.8 ft/century (24 cm/century) for the delta plain south of English Turn. Saucier (1963) determined an overall rate of 0.4 ft/century (12 cm/century) for the Pontchartrain basin. Watson (1982) determined from benchmark data that subsidence was 1.3 ft/century (40 cm/century). Ramsey and Moslow (1987) estimated from tide gauge data that relative sea level rise in Orleans Parish ranged from about 0.2 to over 0.4 in/yr (0.5 to 1.0 cm/yr) from 1962 to 1982. Assuming the subsidence rate to be between the values given previously by Kolb and van Lopik (1958) and Saucier (1963), or about 0.6 ft/century, the ground surface in this area should be about 1.5 ft lower than it was in the mid-18th century.

Channel migration is an important factor in relation to site preservation, but has not been significant in the project area. The Mississippi River has migrated very little in the proposed project area (river mile 92.5 Above the Head of Passes). The rate has been less than 100 ft/century in either direction (Torrey 1988) (Figure 14) between the time of the 1879-94 and the 1973-75 hydrographic surveys. Wave wash and water-level surges caused by ship traffic are processes responsible for local bank recession (Saucier 1983) and reworking of subaqueous and subaerial sediments proximal to the river's edge. Cultural materials in these deposits that are reworked by wave wash are typically found on pocket beaches or crenulations along the river edge. The water depths from which these materials are reworked are estimated to be less than 20 ft in depth.

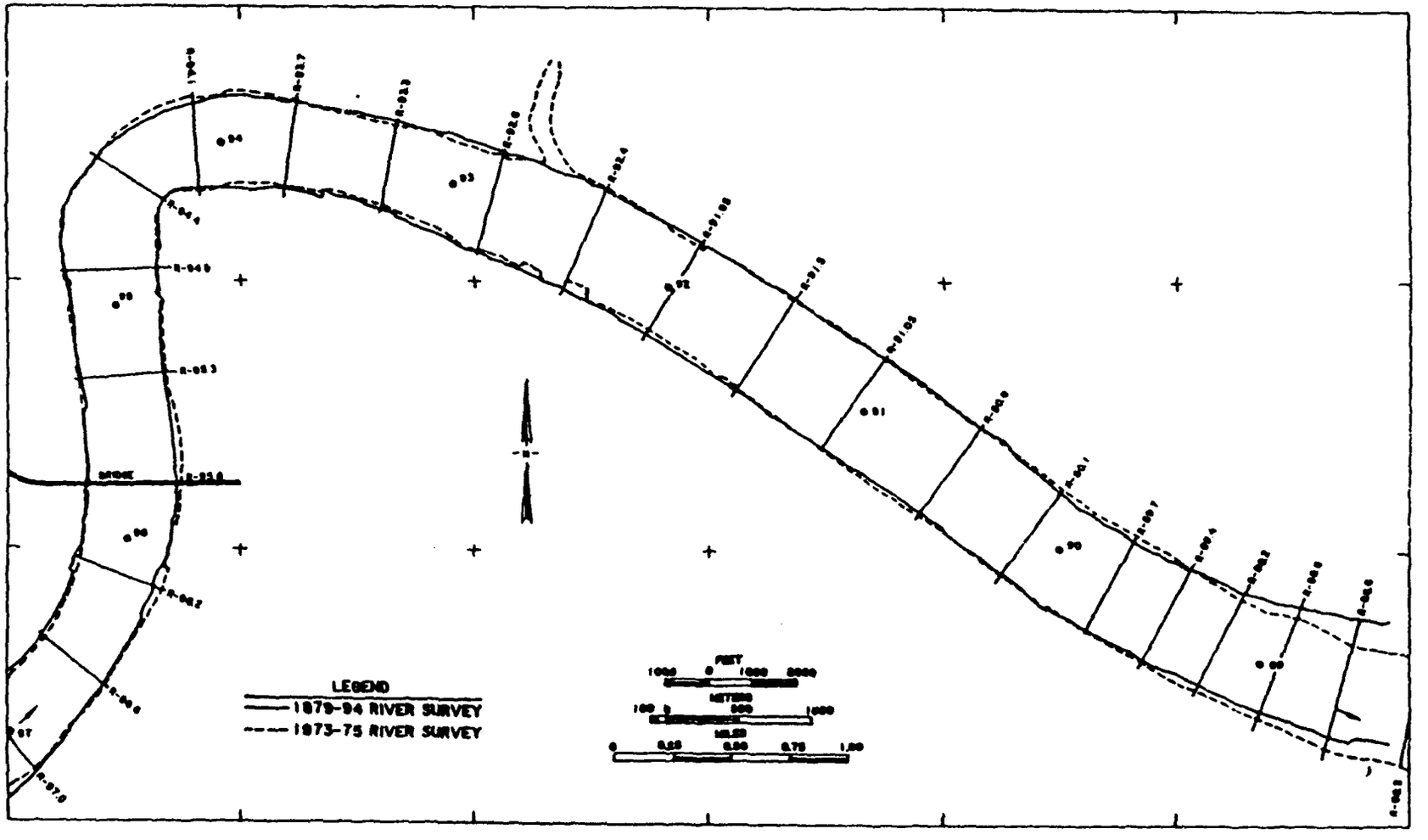


Figure 14. Comparison of bank lines between the 1879-94 and the 1973-75 hydrographic surveys on the basis of approximate low water reference plane between miles 97 and 89.5 AHP (from Torrey 1988).

CHAPTER 3
ENVIRONMENTAL SETTING

Biological Setting

The Mississippi River delta region within which New Orleans is situated is characterized by a set of ecological parameters which are integrated into a dynamic ecosystem with enormous biological productivity. The prime integrating feature of this ecosystem is water. Primary units of the system are forests, fresh water marshes, brackish marshes, saline marshes and the offshore area (Bahr and Hebrard 1976:1-3; Bahr et al. 1983).

Climate

New Orleans is located within the subtropics, and its weather is strongly influenced by the nearby Gulf of Mexico. Rainfall exceeds 160 cm (64 inches) annually. Periods of greatest rainfall generally occur in August and September. October is, on average, the driest month. The mean annual temperature is about 21° Centigrade (70° Fahrenheit), with a mean low in January averaging 11° Centigrade (52° Fahrenheit) and a mean high in July of about 29° Centigrade (84° Fahrenheit). The growing season exceeds 260 days (White et al. 1983:103).

Hurricanes and storm surges occur intermittently, and these have profound effects on floral, faunal and human communities. Although these storms are natural calamities, they also produce beneficial effects. Large amounts of sediments and nutrients are deposited into coastal estuaries, resulting in both short and long term increases in primary productivity (Bahr et al. 1983:22).

Hurricanes and tropical storms are characterized by low barometric pressure. This causes a significant rise in sea level. In combination with winds up to 200 or more km/hr, storm surges as great as 7 m (23 ft) can drive ocean and lake water a considerable distance inland. The flooding problem is aggravated by accompanying tropical rains (Bahr et al. 1983:23).

Plant Communities

Prior to cultivation and urbanization of the New Orleans area, upland forests would have occupied most of the natural levee. Upland forest habitat would have graded to bottomland hardwood as elevation declined and

flooding frequency thereby increased. Similar plant communities remain present on the Pleistocene terrace north of Lake Pontchartrain. Natural climax vegetation in such forests is dominated by mixed deciduous and evergreen trees that are less tolerant of flooding than are bottomland hardwood species. Woody species in a natural levee forest would have included oaks (Quercus virginiana, Q. alba, Q. nigra), shagbark hickory (Carya ovata), hackberry (Celtis laevigata), sweetgum (Liquidambar styaciflua), pecan (Carya illinoiensis), magnolia (Magnolia spp.), and various pines (Bahr et al. 1983:82).

As elevation declines at the edges of the natural levee, distinctively different plant communities occur. One of these is a "hardwood bottoms" community. The "cypress-tupelo" forests are located at slightly lower elevations. An intermediate swamp is sometimes located between these two communities. Large tracts of marsh occur in surrounding areas. Elevation of the land dramatically affects distribution and composition of plant communities within the area. Differences of only a few centimeters in elevation are associated with striking changes in vegetation. This is largely the result of the effects of soil saturation (White et al. 1983:102-103; Bahr et al. 1983:43-45).

Hardwood bottom forests in the area are dominated by the water oak (Quercus nigra). Subdominants include the sweet gum (Liquidambar stryaciflua), hackberry (Celtis laevigata), and live oak (Quercus virginiana). Other forest species include the box-elder (Acer negundo), honey-locust (Gleditsia triacanthos), American elm (Ulmus americana) and the Nuttall oak (Quercus nuttallii). The most common shrub species are palmetto (Sabal minor) and green haw (Crataegus viridis), but thickets of possum-haw (Ilex decidua) also occur. Within forest gaps, elderberry (Sambucus canadensis) and French-mulberry (Callicarpa americana) occur. Introduced species such as the camphor tree (Cinnamon camphora) are also present (White et al. 1983:103-104).

Vines are found throughout the bottomland forest, and few trees are observed without them. The most common of these include poison-ivy (Rhus toxicodendron var. vulgaris), Virginia creeper (Parthenocissus quinquefolia), supple-jack (Berchemia scandens), pepper-vine (Vitis rotundifolia), muscadine (Vitis rotundifolia) and hemp-weed (Mikania scandens) (White et al. 1983:104). Herbaceous ground cover is generally absent.

The cypress-tupelo swamps, located at lower elevations, are dominated by bald cypress (Taxodium distichum). Water tupelo (Nyssa aquatica) is often either a sub- or co-dominant species. Red maple (Acer rubrum var. drummondii) and ash trees (Nyssa aquatica) represent the other sub-dominants in this community. Shrubs include wax-myrtle (Myrica cerifera) and button-bush (Cephalanthus occidentalis), while vines are cat-briar (Smilax spp.), trumpet-creeper (Campsis radicans) and poison ivy. Herbaceous ground cover, absent in the bottomland community, includes smart-weed (Persicaria punctata), alligator-weed (Alternanthera philoxeroides), swamp potato (Sagittaria lancifolia), and water hyacinth (Eichhornia crassipes) (White et al. 1983:105). Maps from the eighteenth and nineteenth century indicate that dense cypress forests stood between settled areas of the natural levee and Lake Pontchartrain.

Between the hardwood bottom forest and the swamp forests, an intermediate swamp forest sometimes occurs. It can be extensive due to gradual slope of the land. Swamp red maple, American elms, and water oaks are common here. Palmettos create a dense understory, which is nearly impenetrable in some locations (White et al. 1983:105).

The other predominant plant community in the vicinity of New Orleans occurs in the marsh areas. Marshes are categorized according to their degree of salinity, and the areas covered by the various marsh communities varied through the period of prehistoric occupation due to variation in fresh water influx compared to salt water intrusion.

The ecological distinction between a swamp and a marsh is the absence of trees in the latter. Marsh soils are peat and muck, and elevation of these is less than one meter above mean sea level in the vicinity of the study area. In the brackish or intermediate marsh, cord grass (Spartina patens) is dominant, while swamp-potato (Sagittaria lancifolia) predominates in freshwater marsh. Numerous other species co-occur with these (White et al. 1983:106-107).

Fish

Although the Mississippi River supports various species of freshwater fish, it is relatively unproductive because of high turbidities and strong currents. Freshwater sport species presently exploited

in the vicinity of the project area include largemouth bass, spotted bass, yellow bass, black and white crappie, bluegill, spotted sunfish, and redear sunfish, as well as warmouth, channel, flathead and blue catfish. Commercially exploited fish include catfish, bowfin, carp, gars and buffaloes (U.S. Army Corps of Engineers 1984:16-17).

Waters in the estuaries in the vicinity of New Orleans host a diverse assemblage of species of fish. These species are highly mobile, and seasonal movements of fish populations are widespread. The result is that marine fish penetrate inland to fresh water habitats, while fresh water species are sometimes found in more saline environments. Also, the lower reaches of freshwater streams probably serve as nursery areas for the young of some marine species (Bahr and Hebrard 1976:69).

Birds

At least 216 species of birds are known to occur in estuary and swamp areas in the vicinity of New Orleans. Approximately 43% of these are passerines. Some species of this group are permanent residents, while others are only present seasonally. The remainder of the 216 species are predominantly waterfowl, many of which are migratory. Because New Orleans lies near the terminus of the Mississippi flyway, which is the largest waterfowl migratory route in North America, birds represent a potentially abundant source of food, feathers, and bone for tools (Bahr and Hebrard 1976:6-7, 78-115).

Mammals

Important fur-bearing species present in the vicinity of New Orleans include the muskrat (Ondatra zibethicus), raccoon (Procyon lotor), mink (Mustella vison) and otter (Lutra canadensis). Other mammals known to occur in the area include the Virginia opossum (Didelphis virginiana), the non-indigenous nine-banded armadillo (Dasypus novemcinctus), the swamp rabbit (Sylvilagus aquaticus), the fox squirrel (Scirus niger), the fox (Vulpes fulva), the bobcat (Lynx rufus), the beaver (Castor canadensis), the civet cat or spotted skunk (Spilogale putoris), and the white-tailed deer (Odocoileus virginianus). In addition, several species of terrestrial rodents and of bats are endemic (Bahr and Hebrard 1983:118-126). The mammalian faunal inventory

would have been even more extensive during the prehistoric period (Speaker et al. 1986:26-29).

Present-Day Urban Environment

The present-day project corridor consists of the Industrial Canal with associated levees and structures within those levees. In addition, the eastern portion of the project corridor is a suburban residential community that lies between Sister and Deslonde Streets (Figure 1). Characteristics of the residential community are discussed in Chapter 12 of this report.

CHAPTER 4
ABORIGINAL OCCUPATIONS IN SOUTHEASTERN LOUISIANA

This discussion of prehistoric culture begins with the Tchula Period, for it is likely that this is when an adaptive strategy allowing full exploitation of the Mississippi River delta and the coastal plain was developed. That adaptive strategy, of which the harvesting of Rangia cuneata was an integral part, was maintained through subsequent occupations. The general location of prehistoric sites discussed in this chapter are shown on the map in Figure 15.

Cultural and Chronological Terminology

Cultural and chronological terms used in this chapter are based on the framework for the Lower Mississippi Valley as outlined by Phillips (1970) and as modified and expanded by Gagliano et al. (1979) and Wiseman et al. (1981). "Periods" in Table 1 represent the basic Lower Mississippi Valley chronology. "Cultures" appear in the archaeological record as new features, new assemblages, and new styles. They represent "major continuities" in the framework. "Phases" are geographically specific expressions of a cultural tradition, and ideally they have chronological significance within the larger period to which they belong. Table 1 presents this framework in schematic form. The table presents phases for the eastern (Pontchartrain) province of the Mississippi River delta.

The Tchula Period (250 B.C. to A.D. 0)

Tchula period occupations in the Lower Mississippi Valley are associated with the Tchefuncte culture. The period has been called "the early ceramic period" because, with the exception of fiber-tempered pottery, it was the interval during which initial pottery complexes appeared in the Lower Mississippi Valley. Sites are few and scattered, and there are no universal markers. However, within subareas such as South Louisiana, regional markers, primarily Tchefuncte type ceramics, have been identified (Phillips 1970:7-8, 15, 76).

Peoples of the Tchefuncte culture were the first to engage extensively in the manufacture of ceramics. Fiber-tempered and some grog-tempered or temperless sherds have been recovered from earlier Poverty Point contexts. These may represent primarily trade goods from the earliest pottery-making cultures to the east.

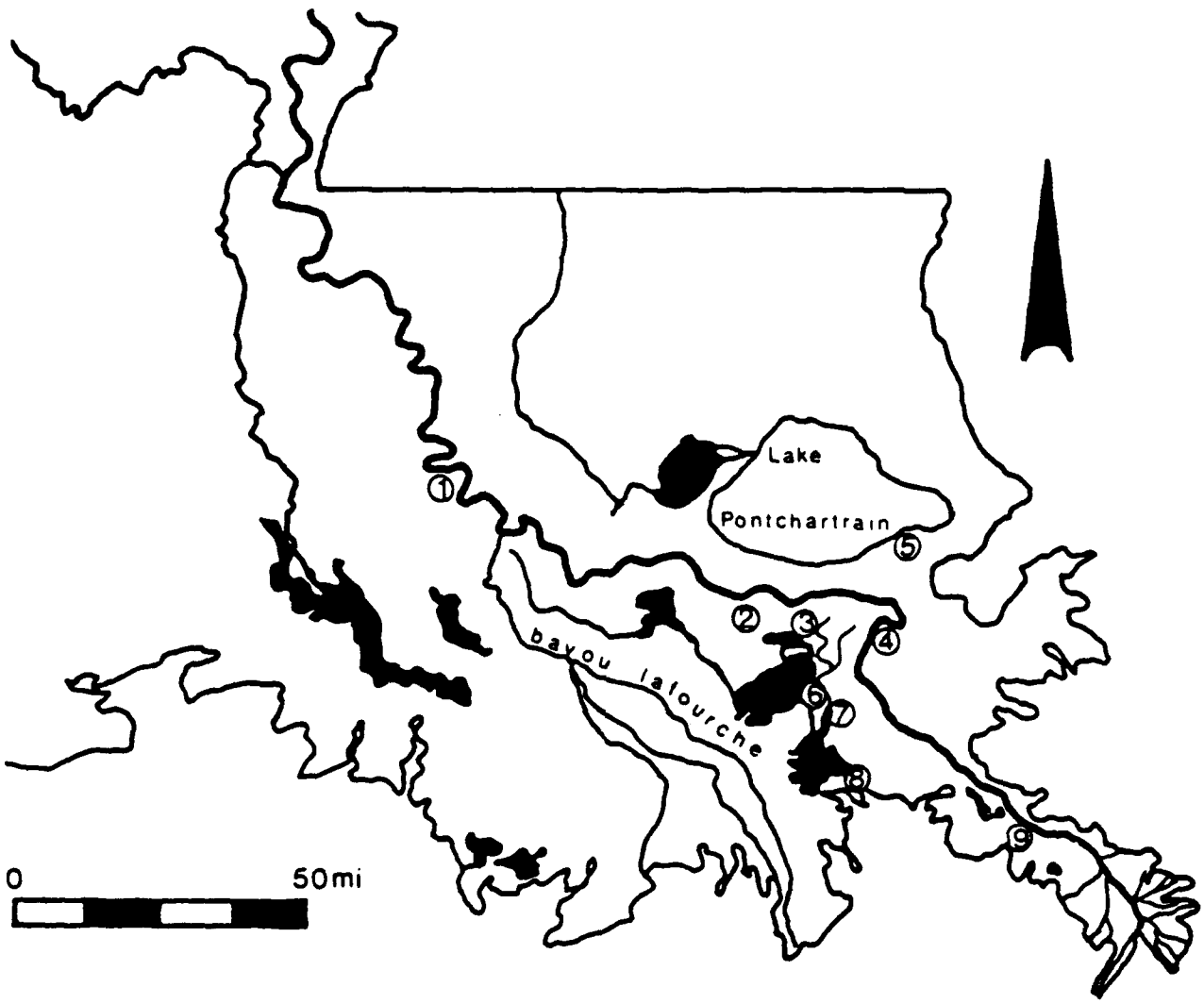


Figure 15. Map of Southeastern Louisiana showing locations of major archaeological sites. Key: 1) Bayou Goula; 2) Sims; 3) Coquilles 4) Scarsdale; 5) Big Oak and Little Oak Islands; 6) Fleming, Isle Bonne, and Bayou Villars; 7) Bayou Du Pont; 8) Bayou Cutler; and 9) Buras Mounds.

Table 1. Coastal Louisiana Culture Sequence and Chronology (adapted from Gagliano et al. 1979).

Time Interval	Period	Culture	Phase
Present	Historic	Various Cultures	Various Tribes
A.D. 1700	Mississippi	Natchezan	Delta Natchezan
		Mississippian	Bayou Petre
A.D. 1300		Plaquemine	Medora
A.D. 1000	Coles Creek	Coles Creek	Bayou Ramos
A.D. 850			Bayou Cutler
A.D. 700	Baytown	Baytown	Whitehall
A.D. 300	Marksville	Hopewellian-Marksville	Coquilles Magnolia
A.D. 200			Smithfield Labranche
A.D. 0	Tchula	Tchefuncte	Beau Mire
250 B.C.			Pontchartrain

The basic Tchefuncte ware is temperless or grog-tempered, with accidental inclusions of small quantities of sand and vegetable fiber. Sand-tempered wares represent a minority constituent of Tchefuncte site assemblages (Shenkel 1984:47-48).

Four phases of the Tchula period have been identified in South Louisiana. The Pontchartrain phase is defined on the basis of sites around the edges of Lake Pontchartrain and Lake Maurepas. On the prairie terrace surface just to the west, evidence is found for a Beau Mire phase, which is believed to postdate the Pontchartrain phase. The Lafayette phase is defined on the basis of sites associated with the old Teche-Mississippi course. In Southwest Louisiana, Tchefuncte sites are attributed to a Grand Lake Phase (Gagliano et al. 1979:4/2-4/3).

Although both inland and coastal plain Tchefuncte sites have been identified within Louisiana, only adaptations associated with the latter are well understood. The closest sites to New Orleans which have been extensively excavated are Big Oak and Little Oak Islands along the southeastern shore of Lake Pontchartrain.

Big Oak is a stratified site with two distinct Tchefuncte components. The lowest occupation had a high artifact content but no shell refuse. Its radiocarbon date is 520 B.C. Above it is a Rangia cuneata shell midden, also containing numerous artifacts. Artifacts are primarily Tchefuncte, and the radiocarbon date is 300 to 200 B.C. The Little Oak Island site is 2000 meters east of Big Oak. It is a thin earth midden lying atop a natural shell beach, and has been dated to 215 B.C. Thus, the Little Oak occupation and the shell midden occupation at Big Oak are contemporaneous (Shenkel 1984:44-46).

The relationship between Tchefuncte components at Big Oak and Little Oak provides considerable insight into activity patterning related to subsistence and to settlement. The ceramic assemblage (based on pottery types, vessel size, and vessel shape) for the basal Big Oak occupation is most similar to that at Little Oak. Although they are not contemporaneous, both assemblages are derived directly from an earth rather than a shell midden.

These earth midden occupations by Tchefuncte peoples are interpreted as residential. Associated

vessels were utilized for cooking and for storage. The shell midden occupation at Big Oak yielded a higher proportion of undecorated vessels than did the contemporaneous earth midden at Little Oak, and the vessels were generally smaller. These utilitarian ceramics were associated with gathering and with transport back to the village site (Shenkel 1984:49-51).

Faunal analysis confirmed the differential function of these sites. Fresh water drum predominated in both the Big Oak shell midden and the contemporaneous Little Oak earth midden. However, remains of these fish were primarily bony mouth parts at Big Oak, while interneural and dorsal spines predominated at Little Oak. Thus, fish heads were mixed with shells at Big Oak, while fish bones were mixed with other earth midden debris at Little Oak. Apparently fish were obtained near Big Oak, and initial cleaning at least occurred here. Big Oak, then, appears to represent a large-scale faunal processing activity area. Cooking and consumption of these fish apparently took place at the Little Oak residential center. For the contemporaneous occupations at Big Oak and Little Oak, the three most important dietary constituents, in terms of estimated weight, were fresh water drum (40%), Rangia meat (37%) and deer (8%) (Shenkel 1984:60-61).

Interestingly, Tchefuncte occupations at Big Oak and Little Oak are associated with a well-developed lithic technology. Over one hundred projectile points have been recovered, as well as unifaces and bifaces, some of which have been worked into special-function tools such as picks and burins. Some ground-stone tools have also been recovered. The source of raw materials for stone-tool manufacture is streams flowing into northern Lake Pontchartrain. These are thirty to forty kilometers from the sites. At Little Oak, primary, secondary, and bifacial thinning flakes are found. This indicates that all stages of lithic reduction were occurring. Occupants must have obtained raw materials either by travelling to streambed quarry sites to the north or by trading. Some exotic stones and some of the bifaces may have been collected from Archaic and Poverty Point sites north of the lake.

Tchefuncte occupations around Lake Pontchartrain and at Weeks Island to the west may represent the beginnings of exploitation of the Mississippi River delta and coastal plain. The adaptive strategy developed by Tchula period occupants of the region was then maintained by subsequent populations in coastal

Louisiana. Collection of Rangia cuneata was a key part of this adaptation (Shenkel 1984:67). Virtually all of the post-Tchefuncte sites found in South Louisiana are associated with a Rangia midden. This clam is most abundant on muddy bottoms which receive occasional influxes of either fresh- or salt water that promote spawning. Spring floods and storm surges provide these influxes. In addition to Rangia, its predators and other aquatic species are represented on these sites.

Big Oak and Little Oak were abandoned at about the time Lake Pontchartrain changed from a brackish to a fresh water environment. This ecological change made the waters an unsuitable Rangia habitat. Rather than adapt to a new environment, the Indians simply moved. Similar prehistoric cycles of occupation, abandonment, and in some areas, reoccupation, may be related to environmental shifts associated with the evolving Mississippi River delta (Shenkel 1984:65-67).

The Marksville Period (A.D. 0 to A.D. 300)

The Marksville period is associated with a Hopewellian culture and tradition manifested throughout the Lower Mississippi Valley (Phillips 1970:7, 17-18, 886). The phase designation for sites in southern Louisiana from the earlier part of this period and associated with Lake Pontchartrain occupations, is LaBranche. Sites to the east of the present course of the Mississippi River, including the Scarsdale site at English Turn and the Magnolia Mound site in St. Bernard Parish, are assigned to the somewhat later Magnolia phase (Phillips 1970:898-899; Gagliano et al. 1979:4-19). Late period Marksville occupations in the nearby Barataria Basin are assigned to the Coquilles phase (Beavers 1982:20-21).

The Hopewell culture's two major centers of development were in Ohio and Illinois, and date to between 200 B.C. and A.D. 400. Diffusion of aspects of the culture may have resulted from the activity of traders who established a wide-ranging network, sometimes termed the "Hopewellian Interaction Sphere." In addition to diagnostic pottery types of the Marksville period, conical burial mounds were characteristic of the culture. Interments are generally associated with grave goods. Some of these were manufactured from exotic raw materials (Neuman 1984:142-168).

Excavations at the Coquilles site (16JE37) on Bayou des Familles provide the most complete picture of Marksville occupations in southeast Louisiana below New Orleans. The site is multi-component, and excavations there have yielded data concerning the relationship between Marksville occupations and those of the subsequent Baytown period. Ceramic assemblages from upper and lower levels of these excavations exhibit differences in the ratio of decorated to plain ceramics and the ratio of stamped to incised designs. From the upper levels, only 9% to 19% of the pottery was decorated, while 30% of the pottery from lower levels was decorated. Also, upper levels showed a higher number of incised designs, while lower levels contained more stamped designs (Giardino 1984a:46-47).

These differences parallel those recorded by Beavers (1982:23-25) for earlier excavations at the same site. Within some of Beavers' excavation units, a sterile, sandy stratum was interposed between upper and lower components. Absence of this sterile stratum in other parts of the site suggests it may be a result of cultural rather than natural deposition. Nevertheless, the ceramic frequency differences suggest that there was an "earlier" and a "later" occupation of the Coquilles site (Giardino 1984a:55).

Interestingly, ceramic artifact analyses by Beavers (1982) and by Giardino (1984a) indicated that despite the differences discussed above, the majority of excavated pottery should be assigned to a Marksville period occupation. However, carbon dates indicate that the upper component assemblage actually belongs to the subsequent chronological interval represented by the Baytown Period (below). Although ceramic type frequencies change, they do not exhibit sufficient change to indicate the presence of a new cultural tradition. This apparent continuity in ceramic assemblages suggests that at least within the Barataria Basin, late Marksville culture extends into the subsequent Baytown period with few apparent changes in the archaeological record. Similar difficulty in distinguishing late Marksville and Baytown occupations has been encountered elsewhere in the Lower Mississippi Valley (see Phillips 1970).

A radiocarbon date of A.D. 115 was obtained at the base of the mound at Coquilles. Other dates from this feature cluster around A.D. 200. Unlike more "typical" mounds of the Marksville period, the Coquilles mound has yielded no evidence of interments, prepared floors, or

burial platforms. This negative evidence has led to the suggestion that the mound was constructed to improve habitation and refuge conditions in times of tidal surges or heavy floods (Giardino n.d.:13-14). However, some elderly informants remember the discovery of human burials during the course of previous shell removal episodes (Giardino n.d.:13-14). Thus, function of the mound at the Coquilles site remains undetermined.

A house floor within the village portion of the Coquilles site yielded carbon dates of A.D. 280-320, consistent with a late Marksville period occupation. The associated structure was circular, with timbers averaging six to eight centimeters in diameter. Large quantities of daub are evidence of the nature of construction materials. A hall-like entrance was oriented towards the southwest. Two infant burials were found almost directly below the wall. This structure represents the only Marksville period house discovered in southeastern Louisiana (Giardino n.d.:15-17).

The Baytown Period (A.D. 300 to A.D. 700)

The Baytown period has been defined as the interval between the end of Hopewellian/Marksville culture and the emergence of Coles Creek culture. In the southern half of the Lower Mississippi Valley, there are no area-wide horizon or period markers (Phillips 1970:901).

The Baytown period is often referred to as the "Troyville period" by Delta archaeologists. Because of the lack of diagnostic markers for the period in southeastern Louisiana, it is often assimilated with the subsequent Coles Creek period, and the two are together referred to and discussed as "Troyville/Coles Creek cultures" (e.g. Neuman 1984). Gagliano et al. (1979:4/20) note that the entire eastern coastal zone of Louisiana is subsumed within a single phase, called Whitehall. He considers it likely that work in the Barataria Basin will allow a separate phase designation for that area.

The upper component of the Coquilles site (16JE37) is now attributed to the Baytown period (see above). As discussed previously, almost 35% of all sherds from the lower (Marksville) components of the Coquilles site are decorated, whereas only 7% to 16% of sherds from the upper (Baytown) levels are decorated. This difference may be due to the fact that Baytown period peoples usually decorated only the necks of vessels, a practice which results in representation of a greater proportion

of "plain body sherds" in archaeological remains. Other explanations have, however, been proposed. One other difference between Marksville and Baytown period pottery at the Coquilles site is that incised designs predominate in the later period, while stamped designs predominate in the earlier (Beavers 1982:22-25; Giardino n.d.:18-22).

A circular house structure at Coquilles was carbon dated to A.D. 410-450, thereby placing it within the Baytown period occupation. It is similar to the Marksville period house discussed above, but one major difference has been noted. The Baytown house was constructed with poles that average six to ten centimeters more in diameter than those of the earlier house. Daub, however, was used in the construction of both (Giardino n.d.:24-25).

Recovery of houses from both Marksville and Baytown periods, and carbon dates ranging from about A.D. 200 to A.D. 570, suggest that a stable village-type occupation was located at the confluence of Bayous des Familles and Coquilles for about 400 years. Although some changes in proportions of ceramic types have been noted, there is continuity between the two assemblages. This continuity appears to reflect long-term and possibly continuous occupation of the site.

The Coles Creek Period (A.D. 700 to A.D. 1000)

The Coles Creek period is the interval that begins with the emergence of Coles Creek culture in the southern part of the Lower Mississippi Valley and ends with the establishment of "full-blown" Mississippian culture in the northern part of the Valley (Phillips 1970:18). Although it appears to represent a population zenith in the eastern delta province, many sites tentatively classified as Coles Creek may actually be from the Baytown period (Wiseman et al. 1981:3/5).

Coles Creek culture was characterized by small ceremonial centers with mounds. These were surrounded by villages of varying size. The culture developed in the area between the mouth of the Red River and the southern part of the Yazoo Basin. Its influence filtered into the delta region of southeastern Louisiana (Brown 1984:95).

Mounds associated with the Coles Creek culture generally are larger and exhibit more construction stages than those associated with the earlier Marksville

culture. A more significant difference is that Coles Creek mounds are pyramidal and flat-topped, and they were used as substructures for religious and/or civic buildings. In contrast, Marksville peoples generally built conical burial mounds (Neuman 1984:167).

In southern Louisiana generally, the early phase for the Coles Creek period is Bayou Cutler, and the late phase is Bayou Ramos (Brown 1984:97-99). However, in southeast Louisiana, only the Bayou Cutler phase is recognizable. The type site for the Bayou Cutler phase is Bayou Cutler I (16JE3), located within Barataria Basin (Gagliano et al. 1979:4/27-4/30). The Bayou Cutler phase, as defined by Kniffen, is identified by an absence of shell-tempering in pottery, presence of lugs or ears on vessel rims, incised lines on rims, absence of handles on vessels, and a large percentage of check-stamped decoration. Phillips (1970:921) identified types and varieties that exhibit these characteristics (Wiseman et al. 1981:4/3, 4/9).

Pontchartrain Check Stamped pottery is the most typical Coles Creek period ceramic of the delta region. Check stamping probably was a utilitarian technique that produced desired results during the manufacture of pottery. Thus, it may not have been solely a decorative style (Brown 1984:115,123). Pontchartrain Check Stamped pottery was contemporaneous with similar types being produced in northwest and eastern Florida. This similarity, as well as similarity of rim modes from the three areas during this period, suggests contact between Coles Creek peoples of the Louisiana delta and Gulf Coast occupants to the east (Brown 1984:115-122). However, ceramic designs also show influence from the Mississippi River alluvial valley (Wiseman et al. 1981:3/5).

The Mississippi Period (A.D. 1000 to A.D. 1700)

The beginning of the Mississippi period is marked by the emergence of Mississippian culture in the northern part of the Lower Mississippi Valley and Plaquemine culture in the southern part (Phillips 1970:18-19). The Barataria phase is associated with early Mississippi period occupations within the Barataria Basin (Holley et al. in Gagliano 1979:4/36-4/41). It is the equivalent of the Medora phase as defined by Quimby for the Baton Rouge area.

During the Barataria phase, the "Barataria Complex," as defined by the neighboring sites Fleming

(16JE36), Bayou Villars (16JE68), and Isle Bonne (16JE60), probably reached the height of its importance. Shell middens, shell mounds, earth and shell mounds, and probable extensive habitation areas are represented in this complex. Some sites along the des Familles-Barataria trunk represent small habitation locales and/or special activity areas (Gagliano et al. 1979:4/45; Franks and Yakubik 1990).

The Bayou Petre phase follows the Barataria phase. It is most strongly expressed in St. Bernard Parish. The final phase of the Mississippi period within the area is termed "Delta Natchezan". It is best represented at the Bayou Goula site (16IV11) to the north and at sites along Bayou Lafourche to the west. Many sites in the Barataria Basin exhibit a mix of Bayou Petre and Delta Natchezan traits so that assignment to either phase is problematic (Gagliano et al. 1979:4/41).

The Bayou Petre phase, as defined by Kniffen, is identified by a high percentage of shell-tempered sherds, handles on vessels, simple nodes or lugs on rims, undecorated rims, gritty-textured ware, greater use of curvilinear lines and coarser wares than during the Bayou Cutler phase of Coles Creek, and an absence of check-stamped pottery. This list of traits is still applicable, although check-stamped pottery is at least a minority ware in many Mississippi period sites in Louisiana. Type assignments for Bayou Petre wares from the eastern delta are generally the same as those for the eastern Gulf coast, evidence for contact between the two areas (Wiseman et al. 1981:4/3-4/4).

The Plaquemine culture itself is sometimes considered to be the classic development of temple mound construction in the lower portion of the Lower Mississippi Valley. However, archaeological excavations suggest that it actually represents a late prehistoric development of the preceding Coles Creek culture. Multi-mound construction and artifact assemblages are evidence that link the two. Absence of European trade goods indicates that the Plaquemine culture reached its zenith prior to contact (Neuman 1984:258-259).

The Medora Site, the type site for Plaquemine culture, is located in West Baton Rouge Parish adjacent to Bayou Bourbe, a distributary of the Mississippi River. It consisted of two mounds separated by a 400 ft long plaza. One of the mounds was fully excavated with the exception of two small blocks. About one-third of the second mound was completely excavated, and test

trenches were dug into its other parts. Also, a network of test trenches was excavated in other parts of the site (Quimby 1951:88-92).

Excavation of a pre-mound level at Medora uncovered numerous postholes and two rings, one inside the other, comprised of wall trenches and post molds. These were 45 and 25 feet in diameter. Fire pits and a "clay altar" were located within the smaller ring. Some post molds suggested square structures as well. Wattle-and-daub was apparently the technique of house construction. The larger mound showed evidence of episodic construction, with pits and/or structures on the upper surface of each successive modification. Atop the smaller mound, either one or two structures was located, and these were marked by postmolds and a wall trench (Quimby 1951:94-101).

Excavations at Medora recovered 18,508 sherds, of which only 44 were shell-tempered. Paste characteristics in the Plaquemine sherds were uniform. The paste was soft, clay-tempered and poorly fired. Color was variable but grays and tans predominated. Surface finish was smooth, and had a soft and chalky feel. About ten percent of the collection was decorated. Brushing and incising were the most common decorative techniques, but engraved and punctated sherds did occur. Although this was a single component site, some Coles Creek types occurred, including Pontchartrain Check Stamped. These types exhibited the same or nearly the same paste characteristics as the Plaquemine types, and were considered an integral part of the Plaquemine complex. Further, Plaquemine pottery appeared to be "...an outgrowth of Coles Creek pottery" (Quimby 1951:123-124, 129).

The Bayou Goula site also yielded data concerning the nature of a Plaquemine occupation in south Louisiana. The site is located on the west bank of the Mississippi River about 25 miles downstream from Baton Rouge. At the time of excavations, two badly eroded mounds were present, separated by a plaza about 600 feet long. The river was about 500 feet from the site (Quimby 1957:98-99).

The Plaquemine component was represented by two mounds and by artifacts in a thin midden deposit within an old humus level that was lying atop a bed of silt. The midden was beneath four to five feet of more recent alluvium. The mound rested on the humus layer. The

excavated mound showed evidence of three construction phases (Quimby 1957:104-105, 114-117).

Plaquemine component pottery types from non-mound portions of the site were dominated by Addis Plain, as was the case at Medora. Surprisingly, Pontchartrain Check Stamped was the most frequently occurring decorated type. One shallow depression about three feet in diameter was lined with cane, grass, and leaves. Also, a small deposit of fragmentary, burned corncobs was uncovered (Quimby 1957:105).

Lying above the four to five feet of relatively sterile alluvium was evidence of the historic period occupation of the site by Bayogoulas and other groups. The village had been visited in the late seventeenth and early eighteenth centuries by Iberville and other Europeans, some of whom left descriptions of material culture and of ceremonial activity associated with the mounds. Unlike the Plaquemine component here or at Medora, European goods were found in association with aboriginal wares in this late component which was termed Delta Natchezan (Quimby 1957:97-103, 134-141, 147-161).

Features associated with the Delta-Natchezan occupation were primarily burials, of which eleven were found in the larger mound. Both European and aboriginal artifacts were recovered in association with these interments (Quimby 1957:118-119).

European material included trade beads, glass bottle fragments, kaolin pipe fragments, copper and brass ornaments, and various metal items. European ceramics were found, but have been described only in a summary fashion as "crockery" and "earthenware." Although Addis Plain dominated ceramic types from the Delta Natchezan occupation, a number of shell-tempered types were recovered. Sherds of the shell-tempered plainware Mississippi Plain <u>var. Fatherland</u> were the second most frequently occurring, while no sherds of this type were recovered from non-mound portions of the Plaquemine component. This innovation in techniques of pottery manufacture was considered one of the markers for the Delta-Natchezan culture (Quimby 1957:134-144).

The Buras Mound site in Plaquemines Parish, based on ceramic analysis, also represents a late Mississippi period occupation. It is one of the southernmost aboriginal sites in the Mississippi River delta region. Although it is subsiding rapidly, four mounds arranged

around a central plaza were observed in 1981. Buried shell middens are also present (Gagliano and Weinstein n.d.).

Faunal remains from the site included two species of Rangia as well as other shellfish, fish, reptile and mammal bones. Floral remains included hackberry, greenbriar, walnuts, and charred cobs of maize. The latter were found in a concentrated area. Ceramic analysis indicates influence both from the eastern Gulf area and from the Mississippi River alluvial valley. A relatively high percentage of sherds were shell tempered. Although no European trade goods have been reported, the Buras Mounds site may represent a very late prehistoric or early protohistoric occupation in the delta. DeSoto's men reported the presence of hostile Indians who still used the atlatl in this vicinity (Gagliano and Weinstein n.d.).

Aboriginal Occupation during the Colonial Period

Identities and locations of Indian tribes in Louisiana cannot be determined for any period prior to ca. 1700. At about that time, literate French settlers and visitors began to record their observations regarding aboriginal occupants of the area. Even so, it remains difficult to sort pre- and post-contact culture traits. This is especially true for the lesser tribes living along the Mississippi River and other areas within southeastern Louisiana (Kniffen et al. 1987:45).

The primary Houma village in 1700 was located near present-day Angola. Iberville reported 140 cabins here, arranged in a circle, and estimated the population to include 350 warriors. The Bayogoula settlement (above), with a population of 400 to 500, clustered around a village near the modern town of Bayou Goula. The Acolapissa lived in six towns along the Pearl River and other streams flowing into Lake Pontchartrain. Their settlement pattern may have been diffuse. After 1700, they moved closer to Lake Pontchartrain, and in 1718 established a village on the Mississippi River above New Orleans (Kniffen et al. 1987:49-51).

The Quinapisa, who may have derived from the Acolapissa, lived at a village on the right bank of the Mississippi River near Hahnville in 1682. Prior to that, they lived in several villages nearer the mouth of the Mississippi. By 1700 their numbers had diminished, and they merged with the Mugulasha and moved to the Bayogoula village. In an unexplained bout of

internecine hostility, numbers of them and the Mugulasha were slaughtered by the Bayogoula. Little is known of the latter tribe who disappeared from the historic record after the 1700 massacre (Kniffen et al. 1987:51-52).

The Tangipahoa may have lived at one time near the Acolapissa on the Pearl River. However, by 1682 some of them had moved to the Mississippi River and established a village two leagues below that of the Quinapisa. That town was destroyed by the Houma and Okelousa, and its survivors fled back to the Pearl River. The tribe may ultimately have settled along the river that bears their name (Kniffen et al. 1987:52).

Little was recorded concerning the Okelousa. They are thought to have lived on lakes to the west of and above Pointe Coupee. Described as the 'wandering people west of the Mississippi,' they formed an alliance with the Houma to destroy the Tangipahoa village. In 1699, the combined population of the Okelousa, Chawasha and Washa was estimated at 700, of whom 200 were warriors (Kniffen et al. 1987:52-53).

The Chitimacha population in 1650 has been estimated as 4,000. Their oral tradition indicates a former home in the Natchez area, and the Natchez claimed kinship ties with the Chitimacha. They had settlements on the Mississippi River and Bayou Plaquemine. After the appearance of the French, two divisions of the tribe may have occupied lower Bayou Teche and upper Bayou Lafourche. The Chitimacha are among the lower Mississippi tribes that displayed the highest cultural attainments in the southeast (Kniffen et al. 1987:53-55).

In 1699, the Washa lived around a central village on upper Bayou Lafourche. However, they ranged widely and shared the resources peculiar to the lower Mississippi and the Gulf coast. After the arrival of the French, the Washa moved frequently. Sibley reported that they originally lived in the Barataria area. By 1718 they had established a village on the Mississippi near the Cote des Allemands post. The Chawasha were said by the French to have the same character as the Washa. They also lived on Bayou Lafourche, near the principal Washa village. In 1718, that village was visited by a party of Natchez, Yazoo, and Chiksaw who attacked the Chawasha, killed the chief and members of his family, and carried away eleven slaves, one of whom was the chief's wife. After New Orleans was

established, the group settled on the Mississippi River at a downstream location. In 1730, that village was attacked by a group of black slaves directed by Governor Perrier (Kniffen et al. 1987:55-56).

The protohistoric and early historic periods were traumatic for aboriginal society in southeastern Louisiana. The effects of disease and of the ever-increasing European population are reflected in the declining aboriginal population and in the migrations by remnants of various tribes. Internecine warfare typified relations between the various groups (Giardino 1984b).

Louisiana Indians feared and detested slavery more than any other European institution. One Tunica woman was reported to have hanged herself to have avoided it. Nevertheless, Europeans held slaves from a number of tribes. These slaves derived primarily from tribes that had traditionally exhibited hostility toward the Europeans. However, Indians from larger and more militant tribes such as the Caddo, Chickasaw, and Choctaw were usually not enslaved (Kniffen et al. 1987:65).

CHAPTER 5
A HISTORY OF THE GROWTH AND DEVELOPMENT OF NEW ORLEANS

Although LaSalle had claimed for France all of mid-continental America drained by the Mississippi in 1682, France initially did little to develop the new territory. Louis XIV was preoccupied with wars and court extravagances until shortly before the start of the eighteenth century. In 1698, Pierre LeMoyne d'Iberville, accompanied by his younger brother Jean-Baptiste LeMoyne de Bienville, was sent to establish French sovereignty over the Mississippi Valley and the Gulf Coast in the vicinity of the river's mouth. Bienville established Fort Maurepas at Biloxi Bay in 1699, and the following year he founded Fort de la Boulaye on the east bank of the Mississippi River somewhere within present-day Plaquemines Parish. Both sites were abandoned within a few years, and a settlement at Mobile became the center of French activity (Wilson 1987a:1).

In 1712, the French crown granted Crozat a monopoly on economic affairs of the languishing settlements. Crozat's charter granted him commercial, mineral, and fur trading privileges, and it authorized him to send one shipload of Blacks annually for sale to the colonists. In turn, Crozat's obligation was to send two vessels of colonists each year. Crozat was relying on commercial profits to finance his enterprise. However, anticipated profits from exploitation of mineral resources and from the fur and Indian trade were not forthcoming. Crozat's only reliable market was the approximately 700 settlers scattered through the colony (Clark 1970:14-16).

In 1717, Cruzat's financial failure forced him to give up his commercial monopoly on the colony. Louis XIV had died in 1715, and France was now ruled by the Regent Phillipe, Duc d'Orleans, whose financial advisor was John Law. Law's Company of the West, involved in French commercial and financial ventures throughout the world, assumed responsibility for the Louisiana colony in 1717 (Clark 1970:17). That same year, the Company directed that a city named New Orleans be established on the Mississippi River some thirty leagues from the mouth (Wilson 1987a:3-4).

In 1718, Bienville, now commandant general of the colony, selected the site of the present-day Vieux Carre as the locale for establishing this new city. It was

located at the river end of a portage which Indians had used to transport canoes to and from Lake Pontchartrain. Some Frenchmen from Mobile had been granted concessions and had established themselves in this vicinity beginning in 1708. French squatters from the Illinois country were probably also residing there by 1718 (Wilson 1987a:4).

Although Law's financial empire collapsed in the "Mississippi Bubble" of 1719, colonization and development efforts in the Louisiana colony continued until 1721 under the direction of the Company of the Indies. Colonists were recruited in France, Germany, and other European countries, and they were granted large concessions on the Mississippi River and some of its tributaries. The city of New Orleans was envisioned as a trading post from which business could be conducted with these concessionaires (Wilson 1987a:4).

Bienville's selection of the site was criticized because it was low and swampy, and was situated far from the mouth of the Mississippi. Some critics advocated a location near Bayou Manchac where the first naturally high ground occurs. Others favored a location below English Turn because ships were often delayed at that dramatic bend in the river. However, the Engineer in Chief of Louisiana, Le Blond de la Tour, agreed with Bienville, primarily because the portage route allowed access via lakes, thereby avoiding the necessity for year-round navigation of the lowermost part of the river (Wilson 1968:1-2).

Construction began in 1718, and some of it was carried out under the personal supervision of Bienville who arrived with six vessels carrying thirty laborers, six carpenters, and four Canadians. They cut through a dense canebrake and cleared the construction sites for a store-house, warehouses, barracks, and residential cabins. Wood, bousillage, and cypress bark were the predominant construction materials. The earliest clearing probably was located at the foot of present-day Conti Street. Further clearing prior to 1721 apparently included the area from the foot of Conti Street to the Place d'Armes and from there, back to Royal Street. The early structures were in need of constant repair due to periodic flooding (Wilson 1968:4-6).

Father Charlevoix wrote in January of 1722 that New Orleans consisted of only about one hundred huts placed with little order, and one-half of a warehouse. Despite the lack of progress, he and at least some of his fellow

colonists recognized that "... this wild and desert place that canes and trees still cover almost entirely, will be one day, and perhaps that day is not far off, an opulent city and the metropolis of a great and rich colony" (Charlevoix in Wilson 1968:9).

The engineer De la Tour and his assistant Pauger were responsible for a series of plans for the city drawn up between 1720 and 1723, the year of De la Tour's death. They used plans originally drawn for the settlement at New Biloxi as the prototype. A plan dated April of 1722 placed the public square (Place d'Armes) in the center of the city. The city extended for four square blocks above and below the square, and six blocks back from the river. The blocks flanking the public square were reserved for use by the Crown and the church. Squares as far back as Bourbon Street were divided into lots, which were to be granted to those individuals best able to construct houses. Subsequent plans from the 1720s show the city extended along the river to provide a total of eleven squares front (Wilson 1968:10-12).

During the years 1721 to 1723, the Company of the Indies was reorganized. It continued as the controlling body of the newly established colony until 1731 (Clark 1970:15). The 1723 Carte Particuliere du Fleuve St. Louis, Nouvelle Orleans shows concessions granted by this company and its predecessor above, below, and across from the city. Bienville received a concession extending from the upper limits of the Vieux Carre to a point near the present-day Orleans/Jefferson Parish boundary. He also received a large concession across from the city, extending from just below Algiers Point for a distance of two leagues downriver (Cruzat 1927:11-12,374). A series of smaller concessions below New Orleans and on the same side of the river were granted to several individuals (Chapter 7).

In September of 1722, a hurricane destroyed most of the public and private buildings within the city proper. Immediately afterwards, Bienville ordered the inhabitants to enclose their houses or lands within wooden palisades or forfeit their property to the Company. During that same year, several individuals were forced to remove structures erected within the alignment of projected streets. Orderly development was difficult to maintain during the early years of growth (Wilson 1968:13-15).

One significant achievement of the 1720s was construction of a levee to prevent inundation of the city by the river's floodwaters. It was erected between January of 1723 and May of 1724. The Company used its own slaves, and 4231 man-days were expended. Construction represented either replacement or improvement of an earlier levee built under the direction of Claude Dubreuil. In 1724, the levee was almost 3000 feet in length (Wilson 1968:15). By 1727, it was 5400 feet long, three feet high, and eighteen feet wide at the top with a roadway on its crown. By 1735, the levee extended about twelve miles below and thirty miles above the city (Elliot 1932).

By 1724, Pauger considered the city and the nearby concessions at least a relative success. In a letter to France he urged that no further consideration be given to relocation of New Orleans to a site below English Turn, noting that "...this town is so advantageously placed in relation to the principal plantations in order to supply their needs, and reciprocally to draw upon them, that they are growing strong together and are visibly increasing..." (Pauger in Wilson 1968:18-19).

The Company of the Indies supplied the colony with Black slaves from 1720 until 1731. These slaves, along with contract laborers and criminals from Europe, were the primary labor source. By 1722, over 2500 slaves were present, and the number had increased to 6000 by 1731 when importation virtually ceased. Payment for slaves was a problem because cash was scarce, so the Company accepted tobacco, rice, and other goods. The colonists were constantly complaining, however, that the slave labor force was inadequate and that additional slaves were needed to produce goods to pay for those already received (Clark 1970:23-25).

During the years prior to 1731, New Orleans remained a company town. "Company vessels loaded and unloaded company goods in company stores while the distribution and handling of the goods was supervised by company agents" (Clark 1970:25). Company personnel and troops were the two most important elements present in the city. Most of the other colonists lived on the various concessions or worked as small farmers. Local Indians and slaves supplied much of the city's produce. Cattle and hogs were driven into town, then slaughtered and bled in the open. New Orleans remained primarily a military-administrative center rather than a commercial town (Clark 1970:25).

Successful development during the period was, however, occurring at the concessions above and below the city. It is estimated that by 1730 any two of the plantations surrounding New Orleans probably comprised a larger economic unit than the city itself. This local hinterland supplied the city, which in turn provided minimal storage and transportation facilities for plantation produce (Clark 1970:27).

The Company's aim was development of crops and other commodities for sale in France, thereby providing the colonists with the means to pay for imported goods and slaves. Rice became the major local food crop, largely because the supply of wheat from Illinois and flour from overseas was unreliable. Some lumber and lumber products were exported to the West Indies, but tobacco became the main cash crop on concessions between New Orleans and Natchez. Wealthier concessionaires also planted indigo, but the capital outlay for machinery and the size of the necessary labor force for this staple was prohibitive for most (Clark 1970:28-29).

Bienville had hoped that New Orleans would become the pre-eminent center for export of furs acquired through the Indian trade. However, competition by the British and the 1729 Natchez massacre temporarily disrupted that activity. That massacre, the subsequent Indian wars, and the anticipated need to defend the colony against the British caused the Company to retrocede Louisiana to the Crown in 1731. The colony had not yet achieved a favorable balance of trade at this date. Planters owed over three million livres for previous shipments of slaves and supplies. By that time, structures within New Orleans proper extended five squares above the Place d'Armes, four below, and three back from the river (Clark 1970:26-31,43-45).

Throughout the 1720s, health problems were severe in the new city. Some officials had requested that nuns be sent to care for the sick. Little was done until 1726, when the Company and the Ursulines of Rouen, France agreed that the order would provide an establishment to care for the indigent ill and to educate young girls of the colony (Wilson 1987b:161-162). The nuns arrived in 1727, and were initially housed at the corner of Bienville and Chartres Streets in a residence purchased by the Jesuit Father Beaubois. Broutin, chief engineer of the colony, was in charge of design and construction of a permanent convent and associated hospital on Chartres Street. The new convent was completed in 1734 and occupied by the nuns in the

same year. The Ursulines continued to occupy this structure until 1752 or 1753 when they moved into a structure of similar design, somewhat closer to Chartres Street, which is still standing at present (Wilson 1987b:162-167,181-187).

When the Crown took possession of Louisiana in 1731, total population of the territory was about 5000, of whom approximately 3000 were slaves. The population was concentrated in New Orleans and its environs, and included 1000 soldiers and male civilians. Population remained stable in the city until 1745. The 1730s and 1740s were arduous for the colonists, as hurricanes and flooding alternated with years of drought. Crop losses were frequent and severe. The near abandonment of Natchez after the 1729 massacre caused further economic difficulty, as this area grew most of Louisiana's principal export, tobacco. Indian wars in the colony and France's preoccupation with continental European wars and politics aggravated the difficulties caused by nature. Shipping between France and Louisiana was hazardous due to British naval activity (Clark 1970:46-49).

Between 1745 to 1763, the population in New Orleans increased to almost 5000 whites and Blacks. Although new houses were mostly of wood, enough brick structures were erected to support production by three brick kilns just outside the city. Port traffic also increased as ocean-going vessels, canoes, dugouts, pirogues, batteaux, and flats anchored in the vicinity of the market, the King's Storehouses, and the Intendant's quarters. Many of the smaller vessels were bringing farmers and their produce to market. It was here that merchants, planters, Black longshoremen, and the city's peddlers congregated. During this period, New Orleans was a frontier market town, a seaport, a provincial capital, and a military center (Clark 1970:49-51).

Owners of large and well-equipped plantations in the vicinity of New Orleans probably cultivated indigo as the major cash crop, while rice was grown on at least some tracts. Large herds of cattle were maintained, and corn and vegetables were supplemental crops. The German Coast, about 25 miles above the city, provided New Orleans with most of its vegetables and much of its meat. That area was also exporting produce to the West Indies by the mid-1750s. Tobacco remained an important cash crop through much of this period. Lumber, pitch, tar, and myrtle wax were other plantation products exported from the colony (Clark 1970:53-57).

French merchants of the eighteenth century, including those involved with the Louisiana trade, operated both as individuals and members of familial associations. Partnerships were fluid and generally formed for a specific purpose after which they were ended. Because shipping ventures were so hazardous, individuals and merchant families spread their capital among as many ventures as possible. Multiple ownership of vessels was one common means for sharing risks (Clark 1970:64-67).

French merchants were reluctant to take on colonial exports at New Orleans. The value of a full load of goods from France was four times the value of a full load of tobacco. Pitch, tar, lumber, and pelts were also bulky and no more valuable than tobacco. For this reason, French merchants commonly shipped goods to the West Indies where the goods were transferred to Indies vessels for shipment to New Orleans. The Louisiana colonists were thus forced to export their own produce indirectly via the Indies. The result was higher prices for French goods in Louisiana, lower prices for exports from Louisiana, and an inadequate number of vessels to carry Louisiana's produce (Clark 1970:74-76).

The financial position of New Orleans merchants was precarious throughout the period from 1731 to the end of French rule. The limited variety of exportable goods provided almost no safety margin when bad weather resulted in crop failure. Crop failure made it difficult for planters to pay the merchants for imported necessities and luxury items. Also, France maintained a monopoly on trade in the colony so that the colonial merchant was prohibited from seeking alternate markets. Some illicit trade with the British and Dutch was conducted, at times with the consent of colonial governors who recognized how difficult the commercial situation was (Clark 1970:88-91).

Most of New Orleans' merchants had arrived from France after 1731. Many were also planters, and some were government officials as well. Some French merchants sent agents to reside at New Orleans. These agents served as middlemen between the colonial planters and the French merchants. Trade between Louisiana and the French West Indies was similarly organized. Merchants in the Indies shipped French goods to Louisiana, and received in exchange lumber, rice, and other produce for re-sale in France (Clark 1970:92-95).

From the 1740s until the end of French colonial rule, trade between New Orleans and the French West Indies predominated over direct trade with France. West Indian planters had, by the early eighteenth century, devoted their lands almost exclusively to staple exports. They were, therefore, dependent on imports for subsistence items and other goods which France was unable to supply. Trade with Louisiana, was therefore, encouraged by France as an alternative to illicit supply of the French West Indies by Britain's New England colonies. Products shipped from New Orleans to these islands were primarily myrtle wax, tobacco, rice, vegetables, tallow, and bear oil. Unfortunately for the colonists in Louisiana, indirect receipt of French goods that filtered through West Indian ports resulted in higher prices and aggravated economic difficulties (Clark 1970:139).

Throughout the period of control of Louisiana by the French Crown, merchants hoped that New Orleans would become a center for trade with the Spanish colonies in the New World. However, Spain was generally hostile to that activity. Even when it was allowed, French ships were sometimes seized at Spanish ports in Cuba and Vera Cruz. Lumber and lumber products were the primary commodities needed in the Spanish colonies, but restrictive trade policies, a labor shortage in the Louisiana colony, and a shortage of vessels for shipping those products limited the development of this market (Clark 1970:142-147).

France had, then, succeeded in establishing a settlement on the Lower Mississippi that would in the next century become, for a time, one of the world's major ports. Further, she had fostered the growth of a plantation system capable of partially supplying the local market with food and of producing some exportable commodities. However, French economic policy in the colony was largely a failure, for it enhanced the position of neither the mother country or the colony in the developing world economy:

> New Orleans was the capital of a territory which exerted little visible influence on the economic policies of the ruling state. Its products were valuable but they were not available in quantities sufficient to attract merchantmen from France. Its lands were more fertile than the increasingly depleted soils of the French West Indies, but so wretched was

> the reputation of Louisiana that immigration was negligible after the fall of John Law. Louisiana needed people, white and black, if its position in the colonial pecking order was to improve. People finally came but they were British or British-owned, and they came only after France relinquished the colony to her Bourbon cousins in Spain (Clark 1970:148).

Hostilities between France and Britain subsequently termed the Seven Years' War in Europe and the French and Indian War in North America, with Spain intervening on the side of France, ended in 1763 with the signing of the Treaty of Paris. New Orleans and all of French territory west of the Mississippi were ceded to Spain. Spain's initial attempts to take control of the colony were marked by disorder. Ulloa, the first Spanish governor, arrived in Louisiana in 1766. He was expelled in 1768 in an attempted coup by local citizenry. The following year, O'Reilly arrived with sufficient troops to take and maintain Louisiana for the King of Spain (Clark 1970:158-159; Wilson 1968:39). Pittman's map dated the following year shows that New Orleans consisted by then of eleven full squares and two partial squares fronting the river, and that it extended back for six squares (Wilson 1968:Figure 37).

During the six years (1763-1769) when the Spanish presence was inadequate to govern affairs in the colony, trade and commerce at New Orleans were conducted primarily by British citizens. The 1763 treaty had granted Great Britain the right to navigate the Mississippi, and she began to do so in that same year. British merchants brought flour to New Orleans which alleviated a food shortage, and thereby established a pattern whereby British and American traders furnished the city with most of its food supply through the remainder of the century. Britain also used the period of political instability to consolidate her hold on the Indian and fur trades. British merchants began bringing the first large shipments of Black slaves to Louisiana since 1743. Finally, the British brought with them shipping contacts with New York, Philadelphia, and Baltimore which would become increasingly important. Although Ulloa had orders to eradicate this trade with the British, he lacked the means to do so (Clark 1970:160-165).

In an effort to prevent further economic penetration by the British into Spain's colonial empire,

Charles III promulgated trade reforms in 1765 and 1768. Restrictions were loosened on trade between the various Spanish New World colonies including Louisiana. However, Spanish policy favored Cuba over Louisiana and forbade trade between New Orleans and its already established markets in the French West Indies. Despite efforts by the Spanish crown, illicit trade with the British, which during a few critical food shortages was actually authorized by the Spanish governor, became the mainstay of Louisiana's colonists until the American Revolution (Clark 1970:171-180).

The final three decades of French rule of Louisiana had seen little change in population size or productive capacity. It was during the Spanish period that new settlements grew throughout the entire Mississippi Valley which was New Orleans' natural hinterland. The city's promise as a major port, foreseen by early Company officials such as Bienville, began to be realized. Although prohibited by treaty from settling the old Illinois Territory west of the Appalachians, the British rapidly expanded the fur trade there. That trade now flowed through New Orleans, helping to revitalize commerce. Also, British settlers in the vicinity of Natchez, Baton Rouge, and other locales expanded rapidly the inhabited area of New Orleans' agricultural hinterland (Clark 1970:181-183).

Indigo remained the most valuable of the staple crops, and it was planted on plantations along the Mississippi from below New Orleans to Baton Rouge. Technology for cultivation and production remained unchanged so that production costs were high and a large labor force was required. As was true earlier in the century, only the wealthiest planters could afford cultivation of indigo. Between 1791 and 1794, adverse weather and insect predation, combined with a changing world market, caused even these planters to abandon production. Tobacco was more widely grown than indigo prior to 1790, largely because it was cheaper and required a smaller slave labor force. However, demand in Europe was variable, and Louisiana tobacco had a reputation as inferior to that from other regions. Like the cultivation of indigo, tobacco cultivation also declined drastically in the 1790s. Until that date, however, these two crops were important contributions by New Orleans' agricultural hinterland to the city's growth as a major port. Furs from the interior were also an important export commodity. From 1783 to 1793,

exports were 300 percent higher than during the most prosperous years of French rule (Clark 1970:187-194,201).

Several events in the last two decades of the eighteenth century consolidated New Orleans' increasingly important role in world markets, a role seemingly guaranteed by her geographic location near the mouth of the Mississippi. In the 1790s, steam engines were harnessed to power looms, and Eli Whitney perfected the cotton gin. The cost of cotton clothing was thereby reduced which in turn increased the demand for raw cotton. Supply of and demand for that single commodity would pace the Industrial Revolution in the United States and Great Britain for decades to come. Nearly all of the raw cotton grown in America would pass through the port of New Orleans (Clark 1970:203).

Another critical factor in New Orleans' rise to pre-eminence followed the American Revolution, as large numbers of settlers arrived in the Upper and Lower Mississippi Valley. Just as those in the Lower Valley would produce exportable cotton, those in the Upper began raising grain and livestock which for the coming decades would be shipped down the Mississippi to New Orleans, a center both for consumption and export (Clark 1979:202).

By 1790, at least 150,000 Americans had settled west of the Appalachians. Ten years later that figure was 400,000. All were dependent on the Mississippi as the route by which their produce could reach a market. Thus, New Orleans and the entire Louisiana Territory, despite their status as a Spanish colony, were drawn increasingly into the economic sphere of the newly formed United States and of the world's pre-eminent industrial power, Great Britain (Clark 1970:207-209).

During the 1790s, most of the plantations along the Mississippi River from Baton Rouge to south of New Orleans switched from cultivation of indigo to sugar production. The failure of indigo, disruption by war and revolution of sugar production in the West Indies, and de Bore's successful production of a commercial sugar crop in Louisiana in 1795 were important factors in this change. Sugar cane would remain the pre-eminent crop in the region until the decade following the Civil War and would represent yet another important contribution to New Orleans' export economy. Flour, tobacco, provisions, and sugar now flowed through the port and onto world markets (Clark 1970:217-220).

Although economic growth of the Spanish colonial period alleviated recurrent shortages of food and other supplies suffered by New Orleans' residents under the French, life remained difficult. At least one visitor remarked on the unequal distribution of wealth as marked by the condition of many residences. The affluent ruling elite distinguished themselves by expenditures on visible symbols of wealth, including architecture, modes of dress and transportation, and home furnishings. Despite an extravagant and ostentatious lifestyle by the rich, the New Orleans environment remained that of a frontier town. Streets were unpaved and mostly unlighted, and were seasonally filled with either mud or potholes. Floods periodically topped the levee, leaving stagnant water and rotting fish in the city, along with garbage disposed of carelessly by the urban residents. Visitors commented on the stench emanating from the city. This was an environment favorable to proliferation of vectors of contagion, and the result was episodic outbreaks of epidemics of killing diseases (Clark 1970:252-253).

A devastating hurricane in 1779 destroyed most structures in New Orleans. Only a few years later in 1788, a fire destroyed 850 buildings, including most of the mercantile business establishments and residences of the wealthy elite (Wilson 1968:44-45). After the 1788 fire, the city was quickly rebuilt. However, a second conflagration in 1794 destroyed all of the structures in nine squares and in portions of four others. Once again, rebuilding was rapid (Wilson 1968:48-49).

A "Plan of the City of New Orleans" by Carlos Trudeau dated 1798 (Wilson 1968:Figure 47) demonstrates growth of the city during the period of Spanish rule. The original settlement still extended back six squares from the river, and eleven squares still fronted the Mississippi. However, infilling of residences within that grid as well as the high death rate had necessitated establishment of a new cemetery (St. Louis No. 1) outside the grid. Also, Trudeau's Plan shows that an upriver area had been developed by that date. This was the Faubourg St. Mary, and it was here that newly arriving British and American immigrants established themselves. Subdivision of larger properties for residential development had not yet begun in a downriver direction. Trudeau's Plan also shows the fortification begun in 1792 which surrounded the old city (Wilson 1968:45-50).

By 1803, New Orleans' economy was based almost entirely on international trade and the supply of local residents. A few sawmills, distilleries, and cordage factories represented the entire industrial establishment. Two cotton mills, a sugar refinery, and a small rice mill were located in more peripheral areas. There were also a few facilities for the construction and repair of ships (Clark 1970:269).

Louisiana, including New Orleans, was retroceded to France in 1803, and in the same year became a part of the United States. Residents and officials immediately recognized that rapid growth of the population and economy necessitated removal of the 1790s fortifications surrounding the old city. Removal was intermittent due to fear of invasion and land ownership disputes, but was accomplished by 1812. In 1805, the City of New Orleans incorporated with its downriver boundary at Canal des Pecheurs (Fisherman's Canal) just below the U.S. Barracks (Wilson 1968:57-59).

Development of those portions of Esplanade Avenue below the original city was underway by 1810. Five years earlier, Bernard de Marigny had received permission from the City Council to subdivide his plantation below Esplanade Avenue and fronting the river, whereupon the tract was surveyed for sale as small residential lots. In 1810, the City bought Claude Treme's plantation that extended along the Old Bayou Road. This, and the adjacent commons beyond Ramparts Street, were surveyed and lots sold. The city, having already expanded upriver, was now growing in all available directions (Wilson 1968:59-60).

The U.S. Census of 1810 recorded a population of 24,522 in New Orleans, making it the largest city south of Baltimore and the fifth most populous city in the United States. At the time of the Louisiana Purchase, elements of the population in descending order of numerical importance were French Creole, Black, and Anglo-American. The French and free Black population expanded most rapidly prior to the 1810 census, largely because of immigration from the French West Indies via Cuba (Clark 1970:275).

Internecine political disputes were rampant during the first decade of American rule. The city's French Creoles who were members of the old ruling elite, and the more newly arrived Anglo-Americans disliked and distrusted each other. Even their residential enclaves were separate. However, at the same time, officials and

merchants recognized the necessity for bringing order to commercial affairs. By 1810, courts had been established to handle disputes concerning commercial transactions. Legislation was passed concerning debtors and unpaid letters of exchange. Auctioneers were regulated. Charters were granted to banks, an insurance company, and an internal improvements company. Merchants established a Chamber of Commerce to standardize routine business affairs. At least a minimal conformity was being introduced into the city's business life (Clark 1970:301).

The downriver traffic to New Orleans consisted of flats, barges, and keels. The numbers of those vessels arriving each season increased from hundreds to thousands, and the value of goods shipped downriver increased from about $1.5 million annually during the years 1801 to 1803 to twice that amount by 1807. Flour was the most important item in this trade. Corn and its derivatives, pork and pork products, lard, tallow, and whiskey were also shipped (Clark 1970:301-302).

The pattern of relationships between planters and New Orleans merchants now became firmly established. Although some overseas firms maintained cotton agents in New Orleans, most trade was through local firms. These firms commonly maintained accounts with the planter whereby the latter received credit for his goods. The merchant firm in turn supplied the planter with both necessities and luxury items, deducting the cost from the planter's credit account. The merchant firm sold the planter's cotton or sugar in Liverpool, Philadelphia, or elsewhere on the world market, and charged the planter with a percent fee of the gross proceeds (Clark 1970:305-307).

The most important illicit trade during the first decade of American rule was that in imported slaves. The federal government prohibited importation of foreign slaves to Louisiana in 1804, and that prohibition became a national one in 1808. However, local entrepreneurs continued to advertise the sale of Blacks from Africa after the prohibition became effective. The Baratarians were also engaged in the smuggling of slaves. Concurrently, New Orleans became an important market for the legal sale of slaves imported from other slave states. The demand for labor in this and subsequent decades was greater than the supply, and New Orleans would remain the South's most important slave market until the Civil War (Clark 1970:317-318).

One important result of New Orleans' expanding export economy in the late eighteenth and early nineteenth centuries was formation of and consolidation of power by a commercial elite. Some of the individual members were French Creoles, but many were British or American traders who arrived during or before the 1790s. This ruling elite not only controlled foreign trade, but also dominated the city's social, political, and religious life. Its members served on the boards of banks and corporations and held positions on the City Council. Before 1812, up to one-third also managed stores, so that a subset of the group also dominated the expanding retail economy during this period of population growth (Clark 1970:330-353).

Although the first decade of American rule of Louisiana was a period of economic growth for the port and merchants at New Orleans, international tensions did cause difficulties for overseas shipping. In 1805, in the Essex decision, the British admiralty ruled that belligerent goods on an American ship were subject to seizure by the British unless proof was available to show that the final destination of those goods was an American port. Beginning in 1806, British ships were permanently stationed in the Gulf to monitor cargo from the Mississippi River (Clark 1970:321). Although the United States maintained a neutral posture in hostilities between France and Britain, trade by neutral countries was forbidden for a time in 1807. During that year, the British attacked the American vessel Chesapeake and war with or retaliation against Britain became a possibility. At the end of 1807, the United States enacted a trade embargo prohibiting American vessels from sailing for foreign ports and prohibiting foreign vessels from carrying American goods out of American ports. Smuggling was one response to the embargo in New Orleans (Clark 1970:324-326).

The general embargo was lifted in 1809, but the Non-Intercourse Act was enacted to outlaw American trade with both France and Britain. Relations between the United States and Britain deteriorated through that year and the following when the Non-Intercourse Act was lifted, only to be replaced in 1811 by a similar act applying only to Britain. By June of 1812, President Madison had declared war. Shortly thereafter, British warships began appearing near the mouth of the Mississippi (Clark 1970:326-328).

The main effect of the War of 1812 on New Orleans prior to 1814 was the vastly increased danger for

international trade. Late in the war, a British invading force led by General Henry Packenham arrived in Louisiana. Skirmishes between his forces and the American troops led by General Jackson took place on both sides of the river and within three miles of New Orleans in December of 1814 and January of 1815. Damage claims by plantation owners as close as two miles to the Vieux Carre were filed after the war. The main engagement at the Chalmette Battlefield on January 8, 1815 resulted in a decisive victory for the American forces. British troops were completely routed. Although the battle was unnecessary because peace terms had already been negotiated, the victory greatly enhanced American prestige and power.

New Orleans was deemed "America's Western Capitol" during the years from 1810 to the Civil War. She was the largest city west of the Appalachians in 1810, and only New York, Philadelphia, Boston, and Baltimore were more populous in that census year. For the next thirty years, the population growth rate exceeded that of all other American cities. By 1840, the population of the city was third in the nation with only a few hundred fewer residents than second-ranked Baltimore. Newly arriving Americans continued to settle above the old city in the Faubourg St. Mary and in newer neighborhoods further upriver. The center of the city's commercial life was also now concentrated upriver from the original settlement. Descendants of the eighteenth century French Creoles continued to reside in the Vieux Carre, in the Faubourg Marigny, and in newly subdivided areas downriver. Many Irish and German immigrants also settled in this downriver portion of the city that later would become the Ninth Ward (Lewis 1976:32,39-40).

In 1819, the City Council expressed a desire to extend Conde (later re-named Chartres) and Hospital (later re-named Gov. Nicholls) Streets through the grounds of the Ursulines Convent and the barracks grounds within the old city. This conformed to the original city plans from the 1720s. The Council offered to provide materials for a fence and gates on the line between the projected extension of Conde and the grounds on which the convent and its dependencies stood. The Ursulines opposed extension of the streets despite evidence that they had been open while the convent was under construction and closed only after 1734. Agreement was not reached on the matter until 1820. On January 1, 1821, the Ursulines decided that their loss of privacy would be intolerable, and resolved to build a new convent on a downriver plantation acquired from

Francois Duplessis. Work was begun in 1823, and the nuns moved from the old city in 1824 (Wilson 1968:76; Wilson 1987b:198-201).

Steamboats were introduced to the Mississippi River in 1811, facilitating the growth of trade in an upriver direction. Regular service in the 1830s and 1840s dramatically increased the volume of trade between New Orleans and rapidly developing inland cities located on major waterways. Cincinnati, Pittsburgh, Louisville, and St. Louis became secondary commercial centers as a result of increased river traffic. New Orleans' agricultural hinterland continued to expand as the limits of settlement shifted westward (Ward 1971:34).

Despite the importance of cotton for New Orleans' commerce, areas further upriver, which were continuing to provide grain, corn, pork, and pork products, were the agriculturally richest areas of the city's hinterland. Locally produced sugar, although important, was of lesser economic value than either cotton or products from the upper Mississippi Valley (Lewis 1976:15).

Cotton's role in the economic development of New Orleans and the South represented a block to economic diversification and industrialization. Only limited mechanical services were required for production and initial processing of the crop. Only ginning, baling, and pressing were then necessary prior to sale for industrial production of cloth and clothing. That production occurred primarily in the Northeast and in Britain. The intermediate stages between harvesting and shipping occurred on plantations, at smaller river towns, and at New Orleans. Marketing of cotton became highly concentrated in the hands of itinerant factors or agents who provided the full range of commercial services with only a relatively small investment in plant or machinery (Ward 1971:38).

The antebellum years of rapid population growth resulted in subdivision for residential use of many of the old plantations below Faubourg Marigny. Zimpel's map of 1834 shows that undivided and divided properties were checkerboarded as far as the boundary of Orleans and St. Bernard Parishes. Some of the undivided parcels were profitable when used for cultivation of foodstuffs and production of dairy products for consumption by the growing urban population. An 1830 newspaper advertisement for sale of the agricultural portion of the Danuois Plantation vividly describes such use:

> About 10 arpents of land enclosed in a good picket fence, and well ditched and drained, and cultivated as a kitchen garden, and surrounded with orange trees; within it are planted a variety of Fruit Trees, such as Orange, Peach, Quince, Cherry, Pecan, and Persimmon. There are also some Pride of China, with French and Italian Grape-Vines... A canal of 6 feet wide has been newly cut from the Meadow to about 15 acres back in the woods, where there is an abundance of cypress and other timber. The Meadow is well fenced in and would afford pasture for 40 or 50 head of Cattle. An intelligent manager, with 10 common labourers, might easily realize $3,500 to $4,000 per annum, from Vegetables, Fruit and Milk. The purchaser of the above property will have the option of buying at the time, 4 excellent Negro Gardners and 2 wenches, one an excellent sales woman for vegetables and the other a good milk maid (Louisiana Courier, March 20, 1830).

Just downriver from this agricultural tract stood the Levee Steam Cotton Press, an example of New Orleans' limited industrial development. It was completed in 1832 for an approximate cost of one-half million dollars, and it had an average yearly capacity of 120,000 bales. Similar facilities were also located upriver from the old city. Downriver from the Levee Steam Cotton Press was an industrial facility for refining sugar cane. This was the Louisiana Sugar Refining Company. During the 1830s it employed 140 workers to produce 30,000 to 35,000 pounds of refined sugar annually as well as 2000 gallons of rum (Winston 1924:218).

During the 1830s, facilities such as these, in combination with the ever-increasing port traffic, created a shortage of unskilled laborers and mechanics (Winston 1924:218). Urban slaves filled part of that need. The Levee Steam Cotton Press was one large slaveholder. Another cotton facility, bounded by Carondelet, St. Charles, Poydras, and Perdido within the commercial sector of the city, owned 42 male slaves and only one woman and child. The various cotton presses frequently advertised in newspapers, offering to hire

other people's slaves. Many slaves were also hired out by their owners for work on the docks (Martin 1972:37,41-42).

Urban slaves who were hired out by their owners as well as those selling produce, dairy products, and other wares in the various markets moved somewhat freely through the city despite legal restrictions placed on their activity. In addition, many worked for money in their free time and thereby represented a consumer group with a somewhat specific set of demands. Although the industrial and dock facilities utilized male labor almost exclusively, female slaves outnumbered males in the city, at least from 1840 to 1860. This proportion was opposite that characterizing Louisiana as a whole and was probably due to the use of female slaves as household domestics (Martin 1972:17-28,37).

One recurring complaint by the press of the period was that despite laws forbidding it, some grog shops were catering to urban slaves who would intermingle freely in such establishments with Free People of Color. Despite such complaints, large slaveholders such as the Levee Steam Cotton Press issued monthly passes good for nights only. Alternatively, the New Orleans Gaslight and Banking Company, founded in 1835 and located near the commercial sector, held its slaves in special quarters within a fifteen-foot high brick wall with iron gates (Martin 1972:40,61-62,70).

Because systematic records concerning New Orleans' resident slaves were either not kept by larger holders or, more likely, have been subsequently lost, relatively little is known concerning this element of the city's antebellum population. Census records do, however, indicate that the number of urban slaves declined in both absolute and relative numbers during the two decades prior to the Civil War. During the same period, the value of slaves was increasing due to the expanding agricultural plantation system. The decline in numbers within the city, then, is at least partly explained by the sale of many urban slaves to plantation owners. They were replaced as laborers in the city by the large numbers of European immigrants. The latter provided a cheaper labor source than had the slaves (Martin 1972:73-74).

Many Irish immigrants established residences below the old city. The number of Irish immigrants arriving in the 1830s and 1840s was great enough to change the racial makeup of the city from predominantly Black to

predominantly white. They profoundly affected the Catholic Church which, until this time, was dominated by descendants of the old French Creole population. The Catholic Church and church-related institutions such as schools were rendered less exclusive (Goldfield 1982:55).

Germans were the other immigrant group whose numbers helped change the racial and ethnic composition of the city during the decades prior to the Civil War. They began arriving after 1815, and by 1850 over 54,000 German immigrants had been counted at the Port of New Orleans. Merchants met them at the port and purchased their services for three to eight years. During that period, the new arrivals received lodging, food, and clothing but no salary. Although New Orleans was only a port of entry for many of these Germans, by the mid 1830s, 7000 German-born immigrants were residing in the city (Nau 1958:4).

Political unrest and food shortages in Germany during the 1840s and 1850s stimulated a second wave of German immigration, which included professionals and tradesmen such as carpenters. They rapidly came to dominate the brewing industry. Many Germans, as well as Irish, replaced Blacks as draymen. By 1850, New Orleans had over 11,000 German-born residents, representing ten percent of the total population. By 1860, there were almost 20,000, and with their children they may have represented about twenty percent of the total white population (Nau 1958:4-7; Clark 1937:992-993; Eighth Census:196).

German residence was concentrated below Faubourg Marigny. Concentrations were so high that some neighborhoods were referred to as "Little Saxony" and "Faubourg des Allemands." Five churches serving predominantly Germans were established in the area between 1840 and 1860, reflecting the increased numbers of immigrants (Culvert 1986:116; Nau 1958:16-17).

By 1860, foreign-born residents comprised forty percent of the total New Orleans population. Germans and Irish represented the majority of these. Many worked for low wages and performed tasks such as deck and boiler work or canal- and road-building that were considered too dangerous for the increasingly valuable Black slaves. Working conditions and wages stimulated some labor militancy such as the successful 1853 strike

against steamboat companies by the Screwmen's Benevolent Association with its high proportion of Irish members (Goldfield 1977:64).

The influx of immigrants stimulated growth of a strong Know Nothing movement in New Orleans, the adherents of which were primarily former Whigs. They advocated severe restrictions concerning naturalization and supported laws restricting office holders to native-born Americans only. One element of the organization engaged in rioting and obstructed foreigners from voting (Nau 1958:17-18). The Louisiana Native American Association, which had organized in 1830, remained a strong political force through the 1850s and outlived the national organization by more than five years (Larsen 1985:41).

Throughout the decades prior to the Civil War, New Orleans' commercial export economy continued to expand. From 1840 to 1860, 83 percent of the cotton passing through New Orleans was shipped to foreign ports. During the 1850s the value of cotton receipts increased by 160 percent. The value of southern and western produce passing through the port increased from $22 million in 1830 to $185 million by 1860. The volume of trade has led to characterization of the 1850s as "the golden age of river commerce" (Goldfield 1977:56-57,87).

However, such growth figures, which were cherished by the city's boomers, masked the fact that New Orleans was entering a period of relative decline from which she would never recover. Newly built railroads were now carrying crops produced north of the cotton belt directly to Eastern markets, thereby leaving the Mississippi River as a regional highway. During the 1850s, the proportion of flour transported by rail increased from three percent to 91 percent. In the years from 1846 to 1849, two times as much flour and eight times as much bacon were exported from New Orleans than was true for the years 1858 to 1861. Southerners' cherished hope of an economic and political alliance with the West was fading as that region became more closely linked to the Northeast and especially to New York City. It was the increase in cotton receipts alone that accounted for New Orleans' trade increase in the decade before the Civil War. Nevertheless, trade figures for 1856 to 1860 were impressive, as New Orleans handled 28.4 percent of the United States' exports compared to New York City's 31 percent (Goldfield 1982:60,126).

Unlike commercial cities of the Northeast, New Orleans did not adapt its resources to nor invest its acquired capital in industrial activity. This was generally true of the South which relied instead on agricultural production (Bolding 1975:166). Residents of the region recognized this fact and became increasingly hostile to the North, partly because their dependence on imported manufactured goods relegated their economic status to that of a colony. Albert Pike, born in Boston but living and doing business in New Orleans, expressed the general sentiment of the Southern economic elite during this era before a meeting of merchants and planters in New Orleans. Despite his hyperbole, he accurately described the economic status of the South:

> From the rattle with which the nurse tickles the ear of a child born in the South to the shroud which covers the cold form of the dead, everything comes to us from the North. We rise from between sheets made in Northern looms, and pillows of Northern feathers, and wash in basins made in the North, dry our beards on Northern towels, and dress ourselves in garments made in Northern looms; we eat from Northern plates and dishes; our rooms are swept with Northern brooms; our gardens are dug with Northern spades and our bread kneaded in trays or dishes of Northern wood or tin; and the very wood which feeds our fires is cut with Northern axes, helved with hickory brought from Connecticut or New York; and when we die our bodies are wrapped in shrouds manufactured in New England, put in coffins made in the North. We have our graves filled with Southern soil but it is pulled in by Northern spades and shovels (Pike in Goldfield 1982:61).

Issues of slavery and the South's colonial economic status, combined with intransigence and paranoia among some politicians of the region, resulted in the outbreak of war in 1861. In New Orleans, merchants attempted to conduct business as usual. However, by the end of 1861 a Union naval blockade brought commerce to a near-complete halt. Surrender of New Orleans came relatively early in the war and was probably a relief for local

businessmen. Trade resumed and the presence of federal soldiers injected United States currency into the local economy (Goldfield 1982:81).

The most far-reaching effect of the Civil War on New Orleans was the change in Black-white relations. With the arrival of Federal troops in the area, large numbers of slaves began leaving plantations. They congregated at Union camps and at contraband camps and refugee colonies designated by Federal officers. By the summer of 1862, more than 10,000 refugee slaves were present in New Orleans. Many joined the Union Army to fight for freedom, while others were conscripted as laborers for the Union effort. But many were homeless and jobless, dependent on relief efforts for subsistence. Whites in the city were frightened and shocked. One hundred and fifty years of a legitimized slave/free dichotomy had left them unprepared for this upheaval in social relations (Blassingame 1973:25-47).

Because of early surrender, New Orleans' port and commercial facilities and her residential neighborhoods were undamaged by the war. Plantations in southern Louisiana were generally less devastated than those elsewhere in the South. While large portions of Virginia and the upland South lay wasted and in ruins, Louisiana's planters suffered primarily from the loss of their slave-holdings which had represented a high proportion of their pre-war wealth. This financial setback resulted in the sale and resale of large numbers of sugar plantations, but production of sugar augmented by rice quickly resumed with hired laborers. By the 1870s, the central factory system was replacing antebellum plantation-based refining methods (Sitterson 1953:258).

Cotton production in other parts of the South also resumed, now based on a tenant system of labor. By 1883, New Orleans' cotton receipts reached pre-War levels. One significant change occurred, however. Increased construction of east-west railroads resulted in increased use of these systems for transport. Only those planters for whom the Mississippi was more convenient than the new railroads were routing their cotton through New Orleans. The city's relative decline, in terms of both commerce and population, was accelerating. In 1860, the city's population was the sixth largest in the country, while in 1870 it was eighth and by 1900 had dropped to fifteenth (Goldfield 1982:86).

Race relations, issues related to ethnicity, working conditions, and living conditions were the dominant issues for the majority of post-bellum residents of New Orleans. The Black population increased rapidly during the years 1862 to 1880, adding to the number of people competing for a limited number of jobs. In 1870 and 1880, Blacks represented 25 and 23 percent of the labor force, while foreign-born workers represented 49 and 23 percent of the total in the same years. By 1880, first generation descendants of many antebellum immigrants had also entered or were about to enter the work force (Blassingame 1973:50,60-61).

Difficult economic conditions and racism resulted in periodic violence during Reconstruction and after. The 1863 platform of the Working Men's Union League exemplifies the uneasy admixture of progressivism and reaction characteristic of the period. The group, consisting largely of immigrant laborers, called for the abolition of slavery but at the same time held that all Blacks should be removed from Louisiana. Reacting to latent nativism, the group also demanded universal suffrage for white males without residence requirements (Shugg 1968:198-199).

In 1866, the Constitutional Convention of 1864 was reconvened at the instigation of white radicals who wanted to enfranchise Blacks. A demonstration of support, primarily by Blacks, ended in a riot in which 34 Blacks and four whites were killed. Over 200 Blacks and ten policemen were wounded. The police, ineffectual and prejudiced throughout the late 1800s, arrested no one (Shugg 1968:216-217).

Black unions formed primarily as social and self-help organizations, but their members were also engaged in many of the strikes that were now occurring. In 1867, contractors who had hired Blacks to unload ships refused to pay the agreed upon wage. Five hundred Black longshoremen struck. In one incident of that labor action, the strikers were about to lynch one of the contractors whereupon the police intervened. Strikers then chased the police and the other contractors off the docks. A company of Army troops was deployed to the docks to disperse the crowd, but the Black longshoremen held firm as they chased scabs hired by the contractors from some ships. The strike ended in victory as the head of the Freedmen's Bureau Office issued an order that captains as agents of vessels were responsible for wages due Freedmen. Blacks again demonstrated their militancy one month later after a white engineer hit a

Black worker on the levee. Longshoremen chased the white into a store where he was trapped until the police dispersed the crowd. In 1872, Black longshoremen again went on strike. When some of them boarded a ship being loaded by scabs, the captain fired on them. The Black strikers, in turn, murdered the captain (Blassingame 1973:64-65).

Racial violence erupted again on the docks in 1874. Merchants and employers were using the ranks of the Black unemployed to keep wages low. Many Blacks were living under tarpaulins or in barrel houses on the batture while they worked as longshoremen for 25 cents an hour at a time when whites were demanding 50 cents. White longshoremen asked General Badger, head of the Federal Army still occupying the city, to arrest those vagrant Blacks. The General complied. But more hopeful Black workers moved onto the docks, resulting in rising tensions over a period of months. The episode ended in riot as Blacks tried to drive white longshoremen from the levee and attacked police. Although several participants were wounded, no one was killed in the incident (Shugg 1968:301-302).

Blacks were not alone in expressing labor militancy in the post bellum years. Although New Orleans' commercial economy was recovering from the war, it was no longer expanding at the pre-1860 rates which had allowed so many immigrants to find jobs. Railroads that bypassed the New Orleans port were carrying more and more cotton and grain. Yellow fever epidemics continued unabated, and adversely affected the commercial economy as in 1873 and 1878 when other Southern ports refused to admit ships from New Orleans which they feared were spreading contagion. Simultaneously, lack of capital and perhaps economic inertia impeded industrialization which in the North continued to create new jobs. The result in New Orleans was low wages, poor working conditions, and high unemployment to which white workers as well as Blacks responded by organizing (Shugg 1968:298-299; Rabinowitz 1977:103).

Some of the bitterest incidents pitting white workers against Blacks were the result of the nationwide Panic of 1874 and the depression years which followed. Also, the white business community was attempting to thwart labor organizations by hiring strikebreakers of both races at starvation wages. The practice was probably especially true of merchants and shipowners. Nevertheless, one element within the white working class, the proportion of which is unknown, recognized

that co-operative actions by both races were more likely to result in improved wages and working conditions than would continued division and strife between the two groups of laborers. Some unions such as the Teamsters enlisted members of both races. In other crafts separate but correlative organizations were formed such as the all-white Cotton Yardmen's Association No. One formed in 1879 and the all-Black Cotton Yardmen's Association No. Two formed the following year. The Screwmen's Benevolent Association Nos. One and Two were similarly organized along racial lines. Even on the docks, racial violence was only episodic. Through much of the period, Black and white longshoremen's associations reached agreement on the division of dock workers' jobs (Somers 1974:30-31).

The Typographical Union led the labor movement, and in 1881 was instrumental in the formation of a Central Trades and Labor Assembly. By 1883, the umbrella group counted thirty Black and white organizations in its ranks with a total of 15,000 members. The racially mixed group elected a Black vice-president in 1884. The Knights of Labor also admitted Blacks in the 1880s and helped to organize co-racial strikes. Although the racial sympathies of the majority of the rank and file are unknown, an integrated funeral procession of 2000 marched through the city after a policeman killed a Black striker in 1881. Similarly, several white unions joined an 1885 sympathy strike in an effort to help Black draymen win Union recognition.

The culmination of the nineteenth century labor movement in New Orleans was the general strike of 1892, the first of its kind in the history of the United States. The failure of that effort, the continued slowing of the rate of economic growth in the city's commercial export economy, and the failure to industrialize all contributed to the subsequent decline of the labor movement.

In addition to low wages and a shortage of jobs, living conditions in New Orleans contributed to unrest among working class and underclass residents. The city's environment had not been good in the antebellum years, characterized by frequent outbreaks of epidemic disease. Although the death rate was lower in non-epidemic years, it was the highest of any city in the United States. However, prior to the Civil War, tenement conditions were largely confined to the old Faubourg St. Mary and the Irish Channel. The post-bellum influx of Blacks, continuing immigration from

Germany and Ireland, and the arrival of significant numbers of Italians, created housing shortages that now resulted in overcrowding in the Vieux Carre and the downriver faubourgs.

In general, living conditions in New Orleans during the late nineteenth century were unhealthy and unpleasant. Although sidewalks of artificial flagstone had been laid in prosperous sections, most areas had sidewalks constructed of brick or plank boards. In 1880, four out of five streets were still unpaved. Cobblestones, stone blocks, and pulverized oyster shell were used instead. In poorer neighborhoods, unpaved streets had been graded originally with refuse from kitchens and stables. That refuse was estimated to comprise fifteen percent of the soil. Street gutters were stagnant reservoirs of garbage and slop which street cleaners would occasionally move to the center of the street to clean the gutter. That system was ineffective as the garbage washed back into the gutter after the first heavy rain (Shugg 1968:282).

Population density in 1882 was highest in the old Faubourg St. Mary where two-thirds of the buildings were of wood frame construction. The Vieux Carre was the second most densely populated area of the city at that time. Most of the Germans and many Creoles lived in Faubourg Marigny and below. Malaria was a major problem in that area because of undrained swamps bordering on Lake Pontchartrain. The death rate in Marigny was 25 per 1000 inhabitants. In contrast, the Garden District with its cleaner streets and well-drained gutters, experienced a somewhat lower death rate, only 19 per 1000 (Shugg 1968:282-283,285).

In the 1870s, some residents of New Orleans blamed the high incidence of disease on a faulty system of garbage collection and the "innumerable smelly, refuse-cluttered ditches and canals throughout the city" (Jackson 1961:23). The Daily Picayune on December 24, 1884 (in Jackson 1961:76) published a doctor's complaint that garbage was piling up on neutral grounds and "back of town." Throughout the 1880s, doctors continued to complain about the ill effects of garbage rotting in canals and ditches (Jackson 1961:115-116).

The city administration in 1893 accepted a contract for the burning of garbage. However, in 1894 a grand jury complained that the contractor's definition of "garbage" was too limited because he would not pick up old shoes, bottles, broken glass, or tin cans. Also,

this new system required special receptacles. The mayor threatened to arrest anyone who did not sort garbage properly and put it in the designated container type (Jackson 1961:101-102).

Compounding the garbage problem was the sporadic nature of collection procedures. In sparsely settled areas, some residents resorted to dumping their refuse on neutral grounds (Jackson 1961:133). Also in the late nineteenth century, uncollected garbage was dumped by many into privies. Because some empty lots were graded with manure (Jackson 1961:161), part of this refuse became part of a general diffuse scatter.

In 1918 and 1919, the garbage problem was studied by the Orleans Parish Board of Health, the City of New Orleans, and the Metropolitan Life Insurance Company. They noted that until 1900 garbage had been loaded onto special boats at designated garbage wharfs and then dumped into the Mississippi River. By 1919, the law required that garbage be kept in a metal, tightly covered, water-tight can. Unfortunately, the cost of such cans was $2.00, a prohibitive amount for many residents. The result was that "In the poorer quarters of the city, boxes, baskets or pails are in common use" (Behrman et al. 1919:112).

The city ordinances also required by 1919 that garbage be separated from other household wastes such as tin cans, paper, boxes, crockery, or ashes. Again the 1919 study noted that many householders were not complying. Further, collection wagons were picking up both garbage and "other wastes" which was another violation of the system. The collection standard was daily pick-up in central portions of the city and twice weekly pick-up on the outskirts. However, the 1919 study notes that this standard was not always maintained. By this time, the ultimate destination for collected garbage was designated dump sites (Behrman et al. 1919:112-113).

Sewage disposal was another major problem of the late nineteenth century. In 1877, the City of New Orleans adopted an ordinance requiring that new privies not exceed two feet in depth below ground surface. The ordinance also mandated that new privies be walled with brick or stone, laid in cement with sharp sand its whole depth. Water-tight bottoms were also required. Finally, the law specified that the brick or stone wall rise at least one foot above ground surface (Hughes 1908:93-100).

Two years later, an ordinance was passed empowering the Board of Health to order that any privy vault filled to within one foot of the surface be emptied within 48 hours (Hughes 1908:99). Unfortunately, in uptown areas where a number of dairies and truck farms were located, privies were seldom emptied. Sanitary contractors complained that they were too busy in more crowded neighborhoods. One common solution was to locate privies in back gardens and to use the contents for fertilizer (Shugg 1968:285-286).

In 1897, privies still served the sewage disposal needs of the majority of residences, although alternate systems were in use:

> [In 1897] The existing methods of sewage disposal consisted of a few private lines discharging into the river, serving the larger business houses, hotels and public buildings. The better classes of residences were equipped with modern plumbing, discharging into cesspools, which in many instances overflowed into the gutters. The majority of homes were served with rear privies, their contents being removed by one of the numerous sanitary excavating companies (Behrman et al. 1919:10).

The city attempted construction of a sewerage system in 1880 and 1881, but the effort failed due to prohibitive costs. A second attempt from 1892 to 1895 focused on construction of a system to serve the central parts of the city, but that effort also failed. Finally, in 1899 a Sewerage and Water Board was created. The laying of pipes began in 1903, and the sewerage system was considered complete in 1908 (Jackson 1961:124-125).

The sewerage system represented an important civic improvement, undoubtedly contributing to better health and sanitation conditions for residents of New Orleans. Because of the configuration of an average city square, prior to the system five privies were lined up against the side fence of each of four key lots in the center of the square (Behrman et al. 1919:139). The stench was obnoxious, and the spread of filth during heavy rains was a major contributing factor to the spread of disease and to generally unpleasant living conditions in most neighborhoods. By 1919 the situation had improved

considerably. It was estimated that of 80,000 premises in New Orleans, 75,000 were connected to the sewerage system. With only 5,000 privies still in use, they were considered "...a rare sight indeed in the built-up areas of New Orleans" (Behrman et al. 1919:103).

Although some outlying areas were not yet served by the 497 miles of sewerage pipes in use by 1919 (Behrman et al. 1919:103), the system had been designed to extend to the St. Bernard Parish line and lakeward to Florida Avenue (Sewerage and Water Board 1903:Plate XIII). The sewerage system plan was based on an estimated 56,423 premises within its area of coverage in 1900 (Sewerage and Water Board 1903:214). By 1925, 560 miles of city streets were associated with sewerage pipes serving about 96,000 premises (Sewerage and Water Board 1925). By 1937, mileage had been increased to 699, serving an estimated 112,000 premises (Sewerage and Water Board 1937).

In 1896, the Board of Commissioners for the Port of New Orleans was established by law. That group, commonly referred to as the "Dock Board," undertook projects from 1900 to 1910 to rebuild and expand the city's port facilities. In 1879, completion of the South Pass jetties had removed sand bar obstacles to large ships at the mouth of the river. Concurrently, railroad construction, belated though it was, made New Orleans one of the southern hubs for overland transit of bulk goods. The Southern Pacific line linking New Orleans and California, and the Illinois-Central line linking New Orleans and Chicago, were two of the most important. Cotton remained important to the city's commercial life, while trade with Latin countries was increasing. Importation of coffee and bananas were the mainstay of the Central and South American trade (Lewis 1976:48-57).

The "Dock Board" sponsored construction of the Inner Harbor Navigation Canal on the grounds of the second Ursulines Convent. It was intended to remove the necessity for navigating the Mississippi from New Orleans to the mouth of the river. It was also intended to stimulate industrial development along its banks. The canal was finished in 1921 and was connected to the river by locks in 1923. Rather than serve as a location for manufacturing facilities, the IHNC was soon lined with facilities to serve bulk cargo barges on the Intracoastal Waterway (Lewis 1976:56-57, 71).

The Great Depression of the 1930s slowed the pace of international trade, and thereby severely affected New Orleans. World War II stimulated some growth in the city's economy, particularly as a result of rapid expansion of the ship-building industry in the area. After the war, ongoing changes in the shipping industry such as the use of trucks, rail mergers, use of container ships, and completion of the St. Lawrence Seaway cut into the port's volume of business. However, by 1967, New Orleans was still largely dependent on the port. Only 14 percent of the work force was involved in manufacturing compared with a national average of 23 percent for cities with populations above 200,000 (Lewis 1976:67-68).

CHAPTER 6
A REVIEW OF PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS IN NEW ORLEANS

The following review examines results of previous archaeological investigations in New Orleans in order to provide a context for excavations that may be necessitated in the present project corridor. Recovered artifacts and features are discussed in some detail, particularly when these derive from residential occupations. In addition, the analytical and theoretical framework of previous investigations are discussed for projects in which these were explicit.

The Site of the U.S. Mint Building (16OR52)

In 1760, defense bastions connected by palisades and a continuous perimeter moat were constructed around the city of New Orleans. The system intersected the Mississippi River near the presently standing U.S. Mint building. In 1792, five pentagonal forts revetted with brick were constructed along the walls and moat. Fort St. Charles stood at 16OR52, and it was not dismantled until the years 1816 to 1821. The property served as a park in honor of General Jackson until 1835 when the U.S. Mint building was erected. Mint officers were allowed to live on the grounds until 1888. During Federal occupation of New Orleans from 1862 to 1877, troops occupied and maintained quarters there. After minting operations ceased in 1909, the structure was occupied by the Veterans Bureau, the U.S. Coast Guard, and the Louisiana State Museum. During renovations in 1931, a brick footing was uncovered, and it was thought to derive from Fort St. Charles (Castille 1978:2-5).

During 1978, the Louisiana Division of Archaeology excavated three test pits on the grounds of the U.S. Mint. The first unit measured 1 x 1 m, and was excavated to a depth of 30 cm. The unit was abandoned when it was determined that it had been placed directly above a sewer line. Soils appeared disturbed to a depth of 30 cm, and artifacts were primarily architectural debris and Rangia shells (Castille 1978:6).

A second unit was placed at the edge of the structure facing Esplanade Avenue. The unit measured 1.2 x 2.25 m, and was excavated to a depth of 1.45 m. The only feature encountered was the Mint's stepped brick footing. Tin-enameled earthenware (n=21) and lead-glazed earthenwares (n=8), both characteristic of the eighteenth century, were recovered only below .4 m

depth. Cream-colored earthenware (n=26) and pearlware (n=41), both late eighteenth and early nineteenth century wares, were recovered at depths of .2 m to 1.2 m. Only two sherds of whiteware were recovered, and these were from levels above .3 m. One undescribed aboriginal sherd and two sherds of unglazed coarse earthenware were also recovered. The presence of pearlware in most levels was interpreted as evidence that in situ pre-1780 deposits might be present only below 1.5 m, the approximate depth of water table and sterile clay. However, when a posthole digger was used to reach a depth of 2.5 m within the unit, no artifacts were recovered (Castille 1978:6-8 and Figure 12).

The third unit was also placed on the Esplanade Avenue side of the building, but this time at a distance of 1.2 m from the exterior wall. It measured 1.1 x 1.2 m and was excavated to a depth of 1.45 m. Tin-enameled (n=6), unglazed coarse earthenware (n=1), lead-glazed (n=4), and pearlware (n=9) sherds were recovered. A clayey sand termed Zone 6 yielded small fragments of pearlware as well as gunflint fragments. This zone lay below a stratum of brick and mortar rubble. That portion of the stratigraphic sequence suggested a parade-ground succeeded by a building or demolition stage associated with a brick structure (Castille 1978:8-9).

Although no features associated with Fort St. Charles were encountered, further excavations were recommended because of pending terrain alterations on all sides of the U.S. Mint structure (Castille 1978:10). Further work was accomplished by monitoring of mechanical excavation of sewer and utility line trenches that were 1.0 to 2.2 m deep, by hand excavation of trenches to depths of .25 to .50 m in the basement of the structure, and by mechanical excavation of seventeen six-inch cores to a depth of 2.5 m (Gibbens 1978:6-7).

No evidence of Fort St. Charles was noted. Several brick footings were uncovered. These were interpreted as possible foundations for a coal shed or a covered walkway. Two square cypress timbers beneath the basement floor had probably served as supports for heavy equipment in the boiler room. Portions of a central set of water closets, 13.9 x 3.5 m and formerly located along a portion of the exterior wall, were excavated. These were floored with pine planks at 1.75 m below the top of the structure's foundation. Fill consisted of brick rubble, granite paving stones, and mortar. Few artifacts were present, indicating that the water

closets were cleaned out and backfilled with rubble during their 1908 demolition (Gibbens 1978:7-14).

A circular foundation of St. Joe Brick in the Flemish bond pattern represented a cistern base with a diameter of 2.5 m and a depth of .5 cm. Interior fill yielded early nineteenth century transfer-printed pearlware sherds and modern 7-Up bottle fragments. Two circular steatite-lined basins with diameters of 3.05 m were noted. Fill was excavated from one of these, but it yielded only granite paving stones and brick. The spread-foot foundation of the original Mint smokestack was examined. Soft, bright red bricks were laid in the Common bond pattern, and the feature was 2.3 m square and .45 m thick. Artifacts included 209 glass sherds, of which 83 represented wine or liquor bottles. A total of 158 ceramic sherds were recovered. These included whiteware (n=79), pearlware (n=38), tin-glazed earthenware (n=17), creamware (n=7), and lead-glazed earthenware (n=7). Fifty-one of 54 recovered bones represented cow (Gibbens 1978:7-14).

Excavations indicated that numerous renovations of the building and grounds have resulted in disturbed stratigraphy and mixing of artifacts. Also, remains of Fort St. Charles probably were removed some time before or during construction of the U.S. Mint building (Gibbens 1978:7-14).

Gallier House Complex (16OR46)

The Gallier House site (1132 Royal Street) and associated warehouse complex (1118-1128 Royal Street) were part of the original Ursuline Convent grounds until the square on which they stand was sold by the Order in 1825. Buildings were constructed beginning in 1833, and the presently-standing Gallier House was built in 1857. Archaeological investigations were conducted on the property in 1970 during an extensive renovation program (Hudson n.d. a:1-3).

The Gallier property was closed in by the house and garden walls in 1857. Artifacts were expected to derive primarily from occupations of pre-existing, nearby structures because in 1857 most of the grounds had been sealed under a flagstone walk or used as part of a grass plot with a fountain. Grounds associated with the Gallier House proper had been disturbed by construction of a swimming pool and subsequent deliberate infilling, by construction of a cistern base, and by various other construction episodes. The result was an absence of

observable stratigraphy necessitating interpretations based only on recovered artifacts (Hudson n.d. a:5-7).

Only one sherd of tin-enameled earthenware was recovered. All other ceramics were produced in the nineteenth or early twentieth centuries. These included pearlware, whiteware, and stoneware. The manufacture of at least some of these sherds probably pre-dated the 1857 construction, and all of them could have derived from earlier occupations of the square. Glass sherds were also recovered, and these included eleven identifiable seals. The servants' privy, constructed at the same time as the house, yielded only late nineteenth century artifacts. This indicates that the privy contents had been periodically removed during its period of use. The privy was a rectangular brick structure measuring 27 x 51 in, and was 62 in deep. The top and interior were covered with mortar. The interior contained two cypress floors, one at a depth of 42 in below the top course of bricks and the second at 52 in. Two hair tonic bottles, one hair dye bottle, and one perfume bottle were recovered from the privy fill, as well as wine bottles, table glass sherds, window glass, and one optical lens. An 1899 five-cent piece also derived from the privy, while three other coins recovered from the grounds were dated 1773, 1799, and 1833. The main house was served by an interior patent water closet which discharged into an underground sink five feet in diameter and seven feet deep. This feature had been destroyed by swimming pool construction (Hudson n.d. a:7-37).

One small area within the courtyard yielded 131 gunflints, suggesting a cache of unknown purpose and date. Only one black English flint was recovered. The others were honey-colored French flints. Toys recovered from the site included seven porcelain doll fragments, a toy porcelain animal fragment, a toy porcelain lid from a child's table service, and part of a lead horse. Most of these toys were manufactured during the late nineteenth century. Both clay and glass marbles were recovered. Faunal remains were primarily beef, followed in frequency by pork. Some chicken and smaller bird bones were found, as well as two fish vertebrae. Oyster shells were also present (Hudson n.d. a:38-46).

The warehouse adjacent to the Gallier House was built in 1832, and was the first building to stand on its site. Its use is unknown except for 29 years during which it was leased by mineral water companies and 34

years during which it was owned by furniture dealers. It was used as a livery stable for less than two years (Hudson n.d. b:1-4).

Excavation revealed that the arcade brick piers rested on 2-inch thick cypress planks. Short planks had been laid across the base of a maker's trench, and longer planks rested on these and ran the length of that trench. The planks were at the level of the water table and provided the necessary base for the piers and the weight of the arches which the muck would otherwise have made unstable. Wall footings were stepped and also rested on cypress planks. One trash pit of undetermined size was noted (Hudson n.d. b:4-8, 13).

Several thousand buff-colored stoneware sherds were recovered, some of which bore the mark of M. Piris, a New Orleans manufacturer of soda water, who apparently used the warehouse in the 1840s. In the 1850s, P. Pons, another soda and mineral water dealer, used the warehouse, and some glass bottle fragments were embossed with his name. A series of such dealers used the facility until the 1870s. Other glass artifacts included wine bottle fragments, wine seals, and a cache of 56 light aqua ink bottles. Pontil scars on the latter indicated manufacture at some time between the 1820s and the 1880s. Pearlware and whiteware were the dominant ceramic types (Hudson n.d. b:13-30).

The Hermann-Grima House (16OR45)

The Hermann-Grima House at 320 St. Louis Street in the Vieux Carre is actually a structural complex that includes a two-story brick mansion, rear courtyard, three-story rear structure that served as a kitchen and work area and servants' quarters, and a smaller two-story brick structure also in the courtyard. The complex was built in 1831 for Samuel Hermann, a wealthy commission merchant. Felix Grima purchased it in 1844 after Hermann's bankruptcy, and the Grima family resided there until 1921. It has since been owned by the SPCA for three years, and by the Christian Women's Exchange (Shenkel et al. 1977:1-3).

Excavations by the University of New Orleans were designed to provide information on the kitchen and parts of the servants' quarters, on the well, on the smaller back-building, on the suspected privies, and on the cisterns. Twenty units of varying size were excavated (Shenkel et al. 1977:1-3).

Results provided important information concerning the function, construction sequence, and design of the two outbuildings. Excavation in the courtyard indicated that the present flagstone paving lies nine inches above an earlier herringbone brick patio. Between the two lies fill consisting of sand, lime, and concrete. Below the brick patio, features were uncovered that pre-date the 1831 structures. These features included a brick foundation and portions of two earlier courtyard pavements, one at 1.25 ft and the other at 1.75 ft below present ground surface. The series of pavements separated by fill indicates that residents of the Vieux Carre periodically elevated their occupation surfaces. Most of the eighteenth century artifacts recovered came from levels below the uppermost herringbone brick patio. One of the pre-1831 features was a wood-lined well, 6.5 ft in diameter with a depth of 5.25 ft below present surface. It was apparently filled with architectural rubble and debris and then covered by the herringbone patio at the time of construction of the presently standing structure (Shenkel et al. 1977:3-27).

A second well, this one associated with the 1831 structure, was also excavated. It was 13 ft deep and lined with bricks laid in a radial pattern. Diameter of the opening was slightly greater than three feet. Fill included late nineteenth/early twentieth century clay marbles and coins, a brass shingle exhibiting Alfred Grima's name, and large amounts of slate and brick debris. The well was apparently filled in during the early twentieth century. Associated with the well was a rotary hand pump. No privies were located by these or subsequent excavations (Shenkel et al. 1977:27-29).

Ceramics, glass, and nails were the major artifact categories. Creamware accounted for over 58 percent of recovered ceramics, while pearlware constituted only about 20 percent. Other types included tin-enameled earthenwares, jackfield wares, hard-paste porcelain, lead- and salt-glazed coarse earthenwares, refined earthenwares, redwares, black basalt, and stonewares. A total of 6,137 sherds were recovered. Of these, 91.7 percent were manufactured in Britain while 5.3 percent were of French origin. Mixing of ceramics and other artifacts of widely-varying dates in all units were interpreted as evidence disturbance prior to excavation. Most nails were too badly corroded for identification. Diagnostic glass indicated manufacture dates from 1761 to the early 1800s (Prieto 1977:87-101). A re-analysis

of ceramics from these excavations indicates that, contrary to the original interpretation, disturbance was minimal (Yakubik 1990).

During 1982, Tulane University conducted additional excavations at the Hermann-Grima House to mitigate the impact of drainage improvements. Thirteen test units were excavated at various locations adjacent to the house, the main outbuilding, and within the courtyard (Davis and Giardino 1983:2-4).

It was suggested that the uppermost herringbone courtyard, because of its relationship to the house and the configuration of brick-lined drains, may have predated the 1831 construction episodes. Wooden dividers consisting of upright stakes were uncovered in some brickless areas. The presence of a series of brick-lined floors beneath the herringbone was confirmed. One stratum yielded evidence of an episode of severe burning. Artifacts from the stratum were dated to 1780-1797, suggesting an association with either the great fire of 1788 or 1794. Mean ceramic dates from excavations south of the house ranged from 1831 at Stratum I to 1753 for the wood-lined well located beneath Stratum V. The ceramic and stratigraphic sequence suggested deposits were undisturbed beneath the uppermost herringbone. One unit contained part of a stepped-brick foundation for the house. As was true of the stepped-footings at the Gallier House, the footings at Hermann-Grima rested on cypress boards (Davis and Giardino 1983:19-49).

Of 3,435 artifacts, 56 percent were ceramics, 17 percent were glass, 17 percent were bone, and 10 percent were metal. Ceramic type percentages were almost identical to those reported for the University of New Orleans excavations, with creamware predominating (56 percent) and pearlware (20 percent) occurring with the next highest frequency. Most diagnostic bottle glass sherds were dated to the years between 1790 and 1810. The most commonly recovered faunal remains were cow, pig, and horse, with chicken and turkey bones common but less frequent. The bottom-most level of one unit yielded one shell-tempered aboriginal sherd and a blue glass trade bead (Davis and Giardino 1983:63-66).

Convent of the Perpetual Adoration, Holy Cross National Historic District

The only reported archaeological investigations within the Holy Cross National Historic District were

conducted within the square bounded by Royal, Tupelo, Chartres, and St. Maurice Streets. Presently standing on the square are the Convent of the Perpetual Adoration, completed in 1919, and a 1981 nursing home facility (Beavers and Lamb 1989:1-4).

The Convent of Perpetual Adoration is situated in an area that apparently was subdivided between 1834 and 1835. St. Maurice Parish was created in 1852, and the presently standing St. Maurice Church was erected in 1857. The Sanborn Insurance Map of 1896 indicates that by that date many lots in the area did not yet contain houses. A school once stood on part of the investigated square. Chain of title was not conducted to determine the date of construction and ownership of a dwelling standing on the property in 1896 imme`iately lakeward of the courtyard scheduled for impact (Beavers and Lamb 1989:20-35).

Eleven shovel tests were excavated within the courtyard, and a surface collection was made. Shovel tests yielded coal, cinders, gravel, animal bone, and whiteware sherds, one of which was dated to ca. 1950 by a maker's mark. Architectural debris was also recovered, and some evidence of fill on the site was noted. No artifact concentrations were observed (Beavers and Lamb 1989:1-4, 9, 13-16).

The Jazz Complex and Beauregard (Congo) Square

The project area was within Faubourg Treme immediately adjacent to the Vieux Carre, and was bounded by North Rampart, St. Philip, North Villere, and Orleans Avenue and St. Peters Streets. That square houses the New Orleans Municipal Auditorium and the Louis Armstrong Park. Two specific sub-areas were the focus of archaeological investigations. Area 2, Beauregard (Congo) Square was the suspected site of Fort St. Ferdinand associated with the French and Spanish defensive perimeters that circled the old city. Since the fort's removal after 1803, Area 2 has served as a public park and was the site of nineteenth century gatherings by urban slaves on Sunday afternoons. In addition to the two areas that were the focus of intensive field work, a trash pit, a well, and two privies in the 800 and 900 blocks of North Rampart Street were excavated. Units measured 5 x 5 ft and were excavated in .5 ft levels (Shenkel et al. n.d.:1-4).

A series of test pits and of backhoe trenches were excavated within old Congo Square. In one of these, at

a depth of 3.1 ft and extending to a depth of 10 ft, was a concentration of bricks associated with a row of vertical cypress planks which appeared to have been driven into place. A row of three upright posts or beams was also associated with the brick concentration. Artifacts in the trench were predominantly dated to the late eighteenth and early nineteenth centuries, with the exception of a lens that yielded large amounts of ironstone. The brick and board feature apparently represents the remains of a board-lined ditch and brick bridge known to have been part of Fort San Fernando. Those remains provided a basis for interpretations of construction sequences in the late eighteenth century. Strata in most other units and trenches in this area indicated that it was severely disturbed (Shenkel et al. n.d.:101-123).

The vicinity of the Jazz Complex was investigated in order to obtain data related to cultural activity during the several historic periods when the Faubourg Treme served primarily as a residential community. The remains of a spring house measuring 10.2 x 8.0 ft were encountered at 0.2 ft below surface. Apparently the original flooring of the spring house consisted of a 0.5 ft thick layer of oyster shell. Although some creamware and pearlware were recovered from inside the structure, artifacts from the interior derived primarily from the late nineteenth or early twentieth century. The soft red bricks used in the foundation suggested construction prior to 1840. Excavations at the exterior of the structure yielded far more artifacts, including a much higher proportion of creamware and pearlware than was obtained from the interior fill. This supports the hypothesized construction date, and it indicates that the interior was periodically cleaned out, whereas the exterior was a locale for fairly concentrated refuse disposal (Shenkel et al. n.d.:123-143).

In an area near a firehouse, a wood-lined privy and part of a fence were uncovered. The fence line was interpreted as the eastern edge of a wood-lined, open trash pit, into which the later privy intruded. Over 10,000 artifacts, of which over 3500 were ceramic sherds, were recovered from units placed to investigate these features. The date range of recovered artifacts, including creamware, pearlware, coarse earthenwares, and ironstone suggested a date of ca. 1820 to 1870 for the features (Shenkel et al. n.d.:143-155).

At the St. Philip Street locale, two units contained the bottom segments of shallow privies, the

tops of which had been removed by landscaping activity. Both were apparently associated with a single residence. Artifacts were predominantly from the early nineteenth century, suggesting that this might have r presented one of the earliest residential sites in the faubourg. A fire well, consisting of a hollow circular column of bricks with a diameter of 5.2 ft and 10.0 ft deep, was excavated at a locale near 827 N. Rampart St. Although well water was not drinkable, an eighteenth century ordinance required their presence in case of fire. Creamware (17 percent), pearlware (44 percent), and ironstone (18 percent) were the predominant wares suggesting that the well had been infilled during the early to middle nineteenth century (Shenkel et al. n.d.:144-161).

Features and artifacts representing late eighteenth to late nineteenth century occupations were present at the various sites. The number of artifacts, and the fact that many derived from described and dated features, make this an important comparative collection. However, the reported ceramic analysis is somewhat idiosyncratic so that before comparisons with other sites can be made, re-analysis should be undertaken.

Algiers Point

Archaeological data recovery of several city blocks scheduled for impact by a levee setback was conducted at Algiers Point, a short distance upriver and across from the present project corridor. Prior to field work, an archival overview (Fritz and Reeves 1983) was prepared (Goodwin et al. 1984:12). Field methods applied at Algiers Point were primarily excavation of backhoe trenches of variable length and depth supplemented by hand excavations of features. Excavations were located within squares which, on the basis of archival research, were considered to be high probability locations for intact historic period archaeological deposits (Goodwin et al. 1984:137-139).

Fifteen features and three refuse deposits were uncovered in Square 21. One of these was a ferrous zone associated with Johnson Iron Works, the location of which is shown on a 1909 Sanborn map. Wooden planking above an L-shaped brick foundation was also excavated. Excavations within Square 21 also yielded cultural material associated with residential occupations (Goodwin et al. 1984:137-139).

Features within Square 13 were primarily brick walls and smaller brick foundations. Some of these were associated with a slate-roofed residence which was standing during the 1880s. Others were associated with Johnson Iron Works and included foundations to support machinery. Two refuse lenses associated with antebellum and postbellum residential activity were also uncovered. Square 10 contained the remains of a blacksmith concern as well as three tenant residences shown on the 1903 Sanborn map (Goodwin et al. 1984:139-140).

Analysis of cultural material included calculation of mean ceramic dates and bracketed glass dates for all excavated proveniences. All of the obtained dates were within the nineteenth century, and were primarily post-1850. Earlier dates were generally associated with smaller sample sizes, many of which were so small that they may be unreliable (Goodwin et al. 1984:169-172).

Unfortunately, deficiencies in the documentary and archival records limited the utility of analysis of artifacts aimed at differentiating status of the various occupants. Often, artifacts were recovered that pre-dated periods for which archival information had been obtained. This was the case for cultural material associated with residential occupations within Square 21 (above). However, sufficient archival information was obtained for interpretations and comparisons of residential debris excavated from Square 13. Material there could be assigned to a church and clerical residence (1849-1872) and a subsequent mixed residential-commercial occupation by a "middle class" mortician and furniture-maker. Also, some material was obtained from Square 13 that could be assigned to a "working-class" occupation (Goodwin et al. 1984:179).

South's (1977) functional classes of artifacts were used for data analysis with two major modifications. First, because of low frequencies of occurrence, the categories of clothing, tobacco, and toys were included in the category for personal items. Second, South's kitchen category was modified in that glass and ceramics were considered separately.

When artifacts from privy fill were compared for the "middle class" and "working-class" occupations, significant differences were noted. The "middle-class" privy yielded more glass, architectural material, and personal artifacts, but it contained fewer ceramics. The greater than expected frequency of architectural material was attributed to demolition of the church that

formerly occupied the lot. However, the high frequency of glass and personal artifacts was interpreted as a reflection of a higher status occupation. Miller's (1980) price ranking of ceramics was also used to compare the "middle class" and "working class" occupations. Following Miller, porcelain was excluded from the analysis. Because of low frequencies of occurrence, Miller's second and third levels were combined. The comparison did show a significant difference between the two ceramic assemblages. One additional comparison, this time between the "working-class" resident and a nearby "tenant" produced similar results. Statistical testing did not support the hypothesis that higher status occupations yield a higher frequency of personal artifacts than do lower status occupations. Similarly a comparison to detect the presence of relict ceramics in assemblages associated with lower status occupations yielded negative results (Goodwin et al. 1984:179-195).

Excavations at 16OR69

It is believed that this site, bounded by Jackson Avenue, St. Thomas, Josephine, and Rousseau Streets was initially the location of a sugar house. That structure was converted for use as an orphanage dormitory. Subsequently, residential structures and then a school were present. Backhoe trenches were used to locate features which were then excavated by hand. Thirty-five features were uncovered, of which the majority were brick footings and foundations. Excavated features also included two cistern foundations and three privies (Goodwin and Yakubik 1982:1-3).

The site was part of a plantation above New Orleans until the 1824 purchase of a lot by the Society for the Relief of Destitute Orphan Boys. The organization repaired an "old brick edifice formerly a sugar house..." on the property to house orphan boys. The asylum was abandoned in 1861, and the property was subdivided and sold at auction in 1866. Subsequently, shotgun residences and a school for Blacks stood on the various lots (Goodwin and Yakubik 1982:4-19).

A series of brick footings were interpreted on the basis of map evidence as the remains of the sugar house/orphanage. Most other brick features were continuous brick foundations associated with later structures. One of the trashpits contained a large concentration of kitchenware and subsistence refuse, and was located near an addition to the orphanage dormitory

that may have been a kitchen wing. One of the cistern bases probably was constructed prior to 1860, while the other was slightly later. The excavated privies were dated from 1885 to 1895 (Goodwin and Yakubik 1982:20-30, 97-147).

Artifacts included kitchenware, architectural items, toys, tools, buttons, and a variety of personal possessions. The majority were recovered from the trash pit and from privies, with very few occurring in the immediate vicinity of living areas. This pattern of artifact location is different from models developed for eighteenth century British sites in the East. It reflects efforts by nineteenth century urban residents to maintain a relatively clean area around their houses and to dispose of refuse in discrete features or to remove it to some other locale (Goodwin and Yakubik 1982:82).

Ceramic dating indicated that for the late nineteenth century, Mean Ceramic Dating as proposed by South (1977) should be used with caution because no date so calculated can post-date the latest median date for the types occurring in the sample. Glass artifacts, especially datable manufacture techniques, were used to provide a more realistic chronology for the site and its features (Goodwin et al. 1982:83-96).

A comparison of the dates for glass and ceramic artifacts associated with the orphanage (1825 to 1861) indicated that relict ceramic use was occurring in that institution. Mean Ceramic Dates from specific features were considerably earlier than bracketed glass dates for the same features. This was not true for later residential occupations on the site. Ceramics were also divided into holloware, flatware, and miscellaneous categories. The analysis indicated that occupants of the orphanage used relatively greater proportions of holloware than did the later residents of shotgun houses. However, frequencies of holloware were higher than those recorded by Otto's (1977) studies of an "upperclass" planter and a "lower middle-class" overseer, indicating that both occupants of the orphanage and the subsequent residents were all of "lower class status." Burned bone was rare at the site, suggesting that roasting meat was an uncommon practice. This, and the high frequency of hollowares is evidence for a diet high in soups and stews. Finally, use of Miller's (1980) price ranking analysis, discussed at greater length below, indicated that a greater proportion of expensive ceramic types were used by the

late nineteenth century residents than was true for the occupants of the orphanage (Goodwin and Yakubik 1982:180-187).

Unlike the investigations reported in the section immediately below, neither ethnic identities nor occupational status of the post-orphanage residents of 16OR69 were obtained at the time of excavations and the subsequent report. However, these data could be easily obtained should the curated collection be relevant for comparisons with other New Orleans sites.

Lots at Esplanade Avenue and Rampart Street 16OR63

Archaeological test excavations were conducted within an area just outside the Vieux Carre. Located at the corner of Esplanade Avenue and North Rampart Street, part of the property was located within the Faubourg Marigny National Historic District and the remainder was within the then-proposed Esplanade Avenue National Historic District. A French bastion dated to the colonial period, and Fort. St. Jean associated with the defensive walls built in the Spanish period were thought to have been located in the vicinity of the project. By the 1820s, the fort and associated wall had been removed, and subdivision for residential use had begun. The architect Felix Pinson built two houses on the lots, and he sold those structures by 1836. A female Free Person of Color was living on one lot by 1813. Through the 1800s, structures passed through a series of owners, and beginning in 1871, the Ursuline Nuns, followed by the Brothers of the Sacred Heart, established schools there. One other portion of the property had a different history. It became the site of one of the costliest mansions in New Orleans in 1856. This latter area (Unit 2) was ultimately determined ineligible for the National Register of Historic Places (Castille et al. 1979:2/11, 4/4-4/11).

The Pinson/Ursuline areas, deemed Unit 1, were found eligible for inclusion on the National Register after excavation of eight 1 x 1 m test pits yielded features and large numbers of artifacts from the early and late nineteenth century occupations. Data recovery was recommended and later undertaken on this portion of the property (Castille et al. 1979:5/12-7/1).

Several explicit research objectives were developed to guide further archaeological investigations. One goal was further development of a model for urban residential compounds typical of the slave-holding

South. Such compounds commonly consist of a main residence, a yard in the rear that often included servants' quarters, a kitchen, store rooms, a stable, and other outbuildings located either to the side or to the rear of the main house. The Pinson two-story townhouse represented such a compound. A nearby property occupied by Free Persons of Color from the 1850s to ca. 1870 and then occupied by whites of modest means, was expected to provide a contrast to the Pinson compound (Castille et al. 1982:1/3-1/4).

The second major research objective was an examination of manifestations of social and status differences in the archaeological record. It was anticipated that status differences would be reflected in architectural remains, material possessions including ceramics, and dietary remains. The third objective was to obtain archaeological data pertaining to material and spatial aspects of urban slavery. Finally, research was designed to depict involvement of residents in local, regional, national, and international economic spheres (Castille et al. 1982:1/6-1/7).

On the Pinson lot, 71 m^2, or approximately one percent of the total surface area, were excavated by hand and 15 m^2 were opened by backhoe. On the other lot 54 m^2 (1.4 percent of the total area) were excavated by hand and 3 m^2 by backhoe. Over 50,000 artifacts were recovered, of which over 25,000 derived from features. The latter group was analyzed. The 23 recovered features consisted of six brick foundations, three trash pits or piles, three demolition or pipe excavation disturbances, two artifact concentrations, two brick-lined wells, three brick walkway or patio remnants, three brick-lined pits, and two pits or depressions (Castille et al. 1982:1/8,4/5-4/6).

For analysis of artifacts, South's (1977) nine functional groups were used: (1) kitchen; (2) bone; (3) architecture; (4) furniture; (5) arms; (6) clothing; (7) personal; (8) tobacco; and (9) activities. Two additional functional groups were devised to accommodate artifacts not considered by South: (10) miscellaneous; and (11) structural debris for bricks, slate, and other rubble types not included in architecture by South. Finally, the kitchen group as defined by South was modified to accommodate late nineteenth and early twentieth century material such as tin cans (Castille et al. 1982:5/1-5/8).

Miller's (1980) pricing study of late eighteenth to mid-nineteenth century earthenware ceramics was used to examine status differences between occupations. Miller classified ceramics into four groups to which he assigned numerical status indices. These are, in increasing status order: (1) undecorated; (2) edge, sponge, banded, mocha, and finger trailed slip decorations; (3) hand-painted; and (4) transfer-printed and ironstone. Some additions were made to Miller's four groups in order to accommodate common late nineteenth century ceramic types. "Ironstone" was defined as a highly vitrified, "opaque porcelain." Also, molded or embossed ceramics were ranked with hand-painted ceramics, and yellowware was added to the edge/banded/mocha category. Finally, lead-glazed utilitarian earthenwares and stoneware were placed with undecorated ceramics in the lowest status (Castille et al. 1982:5/33-5/34).

Data to address the first research objective of the project derived from comparisons of the excavated properties with other nineteenth century residential compounds. The result was refinement of a model depicting three variations of "middle class" residential units which apparently, at the time of construction, correspond to differences in socio-economic status. The lowest status compound of the three "middle class" units consists of a main residence, a detached kitchen, a courtyard, privy, cistern, and fire well. The residential structure is often a one-story wooden Creole cottage. Sometimes these were "doubles" shared by two poorer families. Middle status units are characterized by the additional presence of servants' quarters in the same structure as the kitchen. Also, the residence is often larger, sometimes a 1-1/2 story Creole cottage. Such a middle status compound was commonly surrounded by a wooden fence. The highest status "middle class" compound is characterized by an additional building which may have served as a stable/carriage house. Most structures are made of brick. Both the main house and the kitchen/servants' quarters are two stories. A carriage-way may lead into the courtyard. A high brick wall surrounds the compound, and a formal garden may be present in or near the courtyard (Castille et al. 1982:6/1-6/3).

The second research objective of the project, examination of social and status differences, was not met due to site disturbance and due to temporal differences between features on the two lots in which excavations were conducted. One other problem with such

an objective may be the admixture of artifacts from the main residence and the servants' quarters of a single high status, walled compound. This problem also makes data collection to address the third objective, depicting spatial and material aspects of urban slavery, particularly difficult. The fourth objective, documenting economic networks, was somewhat successful because of available information on ceramic types and makers' marks and on the French origins of most of the excavated wine bottles (Castille et al. 1982:6/3).

Use of formal/functional groups for comparing artifacts was a successful research strategy for the site. A higher percentage of kitchen-related artifacts was recovered than is true of British patterns defined on the basis of sites on the East Coast. However, the percentages at Esplanade Avenue did approach those termed the "Piedmont Survey Pattern," possibly reflecting low status occupations of the late nineteenth and early twentieth centuries, or reflecting a change in artifact patterning characteristic of and ongoing during the nineteenth century as a whole (Castille et al. 1982:6/3-6/5). Field investigations and artifact analyses reported for this project were exemplary, and represent an invaluable data basis for comparisons with other urban sites both in New Orleans and in other cities.

The Greater New Orleans Bridge No. 2 Right of Way

The most extensive and best-reported archaeological investigations in Urban New Orleans to date were undertaken in the Lower Garden District, within the right-of-way of the Greater New Orleans Bridge No. 2. The project area lay along an axis stretching from the foot of Thalia Street at the river to the bed of the former New Basin Canal near Claiborne Avenue, encompassing at least 56 squares. Pursuant to the Scope of Services, no intensive survey was undertaken. Rather, 24 properties which had been found to have architectural significance were defined as the focus of archaeological investigations. The properties included a cotton press, a cotton mill, residences, warehouses, stores, a church, and miscellaneous other structures. Actual archaeological testing was undertaken on 14 of the 56 squares, each of which contained an average of about 12 properties. Thus, only a few properties on each square could be investigated. Ultimately only about one-half of the architecturally significant properties were investigated, but excavations were conducted at replacement sites defined on the basis of

testing. Both backhoes and hand excavation units were used in the course of these investigations. Field work lasted about four months. A total of 9200 person hours were expended in the field and 16,000 additional hours were expended during artifact analyses and report preparation (Castille et al. 1986:1/1-1/6).

Notarial records, census records, and city directories were used to identify mid-nineteenth century residents of targeted properties. The project research design outlined several objectives. The first was to examine the structure and variability of the urban residential unit based on the model previously proposed by Castille et al. (1982 and above). The second objective was an examination of social, ethnic, economic, and status variability. One aspect of this was to obtain comparative data from nineteenth century occupations by German and Irish immigrants, as well as from non-immigrant "middle and upper class" residents. The third research objective was to examine the commercial and industrial setting of the project area. One aspect of this objective was an examination of nineteenth century use of the accreting batture located here (Castille et al. 1986:1/9-2/7).

For artifact analyses, South's (1977) functional classification was abandoned because his typology appears to include a mixture of both functional and descriptive criteria and because some of his artifact classes represent several unrelated activities. A new functional classification was, therefore, devised in an attempt to compare artifacts on the basis of presumed function. Where previously established descriptive criteria provide relevant data, such as chronological information derived from glass and ceramics, these were also used for analysis. The desired result was added flexibility during analysis so that an appropriate classificatory system could be used to address specific research problems (Castille et al. 1986:2/6-2/7).

Table 2-1 in Castille et al. (1986:2/8-2/10) should be consulted for detailed information regarding functional categories used in this study. These are only briefly outlined in the present discussion. The Domestic Group includes artifacts that would have been kept in the house and used for subsistence and comfort. The two major components are a kitchen class and a household furnishing class. The Personal Group includes portable items that would have been carried or worn by an individual. The Health and Hygiene group includes two major classes, artifacts related to medicine and

artifacts related to sanitation. The Architecture Group included three artifact classes: construction, hardware, and utilities. The Economic Activities Group includes four classes: industrial, handcraft, commercial services, and transportation. The Services Group encompasses military artifacts and artifacts related to public services. The Ritual Group includes religious and fraternal artifacts. Finally, an Unclassified Group includes miscellaneous fragments of metal, glass, ceramics, and other artifacts the function of which could not be determined (Castille et al. 1986:2/7-2/12).

Ceramics, glass, buttons, and coins were used to date all excavated features. Status was examined through comparisons of the relative percentages of ceramic types, faunal remains, alcoholic beverage containers, and tobacco pipes. Miller's (1980) pricing categories, as modified for the Esplanade Avenue excavations (Castille et al. 1982 and above) were an important component of investigations related to status. Vessel forms were also used. Occurrences of wine seals and of tobacco pipe fragments were used to address status, and it was believed that the latter artifacts might reflect ethnicity as well (Castille et al. 1986:2/14-2/17).

The project area had been owned first by Bienville, then by the Jesuits, and after 1763 by members of a few French Creole families who were representatives of New Orleans' ruling elite. Subdivision of some areas for residential and commercial use began as early as 1810. By the mid-nineteenth century, much of the area was populated by Irish and German immigrants. Use of the censuses of 1850 and 1860 indicated that most residents of the area worked at jobs near their houses. Coffee houses, bars, and grocery stores were common in the neighborhood. A sample of 1,120 residents included 292 working people with 54 different occupations. The largest category was that of laborer, and included thirty percent of the sampled workers. The other common occupations were clerk, merchant, carpenter, drayman, and steamboatman. Industrial/commercial facilities in the vicinity included a relatively large number of cotton presses, a sugar refinery, a foundry, and numerous warehouses (Castille et al. 1986:4/1-4/31).

Field work resulted in excavation of 59 backhoe trenches and 110 hand excavation units, together representing 1000 m^3. Features included 23 privy pits, two wells, nine cistern foundations, 74 wall foundations, and 68 pavements, as well as post molds,

trash deposits, and artifact lenses. Artifacts were associated with a wagon yard, a tin shop, an ice house, a brick kiln, stores, residential complexes, and other components. It was estimated that two tons of artifacts, or over 200,000, were recovered. In general, the smallest cultural unit was the lot. Most lots, especially those used for residential purposes, maintained the same configuration through the nineteenth and twentieth centuries. Research objectives were refined in the course of excavations, and one square (Square 46) was selected for intensive comparison of remains of Irish and German immigrant occupations and of industrial development. Previous experience in the project corridor indicated that careful exploratory trenching with a backhoe yielded more features. This was confirmed by the additional excavations within Square 46 (Castille et al. 1986:5/3-5/6). A detailed report of excavations by square and by lot, and of artifact analyses for each excavation unit and/or feature, were included in the report (Castille et al. 1986:6/1-6/518) which is, and may remain, the single most important source for information concerning nineteenth century archaeological deposits in New Orleans.

The largest number of artifacts derived from privy fill. The densest concentrations of artifacts within privies generally occurred either in a thin zone at the top or at the base. This suggested that artifact deposits in privies usually were the result of a single, temporally restricted event rather than a slow accumulation over the use life of the pit. It is possible that this pattern of deposition is related to transitional periods in site occupancy, such as when a family moved in or out of the associated house, or when a dependency is cleaned out. Also, the contents of privies in New Orleans were periodically removed for sanitation and hygiene reasons (Castille et al. 1986:7/1-7/4).

In an effort to assess the utility of the Functional Group classification system proposed and used, 24 major proveniences representing 19 features were examined. These proveniences yielded the largest concentrations of in situ artifacts, and represented properties for which the occupants could be identified. Site function for these properties was classified as either residential, craft (a residence with an associated cottage industry), or store (combination residence and retail outlet in the same building). Functional groups of artifacts were compared. For the

24 proveniences as a whole, artifact functional group frequencies in descending order were Architecture Group (35 percent), Domestic Group (31 percent), and Personal Group (30 percent). The Health and Hygiene Group was considerably less important, and the other newly-defined categories included less than one percent each. Similarities in size of the three largest groups indicated the utility of the classification scheme, because use of South's (1977) often results in assignment of 75% or more of all recovered artifacts to a single functional group. Group frequencies for the three types of sites were similar, except that relatively less architectural material and relatively more Personal Group material was associated with stores (Castille et al. 1986:7/4-7/9).

Census records, map data, property titles, and city directories provided a social history of some of the sites and was used to assess status and ethnicity of the occupants. Each of the twenty locales compared were ranked along a continuum from low to middle or high status. The artifacts associated with those locales were then compared. Fifteen of the twenty proveniences were considered middle status based on the archival record. Ceramics from these included a greater percentage of high status wares and a lower percentage of low status wares than did the five proveniences which the archival record indicated to represent a low status occupation (Castille et al. 1986:7/9-7/13).

An attempt was also made to determine whether the declining socio-economic status of residents of the project corridor during the late nineteenth and early twentieth centuries was reflected in the archaeological record. It was not, and this was considered to result from the fact that the modification of Miller's (1980) pricing scheme placed porcelain among high status wares despite the fact that cheap porcelain began to be produced during the period in question (Castille et al. 1986:7/12-7/13).

Archival research indicated that ethnic groups in the project corridor could be ranked, from highest status to lowest, as Germans, Italians, and Irish. A ceramic status comparison was undertaken to determine whether this was reflected in the archaeological record. It was not, as Italian occupations yielded the highest percentage of high status ceramics. This was again considered a possible artifact of the classificatory scheme. The Italian occupations were relatively late so that a higher proportion of relatively cheap porcelain

was recovered, while the modifications to Miller's scheme placed all porcelain in the high status category. Also, Irish occupations yielded a relatively higher percentage of high status ceramics than did German, which was again the reverse of the prediction made based on the archival record. Possible explanations are relatively similar status between the specific households compared or differential emphasis on stylistic display related to status by the different ethnic groups. Interestingly, the frequency of ceramics in German privies was lower than in privies associated with the other groups, and yard middens on German sites yielded relatively fewer artifacts, suggesting that they disposed of fewer items in the vicinity of their house (Castille et al. 1986:7/13-7/17).

Remains of wine and other alcoholic beverage bottles were also compared to determine whether higher status occupations were associated with relatively more wine consumption and lower status occupations with relatively more consumption of other beverages. No difference was indicated by the comparison. However, an analysis of wine seals did yield positive results. Such seals usually appear only on more expensive wines. Within the project corridor, they were recovered only from features associated with middle status occupations. Ethnicity was reflected by frequency of tobacco pipe fragments, which was greater for features associated with Irish occupations than for German occupations. There was no association between socio-economic status and pipe-smoking, but perhaps unexpectedly, the frequency of elaborately decorated pipe bowl fragments was higher on low status sites. Generally, however, all pipes were relatively inexpensive. Other artifact comparisons to examine ethnic differences were generally unsuccessful (Castille et al. 1986:7/17-7/23).

CHAPTER 7
CHAIN OF TITLE FOR THE PROJECT AREA

This chapter presents chain of title for lands that lie within the present-day Industrial Canal and for an area below that canal, between Sister and Deslonde Streets, some of which may be impacted if the proposed upper site is selected for construction of a new lock and connecting channels. The purpose of the research presented here was two-fold. First, research was conducted to determine what archaeological resources were destroyed during ca. 1920 construction of the present canal and lock. Those resources were primarily associated with the location of the second Ursuline Convent. The second purpose was to determine what archaeological resources might be present in the corridor just below the canal. Data related to historic period land use within that area are presented in Chapter 8. This chapter summarizes the history of ownership of the relevant parcels.

Land transactions outlined below were complex. Figure 16 is an excerpt from the USGS quad, and it is marked to show the general area under discussion as well as the boundaries of three specific parcels, labelled and discussed as "A," "B," and "C." Figure 17 presents a summary of the land transactions. Frequent reference to the two figures should facilitate an understanding of this discussion.

The 1723 Carte Particuleure shows a series of ca. 1720 concessions below New Orleans made by the Company of the Indies. Beginning at the lower edge of the Vieux Carre, the first of these was La Brasserie (or the Brewery). It consisted of five arpents front and was owned by Pierre Dreux. Next was a three arpent tract granted to J.B. Chavannes and later bought by Dreux for incorporation into La Brasserie. The next tract downriver consisted of seventeen arpents front owned by Jonathan Darby. Below that was fourteen arpents held by Coustillas, an officer of the Company. Although present-day locations of some of these early concession boundaries cannot be precisely determined, it is probable that the lowest six arpents of Coustillas' tract later became the site of the second Ursuline Convent and then of the Industrial Canal (Wilson 1974:20-21). Below the Coustillas' concession was that of Trudeau. The possible impact corridor for this project as well as lands later purchased by the Congregation of the Holy Cross probably represent the uppermost portion of Trudeau's holding.

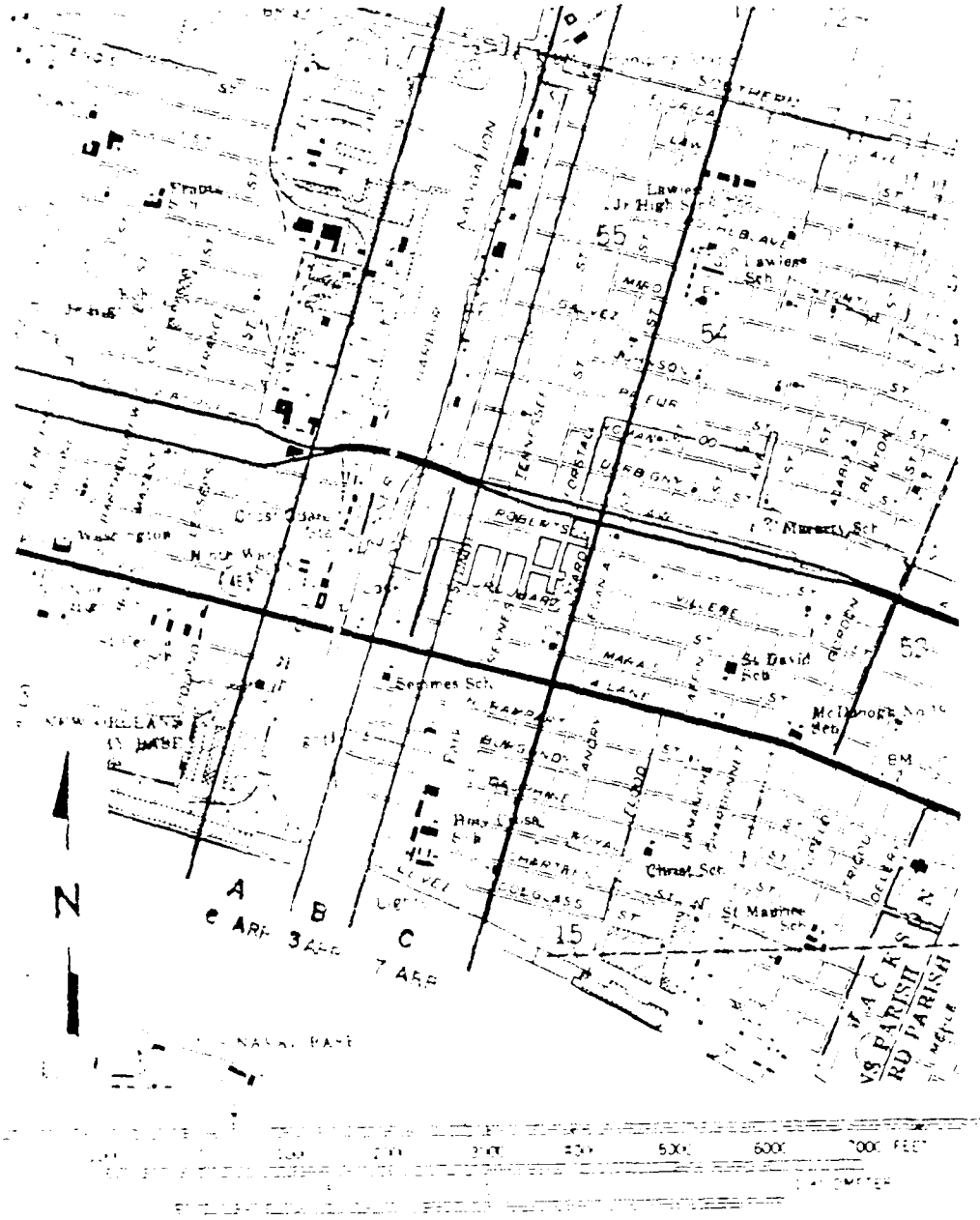


Figure 16. Excerpt from the USGS quadrangle, New Orleans East, delineating parcels for which chain of title is presented.

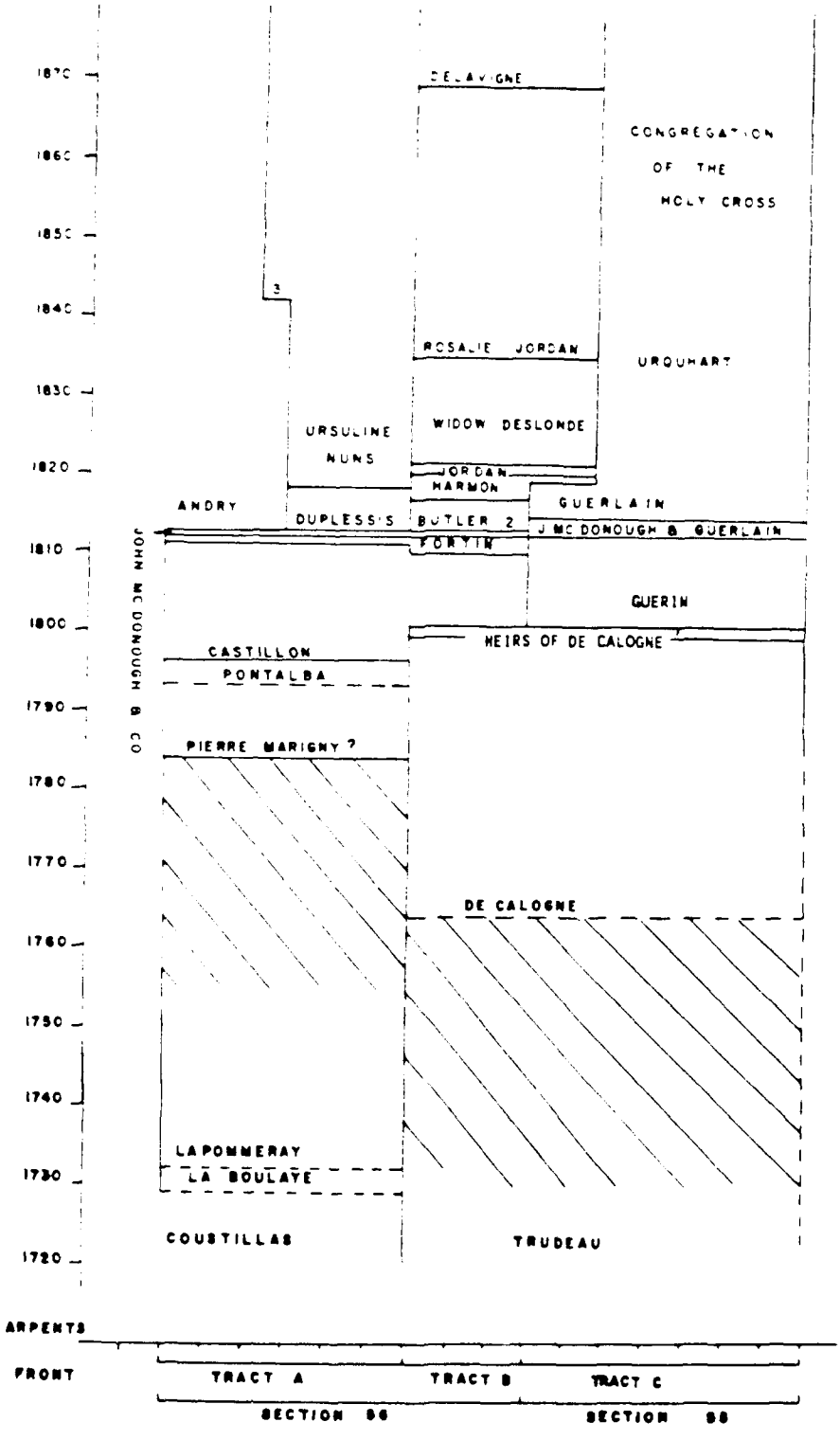


Figure 17. Chain of title for the project area.

KEY TO FIGURE 17

1. The interests of the numerous Decalogne heirs were consolidated by Juan Bautista Dolhonde and Luis Antonio Decalogne, who sold the property to Juan Bautista Lille Sarpy (P. Pedesclaux, 2 August and 11 November, 1800, NONA). Sarpy sold the plantation to Guerin two days after he acquired it (P. Pedesclaux, 13 November 1800, NONA).

2. Richard Butler purchased the property from Resin Davis Shepherd (M. de Armas, 26 Feb 1812, NONA). Shepherd had purchased the property from John McDonogh and Co. the previous day (M. de Armas, 25 February 1812, NONA).

3. Heirs of Manuel Andry to the Ursuline Nuns (L.T. Caire, 8 April 1842, NONA).

Land transactions were frequent during this early period of French colonization, and at present only partly documented. However, by 1731, census records indicate that there was an intervening property between that of Coustillas and Trudeau. This tract was owned by LaPommeray, who obtained it through marriage to the Widow Laboulay (Conrad 1970:49). LaPommeray held this land until at least 1753.

By 1764, Decalogne appears to have owned the former Trudeau concession because in that year he was granted a second depth (for a total of eighty arpents) from the river (Gales and Seaton 1834:336). Ownership may have been formalized by the Spanish government in 1785 when a ten by eighty arpent concession was granted to Luis Antonio de Cologne.

In 1784, Pierre Marigny may have obtained the former Coustillas' holdings (Wilson 1974:21). If so, he had sold at least the lowermost six arpents to Joseph Xavier de Pontalba by 1794. In that year, Pontalba requested that Governor Carondelet grant him a second depth for a habitation with six-arpents front situated one-half league below the city and on the same side. A plat associated with this transaction was executed by Carlos Trudeau (de Armas, October 6, 1812, NONA).

Pontalba sold a six by forty arpent tract to Juan Bautista Victor Felix Castillon in 1795. The property was bounded above by lands owned by Lorenzo Wiltz and below by the tract owned by the Decalogne family since 1764. It is in this period that maps and notarial records make placement of the tracts under discussion more certain. The downriver portion of Pontalba's habitation, which he was selling to Castillon, would a few years later become the site of the Ursuline Convent and later of the Industrial Canal.

The habitation purchased by Castillon in 1795 included a principal house, slave quarters, and other buildings. A distillery for production of hard liquor was also located thereon. With the property went tools and utensils, two yokes of oxen, forty head of cows (both large and small), two mules, and eleven slaves. This parcel may have served primarily as a rum distillery (P. Pedesclaux, October 1, 1795, NONA). The slaves are all males, and their age range is only 24 to 34 years old.

Land transactions involving the study area were frequent and complex for the period 1800 to 1826. For clarification of this discussion, frequent reference should be made to Figures 16 and 17. A portion of Tract A would in 1818 be purchased by the Ursuline Nuns and shortly thereafter would become the site of their second convent. Tract B and a portion of Tract C would in 1821 become the property of the Widow George Deslonde. This tract represents the area of potential direct impact. Finally, Tract C would become the property of the Congregation of the Holy Cross shortly before the Civil War.

Tract A, the Castillon property that included a house and rum distillery, remained the property of Castillon and his widow until 1811. Tracts B and C were, in 1800, property of the heirs of Decalogne who owned the land by 1764 (above). The Decalogne heirs engaged in a series of complex real estate transactions during the period August 2 to November 22 in 1800. One result was that J.B. Castillon purchased Tract B in November of 1800 so that he now was in possession of nine arpents fronting the river. The upper six arpents included the rum distillery, house, and other buildings purchased from Pontalba in 1795. In purchasing the additional three arpents (Tract B), Castillon also bought the "principal house and garden" located thereon (P. Pedesclaux, November 22, 1800, NONA).

Thus, there was a residence and industrial complex dating to the colonial period on Tract A as well as a residence and garden also dating to the colonial period on Tract B. The latter were presumably constructed during the long period of ownership of the property by the Decalogne family. The house and distillery on Tract A were present when Pontalba sold the property in 1795 and could have been built at any time prior to that date.

An August 2, 1800 transaction (P. Pedesclaux, August 2, 1800, NONA) by heirs of Decalogne and involving Tract C indicates that it was also the site of "constructions," and it was conveyed with cattle and farm equipment. No residence is mentioned, further evidence that the Decalogne house was the aforementioned structure on Tract B. Nine slaves were conveyed with Tract C.

On November 11, 1800 (P. Pedesclaux, November 11, 1800, NONA), Tract C was again sold by some of the Decalogne heirs, this time to Lille Sarpy. It was

described as a seven by eighty arpent tract with "all the buildings, tools and utensils." Most of the same slaves were again sold with the tract

On November 13, 1800, two days after his purchase, Lille Sarpy sold the seven arpent Tract C and improvements thereon to Francisco Maturino Guerin, while at the same time selling the slaves back to one of the Decalogne heirs.

To recapitulate then, by 1800 Castillon had come to possess Tracts A and B on Figure 16, while Francisco Maturino Guerin was now the owner of Tract C. Castillon's holding was surveyed by Carlos Laveau Trudeau in 1800. The plan confirms that Castillon obtained the upper six arpents from Pontalba. The upper line of this six arpents was marked by a levee and a ditch, while the lower line was marked by a levee and a double ditch. The plan also confirms that Castillon's lowermost three arpents were obtained by him from the Decalogne heirs and indicates that it and the next parcel downriver (Tract C, now owned by F.M. Guerin) had been granted to Decalogne by the Spanish colonial government in 1785. Upon the death of J.B. Castillon in 1809, his wife the Widow Delaronde Castillon inherited the property.

In 1810, the Widow (Louise) Delaronde Castillon conveyed the three by eighty arpent habitation (Tract B) to Louis Fortin. She received a house on Royal Street in exchange (N. Broutin, August 1, 1810, NONA). In the following year, she also sold the six by eighty arpent habitation (Tract A) to Louis Fortin (N. Broutin, October 3, 1811) so that he was now the owner of nine arpents front (combined Tracts A and B, Figure 16). With the 1811 transaction, Fortin also received cattle, a mule, a yoke of oxen, a cart, a plow and other farm tools, a "mulatto" slave named Little Louis and aged 25, who was a cowman and cartdriver. Fortin paid $30,000.00 for the six arpents and associated items listed above. The Widow Castillon would, in 1812, use the proceeds from this sale as part of her daughter's dowry.

Fortin's ownership of Tracts A and B was short-lived, as he sold the nine arpent parcel to John McDonough and Company in 1812 for 70,000 piastres. The property was conveyed with "houses and establishments" (M. de Armas, January 25, 1812, NONA). The presence of residential structures on both the six and three arpent portions of the combined nine arpent tract was noted above. Of particular significance is the fact that a

brick yard was present on the three arpent tract (Tract B). That brick yard continued in use through the 1890s.

McDonough now engaged in a complex series of land transactions involving these and many other properties. In February of 1812, McDonough and Company sold the three by eighty arpent Tract B "together with the houses and establishments thereon" to Resin Davis Shepherd for 35,000 piastres. One of these "establishments" would have been the brickyard (M. de Armas, February 25, 1812, NONA). The following day, Shepherd sold the same tract "...with the houses and establishments..." to Richard Butler for 35,000 piastres (M. de Armas, February 26, 1812, NONA).

Less than two months later, Francois Guerin, who had held the seven by eighty arpent Tract C since 1800, sold it to John McDonough and Company and L.H. Guerlain for $70,000.00. Francois Guerin purchased from McDonough a sugar plantation in St. James Parish on the same day (M. de Armas, April 8, 1812, NONA).

In April of 1812, John McDonough and Company made an exchange of lands with Manuel Andry. McDonough received properties on Dauphine and Royal Streets, while Andry received the uprivermost three by eighty arpents of Tract A. At the same time, Andry either owned or acquired the adjacent property upriver, not under discussion here. The Widow Castillon held a mortgage on Tract A of which she was the former owner, and on a second habitation and 22 slaves (M. de Armas, April 28, 1812, NONA).

About one month later, still in 1812, McDonough and Company sold the downrivermost three by eighty arpent portion of Tract A "together with the establishments thereon" to Francois Duplessis. The price was 7,000 piastres (M. de Armas, June 3, 1812).

Real estate transactions ceased until March 15, 1814 when McDonough sold his undivided half of the seven by eighty arpent Tract C to Lewis H. Guerlain (M. de Armas, March 15, 1814, NONA). This placed Guerlain in sole possession of the parcel.

Another series of sales beginning in 1817 led to a stable property configuration that persisted through the late nineteenth century. First, in 1817 Richard Butler sold the three by eighty arpent Tract B to Thomas Harmon for $20,000.00. Included with the sale were the "...new two-story brick house thereon and all and every their

appurtenances..." (M. de Armas, May 23, 1817). Date of construction of this house is unknown. However, the property was conveyed with a "principal house and garden" in 1800 (above) and with "houses and establishments" in 1812. It is possible then that the "new house" mentioned in the 1817 transaction was built some time after 1812. It stood through the early 1900s, by which time it was known as the "Delavigne House." In a conveyance record from a later date, the two-story brick house is described in greater detail, and the presence of two brick-between-posts structures is noted (Chapter 8). These latter may represent the earlier houses that stood on the property prior to 1812.

In 1818, the Ursuline Nuns purchased the downriver three by eighty arpent portion of Tract A, and in 1821 they decided to move from their original convent in the Vieux Carre to this new location (Wilson 1987). They held it until shortly before construction of the Industrial Canal.

In 1819, Lewis H. Geurlain sold the uprivermost 1-3/4 by eighty arpent portion of Tract C for $10,000.00 to Thomas L. Harmon who had held the three by eighty arpent Tract B since 1817. No buildings or improvements are noted with the sale (M. de Armas, March 9, 1819, NONA). The remainder of Tract C would become the property of Thomas Uruquhart and later the Congregation of Holy Cross.

In 1820, Barthelemy Jourdan purchased Tract B, now 4-3/4 by eighty arpents due to the addition in the paragraph above, from Thomas L. Harmon for $50,000.000. Included with the sale were buildings and improvements, animals, and thirteen slaves (C. Pollock 1820, Special Collections of the Howard-Tilton Memorial Library). Jourdan purchased the property and the two-story brick house thereon for his mother-in-law, the Widow [Rosalie Picou] George Deslonde. He conveyed it to her, with the thirteen slaves, in 1821. She held it until her death in 1835, at which time it was inherited by her daughter Rosalie Deslonde Jourdan (Succession of Rosalie Picou, Widow George Deslonde, January 16, 1835, New Orleans Public Library). Rosalie Deslonde Jourdan then held the property until her death in 1869. In that year, it was subdivided at public auction.

CHAPTER 8
A DETAILED HISTORY OF LAND USE AND RESIDENTS WITHIN THE STUDY AREA

Introduction

This chapter presents detailed information concerning land use within and residents of the study area. Data were obtained from primary source documents including conveyance records, probate records, and U.S. Census records. The purpose was to determine the origin, nature, and extent of archaeological features and deposits that may be present.

The Study Area, 1721 to 1731

During the 1720s, it appears that Coustillas was the owner of the concession that would later become the location of the second Ursuline Convent. Downriver from Coustillas was the concession of Sieur Trudeau. The uppermost portion of Trudeau's tract lies between Sister and Deslonde Streets (Chapter 7) and thus represents an area of impact should Industrial Canal be expanded into this corridor.

Data from the early French censuses provide information concerning the number of people on the various concessions near New Orleans. In 1721, Coustillas is listed as an officer of the Company. On his concession were one "master," three servants, and twelve Black slaves. The "master" probably refers to Coustillas himself, while the servants probably were indentured bondsmen from France or some other European country. At that date, there were nine "masters" on the Trudeau concession. These were Trudeau, his wife, and seven children. Also present were 31 Black slaves and one Indian slave (Maduell 1972:17). Even at this early date, Trudeau's slave holdings were large relative to those of most other concessionaires.

The 1726 census indicates that one master and eleven Black slaves were residing at the Coustillas concession. On the Trudeau concession were one master and 25 Black slaves. By this date, Trudeau's wife and presumably his children were residents in the Vieux Carre. Also in 1726, both Trudeau and Coustillas, along with other concessionaires, signed a letter to the Company of the Indies requesting Black slaves (Maduell 1972:56,77). This request suggests that Trudeau and Coustillas either had undertaken or were planning to undertake cash crop cultivation, probably indigo. As

was discussed in Chapter 5, indigo cultivation and production were labor-intensive activities.

In 1729, census records indicate that two masters, 33 Black slaves, and two Indian slaves were residing at the Coustillas concession. The two masters are listed as "Le sieur Coustillas, lieutenant with Le sieur des Cayrac." The number of slaves had increased dramatically, indicating that Coustillas' request for additional Blacks was successful. By 1729, Coustillas may have sold the lowermost portion of his original concession. The census for that year indicates that there may now have been two intervening properties between Coustillas and Trudeau. At one of these were eight Black slaves but no master. It apparently was owned by Dupuy Planchard. The size, exact location, and nature of Planchard's tract is unknown. Below this was property belonging to Le Sieur de la Boulaye. He and his wife comprised the two masters enumerated there, and they had eight Black slaves. At the time of the 1729 census, Trudeau was still the only master on his concession. He lived there with 45 Black slaves. Like Coustillas, he had successfully increased his slave holdings between 1726 and 1729. Both of them were probably cultivating and producing indigo on their properties by this date (Maduell 1972:98).

In the 1731 census, the last available for the French colonial period, one man capable of bearing arms is listed at the Coustillas concession. This is presumably Coustillas himself. With him were 38 Black slaves and 17 Black children. The Widow La Boulaye is still present, presumably on property between that of Coustillas and Trudeau. No men capable of bearing arms were present on her lands where she lived with her two children, eleven Black slaves, and six Black children. Dupuy Blanchard is not enumerated in this vicinity. One man capable of bearing arms was residing on the Trudeau concession in 1731, presumably Trudeau himself. With him were thirty Black slaves and 23 Black children (Maduell 1972:115).

The Study Area, 1763 to 1770

Ownership for the tract of land that would later become the location of the second Ursuline Convent is not clear for Spanish censuses conducted in the 1760s. However, it is clear that Louis Antonio Decalogne owned ten arpents (Chapter 7), the uppermost portion of which were in the area of potential direct impact should the Industrial Canal be expanded. The 1763 census indicates

that Decalogne resided on that property with one woman, one girl under twelve, five male slaves, and five female slaves. He owned ten bull oxen, fourteen cows, and fourteen sheep. His property consisted of 140 arable arpents and 420 wooded arpents. Decalogne also owned three muskets, two swords, and two pistols (Voorhies 1973:45). The amount of cleared land extended to fourteen arpents depth. Clearing probably occurred during Trudeau's occupation. The number of slaves on the parcel had declined dramatically since ownership by Trudeau. Decalogne, unlike Trudeau, did not have a sufficient labor force to support cash crop cultivation.

In 1766, Decalogne was residing with one woman, one teenage boy, and eight slaves. The 1770 census indicates that he was 45 years old and that his wife was 32. It also lists his two daughters, ages 11 and 3. His holdings are described as 14 arpents, eight slaves, thirty cattle, twenty sheep, four hogs, and two muskets (Voorhies 1973:135,238). In the years between 1763 and 1770, Decalogne had increased his livestock holdings. He may have been selling dairy products and vegetable produce in the city markets.

The Study Area, 1809 through 1812

Some information concerning the study area is contained in the succession papers of Jean-Baptiste Castillon. At the time of his death in 1809, he was the owner of the property that later would be the location of the second Ursuline Convent as well as the next three arpents downriver, most of which lie between present-day Sister and Deslonde Streets (Chapter 7). Buildings on the property in 1809 included a tafia (rum) distillery. The documents indicate that the Widow Castillon then owned 82 slaves, 55 of whom resided at a sugar plantation above New Orleans. This suggests that as many as 27 slaves may have been resident in the study area in 1809. In that year, the Widow Castillon was a resident of St. Peter Street in the Vieux Carre.

The 1810 United States census enumerates V. [Widow] Castillon as a female over 45 residing with a second female, age 10 to 16, who is undoubtedly her daughter, the future Baroness Pontalba. Apparently residing with Widow Castillon were nine slaves. It is unclear whether or not the two women were living in the Vieux Carre or on their holdings in the study area. The former possibility is more likely, and the slaves may have been divided between a city residence and the study area habitation.

Louis Fortin obtained a total of nine arpents front from the Widow Castillon in two different transactions in 1810 and 1811. In the 1811 transaction, he also obtained one slave. Fortin sold the lower three arpents, located between Sister and Deslonde Street, in 1812. By that date, a brick yard had been established on the property. The brick yard was not noted in Castillon's 1809 succession papers. This suggests it may have been established after 1809 but before 1812.

Data from the 1820 Census

By 1820, the Ursuline Nuns had acquired the three-arpent tract that would, one hundred years later, become the location of the Industrial Canal. Below them was the 4-3/4 arpent tract now held by Thomas Harmon (Chapter 7). This property lies between present-day Sister Street and property now associated with Holy Cross College. The 1820 census indicates that Harmon and his wife were both between the ages of 26 and 45 and that they had a daughter age 10 or under. Harmon owned eight male and ten female slaves. Five of these were under fourteen years of age.

During the year 1820, Harmon sold the tract to Barthelemy Jourdan, who was purchasing it for his mother-in-law. The thirteen slaves conveyed with the land are listed in Table 2.

Data from the 1830 Census

In 1830, the Widow George Deslonde was the owner of the tract between present-day Sister and Deslonde Streets. She was a white female, age 60 to 69. She owned 27 male slaves and eleven female slaves. Only two of her slaves were under ten years of age. Residing with her were Barthelemy Jourdan and his wife, who was Widow G. Deslonde's daughter. The Deslonde/Jourdan household was rather large. In addition to the widow, it consisted of two free males age 40 to 49, one free male age 30 to 39, two free males age 15 to 19, two free males age 10 to 14, one free female age 30 to 39, two free females age 15 to 19, one free female age 10 to 14, one free female age 5 to 9, and one free female under 5 years of age. Some of these are undoubtedly the Jourdan's children. However, some of the adult free males may have been employees at the brick yard.

Table 2. Slaves Included in the 1820 Harmon to Jourdan Sale.

Ben	40
Johnson	40
Daniel "mulatto"	30
Richard	35
Rippia	25
James	14
David	60
Bandide	10
Eliza	15
Rachel	35
(and her three children: Caroline, Margaret, and Rachel)	

The Study Area in 1835

The Widow George [Rosalie Picou] Deslonde died in January of 1835. Her only heir was her daughter Rosalie, wife of Barthelemy Jourdan. Felix Grima, Notary Public, inventoried the 4-3/4 x 80 arpent tract, which he described as being about two miles below New Orleans. The tract was bounded above by the property of the Ursuline Nuns and below by property belonging to Thomas Urquhart.

The property at that time included a number of structures. One of these was a two-story brick dwelling house with a gallery around it. The exterior kitchen was 50 x 20 ft, and was constructed of brick-between-posts. Another building the same size as the kitchen was used as a barn. Also present were two brick pigeon houses, each of which was fourteen feet long. Fronting the levee were "two small houses." Three additional "small houses," each with four rooms, were located in the interior portion of the property. Methods and materials for construction of these five houses are not described.

There was a brick yard on the property in 1835. Associated structures were three round buildings, probably covering mixing pits or pug mills, and four kilns. Eight drying sheds measuring 130 feet in length and six drying sheds measuring 100 feet in length were present. Finally, "several negro cabins" stood on the property. These were described as being in bad condition. The 4-3/4 x 80 arpent tract with its structures, brick yard, and brick yard appurtenances was valued at $110,000.00.

The 1835 inventory included a list of 50 "slaves belonging to the brick yard" and six "house servants" (Table 3). Thirty-four of the brick yard slaves were males aged 12 years or older. The oldest males were age 48 (one), age 40 (one), and age 34 (two). The remainder were less than 30 years old. Fifteen of the brick yard slaves were females aged 13 and over. The eldest were 48 years old (one) and 35 (one), while the rest were younger than 30. The ages of their small children ranged from one month to ten years.

One of the male slaves was described as "a good blacksmith" indicating there was a smithing facility located on the grounds. A different male slave was said to be "a driver and baker." It is likely then that a baking facility was also present.

Table 3. The 1835 inventory of brick yard slaves and house servants (Grima 1835).

"Slaves Belonging to the Brickyard"

Robert, Negro man, 26, overseer	$ 1000.00
Peter, about 27	800.00
Jean Louis, Creole Negro, 25	800.00
Reuben, 24	800.00
James, mulatto boy, 28	800.00
Anthony, about 23	800.00
Amsted, 24	800.00
Colman, about 25	800.00
Lafortune, about 34	600.00
Johnson, 26	800.00
Amat, about 24, addicted to drinking	500.00
Demry, about 34	550.00
Beun, about 40	450.00
Johnson, about 48	800.00
Mathieu, about 26	700.00
Ostin, about 26	700.00
Bacchus, about 20	700.00
Gabriel, about 17	600.00
Louis, about 17	700.00
Hilaire, brother of Louis, about 15	600.00
Big Johnson, about 26	800.00
George, 21	700.00
Daniel, about 18	600.00
Phillipe, about 16	550.00
Mandford, about 15	450.00
Sammy, about 17	600.00
John Grums, about 32	750.00
Walis, Negro man, about 23	750.00
Allain, about 14	500.00
Henry, Creole boy, about 12	450.00
Moses, good blacksmith, about 28	1200.00
Jacques, 24	700.00
Gros Jacques, 26	750.00
Lewis, a driver and baker, 21	800.00
Laiza, Creole Negro woman, 24	600.00
Rachel, about 21 with her 6 month child	650.00
Caroline, 19, with her 1 month child	650.00
Marguerite, Creole Negro girl, about 17	600.00
Sanite, about 35	450.00
Hyacinthe, about 48	400.00
Eugine, mulatto boy, about 10	400.00
Betsy, about 22 and 4 year old child Bill	700.00
Evens, about 22 and her 8 month child	600.00
Courtney, about 28	500.00

Table 3 (cont.). The 1835 inventory of brick yard slaves and house servants (Grima 1835).

Esther, about 26	500.00
Lucinde, about 17	450.00
Daphne, about 14	450.00
Francoise, Creole Negro woman about 23, and her 3 year old child Celestine	700.00
Diana, about 40 years	400.00
Ida, daughter of Diana, about 13	400.00
TOTAL VALUE OF BRICK YARD SLAVES	$ 32,350.00

"House Servants"

Louis, cook, about 50	$ 700.00
Joe, house servant about 23, and his 8 year old daughter Maria	1000.00
Charlotte, about 12	400.00
Suzanne, washer woman, about 44	800.00
Marie, house servant, about 43	500.00
TOTAL VALUE OF HOUSE SERVANTS	$3400.00
TOTAL VALUE OF ALL SLAVES	$ 35,750.00

The total value of slaves associated with the brick yard was $32,350.00, and the house servants were valued at $3400.00. Table 4 lists carts and livestock associated with the brick yard, and shows that total value of these items was $3370.00. Livestock consisted of 24 mules, five American horses, three carriage horses, fifteen cows, and three oxen. It is probable that some or all of the cows were used for milk production.

Total value in 1835 of the 4-3/4 arpent parcel with its residential structures, brick yard, miscellaneous additional structures, equipment, and 55 slaves was $149,120.00. At the time of her death, Widow G. Deslonde also owned a three-story brick house with associated brick kitchen and grounds, worth $63,000.00. This property was on Levee Street in the Vieux Carre between Dumaine and St. Phillip Streets. She also owned a lot on St. Charles Avenue with a brick house, kitchen, and grounds valued at $2500.00. Table 5 presents the notary's summary of the Widow G. Deslonde's assets and debts in 1835. Assets were in excess of $250,000.00, while debts were slightly less than $100,000.00. Her net worth at the time of her death was $163,344.14.

Information derived from the 1835 probate inventory is complemented by data presented in Zimpel's Topographic Map of 1834 as excerpted in Figure 18. The two-story brick residence is shown on the upriver portion of the 4-3/4 arpent parcel. In front of it is a landscaped garden. Behind it are two structures of similar size. One of these is undoubtedly the brick-between-posts exterior kitchen, while the other may be the building described as the same size as the kitchen and which was in use as a barn. The two 14-foot wide pigeon houses can also be seen behind the main residence.

Zimpel's map (Figure 18) also shows the brick yard complex at the downriver end of the property. The three round structures mentioned in the inventory are figured. Although the inventory enumerates fourteen drying sheds, only twelve are shown on the map. Zimpel's map also shows three large structures within the complex that are undoubtedly kilns. The fact that data gathered for the map in 1833 indicates only twelve drying sheds and three kilns while the 1835 inventory enumerates fourteen sheds and four kilns suggests that business may have been expanding during the intervening two years.

Table 4. Carts, Horses, and Mules for the Use of the Brick Yard (Grima 1835).

6 large carts for carrying bricks, with harnesses - $50 each	$ 300.00
4 smaller carts with harnesses - $30 each	120.00
24 mules at $50 each	1200.00
5 American horses at $60 each	300.00
1 Barouche and 1 carriage together	800.00
3 carriage horses at $100 each	300.00
15 cows and 3 oxen	350.00

Table 5. Summary of Assets and Debts of Widow G. Deslonde at the time of her death in 1835 (Grima 1835).

ASSETS:	
Land and Brick yard etc. below the city	$110,000.00
Slaves	35,750.00
Carts, etc.	2,370.00
City lot	63,000.00
St. Mary lot	2,500.00
Stock	14,350.00
Cash in bank	7,705.25
Amount owed to her in various debts	21,302.89
TOTAL ASSETS	$256,978.14
TOTAL DEBTS	93,634.00
BALANCE	163,344.14

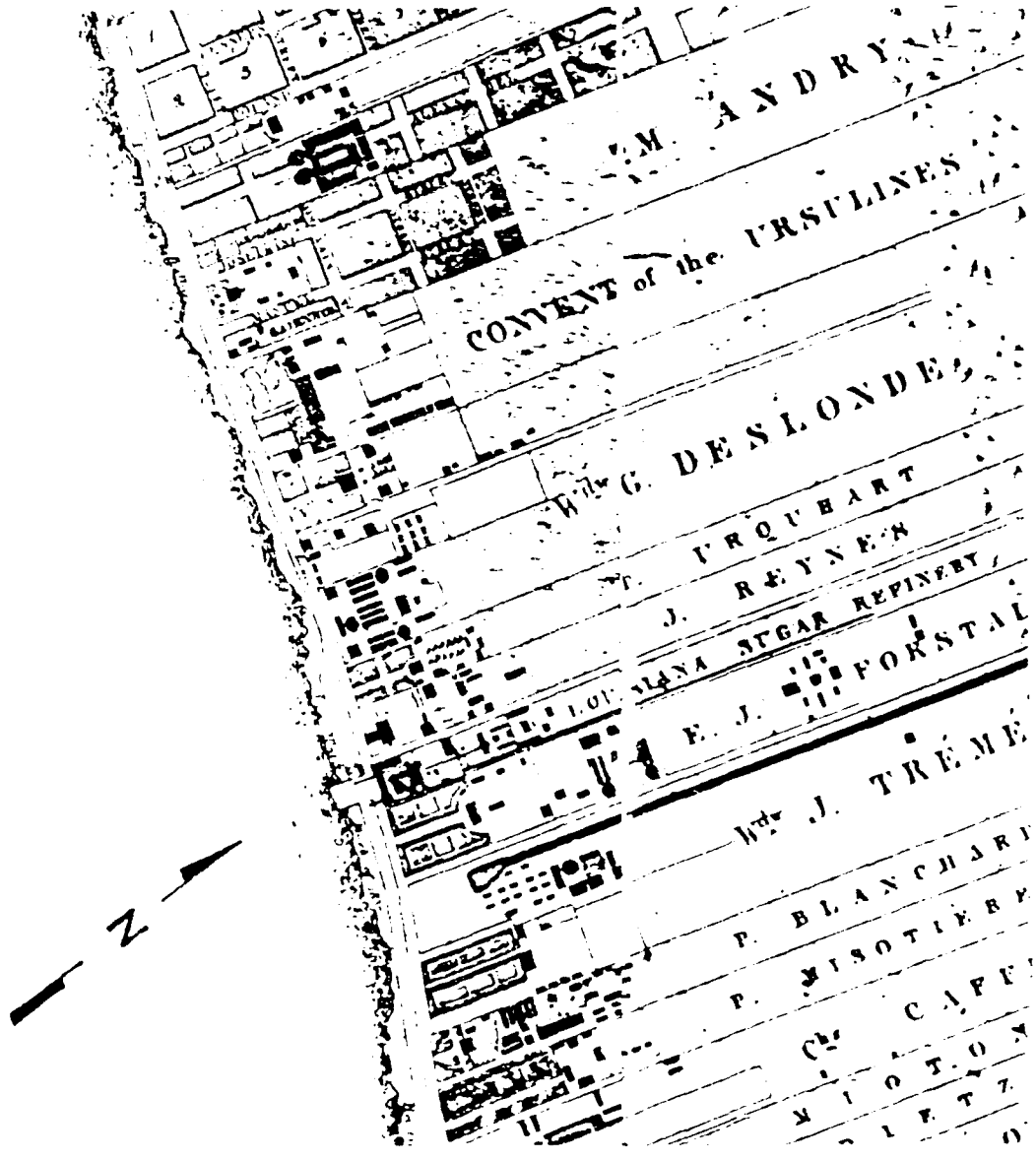


Figure 18. Excerpt from Zimpel's Topographic Map of 1834.

Adjacent to the levee and between the main residence and the brick yard, Zimpel shows four structures. Two of these may be the "small houses" described in the inventory. Further back from the river are two more structures, behind which is a slave quarter complex consisting of three parallel rows of three cabins each. These are almost certainly the cabins described as "in bad condition" in the 1835 inventory.

The large open square directly behind these cabins probably represents a garden. This would have been tended by at least some of the thirteen female slaves aged thirteen years and over. Such a garden probably would have provided much of the food consumed both in the main residence and in the quarters.

Finally, Zimpel shows a road oriented perpendicular to the river and running to the interior of the property. Along the road are a series of seven structures. Three of these are larger than the others, and each is associated with a nearby smaller structure. It is possible that the larger structures are the three small houses said to be located on the interior of the property in the 1835 inventory. If so, the smaller associated structures probably represent outbuildings, possibly stables. The purpose of the road into the interior of the property was for the transport of timber necessary for firing bricks.

Data from the 1840 Census

The 1840 census indicates that Barthelemy Jourdan and Barthelemy Jourdan fils both resided with their families in the area between present-day Sister and Deslonde Streets. Barthelemy Jourdan's household consisted of seven free white males of whom six were under 9 years of age and five free white females of whom two were under 15 years of age. His son's household consisted of nine free white males of whom three were under nine years of age and nine free white females of whom five were under 15 years of age.

The senior Barthelemy Jourdan was the owner of 104 slaves, 74 of whom were males. Only ten of the slaves were under ten years of age. His son owned two male and two female slaves, all between the ages of 10 and 35. The presence of 108 slaves on the property is remarkable, and it indicates that the brick yard had increased production substantially since 1835. The Jourdans were probably among the largest slaveholders in Orleans Parish at this time. Their neighbors the

Ursuline Nuns owned only 46 slaves in the same census year, and other nearby property owners had fewer than 30.

Data from the 1850 Census

The senior Barthelemy Jourdan died in 1847. At the time of the 1850 census, his son was listed as a 30 year old white male residing with his 50 year old mother and his two sisters, ages 20 and 18. There were 21 male slaves on the property. All but two of these were over eighteen years of age. Also present were twenty female slaves, fifteen of whom were older than 16 years.

Between 1840 and 1850, the slave population at the Jourdan Brick Yard and residence had been reduced by over half. It is possible that the reduction was due to the sale of surplus male slaves no longer necessary for brick production. The demand for bricks may have dropped so that production was cut back, or the value of slaves on agricultural plantations was sufficiently high that the Jourdans determined it would be more profitable to replace slave labor with hired immigrants. The latter were increasing in numbers, and their low wages could have represented a cost-savings in comparison with maintenance of a large slave population (Chapter 5). Increased dependence on hired laborers would also have allowed flexibility in the size of the work force, an option not available under a slave labor system which requires maintenance of a work force of a relatively constant size despite fluctuations in demand.

Also associated with the property in 1850 were livestock valued at $700.00. These consisted of fourteen horses, eight asses and mules, and nine milk cows. No other agricultural produce was listed. The total value of the real estate was listed as $50,000.00.

No data pertaining to the Jourdan's residence and brick yard was located in the 1860 census records.

The Study Area in 1869

In 1869, Barthelemy Jourdan's widow, Rosalie Deslonde Jourdan, died. Her two heirs were her grandson Alfred Delavigne and her great-grandson Charles Edward Harmon Sheldon. The latter was a minor represented by his father, William James Sheldon, in proceedings related to division of the estate.

The Second District Court of the Parish of Orleans ordered that all effects of the estate be partitioned by public auction. Louis Pilie, City Surveyor, and an architect prepared plats showing locations of structures and subdivision of the property into lots. A flyer for the partition auction announced:

Important Sale by Public Auction
to effect a partition
of the
Brick Yard, Kilns, Pits, etc
well known as the
"Jourdan Brick Yard"
Splendid Squares of Ground
In its Rear, under Fine Cultivation
The Substantial Two-Story Brick
Family Mansion and Dependencies;
A Large Tract of Land
in the Rear of the Brick Yard, sufficient to
supply the Brick Yard with Earth, Wood, etc.
and Lastly
That Three-Story Brick Store
Popularly known as the
"Red Store Exchange"
Situated Between the Vegetable and Beef Markets, 2nd District

The auction was announced for April 27, 1869 at noon at the St. Charles Hotel.

The flyer and other documents associated with the partition auction provide a detailed description of the property. It appears that many of the structures described in the 1835 inventory were still present. The main residence was a two-story brick building with slate roofing. The ground floor consisted of a parlor, a dining room, two other rooms, a cabinet, a kitchen, and a vestibule with stairs. The second story consisted of four bedrooms, two cabinets, and "a splendid gallery all around the house." This is the same house that was described in less detail in 1835. During the intervening years, an interior kitchen had apparently been constructed.

Two one-story brick buildings stood behind the house. Both had slate roofing, and each consisted of two rooms and a gallery. An additional back building was brick-between-posts with four rooms. One of these may have been the exterior kitchen described similarly in 1835. The two brick pigeon houses were still present in 1869, and the rooms beneath them were in use for

storage. A stable was present that could accommodate six horses and serve as a carriage house.

Also on the grounds was an overseer's house made of brick-between-posts. It had four rooms, two cabinets, a front and rear gallery, and a small kitchen in the rear. Also present was "another building of same description," apparently referring to brick-between-posts construction. This latter structure had four rooms, four cabinets, and a front gallery.

Also on the grounds were the "laborer's quarters," consisting of five cabins, each with two rooms. A fourth brick-between-posts building consisted of two rooms, three cabinets, and a front gallery. It had a small kitchen in the rear. Also to the rear of this structure was a stable with accommodations for eighteen mules, a corn-bin, a workshop, plus a shed and a hayloft.

The formal brick yard complex was described rather briefly as including four brick kilns, three pits, and fourteen brick sheds and racks. These are shown in Figure 19. Interestingly, the 1835 inventory noted the presence of fourteen sheds, four kilns, and "three round buildings" that would have covered the pits. Thus the industrial complex was relatively unchanged by 1869.

Associated with the brick yard was a small frame office with one ten-by-twelve foot room. There were 2000 yards of river sand on the premises, presumably for tempering brick. Finally, sale of the brick yard was to include those portions of the original 4-3/4 x 80 arpent tract that extended behind projected Uruquhart Street to the eighty arpent line. This portion of the property was said to consist of sufficient swamp lands to supply "earth, dirt, wood, etc." necessary to carry on the brick-making industry.

The main residence, associated dependencies described above, as well as the brickyard and associated structures stood between North Peters and Royal Streets. The court order stipulated that this subportion of the larger property would be sold as a unit and that unit would also include that portion of the tract lakeward of Uruquhart Street. Thus the majority of the 4-/34 x 80 arpent tract remained undivided pursuant to the court order. The apparent purpose was to maintain the viability of the brick yard and of the residential complex associated with the main house. Alfred Delavigne, one of the two heirs, purchased the brick

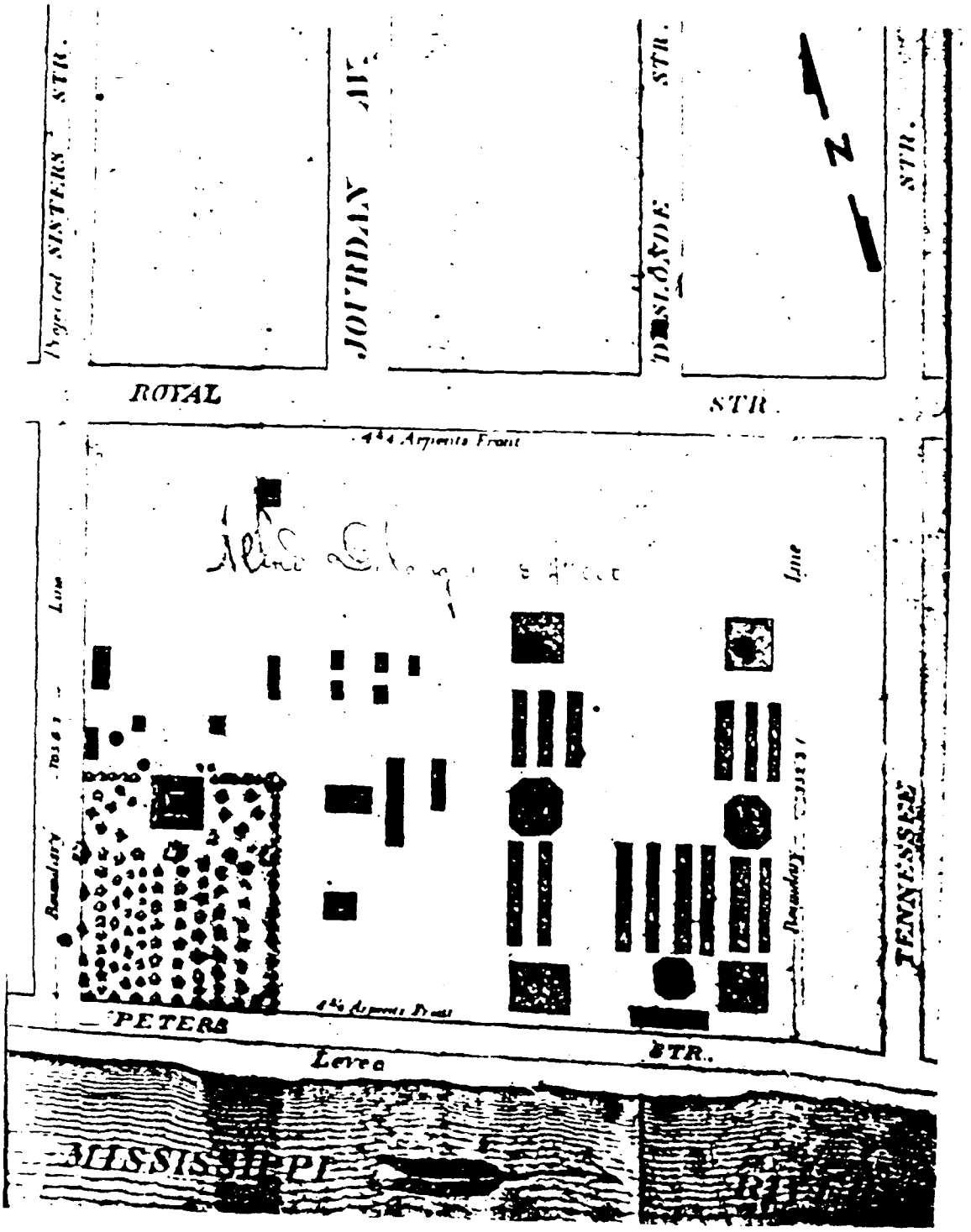


Figure 19. 1869 plat showing the Jourdan Brick Yard and residential complex.

yard, swamp lands, and main residential complex at auction for $47,000.00. He also paid $2348.00 for bricks on hand, cord wood, implements and tools, mules, and cattle.

That portion of the larger tract lying between Royal and Uruquhart Streets had been surveyed and divided into lots of varying sizes. These were to be sold at the same auction. The configuration of squares and lots as shown in Figure 20 indicates that the purpose of the subdivision was to create residential lots and properties suitable for truck farms.

Some structural improvements were already present in the area between Royal and Uruquhart Streets. Square No. 12 (Figure 20) had a wooden house with two rooms. Also present was a stable. Square No. 13 (Figure 20) contained three structural improvements in 1869. Two wooden houses were present, each with two rooms, as well as a double stable. Square No. 18 (Figure 20) included a wooden house with two rooms and a gallery. This residence faced Ramparts Street.

Square No. 19 (Figure 20) included a wooden house with two rooms, two cabinets, and a gallery. A stable was also present. The stable was behind the house, in the approximate center of the quarter-square. A cistern is also shown in the figure. Square 21 (Figure 20) had a one-room wooden house and a stable. These were not shown on the plats.

Also standing at the time of the 1869 auction was a two-room wooden house with a gallery and a stable. These were not shown on the plats, but they lay within the projected path of Jourdan Avenue between Marais and St. Claude. The court stipulated that the purchaser of these structures would have to move them within thirty days of the sale.

It is likely that tenant truck and/or dairy farmers resided on the squares with houses and stables prior to 1869. They may have been engaged in share-cropping arrangements with the Widow B. Jourdan. Slaves were no longer available to perform gardening tasks after 1863, and they may have been replaced with tenant farmers. Portions of Squares 13 and 14 were subject to a monthly lease at the time of the 1869 auction, which is evidence for such an arrangement, particularly since Square 13 was the site of two houses and a double stable (above). There was a yearly lease on Squares 17, 22, 23, 28, 29, and on portions of Squares 18, 21, 24, 27, and 30.

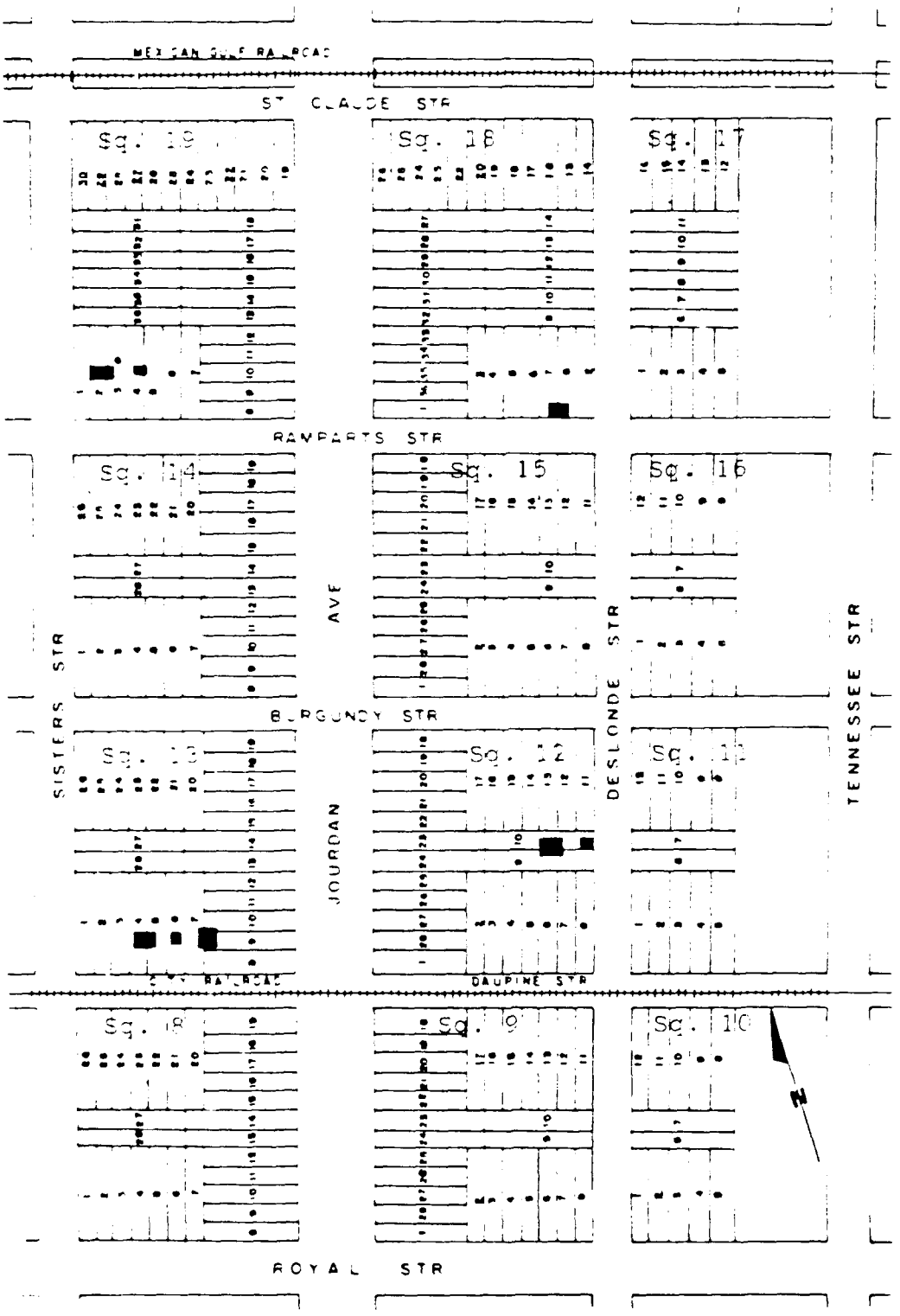


Figure 20. 1869 plat showing subdivision of a portion of the Jourdan land holdings.

Squares 18 and 21 included residences, and a stable also stood on Square 21. This extensive leased area may also have been used for farming and/or dairying. Further evidence is mention in the auction flyer of "...splendid squares of ground... under fine cultivation."

Table 6 presents the results of auctions of the various squares and lots between Royal and Uruquhart Streets. Purchasers are listed in that table. Examination of the plat in Figure 20 shows that twelve city squares were auctioned, as well as six half-squares. The latter abut the downriver property boundary which was located halfway between Deslonde and Tennessee Streets.

As noted above, Alfred Delavigne acquired the brick yard and residential complex between Royal and Peters Streets as well as all of the property lakeward of Uruquhart Street. In addition, he purchased the 2-1/2 squares located behind the brick yard and residence, giving him title to all of the land between Peters and Dauphine.

The 2-1/2 squares between Dauphine and Burgundy were divided among a number of buyers (Table 6). Square 12 included two structures, a two-room wooden house and a stable. The plat indicates that one of these straddled Lots 9 and 10 while the other fronted Deslonde Street within Lot 10. The terms of auction had stated that if a building was situated on two lots, the lots would be sold to a single bidder. Either that rule was not followed or placement on the plat of a single structure on both Lots 9 and 10 is in error because the two lots went to separate bidders. Additional records related to the auction indicate that in May 31, 1869, George Sheldon purchased Lots 10 to 23, representing one-half of this square.

Square 13 also included structural improvements. Lots 7 to 13 and the structure thereon were sold to Louis Blaser. Lots 1 to 6 and 28 were bought by the architect A. Castaing for the account of E. Dechamps. The other two structures on Square 13 lay within this quarter-square.

Square 18, was the location of a wooden house with gallery which faced Rampart Street, and it was purchased by a single buyer, Andre Luquet. The one-quarter portion of Square 19 that contained a two-room wooden house with two cabinets and a gallery as well as a stable were purchased by David Douglass. Square 21,

Table 6. Summary of 1869 auction sale. Squares are shown in Figure 20.

SQUARE 8:

Lots	Unit Price Per Lot	Cost	Buyer
1,2	$100	$200	Alfred Delavigne
3-6,28	60	300	Alfred Delavigne
7-13	60	420	Alfred Delavigne
18,19	110	220	Alfred Delavigne
14-17,20	80	400	Alfred Delavigne
25,26	70	140	Alfred Delavigne
21-24,27	50	250	Alfred Delavigne

TOTAL COST OF LOTS WITHIN SQUARE 8: $1930.00

SQUARE 9:

Lots	Unit Price Per Lot	Cost	Buyer
1,28	$105	$210	Alfred Delavigne
2,24-27	50	250	Alfred Delavigne
7,8	70	140	Alfred Delavigne
3-6,9	65	325	Alfred Delavigne
11,12	100	200	Alfred Delavigne
10,13-16	70	350	Alfred Delavigne
18,19	115	230	Alfred Delavigne
17,20-23	60	300	Alfred Delavigne

TOTAL COST OF LOTS WITHIN SQUARE 9: $2005.00

ONE-HALF OF SQUARE 10:

Lots	Unit Price Per Lot	Cost	Buyer
1,2	$80	$160	Alfred Delavigne
3-6	50	200	Alfred Delavigne
11,12	60	120	Alfred Delavigne
7-10	50	200	Alfred Delavigne

TOTAL COST OF LOTS WITHIN ONE-HALF OF SQUARE 10: $680.00

Table 6 (cont). Summary of 1869 auction sale. Squares are shown in Figure 20.

ONE-HALF OF SQUARE 11:

Lots	Unit Price Per Lot	Cost	Buyer
1,2	$90	$180	John Edgar Lambert
3-6	45	180	John Edgar Lambert
11,12	40	80	Dr. Gillespie West
7-10	40	160	David Douglas

TOTAL COST OF LOTS WITHIN ONE-HALF OF SQUARE 11: $600.00

SQUARE 12:

Lots	Unit Price Per Lot	Cost	Buyer
1,28	$140	$280	Joseph Gaitte
2,24-27	65	325	Alexandre Castaing
3-9	110	770	Francois Bellocq
10-16	140	980	P. Berges
17-23	55	385	P. Berges

TOTAL COST OF LOTS IN SQUARE 12: $2740.00

SQUARE 13:

Lots	Unit Price Per Lot	Cost	Buyer
1-6,28	$135	$945	A. Castaing acting for E. Dechamps
7-13	180	1260	Louis Blaser
14-20	55	385	P. Gemar
21-27	90	630	P. Gemar

TOTAL COST OF LOTS IN SQUARE 13: $3220.00

SQUARE 14:

Lots	Unit Price Per Lot	Cost	Buyer
1-28	$80	$2240	Louis Blaser

Table 6 (cont). Summary of 1869 auction sale. Squares are shown in Figure 20.

SQUARE 15:

Lots	Unit Price Per Lot	Cost	Buyer
1-28	$35	$980	John G. Monrose

ONE-HALF OF SQUARE 16:

Lots	Unit Price Per Lot	Cost	Buyer
1-12	$55	$660	E. Dechamps

ONE-HALF OF SQUARE 17:

Lots	Unit Price Per Lot	Cost	Buyer
1-16	$30	$480	Alfred Delavigne

SQUARE 18:

Lots	Unit Price Per Lot	Cost	Buyer
1-36	$35	$1260	A. Luquet

SQUARE 19:

Lots	Unit Price Per Lot	Cost	Buyer
1-6,34-36	$100	$900	David Douglass
7-33	35	945	J.F. Barthelemy

TOTAL COST OF LOTS IN SQUARE 19: $3220.00

Table 6 (cont). Summary of 1869 auction sale. Squares are shown in Figure 20.

SQUARE 20:

Lots	Unit Price Per Lot	Cost	Buyer
1-24	$45	$1080	V. Deckert

SQUARE 21:

Lots	Unit Price Per Lot	Cost	Buyer
1-6,19-24	$35	$420	F. Daubert
7-18	25	300	A. Delavigne

TOTAL COST OF LOTS IN SQUARE 21: $720.00

ONE-HALF OF SQUARE 22:

Lots	Unit Price Per Lot	Cost	Buyer
1-11	$17	$187	J.N. Charbonnet

ONE-HALF OF SQUARE 23:

Lots	Unit Price Per Lot	Cost	Buyer
1-13	$9	$117	Alfred Delavigne

SQUARE 24:

Lots	Unit Price Per Lot	Cost	Buyer
1-30	$7	$210	Alfred Delavigne

SQUARE 25:

Lots	Unit Price Per Lot	Cost	Buyer
1-30	$11	$330	Rudolf Stahl

which contained a one-room wooden house and a stable neither of which were figured on the plats, was purchased by F. Daubert (Lots 1 to 6 and 19 to 24) and by Alfred Delavigine (Lots 7 to 18). The frame buildings lying within the projected passage of Jourdan Avenue between Maurais and St. Claude, were purchased by Rudolph Stahl for $75.00. These were moved within 30 days if the terms of auction were met.

One property outside the study area was also auctioned. It was "that three-story Brick store popularly known as the 'Red Store Exchange' situated between the vegetable and beef markets, Second District. An accompanying plat shows that this structure was in the Vieux Carre between the levee and Peters Street, fronting on the latter and located between Dumaine and St. Phillip. It is in fact the "three-story residence" described in 1835 as part of the inventory of the Widow G. Deslonde. It had, therefore, remained in the family until this 1869 auction, at which time it was purchased by Pablo Sala for $32,500.00.

Table 6 summarizes the buyers, purchase prices, and lots sold at the 1869 auction. City Directory issues for 1870 through 1879 were checked to obtain information concerning the buyers and to determine whether any of them moved into the study area. Alfred Delavigne may already have been residing in the Deslonde-Delavigne House and acting as proprietor of the brick yard, although no evidence was obtained regarding this issue.

Phillip Gemar, Valentin Deckert, Andre Luquet, Louis Blaser, and Alexandre Castaing were purchasers who moved into the study area for varying periods of time. In 1871, Phillip Gemar is listed as residing on Dauphine between Sisters and Manuel Streets. In 1875, he is listed as a gardener residing on Dauphine near Jourdan. He and his descendants continued to reside in the study area at least through 1910 (Chapter 9). In 1874, "Faltine Deckert" is listed as a driver residing on St. Claude at the northwest corner of Tennessee, while in 1875, he is listed as a gardener residing on St. Claude at the northwest corner of Jourdan. In the 1879 Directory, he is listed as a gardener residing on the south side of Jourdan between North Rampart and St. Claude.

In 1871, Andre Luquet was listed as a milkman on Rampart between Jourdan and "Delaronde." The latter street is almost certainly a misprint of "Deslonde." In 1876 and 1877, he is listed as a butcher and is no

longer residing in the study area. Louis Blaser is listed in 1871 as a gardener residing on Dauphine between Jourdan and Sisters Streets. In 1876 and 1877, he is listed as a gardener residing on the west side of Dauphine between Sister and Tennessee Streets. In 1879, his residence is shown as the west side of Dauphine near Jourdan.

The City Directory check indicated that Alexandre Castaing was an architect. In 1871, his offices were at 56 Exchange Alley. He may have been residing in the study area, as his residence is listed as "Dauphine between the Convent and the Barracks." However, in 1872 his residence is listed as Dauphine near Flood. In 1873 he lived on "Dauphine below the Convent," while in 1874 and 1875 his residence is listed as "Dauphine near the Convent." If he was in fact residing in the study area during the period 1871 to 1875, he had moved by 1876 when his address is listed as Dauphine at the corner of Andre. In 1878 and 1879, his residence was on Esplanade Avenue.

Francois Bellocq was a grocer and saloon-keeper on Esplanade Avenue at the time he bought property within the study area. His purchase may have been intended as a locale for raising vegetables. Rudolph Stahl was also listed as a grocer, and his business and residence were on Frenchman Street. Joseph Numa Charbonnet was a cotton clerk at Phelps, McCulloch and Co. He resided on Bayou Road, at the time but later moved to Hospital Street. He presumably purchased property in the study area as a real estate investment. In 1871, Jean Francois Barthelemy was listed as a real estate agent residing on Desire Street. Jean George Monrose worked at an auction house. Francois Daubert was a clerk, probably for a cotton factor. David Douglas was an inspector of weights and measures. John Edgar Lambert and his son were blacksmiths. Dr. Gillespie West was a physician. P. Berges may have been a butcher, although his identity could not be firmly established. Finally, Marceline Eugene Dechamps was an importer of wines and brandies and a dealer in domestic liquors. The fact that these buyers were predominantly businessmen, skilled craftsmen, and professionals, and the fact that they did not move onto their newly acquired properties, suggests their purchases were real estate investments.

The Study Area ca. 1872

The map excerpted in Figure 21 provides some locational information for the earliest period following

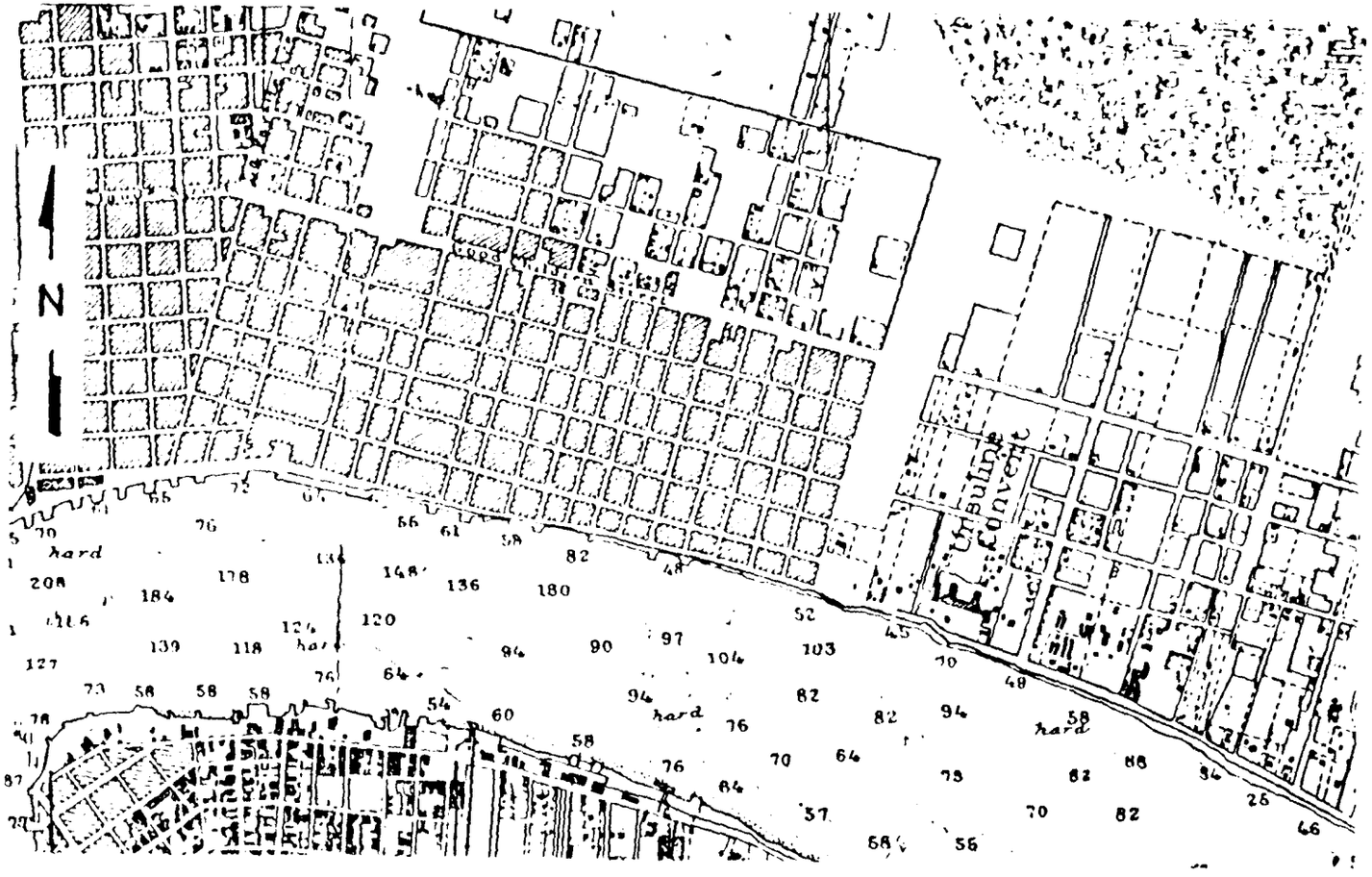


Figure 21. Excerpt from sheet 11 of a U.S. Coast and Geodetic Survey map dated 1873.

subdivision. The brick yard and associated residential complex remain intact. A number of residential structures not present in 1869 have been erected. There is one linear row of structures along Jourdan Avenue on its downriver side. Structures are also concentrated within four squares, two on the upriver side and two on the downriver side of Jourdan Avenue. This concentration apparently lies between present-day Royal and Burgundy Streets. In addition, there are isolated structures on N. Rampart, St. Claude, and as far back as present-day Uruquhart Street. Data from the 1880 census (below) indicates that these structures were residential, housing both Blacks and whites, and outbuildings related to truck farms

Data from the 1880 Census

The 1880 census provides data concerning residents of the study area eleven years after subdivision of the Jourdan holdings (Table 7). Because street numbers were not given, this discussion necessarily includes both sides of Deslonde. To maintain consistency in terms of population size and make-up, both sides of Deslonde are included in the following two sections of this chapter on the 1900 and 1910 census. This inclusion also provides a more accurate characterization of development of the Jourdan holdings following subdivision in 1869. Beginning in Chapter 9, the east side of Deslonde Street is excluded from detailed discussion because according to present plans, it is not directly threatened by construction impact.

By 1880, there were at least 35 enumerated dwellings witnin the subdivided portion of the study area. At least 186 individuals now resided on Sister, Jourdan, and Deslonde Streets and on the cross-streets between. Of these, 96 (52 percent) were white. The remainder were Black. The population was racially balanced, although clustering of white and Black residences did occur. The Amazion Baptist Church had already been established on Deslonde Street to serve the relatively large Black population.

Twenty-seven of the white adults, representing 28 percent of the total white population, were foreign-born. Most of these immigrants were from Germany (63 percent) and France (26 percent). Only one Black resident of the area was foreign-born. He was a 65-year old claiming birth in Africa.

Table 7. Demographic Summary of the Subdivided Portion of the Study Area in 1880.

Enumerated dwellings	35
Enumerated individuals	186
Enumerated whites	96
Enumerated Blacks	90
Foreign-born white adults	27
Born in Germany	17
Born in France	7
Born in Ireland	2
Born in Switzerland	1
Foreign-born Black adults	1
Born in Africa	1
Employed white males	22
White male day laborers	12
White male gardeners	6
White male clerks	2
White male butchers	3
White male lamplighter	1
White male huckster	1
White male blacksmith	1
White male joiner	1
White male carpenter	1
White male lawyer	1
White male cartdriver	1
White male tanner	1
Employed white females	6
White female seamstresses	5
White female gardeners	1
Employed Black males	25
Black male day laborers	23
Black male sugar boiler	1
Black male chopper	1

Table 7. Demographic Summary of the Subdivided Portion of the Study Area in 1880.

Employed Black females.....18
Black female servants.....11
Black female wash women.....3
Black female seamstresses.....3
Black female laborer's apprentice...1

Occupations of whites in the study area in 1880 showed far more diversity than those of Blacks. Twelve of the employed white males (55 percent) were listed as laborers, while six (29 percent) were gardeners or truck farmers. There were three white male butchers, two clerks, and eight white males with other occupations. In contrast, 92 percent of the employed Black males were classified as day laborers. The majority of white females (71 percent) were listed as "keeping house," indicating that they had no employment outside the home. Of the six employed white females, five were seamstresses and one was a gardener. In contrast to white females, over half of the Black adult females worked outside the home. The majority of these employed Black women worked as servants.

Data from the 1900 Census

Data could not be obtained for 1890 because records for that census year were lost in a fire. The 1900 census, partially summarized in Table 8, indicates that the number of dwellings had increased from 35 in 1880 to 96. The total population had increased to at least 532, almost triple the figure for 1880. Racial composition now was 62 percent white and 38 percent Black. Since 1880, then, more whites than Blacks moved into the newly erected structures. Foreign-born whites represented only 10 percent of all whites in the neighborhood.

There were 104 employed white males in the study area. Of these, 25 percent were classified as day laborers, and 23 percent were occupied by truck farming, gardening, dairying, and raising poultry. The remainder of employed white males worked at a variety of occupations (Table 8). In contrast, of 60 employed Black males, 53 percent were classified as day laborers and 8 percent were occupied by gardening. Other Black male occupations are listed in Table 8.

A much higher proportion of Black females were working outside the home than was true for white females. All but one of the employed Black females were doing washing, ironing, cooking, or house keeping. Sixty-seven percent of the employed white females were doing house work, house keeping, or were servants. Other white female occupations are listed in Table 8.

Data from the 1910 Census

By 1910, the number of dwellings in the subdivided portion of the study area had increased to 142, while

Table 8. Demographic Summary of the Subdivided Portion of the Study Area in 1900.

Enumerated Dwellings.....96

Enumerated Individuals.....532

Enumerated whites.....328

Enumerated Blacks.....204

Foreign-Born whites.....54
- Born in Germany.....34
- Born in France.....12
- Born in Italy.....3
- Born in Ireland.....3
- Born in Denmark.....1
- Born in England.....1

Employed white males.....104
- White male day laborers.....26
- White male garden laborers.....10
- White male truck farmers.....8
- White male butchers.....4
- White male blacksmith.....4
- White male gardeners.....3
- White male house builders.....2
- White male carpenters.....2
- White male saloon keeper.....2
- White male baker.....2
- White male grocery proprieter.....2

And one white male in each of the following occupations:

U.S. Army Private, cigar box maker, candy maker, candy manufacturer, real estate agent, poultry raiser, saw mill superintendent, saw filer, stenographer, restaurant waiter, bank cashier, solicitor, cotton sampler, night watchman, street car motoneer, street car motorman, engineer, lumber clerk, machinist, barber, cooper, saw mill fireman, slaughter house fireman, sugar refinery fireman, bartender, barkeeper, stevedore, sugar boiler, grocery clerk, notary public's clerk, cotton clerk, dry goods clerk, teamster, wheelwright, steamboat clerk, boiler maker, flour drummer, dairy farmer, dairy farm manager

Table 8 (cont.) Demographic Summary of the Subdivided Portion of the Study Area in 1900.

Employed white females.....21
White female house work.....9
White female housekeepers.....2

And one white female in each of the following occupations:

House servant, servant, waitress, forelady of tobacco company, keeper of notions store, plant nursery, drawing teacher, school teacher, seamstress

Employed Black males.....60
Black day laborers.....32
Black coal rollers.....3
Black butchers.....3
Black gardeners.....3
Black coachmen.....2
Black garden laborers.....2
Black teamsters.....2
Black longshoremen.....2

And one Black male in each of the following occupations:

Hostler, wagon driver, timber contractor, broom maker, candy maker, float driver, cook, clergyman, painter, cotton screwman, carpenter

Employed Black females.....43
Black female house workers.....13
Black female cook.....10
Black female wash women.....9
Black female wash and iron.....9
Black female laundress.....1
Black midwife.....1

total population had increased to 848. Demography for 1910 is summarized in Table 9. The Black population had declined slightly since 1900, now representing only 31 percent of the total. The proportion of foreign-born whites had increased since 1900, now representing about one-fourth of the total adult white population. Of the foreign-born adult whites, 46 percent hailed from Germany and 22 percent from France. Others were from England, Canada, Ireland, Norway, Portugal, Italy, and Mexico. Many of the American-born whites in the study area were the children of immigrants.

In 1910, there were 138 employed white males. Of these, 31 percent were classified as laborers and 9 percent as clerks. Other employed white males worked at a diverse array of jobs, as shown in Table 9. There were 38 employed Black males in the area. In contrast to whites, 61 percent of working Black males were classified as laborers and none as clerks. Black male employment is delineated in Table 9. Only a small minority of white adult females were employed. Most of these worked as salesladies, servants, and teachers. Almost half of all adult Black females worked. Fifty-eight percent of these were employed as wash women, while 31 percent worked as servants.

The 1910 census also indicates that the Deslonde-Delavigne House had been converted to a dormitory for inmates under the care of the Louisiana Society for the Prevention of Cruelty to Children. Residents at the institution are excluded from data presented above and in Table 9.

Table 9. Demographic Summary of the Subdivided Portion of the Study Area in 1910.

Enumerated dwellings	142
Enumerated individuals	848
Enumerated whites	589
Enumerated Blacks	259
Foreign-born white adults	63
Born in Germany	29
Born in France	14
Born in England	7
Born in Canada	4
Born in Ireland	3
Born in Norway	2
Born in Portugal	1
Born in Italy	1
Born in Mexico	1
Employed white males	138
White male laborers	43
White male clerks	12
White male barkeepers	6
White male merchants	6
White male farmers	5
White male salesmen	5
White male salesmen	5
White male engineers	4
White male engineers	4
White male firemen	3
White male coopers	3
White male painters	3
White male blacksmiths	3
White male carpenters	3
White male conductors	3
White male butchers	3
White male gardeners	3
White male motormen	2
White male boat pilots	2
White male druggists	2
White male bakers	2
White male millwrights	2
White male sugar makers	2
White male saddlers	2

Table 9 (cont.). Demographic Summary of the Subdivided Portion of the Study Area in 1910.

And one white male in each of the following occupations:

steward, plumber, insurance agent, accountant, professor, apprentice dentist, inspector, servant, sampler, letter carrier, credit man, janitor, messenger, cashier, electrician, stenographer, bookkeeper, pittman, lawyer, sailor, real estate agent, mail clerk, tinsmith, cabinet maker, artist, cook, cistern maker

Employed white females.....23
White female salesladies.....5
White female servants.....5
White female teachers.....4
White female wash women.....3
White female packers.....2

And one white female in each of the following occupations:

seamstress, milliner, farmhand, governess, cook, stenographer, bookkeeper, cashier, laborer

Employed Black males.....38
Black male day laborers.....23
Black male coopers.....3
Black male wagon drivers.....3
Black male sugar weighers.....2

And one Black male in each of the following occupations:

slater, fireman, plasterer, gardener, stableman, longshoreman, butcher

Employed Black females.....26
Black female wash women.....15
Black female servants.....8
Black female cook.....1
Black female housegirl.....1
Black female midwife.....1

CHAPTER 9
DETAILED REVIEW OF HOUSEHOLDS, 1869 TO 1910

Introduction

The purpose of this discussion is to delineate the range of commercial, residential, and farm properties that might be impacted by possible construction within the corridor delineated in Figure 1. A sample of these properties should be selected for archaeological testing. Should that testing indicate that significant archaeological resources exist within the corridor, then additional properties should be selected for excavation during a program of data recovery. Specific recommendations concerning test excavations are presented in Chapter 10.

Properties associated with structures located on Sister, Jourdan, the west side of Deslonde, and on cross streets between lie within the area of potential direct impact as defined by the original Scope of Services for this project (Figure 1). Data from the United States censuses of 1880, 1900, and 1910 have been used in this chapter to provide information concerning residents of the area. The 1890 census was lost in a fire and was therefore unavailable. Issues of the City Directory were consulted to obtain additional data concerning residents of the area. Census data were supplemented with the 1896 Sanborn map of the area which provides locational information on structures located on ister, Jourdan, and Deslonde, and on the cross streets as far north as the river side of Chartres Street. The 1909 Sanborn map was used to obtain data on structures in the same area. This later map depicts a larger area, showing structures as far north as the river side of St. Claude Avenue.

Data from the 1880 Census were summarized in Chapter 8. At that date, no house numbering system was recorded by census enumerators. Thus, households enumerated in that year cannot be precisely located. However, some of them can be generally located by comparison with later records.

By the late 1890s, the City Directory lists street numbers. The 1900 and 1910 census also provide that information. It is for this period, then, that precise locations of all households in the study area can be determined. This enables control for race, ethnicity, and employment of the residents at specific addresses.

House numbers for the various blocks within the impact zone have been stable since the late 1890s. Thus, the even side of the 600 block of Jourdan Avenue is in the same location now as it was in 1900. However, numbers of specific structures within blocks have changed somewhat. Even between the 1900 and the 1910 censuses, there are some numerical discrepancies. The same is true when the 1896 and 1909 Sanborn maps are compared with each other and with the census records. One reason for this discrepancy is probably the fact that as new structures were built, the numbering system was changed slightly.

Households on the West (Even-Numbered) Side of Deslonde Street

Since the late 1890s, houses on the west side of Deslonde Street have been assigned even numbers, while houses on the east side are odd-numbered. Although the east side of Deslonde Street was included in discussions of the 1900 and 1910 census data (Chapter 8), these are excluded from this detailed discussion of households because they lie outside the area of possible direct impact.

500 Block of Deslonde. The 1896 Sanborn shows no structures on the west side of the 500 block (Chartres to N. Peter) of Deslonde. By 1909, residential structures had been erected on the west side of the 500 block. These were either moved or destroyed during construction of the Industrial Canal and/or contemporaneous levee adjustments. The 1937 Sanborn indicates that they no longer existed by that date.

No residents were enumerated for the west side of the 500 block of Deslonde in the 1900 census. This, in conjunction with map evidence, indicates that structures there were erected between 1900 and 1909. The sites of two of these structures and associated household refuse may be extant subsurface at the present-day foot of the west side of Deslonde Street in a cleared area north of the levee.

532 Deslonde was a two-story residence occupied in 1910 by Anthony Wilhelm and family. Wilhelm was a white post office clerk from Indiana.

538/540 [536/538] Deslonde. On the west side of Deslonde at the corner of Chartres was a double shotgun, shown on the 1909 Sanborn as 538 and 540 Deslonde but listed in the 1910 census as 536 and 538 Deslonde. It

was not listed in the 1900 census, suggesting that the structure was erected between 1900 and 1909. Oscar Villere, a white Louisiana-born salesman, and his family occupied 536 Deslonde in 1910, while 538 was occupied by Henrietta O'Brian, her mother, cousins, and nephew. Only one of the cousins was employed, and he was a laborer. All were white.

600 Block of Deslonde. Neither the 1896 nor the 1909 Sanborn maps depict structures fronting on the west side of the 600 block of Deslonde Street. Similarly, neither the 1900 nor the 1910 censuses enumerate residents with an address indicating locations there.

700 Block of Deslonde. The 1896 Sanborn depicts no structures fronting the west side of the 700 block of Deslonde (Royal to Dauphine), and the 1900 census enumerates no residents with addresses indicating residence there. The 1909 Sanborn depicts a double shotgun at 700/702 Deslonde, at the corner of Royal. The fact that the address was not listed in the 1900 census indicates that the structure probably was erected between 1900 and 1909. The 1910 census indicates that this was the only structure occupied on the west side of the block at that date.

700/702 Deslonde. At 700 Deslonde in 1910 were Louis Lamothe, a French-born hotel cook, and his family, while 702 was occupied by Joseph Decuir, a white Louisiana-born artist, and his family. Decuir's wife and sister-in-law who resided with him were immigrants from France.

800 Block of Deslonde. The 800 block of Deslonde Street lies between Dauphine and Burgundy, and it was not depicted on the 1896 Sanborn. However, the 1900 census indicates five households were residing there by that date. The 1910 census indicates that the number of households had increased to seven. The 1909 Sanborn, depicting seven residential addresses on the west side of the street, agrees well with the census data.

814/816 Deslonde. At 814/816 Deslonde was a double shotgun. In 1900, each half was rented by Black householders. In 814 were George Carrol who was a day laborer and his wife. The surname "Carrol" and variant spellings were checked in the City Directory for the years 1890 through 1900, but no listings were obtained.

In 816 were Joseph Darcey who was also a day laborer and his wife who was employed washing and

ironing. The surname "Darcey" was not listed in the study area in the City Directory for the years 1890 through 1900. By 1910, there were new occupants at each address. All were Black. They were Rachel Riley, who was a wash woman, and her two children at 814 and Constance Dorsey, who was a laundress, and her three children at 816. The similarity between the surname "Darcey" at 816 Deslonde in 1900 and "Dorsey" at the same address in 1910 tentatively suggests familial continuity for 1900 through 1910.

820 Deslonde. At 820 Deslonde, the 1909 Sanborn depicts a single shotgun. No one is enumerated at that address in the 1900 census, indicating it was erected between 1900 and 1909. By 1910, it was occupied by Henry Smith who was a Black laborer and his family of six. The only other employed individual in the household was his 19-year old son.

824 Deslonde. The 1909 Sanborn indicates that a single shotgun existed at 824 Deslonde. It was occupied in 1900 by Joseph Escaig who was a white Louisiana-born butcher and his wife. No City Directory listings were obtained for the surname "Escaig" in the study area during the years 1890 through 1900. By 1910, they had moved and the address was occupied by Joseph Grise, listed as a white German-born merchant, his wife, his daughter, and his son-in-law. The latter was Walter Inbau, a clerk, who had other relatives in the neighborhood.

826 Deslonde. The structure at 826 Deslonde was also a single shotgun as depicted on the 1909 Sanborn. No one was enumerated at that address by the 1900 census, suggesting it was erected between 1900 and 1909. By 1910, it was occupied by Henry Krementz, listed as an Indiana-born white laborer, his wife, and their six children.

It is important to note that the City Directory in 1896 indicates that Johanna Heinrich, widow of Charles Heinrich, resided at 826 Deslonde. A Heinrich family was enumerated on Deslonde Street in the 1880 census, although the given name was listed as "George." He was a tanner from France. Charles Heinrich is listed in the City Directory of 1878 as a resident of Deslonde near Dauphine. He apparently died in 1884 or 1885. His widow Johanna was subsequently listed as a resident of Deslonde between Dauphine and Burgundy in 1886, as was Jacob who was a cisternmaker. Chain of title for portions of the even-numbered side of the 800 block of

Deslonde would be necessary to determine where the Heinrich residence was located. Evidence obtained to date indicates that this residence was maintained from 1878 through 1896, probably at a single address.

834 Deslonde. At 834 Deslonde was a single residence occupied in 1900 by Charlatine Lewis, listed as a Black woman employed washing and ironing, and her daughter who was employed as a cook. The elder Ms. Lewis owned the structure. She still resided there in 1910 with her daughter, son-in-law, and grandson. The son-in-law was classified as a laborer in the 1910 census.

It is probable that the Lewis family had occupied 834 Deslonde at least since 1880. At that date, Charles Lewis and his wife 'Charlotte' were enumerated on Deslonde Street. Charlotte was listed as 38 years old in 1880. 'Charlatine' was listed as 60 years old in 1900, an age in close agreement with that for 1880. City Directory listings were obtained for Charles Lewis beginning in 1881 when his residence was listed as Tennessee at the corner of Burgundy. (During the early 1880s, many residents of the study area had addresses shown as Tennessee rather than Jourdan or Deslonde). By 1882, the City Directory describes Charles Lewis' residence as located on the west side of Deslonde at the southeast corner of North Rampart. This is in the vicinity of 834 Deslonde. Again, address descriptions for this period are vague. However, in 1883, 1885, 1886, 1888, 1889, and 1894, the residence of Charles Lewis is listed in the City Directory as being on the west side of Deslonde, either near Dauphine or between Dauphine and Burgundy. For these years, then, the address description corresponds quite well with 834 Deslonde. This, and the continuity in names, indicate that a single Black family probably occupied 834 Deslonde by 1880 and continued to reside there until at least 1910.

836 Deslonde. The single shotgun at 836 Deslonde was rented in 1900 by Milton Smith, listed as a Black longshoreman. He lived there with his wife, his children, and one son-in-law named Frank Brocks. The latter was employed as a painter. Milton Smith was enumerated as a resident of Deslonde Street in the 1880 census at which time he was a laborer. The City Directory indicates that he resided on Deslonde by 1878. In 1881, his address was shown as Tennessee at the corner of Burgundy, another instance of use of Tennessee Street to refer to the study area generally during this

period. From 1882 through at least 1894, Milton Smith was listed as a laborer, either on the west side of Deslonde near Burgundy or on the corner of Burgundy near Deslonde. All of the descriptions correspond well with the actual location of 836 Deslonde as depicted on the Sanborn maps. Thus, this address was probably occupied by a single Black family from at least 1878 through 1900. By 1910, the structure at 836 Deslonde was occupied by a white family. The head of household was Bernard Burdette, listed as a French-born laborer, who lived there with his wife and three children.

900 Block of Deslonde. The 1909 Sanborn depicts no structures on the west side of the 900 block of Deslonde (Burgundy to N. Rampart). Rather, this area was utilized as part of two truck farms, the residences of which fronted Jourdan Avenue (discussed below). Similarly, no residential structures faced the west side of the 1000 block of Deslonde, apparently because the land was in use as truck farms. The 1900 and 1910 censuses confirm this, listing no residences with even numbers in either the 900 or 1000 block of Deslonde.

Households on the East (Odd-Numbered) Side of Jourdan Avenue

600 Block of Jourdan Avenue. The 600 block of Jourdan Avenue lies between Chartres and Royal. Residents were enumerated on the east side in the 1900 census, and structures were shown there on the 1896 Sanborn. However, construction of Industrial Canal and modification of the river levees has probably resulted in loss of most of these sites with the exception of addresses discussed below.

675/677 Jourdan. At 675/677 Jourdan, a small double is depicted on the 1896 and 1909 Sanborns. It is possible that remains located behind that structure may still be extant beneath a vacant lot adjacent to the river levee. This should be confirmed by on-the-ground measurements.

The 1900 census indicates that Harry Curtis, a Black day laborer, occupied 677 Jourdan with his wife and four step-children. One of the latter was a female employed as a cook. City Directory listings for 1887 through 1900 show Harry Curtis at 677 Jourdan only in 1899 and 1900. In 1910, 677 Jourdan was occupied by John Taff and his wife. John was a Black laborer, while his wife worked as a wash woman. Because no listing is given for 675 Jourdan in either census, it is possible

that the structure under discussion was a single-family residence, despite depiction on the Sanborn maps as a small double.

685/687 [683/685] Jourdan. A double shotgun located on the east side of Jourdan at the corner of Royal was depicted on the 1896 Sanborn as 685/687 Jourdan, while in 1909 it was shown as 683/685. In 1900, one-half of the structure was rented by Joseph Pardo, a Black cook, who lived there with his wife and four children. City Directory listings for 1888 through 1900 list a Jefferson Pardo at 687 Jourdan in 1899.

The other half of the shotgun was occupied by a second Black family consisting of Charles Franklin, his wife, and his two adult step-children. The latter were a female cook and a male day laborer. For the period 1887 through 1900, City Directory listings place Charles Franklin in the study area only in 1898 and 1900, and his address is listed as 4726 Dauphine, a different structure than the one under discussion.

By 1910, both halves of the structure were occupied by new families. On one side were Milton Smith, his wife, daughter, and sister-in-law. Milton Smith was the Black longshoreman who had lived at 836 Deslonde (above) through at least 1900. Thus he moved at some time between 1900 and 1910. He was still enumerated as a longshoreman in 1910, while two other employed members of his household were a servant and a wash woman.

A white family resided on the other side in 1910. They were William Haindle, his wife, his parents-in-law, and a brother-in-law. William was a fireman in that year, and his father-in-law was a butcher. No one else in the household was employed.

700 Block of Jourdan. Only two residential structures fronted the east side of the 700 block of Jourdan Avenue (Royal to Dauphine) in 1896. By 1910, that number had increased to four.

701 Jourdan. The shotgun at 701 Jourdan was one of the post-1896 structures. The address 701 Jourdan was not enumerated in the 1900 census indicating construction between 1900 and 1909 when it was depicted on the Sanborn map.

Two families are enumerated there in 1910, both with addresses listed as 701 Jourdan. One of these consisted only of Mary Cain, a 75-year old Irish

immigrant with no occupation. The other family consisted of Samuel Achurch and family. Samuel was an English-born boat pilot who resided with his wife, three children, and a Louisiana-born brother-in-law employed as a laborer.

719 Jourdan. The 1896 Sanborn depicts a residential shotgun at 719 Jourdan and a non-residential shed located immediately riverward of the residence. By 1909, that shed had been removed. Also, the residence had either been moved back from the street, or it had been replaced by that date.

In 1900, the residence at 719 Jourdan was rented by an extended Black family. The head of household was Thomas Lambert, a day laborer. He lived with his wife, three adult female children, and four grandchildren. Two children were cooks, and the third was employed doing house work. City Directory listings for 1880 through 1900 indicate that Thomas Lambert resided at 719 Jourdan by 1897. Also, a "Joseph Lambert," possibly a relative, was listed on North Peter near Sister Street in 1886.

By 1910, the new or moved structure at 719 Jourdan was occupied by Albert C. Francis, listed as a white English-born street car motorman, his Louisiana-born wife, and three children. City Directory listings indicate that the Francis family did not establish residence at this address until some time during 1900.

721 Jourdan. A single shotgun was present at 721 Jourdan by 1896. In 1900, it was rented by Albert C. Francis and family, who are discussed in the preceding paragraph. As noted above, Francis was enumerated at 719 Jourdan in the 1910 census. It is possible that the Francis family moved during the intervening ten years. Alternatively, 719 Jourdan was replaced or was itself moved slightly. Field measurements and precise, careful comparison with the two Sanborn maps and with present-day structures will be necessary to determine where remains from the Francis family occupation are actually located. In 1910, the Chaloupha family was enumerated at 721 Jourdan. The head of household was a New York-born white male with no occupation given. His wife and two small children resided with him along with his Louisiana-born sister-in-law who was employed as a clerk.

725 [721] Jourdan. Fronting Jourdan Street north of 721 Jourdan in 1896 was a wooden shed. By 1909 a

shotgun residence stood there, and the address was 725 Jourdan. It was apparently erected between 1896 and 1900, because in that census year, the extended white family of Cora Luhring rented the structure. Her son-in-law was employed as a lumber clerk, while one other male occupant worked as an engineer. City Directory listings for 1890 through 1900 did not record any of the census year occupants as located within the study area.

In 1910, the family of Mexican-born carpenter James Oliver occupied 725 Jourdan. James lived with his wife and five children. Three of the latter were employed. One was a saleslady, one a tobacco packer, and one a clerk.

800 Block of Jourdan. Odd-numbered structures on the east side of Jourdan within the 800 block lie between Dauphine and Burgundy Streets. This area is not depicted on the 1896 Sanborn.

801 Jourdan. In 1909, a corner lot was occupied by a store shown as 801 Jourdan. A stable was located north of the store. In 1900, it was rented by Nicholas Sacco, a saloon keeper, who lived with his wife and two children. His son was employed as a bar keeper.

The City Directory lists Nicholas and Anthony Sacco as residents of 1565 N. Claiborne in 1898 and 1899. Nicholas Sacco also had a grocery business at that address in both years. In the 1900 City Directory, Nicholas Sacco maintained a saloon at 1007 N. Claiborne, but his residence was not listed. Thus, he may have moved into the study area in 1900, and he may have maintained a business elsewhere. Alternatively, he may have used the structure at 801 Jourdan for business purposes. In 1910, it was occupied by Theodore Mumme (? spelling), listed as a retail merchant, and his wife.

811 Jourdan. The 1909 Sanborn depicts a single shotgun at 811 Jourdan. It was erected prior to 1900 because that census indicates that William Danridge and family were renting a structure at that address. The City Directory indicates that Danridge resided at this address by 1898. William was a Black day laborer. His wife was employed washing and ironing, while one of his two sons worked as a coachman and his daughter was employed doing housework.

In 1910, a different Black family resided at 811 Jourdan. Head of household was Cornelius Copelin, a butcher, who resided there with his wife and young daughter.

813 Jourdan. No 1900 census record exists for 813 Jourdan, indicating that the single shotgun there was erected after 1900 but before 1909, when it was depicted on the Sanborn. In 1910, it was occupied by a white family consisting of Louisiana-born Celle Bauer and her children. Only one member of the household was employed. This was Bauer's 18-year-old son who was working as a stenographer.

821 Jourdan. By 1900, a structure was present at 821 Jourdan. In that census year it was rented by a white stevedore, Emile Morgan, who lived there with his six children and his mother, Josephine Miret. His only adult son was a day laborer at that time.

The residence is depicted on the 1909 Sanborn. Attached to it on the river side is a wooden structure labelled "The In For Fun Social Club Dance Platform." The 1910 census indicates that Emil Duchman lived there. He was a Louisiana-born carpenter residing with two sisters, a niece, and a nephew.

827 Jourdan. By 1900, a structure was present at 827 Jourdan. In that census year, it was owned and occupied by Charles Thompson, listed as a white machinist, and his wife. Thompson was listed in the City Directory in 1899 and 1900 as a resident of Pauline Street. Apparently he bought a house and moved into the study area some time during 1900.

By 1910, the Thompsons had been replaced at 827 Jourdan by Ernest Robinson and family. Ernest was a white machinist living there with his wife, two small children, and his mother-in-law.

829/831 Jourdan. The 1909 Sanborn shows a double shotgun with addresses given as 829/831 Jourdan. In the 1900 census, only 829 Jourdan is enumerated. It was owned by Henry Jones, a Black carpenter, who lived there with his wife and two grown daughters. One of the latter was employed as a cook while the other did housework. Similarly, in the 1910 census, only 829 Jourdan is enumerated. The head of household at that time was Pauline Jones, widow of Henry. Her daughters still resided there, as did one son-in-law. He was the

only employed member of the household, working as a carpenter. Also present was one grandson.

Thus, census records establish that the Jones household at 829 Jourdan exhibited continuity from 1900 through 1910. However, it is likely that they were present at least fifteen years prior to 1900. As early as 1879 City Directory listings indicate a "Henry Jones" was present in the study area when he was listed on the west side of Jourdan between Dauphine and Burgundy. He is enumerated as a boarder at the Solomon Reed household on Jourdan Avenue in the 1880 census. At that time, Henry Jones was 70 years old.

Beginning in 1885, a "Henry Jones" is listed in the City Directory as a laborer residing on the east side of Jourdan between Dauphine and Burgundy. That address description corresponds with the location of 829 Jourdan. In 1889, "Henry Jones'" occupation is listed as "carpenter" as it was in the 1900 census. By 1896, his address is shown as 829 Jourdan. It is probable that the "Henry Jones" in the 1880 census was the father of the "Henry Jones" in the 1900 census.

In addition, the 1880 census lists the residence of Charley Jones who was a Black laborer, his wife, four children, and a mother-in-law as Jourdan Avenue. The City Directory indicates that Charles Jones lived on the east side of Jourdan between Dauphine and Burgundy by 1881 or 1882. This address description corresponds to the 829 Jourdan address under discussion here. The consistency of City Directory listings after 1882 in conjunction with census records indicates that the Jones family probably occupied 829 Jourdan from a date no later than 1882, possibly 1880, and through at least 1910.

833 Jourdan. The 1909 Sanborn depicts a single shotgun at 833 Jourdan. That address was not enumerated in the 1900 census, suggesting construction between 1900 and 1909. In 1910, the structure was occupied by Angelin Ulrich who was a German-born laborer, his German-born wife, and their four children. It should be noted that the 1897 City Directory lists Ulrich at this address, so it is possible that the structure predates 1900. However, Ulrich's tenure there was not continuous because the 1900 census places him at 4817 N. Rampart (below).

900 Block of Jourdan. The east side of Jourdan Street between Burgundy and N. Rampart is the odd-

numbered 900 block. The 1909 Sanborn depicts two truck farms there, each occupying one half of the square and extending eastward to Deslonde Street.

901 Jourdan. By 1909, a residential structure stood at 901 Jourdan, and north of it was a stable complex. The 1900 census indicates that George Eichhorn, born in Germany, was the owner of this truck farm. He lived there with his wife Caroline. Residing with them were his nephew Wolfgang Oath, also from Germany, a niece, and two grand-nieces. Wolfgang Oath was apparently employed by Eichhorn as a garden laborer.

By 1910, Eichhorn and his wife had apparently either moved or died. However, Oath still resided on the property with his wife and three children. Oath was listed as a farmer.

City Directory listings indicate that George Eichhorn was a resident of the study area by 1881, when his residence was listed as Jourdan at the corner of North Rampart. Beginning in 1884 his residence was described as Jourdan at the northeast corner of Burgundy, which coincides with 901 Jourdan. Beginning in 1896, the listings refer to the actual address. George Eichhorn was listed consistently as a gardener. Thus, 901 Jourdan Avenue is a property with residential continuity from at least 1884, probably from 1881, through 1910. It was probably a working truck farm during that entire period.

923 Jourdan. The other residence on the east side of Jourdan in the 900 block is shown on the 1909 Sanborn as 923 Jourdan. On its north side was a stable complex. Jacob Mayer, a German-born truck farmer, owned and occupied the residence/farm in 1900. He lived there with his wife, their seven children, and his elderly father. The two eldest children were employed as garden laborers.

The Jacob Meyer family was still present at this address in 1910. While Jacob was still listed as a farmer, his three eldest children are listed as laborers. Three additional children and a 67-year old boarder listed as a German-born laborer were also present. The City Directory indicates that Jacob Meyer was present at this address by 1894 when he was listed as a gardener. The property at 923 Jourdan, then, exhibits residential continuity by the same family from 1894 through at least 1910. During at least part of that period, the property was used as a truck farm.

The 1000 Block of Jourdan. The 1909 Sanborn shows two residential structures on the east side of Jourdan Avenue between N. Rampart and St. Claude.

1007 and 1013 Jourdan. The 1909 Sanborn indicates the addresses of the two structures here as 1007 and 1013 Jourdan. Behind and attached to the latter was a stable. The two residences probably represent a single truck farm with two residential structures. The farm occupied one-third of the city square on which it was located. Census and City Directory data indicate that there was residential continuity here from ca. 1880 through 1910.

The 1900 and 1910 censuses list only 1007 Jourdan. The head of household and owner at that address in 1900 was Catherine Meyer, listed as a truck farmer. Her son John was enumerated as a garden laborer. Also present were Catherine's daughter-in-law, one other son, and two grandchildren.

A second household occupied the same address, and the size of each family may account for the two residences. The second household was the Louis Kathmanns. Louis was Catherine's son-in-law, and was employed as a cooper. With him were Catherine's daughter and their four children.

In 1910, at least part of the Meyer [Mayer] family still occupied this address. Catherine is not listed, and the head of household now is the 69-year-old Louisiana-born Valentine Meyer. However, individuals listed as Catherine's sons in 1900 are now listed as Valentine's sons. The total household includes Valentine, two sons, a daughter-in-law, four grandchildren, and a 52-year-old boarder listed as a farm hand.

Households on the West (Even-Numbered) Side of Jourdan Avenue

The 500 and 600 Blocks of Jourdan. Map evidence suggests that former structures and associated archaeological remains on the west side of Jourdan Avenue riverward of Royal Street were destroyed by construction of the Industrial Canal and the erection of levees associated with the canal and with the river. Computerized comparison of field and historic maps should provide more detailed information concerning this issue.

The 700 Block of Jourdan. Structures that formerly stood on the west side of the 700 block of Jourdan Avenue between Royal and Dauphine were demolished prior to 1937, presumably at the time of Canal construction and levee alteration. However, a vacant lot now occupies that area, and it is anticipated that structural remains and archaeological features and deposits may lie beneath that lot. Again, computerized comparison of field and historic maps should provide more detailed locational information for this area where five residential properties discussed in this section were formerly located.

704 Jourdan. The 1896 and 1909 Sanborns depict a residential structure at 704 Jourdan Avenue. In 1900, it was rented and occupied by a white female named Mary Boubre, her three daughters, one son, and two grandchildren. The daughters were all employed doing housework while the son was a day laborer. No City Directory listings were obtained in an 1890 to 1900 check for surnames listed in the 1900 census. By 1910, Charles Castaing, a French-born laborer, occupied the structure.

708/710 Jourdan. Both the 1896 and 1909 Sanborn maps depict a double shotgun at 708/710 Jourdan. The 1900 census indicates that George Yaeger, a white fireman at a sugar refinery, rented and resided at 708 Jourdan with his wife and their seven children. The City Directory indicates that George Yaeger was at that address at least by 1896. Also, the City Directory places George Yaeger on the west side of Jourdan by 1887. Thus, the Yaeger family probably resided at 708 Jourdan from 1887 through 1900.

At 710 Jourdan in 1900 were Henry Hoffman who was a white night watchman, his wife, and two adult sons employed as day laborers. The 1910 census indicates that Henry Hoffman probably had died, but that his wife and one son employed as a laborer continued to occupy one-half of the structure. However, they are now listed at 708 Jourdan. Thus, they either moved into the other half of this double shotgun or the census record includes a slight error. Henry Hoffman's address was listed as 710 Jourdan in the City Directory beginning in 1896. Further, Henry Hoffman was listed as a resident of the west side of Jourdan near Royal or between Royal and Dauphine beginning in 1887. Thus, the Hoffman family probably occupied this address from 1887 through at least 1900.

In 1910, Albert Berniol, a white laborer is listed as the occupant of 710 Jourdan. He lived there with his brother, a salesman, and his sister.

714 [712] Jourdan. A single shotgun is depicted on the 1896 and 1909 Sanborn maps at 714 Jourdan. It was rented and occupied in 1900 by Walter Willis, a Black day laborer. Residing with him were his wife, three adult children, and one grandchild. The two adult sons were employed as day laborers, while the adult daughter did housework. A check of the City Directory yielded no listings for Walter Willis in the study area until 1899 when he was residing at 714 Jourdan.

In the 1910 census record, occupants of this structure are recorded as residents of 712 Jourdan. As noted above, some discrepancy does exist in the intra-block numbering system here. The 1910 occupants were Joseph Escaig, listed as a white butcher, and his wife.

718 Jourdan. At 718 Jourdan, the 1896 and 1909 Sanborn maps depict a single-family residential structure. In 1900 it was occupied and rented by Emile Pierre who was a Black day laborer, his wife, a daughter employed doing housework, and a young niece. The City Directory indicates that Emile Pierre resided at 718 Jourdan by 1896. It also indicates that members of the Louis Price family, enumerated in the 1880 census as residents of Deslonde, were residing at 718 Jourdan in 1896. Louis and one of his sons were laborers in that year, and also present was Louis' widowed mother. Beginning in 1885 a "Nancy Pierre Widow Jean" and a "Zeno Pierre" are listed in the study area but as residents of Deslonde Street.

By 1910, a white French-born woman, listed as the Widow Pierre Duprat occupied this structure with her "retired" 44-year-old Louisiana-born son.

728 [732] Jourdan. The 1896 Sanborn depicts a single shotgun at 728 Jourdan, behind which was a stable that was larger than the residence. The residential structure was still depicted on the 1909 Sanborn, but the stable was no longer present.

The 1900 census lists the address for this structure as 732 Jourdan. Living there was Lawrence Hurstell who was a 20-year old white gardener, his wife, and daughter. The Hurstells at this address are almost

certainly relatives of the Hurstell family with long-term residence at 4710 Dauphine (below).

In 1910, the address is shown as 728 Jourdan. At that time, it was occupied by a Black family. The head of household was Frank Brooks, a painter. With him were his wife, one son also employed as a painter, and four other children.

The 800 Block of Jourdan. The west side of Jourdan Avenue between Dauphine and Burgundy represents the even-numbered portion of the 800 block. This area is not depicted on the 1896 Sanborn map.

816 Jourdan. On the 1909 Sanborn map, a stable is shown at 816 Jourdan. It is associated with the corner store discussed as 4737/4739 Dauphine (below). However, it should be noted that the City Directory indicates that Florans Dirmann (see 4733 Dauphine Street, below) was selling meat at 816 Jourdan in 1899 and 1900. Thus, the store may later have been converted to a stable.

824 Jourdan. Next to the stable was a double shotgun enumerated on the 1909 Sanborn as 824A and 824B Jourdan. It served as both a bakery complex and a residence in 1900 and 1910, and was occupied by a single family along with some employees. Two buildings were depicted behind the residential structure. One houses an oven and an electric motor. The other is labelled "W. Ho." (warehouse ?) and apparently had a very small attached stable. The 1937 Sanborn indicates that a bakery was still in operation on the property by that date.

The head of household in both 1900 and 1910 was a German-born baker named John Riemer. Also present in 1900 were his German-born wife, their four young children, a female employee doing housework, and a male employed as a baker. In 1910, only the Riemer family is enumerated. It consisted of John, his wife, and seven children. The two eldest sons were employed as bakers, presumably obviating the necessity for hired labor. The City Directory indicates that the Riemer family lived and baked at 824 Jourdan by 1896. They were in the study area by 1894, but the address listings are unclear concerning whether or not they were at this address.

834 Jourdan. The 1909 Sanborn depicts a single shotgun at 834 Jourdan. No one was enumerated at that address in 1900, indicating a construction date between 1900 and 1909. In 1910 it was occupied by George Luquet

who was a white streetcar pittman, his wife, and two children. Also present were a nephew and George's 78-year-old father, Andrew Luquet. In Chapter 8 "Andre Luquet" was discussed as one of the original purchasers of property in the area in 1869. However, the residence under discussion here was not within the purchased parcel. Nevertheless, the coincidence of names, the age of Andrew in 1910, and the presence of an additional Luquet family (below) in the study area suggest that "Andrew" in 1910 is the same individual enumerated as "Andre," a purchaser in 1869.

838/840 Jourdan. A double shotgun faced Jourdan Avenue at the corner of Burgundy, and the 1909 Sanborn map indicates the address was 838/840 Jourdan. No residents are listed there in the 1900 census, indicating a construction date between 1900 and 1909. In 1910 William Hagen, an English-born bookkeeper, lived at 838 Jourdan with his wife and his daughter who was employed as a stenographer. At 840 Jourdan were Mathew Wetzel, listed as a German-born boss drayman, and his Louisiana-born wife.

900 Block of Jourdan. Even-numbered addresses on the west side of Jourdan Avenue in the 900 block lie between Burgundy and N. Rampart. This area was not depicted on the 1896 Sanborn map.

900 Jourdan. The 1909 Sanborn depicts a residential structure and truck farm at the corner of Burgundy, listed as 900 Jourdan. Associated with it was a stable at 908 Burgundy. The truck farm extended back to Sister Street which was not yet opened in this area.

In 1900, Frank Meyer and his family occupied 900 Jourdan. Meyer was listed as a German-born truck farmer, residing with his German-born wife, two sons, and a daughter. One of the sons was employed doing garden labor while the other was a grocery clerk. In 1910, Frank and his wife continued to occupy the residence at 900 Jourdan. Only one of the sons was listed there, and he was employed as a clerk.

The City Directory lists the address for Frank Meyer as 900 Jourdan beginning in 1896. Further, he is listed as a resident of the west side of Jourdan near or at the corner of Burgundy beginning in 1878. He was always listed as a gardener. Thus, the Frank Meyer family almost certainly resided at this address from 1878 through 1910, and during most or all of that period, they were using the property as a truck farm.

912/914 and 916/918 Jourdan. The 1909 Sanborn map depicts two double shotguns, one listed as 912/914 Jourdan and the other as 916/918 Jourdan. These addresses were not enumerated in the 1900 census. Locations of the two structures indicate that they were erected after 1900 on a portion of the Frank Meyer truck farm.

In 1910, 912 Jourdan was occupied by a white street car motorman named Henry Kintz. He lived there with his wife and three children. The other half of the structure, 914 Jourdan, was occupied by William Lingener who was a German-born mechanical engineer living with his wife Caroline.

Living at 916 Jourdan in 1910 were a white clerk named William Mayer and his wife. Romain Dussorn (? spelling), a white streetcar conductor, lived at 918 Jourdan with his wife and their four children.

924 Jourdan. The 1909 Sanborn depicts a double residential structure as 924A and 924B Jourdan. However, listings in the 1900 and 1910 censuses suggest it was occupied by a single household. It was a truck farm which could have occupied one-half of the square until after 1900. The head of household at 924 Jourdan in 1900 was Anthony Duvic, a white truck farmer. He lived there with his wife Louisa, their eight children, and a step-son named Victor Hinterlang. One son was employed as a truck farmer, and two daughters did housework.

By 1910, the head of household was Henry Duvic, one of Anthony's sons. Henry was occupied as a laborer. Also present were Victor Hinterlang who was working as a bartender, one of Anthony's other sons who was employed as a laborer, and one of Anthony's daughters. The fact that none of the residents are listed as truck farmers, gardeners, or farmers in 1910 is evidence that the original truck farm was subdivided after 1900, and that large parts were sold for use as residential lots.

The City Directory provides additional information concerning the Duvic/Hinterlang families. Anthony Duvic was residing at 924 Jourdan by 1896. The pre-1896 listings indicate that Anthony Duvic resided on Jourdan near N. Rampart by 1890, and that address description fits well with 924 Jourdan. Between 1884 and 1889, Anthony Duvic was a resident of the study area but his address descriptions are variable. Also, Anthony

Duvic's wife Louisa in 1900 was previously married to Charles Hinterlang who died between 1891 and 1893. The Hinterlangs had also been in the study area since 1884 but probably lived on Dauphine between Sister and Jourdan.

930 [934] Jourdan. This address was not listed in the 1900 census but was shown on the 1909 Sanborn map as a single shotgun. It is listed as 934 Jourdan in the 1910 census when it was occupied by a white Louisiana-born boat pilot and his wife, born in Ireland.

938 Jourdan. The large structure at 938 Jourdan was not listed in the 1900 census but is shown on the 1909 Sanborn map. It was apparently erected between those dates. In 1910, it was occupied by Annie Brown who was a 34 year old white female, her seven children, and her sister. No one in the household was employed.

1000 Block of Jourdan. This area lies between N. Rampart and St. Claude Streets.

T.J. Semmes School. Much of the west side of Jourdan Avenue between N. Rampart and St. Claude is occupied by the T.J. Semmes School. An inscription on the facade of the present structure exhibits the date 1900. In 1909, the Sanborn map shows the school and indicates that it was heated by hot water, fueled by coal, and lighted by electricity. Behind it and attached to it by an open arcade were two water closets. Two sheds were associated with the school. A rear addition to the school, present now but not in 1909, probably lies over the water closets and out buildings.

1038 Jourdan. The 1909 Sanborn map also depicts a shotgun residence at 1038 Jourdan. On its lake side was an associated wooden outbuilding. The residential structure probably represents the residence for a truck farm which was reduced in size by sale of lands for school construction and residential purposes.

In 1900, Philip Reuther, listed as a truck farmer, resided at 1088 (sic.) Jourdan with his wife, six children, and a mother-in-law named Elizabeth Voland. This may be the 1038 address depicted on the Sanborn. Another discrepancy appears in City Directory listings that show Philip Reuther and Elizabeth Voland as residents of 1004 Jourdan beginning in 1896. Elizabeth Voland's husband was Philip Voland, a gardener residing in the study area from 1882 through his death between 1891 and 1894. The Volands were listed on Jourdan at

the northwest corner of North Rampart. This may be one block south of 1038 Jourdan. Alternatively, it may represent an example of confusion in the Directory listings. Chain of title for this property is important because it is possible that the lot was occupied from 1882 through at least 1900 by various members of a single family.

Interestingly, there was an Andrew Reuther within the study area from 1882 through 1890. The census listed him in 1880 as a resident of Jourdan Avenue, but cross street listings were not obtained for that year. The City Directory indicates that Andrew Reuther lived on Dauphine Street. This is probably Philip's father. Philip Reuther owned the truck farm in 1900. However, by 1910 the structure was occupied by Frank Richard, listed as a white bartender, his wife, and their two young children. Use of the property as a truck farm had, therefore, terminated between 1900 and 1910.

Properties on Sister Street

The property line between the second Ursuline Convent and the Jourdan property lay in the approximate center of present-day Sister Street. The west side of that street is now occupied by the levee associated with the Industrial Canal. However, the east side of the street is still extant.

The 700 Block of Sister. The 1896 Sanborn map indicates that Sister Street was extant only between Royal and Dauphine. This is the present-day 700 block. At that date, there was a dwelling at the corner of Royal, discussed as 4701 Royal (below). Behind it and fronting on Sister Street was a stable. North of the stable were two single residence dwellings, listed as 725 and 727 Sister Street. On the 1909 Sanborn, these two dwellings are shown as 721 and 723 Sister. North of those in 1896 is a paint shop associated with a double shotgun at the corner of Sister and Dauphine. It is discussed as 4700/4702 Dauphine (below).

The 1900 census enumerates two households on Sister Street. They presumably occupy 725 and 727 Sister Street. However, this is uncertain because the census states "address not available." In 1910, only two residences are shown on Sister Street and these are enumerated as 15 and 17 Sister. The locations of the structures themselves may now lie beneath the Industrial Canal levee. However, some archaeological deposits could exist in the portion of the vacant lot on the west

side of the 700 block of Jourdan Avenue. Comparative map data should clarify this issue.

In 1900, Daniel Robertson, a Black float driver, owned one of the residences fronting Sister Street. He lived there with his wife, two sons, and three daughters. The two sons both worked as day laborers. In 1910, Joe Robertson, a Black servant, was the head of household at the Sister Street structures listed as 17 Sister. With him was Ella Robertson, the daughter of Daniel. The City Directory indicates that Daniel Robertson resided at Sister Street by at least 1884 and that he was in the study area by 1882. Chain of title should provide information concerning the exact location of the Robertson residence, which was continuously occupied by the same Black family at least from 1884 through 1910.

The other structure on Sister Street was occupied in 1900 by Ovide Gray, listed as a Black gardener, his wife, and their five children. Two of the daughters worked as cooks, one did house work, and two sons were employed as butchers. Ovide Gray lived in the study area as early as 1889, but he moved out for varying periods of time. The City Directory does indicate, however, that he lived on Sister Street by 1898. In 1910 the second structure on Sister Street, enumerated as 15, was occupied by Steven Alphonese, listed as a Black laborer, his wife who was employed as a wash woman, and five children.

Residential Structures on North Peters Street

Residential structures were present on North Peters Street in 1896 and 1909. Examination of the 1937 Sanborn map and the current USGS quad indicates that any archaeological remains associated with these properties were probably destroyed during construction of the Industrial Canal and associated levee alterations or perhaps lie beneath the levee. Field maps and a comparison with digitized historic maps should result in more precise information concerning this issue.

Residential Properties on the South (Even-Numbered) Side of Chartres Street

The 1909 Sanborn map indicates that residential properties existed on the south side of Chartres Street between Deslonde and Jourdan by that date. However, an examination of the 1937 Sanborn map and the current USGS quad indicates that remains associated with those

structures lie within the Industrial Canal or under its associated levee. Field maps and a comparison with digitized historic maps should result in more precise information concerning this issue.

Households on the North (Odd-Numbered) Side of Chartres Street

The 1896 Sanborn map indicates that Chartres Street was extant between Deslonde and Jourdan. The north, or present-day odd-numbered side, had only one residential structure. It was numbered "B" on that map, and behind it were a shed and a stable. By 1909, the address was depicted as 4825 Chartres. The structure was situated in the approximate center of the block. By 1937 the house had been removed, presumably during Industrial Canal construction. However, the area which the structure and its outbuildings occupied is now a vacant lot, under which may lie archaeological features and/or deposits.

The 1900 census indicates that this structure was owned and occupied by a white saw mill superintendent, Charles Champlin. He lived with his wife and three children. One son was employed as a saw filer, while the other worked as a stenographer. City Directory listings indicate that the Champlins were residing elsewhere on Poland Street prior to 1900. By 1910 the residence was occupied by John A. Spadr, listed as a white bar keeper, his wife, and their four children. One of the sons was a credit manager, and one of the daughters was a public school teacher.

Comparison of the 1896 and 1909 Sanborn maps indicates that several additional structures were erected on the north side of Chartres Street between those dates. Again, the street was extant only from Deslonde to Jourdan. None of these addresses are enumerated in the 1900 census, indicating that structures were erected after that date. The residence at 4833 Chartres near the corner of Deslonde had an associated shed. The residence was occupied by George Marshall who was a white sugar maker and his wife. A double shotgun between 4833 and the older 4825 Chartres, was listed as 4827/4829 Chartres. At 4827 Chartres were Frederick Sielinger who was a white laborer, his wife, and their two daughters. At 4829 were Eugene LaHanier who was a white letter carrier, his wife, and their two children.

This portion of the study area was considerably altered during and subsequent to construction of Industrial Canal. Therefore, careful field measurements combined with precise comparisons with the 1896, 1909, and 1937 Sanborn maps and with the USGS quad will be necessary to determine which properties are likely to have intact associated archaeological deposits and where those are located.

Households on the South (Even-Numbered) Side of Royal Street

4824 Royal. The 4800 block of Royal Street lies between Deslonde and Jourdan. The 1896 Sanborn depicts a single shotgun at 4824 Royal, and it was also illustrated in 1909. In 1900 it was owned and occupied by Jacob Smith, a Black day laborer. He lived there with his wife and eight children, ages 8 to 24. Two daughters were employed doing housework. One son was a broom maker and one was a coal roller. Jacob Smith, his wife, three of their children, and a grandson were still occupying the structure in 1910. Jacob and two of his sons were listed as laborers, and one daughter was employed as a servant. City Directory listings indicate that the Smith family established residence here in 1894 when Jacob is first listed as a laborer on the south side of Royal Street between Jourdan and Deslonde.

4820 Royal. A residential shotgun also stood at 4820 Royal in 1896 and in 1910. In 1900 Henry Livers, a Black teamster, owned and occupied the structure with his family. The latter included his wife, a son, a daughter-in-law, and two grandchildren, as well as a 61-year-old invalid boarder. By 1910, Henry's son Samuel was the head of household. He lived there with his wife and two sons. Samuel was employed as a wagon driver, while one son worked as a laborer and the other as a weigher. Data from the 1880 census and from the City Directory indicate that the Livers family had lived within the study area since 1880. At that time, the census record lists them on Jourdan Avenue. However, placement of households may be only general for that enumeration. From 1883 to 1888, Henry Livers is listed in the City Directory as a laborer on the east side of Jourdan near N. Peter. From 1890 to 1894, Henry Livers is listed intermittently as a resident of the south side of Royal between Jourdan and Deslonde. That address description corresponds with 4820 Royal, and by 1896 the City Directory, in fact lists Henry Livers' address as 4820. This family, then, almost certainly occupied 4820 Royal from 1890 to 1910.

4818 Royal. The 1909 Sanborn map shows a residence at 4818 Royal. It was present in 1896, but no address was presented on that map. In 1900, John Smith, a Black day laborer, rented and occupied the structure with his wife and three young children. City Directory listings indicate that John Smith was residing at 4818 Royal beginning in 1898.

In 1910 4818 Royal was occupied by a Black man, John Cephas, who was born in England and was employed as a weigher. He lived there with his wife, two very young children, and a second married couple whose relationship to Cephas is not specified. Although the 1896 map shows the structure as a double residence, the 1909 map does not. It is possible, nevertheless that it was divided and the second couple, Alfred Bell, listed as a Black laborer, and his wife occupied a separate half from the Cephas family.

The south side of Royal between Jourdan and Sister Street represents the even-numbered portion of the 4700 block. In 1896 and 1909, several residences were located there. However, these and their associated archaeological remains may lie in the Industrial Canal or under the levee. Comparison of field maps with historic maps should provide further locational information for this area.

Households on the North (Odd-Numbered) Side of Royal Street

Structures along the north side of Royal Street between Deslonde and Jourdan fronted those streets and were discussed as 700/702 Deslonde and 701 Jourdan.

4721 Royal. The odd-numbered (north) side of the 4700 block of Royal was located between Jourdan and Sister Street. It no longer exists due to construction of Industrial Canal and modification of associated levees. However, remains associated with a residence shown at 4721 Royal might be located within the vacant lot that now occupies part of that area. It was owned and occupied in 1900 by Mary Warren, a Black wash woman. Mary Hopkins, also a Black wash woman, boarded there. By 1910, Mary Warren was not listed but Mary Hopkins continued to reside there with a Black boarder employed as a laborer. The City Directory indicates that Mary Warren was a widow who had established residence at 4721 Royal by 1898.

Other residences on the north side of the 4700 block of Royal Street were present in 1896 and 1910, and census data are available for these. However, they are not discussed in this text because it is probable they have been severely impacted and/or lie under the levee. A computerized comparison of field maps with historic maps should provide locational information necessary to determine where archaeological deposits associated with these properties might be located.

Households on the South (Even-Numbered) Side of Dauphine Street Between Jourdan and Deslonde

In 1896, only one residence and a connecting store were depicted on the south side of Dauphine Street between Deslonde and Jourdan. However, by the time of the 1900 census enumeration, two households are listed. By 1909, the original residence was either modified or replaced. In addition, four double and two single shotguns had been erected on the block, and the numbering system of the street was changed somewhat. For this reason, 4810 in the 1900 census is not the same location as 4810 in the 1910 census. In 1910, 4810/4812 is one of the new double shotguns.

The remainder of the structures on the south side of this block of Dauphine are a source of confusion. The 1910 census records do not correspond to the 1909 Sanborn map structures in terms of address. Therefore, at present, particular families cannot be assigned to particular addresses and/or structures. Chain of title will be necessary to determine whether this situation can be corrected. For this reason, census data for the post-1900 structures are not discussed in this text.

4804/4806/4810 Dauphine. The 1896 Sanborn map depicts only one residence and an associated store on the south side of Dauphine between Deslonde and Jourdan, at the corner of Jourdan. The residence address is shown as 4804 while the connecting store address is 4808. By 1909, the store is no longer extant, and the structure has either been divided to form a double shotgun or it has been replaced. The 1909 addresses for the double shotgun are 4804/4806 Dauphine. The 1900 census indicates that Stanaford Hopkin, a white candy manufacturer, was residing at 4804 Dauphine with his wife, three sons, and a female boarder/housekeeper. Also present were a brother-in-law and an employee, both working as candy makers. The City Directory indicates

that Hopkin did not establish residency at 4804 Dauphine until 1900. His business address was 510 Bienville Street.

In 1900, 4810 Dauphine is apparently a residential address so that the store may have been removed since 1896 and the initial residential structure either replaced or divided. At 4810 were Samuel Kormick, a white steamboat clerk, his wife, and their four children. The eldest son was employed as a restaurant waiter.

In 1910, census data indicate that at 4806 Dauphine were a white millwright named Isidore Durocher, his wife, and their six children.

4834 [4836] Dauphine was a single shotgun erected after 1896 but prior to 1900. In that census year it was occupied by William T. Inbau who was a saloon-keeper. He lived there with his four children and a female housekeeper. By 1910, the structure was occupied by Frederick Piderson who was employed as a boat steward.

4838 [4840] Dauphine. In 1900 and 1910, this structure was occupied by a white carpenter named Andrew Klees, his wife, and their young child. City Directory listings indicate that Klees lived elsewhere in the neighborhood prior to 1900.

Households on the South (Even-Numbered) Side of Dauphine Street Between Deslonde and Sister

Comparison of the 1896 and the 1909 Sanborn map of this block indicates that the configuration of structures and street addresses changed between those years. Some buildings were replaced or removed. Complicating this problem is the fact that the 1900 and 1910 census records differ from each other and from the two Sanborns in terms of addresses. Therefore, chain of title would be necessary to determine which structures and lots were inhabited by individuals discussed below. None of the structures remain standing. They were moved or destroyed during Industrial Canal construction. However, a vacant lot is present there now, and beneath it may lie archaeological deposits and features.

4736/4734 Dauphine Street. The south side of Dauphine Street between Jourdan and Sister Street represents the even-numbered 4700 block. The 1896 Sanborn map shows a combined store and residence at the

corner of Jourdan. The store address is shown as 4736 while that of the residential half is 4734. The 1900 census record indicates that 4736 Dauphine was occupied by Louis Rippo, listed as a white day laborer, and his wife. His wife was keeping a notions store. The City Directory lists the Rippos only in 1900, and it confirms that Mrs. Rippo was selling notions at 4736 Dauphine. It is probable that the Rippos were actually occupying the residential half of the structure, shown on the 1896 Sanborn as 4734.

In 1900, Pierre Duprat is listed as the owner and resident at 4734 Dauphine. He is listed as a dairy farmer. He lived there with his wife and one son who is listed as the manager of a dairy farm. The City Directory indicates that the Duprats were definitely at this address since at least 1896 and probably by 1894. The 1900 census classifies their residence as a farm, and indicates that they owned it. The structure on the 1896 map at 4726 Dauphine probably represents the Duprat residence because there is a large stable directly behind it.

4722 Dauphine. The 1896 Sanborn map shows two residential structures at this address. The 1900 census indicates that the property was owned by James Fleming who was a Black gardener residing with an adult female and with his nephew who was employed as a day laborer. Fleming was only 20 years of age in 1900. However, the City Directory begins listing a "James Fleming" on Dauphine between Sister and Jourdan in 1882. Also, Ezekiel McKinney is listed in some years as residing there. "McKinney" is the surname of Fleming's nephew in 1900. This property, then, probably represents a location where members of a single Black family resided from 1882 through at least 1900. In 1910, a Black male laborer and his wife, possibly unrelated to the previous occupants, were here.

4710/4712 Dauphine. The 1896 Sanborn map shows a double shotgun at 4710/4712 Dauphine. The census record for 1900 lists only 4710 Dauphine. These may have been the same property. In 1900, Clemens Gardener, a white barber, lived there with his wife and his parents-in-law. He rented the structure.

In 1910, 4710 Dauphine was occupied by a German-born female, her laborer son, and three grandchildren. That same year, 4712 Dauphine was occupied by a white male oiler and his wife.

4704 [4708] Dauphine. The 1896 Sanborn map shows a single residence with associated outbuilding at 4704 Dauphine. The 1900 census apparently listed this address as 4708 Dauphine. Renting it were Alfred Rousseau who was a white day laborer, his wife, two children, and his mother-in-law. The Rousseau family was in the study area by 1881 when Alcide Rousseau was listed in the City Directory on the south side of Dauphine near Jourdan. That description fits the address under discussion. Until 1889, an Alfred Rousseau is listed on the west side of Jourdan, a different location. However, beginning in 1890, Alfred Rousseau is consistently listed on the south side of Dauphine between Sister and Jourdan. When street numbers appear in 1896, he is at 4708 Dauphine. Thus, this family began residing in this structure no later than 1890 and probably by 1881. In 1910, Conrad Gemar who was a white laborer lived here with his wife, daughter, and nephews.

4700/4702 Dauphine. The 1896 Sanborn map lists a structure at the corner of Dauphine and Sister Street as 4700/4702 Dauphine. Behind the residence was an outbuilding labelled as a paint shop. The residence was listed in the 1900 census as 4700, and was occupied by Isidore Jiroux who was a French-born housebuilder. With him were his wife and four adult children. One of the latter was also a housebuilder. The City Directory indicates that this family had resided here since 1881, and they remained present at the time of the 1910 census. The location of this structural complex probably lies beneath the levee associated with the Industrial Canal. Because of the long-term residence by a single family, its location should be confirmed by field measurements.

Households on the North (Odd-Numbered) Side of Dauphine Street

4837/4839 Dauphine. The 4700 block of Dauphine Street lies between Deslonde and Jourdan. At the corner of Deslonde on the north side was a store shown on the 1909 Sanborn as 4837/4839 Dauphine. The 1900 census indicates that Anthony Behr was a German-born grocery proprietor there. He was living with three members of the Voelker family who were listed as boarders. Ms. Voelker, also from Germany, was employed doing housework. Her daughter was serving as a dry goods clerk and her son was employed as a boiler maker. Two other boarders were present, and one of these was a street car motoneer. No City Directory listings were

obtained for the surname "Behr" from 1890 to 1900. However, Anthony Behr was again listed at 4839 Dauphine in the 1910 census. At that time he was a retail merchant, while his wife was a saleslady.

4825/4827 Dauphine. This residential structure is depicted as a double shotgun on the 1909 Sanborn map. The 1900 census lists only 4827 Dauphine. Renting and residing there were Bartholemew Decossas, his wife, and their nine children. The City Directory indicates that Decossas was residing outside the study area prior to 1900. He was employed at the Stock Landing. Two of his adult sons were also blacksmiths, while another was a wheelwright.

In 1910, residents of 4825 Dauphine were Marguerite Dickman, listed as a white female, and her three children, two of whom were employed as servants. At 4827 Dauphine were Charles Huff who was employed as a blacksmith, his wife, and their three adult sons. One son was also a blacksmith, while the other two were a laborer and a shipping clerk. It is interesting that different individuals at 4827 Dauphine in the two census years were both blacksmiths. Also, the 1909 Sanborn depicts a complex series of outbuildings behind the structure. These may represent a small-scale smithing facility.

4821/4823 Dauphine. The 1909 Sanborn map shows this residential structure as a small non-shotgun double. In 1900, census records indicate that Joseph Aylies who was a French-born day laborer, his wife, and their five children rented and resided at 4821 Dauphine. At 4823 were George Bauer, listed as a blacksmith, his wife, and their four children. The Bauers were also renters. George Bauer had a business outside the study area listed as Bauer & Miller. The City Directory indicates that he moved to the residence at 4823 Dauphine by 1898.

By 1910, Henry H. Doerger, a street car conductor, and his wife were listed by the census as occupants of 4823 Dauphine. No information is provided for 4821 Dauphine at that date.

4817 Dauphine. The address is not listed in the 1900 census, suggesting it was built after that date but prior to 1909 when it was depicted as a store on the 1909 Sanborn map. Several outbuildings are depicted in the rear, including a stable. The 1910 census indicates

that Lawrence Ingargiola, a white retail merchant, lived there with his wife who was a saleswoman. Also present were their two children.

4815 Dauphine. This address was not listed in the 1900 census, but is depicted on the 1909 Sanborn, indicating construction between those dates. It is a single residence. In 1910, it was occupied by Marie Meyers, a white female with no occupation listed. She lived there with her seven children, ages twelve to less than one year.

4805 Dauphine. This address is not shown on the 1909 Sanborn map. However, it is enumerated in the 1910 census as the residence of Francis Greene, listed as a British-born college professor, his wife, and their three children.

4801 Dauphine. This structure is depicted on the 1909 Sanborn map as a store at the corner of Jourdan. It was discussed above as 801 Jourdan Avenue.

4737/4739 Dauphine. The 1909 Sanborn depicts this structure as a large store. Behind the store was a stable. In 1900, census records indicate that the property was rented by Frank Hurstell who was listed as a grocery proprietor. The City Directory indicates that he was a grocer at that address in the same year. He was residing with his German-born mother and his sister.

The Hurstells were long-time residents of the study area. However, prior to 1900 they resided at 4710 Dauphine. The senior Hurstell, August, was on the south side of Dauphine between Jourdan and Sister by 1881, and worked as a foreman at the N.O.C.R.R. He died by 1888, when his widow was listed and her address described as the south side of Dauphine between Jourdan and Sister. Her son, Frank, was at that time a bartender at A. Kleine which was a bar at 241 Chartres Street. At one time Frank also worked as a grocery clerk at A. Schewegmann's store at 901 Piety. Apparently Frank Hurstell began selling groceries from and residing at 4737/4739 Dauphine in 1900.

In 1910, 4739 Dauphine was listed as the residence of William T. Inbau, a white hospital inspector. His wife was also present as were three children, one of whom was employed as an apprentice dentist.

4733/4731 Dauphine. The 1909 Sanborn depicts this structure as a double shotgun. It was erected by 1900

because both addresses are listed in that census year. In 1900, 4733 Dauphine was rented by Florans Dirmann, listed as a German-born butcher, his wife, their four children, and his sister. From 1896 to 1898, Dirmann resided at 4507 Marais and worked as a gardener. In 1899, he was selling meat at 816 Jourdan and residing at 4731 Dauphine. In 1900, his City Directory listing is 4733 Dauphine, the same as that in the census records.

In 1910, 4733 Dauphine was rented and occupied by Gardener Clement, listed as a white barber, his wife, their two children, and his mother-in-law.

The 1900 census indicates that John Bollinger, a white butcher, rented and resided in 4731 Dauphine with his wife and their five children. One 20-year old daughter was working as a forelady at a tobacco company. Bollinger lived in the study area from 1887 to 1889, and then again beginning in 1900. Bollinger apparently died between 1900 and 1910. In 1910, his widow still resided at 4731 Dauphine with three sons, a daughter-in-law, and a grandchild. Two of the sons were laborers, while the third was a fireman.

4725 Dauphine. The 1909 Sanborn depicts this structure as a single residence. At the time of the 1900 census, it was occupied by Michael Schwartz, listed as a German-born flour drummer, and his wife. The City Directory indicated, however, that Andrew Klees, a white carpenter, resided here in 1899 and in part of 1900. By the time of the census, Klees owned and lived in 4838 Dauphine. However, Michael Schwartz continued to reside at 4725 Dauphine until at least the 1910 census, when he was working as a salesman.

4713/4715/4719 Dauphine. The 1909 Sanborn map shows that 4719 Dauphine was a stable, while 4713/4715 was a double residence. These structures and other associated outbuildings were part of a large truck farm occupying one-half of a city square. The 1900 census indicates that 4715 Dauphine was the residence of Philip Gemar, a 74-year old gardener from Germany. He was living there with his wife, seven sons (all employed as day laborers), a daughter-in-law, and three grandchildren.

In 1869, Philip Gemar was one of the purchasers of property in the study area. He acquired the north one-half of the square on which his 1900 residence stood. However, the residence and associated outbuildings actually were located on property bought by A. Castaing

in 1869 for the account of E. Dechamps. It appears, then, that Philip Gemar may have increased his land holdings some time after 1869.

In 1871, Philip Gemar was listed as a resident of Dauphine between Sister and Manuel Street. The location of Manuel Street is unknown. However, he was listed in 1875 as a gardener residing on Dauphine near Jourdan, an address description that fits with 4715 Dauphine. The City Directory had no listings for "Gemar" in the study area from 1876 through 1883. In 1884, John Gemar was working as a foreman for Alfred Delavigne. Delavigne at that time was listed as a lumber dealer, although his brick yard business was also listed for some years in the 1880s.

Beginning in 1888, Philip Gemar and various other individuals with the same surname are listed consistently as residents of the north side of Dauphine between Sister and Jourdan, the location of 4715 Dauphine. Thus, it is probable that Philip Gemar and family established residency at that location by 1875, and they were almost certainly there by 1888. Chain of title for this square should help establish the precise period of ownership and possibly of residence.

By 1910, Philip had died and his German-born widow was the head of household. Five adult children and one grandson were also present. The four male children all worked as laborers. It appears, then that the Gemar truck farm became unprofitable at some time between 1900 and 1910.

Households on the South (Even-Numbered) Side of Burgundy

4838 Burgundy. The 4800 block of Burgundy lies between Deslonde and Jourdan. This area was not depicted on the 1896 Sanborn map. However, it is shown on the 1909 Sanborn. A structure at the corner of Deslonde is depicted as a store in that year. Addresses are shown as both 840 Deslonde and 4838 Burgundy. Although neither address is listed in 1910, two families are shown in that census record as residents at "Burgundy and Deslonde." One of these is Charles Luquet, listed as a white streetcar driver, and his wife. Charles Luquet may be a descendant of Andre Luquet, one of the buyers of property in the study area in 1869. In 1910, a George Luquet, also employed by a streetcar company, was residing at 834 Jourdan with an elderly man listed as Andrew Luquet (see 834 Jourdan, above). The other family listed at the corner of

Burgundy and Deslonde in 1910 consisted of a white engineer, his wife, and a young son.

4812 Burgundy. The 1909 Sanborn shows a single residence at this address and on its downriver side is a stable listed as 4826 Burgundy. In 1900, Wallace McLeod, a Black day laborer, was renting and residing here with his wife, daughter, two step-children, and one adult female. Two female residents were employed doing housework. The City Directory indicated that individuals named McLeod were resident in the study area by 1888, and the given names suggest a relationship with Wallace. However, residence for these listings is on Royal Street. In 1897, Henry Smith, a laborer, is shown as residing at 4812 Burgundy. He is probably the same Henry Smith listed in the 1910 census at 820 Deslonde (see 820 Deslonde, above).

In 1910 there are two listings for 4812 Burgundy. One is a 64-year old Black gardener named Paul Levy. With him were his wife who was employed as a wash woman and two adult daughters who were employed as a cook and as a "house girl." The other listing is for a 31-year old Black stableman, also named Paul Levy. He is almost certainly the son of the elder Levy. He lived with his wife who was listed as a midwife.

The 1909 Sanborn map shows no residences on the south side of Burgundy between Deslonde and Sister Street (the 4700 block of Burgundy). Neither the 1900 nor the 1910 census records show addresses for this block, most of which was a part of truck farms facing different streets.

Households on the North (Odd-Numbered) Side of Burgundy

Neither the census records for 1900 and 1910 nor the 1909 Sanborn indicate that any residences had addresses on the north side of Burgundy. Rather, the property was part of truck farms discussed as 901 and 900 Jourdan Avenue (above).

Households on the South (Even-Numbered) Side of N. Rampart

No residences are indicated in the 1900 and 1910 censuses for the south side of N. Rampart between Deslonde and Burgundy. The 1909 Sanborn map shows one small outbuilding in the center of the block. It is associated with the truck farm at 923 Jourdan (above).

4720/4722 N. Rampart. Between Deslonde and Sister Streets, the 1909 Sanborn depicts a double shotgun at 4720/4722 N. Rampart. It was not listed in the 1900 census so the structure was probably erected between 1900 and 1909. In 1910, Lawrence J. Lashely, a white chief clerk, was residing at 4720 N. Rampart with his wife and their two young sons. At 4722 N. Rampart were Eugene Park, his Canadian-born wife, and small daughter.

4700 N. Rampart. This address is shown on the 1909 Sanborn as a single residence at the corner of N. Rampart and Sister Street. It was not enumerated in the 1900 census, suggesting that it was not built until after that date. By 1910, it was occupied by John Norton, employed as a white cashier, his wife, and two children. Also listed at that address were Frederick Earhart who was a white 73-year old, his wife, adult son, and three grandchildren. One of the latter was employed as a telegraph messenger. Earhart's mother-in-law was also resident at that address. In 1900, the Earhart's were residing on the east side of Deslonde at 931.

Households on the North (Odd-Numbered) Side of N. Rampart

4839 N. Rampart. The 1909 Sanborn map depicts a truck farm on the north side of N. Rampart at the corner of Deslonde. Two residences are shown, one as 4839 and the other as 4829 N. Rampart. Also depicted are a stable and several outbuildings. The complex was part of a truck farm extending back to St. Claude. In 1900, it was the residence of a 69 year-old German-born female truck farmer, Susan Nuschler. She lived there with her daughter, three grandchildren, and three employees. The City Directory indicates that she was the widow of Andrew Nuschler who died between 1895 and 1896. Andrew Nuschler was listed as a gardener on North Rampart at the northwest corner of Deslonde by 1882, and his address was consistently described as being at that location until his death. A different branch of the same family had a truck farm at 1035 Deslonde Street during the same period. It lies just outside the area of potential direct impact.

One of the employees at the Nuschler truck farm in 1900 was named George Loheig. The City Directory suggests that he began residing there as early as 1885. In 1910, he is shown as the head of household, probably through marriage to one of Susan's daughters. A nephew named John Nuschler was living there and working as an

oiler, and a boarder was employed as a fireman. George Loheig was listed as a farmer and his wife as a farm hand, indicating that the truck farm was still a viable operation at this date.

4817 N. Rampart. The 1909 Sanborn map depicts a single shotgun at this address. It was present by 1900, for the census of that year enumerated the German-born day laborer, Angeline Ulrich, as a renter at that address. With him were his German-born wife and two children. The City Directory placed Ulrich at 833 Jourdan in 1897, but in 1898 he was at 4835 N. Rampart, and in 1899 at 4817 N. Rampart. The 4835 address is almost certainly 4817, but numbered slightly different.

In 1910, the census places a white laborer named Louis Kathmann, his wife, and their five children at 4817 N. Rampart. Two of his sons were also employed as laborers.

4723 [4711] N. Rampart. The 1909 Sanborn map depicts a single shotgun on the north side of N. Rampart between Jourdan and Sister, and the address is shown as 4723 N. Rampart. In the 1910 census, the listing for 4711 N. Rampart probably represents this structure. Neither 4723 nor 4711 N. Rampart were enumerated in 1900. In 1910, 4711 N. Rampart was inhabited by an elderly white male, Louis Trosclair, who lived there with his wife and three adult sons. The latter were employed as a laborer, a bartender, and a grocery clerk.

4705 [4709] N. Rampart. The 1909 Sanborn depicts a residence and outbuildings occupying one-fourth of the city square and with an address of 4705 N. Rampart. The 1900 census lists the address as 4709 N. Rampart and indicates that it was a farm owned by the German-born Sophie Meister who operated a nursery there. She lived with two adult sons, both employed as garden laborers, and one adult daughter.

The City Directory indicates that the Meister family was at this location since 1881. At that time Louis Meister was listed as a seller of vegetables in the French Market and a resident of North Rampart between Jourdan and Sister. After that, the address is consistently described as the north side of N. Rampart near Sister, which fits with 4705/4709 N. Rampart. Various other Meisters are also listed at this location in the 1880s and 1890s. In 1894, the City Directory lists the Meisters as florists in the French Market, indicating that they were raising flowers in addition to

or in lieu of vegetables. In that same year Sophie is listed as the Widow Louis.

This address is not listed in the 1910 census. Chain of title may provide additional information concerning residence on the property at that date.

The South (Even-Numbered) Side of St. Claude Avenue

4706 St. Claude. The 1909 Sanborn depicts a single residence at 4706 St. Claude, on the south side of the street near Sister. It was not listed in the 1900 census. In 1910 it was occupied by Arthur Haas, employed as a white clerk, his wife and infant son, and two brothers-in-law. Both of these were druggists.

4700 St. Claude. The 1909 Sanborn depicts a single residence at this address. No listing for it was obtained in the 1900 census. In 1910 it was occupied by Valentine Dechet, a 39-year old white gardener. He lived there with his wife, two children, and his German-born father-in-law.

This address and the square in which it is located are important despite failure to obtain a 1900 census listing. Valentine Deckert purchased the square at the 1869 auction. In 1874, "Faltine Deckert" is listed as a driver residing on St. Claude at the northwest corner of Tennessee, while in 1875, he is listed as a gardener residing on St. Claude at the northwest corner of Jourdan. In the 1879 Directory, he is listed as a gardener residing on the south side of Jourdan between North Rampart and St. Claude. It is probable that the individual who purchased the square and who was listed in the 1870s in the City Directory was the father of "Valentine Dechet" in the 1910 census. It is therefore possible that this family maintained continuous residence in the study area from the early 1870s through at least 1910. Chain of title is necessary to confirm that possibility and the precise location.

CHAPTER 10
THE RESEARCH DESIGN

By Herschel A. Franks and Jill-Karen Yakubik

Introduction

The study area lies within Management Unit V as defined by Louisiana's Comprehensive Archaeological Plan (Smith et al. 1983), a document prepared by the Louisiana Division of Archaeology. Twenty-five cultural themes have been identified for the area. Thirteen of these refer to prehistoric lifeways or to protohistoric and historic period Indian groups. The remaining twelve themes deal with the period of historic exploration, colonization, and economic development. The historic period themes which are directly relevant to the project area are "Historic New Orleans" and "Ethnic Enclaves: The Blacks, Acadians, Germans and Other Immigrants" (Smith et al. 1983:95). The Comprehensive Plan states that:

> Beyond the Vieux Carre and prehistoric sites, the city contains a multitude of enclaves, each with a unique and valuable history. The American Sector, Irish Channel, Garden District, Algiers Point, and many other areas provide rich sources of historic archaeological information... (Smith et al. 1983:99).

The Louisiana Division of Archaeology recently sponsored preparation of a document to guide archaeological research within portions of New Orleans. The present study area was not included specifically within those portions of the city. However, some aspects of the document are relevant. It defines "major groups" and "minor groups" in terms of socioeconomic position and activity for the French period, the Spanish period, the antebellum American period, and the postbellum through twentieth century period (Goodwin et al. 1987:80-243).

Groups which are relevant to the present study area are merchants, urban slaves, postbellum Blacks, and Germans. Relevant site types include the major class of "Industrial Sites" under which brickyards are identified as a variety. Also, "Religious Sites" and "Residential Sites" are recognized as important categories within New Orleans (Goodwin et al. 1987:244-289).

This chapter uses those and additional themes and research issues derived from urban archaeological projects in other parts of the country to develop hypotheses which should guide initial archaeological investigations within the study area. Recommendations are made concerning the appropriate level of field and laboratory investigations necessary to determine whether significant archaeological resources, as defined by Criterion D (National Park Service 1982:28-33), are present. The level of effort proposed is also sufficient to determine whether or not archaeological remains exhibit integrity as defined by NRHP guidelines (National Park Service 1982:33).

Research to Date

Summary of Archival Methods to Date. Chapters 7, 8, and 9 of this report presented detailed information derived from primary and secondary source documents. These have provided a history of land use within the project area since ca. 1720. Based on that history, archaeological expectations are developed in this chapter for the various periods.

Summary of Field Metnods to Date. In the course of preparation of this research design, neither excavations nor surface collections have been undertaken. However, portions of the project area, defined as high probability areas for location of historic archaeological resources on the basis of archival research, were examined. The examination consisted of driving or walking through those areas. Surface scatters of historic ceramics and glass artifacts were noted but not collected at two locations. One of these was in the southernmost garden at the foot of Jourdan Avenue and on the west side of that street. The other was in the square bounded by Sister, Marais, Jourdan, and St. Claude.

Recommended Level of Effort

It is recommended that a "Level II Intensive Field Survey" as defined by the Cultural Resources Code of Louisiana (Louisiana Division of Archaeology 1980:18-19) be undertaken within areas subject to impact that might adversely effect archaeological resources:

> This level of investigation involves a complete, thorough, on-the-ground survey and testing of an area sufficient to determine the number and extent of the resources present;

> their cultural and scientific importance; and a comprehensive plan for preserving, recovering, or otherwise mitigating adverse effects on them (Louisiana Division of Archaeology 1980:18).

Some aspects of this level of effort are largely completed. For instance, "...an intensive and extensive literature and records review and evaluation..." (Louisiana Division of Archaeology 1980:18) has been done in the course of preparing this research design. Additional research should consist of only supplemental archival research necessary to support archaeological field investigations.

The proposed level of effort would make use of systematic shovel tests in selected areas and augmentation of shovel tests through the use of augers or post-hole diggers (Louisiana Division of Archaeology 1980:18). Also, hand units are recommended in some areas. Specific areas recommended for use of these methods are outlined below and their locations indicated on the map in Figure 22.

As part of the proposed level of effort, a field map of the study area should be produced. "The first phase additionally consists of recording extant above ground cultural resources (districts, buildings, objects and sites" (Louisiana Division of Archaeology 1980:19). At present, a large number of residential structures are present within the study area (Figure 22). Acquisition of field measurements concerning the precise locations of all of these would be prohibitive. Therefore, it is recommended that at this stage of investigations, only structures associated with lots in which excavations are conducted be mapped. Use of CAD and other computer map programs will allow comparisons between the field map, historic maps, and current maps of the area such as the Sanborn or City Planning Commission maps.

The proposed effort includes

> Limited test excavations at known archaeological sites... where additional information is required to support either: (a) eligibility determinations for the National or State Registers, or (b) feasibility and methodological appraisals to be used in mitigation (Louisiana Division of Archaeology 1980:19).

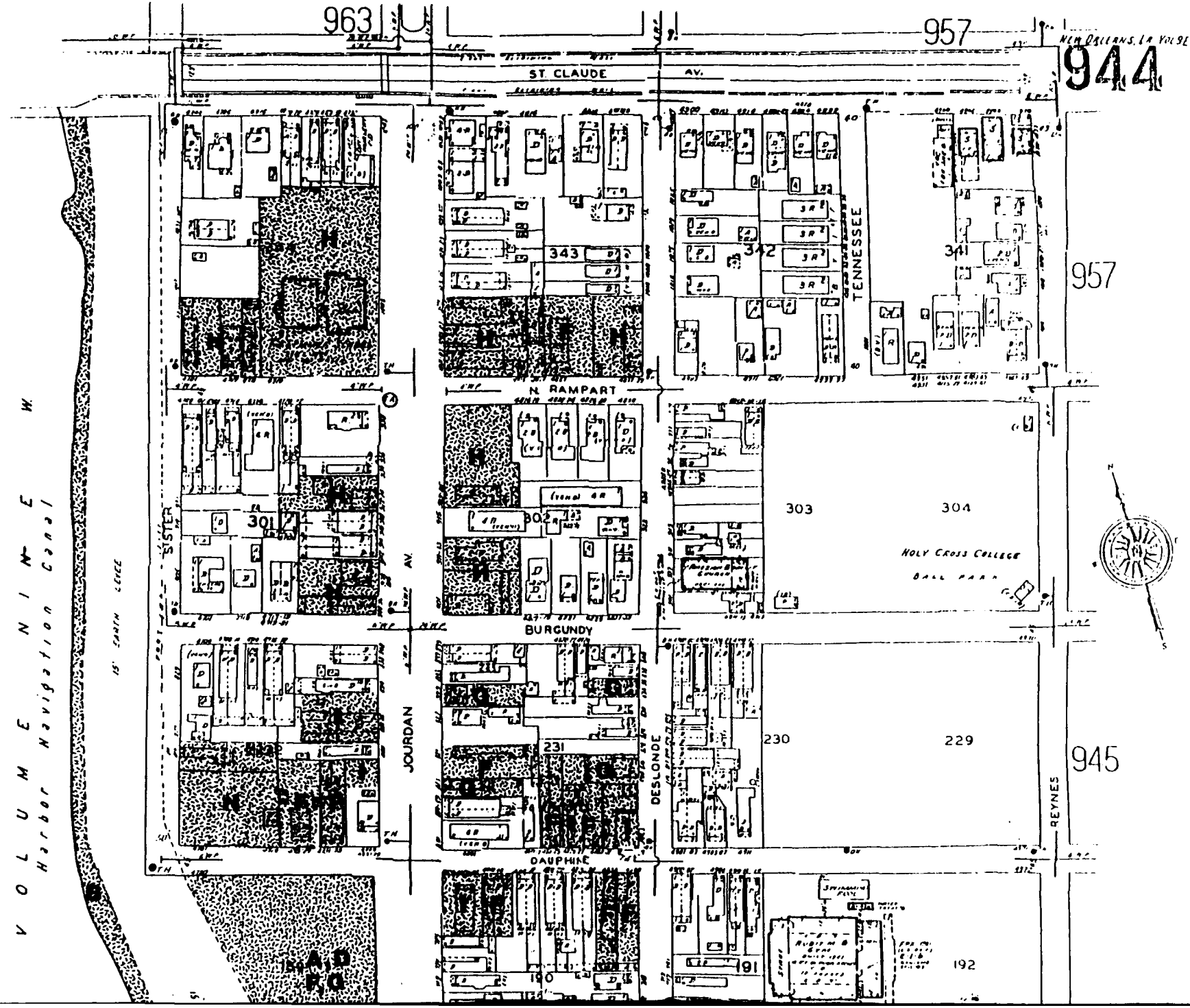
Those limited test excavations should consist of units (1 x 1 m, 1 x 2 m, or 2 x 2 m) and feature excavations. Mechanical excavation is not recommended at the present time because of the presence of occupied residences and because such activity within vacant lots might attract the attention of pothunters.

The recommended level of effort incorporates some aspects of a "Level I Assessment and Preliminary Field Survey" as defined by the Cultural Resources Code of Louisiana (Louisiana Division of Archaeology 1980:17-18). That document indicates that

> On-the-ground inspection based on probability sampling procedures is requisite to this level of cultural resource studies... If less than full coverage, the size of the survey sample will be predicted on previously accumulated knowledge of the total survey area and must be justified in writing by the Principal Investigator (Louisiana Division of Archaeology 1980:18).

A combined Level I and Level II approach, as defined by the Louisiana Division of Archaeology (1980), is recommended because archival research and reconnaissance level inspection of the study area indicate that the probability of locating archaeological remains is one hundred percent. Field investigations are necessary primarily to determine the nature of those remains (e.g. are there deposits present that pre-date the late nineteenth century?). Field investigations are also necessary to assess the integrity and research potential of the deposits present.

At present, the portion of the study area defined as "high probability" is associated mainly with residences. If the effort recommended in this chapter is undertaken while those residences are occupied, a "sample area" (Louisiana Division of Archaeology 1980:18) will be sufficient to obtain information concerning the extent and integrity of deposits. For instance, this chapter identifies particular lots associated with late-nineteenth and early-twentieth century residents. As these are sampled, information will be obtained concerning the general extent of subsequent disturbance and about the number of features that might be expected to occur within other, similar lots should mitigation efforts be necessary.


963
957
944
ST. CLAUDE AV.
NEW ORLEANS, LA. VOL 9E
N. RAMPART
TENNESSEE
343
342
341
957
303
304
HOLY CROSS COLLEGE
BALL PARK
301
302
BURGUNDY
SISTER
JOURDAN AV.
231
DESLONDE
230
229
945
REYNES
DAUPHINE
191
192
VOLUME NINE W
Harbor Navigation Canal

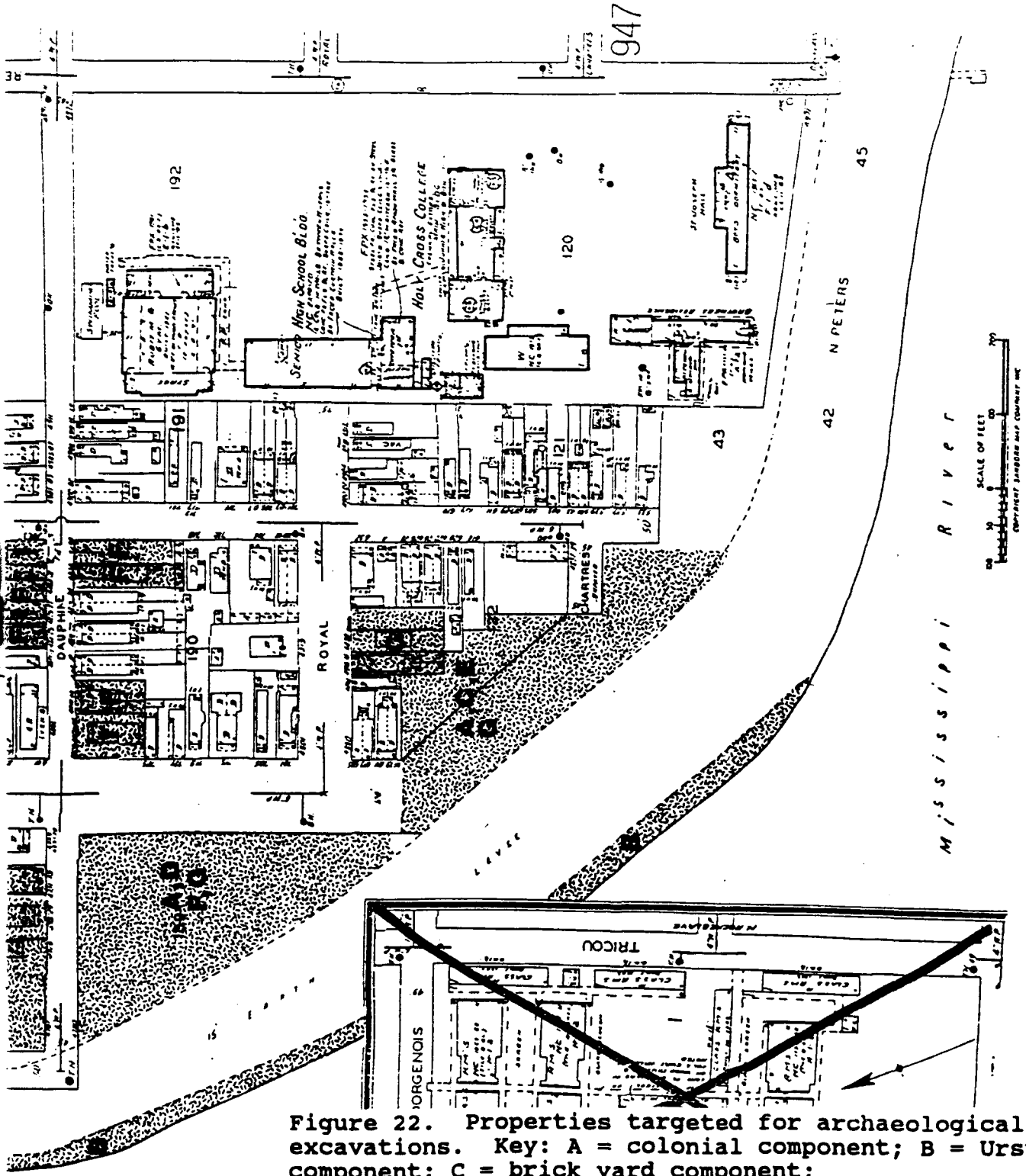


Figure 22. Properties targeted for archaeological test excavations. Key: A = colonial component; B = Ursuline component; C = brick yard component; D = Deslonde/Delavigne house complex; E = slave component; F = white residences; G = Black residences; H = truck farms; I = commercial properties

A Prehistoric Component

Previous archaeological investigations within urban New Orleans (Chapter 6) have not identified prehistoric sites. Known prehistoric sites in the vicinity of New Orleans are almost all located in marsh areas. The density of prehistoric sites along the natural levee associated with the presently active channel is low, and sites that predate that channel are deeply buried (Chapter 2). For these reasons, the project corridor (Figure 1) is considered a low probability area for the occurrence of prehistoric archaeological resources. Therefore, investigations specifically designed to locate such sites are not recommended.

However, if such a site is located in the course of excavations recommended below, its integrity and significance should be assessed. Also, should the contemplated construction take place within the corridor, then crews associated with heavy machinery and extensive earth-moving should be alerted to the possibility of encountering buried prehistoric remains and the necessity for an archaeological assessment of such remains.

The Colonial Period Component

Chapters 7 and 8 presented data concerning the owners of the study area during the French and Spanish colonial periods (ca. 1721 to 1803). Numbers of slaves and probable agricultural activity were discussed therein. No maps are extant to enable a prediction as to the precise location of archaeological remains dated to that period. However, previous research in the vicinity of New Orleans indicates that early occupations were generally quite close to the river.

Although the river bankline is relatively stable in this area (Chapter 2), construction of the Industrial Canal and associated levee alterations may have destroyed early historic period remains. Therefore, specific archaeological excavations to locate a colonial component are not recommended with the exception of shovel tests and units within two vacant lots at the foot of Jourdan Avenue (Figure 22). Also, as outlined below, extensive investigations in areas associated with later components are recommended. Should an earlier component be identified in the course of these other investigations, then its integrity and significance should be assessed.

The Second Ursuline Convent Component

The 1909 Sanborn map indicates that buildings associated with the second Ursuline Convent were located south of Dauphine Street and west of Sister Street. Comparison of the 1909 and 1937 Sanborn map indicates that the area now lies within the Industrial Canal. These map data should be confirmed by an accurate field map which should then be scaled to and compared with the Sanborn series.

Also, systematic shovel tests should be excavated on the batture on the west side of the eastern levee associated with the Industrial Canal (Figure 22). Although the residential portion of the Ursuline Convent was located riverward of Dauphine Street, it is recommended that these shovel tests be continued back to St. Claude to insure that one hundred percent coverage is obtained. Also, auger tests or post-hole excavations should be placed riverward of Dauphine in this area to insure that coverage is sufficiently deep to account for post-occupation deposition.

Comparison of present-day and historic maps should include a focus on the area adjacent to the river on the west side of the Industrial Canal where a "toe" of land extends outward in a southeasterly direction (Figure 1). If computerized map comparisons indicate that this area if associated with the Ursuline Convent and if this area is subject to direct impact due to contemplated construction, then systematic shovel and auger tests should be excavated there.

If this recommended level of effort does not result in recovery of remains associated with the second Ursuline Convent, then no further effort is recommended.

The Brick Yard Component

Chapter 7 presented evidence that a brick yard was present in the study area by ca. 1820. Chapter 8 described the configuration of that industrial complex for the years 1835 and 1869. City Directory listings indicate that it was in use through at least part of the 1880s.

Figure 19 is an 1869 plat that shows the locations of brick yard facilities in that year. The portion of the complex west of Deslonde Street lies within the area of projected direct impact. Within that area stood two kilns, one of the pug mills or mixing pits, and several

drying sheds. Comparison of the 1869 plat with the 1937 Sanborn map suggests that subsurface features associated with one of the kilns and several of the drying sheds may be located between Royal and Chartres and in the small vacant lot riverward of Chartres (Figure 22). Also, the remains of one of the pug mills or mixing pits may be located there.

Charles T. Davis in 1889 related his observations concerning how raw materials were obtained for the production of bricks in New Orleans:

> The clay and sand used in making bricks in New Orleans, Louisiana, are taken from the banks of the Mississippi River, where they are deposited during high water stage between the months of January and June, after which time the river falls low enough to be confined within its own bed, when a year's supply of material is excavated, and deposited in a place of safety within the levees, so as to prevent it being washed away again by the next year's high water (Davis 1889:93).

The clay was processed and tempered in either a pug mill or a ring pit. Pug mills were generally semicircular pits four feet deep, and were lined with bricks. At the bottom were wedge-shaped planks. A horse was used to turn the devices that mixed and tempered the clay (Davis 1889:143-148).

Ring pits were similar, but they were generally larger than pug mills. The 1869 inventory mentions "pits," perhaps suggesting that ring pits rather than pug mills were present in the study area. Ring pits were twenty feet in diameter and two feet deep. They were lined with bricks, and the floor was made of wedge planks. A pit of this size would hold sufficient clay to produce 14,000 bricks. A pedestal in the center held machinery that worked the tempering wheel. Power was generally by horse, although by the 1880s, steam engines began to be used in some areas. In either case, sheds were erected to cover the machinery (Davis 1889:149). In 1835, round buildings were described as part of the Jourdan brick yard.

After tempering in the pug mill or ring pit, the clay was ready for moulding. This was done by hand through most of the nineteenth century. After moulding, bricks were stacked in a special configuration within the drying sheds. Bricks in the drying shed were

periodically rotated. Drying sheds were usually 28 feet wide between outside posts. They had low sides due to a pitched roof. The ends of the sheds were closed with boards, but the sides were left open to allow air to circulate over the bricks. Bricks remained in the sheds for two or three weeks except during rainy weather when drying took longer (Davis 1889:130-135).

The next step was stacking of the bricks in a kiln. This was generally done by a "setting gang" consisting of five men who were expected to move 20,000 bricks per day. The foreman of this gang was responsible for correct stacking of the bricks within the kiln. A small kiln could hold 160,000 bricks, while a large one might hold up to 500,000. Coal or wood was used to fire the kiln. Smoke and steam rising from the top of the kiln were monitored; they provided information about the state of the bricks and whether the fire should be modified. After several days the kiln was opened, and the bricks were cooled and removed (Davis 1889:135-140).

Archaeological test investigations are recommended for the portion of the Jourdan Brick Yard within the area of direct impact. Initially, systematic shovel tests should be excavated at five meter intervals within the vacant lots south of Royal and at the foot of Jourdan Avenue (Figure 22). If shovel tests yield artifacts or features that appear to be associated with the brick yard, then hand excavation units are recommended to obtain data concerning the nature and integrity of suspected remains.

Significant features, i.e. features that could contribute to our understanding of history (National Park Service 1982:29-33), are likely to be associated with either the pug mills, ring pits, or kilns. Should these be encountered, then a research design for data recovery should be prepared. Data recovery should be designed (1) to determine the size of kilns in use and (2) to determine the size of the "pits" and determine whether these were ring pits or pug mills. Remains of the drying sheds should consist primarily of post molds. If these are encountered, configurations and extent should be described. However, this is of lesser importance than examination of the kilns and pits because archival data describe the size and number of the various drying sheds formerly present.

The sizes of the kilns and pits are important, because an extensive nineteenth century literature exists that relates those sizes to the number of bricks

that could be produced. Further, nineteenth century brick-making was highly standardized. The labor force was divided into gangs, and the size and number of gangs were related to the size and number of kilns, pits, etc. Thus, limited archaeological investigations to locate and describe these features of the Jourdan facility would allow computation of its production capacity. This should provide a basis for understanding the number of slaves on the property prior to the Civil War and for understanding the variability in slave population as evidenced by succession and census records. Again, if the excavations recommended in this chapter indicate that brick yard features are present and that they exhibit integrity, excavation of those features should be included in a research design to guide data recovery.

The Deslonde-Delavigne Residential Complex Component

Chapter 8 presented data concerning the Deslonde-Delavigne great house and associated outbuildings. Locations of those structures are illustrated on an 1869 plat (Figure 19). Comparison of that plat with the 1937 Sanborn map suggests that remains of the great house lie within the Industrial Canal. Some material could conceivably lie beneath the present fifteen-foot earth levee.

A precise field map should provide more information concerning the former location of this complex relative to the present-day configuration of land. The field map should be scaled to and compared with the Sanborn series to confirm the suspected location of the great house complex. Also, shovel tests at five meter intervals within the vacant lots at the foot of Jourdan Avenue (Figure 22) should be excavated to "ground truth" the map data. If early- or mid-nineteenth century archaeological material is recovered in this area, then further excavation should be undertaken to determine the nature, extent, and integrity of deposits. This should be done through excavation of hand units (1 x 1 m, 1 x 2 m, or 2 x 2 m). Mechanical excavations are not recommended here because they might attract the attention of pothunters. Rather, if early- or mid-nineteenth-century remains are encountered, a program for data recovery should be developed that incorporates mechanical excavation techniques.

An Urban Slave Component

Chapter 8 presented evidence of a slave population associated with the Jourdan Brick Yard. In 1834, Zimpel

(Figure 18) depicted nine structures in three rows that probably represent the quarters complex when approximately fifty slaves were present. This complex was east of the lane that would become Jourdan Avenue. He also depicted a series of structures along the west side of the lane that would become Jourdan Avenue. These structures may have housed either slaves or tenants. At a slightly later date, there were over 100 slaves resident on the property.

Comparison of Zimpel with the 1869 plat (Figure 19) suggests that the 1834 quarters complex may lie within the square bounded by Royal, Deslonde, Chartres, and Jourdan. This should be confirmed by preparation of an accurate field map which can be compared with historic maps. Part of that square is now vacant, while the remainder has standing structures dated to the late nineteenth century. Shovel tests are recommended within that area (Figure 22) to determine whether remains associated with antebellum quarters complexes are present. If suspected quarters remains are encountered, then hand units (1 x 1 m, 1 x 2 m, or 2 x 2 m) should be excavated to assess the integrity of those remains. Again, mechanical excavation is not recommended at present because it might attract the attention of pothunters.

Remains of this quarters complex would be highly significant. As noted above, the Jourdans were major slave holders in Orleans Parish, and their slave labor force was engaged in industrial production. Such complexes have been rarely investigated. Also, Chapter 8 presented evidence that the historic record concerning urban slavery is scanty. If the proposed effort results in recovery of archaeological deposits with integrity and related to the slave quarters, then a data recovery plan should be developed. That plan should incorporate the use of mechanical excavation techniques.

It is likely that a cemetery was present on the property for burial of slaves. Barthelemy Jourdan's burial in St. Louis Cemetery No. 1 is documented, and it is likely that the other "masters" were buried in city cemeteries. However, the slave population was large, and Chapter 8 indicates that when inventories were conducted, none of the slaves were above age 48. This suggests a high mortality rate. No evidence exists concerning the location of a slave cemetery. Therefore, excavations solely to locate the anticipated cemetery are not recommended. Rather, all members of archaeological and construction field crews should be

aware of its possible presence. If evidence suggestive of a cemetery is recovered, then its presence should be confirmed and a plan for preservation or data recovery developed. (See Yakubik et al. 1986 for relevant research issues.)

The Late-Nineteenth and Early-Twentieth-Century Component

Chapters 7, 8, and 9 have presented extensive data concerning subdivision of the Jourdan holdings in 1869 and subsequent use of the property for truck farms, residences, and combined commercial/residential establishments. Many structures associated with post-1869 residence in the area are still standing. Also, the Sanborn maps of 1896 and 1909 depict many of the structures. Census data have been correlated with the maps in Chapter 9. The period under discussion has become a recent focus of archaeological investigations (see Castille et al. 1986 and Dickens 1982).

The late nineteenth/early twentieth century component of the study area may be relatively undisturbed. More recent construction consists of houses on piers and a few dwellings on cement slabs.

These remains are potentially significant because they have the potential to further our understanding of the relationship between material culture and class distinctions, ethnic differences, and racial differences during this period. Also, many occupants of the study area were Freedmen about whom the documentary record is almost entirely silent (see Singleton 1985 and Yakubik et al. 1987). Further, Chapter 9 presented evidence concerning the diverse labor categories represented in the area. While many were day laborers, others were skilled craftsmen or were engaged in cottage industry. Such diversity within a neighborhood on the periphery of New Orleans has not been examined by either archaeologists or historians. Finally, residences associated with truck farms in the vicinity of New Orleans have never been examined, nor have they been extensively treated in the documentary record. Hypotheses related to residential, commercial, and truck farm lots, and lots targeted for investigations, are outlined below.

A first step for archaeological investigations of this component is execution of a precise field map. That map should then be compared with the various historic period maps of the area. Selected residential

households should then be investigated through the use of shovel tests, auger tests, hand units, and feature excavations. For the late nineteenth and early twentieth century, a "residential component" should be defined as a residential structure, associated outbuildings or other features, and the lot (generally legally defined) on which these are situated.

"Artifact Patterning" for the Late-Nineteenth and Early-Twentieth-Century Component

The first research issue to be addressed for the late nineteenth and early twentieth century is whether or not there are differences between types of households defined below. In order to achieve that goal, an appropriate typological classificatory system must be established. Rote examination of artifact patterning of various functional categories is not recommended. Orser (1989) recently has discussed the inappropriateness of this technique for plantation assemblages, but his criticisms of the overuse of the method are valid for any historic archaeological investigation. That is, the technique is synchronic in perspective and it does not address social and economic interrelationships. In addition, the plethora of modifications to this method have made intersite comparisons, in many cases, problematic if not impossible, thus compromising what is perhaps the most useful aspect of the technique.

This should not suggest that no consideration be given to the functional aspects of the collections. Rather, the researcher should look in a flexible manner for differences in the assemblages that may reflect behavior and economic status. For example, it may become apparent that bottles formerly containing different categories of beverages are not randomly distributed among the assemblages of the various classificatory groups. These differences should then receive special consideration, and historical and behavioral explanations of the differences should be sought. A rigorous and thorough description of the artifacts in all cases will simplify this process, and serve to preclude the necessity of reexamination of assemblages if certain differences become apparent late in analysis.

Castille et al. (1986) took an appropriate first step by abandoning South's (1977) system designed to elucidate "patterns" in the historic archaeological record (see also Orser 1988). Comparisons of "functional categories" that are too broadly defined are

likely to obscure intra-category differences between households. Also, explanations for perceived "patterns" are difficult, if not impossible, to test. For instance, use of South's (1977) functional categories resulted in definition of a "frontier pattern" in rural parts of the Southeast. However, that same "pattern" has been observed on sugar plantations in Louisiana and at urban sites in New Orleans. It may reflect changing patterns of consumption through the nineteenth century rather than an adaptation of pre-existing lifeways to a particular geographic region or environment (Castille et al. 1986). At present, neither the analytic tools nor the data base exists to determine which, if either, explanation is correct.

Nevertheless, artifacts must be sorted if meaning is to be derived from the archaeological record. The framework proposed here is in many aspects comparable to that used by Castille (et al. 1986; see also Chapter 6) for a different New Orleans neighborhood. The similarity between the approaches should facilitate comparisons with collections derived from that work. In addition, use of the analytical units proposed here, which are more tightly defined than those presented by South (1977), allows comparison through collapse of the categories to collections reported using South's system.

Artifacts may be broadly classified into two groups: those that reflect consumption and those that reflect production. Consumption may then be broken down into a series of sub-categories. These are (1) architecture; (2) articles reflecting food consumption; (3) articles reflecting beverage consumption; (4) clothing; (5) articles reflecting fuel consumption; (6) articles reflecting the use of medicines; (7) articles reflecting personal hygiene activities; (8) articles reflecting leisure activities; and (9) the ubiquitous "other" category.

Architecture. In the late nineteenth and early twentieth century component of the present study area, residential architecture was almost entirely wood-frame. Residential structures can be most simply classified as single or double and as shotgun or other. Floor space can also be ascertained for the structures. A combined approach is recommended that utilizes the 1896, 1909, and 1937 Sanborn maps as well as historic standing structures still present. Privy construction, cistern base construction, and the size and nature of outbuildings are other aspects of architectural analysis that should be pursued. Use of this approach will

provide simple but clear evidence concerning differences between households. Further, the approach is replicable so that comparable results could be obtained in other neighborhoods, whether in New Orleans or elsewhere.

Artifacts Reflecting Food Consumption. The category reflecting food consumption subsumes several sub-behaviors. These are acquisition, preparation, preservation, and presentation. Information concerning the expression of those sub-behaviors by a particular household can be obtained through artifact comparisons. The classificatory system proposed here is designed to enable those comparisons.

An initial breakdown of artifacts related to food consumption consists of (a) actual dietary refuse, i.e. faunal and floral remains; (b) ceramics; (c) glass; and (d) metal. Faunal and floral remains should directly reflect the dietary habits of a particular household, and these should be classified at the lowest possible taxonomic level. Faunal and floral remains should reflect acquisition (e.g. domestic vs feral) and preparation (e.g. roasts vs stews, butchering techniques).

Several sub-categories should be used for ceramic artifacts related to food consumption. The first of these is tableware which is related both to presentation and to items consumed. Tableware should be analyzed according to ceramic type (below), decorative style, and vessel shape. The former two are related to presentation, while the latter may provide information on items consumed (see Otto's 1977 comparison of hollow wares and flatwares).

The second major sub-category for ceramic artifacts reflecting food consumption consists of vessels related to food preparation. These would include mixing bowls and similar items. Finally, storage vessels should be considered as a third sub-category because they reflect preservation. Like tablewares, preparation and storage vessels should be described according to type, shape, and size whenever possible.

Glass related to food consumption will consist primarily of either tableware or storage (canning) jars. The former are related to presentation, while the latter could provide information on food acquisition and preservation.

Metal related to food consumption will consist of cutlery, tableware, tin cans, pots and pans, and stoves. Cutlery and metal tableware should reflect food preparation and presentation. Tin cans are likely to reflect acquisition. Pots and pans and stoves are a direct reflection of preparation.

Artifacts Reflecting Beverage Consumption. The primary sub-categories of this class of artifacts are ceramic and glass. The size, shape, and type of a ceramic beverage container generally reflect its contents, thereby providing information on beverage consumption. The same is true for bottles. The latter may contain alcoholic or non-alcoholic beverages. Alcoholic beverages may be either beer, wine, liquor, or cordials. Beverage consumption is likely to have differed between households, and beverage containers should provide data elucidating those differences.

Artifacts Reflecting Consumption of Medicines. Intake of medicines is a ubiquitous human behavior. By the late nineteenth century, it is probable that most medicines were obtained from commercial sources. These were contained in either ceramic or glass vessels, and this should be the first level of sub-categorization. Ceramic medicine containers were likely to have held ointments and salves, the use of which may have differed between households. Castille et al. (1986) proposed a dichotomy for glass medicine bottles, consisting of either patent medicine bottles or of pharmaceutical medicine bottles. The dichotomy is a useful one as it is likely to reflect the frequency of physician/druggist consultations vs. reliance on self-prescribed, over-the-counter concoctions.

Artifacts Reflecting Personal Hygiene. Artifacts related to personal hygiene should be initially classified as ceramic, glass, and "other." Ceramic artifacts will include cosmetic containers, chamber pots, and dresser sets. Glass artifacts will include perfume and cosmetic containers. The "other" category includes specific, functional items such as toothbrushes and combs. Items in the "other" category should be further classified according to the nature of the material from which they were made. For instance, a toothbrush or comb might be made of wood, bone, or ivory and the difference is likely related to cost.

Clothing. An eclectic approach to classification of artifacts derived from clothing is proposed. Three sub-categories are based on materials, while the fourth

is a functional type. The categories are fabric, leather, metal, and buttons. Fabric is unlikely to be preserved, but when it is, it should be described according to type (e.g. silk, cotton), color, and pattern if any. Metal clothing artifacts are likely to be either eyehooks, zippers, or buckles. Leather clothing will be either shoes or belts. Buttons are considered a separate category, because they serve a single functional purpose, but unlike other clothing artifacts they are made from a variety of substances. Thus buttons should be further described according to material (e.g. bone, ceramic) and other attributes (e.g. four-holed, ribbed).

Artifacts Related to Leisure Activities. Artifacts in this broad category should reflect the nature of leisure activities pursued by various householders. Castille et al. (1986) discuss such artifacts that derive from the activities of adults. Few of these, with the exception of smoking pipes, are anticipated in the archaeological record. However, children's toys are commonly recovered. These should be described by type (e.g. marbles, dolls) and by material (e.g. ceramic, stone, or glass marble).

Artifacts Related to Fuel Consumption. This category should consist primarily of coal, heating stove parts, or implements related to fireplaces. Coal should be weighed in the field rather than collected.

"Other" Artifacts Associated with Consumption. This is a catch-all category for artifacts that are recovered in small quantities from archaeological sites and that do not fit in any of the above categories.

Artifacts Associated with Production. The brick yard component of the study area was discussed above. Because it probably reached its final configuration in the antebellum period (Chapter 8), it is not reconsidered here.

Artifacts associated with production in the late nineteenth century component of this area are expected to include farm implements, articles related to animal husbandry, and articles related to cottage industries (e.g. smithing, baking, candy-making).

Ceramic Classification and Analysis for the Late-Nineteenth and Early-Twentieth Century Component

Analysis of Ceramic Body Type. Analysis of late-nineteenth and early-twentieth-century ceramic tableware is complicated by the wide variety of non-vitreous and semi-vitreous white earthenwares produced during this period and marketed under names such as ironstone, stone china, white granite, semi-porcelain, and opaque porcelain. At present, the implications of technological distinctions in terms of place of manufacture and ceramic chronology are unknown (Majewski and O'Brien 1987:129-131). Thus, it is unlikely that time-consuming, fine typological divisions between late-nineteenth and early-twentieth-century non-vitreous and semi-vitreous white earthenwares will provide useful information for the proposed study in terms of either ceramic marketing or temporal control.

Instead, it is suggested that the majority of non-vitreous and semi-vitreous late-nineteenth and early-twentieth-century white earthenwares may be grouped as "refined white earthenwares" and that individual types may be distinguished on the basis of decoration (below). The one exception to this general group is "classic ironstone," which was popular from ca. 1850 until the end of the nineteenth century (Henry and Garrow 1982:300, 466) and is therefore useful for chronological purposes. Classic ironstone is defined here as a heavy bodied, semi-vitreous white earthenware which exhibits a bluish-grey cast and is undecorated or decorated only with molded oblong, geometric, or foliate patterns. Division of non-vitreous and semi-vitreous earthenwares into the categories "refined white earthenware" and "classic ironstone" has the advantage of simplifying classification but will not result in the loss of important chronological or behavioral data.

Two other major categories of ceramic tableware expected from the late-nineteenth/early-twentieth-century contexts within the study area are porcelains and porcelaneous stoneware (hotel china). Both of these should be identified by the ceramic classification utilized in the proposed study. While the former has little utility for chronological purposes, the status implications of relatively inexpensive, late-nineteenth/early-twentieth-century porcelain relative to other white tablewares warrants further investigation (cf. Castille et al. 1986:7/13).

By contrast, porcelaneous stoneware or hotel china may be useful for chronological control, since it was not introduced until the 1880s and may not have been marketed for domestic use until the twentieth century (Majewski and O'Brien 1987:124; Henry and Garrow 1982:466). Again, individual types of both porcelain and porcelaneous stoneware should be distinguished on the basis of decoration.

Utilitarian ceramics (e.g. stoneware, yellowware, brownware) should be classified utilizing a typology which accounts for ware type and surface treatment, such as the paradigmatic classification presented by Yakubik (1990:125-127). This will often provide functional information in the absence of complete vessels, and thus will facilitate functional analyses.

Analysis of Tableware Decoration. Because decoration of late-nineteenth/early-twentieth-century vessels frequently consisted of floral sprays or garlands that edged the vessels, and because undecorated body sherds do not necessarily indicate that the entire vessel was undecorated, body and rim sherds should be separated for analytical purposes. Decorative types of each should then be tabulated. In this manner, a preponderance of undecorated body sherds will not obscure data provided by a lesser amount of decorated rims.

Decorative techniques that should be considered for tablewares include embossing (relief), transfer-printing, gilding, hand-painting, and decaling. Because these methods frequently were utilized in combination, it is recommended that a hierarchical taxonomy such as that presented by Majewski and O'Brien (1987) be utilized to describe the individual decorative types. Their taxonomy considers the stages within the ceramic manufacturing process at which the decision to employ a particular decoration was made. For example, the initial decision is to decorate the vessel or not. The next decision is to modify the surface using relief (embossing) or to leave it unmodified. Subsequently, additional decoration (e.g. transfer-printing, decaling) is chosen (Majewski and O'Brien 1987:135-138).

Ceramic Pricing. The economic/status implications of ceramic tableware decoration have received wide attention since the presentation of Miller's (1980) economic scale. While researchers generally have achieved good results utilizing this scale in contexts dating to the first half of the nineteenth century,

problems arise when dealing with late-nineteenth-century assemblages comprised almost exclusively of undecorated ironstones (Yakubik in Jones 1990). Miller's data are incomplete after 1870 and end in 1881, but the examination of retail prices for late-nineteenth and early-twentieth-century ceramics indicate pricing continued to be related to decoration (Majewski and O'Brien 1987:133). Unfortunately, no easily and generally applicable scale has been developed from ceramic price lists of the late-nineteenth/early-twentieth century. For example, Henry and Garrow (1982:322-327) have presented index values for cups and saucers, plates, and bowls based on Montgomery Ward and Sears, Roebuck catalogues dating from 1895 to 1927. They provided four separate charts of index values: one each for 1895/1897 and 1900/1909, and two charts for 1927. Decorative methods utilized in scaling vary among these charts other than that undecorated ceramics are in all cases the least expensive.

The present study area provides a context in which to examine the economic/status implications of ceramic tableware decoration in the late-nineteenth/early-twentieth-century. Archival data provide good control of the socioeconomic standing of the occupants of various properties (Chapter 9 and below). Ceramic information from households of known socioeconomic levels may provide clues to the decorative (as well as ceramic body) categories relevant to economic/status investigations. In short, the archaeological record might serve to focus archival investigations of ceramic pricing for this time period.

Examinations of retail ceramic prices in the 1908 and the 1909 Sears catalogues (Schroder 1969:349-355; Ventura Books 1979:120-126) illustrate the correlation between ceramic decoration and price and provide an initial framework for the examination of ceramic pricing during archaeological test investigations. For example, in the 1909 catalogue, 100-piece sets that were decorated only with embossing were less expensive than those with monochrome overglaze stenciling or decaling. The latter were less expensive than bi- or polychrome decaled (or possibly transfer-printed; the methods of decoration was not always specified) and embossed sets. The addition of gilding on knobs and handles increased prices, and the use of more extensive gilding (i.e. accents on all of the pieces in the set) further elevated costs.

However, the relative cost ranking of decorative elements is somewhat complicated by place of manufacture. For example, in the 1909 catalogue, an embossed, 100-piece set manufactured by Johnson Brothers in England cost $.17 more than an embossed and decaled set of the same size from the American manufacturer, E.M. Knowles. English manufactured sets were in all cases more expensive than American sets with comparable decoration. While the price of the American manufactured 100-piece sets ranged from $3.98 to $8.98, the English sets ranges from $6.98 to $11.90.

In addition, while it appears that decaled wares generally were more expensive than monochrome transfer-printed wares at least through the first decade of the twentieth century, Majewski and O'Brien (1987:147) state that by the 1920s, decals were utilized on American low-quality earthenwares. Then too, ceramic body appears to have influenced price. A 100-piece set of embossed semi-vitreous American "porcelain" cost $1.00 more than a comparable set of American-made "white granite." Unfortunately, as noted above, distinctions between late-nineteenth/early-twentieth-century non-vitreous and semi-vitreous white earthenwares are unclear. However, porcelain is easily distinguished, and these were more expensive than the refined white earthenwares shown in the 1908 and 1909 catalogues. In 1909, price ranged from $12.95 to $16.85 for German and Austrian porcelain, while prices for Haviland porcelain ranged from $19.98 to $27.50. Thus, the relative cost of different decorative types in the late-nineteenth/early-twentieth century varied with place of manufacture, with time, and with ceramic body type.

Nonetheless, the prices from the 1908 and 1909 Sears catalogues do suggest a pricing hierarchy. Table 10 presents the price ranges for broad decorative categories illustrated in the two catalogues. As the table illustrates, there is considerable overlap between the prices for each of the categories. Further expansion of the monochrome and polychrome categories to include both gilded and non-gilded wares eliminates much of the overlap (Table 11). In fact, only the prices of embossed and monochrome decorated refined white earthenwares are not mutually exclusive. It should be noted however, that the $7.65 price for embossed ceramics was for a single set manufactured in England. All other embossed sets ranged in price between $3.98 and $5.89, and thus were priced lower than monochrome decorated sets.

Table 10. Price Ranges for Decorative Categories Illustrated in the 1908 and 1909 Sears Catalogues (Schroder 1969:349-356; Ventura Books 1979:120-126).

	Decorative Category	Price Range
Refined White Earthen-ware	Embossed	$3.98-$7.65
	Embossed with Monochrome Decoration	$5.98-$6.98
	Embossed with Monochrome Decoration and Gilding	$6.75
	Embossed with Polychrome Decoration	$7.48-$10.98
	Embossed with Polychrome Decoration and Gilding	$7.98-$11.90
	Embossed with Gilding	$8.98-$11.75
	Porcelain (all decorative categories)	$12.95-$31.98

Table 11. Suggested Price Level Rankings for Analysis of Late-Nineteenth/Early-Twentieth-Century Ceramics Based on Price Ranges Provided by the 1908 and 1909 Sears Catalogues (Schroder 1969:349-356; Ventura Books 1979:120-126).

	Decorative Category	Price Range
Refined White Earthenware	Undecorated	none available
	Embossed	$3.98-$7.65
	Monochrome Decoration, with or without Gilding	$5.98-$6.98
	Polychrome Decoration, with or without Gilding, or Gilding alone	$7.48-$11.90
	Porcelain (all decorative categories)	$12.95-$31.98

Table 11, then, presents suggested categories to be utilized for price level comparisons. The category "undecorated" has been added at the lowest end of the scale, although no retail prices are available to support this. Since these categories have been constructed based on a limited examination of price information, and because various other factors (above) seem to have also influenced price, these categories should be used only as a starting point for price level comparisons, and they should be adjusted as necessary. For example, if undecorated porcelain proves to be a large percentage of the lower-income assemblages, it may suggest that it was lower-priced than decorated porcelain. In this case, it might be reasonable to include undecorated porcelain in one of the lower level categories. In sum, the archival data on the socio-economic status of the former residents of the study area should be utilized in conjunction with the archaeological data to try to establish reliable levels for price comparisons.

Chronological Control for the Late-Nineteenth and Early-Twentieth Century Component

It is anticipated that ceramics will only be broadly useful for the purpose of chronological control within late-nineteenth and early-twentieth-century contexts in the study area. A few decorative techniques, such as "revival" transfer-printing (after ca. 1870-1880 [Henry and Garrow 1982:300; Majewski and O'Brien 1987:123-124]) and decalcomania (most common after 1900 [Henry and Garrow 1982:302; Majewski and O'Brien 1987:147]), are useful for temporal ordering. In addition, some ceramic body types, such as lighter-weight semi-vitreous wares (after ca. 1870-1880 [Majewski and O'Brien 1987:123-124]) and porcelaneous stoneware (after 1880) also provide chronological information. But, on the whole, it is unlikely that ceramic types alone will provide sufficiently tight temporal data to securely date features located during archaeological investigations.

Ceramic sherds with identifiable backmarks are the one major exception to the above. Backmarked ceramics may be used to provide *termini post quem* for features. If recovered in sufficient quantities, backmarked ceramics may be used to provide date ranges for individual contexts.

It is likely that bottle glass will provide tighter chronological control than ceramics. While manufacture-

deposition lag for bottles has been investigated (Hill 1982; Harris 1988), it is generally agreed that at least after the mid-nineteenth century, bottles were discarded more rapidly than ceramics. Manufacturers' marks and datable manufacturing attributes should be utilized to determine *termini post quem* and date ranges for features identified during archaeological investigations.

Occupational Classification

In the context of a statistical analysis of the relationship between male occupations and ethnicity in five nineteenth-century cities in the northeastern United States and Canada, Hershberg et al. (1973:174) devised an "...occupational classification [that] reduces the welter of individual occupations to manageable analytic categories..." In order to devise the classification system, they examined occupations listed in various censuses dated 1855 to 1861 and then listed the 113 most frequently occurring occupations. Each historian in the study group then independently assigned each occupation a vertical rank on a five-point scale. Ranking was based on the individual historian's personal assessment of the relationship of each occupation to skill/prestige as well as to wealth/wages. Their assessments were in close agreement, and that allowed compilation of a table of occupations with five vertical categories (Hershberg et al. 1973:187). This table is reproduced in Table 12 with additions as necessary for use in the Holy Cross study area. The five vertical categories were defined by Hershberg et al. (1973:179):

> Category One includes the professional and high white-collar occupations. Category Two includes the proprietors and low white-collar occupations. Category Three includes the skilled artisans. Categories Four and Five include all unskilled workers with the division between the categories, however, coming along the line of "specified" occupations such as carter or teamster and "unspecified" occupations such as laborer (Hershberg et al. 1973:179).

The system was previously used for investigations within a different New Orleans neighborhood (Castille et al. 1986) as well as during investigations of late-nineteenth and early-twentieth century sites in Phoenix, Arizona (Henry and Garrow 1982). Use in the present study area should facilitate comparison between studies.

Table 12. Occupational Rankings (from Hershberg et al. 1973:187) with additions as noted for the Holy Cross study area.

Category I

Clergy, Commission Merchant, Gentleman, Lawyer, Merchant, Physician

Category II

Agent, Bookkeeper, Broker, Builder, Chemist, Clerk, Dentist, Druggist, Dry Goods/Fancy, Farmer, Grocer, Hotel Keeper, Innkeeper, Jeweler, Liquor Dealer, Manufacturer, Sales Agent, Salesman, Storekeeper, Student, Tavern Keeper, Teacher, Tobacconist, Victualer

Additions for Holy Cross: Inspector, Cashier, Credit Manager, Stenographer, Timber Contractor

Category III

Baker, Barber, Blacksmith, Boat Captain, Boiler, Bookbinder, Brewer, Bricklayer, Brickmason, Butcher, Cab Maker, Carpenter, Carriage Maker, Cigar Maker, Conductor, Confectioner, Coop[er, Cordwaiver, Dealer, Dyer, Engineer, Gas Fitter, Glass Blower, Hatter, Joiner, Machinist, Mason, Moulder, Nail Maker, Operator, Painter, Paper Hanger, Pattern Maker, Peddler, Piano Maker, Plasterer, Plumber, Printer, Puddler, Saddle Maker, Saddler, Ship Carpenter, Shipwright, Shoemaker, Stonecutter, Stonemason, Tailor, Tanner, Tinsmith, Turner, Typesetter, Upholsterer, Weaver, Wheelwright

Additions for Holy Cross: Artist, Cabinet Maker, Cistern Maker, Cotton Sampler, Electrician, Flour Drummer, Millwright, Sampler, Slater, Steward

Table 12 (Continued). Occupational Rankings (from Hershberg et al. 1973:187) with additions as noted for the Holy Cross study area.

Category IV

Bartender, Boatman, Carman, Carter, Chair Factory, Coachman, Drayman, Driver, Ferryman, Fisherman, Furnaceman, Gardener, Hostler, Mariner, Porter, Quarryman, Sailor, Seaman, Servant, Teamster, Waiter, Watchman, Yardman

Additions for Holy Cross: Army Private, Broom Maker, Coal Roller, Cook, Cotton Screwman, Fireman, Letter Carrier, Longshoreman, Messenger, Motorman, Pittman, Saw Filer, Saw Mill Fireman, Slaughterhouse Fireman, Stableman, Streetcar Motoneer, Streetcar Motorman, Sugar Boiler, Sugar Maker, Sugar Refinery Fireman, Sugar Weigher

Category V

Farm Laborer, Lab Man, Laborer, Railroad Worker, Waterman

Summary of Archival Research Related to Late-Nineteenth and Early-Twentieth Century Residents

Introduction. Chapter 9 presented summary information concerning some residents of the study area in the period 1870 to 1910. These data were derived from the 1869 auction record; U.S. census records for 1880, 1900, and 1910; and City Directory volumes for the years 1870 through 1900.

This chapter uses these data to identify selected residential, farm, and commercial properties which should be considered for initial archaeological investigations. Methods used to obtain that more detailed information are outlined in this section.

Census Records. The 1880, 1900, and 1910 primary census records for the study area were examined. Unfortunately, the 1890 census records were lost in a fire, and these are not available for use.

For 1880, census records for the study area do not include street numbers. Records were examined for Sister, Jourdan, and Deslonde Streets. Data were not obtained for the cross streets. These should be examined in the course of further archival research as necessary for test excavations or for data recovery if mitigation becomes necessary.

The 1880 census records provide information for the study area on street names, names of residents, their color, sex, age at last birthday, relationship to head of household, marital status, occupation, number of months employed during the census year, whether ill or disabled on census day and the nature of that disability, whether attended school in the census year, ability to read, ability to write, place of birth, and place of birth of mother and father.

For 1900 and 1910, census records include street numbers. Listings were obtained for Sister, Jourdan, and Deslonde, and for cross streets lakeward through St. Claude. The 1900 census records provide information on street address, relationship of each occupant to head of household, color/race, sex, date of birth, age at last birthday, marital status, number of years married, mother of how many children, number of those children living, place of birth, place of birth of mother and father, year of immigration to the U.S., number of years in the U.S., naturalization status, occupation, number of months attended school, literacy, whether speaks

English, and ownership of home (including whether the home is owned free or mortgaged and whether it is classified as a farm or house).

The 1910 census records provide information on street address, relationship of each occupant to head of household, sex, color/race, age at last birthday, marital status, number of years in present marriage, mother of how many children and number of those children living, place of birth, place of birth of mother and father, year of immigration to the U.S., whether naturalized or alien, whether speaks English and if not what language spoken, trade or profession, and general nature of work location (e.g. cotton mill, dry goods store, farm, etc.)

City Directory Checks. The various nineteenth and twentieth century City Directory publications provide an alphabetical list of residences by surname and of businesses. The residential listings generally include occupational information.

The street numbering system currently in use in the study area was established in the middle-1890s. Prior to that, a typical residence location was listed as "Jourdan Av nw cor Chartres" [Jourdan Avenue at the northwest corner of Chartres].

Three separate City Directory checks were performed. First, surnames from the list of 1869 land purchasers were checked from 1870 to 1880 to determine which of these individuals moved into the study area.

The second City Directory check was based on surnames listed in the 1880 census. Listings were followed forward from 1880 for a minimum of ten years. Individuals who continued to be listed and who continued to reside in the study area were followed forward even further, generally to the late 1890s or to 1900.

The third City Directory check was based on surnames listed in the 1900 census. These names were checked from 1900 back to 1890. When negative results (i.e. no listings) were obtained for this ten year period, no further check was made for that surname. However, when positive results were obtained, listings were followed back as far as 1880.

Summary of Results of Archival Research Concerning Late-Nineteenth and Early Twentieth Century Residents and Classification of Residential Sites

Chapter 9 presented summary information on some of the residences and businesses in the study area from 1870 through 1910. Because street numbers were not standardized until the mid-1890s, residences of individuals listed in the 1880 census and who moved away prior to ca. 1895 cannot be located precisely. Chain of title would provide additional information on this issue. Based on the results of a household by household examination, it appears that individual lots within the study area can be classified into four main groups. These are lots associated with: (1) Black residential households, (2) white residential households, (3) truck farm households, and (4) commercial establishments.

Definitions of the Four Main Groups Present after 1870

Numbers of Households and Racial Composition. In 1880, census records list 34 households (including truck farms) on Sister, Deslonde, and Jourdan Streets. Eighteen (53%) of these were Black, and sixteen (47%) were white. At that time, racial composition was balanced (see also Table 7).

By 1900, there were 92 households listed on Sister, Deslonde, and Jourdan Streets and on the cross streets from St. Peter to N. Rampart. The number of both Black (38) and white (54) households had increased, but the rate of increase was greater for whites. Black households now represented only 41% of those enumerated, while white households (including truck farms) represented 59% of the total.

Population continued to grow and racial composition continued to change in the following ten years. By 1910, 144 households were enumerated. Black households (29) now represented only 20% of the total, while white households (115, including truck farms) represented 80%. The absolute number of Black households had actually declined since 1900. These figures indicate that most of the residential structures built from 1900 to 1910 were occupied by white families and that white families were replacing the former Black occupants in some of the older structures.

Black Residential Households. Black residential households consist of individuals of African-American descent who were classified as "Negro" or "Mulatto" in

the census records and who reside together in a single structure or in one-half of a divided (double) structure. Employed males worked outside the home. Many females associated with these households were classified in censuses as "laundress" or "wash and iron." It is likely that these activities were conducted at the residence. However, in most cases they represent a means of obtaining supplemental income. Therefore, even when laundry-related activity is occurring in the context of these households, they are not classified as commercial establishments.

White Residential Households. White residential households consist of individuals classified as "White" in the census records and who reside together in a single structure or in one-half of a divided (double) structure. Employed individuals, with the probable exception of a few women classified as "laundress" or "seamstress," work outside the home.

Truck Farm Households. Truck farm households consist of individuals of European descent and/or native-born Americans who reside in structures located on lots that were used for cultivation of commercial garden produce or dairy products. In most cases, these households occupy a single residential structure. However, in a few cases multiple residential structures were present on these properties. Where multiple structures existed, occupants were linked by ties of kinship and/or marriage.

Commercial Establishments. Commercial establishments represent either retail outlets or locales that were used for the production of non-farm goods. In the former case, these establishments are stores run by small proprietors. The structures associated with stores generally included a residential component, and it was here that the proprietor and his or her family resided. In all cases in the study area, proprietors/shopkeepers are white. At least one store not associated with a residential component was present. This was at one time a retail outlet for meat and may later have been used for other purposes.

Three properties within the study area were associated with the production of goods. One of these is a combined residence and candy manufacturing establishment. Also, a series of residential structures and outbuildings occupied by blacksmiths suggests that commercial, small-scale smithing may have occurred in

the study area. Finally, a combined residence and bakery establishment was present.

Comparison of Black and White Residential Households

Data derived from the 1880, 1900, and 1910 census records are used in this section to characterize similarities and differences between Black residential households and white residential households. The comparison provides a basis for some of the hypotheses proposed for testing.

Number of Residents. Census data indicate that the average number of occupants of Black households is not significantly different from that of white households for the period 1880-1910. Mean household size for Blacks in the three census years is 4.9, 5.3, and 4.9. For whites, mean household size in the three census years is 5.0, 5.4, and 4.8. When the three census years are combined, mean household size for Blacks is 5.1 and for whites the mean household size is 4.9. A T-test comparing the two group means for the three census years combined indicates that the observed difference is not significant ($p = .3492$).

Number of Employed Males per Household. Census data indicate that the number of employed males per Black household is not significantly different from that of employed males per white household. Mean number of employed males in Black households for the three census years was 1.4, 1.6, and 1.6. For whites, the mean number of employed males per household in the three census years was 1.4, 1.6, and 1.3. When the three census years are combined, mean number of employed males per Black household is 1.6 compared to 1.4 for white households. A T-test comparing the two group means indicates that the observed difference is not significant ($p = .1063$).

Nature of Black Male Employment Compared to White Male Employment. The nature of employment of Black males was compared to that of whites. Table 13 summarizes employment of Black and white males for the census years 1880, 1900, and 1910. Occupations are classified in five groups originally defined by Hershberg et al. (1973) with additions as listed in Table 12 (above). The table demonstrates that Black males generally were employed in low-ranked occupations. Although some white males were also so employed, many worked at high or middle status occupations. This

Table 13. Summary of Black and White Male Occupations in the Study Area Utilizing the Classification Presented by Hershberg et al. (1973).

FREQUENCY

	1880		1900		1910	
	W	B	W	B	W	B
I	1	0	1	1	7	0
II	5	0	28	1	41	0
III	7	0	23	6	38	6
IV	3	2	16	19	17	9
V	15	23	36	34	43	23
TOTAL	31	25	104	61	146	38

RELATIVE FREQUENCY

	1880		1900		1910	
	W	B	W	B	W	B
I	3.2	0	1.0	1.6	4.8	0
II	16.1	0	26.9	1.6	28.1	0
III	22.6	0	22.1	9.8	26.0	15.8
IV	9.7	8.0	15.4	31.1	11.6	23.7
V	48.4	92.0	34.6	55.7	29.5	60.5

indicates that per capita income tended to be lower for Black males than was the case for white males.

Number of Employed Females per Household. Census data analyzed on a household basis indicate that Black households have a significantly greater number of working females than is the case for white households. The mean number of employed females in Black households for the three census years was 0.9, 1.1, and 0.7. For whites, the mean number of employed females per household was 0.2, 0.3, and 0.2. When the three census years are combined, the mean number of employed females per Black household is 0.9, while for white households the mean is only 0.2. A T-test comparing the two groups indicates that the observed difference is highly significant ($p < .001$).

Nature of Black Female Employment Compared to White Female Employment. Census records (Tables 7, 8, and 9) indicate that employed white females in the study area worked at a greater variety of jobs that did Black females. In order to examine this statistically, female occupations were classified as either domestic or non-domestic. Domestic occupations are laundry-related (e.g. "wash and iron" or "wash woman") or represent employment as a cook, cleaning person, or servant.

For the three census years combined, 93% of employed Black females were working as domestics compared to only 42% of employed white females. A chi-square test comparing the proportions of domestic and non-domestic labor for employed Black females compared to employed white females indicates that the difference is highly significant ($p < .001$).

Justification for Investigations within Four Categories of Late-Nineteenth and Early-Twentieth Century Sites

Archival research to date, then, indicates that four primary types of properties were present within the study area. These were (1) Black residential households; (2) white residential households; (3) truck farms; and (4) commercial or production establishments. Black and white households appear to be clearly distinguishable not only on the basis of race but also on the basis of occupational classification, socioeconomic status, and patterns of female employment.

Truck farms are distinguishable because they are properties used to raise commercial garden produce and also include a residential component. In addition,

truck farmers tend to be either German immigrants or first generation Americans of German descent. Finally, truck farmers owned larger properties than other residents.

Commercial establishments are distinguishable because they represent retail outlets or facilities for the production of non-farm goods. In most cases, they also include a residential component.

Tables 14 to 27 provide summary data on white residential households where residence by whites was long-term. Tables 28 to 37 provide summary data on Black residential households where residence by Blacks was long-term. Tables 38 to 46 provide summary data on long-term truck farms. It is recommended that right-of-entry be obtained to conduct archaeological investigations within one or two properties placed in each of these three categories.

The nature of the selection process for white and Black residential households is discussed further (below) in the context of hypotheses. It should be noted again that addresses changed slightly in late-nineteenth century archival records. These changes continued throughout the twentieth century. Therefore, as properties are targeted for archaeological investigations, chain of title research should be conducted from the present back to 1869. In many cases this will provide the names of owner-residents. In other cases, where the residents are tenants, it may be necessary to trace chain of title for nearby or adjacent properties in order to allow archival and present-day addresses to be correlated.

In addition, it is recommended that right-of-entry be obtained to conduct archaeological investigations within one or more of the following commercial establishments shown on Figure 22: (1) the former meat market, (2) the former bakery, (3) the former candy-manufacturing facility, (4) the possible smithing area, and (4) the corner store. The level of effort should be sufficient to determine whether "artifact patterning" is different and distinguishable at commercial and production facilities.

Table 14. White Occupants at 4817 North Rampart.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	2	0	2	4	1
1910	2	1	4	7	3

1900 RENT

Heads of Household, Occupation, and National Origin:

1900	Angeline Ulrich	Laborer	GER
1910	Louis Kathmann	Laborer	LA

Additional Employed in Census Years:

1900	0
1910	2 Laborers

City Directory Employment Information:

1899-1900	2 Laborers

Avg. No. Occ. Per Census Year (1900, 1910)
5.5

Avg. No. Emp. Per Census Year (1900, 1910)
2.0

Table 15. White Occupants at 4733 Dauphine.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	3	1	3	7	1
1910	2	0	3	5	1

1900 RENT

Heads of Household, Occupation, and National Origin:

1900	Florans Dirmann	Butcher	GER
1910	Clement Gardner	Barber	LA

Additional Employed in Census Years:

1900	0
1910	0

City Directory Employment Information:

1899-1900	2 Meat
	Commercial Outlet at 816 Jourdan

Avg. No. Occ. Per Census Year (1900, 1910)
6.0

Avg. No. Emp. Per Census Year (1900, 1910)
1.0

Table 16. White Occupants at 4731 Dauphine.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	1	2	4	7	2
1910	1	0	5	6	3

1900 RENT

Heads of Household, Occupation, and National Origin:

1900	John Bollinger	Butcher	LA
1910	Mrs. John Bollinger	None	LA

Additional Employed in Census Years:

1900	1 Forelady at Tobacco Co.
1910	2 Laborers
	1 Fireman

City Directory Employment Information:

1900	Carpenter

Avg. No. Occ. Per Census Year (1900, 1910)
6.5

Avg. No. Emp. Per Census Year (1900, 1910)
2.5

Table 17. White Occupants at 4725 Dauphine.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	0	0	2	2	1
1910	3	0	2	5	1

1900 RENT

Heads of Household, Occupation, and National Origin:

1900	Michael Schwartz	Flour Drummer	GER
1910	Michael Schwartz	Salesman	GER

Additional Employed in Census Years:

1900	0
1910	0

City Directory Employment Information:

1890-1900 1 Gardener, 4 Carpenter [All Andrew Klees who moved to 4838 Dauphine]

Avg. No. Occ. Per Census Year (1900, 1910)
3.5

Avg. No. Emp. Per Census Year (1900, 1910)
1.0

Table 18. White Occupants at 4710 Dauphine.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	0	1	3	4	2
1910	3	0	2	5	1

1900 RENT

Heads of Household, Occupation, and National Origin:

1900	Clements Gardner	Barber	LA
1910	Katie Hertzdel	None	GER

Additional Employed in Census Years:

1900	1 Labor
1910	1 Labor

City Directory Employment Information:

1882-1899 1 Gardener, 2 Asst. Foremen NOCRR, 1 Foreman NOCRR, 2 Hostler, 8 Bartender, 1 Clerk, 1 Laundress, 1 Seamstress [All Hurstells who in 1900 have a store at 4739 Dauphine]

Avg. No. Occ. Per Census Year (1900, 1910)
4.5

Avg. No. Emp. Per Census Year (1900, 1910)
1.5

Table 19. White Occupants at 4708 Dauphine.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	0	2	3	5	2
1910	1	1	3	5	3

1900 RENT

Heads of Household, Occupation, and National Origin:

1900	Alfred Rousseau	Laborer	LA
1910	Conrad Gemar	Laborer	LA

Additional Employed in Census Years:

1900	1 Housework
1910	1 Contractor, 1 Laborer

City Directory Employment Information:

1890-1900	7 Laborer, 1 Clerk, 1 Sugar Boiler

Avg. No. Occ. Per Census Year (1900, 1910)
5

Avg. No. Emp. Per Census Year (1900, 1910)
2.5

Table 20. White Occupants at 4700 Dauphine.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	0	0	6	6	2
1910	1	0	5	6	1

1900 ____

Heads of Household, Occupation, and National Origin:

1900	Isidore Jiroux	House Builder	FRA
1910	Gilbert Giroux	Carpenter	LA

Additional Employed in Census Years:

1900	1 House Builder
1910	0

City Directory Employment Information:

1881-1900	6 Carpenter, 3 Porter, 1 Laborer, 1 Sheet Iron, 1 Tinner, 8 Builder

Avg. No. Occ. Per Census Year (1900, 1910)
6

Avg. No. Emp. Per Census Year (1900, 1910)
1.5

Table 21. White Occupants at 4810 Dauphine.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	2	2	2	6	2
1910	2	0	3	5	2

1900 RENT

Heads of Household, Occupation, and National Origin:

1900	Samuel Kormick	Steamboat Clerk	MO
1910	David Griffert	Laborer	LA

Additional Employed in Census Years:

1900	1 Waitress (F)
1910	1 Research Accountant

City Directory Employment Information:
No listings obtained.

Avg. No. Occ. Per Census Year (1900, 1910)
5.5

Avg. No. Emp. Per Census Year (1900, 1910)
2.0

Table 22. White Occupants at 4838 Dauphine.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	1	0	2	3	1
1910	1	0	2	3	1

1900 OWN

Heads of Household, Occupation, and National Origin:

1900	Andrew Klees	Carpenter	FRA
1910	Andrew Klees	Carpenter	FRA

Additional Employed in Census Years:

1900	0
1910	0

City Directory Employment Information:

1890-1900 Klees resident at 4725 Dauphine until 1900

Avg. No. Occ. Per Census Year (1900, 1910)
3.0

Avg. No. Emp. Per Census Year (1900, 1910)
1.0

Table 23. White Occupants at 4834 Dauphine.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	0	2	2	4	2*
1910	(Census data obtained incomplete; further census check necessary)				

*Includes 1 Housekeeper in residence

1900 OWN

Heads of Household, Occupation, and National Origin:

1900	William T. Inbau	Saloon Keeper	LA
1910	Frederick Piderson	Boat Steward	NOR

Additional Employed in Census Years:

1900	0
1910	Incomplete Data (see note above)

City Directory Employment Information:
1899-1900 1 Saloon, 1 Livestock

Avg. No. Occ. Per Census Year (1900, 1910)
Incomplete Census Data for 1910 (see note above)

Avg. No. Emp. Per Census Year (1900, 1910)
Incomplete Census Data for 1910 (see note above)

Table 24. White Occupants at 704 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	2	1	4	7	4
1910	(Census data obtained incomplete; further census check necessary)				

1900 RENT

Heads of Household, Occupation, and National Origin:

1900	Mary Boubre	None	LA
1910	Charles Castaing	Laborer	FRA

Additional Employed in Census Years:

1900	3 Housework, 1 Laborer
1910	Incomplete census data (See note above)

City Directory Employment Information:
1890-1900 No listings obtained for "Boubre"

Avg. No. Occ. Per Census Year (1900, 1910)
Incomplete census data (See note above)

Avg. No. Emp. Per Census Year (1900, 1910)
Incomplete census data (See note above)

Table 25. White Occupants at 821 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	3	2	3	8	2
1910	2	0	3	5	1

1900 OWN

Heads of Household, Occupation, and National Origin:

1900	Emile Morgan	Stevedore	TX
1910	Emil Duchman	Carpenter	LA

Additional Employed in Census Years:

1900	1 Laborer
1910	0

City Directory Employment Information:

1891-1900 4 Laborers, 1 Saloon, 2 Screwmen, 1 Blacksmith, 3 Superintendent at Coal Company (1897-1900)

Avg. No. Occ. Per Census Year (1900, 1910)
6.5

Avg. No. Emp. Per Census Year (1900, 1910)
1.5

Table 26. White Occupants at 708 Jourdan

NOTE: See Also 710 Jourdan; Structure is a Double Shotgun owned by Hoffman; Hoffman's residing here in 1900 and 1910 but in different halves of structure.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	5	2	2	9	1
1910	0	0	2	2	1

1900 RENT

Heads of Household, Occupation, and National Origin:

1900	George Yaeger	[Sug. Ref.]	Fireman	LA
1910	Mary Hoffman	None		GER

Additional Employed in Census Years:

1900	0
1910	1 Laborer

City Directory Employment Information:

1893-1900 [All Yaeger] 6 Laborer, 1 Seaman

Avg. No. Occ. Per Census Year (1900, 1910)

5.5

Avg. No. Emp. Per Census Year (1900, 1910)

1.0

Table 27. White Occupants at 710 Jourdan.

NOTE: See note for 708 Jourdan concerning owners/occupancy.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	0	0	4	4	3
1910	0	1	2	3	2

1900 OWN

Heads of Household, Occupation, and National Origin:

1900	Henry Hoffman	Night Watchman	GER
1910	Albert Berniol	Laborer	LA

Additional Employed in Census Years:

1900	2 Laborers
1910	1 Salesman

City Directory Employment Information:

1887-1900 [All Hoffman] 4 Laborer, 3 Butcher, 9 Watchman

Avg. No. Occ. Per Census Year (1900, 1910)
3.5

Avg. No. Emp. Per Census Year (1900, 1910)
2.5

Table 28. Black Occupants at 814 Deslonde.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	0	0	2	2	1
1910	0	0	3	3	3

1900 RENT

Heads of Household and Occupation

1900	George Carroll	Laborer
1910	Rachel Riley	Wash Woman

Additional Employed in Census Years:

1900	0
1910	2 Laborers

City Directory Employment Information:

1890-1900	No listings for "Carroll" obtained

Avg. No. Occ. Per Census Year (1900, 1910)
2.5

Avg. No. Emp. Per Census Year (1900, 1910)
2.0

Table 29. Black Occupants at 816 Deslonde.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	0	0	0	2	2
1910	2	1	1	4	2

1900 RENT

Heads of Household and Occupation

1900	Joseph Darcey	Laborer
1910	Constance Dorsey	Laundress

Additional Employed in Census Years:

1900	1 Wash/Iron (F)
1910	1 Laundress

City Directory Employment Information:

1890-1900 No listings for "Darcey" obtained; In 1897 listing for Joseph Aylies, gardener [in 1900 census residing at 4821 Dauphine]

Avg. No. Occ. Per Census Year (1900, 1910)
3.0

Avg. No. Emp. Per Census Year (1900, 1910)
2.0

Table 30. Black Occupants at 834 Deslonde.

	0-11	12-18	18+	Total	No. Emp.
1880	0	0	4	4	1
1900	0	0	2	2	2
1910	1	0	3	4	2

1900 OWN

Heads of Household and Occupation

1880	Charles Lewis	Laborer
1900	Charlatine Lewis	Wash/Iron
1910	Charlatine Lewis	Wash Woman

Additional Employed in Census Years:

1880	0
1900	1 Cook (F)
1910	1 Laborer

City Directory Employment Information:
1882-1900 6 Laborer, 2 Driver, 2 Teamster

Avg. No. Occ. Per Census Year (1900, 1910)
3.3

Avg. No. Emp. Per Census Year (1900, 1910)
1.6

Table 31. Black Occupants at 675/677 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	1	1	4	6	3
1910	0	0	2	2	2

1900 RENT

Heads of Household and Occupation

1900	Harry Curtis	Laborer
1910	John Taff	Laborer

Additional Employed in Census Years:

1900	1 Laborer, 1 Cook (F)
1910	1 Wash Woman (F)

City Directory Employment Information:

1899-1900	2 Laborer

Avg. No. Occ. Per Census Year (1900, 1910)
4.0

Avg. No. Emp. Per Census Year (1900, 1910)
2.5

Table 32. Black Occupants at 811 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	1	0	4	5	4
1910	1	0	2	3	1

1900 RENT

Heads of Household and Occupation

1900	William Danridge	Laborer
1910	Cornelius Copelin	Butcher

Additional Employed in Census Years:

1900	1 Coachman, 1 Wash/Iron (F), 1 Housework (F)
1910	0

City Directory Employment Information:

1898-1900	3 Laborer

Avg. No. Occ. Per Census Year (1900, 1910)
4.0

Avg. No. Emp. Per Census Year (1900, 1910)
2.5

Table 33. Black Occupants at 829/831 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	4	0	3	7	2
1900	0	0	4	4	3
1910	1	0	4	5	1

1900 OWN

Heads of Household and Occupation:

1880	Charley Jones	Laborer
1900	Henry Jones	Carpenter
1910	Pauline Jones	None

Additional Employed in Census Years:

1880	1 Wash Woman (F)
1900	1 Cook (F), 1 Housework (F)
1910	1 Carpenter

City Directory Employment Information:
1899-1900

Avg. No. Occ. Per Census Year (1900, 1910)
5.3

Avg. No. Emp. Per Census Year (1900, 1910)
3.0

Table 34. Black Occupants at 4818 Royal.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	3	0	2	5	1
1910	2	0	4	6	2

1900 RENT

Heads of Household and Occupation:

1900	John Smith	Laborer
1910	John Cephas	Weigher

Additional Employed in Census Years:

1900	0
1910	1 Laborer

City Directory Employment Information:
1897-1900 1 Gardener, 3 Laborer

Avg. No. Occ. Per Census Year (1900, 1910)
5.5

Avg. No. Emp. Per Census Year (1900, 1910)
1.5

Table 35. Black Occupants at 4820 Royal.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	2	0	5	7	2
1910	0	2	2	4	3

1900 OWN

NOTE: The 1880 census lists this family on Jourdan Avenue, and indicates they are white. However, the 1900 and 1910 census show them as Blacks at 4820 Royal.

Heads of Household and Occupation:

1900	Henry Livers	Teamster
1910	Samuel Livers	Wagon Driver

Additional Employed in Census Years:

1900	1 Teamster
1910	1 Laborer, 1 Weigher

City Directory Employment Information:

1890-1900	3 Laborer, 8 Teamster

Avg. No. Occ. Per Census Year (1900, 1910)
5.5

Avg. No. Emp. Per Census Year (1900, 1910)
2.5

Table 36. Black Occupants at 4824 Royal.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	2	4	4	10	5
1910	1	0	5	6	4

1900 OWN

Heads of Household and Occupation:

1900	Jacob Smith	Laborer
1910	Jacob Smith	Laborer

Additional Employed in Census Years:

1900 1 Coal Roller, 1 Broom Maker, 2 Housework (F)

1910 2 Laborer, 1 Servant (F)

City Directory Employment Information:

1894-1900 3 Laborer

Avg. No. Occ. Per Census Year (1900, 1910)
8.0

Avg. No. Emp. Per Census Year (1900, 1910)
4.5

Table 37. Black Occupants at Sister Street.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	2	2	3	7	3
1910	0	0	2	2	2

1900 OWN

Heads of Household and Occupation:

1900	Daniel Robertson	Float Driver
1910	Joe Robertson	Servant

Additional Employed in Census Years:

1900	2 Laborers
1910	1 Servant (F)

City Directory Employment Information:
1884-1900 7 Laborer, 3 Teamster, 1 Driver

Avg. No. Occ. Per Census Year (1900, 1910)
4.5

Avg. No. Emp. Per Census Year (1900, 1910)
2.5

Table 38. Truck Farm (Meister Family) at 4709 N. Rampart.

	0-11	12-18	18+	Total	No. Emp.
1880	Census Data Not Obtained				
1900	0	0	4	4	3
1910	Census Data Not Obtained				

1900 OWN

Heads of Household, Occupation, and National Origin:

1880	Not Obtained		
1900	Sophie Meister	Garden	GER
1910	Not Obtained		

Additional Employed in Census Years:

1880	Not Obtained
1900	2 Garden
1910	Not Obtained

City Directory Employment Information:

1881-1900	27 Garden, 1 Sugar Maker, 1 Sugar Boiler

Avg. No. Occ. Per Census Year (1900, 1910)
Incomplete Census Data

Avg. No. Emp. Per Census Year (1900, 1910)
Incomplete Census Data

Table 39. Truck Farm (Nuschler/Loheide Family) at 4839 N. Rampart.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	1	1	6	8*	5
1910	0	1	3	4	4

* Includes 3 Employees in Residence

1900 OWN

Heads of Household, Occupation, and National Origin:

1880	Not Listed or Not Obtained		
1900	Susan Nuschler	Garden	GER
1910	George Loheide	Garden	TX

Additional Employed in Census Years:

1900	4 Garden
1910	1 Garden, 1 Oiler, 1 Fireman

City Directory Employment Information:

1885-1900	24 Garden, 8 Labor

Avg. No. Occ. Per Census Year (1900, 1910)
6.0

Avg. No. Emp. Per Census Year (1900, 1910)
4.5

Table 40. Truck Farm (Frank Meyer Family) at 900 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	4	0	2	6	1
1900	0	1	4	5	3
1910	0	0	3	3	1

1900 OWN

Heads of Household, Occupation, and National Origin:

1880	Frank Meyer	Garden	GER
1900	Frank Meyer	Garden	GER
1910	Frank Meyer	Retired	GER

Additional Employed in Census Years:

1880	0
1900	1 Garden, 1 Grocery Clerk
1910	1 Clerk

City Directory Employment Information:

1878-1900	19 Garden

Avg. No. Occ. Per Census Year (1900, 1910)
4.7

Avg. No. Emp. Per Census Year (1900, 1910)
1.7

Table 41. Truck Farm (Eichhorn/Oath Family) at 901 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	2	0	4	6	2
1910	2	1	2	5	1

1900 OWN

Heads of Household, Occupation, and National Origin:

1900	George Eichhorn	Garden	GER
1910	Wolfgang Oath	Garden	GER

Additional Employed in Census Years:

1900	1 Garden
1910	0

City Directory Employment Information:

1880-1900	15 Garden

Avg. No. Occ. Per Census Year (1900, 1910)
5.5

Avg. No. Emp. Per Census Year (1900, 1910)
1.5

Table 42. Truck Farm (Jacob Meyer Family) at 923 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	4	3	3	10	3
1910	2	2	4	9	5

1900 OWN

Heads of Household, Occupation, and National Origin:

1900	Jacob Meyer	Garden	GER
1910	Jacob Meyer	Garden	GER

Additional Employed in Census Years:

1900	2 Garden
1910	4 Laborer

City Directory Employment Information:

1893-1900	7 Gardeners

Avg. No. Occ. Per Census Year (1900, 1910)
9.5

Avg. No. Emp. Per Census Year (1900, 1910)
4.0

Table 43. Truck Farm (Duvic/Hinterlang Family) at 924 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	5	4	3	12	4
1910	0	1	3	4	3

1900 OWN

Heads of Household, Occupation, and National Origin:

1900	Anthony Duvic	Garden	LA
1910	Henry Duvic	Labor	LA

Additional Employed in Census Years:

1900	1 Garden, 2 Housework (F)
1910	1 Labor, 1 Bartender

City Directory Employment Information:

1890-1900	7 Garden, 1 Labor, 1 Sugar Drier

Avg. No. Occ. Per Census Year (1900, 1910)
8.0

Avg. No. Emp. Per Census Year (1900, 1910)
3.5

Table 44. Truck Farm (Valentin Mayer Family) at 1007 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	4	1	3	8	2
1900	6	0	6	12	3
1910	4	1	5	10	2

1900 OWN

Heads of Household, Occupation, and National Origin:

1880	Valentine Mayer	Garden	PRU
1900	Catherine Mayer	Garden	LA
1910	Valentine Mayer	None	LA

Additional Employed in Census Years:

1880	1 Garden
1900	1 Garden, 1 Cooper
1910	2 Garden (includes 1 employee in residence)

City Directory Employment Information:

1881-1900	7 Garden, 3 Labor, 3 Cooper, 1 Sugar Boiler

Avg. No. Occ. Per Census Year (1900, 1910)
10.0

Avg. No. Emp. Per Census Year (1900, 1910)
2.3

Table 45. Truck Farm (Voland/Reuther Family) at 1004 Jourdan.

	0-11	12-18	18+	Total	No. Emp.
1880	-	-	-	-	-
1900	6	0	3	9	1
1910	-	-	-	-	-

1900 OWN

Heads of Household, Occupation, and National Origin:

1900	Philip Reuther	Garden	LA
1910	Not listed		

Additional Employed in Census Years:

1900	0

City Directory Employment Information:

1882-1900	19 Garden, 3 Labor

Avg. No. Occ. Per Census Year (1900)
9.0

Avg. No. Emp. Per Census Year (1900)
1.0

Table 46. Truck Farm (Gemar Family) at the Corner of Dauphine and Sister.

	0-11	12-18	18+	Total	No. Emp.
1880	Listing not obtained; further check necessary				
1900	3	0	10	13	8
1910	6	2	8	16	5

1900 OWN

Heads of Household, Occupation, and National Origin:

1900	Philip Gemar	Garden	GER
1910*	Charles Gemar	Labor	LA
	Madeline Gamer	None	GER

* Possibly two residences present by 1910

Additional Employed in Census Years:

1900	7 Labor
1910	4 Labor

City Directory Employment Information:

1871-1900	35 Garden, 1 Foreman at Delavigne's Lumber Company, 1 Cooper, 7 Labor

Avg. No. Occ. Per Census Year (1900, 1910)
14.5

Avg. No. Emp. Per Census Year (1900, 1910)
6.5

Hypotheses to be Tested

Archival research indicates that archaeological resources may be present in the study area to allow testing of several hypotheses focused on the late-nineteenth to early-twentieth century. Several suggested hypotheses are outlined in this section, as are methods for testing. Initial archaeological fieldwork may not provide sufficient data for such tests. However, that fieldwork should allow a determination of whether deposits are present to enable testing of these and other hypotheses that would be defined prior to mitigation. The discussion in this section is based largely on Shephard's (1985) research in Alexandria, Virginia.

Null Hypothesis 1. Differences in socioeconomic status (as indicated by male occupations) are not reflected in the quantity of items composing the material assemblage of late-nineteenth to early-twentieth-century households located at the periphery of urban New Orleans.

Alternate Hypothesis 1. The higher the socioeconomic status (as reflected by male occupations) of a late-nineteenth to early-twentieth-century urban household located at the periphery of urban New Orleans, the greater will be the quantity of possessions composing its material culture assemblage.

Test for Hypothesis 1. The null hypothesis will be supported if households in which male occupations indicate higher socioeconomic status yield similar numbers of artifacts when compared to households in which male occupations indicate lower socioeconomic status.

Control of Other Variables. Additional variables that might affect the outcome of testing of this hypothesis are (1) race, (2) length of occupancy, and (3) number of occupants. In order to test the hypothesis, these variables should be controlled. The variable "race" can be controlled by selecting properties (lots) which the archival record indicates were consistently occupied by households of a single race through the period under investigation (viz. Shepherd 1985). The variable "length of occupancy" can be controlled by using the archival record to determine the date of initial occupation and by using that date in calculations concerning artifact frequencies as

discussed below. The variable "number of occupants" can be partially controlled by using the archival record to determine the number of occupants of households during years (1880, 1900, and 1910) for which census data are available.

Detailed Test of Hypothesis 1. In order to test this hypothesis, excavations would be conducted in four residential lots, two white and two Black, in order to control for the variable race. One of the lots representing a white household should be associated with higher socioeconomic status as reflected in male occupations and one with lower socioeconomic status. Similarly, one of the lots representing a Black household should be associated with higher socioeconomic status as reflected in male occupations and one with lower socioeconomic status.

The initial comparisons, which are designed to control for the variable "race," should be (1) between the quantity of artifacts obtained from the higher status white household with the quantity from the lower status white household, and (2) between the quantity of artifacts obtained from the higher status Black household with the quantity from the lower status Black household.

Methods used to test the hypothesis regarding quantity of artifacts are similar to those used by Shepherd (1985:168-173) to compare early-to-mid-nineteenth century households of Alexandria, Virginia. These methods are designed to control for volume of soil and for the number of occupants.

First, comparisons should be made only for artifacts derived from sealed features, primarily privies and pits because these allow for control of volume of soil. Volume of fill removed from subsurface features can be calculated using standard formulae (i.e. "3.14 x r^2 x h" for cylindrical shapes and "l x w x h" for cube shapes). Numbers of artifacts per cubic meter of fill can then be calculated.

Control of the variable "number of occupants" is somewhat more difficult. The only reliable data that can be used are the 1880, 1900, and 1910 census enumerations, and when available the date of construction of residential structures. It should be noted that the 1920 census enumeration may be released to the public during the two-year period following the date of this report. If those census records are indeed

released during the proposed study, they should be incorporated into this aspect of the research.

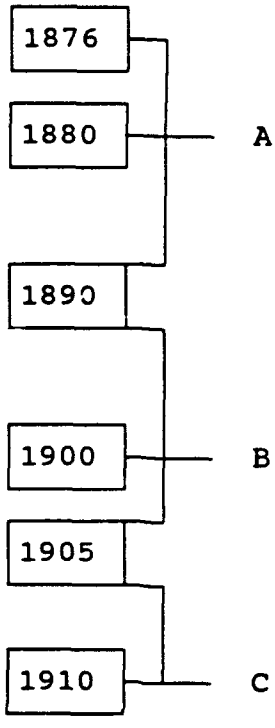
Table 47 presents the method for calculating a figure that represents the number of occupant years at each site. An "occupant year" represents residency of a single individual within a household under investigation. Although the calculated figure is only an estimate, it does provide a way to control for numbers of residents during inter-household comparisons. In a hypothetical case, we assume that the date of construction is 1876. "A" is defined as the number of occupants in 1880. This is multiplied by the number of years from 1876 to 1880 to obtain number of occupant years. Because no census records are available for 1890, the 1880 census figure is assumed to represent the number of occupants for the ten-year period between 1880 and 1890. Thus, the number of occupant years for that period is "10 (yrs) x A." Similarly, the number of occupant years for the period 1890 to 1900 is based on the 1900 enumeration. That figure is "10 (yrs) x B." The 1900 figure is extrapolated forward to 1905, and the number of occupant years is "5 (yrs) x B." The 1910 figure is then extrapolated back to 1905, and the number of occupant years from 1905 to 1910 is "5 (yrs) x C." The sum of these figures represents an approximation of the total number of occupant years from the date of construction to 1910. As noted above, if the 1920 census data are released during or after the period of study, they can be incorporated into the figure by extending the formula's use forward.

The number of artifacts discarded per occupant year can now be calculated by dividing the total number of artifacts within any category under investigation and dividing that number by the total number of occupant years. The resulting figure represents an approximation of the average number of artifacts deposited per person per year. This figure can then be compared to figures obtained from other features on other lots.

Null Hypothesis 2. Differences in socioeconomic status (as indicated by male occupations) are not reflected in the quality of items composing the material assemblage of late-nineteenth to early-twentieth-century households located at the periphery of urban New Orleans.

Alternate Hypothesis 2. The higher the socioeconomic status (as reflected by male occupations) of a late-nineteenth-to-early-twentieth-century

Table 47. Calculation of the Number of Occupant Years at a Site.



Sum of Occupant Years = A(10 + x) + B(15) + C(5)
where A = # occupants in 1880
B = # occupants in 1900
C = # occupants in 1910
x = 1880 minus initial occupation date

residential household, the greater will be the quality of possessions composing its material culture assemblage.

Test of Hypothesis 2. The null hypothesis will be supported if households in which male occupations indicate higher socioeconomic status yield artifacts of similar quality when compared to households in which male occupations indicate lower socioeconomic status.

Control of Other Variables. Race might also be a variable which would affect the outcome of testing this hypothesis. The variable "race" can be controlled by selecting properties (lots) which the archival record indicates were consistently occupied by households of a single race through the period under investigation (viz. Shepherd 1985).

Detailed Test for Hypothesis 2. Excavations should be conducted as outlined above. That is, two white residences and two Black residences (one each upper and lower socioeconomic status) should be excavated, and initial comparisons should be Black-to-Black and white-to-white to control for the variable "race." Comparisons of the quality of the material assemblages may then be conducted using one or more categories of artifact. Decorative categories presented in Table 11 will provide a basis for the comparison of the quality of ceramics between assemblages. Similarly, functional categories of artifacts outlined above can provide further opportunities for qualitative comparison. For example, relative frequencies of pharmaceutical vs. patent medicine bottles can be compared. Marked (sealed) wine bottles as opposed to other liquor bottles also may be utilized for qualitative comparisons. Greater relative frequencies of higher-quality items (e.g. porcelains, pharmaceutical bottles, marked wine bottles) in the assemblages from the upper-socioeconomic households would refute the null hypothesis.

Null Hypothesis 3. Differences in socioeconomic status (as indicated by male occupations) are not reflected in the variety of items composing the material assemblage of late-nineteenth to early-twentieth-century households located at the periphery of urban New Orleans.

Alternate Hypothesis 3. The higher the socioeconomic status (as reflected by male occupations) of a late-nineteenth-to-early-twentieth-century

residential household, the greater will be the variety of possessions composing its material culture assemblage.

Test of Hypothesis 3. The null hypothesis will be supported if households in which male occupations indicate higher socioeconomic status yield artifacts of comparable variety as compared to households in which male occupations indicate lower socioeconomic status.

Control of Other Variables. Race might also be a variable which would affect the outcome of testing this hypothesis. The variable "race" can be controlled by selecting properties (lots) which the archival record indicates were consistently occupied by households of a single race through the period under investigation (viz. Shepherd 1985).

Detailed Test for Hypothesis 3. Excavations should be conducted as outlined above. That is, two white residences and two Black residences (one each upper and lower socioeconomic status) should be excavated, and initial comparisons should be Black-to-Black and white-to-white to control for the variable "race."

By the late-nineteenth century, use of matched tableware sets was in vogue. Sears catalogues of 1906 and 1909 demonstrate that ceramic tableware sets ranging in size from 56 to 101 pieces were available, as were varieties of tea sets, dessert sets, and matched individual services. Because purchase of a matched set represented a larger investment than purchase of individual, odd pieces (including glass and enamelled-metal tableware) on an as-needed basis, it is likely that use of matched tableware is related to socioeconomic status. The issue of "variety" therefore may be addressed through examination of evidence for the presence of matched sets in individual assemblages. Greater evidence for use of matched sets and/or evidence for use of larger sets of matched tableware (lesser amounts of decorative variety) among the upper socioeconomic households would refute the null hypothesis.

Null Hypothesis 4. There is no difference in artifact patterning between different categories of site (e.g. white residential, Black residential, truck farm, and commercial).

Alternate Hypothesis 4. There is a difference in artifact patterning between different categories of site

(e.g. white residential, Black residential, truck farm, and commercial).

Test of Hypothesis 4. The null hypothesis would be supported if the artifact patterns exhibited by the assemblages from the different categories of site were comparable.

Control of Other Variables. Socioeconomic status of the inhabitants of the different categories of site might affect the artifact patterns exhibited by the assemblages. In particular, truck farmers were ranked as having higher socioeconomic status by Hershberg et al. (1973). Therefore, examinations of differences in quantity, quality, and variety outlined above should also be performed in order to establish whether socioeconomic differences may also contribute to variability seen in artifact patterning.

Detailed Test of Hypothesis 4. Artifact patterning should be examined utilizing the functional classification outlined above. Relative frequencies of artifact categories should be compared for the four groups. These comparisons should include not only gross artifact functional categories (e.g. artifacts reflecting food consumption) but by sub-category (e.g. ceramic tableware, storage vessels, glass tableware, etc.). It is anticipated that if differences are noted, they will be greatest on the sub-categorical level. For example, it might be expected that more storage containers would be present in the truck farm assemblages, reflecting more food-preserving activities at this category of site.

Specific Recommendations for Determining the NRHP Status of Archaeological Resources in the Study Area

At present, portions of Squares 189 and 122 are vacant (Figure 22). Shovel tests at 5 m intervals within these squares should provide data on whether artifacts and features associated with colonial period through early-twentieth century occupations are present. It is likely that remains associated with the Jourdan's slave quarters and brick yard are present in Square 122. If shovel tests there confirm the presence of such remains, then 2 x 2 m hand units should be opened to determine whether the archaeological deposits exhibit the quality of integrity. Specifically, one 2 x 2 m unit should be placed at the suspected location of a brick kiln and one at the suspected location of the quarters complex.

In addition, shovel tests at 5 m intervals should be excavated within some of the properties delineated in Tables 14 to 46 as well as within at least one commercial property. The goal of such a shovel test regimen should be to establish whether features are present that could yield artifacts to test hypotheses delineated above as well as other hypotheses related to late-nineteenth to early-twentieth-century activity in the study area. After shovel testing, at least two features should be hand excavated in order to obtain additional information about the density and nature of artifactual remains associated with such features.

Execution of these recommendations should provide data sufficient to assess NRHP status of the study area. In addition, the program outlined here should provide data to enable formulation of a plan for data recovery.

CHAPTER 11
NRHP EVALUATION OF THE ST. CLAUDE, FLORIDA AVENUE, AND NORTH CLAIBORNE AVENUE BRIDGES

by Dr. Ellen Weiss

Introduction

Modification of the Inner Harbor Navigation Canal (IHNC) may require replacement of the St. Claude, Florida Avenue, and North Claiborne Avenue Bridges. For this reason, the quality of significance of these engineering structures was assessed according to National Register criteria. Locations of the bridges are shown in Figure 23, an excerpt from the current USGS quadrangle.

Methods

Archival research was conducted to obtain dates of construction and information concerning subsequent modifications to the three bridges under evaluation. Oral interviews were also conducted. Two of the bridges (St. Claude and Florida Avenue) represent examples of a type, the Strauss Heel Trunnion Bascule Bridge. The Claiborne Avenue (Judge Seeber) Bridge is an example of the vertical lift type. For this reason, research was conducted into the history of the development of movable bridge types in order to determine the place and role of these three bridges in the history of their respective types. Also, research focused on determining whether there was a direct association between Joseph B. Strauss, one of America's great civil engineers, and the two bascule bridges. Finally, field visits were made to each of the three bridges to assess their integrity and to obtain a photographic record for comparison with the original plans and with other, similar bridges located elsewhere.

Description of the Bridges

The St. Claude and Florida Avenue Bridges represent bascule bridges, or drawbridges, built between 1918 and 1921. The North Claiborne Avenue Bridge is a vertical lift bridge built between 1953 and 1957. The New Orleans Port Authority (Dock Board) owns the bascule bridges. The Louisiana Department of Transportation and Development owns the vertical lift bridge.

The smaller of the two bascule bridges is the southernmost structure. It crosses the canal, actually

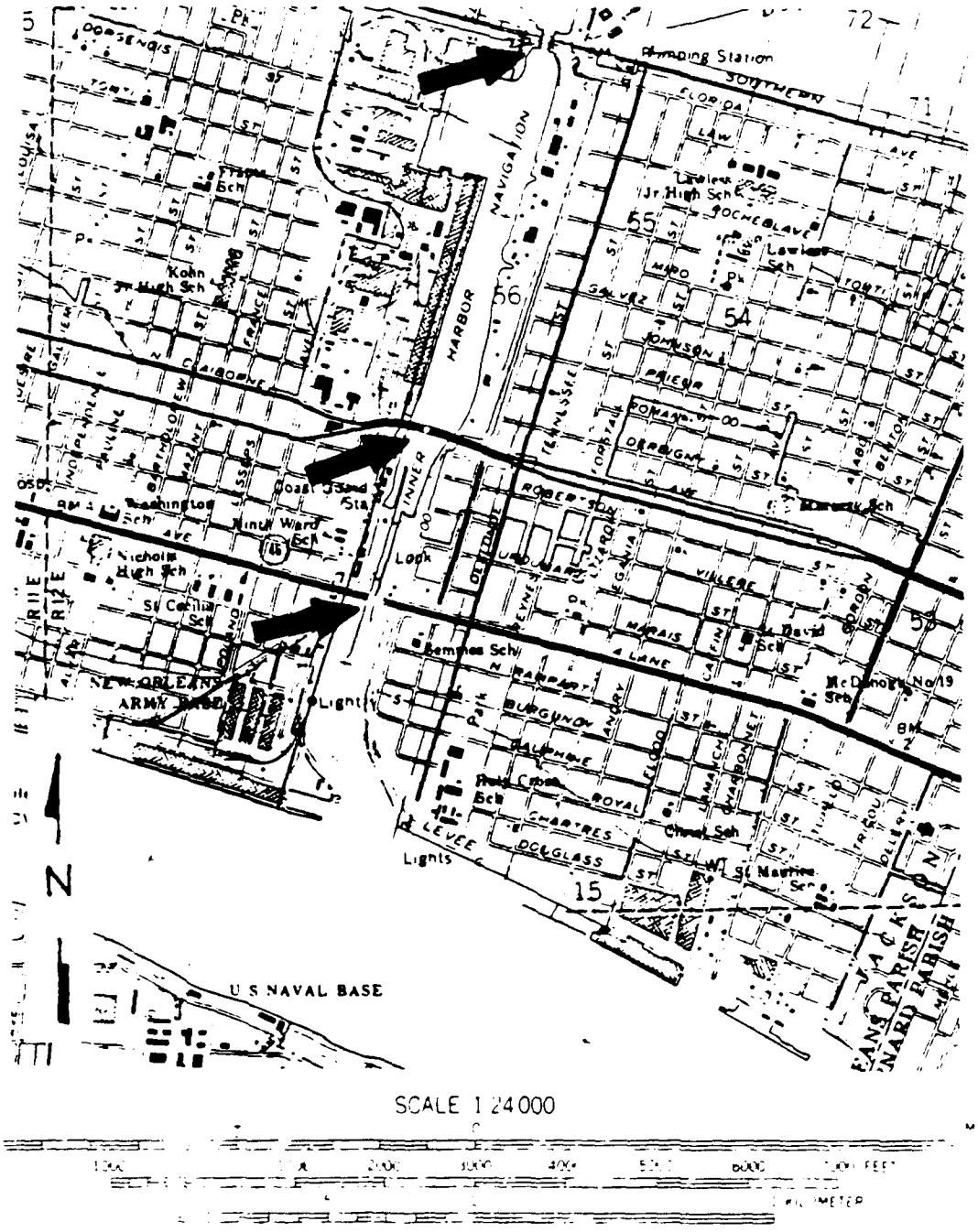


Figure 23. Excerpt from the New Orleans East USGS 7.5' quadrangle showing the locations of the bridges in the project area.

straddling the southern end of the IHNC lock, at St. Claude Avenue (Figure 24). The St. Claude bridge is a riveted steel through Warren truss with verticals. Two vehicular (once streetcar) lanes are located between the trusses and two cantilevered lanes outside the trusses (Figure 25). The northern cantilevered lane was built for a single track of the Louisiana Southern Railroad Company, leaving only one vehicular lane in 1921. There is a tower-like addition on the eastern or pivoting end of the bridge which carries a large concrete counter-weight. The tower holds the counterweight above the roadway when the bridge is closed (i.e. when it is open to vehicles), and lowers it to road level when the bridge is open to allow boats to pass beneath. The moving leaf is 93-1/2 feet long and the clear channel between concrete piers is 75 feet. The opening end of the bridge rests on the west wall of the IHNC lock (Figure 26). Bridge-raising is powered by the two original 50 HP electric motors. There is an auxiliary gas engine for electrical emergencies.

The second bascule bridge is the Florida Avenue/ Southern Railway bridge (Figures 27, 28, and 29). This bridge is near the Florida Avenue siphon, a drainage canal which crosses the Industrial Canal by going under it (Dabney 1921:36-38). It is similar to the St. Claude bridge but is slightly larger with a 117-foot moving leaf and a 94-foot clear channel. The electric motors are 75 HP. The superstructure weighed 1,600,000 pounds at the time of construction and the counterweight 800 tons. The counterweight tower is on the west bank of the canal rather than the east.

The St. Claude Avenue and Florida Avenue bridges were included in a 1918 contract between the Bethlehem Steel Bridge Corporation and the Dock Board for five bridges. One of these five was part of the emergency dam system at the IHNC lock and will not be discussed in this evaluation. The other two are bascule bridges. One of these is the Louisville and Nashville Railway/Gentilly Highway bridge, situated about halfway between Florida Avenue and Lake Pontchartrain. It is north of the Mississippi River Gulf Outlet and thus is not part of the Intracoastal Waterway. Similarly, the Southern Railway/Seabrook bridge at the lake is not associated with the Intracoastal Waterway. These two bridges are identical to that at Florida Avenue. In the following discussion "the four Industrial Canal bascule bridges" will refer to the two bridges (St. Claude and Florida Avenue) that may be replaced during proposed

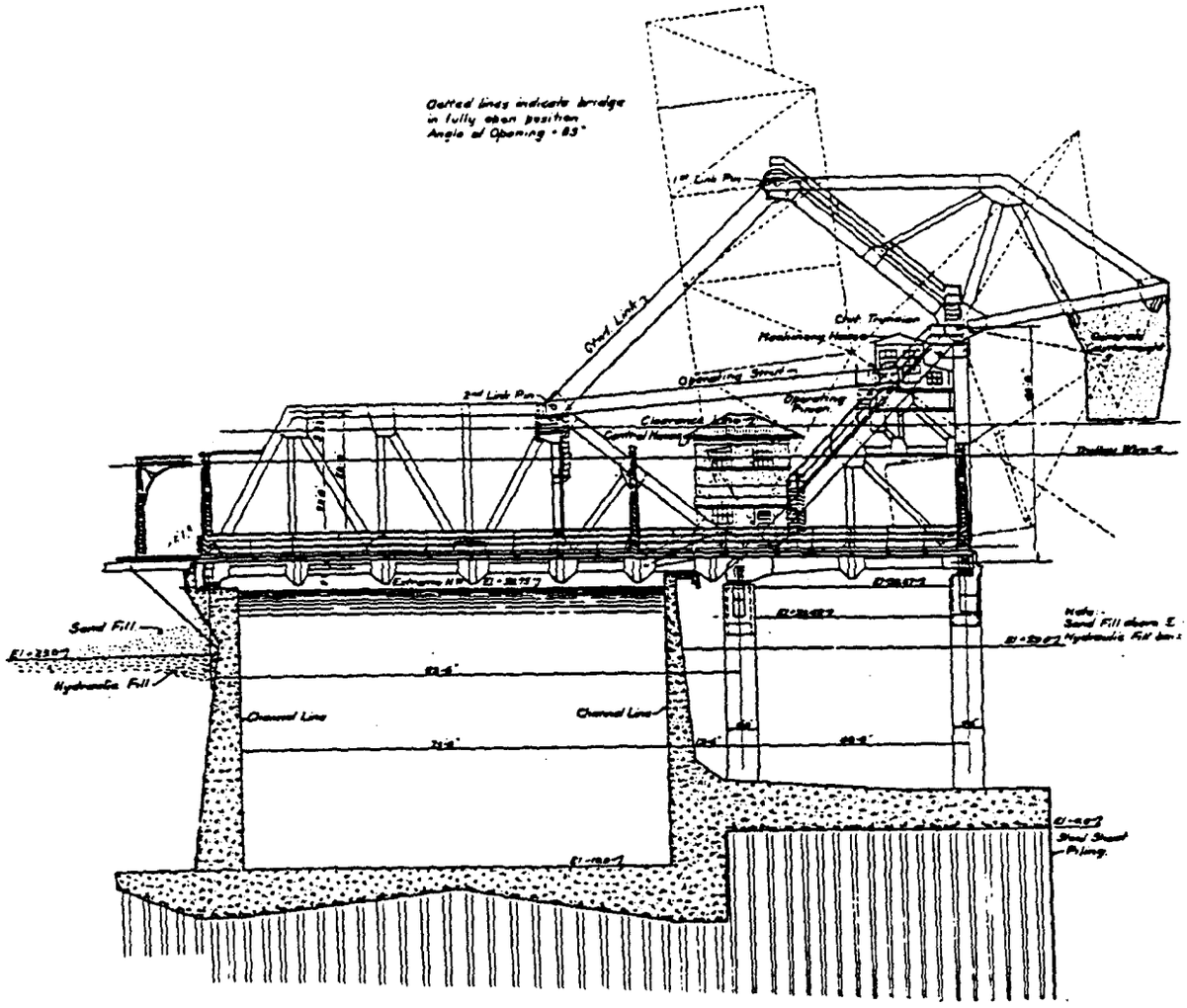


Figure 24. Elevation of the St. Claude Avenue bridge with dotted lines showing the position when fully open. Because the bridge crosses the canal lock (stippled) the rest pier is the west lock wall (Board of Commissioners of the Port of New Orleans).

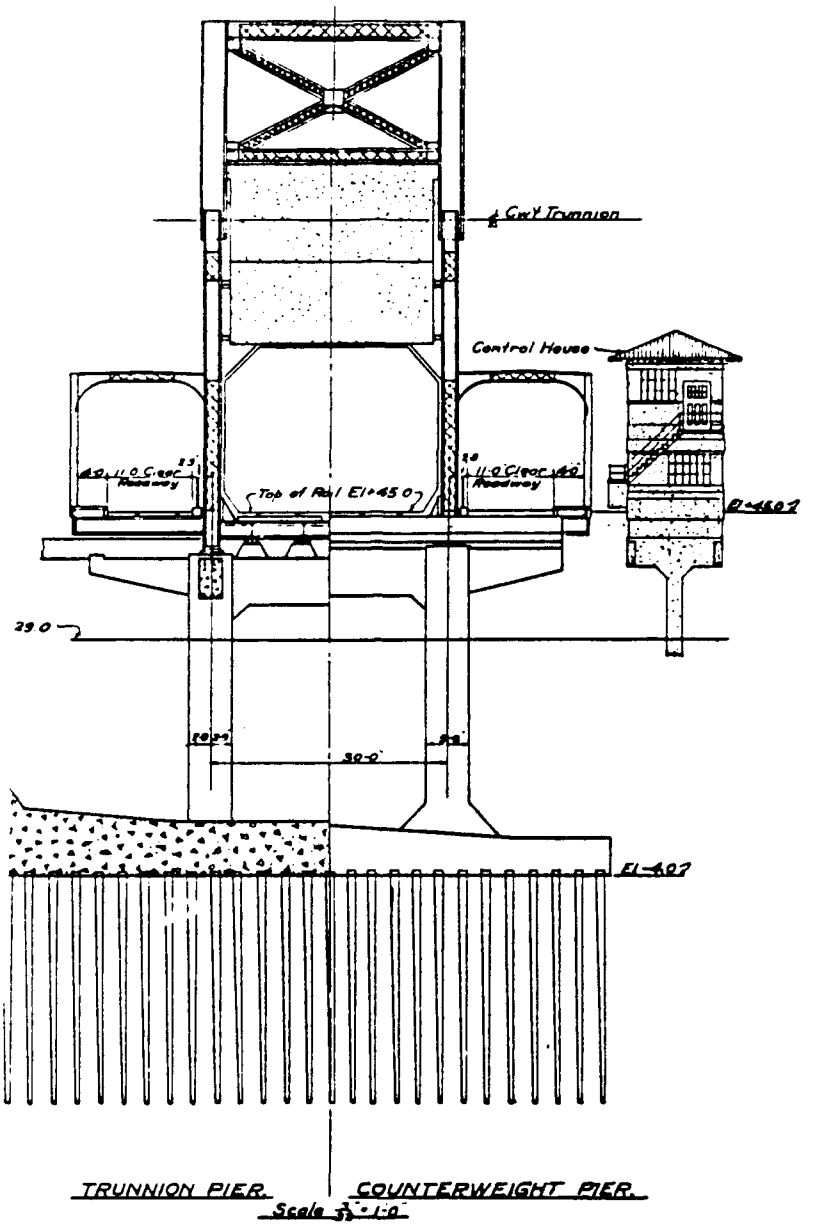


Figure 25. Section through the St. Claude Avenue bridge at the trunnion pier (left) and the counterweight pier (right). Cantilevers outside main truss with trolley arches for electric wires carried the railway line (left/north) and the vehicular road (right/south) (Board of Commissioners of the Port of New Orleans).

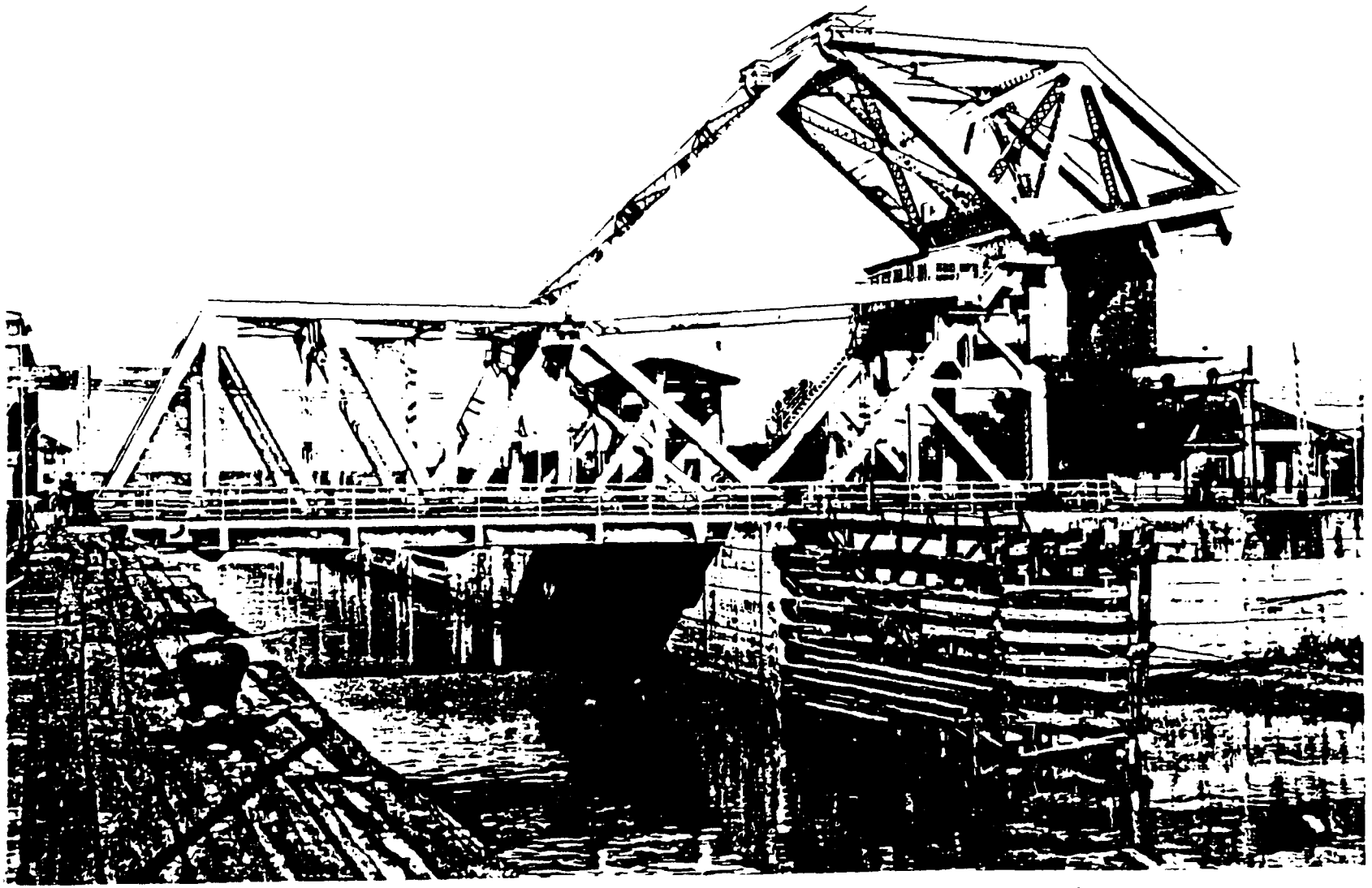


Figure 26. St. Claude Avenue bridge looking northeast (Board of Commissioners of the Port of New Orleans).

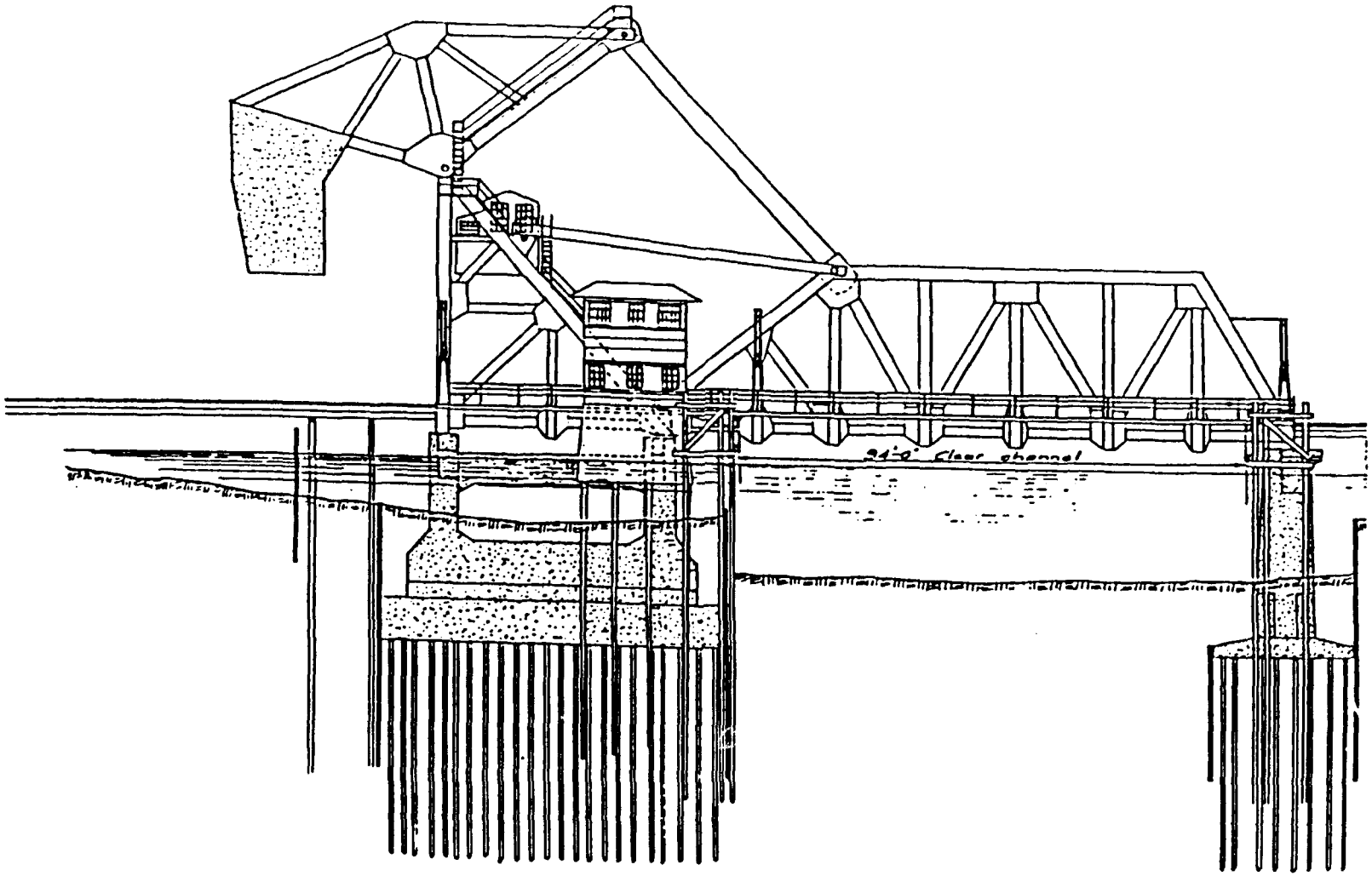


Figure 27. Florida Avenue bridge (Board of Commissioners of the Port of New Orleans).



Figure 28. Florida Avenue bridge before construction of the approaches, Sept. 15, 1919 (Board of Commissioners of the Port of New Orleans).

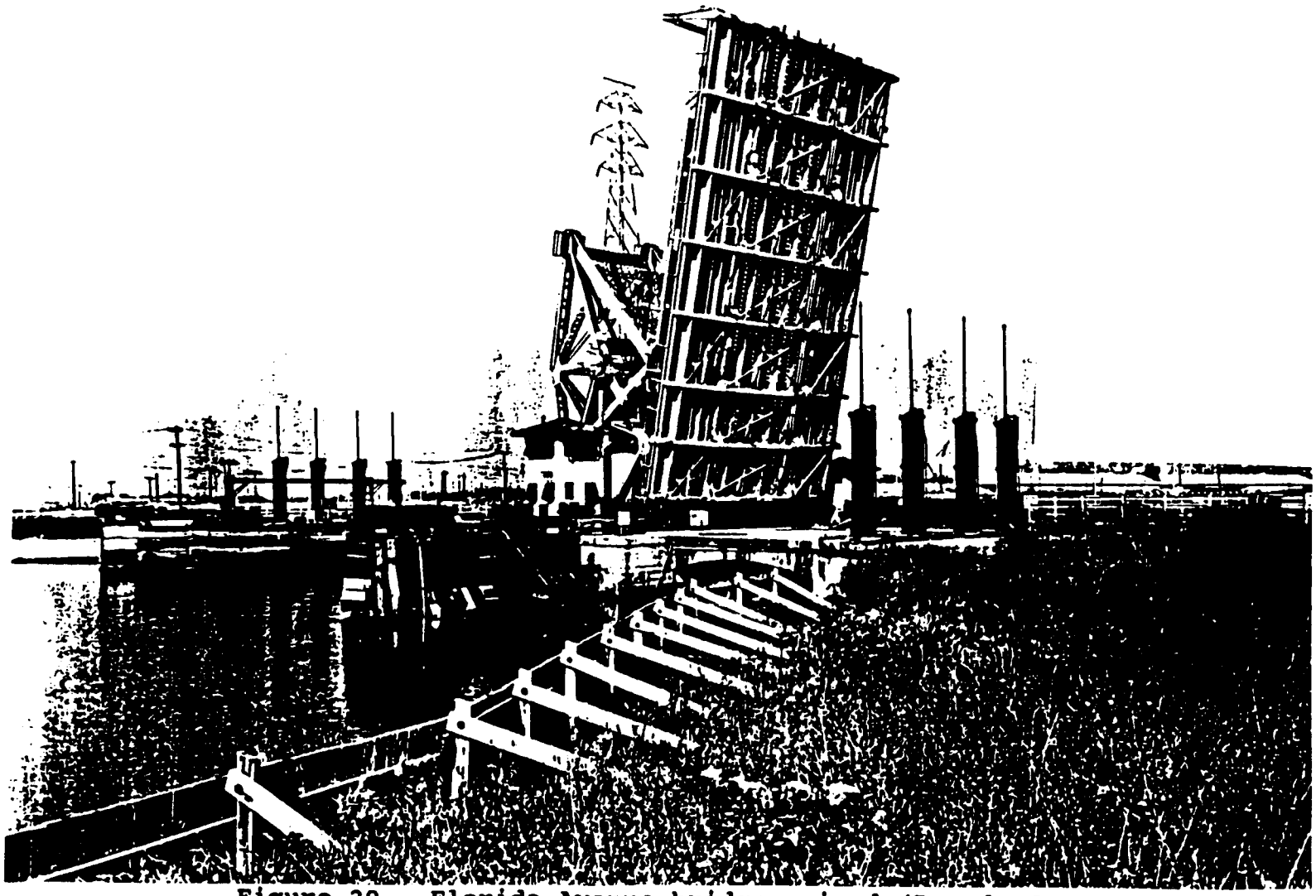


Figure 29. Florida Avenue bridge, raised (Board of Commissioners of the Port of New Orleans).

construction plus the two outside the project area to which they are historically linked.

The third bridge in the study area is the vertical lift North Claiborne Avenue or Judge Seeber Bridge, built between 1954 and 1957. It is situated lakeward of the St. Claude Avenue bridge (Figures 30, 31, 32, and 33). Vertical lift type bridges are constructed with two towers to each side of the waterway. These towers raise the center span in a horizontal position above the vehicular or closed level to allow large ships to pass underneath. On the North Claiborne Avenue Bridge, the moving span is 360 feet long and 57 feet wide and is a steel through Warren truss with verticals. The overall bridge length, including approaches, is 2,418 feet. The approaches are of steel and concrete construction. The piles and piers are cast-in-place concrete. The raised bridge offers a 156-foot vertical clearance from mean high water, sufficient for ocean-going vessels. Closed clearance is 40 feet. The steel towers are approximately 178 feet high (230 feet above water). They contain the machinery at the top, consisting of a power cable strung between the two towers, and stairs, as well as counterweights and counterweight chains (to balance the counterweight cables).

Chicago and the Development of Movable Bridge Designs

Both types of bridges crossing the Inner Harbor Navigation Canal, the bascule and the vertical lift, were developed in Chicago at the end of the nineteenth and the beginning of the twentieth centuries. The "port" of Chicago was the Chicago River, a deep channel used by big ships from the Great Lakes and crossed by twenty or more streets and railroads. These crossings necessitated efficient movable bridges.

Eight movable bridges burned in the Chicago fire of 1871. By 1890 Chicago had 48 bridges, mostly of the swing type in which two cantilevered spans reached from a masonry pier centered in the river to each shore. The spans pivoted open from the pier to a position perpendicular to the main bridge line, thus creating two openings for boats. The swing bridge was unsatisfactory for a number of reasons. First, the pier in the middle of the channel was a navigational hazard. Also, it took a long time to move the spans 90 degrees. Because the bridge was open for a long period, traffic delays resulted. Another problem was that boats had to stay a distance away from the bridge to accommodate the wide horizontal sweep of the spans. This further increased

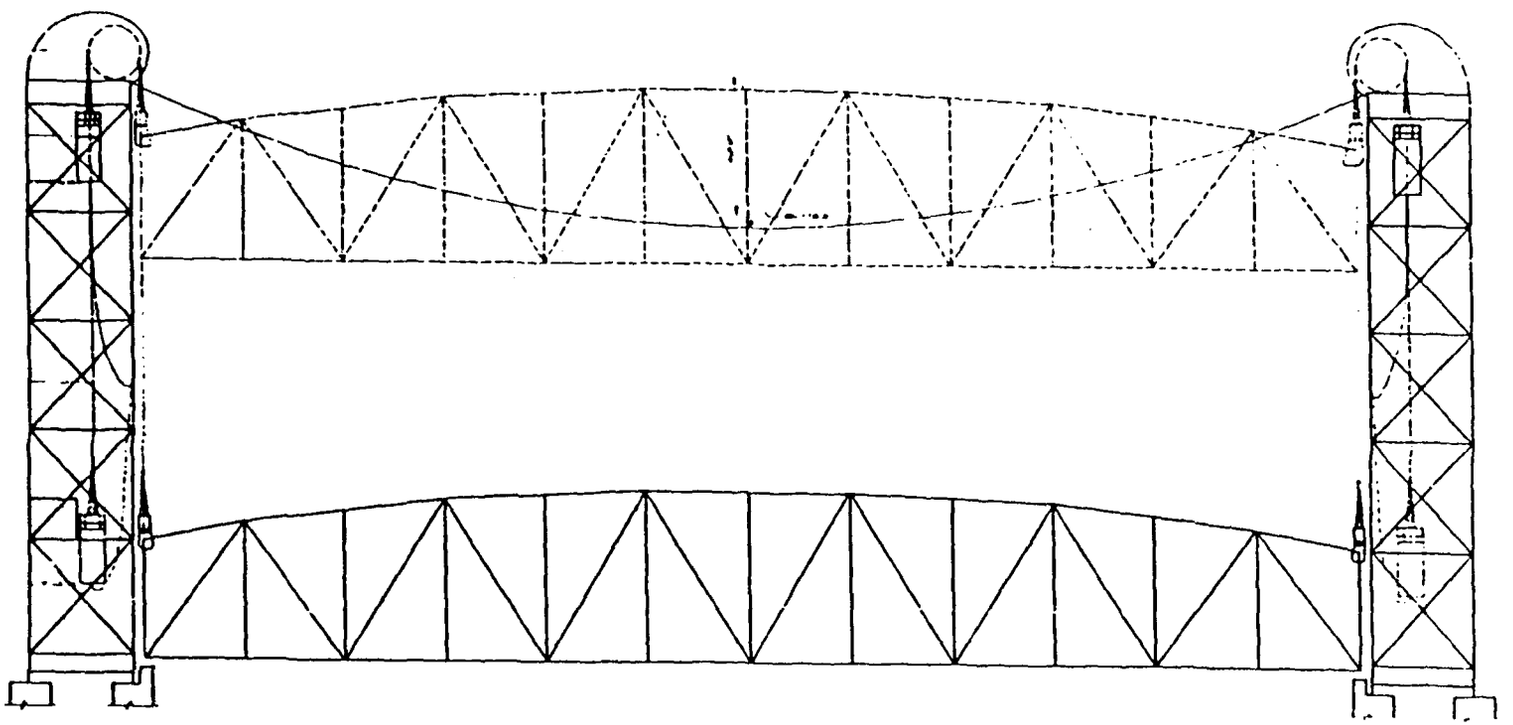


Figure 30. Simplified drawing of the North Claiborne/Judge Seeber Bridge with the span in the closed (solid line) and the open (dotted line) positions. Counterweights are shown in solid line for the lowered bridge and dotted line for the raised bridge raised (Louisiana Department of Transportation and Development).

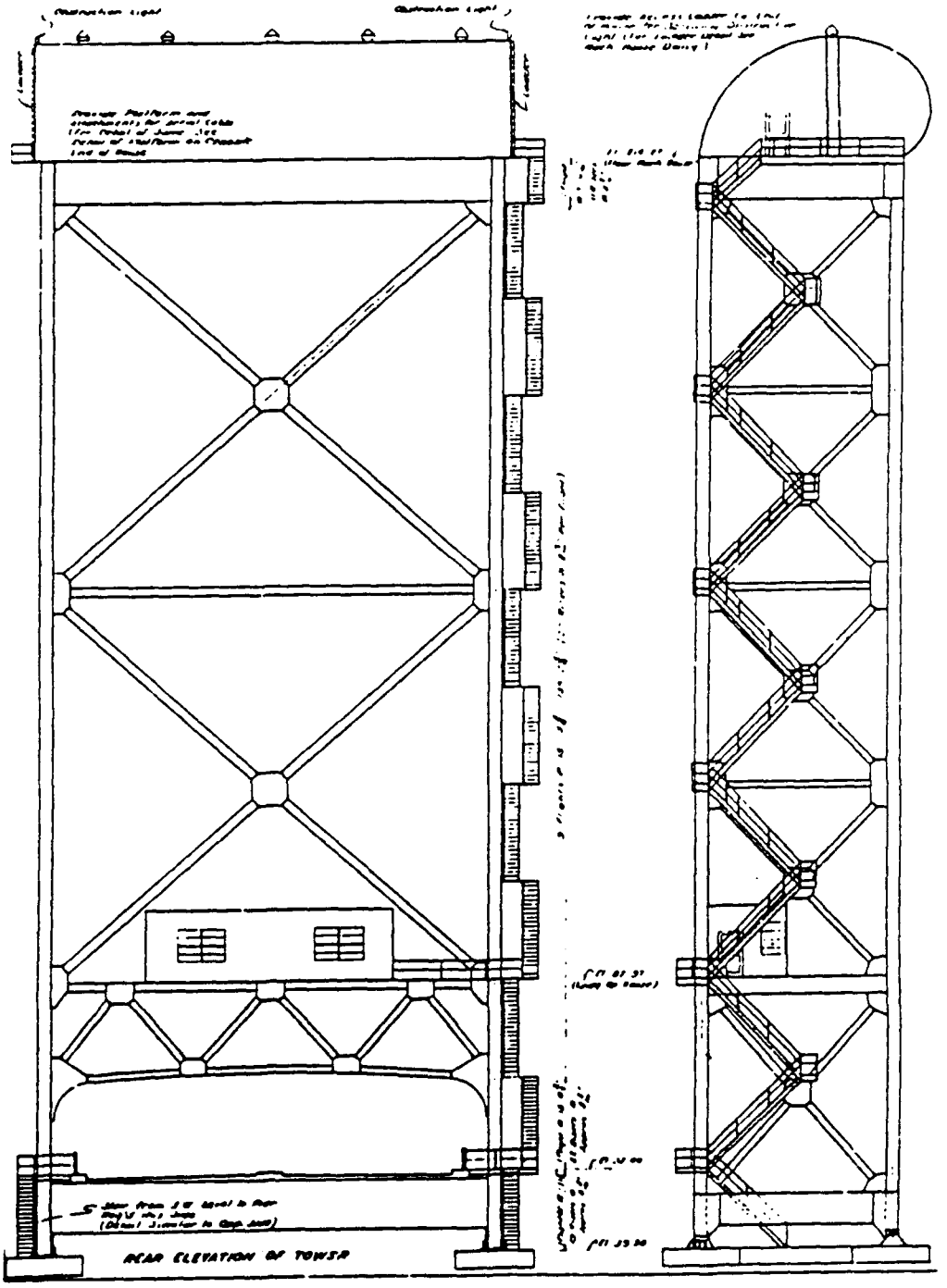


Figure 31. Drawings of the North Claiborne/Seeber Bridge tower from the vehicular approach (left) and from water (right). The counterweight system suspended within is not shown (Louisiana Department of Transportation and Development).

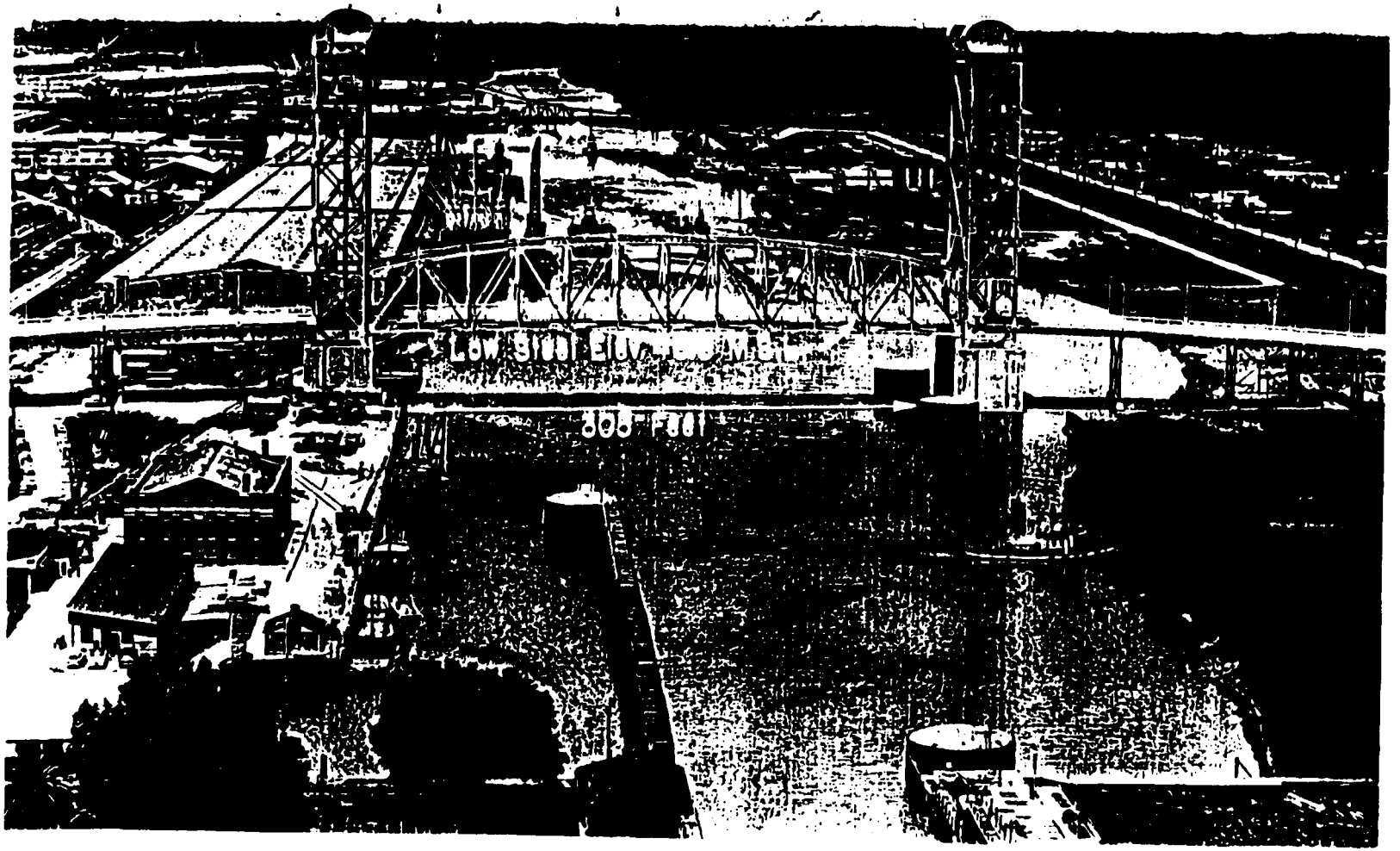


Figure 32. View from lock, looking north into the inner harbor, of the closed North Claiborne Avenue or Judge Seeber Bridge (U.S. Coast Guard).

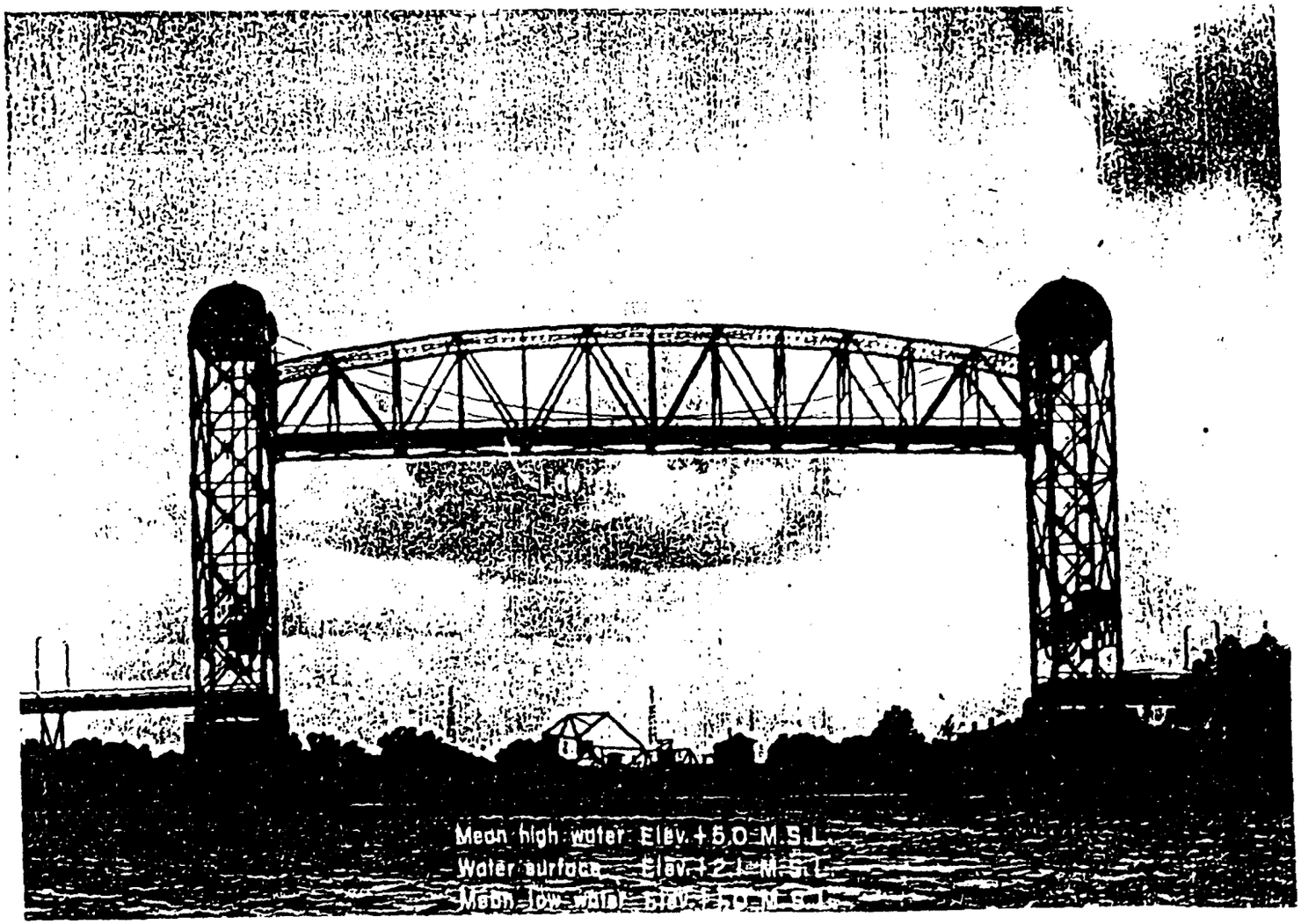


Figure 33. North Claiborne Avenue or Judge Seeber Bridge in the fully raised position (U.S. Coast Guard).

the length of time during which the bridge was closed to vehicular and railroad traffic. It was impossible to line up a number of swing bridges to accommodate six or eight train tracks. Finally, any docking facilities adjacent to such bridges were ruined.

The two most significant responses to the problematic swing bridge came in 1894, with the Waddell lift bridge at South Halsted Street and the Scherzer rolling lift bascule bridge for the Metropolitan Elevated Railroad at West Van Buren Street. These represent the beginning of two new streams of movable bridge development, both of which are represented at the Industrial Canal in New Orleans.

The vertical lift bridge, one of the two responses to the problems of the swing bridge, represents an engineering development that is almost completely American. Although there were earlier pioneering designs in Europe, none were built. In 1872, Squire Whipple built small vertical lift bridges across canals in New York. The first important modern bridge of this type, on the scale of the vast number of such bridges built all through the twentieth century, was J.A.L. Waddell's South Halsted Street bridge in Chicago. It was designed in 1892 and completed in 1894 (Figures 34 and 35). It served vehicles, pedestrians, and streetcars. Two 217-foot towers, built of two vertical and two inward slanting columns braced together, supported machines which could raise the 130-foot span to a total vertical lift of 140 feet. The span was about 15 feet above water when closed.

Waddell's South Halsted Street bridge and all other vertical lift bridges operate on the same principle as a simple sash window. The towers, like window frames, contain pulleys at the top associated with cables linking the movable span (the "window") to counterweights within the "frame" (towers). At South Halsted, the counterweights were cast iron blocks which balanced a 600,000 pound span formed by a through-Pratt truss. More iron counterweights could be added if the weight of the span had been increased by rain water. The operator's cabin was on the span. The system was originally powered by steam engines, but these were replaced by electric motors in 1907. A 1923 evaluation (Hool and Kinne 1923:159) identified the Halsted Bridge as the most reliable in Chicago after the substitution of steam by electric power. Because the vertical lift bridge did not intrude into the riverway while opening, it allowed more economical use of valuable wharf space

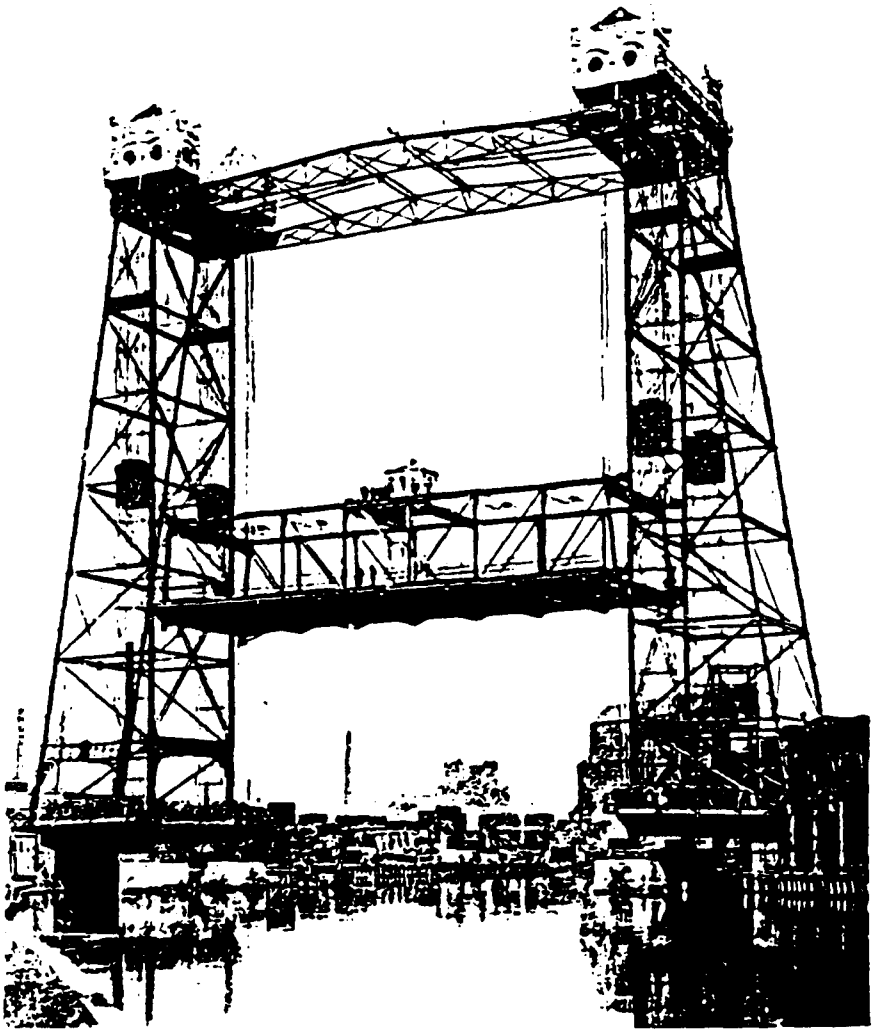


Figure 34. The Halsted Street vertical lift bridge over the Chicago River in 1894. The machinery is located in the housing at the top of the two towers. Two counterweights are in each tower, shown here near the partially-raised moving span (Waddell 1916:722).

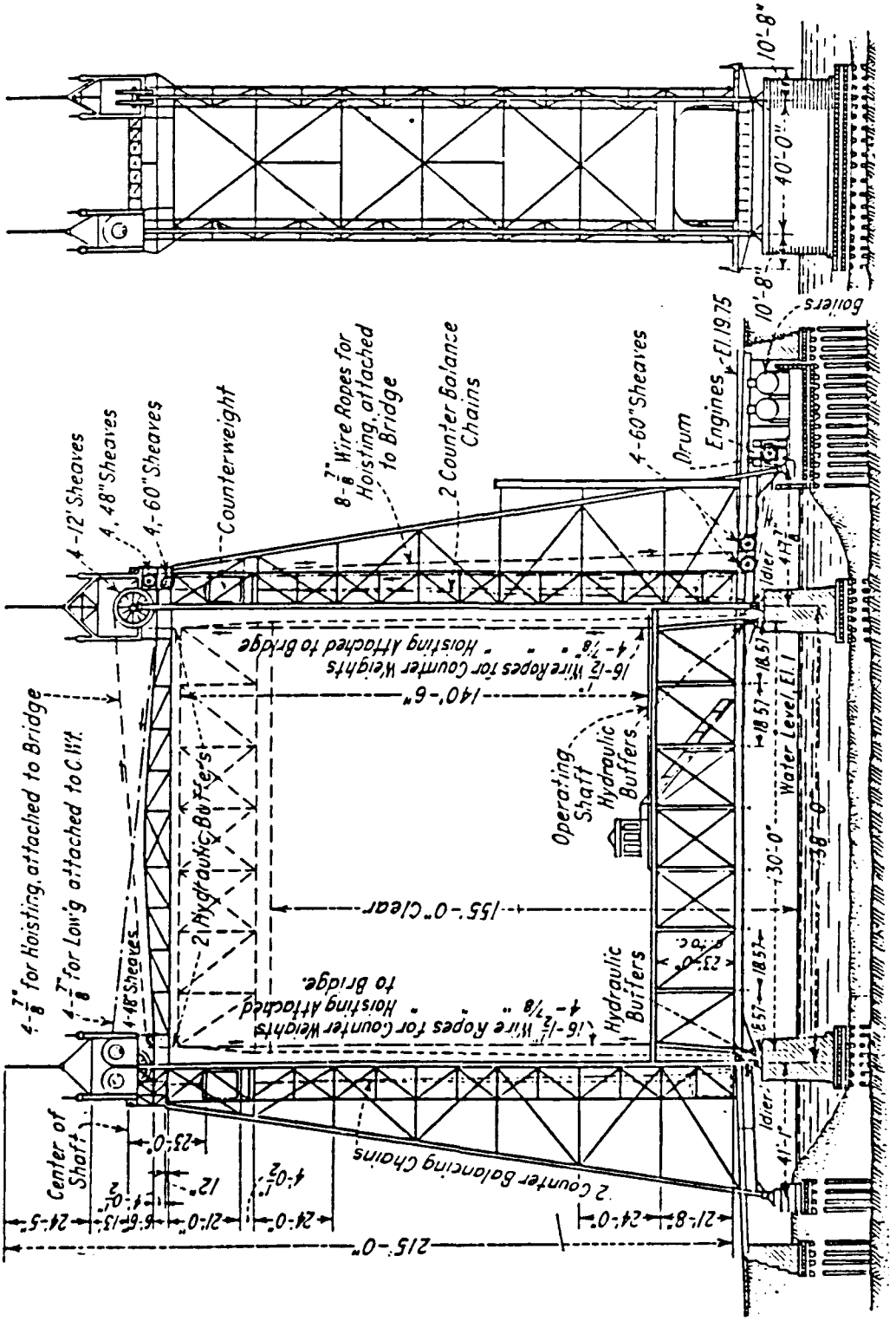


Figure 35. The Halsted Street vertical lift bridge, sectional side and end elevations (Hovey 1927:153).

than did the swing bridge. An additional advantage over the older swing bridges was that boats could move closer to the bridge before it opened. This reduced the length of delays for railroad and vehicular traffic.

J.A.L. Waddell noted that 33 major vertical lift bridges were constructed between 1894 and 1915 (Waddell 1916:744). Vertical lift bridges have remained an important American type throughout the twentieth century. Variations in these bridges are fewer and less important than in the contemporaneous bascule bridge. There are minor variations associated with whether the entire span or only the deck is raised. One other variation is whether there is a connecting span at the top of the towers, as in South Halsted Street Bridge, or not, as in the North Claiborne Avenue Bridge. A span at the top lends additional rigidity. It was also justified at South Halsted Street to provide machinists with quick passage from the top of one tower to the other.

The bascule, or in popular terminology the "drawbridge," was the other line of movable bridge development contemporary with the vertical lift span. Many more of these were built on the Chicago River than was the case for vertical lift span bridges. The word "bascule" is derived from the French word for "balance." Bascule bridges are almost always counterweighted drawbridges. The weight of the upward moving leaf (or two leaves) is matched by a counterweight which swings down. The counterweight usually moves out of sight and into the ground or bridge pier as the leaf moves up. This principle was widely used in the eleventh century. A drawbridge across a castle moat could be counterweighted. The weight was hidden in a pit beneath the castle entrance. A man in the pit pulled the counterweight down, thereby raising the bridge and, incidentally, protecting the entrance (Figures 36 and 37).

Bascules, like other bridge types, were the subject of considerable experimentation in the nineteenth century. During that period, the proliferation of railway lines and canals necessitated low-level bridges with movable spans to allow canal boats to pass underneath. One constraint on construction of these bridges was height. The bridge could not be so high that trains would be unable to climb the resulting steep approach.

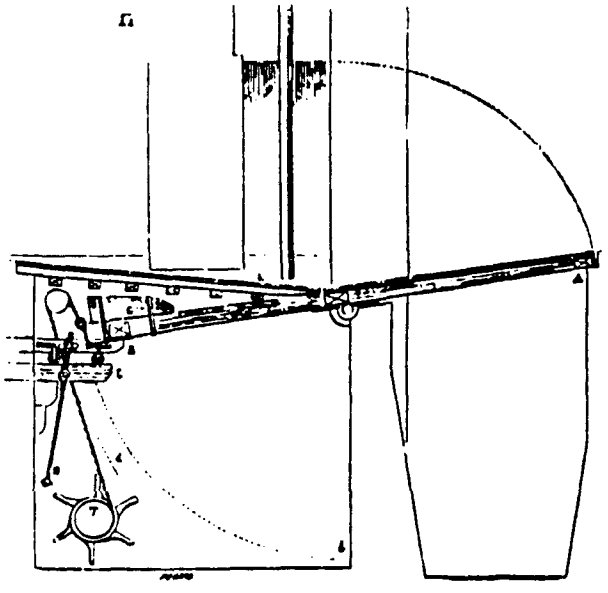


Figure 36. Medieval bascule bridge. The moving leaf (A) swings up to cover the entry to the castle (Viollet-le-Duc 1868, v. 7:257).

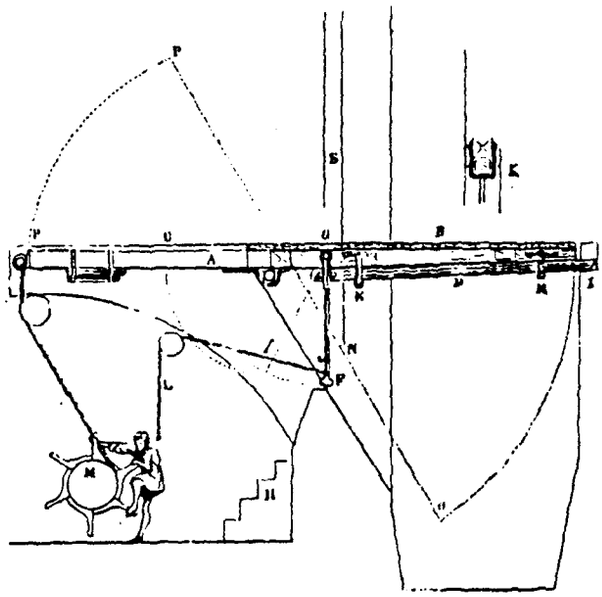


Figure 37. Medieval bascule bridge. In this example, the moving leaf (B) swings down into a dry moat after the locking strut (D) is pulled away from the niche (I) (Viollet-le-Duc 1868, v. 7:255).

Significant developments in the bascule type bridge came in the 1890s with the availability of steel. Tower Bridge in London and the West Van Buren Street Bridge in Chicago, both finished in 1894, are the first two important bascule bridges. The Scherzer Rolling Lift Bridge Company built the Chicago bridge. A Scherzer rolling lift bridge is a bascule bridge in which the pivoting end of the moving leaf is rounded into a quadrant which rolls backward over a horizontal track (Figure 38). The span recedes away from the water as the quadrant rolls back, making a wider clear channel than a simple upward pivoting of the span could provide. As the leaf rises, a counterweight fixed rigidly behind the quadrant is lowered into a watertignt pit which is partially below water level. Unfortunately, these pits were difficult and expensive to build. Another problem was that the rolling action of the quadrant, as the leaf's center of gravity moves horizontally back towards the shore, tended to rock the bridge pier. This rocking was a destabilizing action if excellent foundation conditions, preferably bedrock, were not present.

In 1898, Chicago decided it was necessary to replace all of the old swing bridges because the center piers in the Chicago River made navigation too perilous for the larger ships which were coming in by that date. The Calumet River, which was developing as an industrial zone in South Chicago, was not hampered by swing bridges and as a result was beating out the old city as a port. In 1900, the City of Chicago set aside a million dollars for eight new bridges. A literature search on movable span bridges led to the adoption of three designs by city engineers, all of which revolved on fixed trunnions and had counterweights in tail pits (Figure 39). This bridge became known as the "Chicago Type" and was a modification of London's Tower Bridge (Figure 40 and 41).

A trunnion is a pivot which supports the moving leaf and is fixed in place like a hinge. The problem of the Scherzer rolling lift bridge, rocking action on the piers, was alleviated because the center of gravity of the moving leaf remains on or near the trunnion as the bridge rises. The result was that a trunnion bridge could be built under poor soil conditions and with less expensive foundations. Another advantage was that bascule bridges, with the counterweights out of sight below road level, were more attractive than vertical lift bridges, their main competitor. Attractive bridges complemented Chicago's aesthetically ambitious goal of being the Paris of the new world. However, many

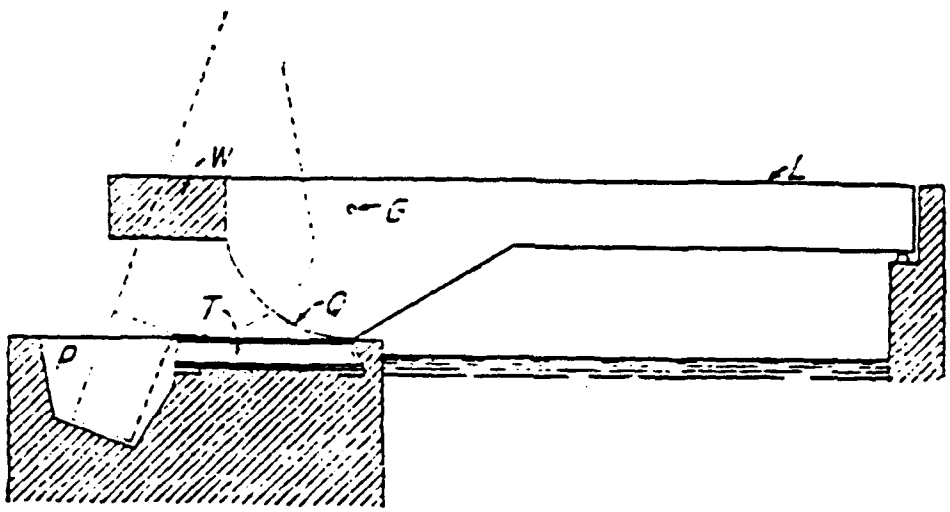


Figure 38. Scherzer Bascule. As the quadrant (Q) rolls back and the leaf (L) rises, the counterweight (W) moves down into the tail pit (P) (Waddell 1916:702).

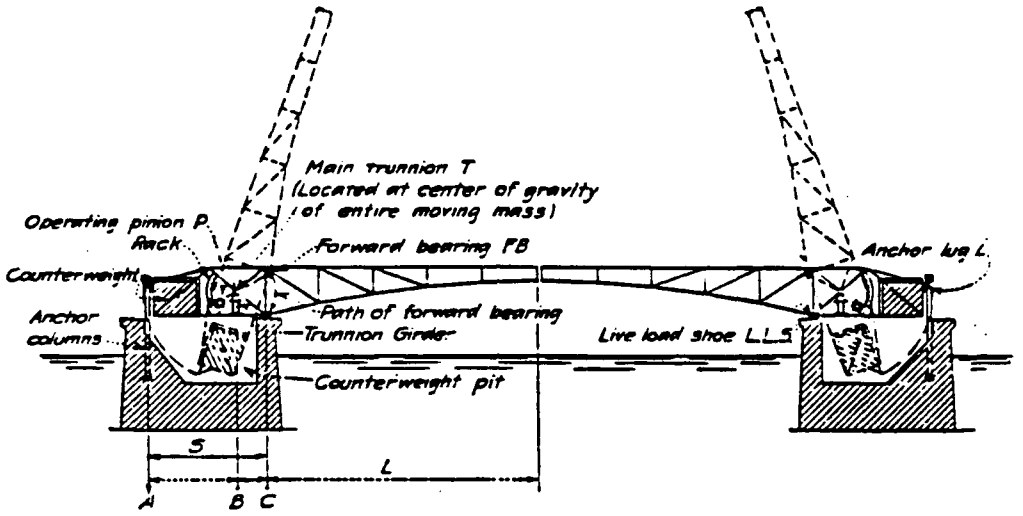


Figure 39. Chicago Type simple trunnion double leaf bascule bridge. The main trunnion (T) remains as the center of gravity as the leaf rises and the counterweight sinks into the tail pit (Hool 1923:20).

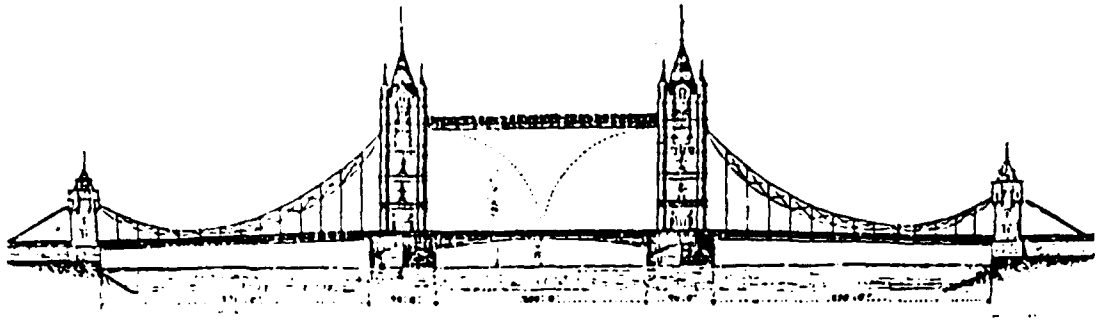


Figure 40. The Tower Bridge in London, an early modern bascule bridge. The high span connecting the upper story of the towers above the (dotted) radii of the moving leaves enables impatient pedestrians to climb a tower and cross at the upper level while the bridge is raised (Hovey 1927:84).

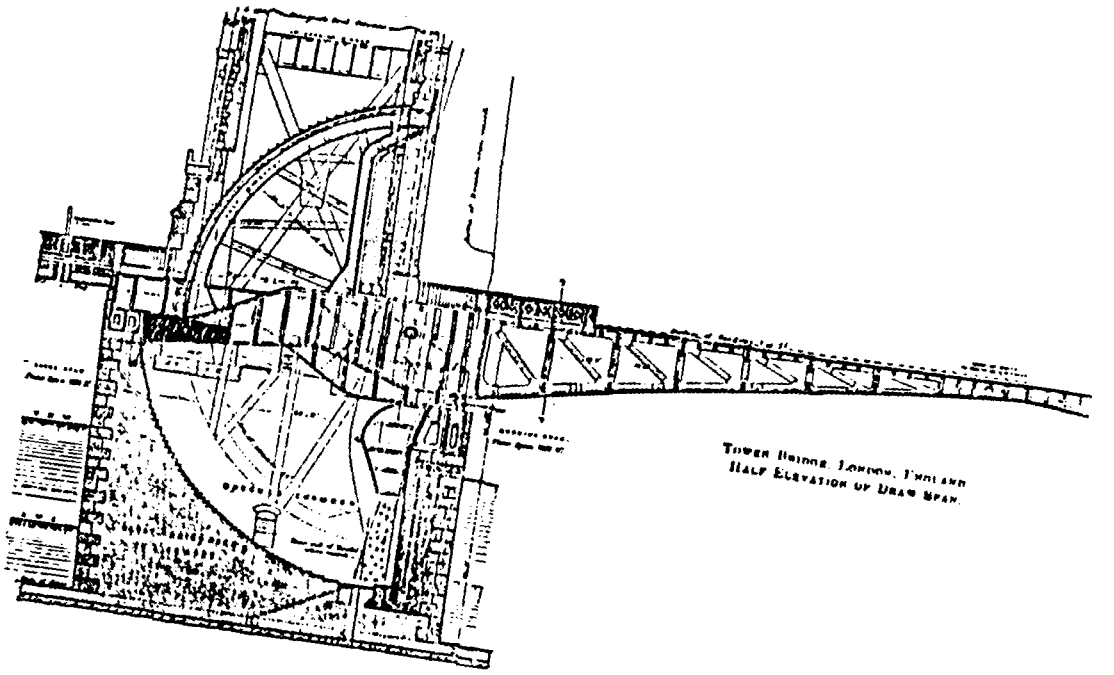


Figure 41. Section though pier and counterweight pit of the Tower Bridge, London. The counterweight pit (black) is fixed to the end of the moving leaf and is rotated to the bottom of pit (dotted) by a quarter circle "rack quadrant." The center of the half circle traveled by the rack quadrant is the single trunnion upon which the leaf pivots (Hovey 1927:85).

vertical lift bridges were built along the Calumet River where, because it was in an industrial zone, aesthetic issues related to bridge design were considered less important.

Relative costs of vertical lift and bascule bridges were much debated during the early twentieth century. The issue of cost was debated in terms of construction cost versus maintenance cost, length of span, and the variables of type and density of traffic both over and under the bridge. Generally, lift spans were considered more acceptable for long spans in industrial areas or in the country. Highway bascule bridges were generally double-leaf so that the two raised leaves would keep vehicles from driving into the waterway from either direction. Railway bascules were generally single-leaf because the moving end of the leaf, when placed on the pier on the opposite shore (the "rest" pier), would be more rigid under live loads than two leaf ends locked together, as in a double-leaf bridge.

There were a number of other bascule bridge types developed between 1895 and 1910, such as the Rall rolling lift or the Waddell roller bearing designs, but they are not important to development of the types present over Industrial Canal. Two of the Industrial Canal bridges represent the type known as the Strauss heel trunnion bascule bridge. The type was developed by Joseph B. Strauss, one of the country's great civil engineers.

Joseph B. Strauss

Joseph B. Strauss, born in 1870 in Cincinnati and educated in engineering at the university there, died in Los Angeles in 1938 at age 68. When interviewed late in his life he said that he could not remember all of the bridges he had built.

Strauss began his career as a draftsman for the New Jersey Steel and Iron Co., after which he taught engineering in Cincinnati. He then moved to Chicago to work for the Lassig Bridge and Iron Co. In 1897, he became a designer for the Sanitary District of Chicago, which was building bascule bridges for the city's deep-water shipping and drainage canal. Strauss then spent about three years heading the Chicago office of the important bridge designer Ralph Modjeski before going out on his own in 1902. In 1904, he launched the Strauss Bascule Bridge Company.

Strauss is credited with five different bascule bridge designs, and earned national recognition as an authority on movable bridges. His other inventions include the "Aeroscope" at the 1915 San Francisco Panama Pacific Exposition; portable search lights used by both the U.S. and Russian governments during World War I; reinforced concrete freight cars; and a bascule door hangar. He is credited with 400 to 500 bridges in the United States, Canada, Europe, and China, but he is best known as the chief designer of the San Francisco Golden Gate Bridge at San Francisco (1933-1937). Strauss first submitted designs for the Golden Gate Bridge in 1921 while working out of the San Francisco branch of his Chicago office. This 1918-1921 scheme called for a combination of two 685-foot spans cantilevered from 800-foot towers and a center suspension span of 2640 feet with a 200-foot vertical clearance for oceangoing ships. The period of development of this early plan was contemporaneous with the period when the four Industrial Canal Strauss bascules were designed and constructed. Although his Chicago office would have been aware of the New Orleans work, it is doubtful that Strauss himself was directly involved. At the time, he was in San Francisco completing his most daring bridge design to date, the Golden Gate.

Strauss also served as primary or consulting engineer for other major bridges: that at Montreal over the St. Lawrence River; the Columbia River Bridge at Longview, Washington; the George Washington Bridge in New York (1927-1931); the 1,650 foot Bayonne Arch connecting New Jersey to Staten Island (1928-1931); and the handsome bascule Arlington Memorial bridge of the Potomac in Washington, D.C. (1926-31). In the assessment of historian Carl Condit, "Joseph Strauss belonged to the great tradition of Roebling and Eads" (Condit 1961:144).

Aspects of Design of The Strauss Heel Trunnion Bascule Bridge

The Strauss bascule bridge differs from the Scherzer and Chicago types in several ways. When an early version of Strauss' new design was introduced in Engineering News (November 1904), the text emphasized cost reductions. The two schemes shown, one for Chicago and one for Cleveland, were said to eliminate the "costly and troublesome" tail pits (Figures 42 and 43). Neither had been completed prior to the date of publication. Other cost-saving benefits ascribed to these 1904 Strauss bridges were the use of concrete

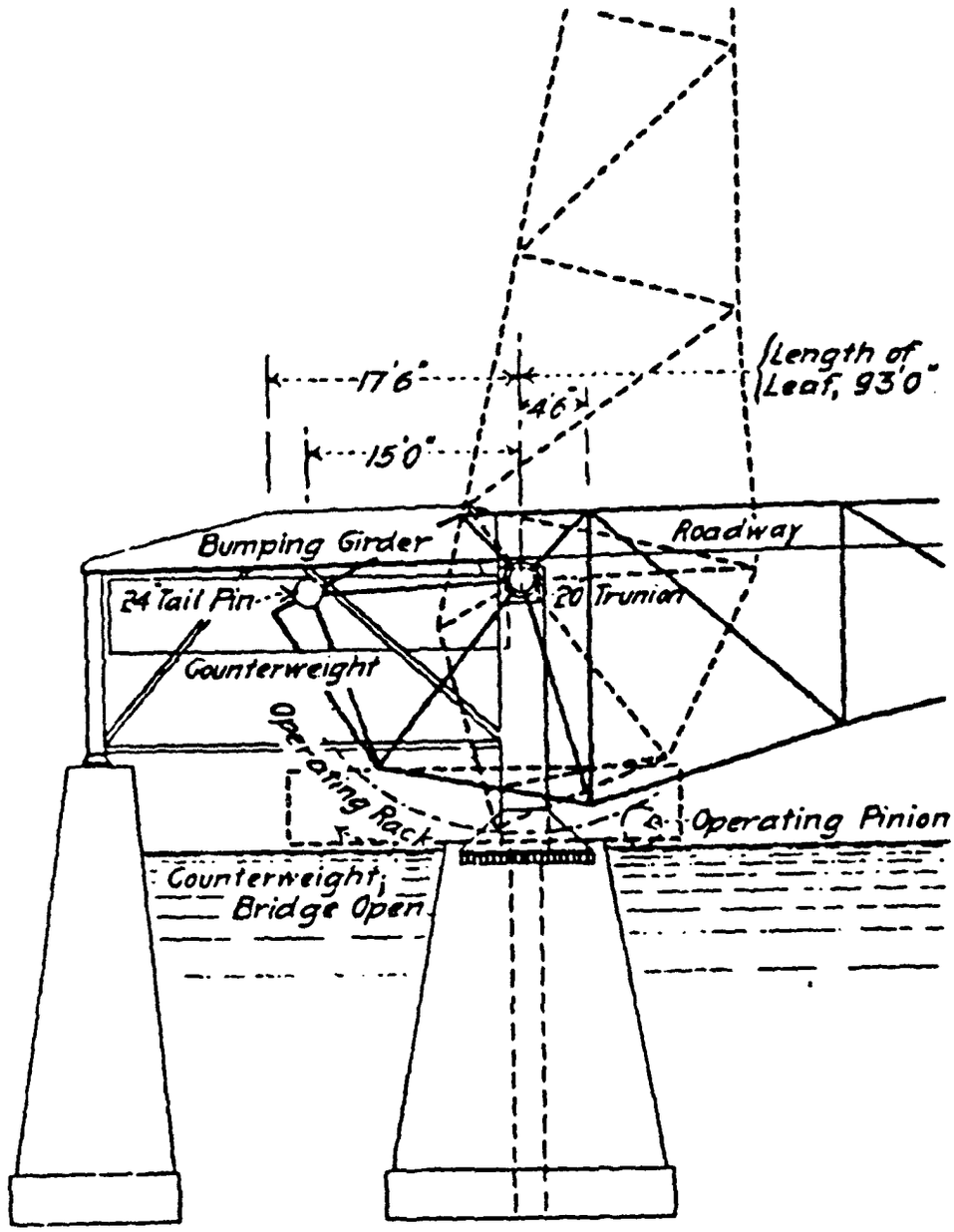


Figure 42. J.B. Strauss design for a Chicago bascule bridge without a tail pit and with the counterweight below roadway (Engineering News, Nov. 24, 1904, p. 480).

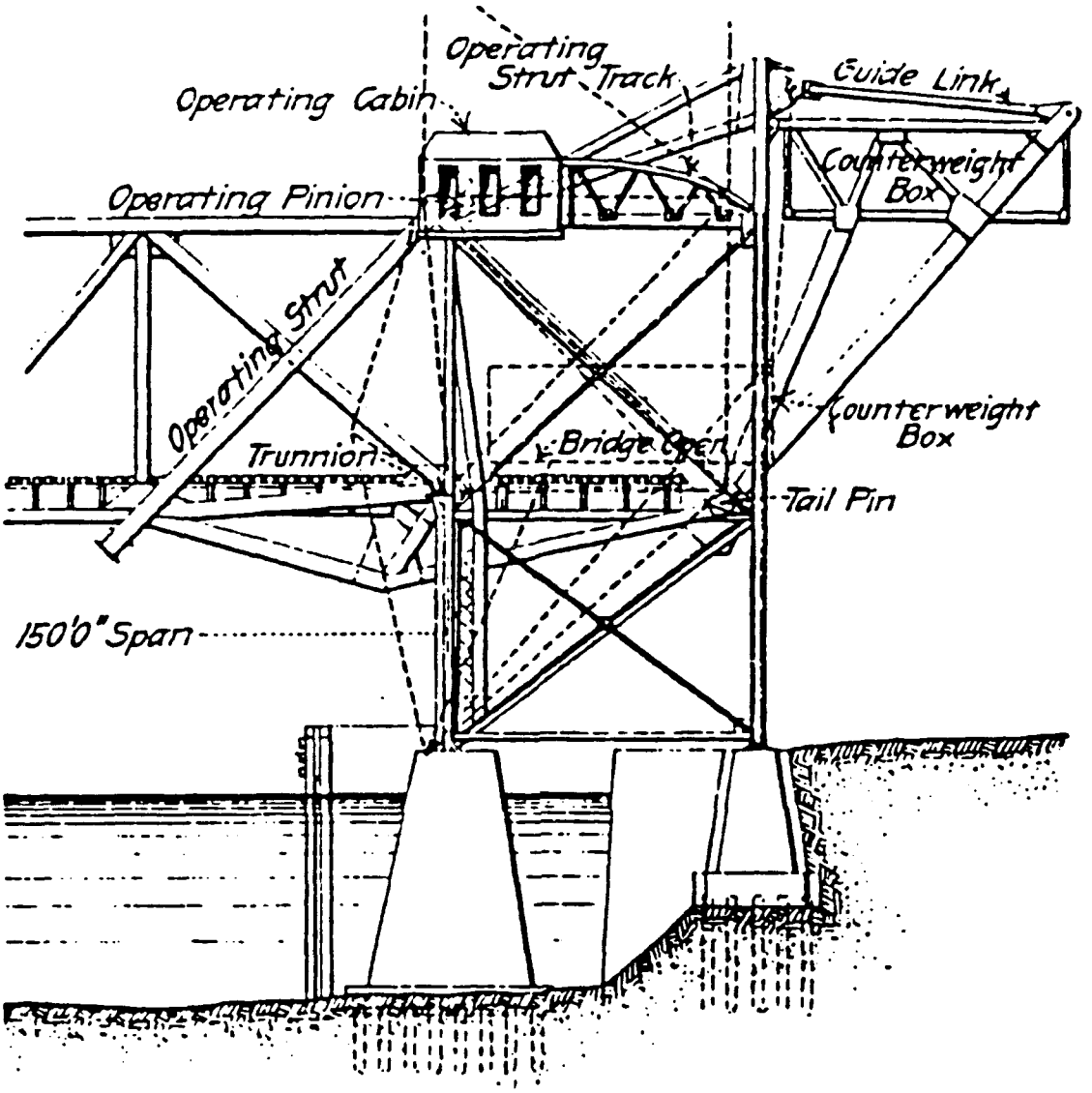


Figure 43. J.B. Strauss design for a Wabash R.R. bascule bridge at Cleveland without a tail pit and with an overhead counterweight (Engineering News, Nov. 24, 1904, p. 480).

rather than cast iron counterweights, the elimination of curved structural members, and a generally spare structure using less steel.

The Strauss Chicago bridge (Figure 42) had its counterweight set below the road so that it could not be easily seen, once again an ideal design for a city which was concerned about aesthetic issues. For a bascule without a tail pit but with the counterweight below the road, a substantial height above water was necessary so that there would be room for the counterweight and its steel support mechanism to swing down yet stay dry. This condition existed in few other places, and this aspect of the design was not relevant for the later New Orleans bridges.

The Cleveland bridge (Figure 43) had a single leaf 150-foot span and an unsightly overhead counterweight. It appears to have worked much like the New Orleans bridges. Strauss' designs, like other trunnion bridges such as the Chicago type (above), offered the advantage of pier stability. The weight of the moving leaf was contained fully on the forward or trunnion pier. The weight of the counterweight was contained fully on the rear or shore pier. Finally, the far or rest pier on the other side of the channel carried no dead load because the moving leaf, even when closed, was still counterweighted. In this manner, any rocking motion which would have destabilized such a bridge was prevented. This aspect of design was particularly relevant to the bridges in New Orleans because of soil conditions in that city.

Otis Ellis Hovey, writing in Movable Bridges (Hovey 1927:121) explained how Strauss refined the stability of the fixed trunnion. The two principal supports which divide the two weighted parts of the superstructure (the moving leaf and the counterweight) are parallel to one another. The moving diagonal struts connecting them are also parallel. The design results in a steel parallelogram no matter what position the bridge is in: open, closed, or at any point in between. The result is that the center of gravity of the moving leaf and that of the counterweight, while changing, are still constant in relation to one another, thereby remaining in balance while the bridge is in motion. The center of gravity of the leaf moves in toward the trunnion as the leaf goes up. The center of gravity of the counterweight also moves in toward the trunnion as the counterweight moves down, but it does so at a lesser rate. The two loads are kept constant and vertical, each on their own pier,

so that foundations remain stable. Hovey implies that this is Strauss' major contribution. While it is unclear whether this principle was fully operative on the 1904 bridges, it is evident in Strauss' work soon after.

In 1912, Philip L. Kaufman of the Strauss Bascule Bridge Company introduced the readers of Engineering News to the heel trunnion bascule bridge. By that date, eight large bridges of this type had already been completed, and many more were under construction. Completed examples included railroad bridges at Buzzards Bay, Massachusetts; Ashtabula Harbor, Ohio; Peoria, Illinois; Cleveland, Ohio; South Chicago, Illinois; Winnipeg, Manitoba; and Seattle, Washington.

Most spans were 160-foot single leafs. An exception was the one in South Chicago which was 186 feet. All were, like the smaller Industrial Canal bridges subsequently built in New Orleans, heel trunnions. This means that the fixed main trunnion about which the moving leaf pivots is at the "heel" of the truss. This is the point where the bottom chord meets the sloping end post. Similarly, the counterweight has a trunnion which is also a fixed pivotal point. Figure 44 shows that when the bridge is closed, the points T, C, P2, and P1 (points T and C being the two fixed trunnions) mark the ends of four steel members which make a jointed rectangle. When the bridge is open, this rectangle is compressed into a parallelogram. This demonstrates the geometry Hovey described as guaranteeing the constant relation between the movement of these parts. That is, a:b=a':b' with a and b representing conditions when the bridge is closed, and a' and b' representing open conditions.

The Duwamish River Bridge at Seattle (Figure 45), which is illustrated in the 1912 article, differed from the Industrial Canal bascules only in the location of the machinery house. On the Seattle bridge, the machinery is at the hip of the truss of the moving leaf (e.g. at the bridge portal), thereby raising the leaf by pulling the operating strut towards the leaf. The New Orleans bridges have the machinery on the tower, thereby pulling the operating strut toward the counterweight. The operating strut is pivoted at the truss hip (P1). This particular modification was in use in 1912 in bridges which Kaufman did not illustrate (Kaufman 1912:831). The design modification, therefore, predates the New Orleans bridges.

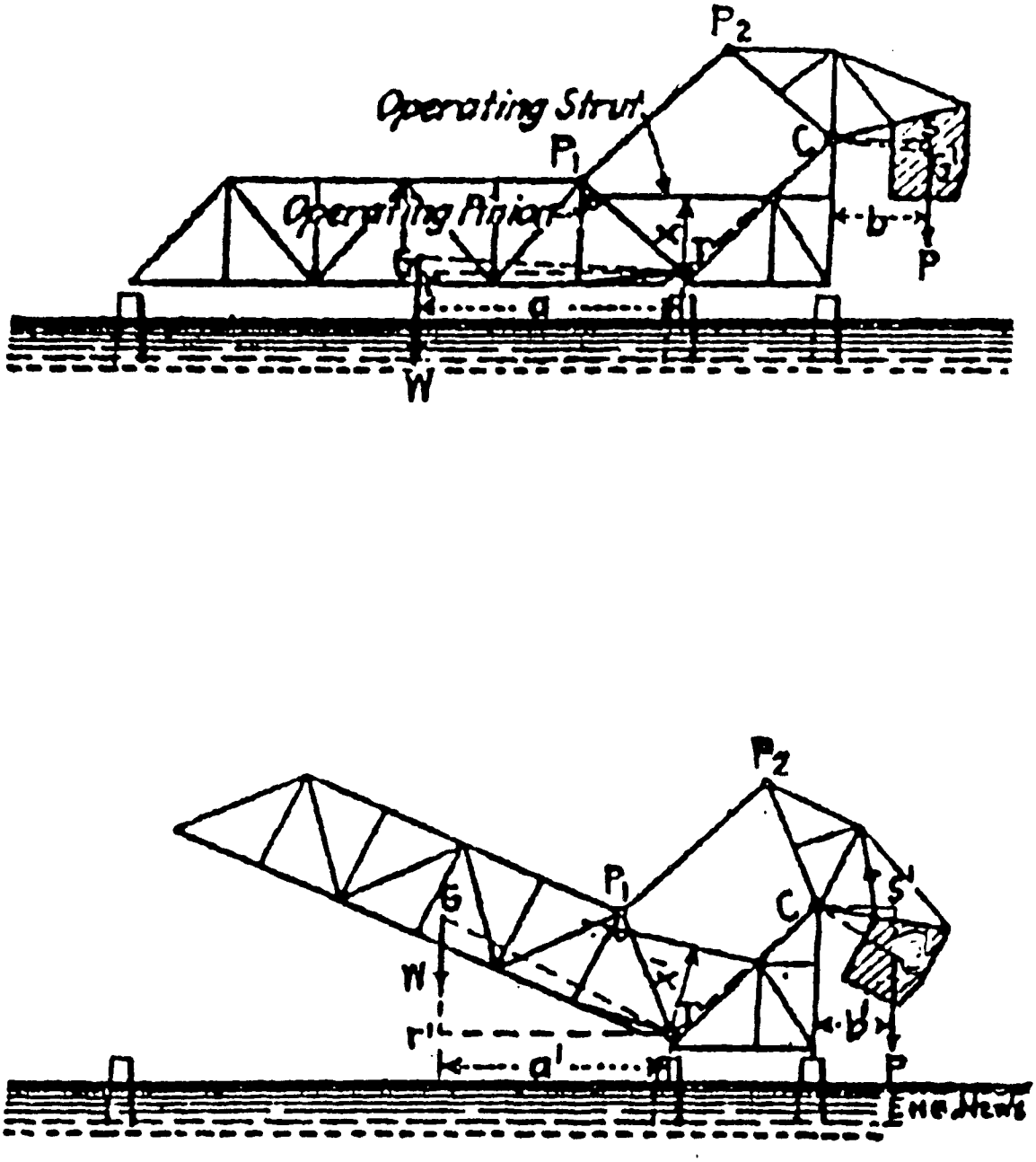


Figure 44. T (at the heel of the truss), P2, P1, and C describe a rectangle relating the raised counterweight to the moving leaf. The rectangle becomes a parallelogram as the bridge is raised. The relation of "a" (the distance between the leaf's center of gravity and the main trunnion) and "b" (the distance between the counterweight's center of gravity and the counterweight trunnion) is constant whether the bridge be closed or open (a' and b').

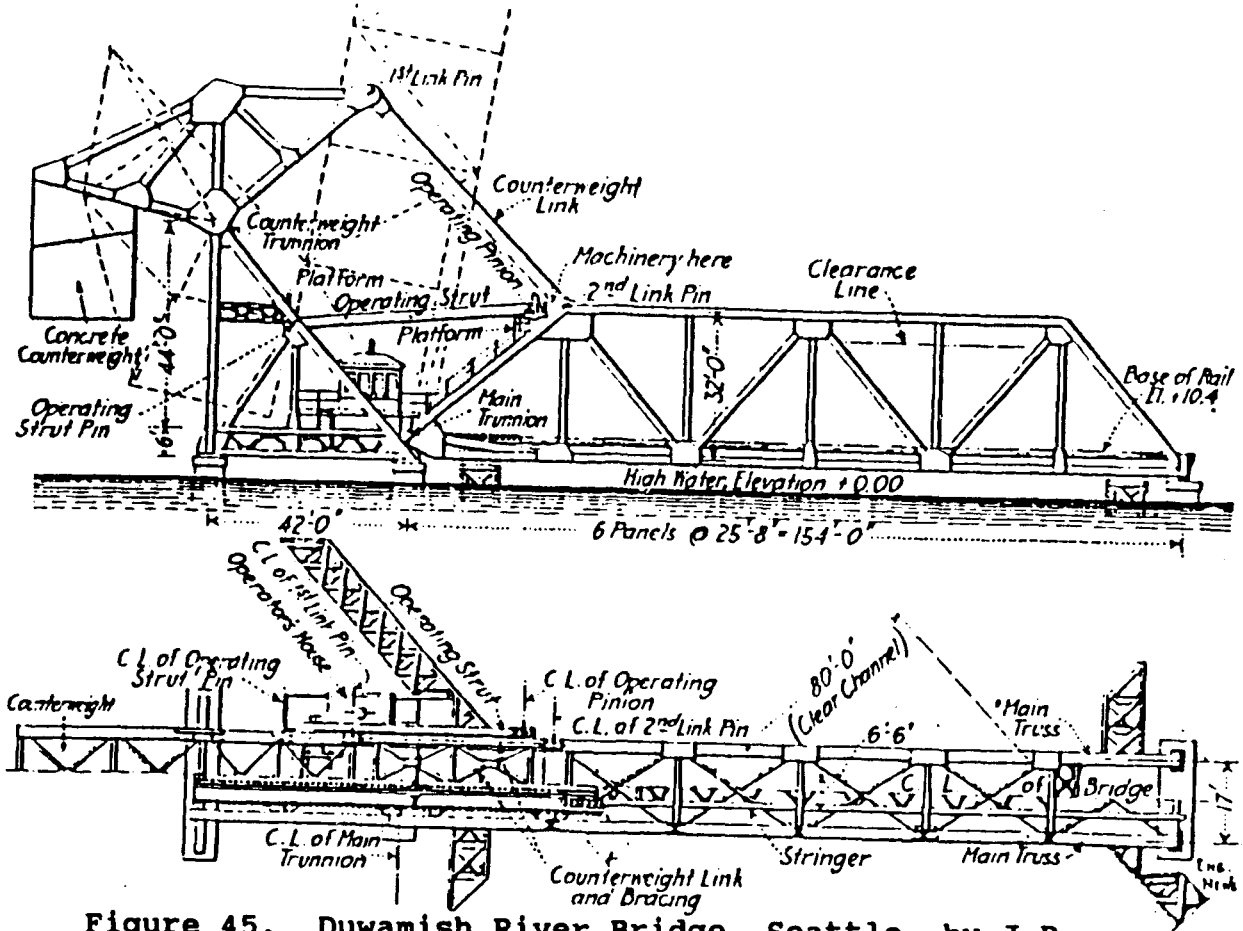


Figure 45. Duwamish River Bridge, Seattle, by J.B. Strauss. All of the essential elements of the New Orleans Strauss heel trunnion bascule bridges are here except for the placement of the machinery and the direction of the operating strut. Here, the machinery is at the bridge portal, and the operating strut, which compresses the rectangle into a parallelogram, is pulled toward the moving leaf (Kaufman 1912:830).

The Place of the St. Claude and Florida Avenue Bascule Bridges in the History of the Type

The Industrial Canal bascule bridges, built between 1918 and 1921, have no special place in the history of the Strauss Bascule Bridge Company or in the development of the type. The heel trunnion bascule was developed between 1904 and 1912, and untold numbers were constructed after 1912 throughout the country. Hool and Kinne (1923:38) believed that the various Strauss designs were the second most popular bascule type. The Scherzer was more popular, while the Chicago Type and the Rall type were built less frequently.

An early Strauss Bascule Bridge was built near New Orleans in 1914. It was a 99-foot single leaf span for the Illinois Central Railroad at Manchac (Hovey 1927:127). A windshield level examination of this bridge performed in the course of this survey indicates that it is still extant and retains its integrity.

Hovey (1927:127) included Louisiana's Illinois Central Railroad Bridge in his 1927 list of Strauss bascule bridges, but that list is incomplete. He missed the four bascule bridges over the Industrial Canal in New Orleans, as well as examples in New York, New Jersey, Cleveland, Chicago, and San Francisco (Hovey 1927:127).

The New Orleans examples of the type are not particularly large relative to bridges of this type erected elsewhere. A double leaf bascule built for the Canadian Pacific Railroad over the Sault Sainte Marie ship canal in 1916 was 336 feet between trunnions, or 168 feet for a single leaf (Waddell 1916:715). In contrast, the Florida Avenue span measures only 100 feet. In 1919, during the period of construction of the New Orleans examples, a Strauss bascule with a 260-foot span in one leaf was erected as the St. Charles Airline Bridge at 16th Street in Chicago. This probably represents the longest single leaf bascule ever built (Hovey 1927:127; Steinman and Watson 1957:357). Even this bridge would have paled before the fantastic project of ca. 1900 to build a bascule across the Mississippi River below New Orleans (Figure 46). This roller bearing scheme, by engineer Montgomery Waddell, promised a 750-foot clear span between piers, making each leaf 375 feet long. J.A.L. Waddell, who published his brother's design in 1916, believed that the bridge

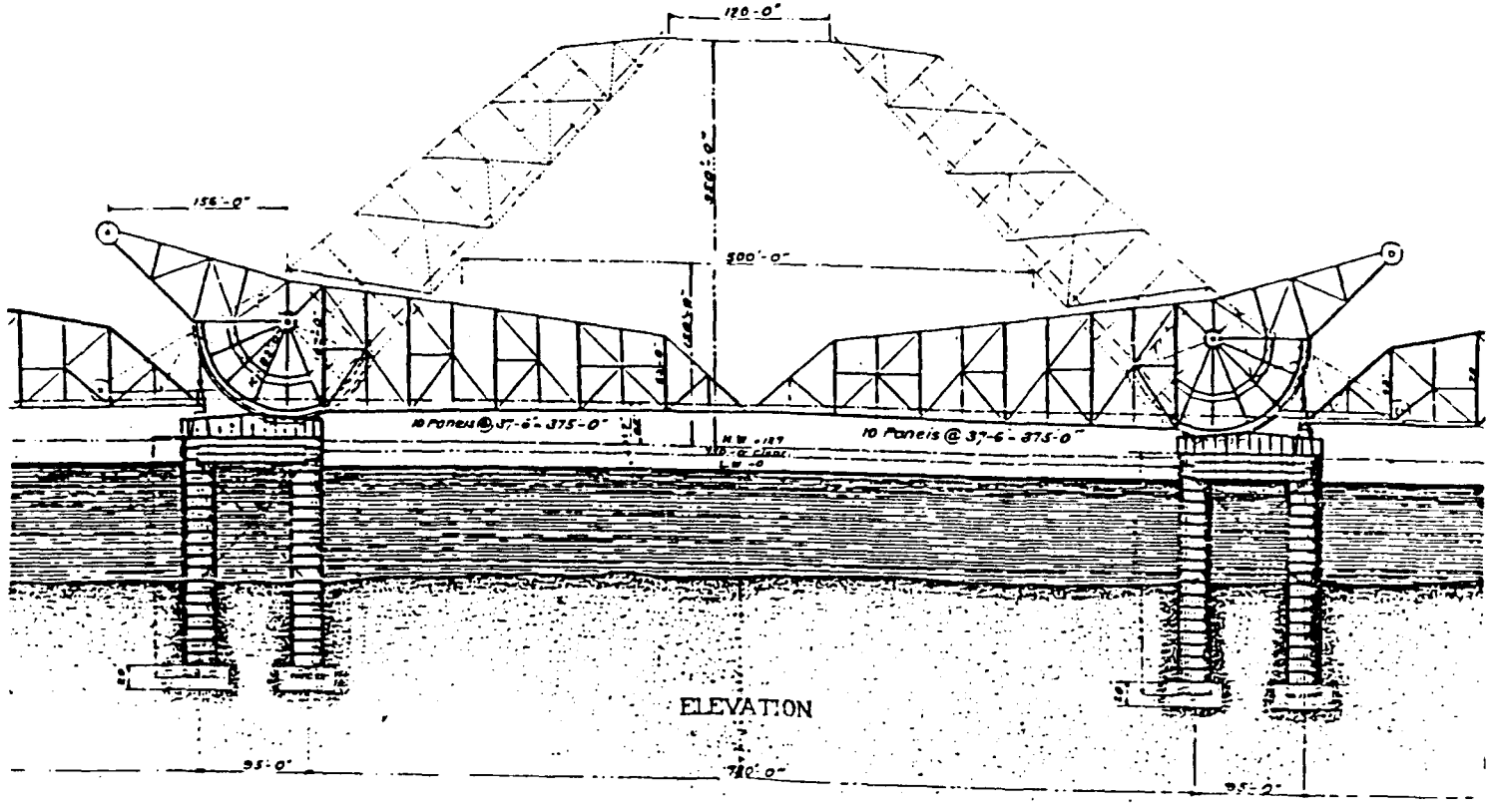


Figure 46. Ca. 1900 plan for the Waddell roller bearing bascule bridge to cross the Mississippi River below New Orleans. A roller bearing bridge has a single trunnion (center of quadrant) and its advantage is stability. The quadrant moves on several bearings in the pier. The counterweight is represented by the small circle with the smaller circular center at the end of the moving leaf. There would have been a 750-foot clear span between piers (Waddell 1916:712).

would have been built were it not for the untimely death of its patron, the railroad magnate Collis P. Huntington.

The History of The Florida Avenue and St. Claude Avenue Bridges

The contract between the Board of Commissioners of the Port of New Orleans and the Bethlehem Steel Bridge Corporation (available on microfilm at the Dock Board Records Office) was signed on October 7, 1918. It provides details concerning the five bridges specified. Four of these were bascule bridges while the fifth was a swing bridge associated with the emergency dam at the lock.

Three of the bascules were identical, each having a single leaf 117 feet long and a clear channel of 94 feet. These were the Florida Avenue (or "Florida Walk" as it was then known), Gentilly, and Lake Pontchartrain bridges. The steel bridge superstructures each weighed 1,600,000 pounds and the concrete counterweights 800 tons. The counterweights were to have empty compartments so that more weight could be added if needed.

The St. Claude Avenue bridge weight and counterweight were lighter because the bridge was smaller than the other three. Its moving leaf measured 93-1/2 feet, and it had a clear channel of 75 feet. In 1949, 37 concrete blocks weighing a total of 7867 pounds were put in the compartments of the St. Claude bridge to counterbalance the new steel deck built to accommodate the heavier loads of trucks and trolley buses (1949 correspondence in the St. Claude Bridge files, Dock Board.)

All four bridges were designed for both railroad and vehicular traffic. The St. Claude Bridge had only one railway track but two streetcar tracks. It is now completely vehicular. The original contract specified that dead and live loads on the moving leafs were to be in accordance with the Railroad Engineering Association Specifications of 1910. Minimum live load was to be a Cooper E-60 locomotive, a 50-ton streetcar, and a 15-ton road roller. Those weights were considerably greater than any then in use in New Orleans.

The concrete piers were apparently built by the Dock Board before the bridge superstructures arrived. However, Bethlehem shipped metal parts (bolts and

grillages) for the piers early so that they could be included. All wood was to be creosoted long leaf Southern pine. This was to be furnished free of charge by the Dock Board for deck flooring, formwork, and railroad ties. Bethlehem furnished 26 drawings for the St. Claude bridge and 27 to be used for the other three.

Contracts specified a price for the bridge superstructures and a formula for a final total, which would include an agreed profit for Bethlehem. The contract price for the five superstructures was $742,784.00. The final total, defined by auditors in 1921, consisted of $990,420.00. This included the contract price plus freight, erection, painting, changes requested by the Board, and profit for Bethlehem.

The Florida Avenue Bridge, contracted at $173,000.00, ultimately cost $223,491.00. Construction costs of the St. Claude Bridge, contracted at $149,100.00, were $204,718.00. The bridges initially were fairly service free. Florida Avenue required no serious work until 1939, and most of the subsequent problems were the result of damage caused by ships. However, the modest 1921 construction figures contrast dramatically with recent repair costs. Estimated maintenance and repair costs for the current four year period total $1,169,000.00 for the St. Claude and Florida Avenue bridges. This represents $695,000.00 for the St. Claude and $474,000.00 for the Florida Avenue Bridge. A 1982 study estimated that the bridges would have a service life only until 1996 (Reeh 1982).

Other aspects of construction were also specified in the contracts and, presumably, were executed. The Strauss Bascule Bridge Company in Chicago was to remain involved by approving Bethlehem's drawings for any subsequent changes. Also, a Strauss representative was to come for tests, and a Strauss formula was to be used for calculating loads and the center of gravity.

The Dock Board maintained the Strauss connection even after 1938 when the Strauss Bascule Bridge Company was dissolved. All through the changes of 1949 and up to 1955, the Board worked with Clifford E. Paine. Paine had been a Strauss engineer at the time of the bridges' erection, but later worked independently as a consultant (Paine correspondence in the St. Claude Bridge Files).

In April 1949, the St. Claude Avenue Bridge was improved by the removal of the hazardous and long unused streetcar tracks. This resulted in a net gain of two

additional automobile lanes between the trusses. At this time, wooden decking was rebuilt in steel in order to meet heavier traffic loads, including diesel buses which were replacing the electric trolley buses. At this time, 9,240 pounds were added to the moving leaf and counteracted by the addition of 44 concrete blocks into the counterweight.

History of the North Claiborne (Judge Seeber Bridge) Vertical Lift Bridge

The North Claiborne Avenue Bridge, also known as the Judge Seeber Bridge, was built between 1953 and 1957 in response to the growing congestion at the St. Claude Avenue Bridge due to the busy navigational canal as well as increasing automobile traffic. Dissatisfaction had arisen due to long vehicular delays, especially during rush hours, and became political issues. The favored solution initially was a tunnel. Mayor deLesseps S. Morrison announced in January 1948, that Palmer and Baker, Inc., of Mobile would study locations and propose a design for a fee of $182,000.00. Costs for the study were paid with $150,000.00 from the Federal Works Agency; $17,500.00 from the City of New Orleans; and $5,000.00 each from the Levee Board, the Dock Board, and New Orleans Public Service, Inc.

Three months later, the consultants' report proposed a tunnel at the St. Claude crossing. The location was based on a traffic study showing that 91.96 percent of all vehicles crossing the canal did so at St. Claude Avenue. It was the route for a maximum of 596 vehicles per hour compared to Florida Avenue's 121. Estimated cost for a tunnel at St. Claude Avenue was $8,228,000.00. Estimated cost of a tunnel at Florida Avenue was $198,000.00 less than the estimate for St. Claude, while estimated cost of such a tunnel at North Claiborne was $595,000.00 more.

The study indicated that the tunnel would necessarily exhibit some unusual design aspects. Fast-acting watertight gates would have to be placed at each end in case of a break in the levee. Also, a construction plan would have to be devised to maintain the integrity of the surrounding water levels at all times.

The City Planning and Zoning Commission had argued for a Claiborne Avenue tunnel because that location represented a better high volume connector to the Mississippi River Bridge approaches. However, the

planning body agreed to the St. Claude Avenue scheme despite the presence of several schools on that street and their feeling that heavy traffic, therefore, was more appropriate elsewhere. The Claiborne Avenue site itself had problems, including the fact that it would have taken the city years to acquire rights-of-way there.

The tunnel plan foundered during the latter part of 1948, probably because of its expense and because of the bitter political rivalry between Governor Earl Long and Mayor Morrison. The Louisiana Legislature appropriated only $1,000,000.00 for the project instead of the requested $3,000,000.00. Meanwhile, improvements to correct problems with traffic flow were undertaken. It was in April 1949 that the St. Claude Avenue Bridge was improved by the removal of the hazardous and long unused streetcar tracks (above).

The viaduct approaches to the bridge had already been widened to accommodate four lanes of traffic. At the dedication of the revised bridge in December of 1949, Sheriff "Dutch" Rowley of St. Bernard Parish criticized the legislature for not funding the tunnel: "I let them know that this bridge is not only used by Morrison men, but also by Long men." He argued against a circulating opinion that soil conditions would not allow a tunnel at St. Claude Avenue and noted that there was "...a tunnel in Mobile where there used to be a muskrat farm" (Times-Picayune Dec. 7, 1949, p. 3).

The next step in the solution to the ongoing traffic problem came in June of 1952, when Governor Robert F. Kennon, Mayor Morrison, and Leon Irwin who was president of the Dock Board proposed a new, semi-high-level bridge. The city traffic engineer wanted it built at Florida Avenue to replace the bascule bridge there. Severe problems had developed with the crossing at that location by 1952. It was necessary to restrict vehicles to alternating turns on the single lane. Upriver traffic could move only while downriver traffic was stopped, and vice versa. A new Florida Avenue bridge would represent one link in a high speed connection between St. Bernard and Jefferson Parishes.

However, Mayor Morrison opposed a new Florida Avenue bridge. He favored instead a site between North Claiborne and Robertson Avenues. This would be closer to St. Claude and would help relieve congestion there. The Florida Avenue bottleneck could be reduced by widening the present 16-foot lane to 24 feet, thus

allowing for two full lanes. Morrison was disappointed about shelving the St. Claude tunnel plan, but he was pleased with the prospect of spending only two or three million dollars for a new bridge compared to twelve million for a tunnel. The less expensive solution would allow him to pursue his plans to build a new city hall and would also protect the financing of the Mississippi River Bridge.

Newly elected State Senator Marion G. Seeber, representing the fifth Senate district (Eighth and Ninth Wards), sponsored financing legislation (Act 284) which became law on July 8, 1952. Act 284 proposed a referendum to amend the Louisiana constitution to designate nine-twentieths of one cent of the gasoline tax to support bonds for "an additional bridge across and over or a tunnel under the Inner Harbor Navigational Canal... the exact location to be fixed by the Board of Highways" (Acts of the State of Louisiana 1952, p. 737). The referendum, which also funded approaches to the Mississippi River Bridge, was approved by the voters of Louisiana on November 4. Senator Marion Seeber named the bridge in honor of his father, Judge William V. Seeber. Since Marion Seeber was appointed to his father's judicial seat in 1954 and retained it until his death in 1979, it is sometimes assumed that the bridge was named for its legislative sponsor, rather than for the sponsor's father.

On Jan. 30, 1953, the Times-Picayune reported that one million dollars were earmarked for the new canal crossing, and that North Claiborne Avenue would be widened from 28 to 32 feet to facilitate the increased traffic that would result. On March 17, Mayor Morrison made formal presentation of a Department of Highways design for a semi-high level structure with an electrically operated vertical lift span forty feet above high water when closed. According to various accounts, either 80 or 90 percent of the boats using the canal could pass under the bridge while it was in the closed position.

The decision to erect a new bridge at North Claiborne and Robertson did not end the ongoing controversy. The U.S. Army Corps of Engineers held hearings concerning the proposed bridge because under the 1944 federal canal lease, it would be necessary for them, along with the Dock Board, to grant a permit. Opponents of the plan were allowed to present their views on the matter at these hearings.

A committee of the New Orleans Steamship Association concluded and testified that the scheme was extremely hazardous to navigation. The bridge piers would be located too close to the lock for the safety of ships either leaving or approaching the lock. Also, the 200-foot horizontal clearance between the piers was too narrow. The committee reported in favor of a tunnel, which would also be useful as a civilian bomb shelter.

The Federal Barge Lines, a repair firm operating in the Inner Harbor, objected to both horizontal and vertical bridge clearances. The following month, the Coast Guard, which had a 99-year lease on over three acres on the canal and one million dollar investment in buildings, protested that the bridge, which overflew the northern end of their wharf, would impact operations in several unfavorable ways. The bridge would also limit new wharf development in the industrial areas by cutting off frontage where lateral service canals could be placed. A consensus was building that a tunnel would be a better solution to the problem under consideration.

On May 14, J.B. Carter, the highway department bridge designer, offered a revised bridge plan. The plan moved the piers landward, placing the western one behind the Coast Guard wharf and leaving a horizontal clearance of 310 feet. There would be a vertical clearance of 45 feet when the bridge was in the down (closed) position, and 155 with the bridge in the up position.

The New Orleans Steamship Association, however, still criticized the 600-foot proximity to the lock. A location this close to the lock would require that the bridge be in the up position for much longer periods than would be the case at a more distant location. The association predicted that proximity would eventually result in a crash. This problem was resolved on June 8, with a Dock Board proposal to place the bridge site 150 feet further north, thereby providing a total of 750 feet of clearance from the lock. This would also relieve the problem of the Coast Guard wharf. The Department of Highways found this acceptable even though it meant there must be a sharp horizontal curve on the approaches from North Claiborne and Robertson. The new proposal met with general approval, and permits were granted.

Design details were reviewed and corrected by many concerned parties. Construction bids were reviewed in early November 1954, and a contract signed with the Boh

Brothers Construction Company on December 7, 1954. The Louisiana Department of Highways Project Engineer was Bill Byles. The steel parts were manufactured by the American Bridge Co., a division of U.S. Steel, in Roanoke, Virginia.

Advanced planning and careful coordination between various agencies continued through the period of construction. Each new operation which could cause any change in the canal, even one so minor as a different size or location of a construction barge, had to be anticipated by two weeks so that advance notice could be given mariners. Construction plans set erection of the east tower in November 1955, and erection of the west tower in February 1956.

On September 6, 1956, the American Bridge Co. applied for a permit for a three-day canal closure the following October so that the lift span could be floated in and raised. The 360-foot span had been built on its own barge, each piece riveted to the next. Only drilled openings were made before shipment of the pieces from Steelton, Pennsylvania. This effort represented the Department of Highways' last riveted construction.

The barge prefabrication of the lift span and its one-piece raising were an unusual construction technique. The barge was to be partially sunk as the span was pulled up, using power from the permanent operating motors already in place at the top of the towers. Counterweights were to be added to the tower mechanism as the span was lifted free so that the motors would not be overburdened. The maneuver was a difficult one because the heavy span on the relatively light barge was unstable. A near disaster occurred when a hurricane struck while the span and barge were in the middle of the canal and thus at their most vulnerable position. There was an all night fight, according to J. Calvin McGrew, Assistant Project Engineer at this time, which was a "touch-and-go" situation with barges and tugs tied together in the effort to keep the barge from toppling and the span from sinking. The wind whipped the span against the east side of the bridge and damaged the tower-to-land span nearby. Nevertheless, the barge was upright when the storm subsided. Disaster had been averted, and the span was then raised as intended. The bridge was completed, and it was accepted by the state on June 3, 1957.

Despite construction of the Claiborne Avenue bridge, the dream of a tunnel lived on. Earl Long,

running for governor in 1955 against Mayor Morrison, took up the cause: "The only reason you don't have a free bridge to Algiers and a tunnel under the Industrial Canal is because of that cute little mayor of yours and the Times-Picayune" (McCaughan 1967:232). Long pushed a tunnel act through the state legislature in June 1960, but the tunnel plan was not pursued after Long's death the following September. Ultimately, the Danziger Bridge was built rather than a tunnel.

The Claiborne Avenue (Judge Seeber Bridge) was a relatively successful solution to the problems that led to its construction. Perry Haynes (personal communication to Weiss, 1989) of the U.S. Coast Guard describes it as "reliable," particularly in comparison to the Florida and St. Claude Avenue bascule bridges.

Since initial construction, some modifications have been necessary. The first barrier system, in which fences were sprung upward from a horizontal level on the bridge floor, proved impracticable and had to be replaced by a standard overhead barrier. The hydraulic devices which activated the original system sometimes shot the barriers up when the bridge was not being raised. On one occasion, the barriers sprang upward between a fleeing felon and a pursuing police car. The police car was demolished and its driver injured. Another change resulted from new highway standards which required a median divider. It was added in 1978 when the entire bridge decking was replaced. The hydraulic motors which fix the locks of the moving span and the road when the bridge is closed have been replaced by mechanical locks. In 1980, the lift span guides were replaced.

Despite the bridge's design success, conflicts concerning automotive vs. canal traffic continue to the present. In 1971, the U.S. Coast Guard assumed administration of the canal bridges from the Dock Board. In 1988, the Coast Guard noted that State regulations and a recent Louisiana law allowing for more closure during rush hours were unconstitutional because of Federal law related to navigable waters.

NRHP Eligibility Evaluations

The North Claiborne Avenue (Judge Seeber Bridge) and the Strauss Bascule Bridges at St. Claude and Florida Avenues were evaluated according to National Register criteria for assessing the significance of structures. In addition to possessing integrity of

location, design, setting, materials, workmanship, feeling, and association, significant properties are those

> A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. that are associated with the lives of persons significant in our past; or
>
> C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. that have yielded, or may be likely to yield, information important in prehistory or history (National Park Service 1982:1).

Levels of significance for historic properties represent

> ...the geographic area - local, state, or national - for which a property has been found to have importance. We assign a property a level of significance based on the historical value we are able to assess given the current scholarly research about the property's historical role or impact... (National Park Service 1982:13).

The North Claiborne Avenue (Judge Seeber) Bridge. National Register Bulletin 15 entitled "Guidelines for Applying the National Register Criteria for Evaluation" states that "...properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register..." with the exception of "...a property... of exceptional importance" (National Park Service 1982:1-2, emphasis added). The North Claiborne Avenue or Judge Seeber Bridge was erected between 1954 and 1957. It is not 50 years old. Archival research and field examinations indicate that, in terms of its historic significance and engineering qualities, this bridge is not an exceptional structure. Rather, it is a perfectly ordinary bridge for its time without any particular merit in design or construction (Al Dunn, J. Calvin McGrew, and Gary

Angelo, personal communications to Weiss, 1989). There are a number of similar bridges in Louisiana, all of which are designed according to the basic principles demonstrated at the South Halsted Street Bridge in Chicago in 1894. In terms of Criterion C, then, it warrants no further consideration for nomination to the NRHP.

The North Claiborne Avenue Bridge, like many similar projects in Louisiana, was a subject of controversy among local and state politicians, particularly Mayor deLesseps Morrison and Governor Earl Long. However, the bridge itself was of minor rather than exceptional importance in terms of state and local history. In terms of Criterion A, then, it warrants no further consideration for nomination to the NRHP. Similarly, the bridge is not directly associated with the lives of persons significant in our past (Criterion B). Further, its lack of exceptional engineering qualities obviates any potential to yield information important to history (Criterion D).

The Strauss Bascule Bridges at St. Claude and Florida Avenues. Neither of these two bridges is associated with events that have made a significant contribution to our history at the national or state level. The bridges are indirectly associated with the general development of lower Orleans and upper St. Bernard Parish in that they facilitated the flow of automobile and rail traffic within the downriver portion of New Orleans. Their role in that regard, however, does not represent a significant contribution to the broad pattern, of even local history. Therefore, the two bridges are not eligible for nomination to the NRHP in terms of Criterion A.

These bridges might be eligible for nomination to the NRHP under Criterion B if they were directly associated with Joseph B. Strauss who was one of America's greatest civil engineers. However, for the properties to be considered under this criterion, it is necessary that "...the association with an important person can be documented by appropriate means of historical research" (National Park Service 1982:20-21). That research was conducted in the course of this project, and has been discussed at length above.

There is no evidence that Joseph B. Strauss participated directly in the design or construction of the St. Claude and Florida Avenue Bridges. He did not visit the bridge sites, and no records of communication

between Strauss and the Board of Commissioners of the Port of New Orleans were observed in files related to construction of the bridges (Dock Board Records Office).

Also, during the period (1918-1921) when the New Orleans bridges were designed and constructed, Strauss was designing plans for the Golden Gate Bridge in San Francisco. He maintained a branch of his Chicago office in that city, and working out of that San Francisco office, he submitted his first design for the Golden Gate in 1921. The coincidence of dates indicates that it is extremely unlikely that Strauss was directly concerned with the New Orleans bridges. These two examples of his patented design were relatively small and their locations presented no particular engineering problems. Rather than Strauss himself, his staff of engineers would have worked on the New Orleans bridges. So many of these were built during the early twentieth century that they probably represented the second most common type of bascule bridge in the United States by 1923 (Hool and Kinne 1923:38).

In short, the "appropriate means of historical research" have yielded no evidence that the St. Claude and Florida Avenue bridges were associated with the life of Joseph B. Strauss except in the sense that he derived income from their construction through contracts between the Strauss Bascule Bridge Company, the Bethlehem Steel Bridge Corporation, and the Board of Commissioners of the Port of New Orleans. Under Criterion B, "A property is not eligible if it was briefly associated with an important individual and the association did not have historical impact or results..." (National Park Service 1982:21).

Guidelines for applying Criterion C state that a structure may be eligible for inclusion on the NRHP if it embodies

> ...the distinctive characteristics of a type, period, or method of construction... To 'embody distinctive characteristics' a property must clearly represent the type, period, or method of construction. That is, it must enhance our understanding of the class of resources of which it is a part. A significant property clearly illustrates (1) the pattern of what was common to the class of resources; (2) the individuality or variation that occurred within the class; (3) the evolution of that class over a period of time;

> or (4) the transition between that class and others. Characteristics may be expressed in terms such as form, structure, plan, style, or materials (National Park Service 1982:22).

The St. Claude and Florida Avenue Bridges are examples of Strauss Heel Trunnion Bascule Bridges. The type is significant in the history of American engineering. This was a commonly built type because it represented a relatively economic, efficient solution to the problem of accommodating vehicular and rail traffic over navigable waterways used by commercial boats. As such, the bridges illustrate "...the pattern of what was common to the class of resources..." In doing so, they enhance our understanding of the class of resources of which they are a part (National Park Service 1982:22).

In addition to representing a pattern, the guidelines (above) raise the issue of whether a property illustrates individuality or variation that occurred within the class it represents. The class of resources under discussion represents a patented design. As a result, particular examples exhibit little individuality. Similarly, little variation is expected when examples are compared. One important variant was placement of the counterweight below the roadway, which was the case for at least one of Strauss' Chicago bridges. This was done for aesthetic reasons, and was possible because of dry subsurface conditions. Use of this design was not feasible in New Orleans with its high water table. The New Orleans' examples are more typical with their counterweights above-ground. The other major source of variation was the length of the leaf and whether the bridge was single- or double-leafed. Both New Orleans examples represent the single-leaf variant, and neither is particularly large compared to examples constructed elsewhere. The New Orleans bridges, then, illustrate only the basic level of the individuality that occurred within the class.

The guidelines also raise the issue of whether the property illustrates "...the evolution of a class over a period of time..." In the case of the New Orleans' bridges, this is not the case. Strauss began building bridges of this type in 1904, fourteen years before the New Orleans contract. The type was "perfected" by 1912. By the period of construction 1918-1921, Strauss' company was building bridges of this type throughout the United States. A standard design was in use, and the type was not evolving. Similarly, the New Orleans

bridges do not illustrate "...the transition between that class and others."

Application of Criterion C to the St. Claude and Florida Avenue Bridges, then, indicates that they represent a significant type of engineering structure which was in common use throughout the United States. At the time of the 1918-1921 construction, the type was not evolving. Similarly, no transition was underway between this and any other type. As representatives of their type, however, they are eligible for inclusion in the NRHP under Criterion C.

Strauss Bascule Bridges appear to be a common type within southeastern Louisiana, apparently because of the relatively large number of navigable waterways. Research conducted in the course of this project indicates that they remain relatively common within southeastern Louisiana at present.

Two other bridges were built in New Orleans itself under the same contract as the St. Claude and Florida Avenue Bridges (above). These remain in place at present. A windshield survey level of examination indicates that they retain the same degree of integrity as the St. Claude and Florida Avenue Bridges (discussed below). Also, a bridge of this type was apparently constructed at Franklin, Louisiana. It was associated with a lock there, and is now part of a park. Mr. Gill M. Gautreaux of the Louisiana Department of Transportation and Development (personal communication to Franks, 1990) believes that bridge is also of the Strauss Bascule type. Finally, the bridge for the Illinois Central Railroad at Manchac was also built by Strauss' company.

Under Criterion D,

> Properties may be eligible for the National Register if they have yielded, or may be likely to yield, information important in prehistory or history... While most often applied to archaeological sites, Criterion D may sometimes apply to... structures... that contain important information. In order for properties to be eligible under Criterion D, the properties themselves must be, or must have been, the principal source of the important information (National Park Service 1982:28-29).

Statements made by Eric DeLony, Chief of HAER, about the research potential of metal truss bridges apply also to Strauss Bascule Bridges:

> I'm interested in metal-truss bridges partly because they were a phenomenon of mass production. These bridges were being thrown up by the hundreds all over the United States in the latter part of the nineteenth century... And then you have to understand what was involved in the patents. Thousands of them were taken out on truss bridges in the latter part of the nineteenth century. Researching those patents, the entrepreneurs, the engineers - the whole process of bridge building - tells us an awful lot about the way this country developed, the way we worked, the way we engineered (Eric DeLony quoted in Brittan 1990:57, emphasis added).

Bridges representing the Strauss Bascule type are disappearing rapidly due to the upgrading of the nation's infrastructure (Brittan 1990:57, Eric DeLony personal communication to Weiss, 1990):

> The monuments - the Golden Gate Bridge, the Brooklyn Bridge - are going to take care of themselves. But the ubiquitous metal truss that may be 70, 80, or 100 years old - those are the ones that we're losing (Eric DeLony quoted in Brittan 1990:57).

This rapid, and to date largely undocumented, disappearance contributes to the research potential of the remaining Strauss Bascule Bridges.

Field examinations and archival research indicate that the St. Claude and Florida Avenue Bridges exhibit the quality of integrity necessary for inclusion in the NRHP. They have integrity of location in that they remain situated at the place where they were constructed. They have integrity of design which "..is the composition of elements that comprise the form, plan, space, structure, and style of a property..." (National Park Service 1982:35). They have integrity of setting in the sense that their "...setting illustrates the character of the place in which the resource played its historical role... surroundings and the way in which a property is positioned or sited may be an integral part of the property itself..." (National Park Service 1982:36).

They exhibit integrity of materials which "...are the physical elements that were combined or deposited in a particular pattern or configuration to form a... structure... in a particular period in the past... (National Park Service 1982:36). Also, they exhibit integrity of workmanship defined as "...the physical evidence of the crafts of a particular culture or people during any given period of history..." (National Park Service 1982:37). Finally, they exhibit integrity of feeling, "...the quality a historic resource has in evoking the aesthetic or historic sense of a past period of time..." (National Park Service 1982:37).

Modifications to the bridges have consisted primarily of widening the space available for automobile traffic and removal of trolley and rail tracks. Also, the wooden decking on the St. Claude Avenue Bridge was rebuilt in steel in 1949 to accommodate heavier traffic loads including diesel buses. Nevertheless, the principal features of the design and construction of the two bridges remain intact. Also, modifications through the 1940s were done either by the Strauss Bascule Bridge Company or, after its demise, by former employees of that company. The National Park Service Guidelines note in relation to the issue of modifications:

> The principal test to establish whether a property retains integrity is to ask whether or not the property still retains the identity or character for which it is important... All properties change over time. The retention of integrity depends upon the nature and degree of alteration or change. It is not necessary for a property to retain all the physical features or characteristics that it had during its period of significance. However, the property must retain the essential physical features that enable it to convey its past identity or character and therefore its significance (National Park Service 1982:39-40).

Based on field examination and archival research, the Florida and St. Claude Avenue Bridges clearly exhibit the quality of integrity. This, in combination with the fact that they are representatives of a type that is significant in the history of American engineering (Criterion C) and the fact that they exhibit research potential in that they have the capacity to further our understanding concerning historic

applications of the type to particular situations (Criterion D) make these two bridges eligible for inclusion in the National Register of Historic Places.

Recommendations

If project implementation requires destruction of these bridges, then HAER documentation should be conducted. The appropriate level of documentation is HAER Level II (Eric DeLony, Chief of HAER, personal communication to Weiss 1990). This level will serve to document the bridges as representatives of a significant type and will result in mitigation of their research potential through curation of documents, plans, and photographs of the structures.

HAER Level II Documentation consists of

(1) Drawings: select existing drawings, where available, should be photographed with large-format negatives or photographically reproduced on mylar.

(2) Photographs: photographs with large-format negatives of.. views or historic views, where available.

(3) Written data: history and description (Federal Register 1983, v. 48(190):44732).

It is recommended that a civil engineer who has experience with HAER documentation or an expert on historic bridges with similar experience be commissioned to conduct the HAER Level II research and prepare the documentation. Files examined in the course of this research contain the necessary drawings. Photographs should consist of a series of both close-up and long-views to show the relationship of the bridge to its site. Written data would consist of use of the material reported in this chapter and amplification of that material as necessary. It is also recommended that after a re-examination of the available files, Dr. Eric DeLony be contacted for a discussion of which drawings and photographs would be most desirable for inclusion in the HAER Level II documentation.

CHAPTER 12
ARCHITECTURAL ASSESSMENT OF THE PROJECT CORRIDOR AND NRHP EVALUATIONS WITHIN THE AREA BOUNDED BY INDUSTRIAL CANAL, DESLONDE STREET, ST. CLAUDE AVENUE AND FLORIDA AVENUE

by Mr. Jeffrey Treffinger

Introduction

An architectural survey was conducted of all areas east of the Industrial Canal and which the Scope of Services indicated might be directly impacted, in terms of destruction or removal of structures, as a result of the proposal to widen the Industrial Harbor Navigation Canal and to construct a new lock east of the present facility. The properties encountered within the study area were residential, commercial, religious, civic, and industrial in nature. Some of these are historic. The purpose of the survey reported here was: (1) to identify all historic properties located within the project corridor (Figure 1) east of the Industrial Canal; (2) to assess the architectural significance of those historic properties according to NRHP criteria; and (3) to assess the impact to the Holy Cross National Historic District, the boundaries of which are shown in Figure 47.

This chapter presents an architectural overview of the project area, and defines three distinct neighborhoods within. A detailed examination of these neighborhoods is then presented in order to describe settlement patterns and overall texture (built pattern). Selected buildings are described, and photographs are provided to elucidate discussions. Potentially significant structures within the area bounded by Industrial Canal, Deslonde Street, St. Claude Avenue, and Florida Avenue are evaluated in terms of NRHP criteria at the end of this chapter. Recommendations concerning possible mitigation measures are included in that discussion. Assessment of impact, in the sense of destruction or removal of structures, to the Holy Cross District is presented in the following chapter.

Methodology

Vehicular and pedestrian surveys were conducted within the study area in order to assess the architecture, streetscapes, and physical conditions of the built environment. The surveys allowed an accurate determination of the current condition of the

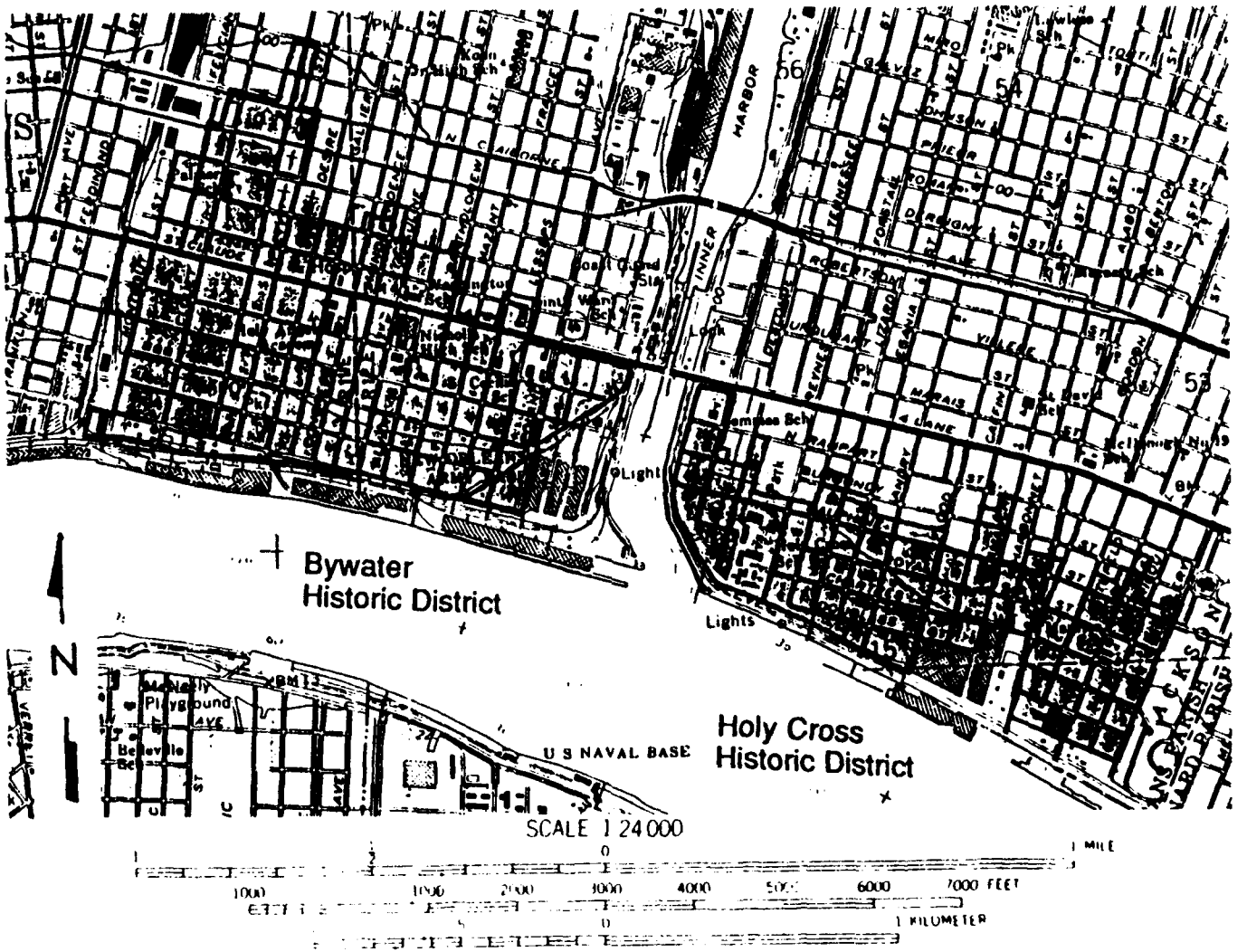


Figure 47. Excerpt from the New Orleans East 7.5' quadrangle showing the boundaries of the Bywater and Holy Cross Districts.

architectural stock. Structures that appear to be over fifty years old and that retain their integrity were evaluated in terms of NRHP criteria with the exception of structures within the boundaries of the Holy Cross National Historic District.

Physical Description of the Upper, Middle, and Lower Sections of the Project Corridor

In the following discussion, the project corridor is divided into three sections or neighborhoods: Upper, Middle, and Lower (Figure 48). All three are bounded on the east by Deslonde Street and on the west by the Industrial Canal. The term "neighborhood" is used because the areas are almost exclusively residential. The "Upper Neighborhood," or northernmost section, is the area between Claiborne and Florida Avenues. The "Middle Neighborhood" is the area between St. Claude and N. Claiborne Avenues. The "Lower" or southernmost neighborhood is the area between the Mississippi River and St. Claude Avenue.

The industrial facilities on the levee between N. Claiborne and Florida Avenues are described in the section concerning the Upper Neighborhood. Some components of the Industrial Canal lock are discussed in the section concerning the Middle Neighborhood.

The tripartite division of the project corridor is useful for several reasons. The architectural vocabulary of the upper and lower areas are quite different. The middle area is transitional between the two. The contrast between the three areas illustrates the chronology of settlement and development within the project corridor.

Overview of the Lower, Middle, and Upper Neighborhoods

The Lower Neighborhood (St. Claude to the Mississippi River) contains a relatively large number of fine shotguns and doubles. Many of these are well cared for, and some are currently undergoing renovation. This was already true at the time of a 1979 study:

> Many of the properties in this area are becoming very good real estate investments for younger professionals who have been outpriced by high values in the uptown section of the city. Many of the houses are being renovated now and real estate values are increasing (Toler 1979:57).

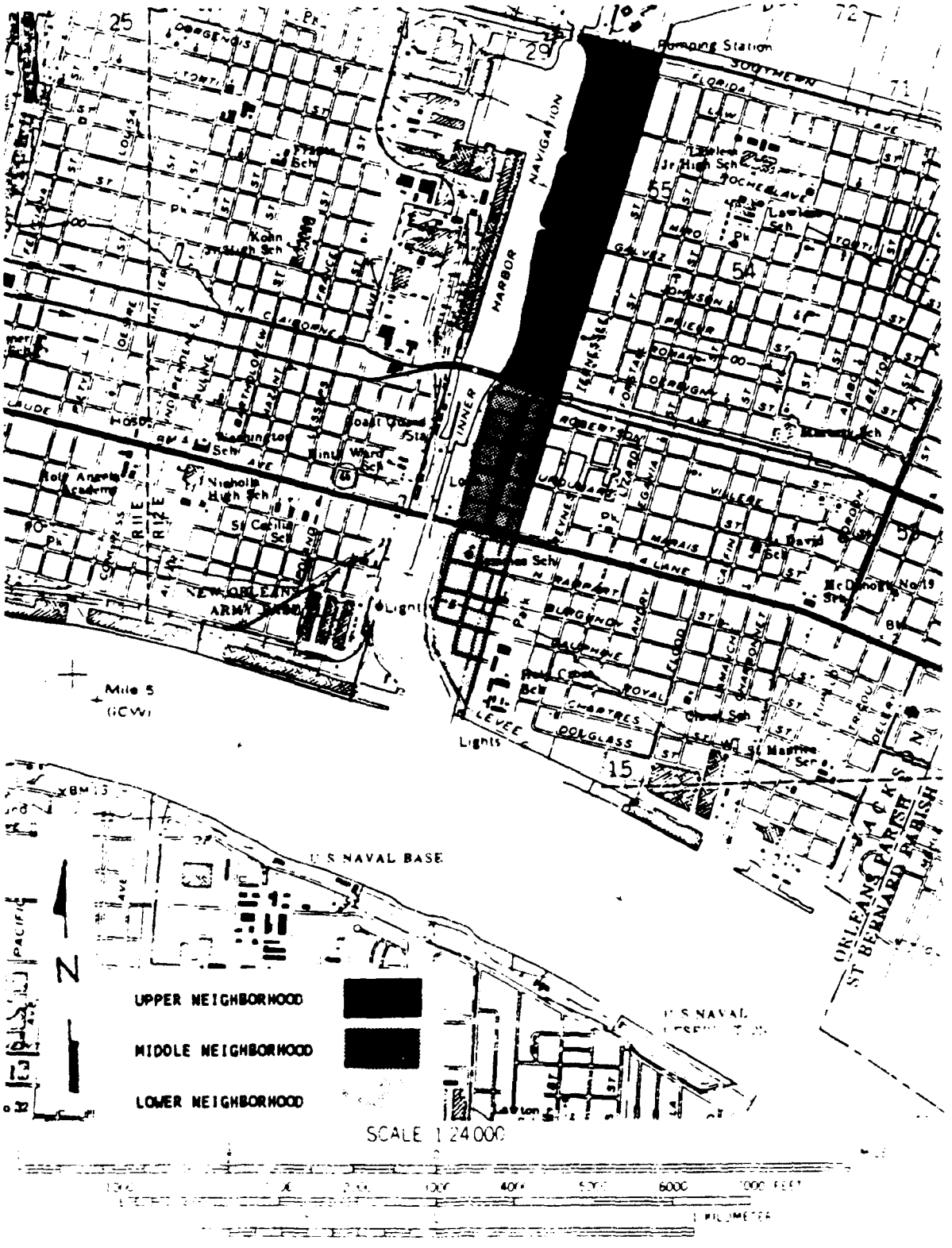


Figure 48. Locations of the Upper, Middle, and Lower Neighborhoods within the project area.

The overall impression is of a historic (older than 50 years) neighborhood. Modern buildings are few and intrusive in nature. Houses and lots are generally well tended. This section of the project area was first subdivided in 1869, and by 1896 a number of residential structures, stores, and truck farms were present.

Structures are present only on the east side of Sister Street. The Industrial Canal levee lies on the west side. The organization of Sister Street is inconsistent with the rest of the Lower Neighborhood. House types on Sister Street are many and varied, and historic structures are oriented 90 degrees relative to the street. Prior to construction of the Industrial Canal, the street marked the eastern boundary of the Ursulines Convent. For this reason, structures were never erected on the west side of the street.

As one walks from the Lower to the Middle Neighborhood, which is situated between St. Claude and N. Claiborne, the architectural fabric begins to change north of St. Claude. Historic structures (older than fifty years) are the exception rather than the rule. Even these few historic structures appear later than many that are present in the Lower Neighborhood. Some are typological oddities that combine architectural techniques and local building types into hybrids. The proliferation of modern, poorly crafted buildings is apparent. The neutral ground at Jourdan Avenue seems somewhat out of place and underdeveloped as an urban idea. It results from a now-covered drainage canal below the street. North of N. Villere Street, historic components are no longer present. The settlement pattern here is reminiscent of that of modern subdivisions: equal size houses centered on equal size lots.

Almost all of the structures in the Upper Neighborhood (the portion of the study area north of Claiborne Avenue) are modern. Dwellings built more than fifty years ago appear to be practically non-existent. This is the result of the fact that this portion of the study area was the last to be developed. Houses here are modest, in some cases representing only a basic shelter.

The area does not represent a typical "New Orleans Urban" scene. Rather, the Upper Neighborhood in certain places possesses rural characteristics stemming from the simplicity of the building types and their late period of construction. The majority of the homes here are

side gable, four room square, or doubles of the same nature. There are few attempts to use traditional New Orleans architypes such as shotguns or cottages. It appears, on the basis of supporting piers, that many of those which do represent such types were moved to their present sites from other parts of the city (below). Structures on some blocks appear to be the product of small-scale Federal Housing Projects or Veterans Administration Assisted Housing.

The Upper Neighborhood is more inconsistent than either the Lower or Middle Neighborhoods. This is true both between blocks and, in some cases, between adjacent properties. Within a single block, some houses are well cared for, with satellite dishes and manicured lawns, while others are abandoned and derelict.

In summary, the three neighborhoods within the project area appear to represent three periods of settlement. The Lower is primarily historic, the Upper is modern, and the Middle represents a transition between these two. Interestingly, "walls" between the three areas have been created by the up-ramps of the St. Claude and N. Claiborne Avenue Bridges. These walls further define the three neighborhoods, and represent architectural boundary lines as well. They divide areas that are distinctive in terms of architectural texture, landscaping, and building types.

The Upper Neighborhood

The physical boundaries of the Upper Neighborhood (Figure 48) are Florida Avenue to N. Claiborne Avenue (north to south), and Deslonde Street to the Industrial Canal (east to west). Within these boundaries, an industrial complex is present between the seawall and the canal. As noted above, this neighborhood was the last to be subdivided and developed within the study area: "You're lookin' for old houses? You ain't gonna find that back here if that's what your lookin' for," (Robert, a thirty-year resident of Deslonde Street, personal communication to Treffinger, 1989). This area did not experience rapid growth until the late-1950s and the 1960s. The streets were finally paved in the middle 1960s.

Development of the Upper Neighborhood. Building techniques of the late-1950s and the 1960s predominate in the Upper Neighborhood. New Orleans architypes such as shotguns or Creole cottages are the exception. Homes in the Upper Neighborhood exhibit a relentless

consistency. They are almost all either side gabled or hipped with ridges oriented parallel to the street. The plans of most of these homes are simple: four room square. The vast majority are clad with wooden weatherboards.

The original home builders in the Upper Neighborhood were predominantly middle and working class Blacks. Many purchased lots several years before the funds were available to construct houses (Mrs. G. Williams, personal communication to Treffinger, 1989). Some people purchased single lots while others built on double lots. Lots were very inexpensive at that time, and the area began infilling with new dwellings. Several churches were constructed for a largely Baptist constituency. Corner stores and barrooms peppered the neighborhood (Figure 49), and a few older homes were apparently moved from other parts of the city to new lots along the Industrial Canal. In addition to small stores and bars, cottage industries such as automotive garages and barber shops (Figure 50) developed here.

Detailed Observations. The Upper Neighborhood, as it exists today, represents a very simple architectural assemblage which varies in character between rural and suburban. Several residents still maintain pens for goats and chickens, while others live in modern four-plexes. The housing types are, without doubt, less urban than is true of most other parts of the city. Modern, side gable, cabin-like homes are very common. The facades of the Upper Neighborhood typically exhibit aluminum awnings, window units, and burglar bars with wrought iron roof supports at the porch. Chain link hurricane fences and carports divide many of the properties. A number of the front yards are adorned with Madonna grottos. A few homes have been modified with newer sheathing materials such as aluminum or vinyl siding. Some have had additions attached. In general, then, the architecture of the Upper Neighborhood is stylistically nondescript.

The housing stock typical of the Upper Neighborhood is not historic. Much of it was poorly constructed. The overall assemblage is atypical in the context of most of the residential neighborhoods within urban New Orleans. This is largely the result of the period of construction:

> With the housing shortage after WWII many large real estate developers came into the area and with the aid of the Federal housing

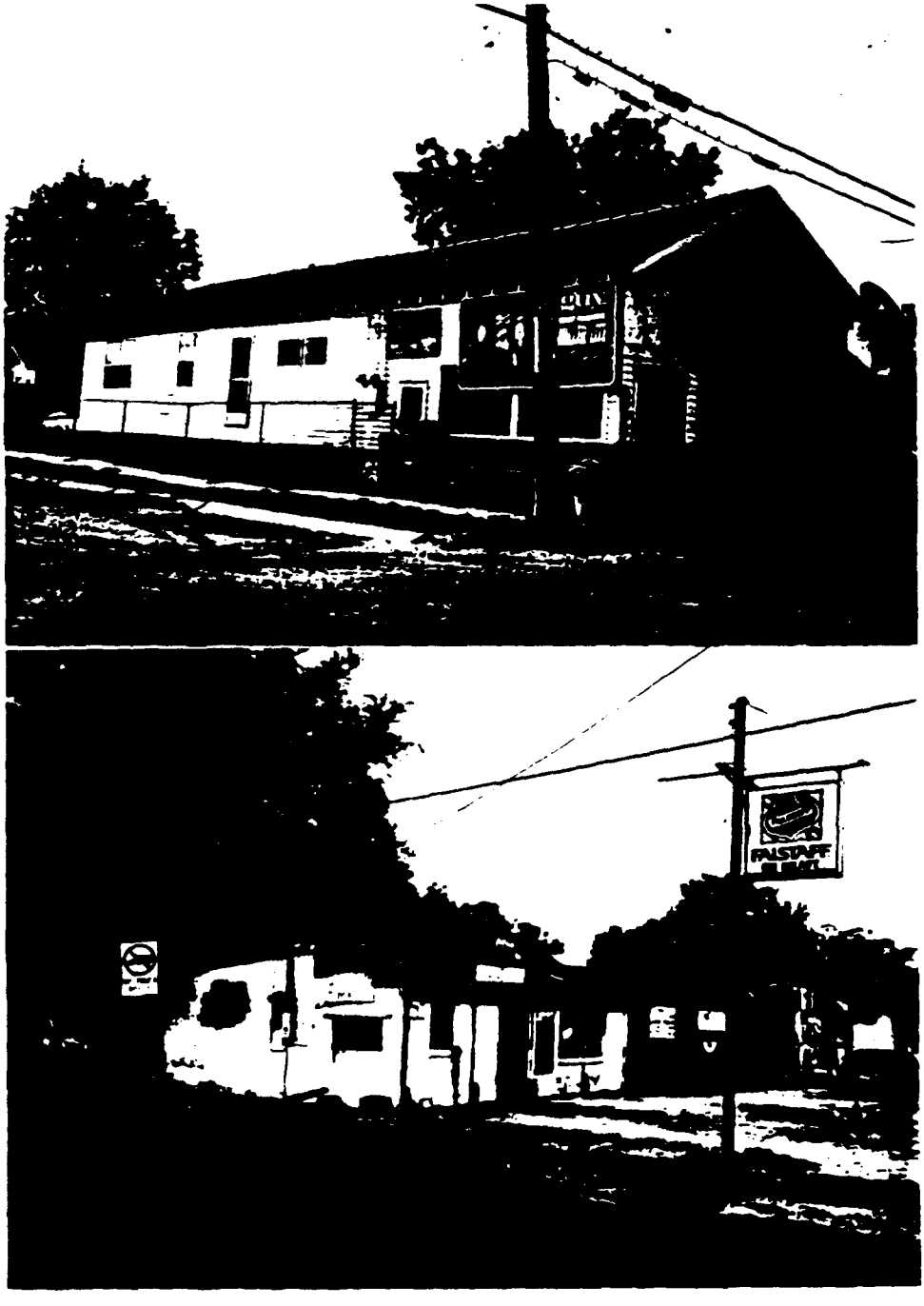


Figure 49. Vic's Grocery at the corner of Jourdan and North Galvez (top) and Mae's Diner at 4842 Florida Avenue (bottom).

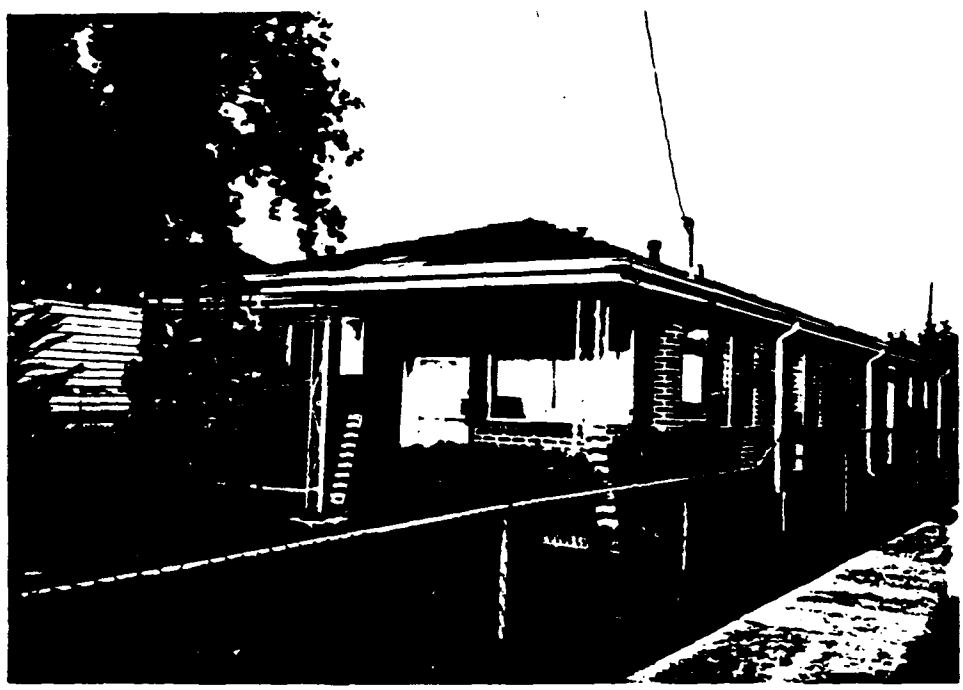


Figure 50. Barber shop at the corner of North Johnson and Deslonde.

funds, constructed much of the current housing found within the Lower Ninth Ward neighborhood (Toler 1979:82)

Vegetation has been used extensively to shield residences and yards from the blazing summer sun. Crepe myrtle or banana trees are often planted directly in front of porches, thereby providing shade and obscuring facades. Many lots are overgrown, and several structures are difficult to see from the street. Shade is an important commodity and there are many acknowledgements of this. It is not uncommon to find places where people have set furniture beneath the boughs of large trees. Also, the streetscape is dotted with small trees and bushes. The majority of the foliage is owner-planted and modest in size. As was typical of most subdivisions, most of the original trees were cleared away. As a result, mature oaks and elms are rare. The thickly wooded Tennessee Street located east of and outside the project corridor, presents a contrast with this condition.

None of the homes along Deslonde Street in the Upper Neighborhood exhibit historic or architectural significance as defined by NRHP Criteria A, B, or C (National Park Service 1982). The entire enclave here is thoroughly modern. Some of the houses on Jourdan Avenue appear to be older than those on Deslonde. In fact, architectural styles suggest that several houses here may be as old as sixty years. Some of the older houses rest on concrete block foundations, and predate the blocks beneath them. This is probably the result of two different factors. First, some of the houses were probably moved into the area from other portions of the city. The other explanation is associated with Hurricane Betsy in 1965. During that storm, the Industrial Canal broke (Miss Mae, owner of Mae's Diner, 4842 Florida Ave., personal communication to Treffinger, 1989). Many houses were washed off of their original brick foundations. New foundations were constructed after the storm. The effects of the storm can still be seen some 25 years later on several homes (Figure 51).

Jourdan Avenue and the Former Drainage Canal. In recent years, that portion of Jourdan Avenue within the Upper Neighborhood has been newly paved, and a drainage canal in its center changed from open to subsurface. This drainage canal continues on the other side of North Claiborne Avenue under the neutral ground on Jourdan Avenue. Water from this canal is pulled to the lake by a siphon at Florida Avenue. Mr. Joseph Domino (a

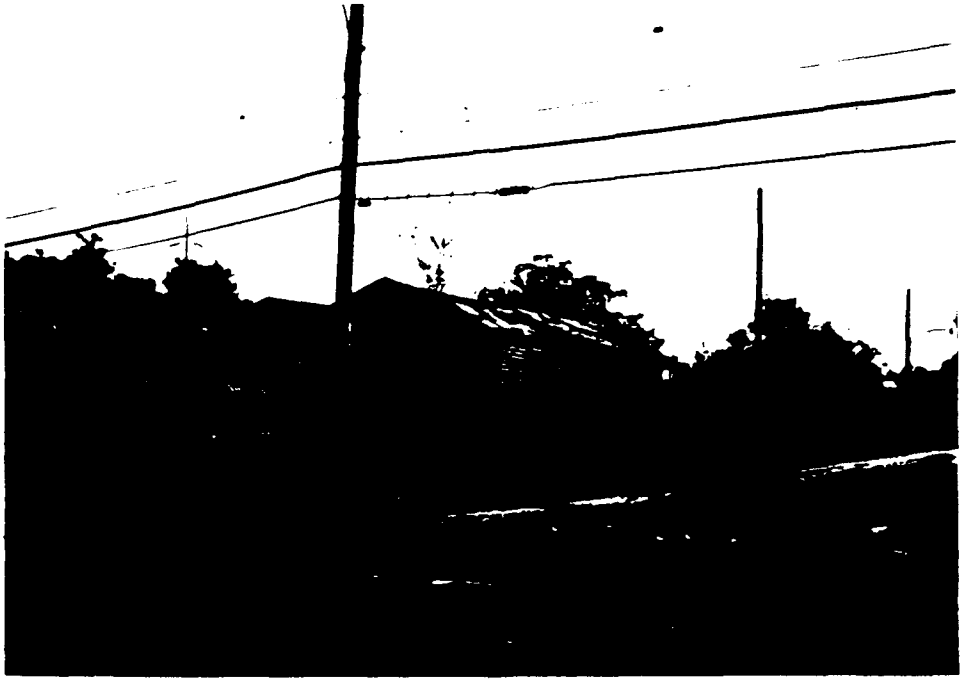


Figure 51. Victim of Hurricane Betsy on Jourdan Avenue.

resident of Jourdan Street for some sixty years, personal communication to Treffinger 1989) stated that this drainage canal was located at the toe of the Industrial Canal levee. Normally, only a small amount of water trickled through it, but it filled during heavy spring downpours. The canal was sprayed regularly by the New Orleans Department of Mosquito Control.

Industrial Complex. The levee along Jourdan Avenue screens residences to the east from the imposing industrial complex located to the west. When one walks down Jourdan, it is not apparent that such a large industrial complex is so close.

Architectural evaluation of the industrial complex indicated that it is thoroughly modern. The buildings are typically steel panel industrial types. Many housed now-defunct businesses, and vines have grown over the structures. At present, only a few operating businesses remain. These include several maritime related businesses such as boat builders, dry docks, and fueling facilities. None of the structures associated with this industrial complex exhibit historical or architectural significance as defined by NRHP Criteria A, B, or C (National Park Service 1982). Toler's (1979) assessment of these structures was the same as the present author's.

Florida Avenue Pumping Station. The Florida Avenue pumping station is located near the intersection of Florida and Jourdan Avenues. It was completed by 1919 as part of a master plan for drainage of the City of New Orleans. The construction of this and other stations made it possible to claim lands north of St. Claude Avenue for new construction (Toler 1979:85). The function of the Florida Avenue pumping station was to pump water from the City into the main outfall canal which led into the remains of Bayou Bienvenue (Toler 1979:86). The mechanisms inside the building were among the only ones in existence in the world at the time of construction. The building which houses this facility, when evaluated by Toler in 1979, was determined to be of Major Architectural Importance. Its significance in terms of NRHP criteria is discussed at the end of this chapter.

Structures Associated with Fats Domino. Located at the corner of Jourdan and North Johnson Streets is an old Victorian cottage of modest design (Figure 52). Although the house has been altered slightly over the years, its old brick chimneys attest to its age. Mr.

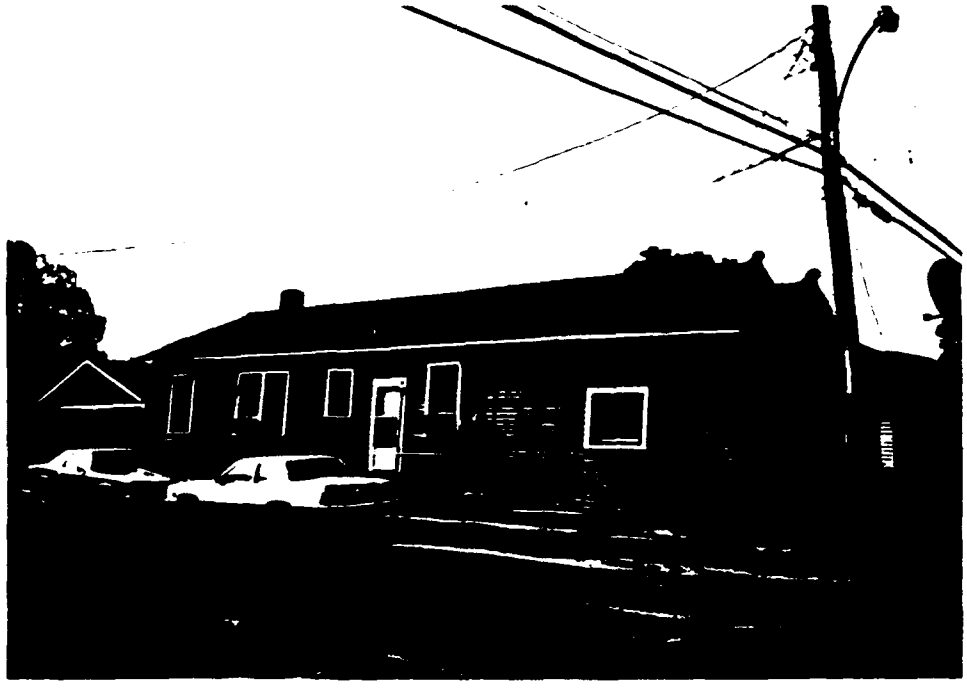


Figure 52. The birthplace of Fats Domino at 1937 Jourdan Avenue.

Joseph Domino (personal communication to Treffinger, 1989) remembers the house being built there at least 62 years ago. He stated that the house was new when his father bought it, and that his family was the first to occupy it.

Fats Domino was born in this house shortly after his family moved in. Fats Domino is an important figure in the field of popular music. This ambassador of New Orleans-style rhythm and blues has sold millions of records world wide. When Fats achieved success in the music business, he decided to stay in the Ninth Ward where he was born and raised. He built a house for himself on Caffin Avenue where he resides today. When he purchased that property, he removed a small, elegant shotgun from the site and moved it into his old neighborhood on Jourdan Street. He moved that structure to 2405 Jourdan (Figure 53), and gave it to his mother (now deceased) and sisters who continue to occupy it today (Joseph Domino, personal communication to Treffinger, 1989). The NRHP status of properties associated with Fats Domino and located within the project corridor is discussed at the end of this chapter.

The Middle Neighborhood

The number of historic structures increases from north to south within the Middle Neighborhood (Figure 54), situated between N. Claiborne and St. Claude Avenues. Although modern structures predominate, a greater proportion of historic buildings (i.e. structures older than fifty years) are present here than is true of the Upper Neighborhood. Most of these are located on Jourdan Avenue. Interestingly, the up-ramps at either end of this neighborhood, associated with the St. Claude and Claiborne Avenue bridges, represent boundaries both for architectural types and people.

Jourdan Street presents an interesting streetscape in the context of the Middle Neighborhood. The Jourdan Street drainage canal was covered over in 1985 by the City of New Orleans (plaque located at Jourdan and St. Claude). Today, a rather curious neutral ground remains there, and it seems to testify to an incomplete urban idea. There are no trees or other types of foliage as are common to most of New Orleans' neutral grounds.

The housing types in the Middle Neighborhood are many and varied. In general, the properties here are in better condition than those in the Upper Neighborhood.



Figure 53. Shotgun moved to 2405 Jourdan Avenue from the site of Fats Domino's house on Caffin Avenue

Figure 54. Map of the Middle Neighborhood.

The small corner stores are open and in a good state of repair. Some historic (older than 50 years) shotguns and cottages do exist. It is sometimes difficult to determine whether those buildings were constructed on their sites or were moved from other areas. This is a primarily modern architectural assemblage, and historic structures are a distinct minority. None of these historic structures are significant. Their NRHP status is discussed at the end of this chapter.

There is one concentration of older structures that is somewhat interesting. This concentration is located at the southernmost end of the Middle Neighborhood (i.e. on the north side and facing the St. Claude Avenue up-ramp), between Jourdan Avenue and Deslonde Street. There are four early-twentieth-century buildings here. One is a modest camelback shotgun. The other three defy typological or stylistic description. These three houses may be considered architectural oddities. Each seems to pull certain design traits from several stylistic influences. The resulting buildings are architectural hybrids of limited interest. One of these, located at the northwest corner of St. Claude and N. Rampart, has been evaluated by the Historic Districts Landmarks Commissions (HDLC) as an important building with some alterations. Recommendations concerning this structure and the adjacent structures are made at the end of this chapter.

Engineering Structures and Related Buildings within the Middle Neighborhood. The existing Industrial Canal Navigational Lock Complex has been determined to be eligible for inclusion on the National Register of Historic Places. This facility was completed in 1921, and represents the first use in the United States of those technologies which were developed and employed during the construction of the Panama Canal (Dabney et al. 1987).

The former U.S. Army Corps of Engineers administration building is situated adjacent to the St. Claude Avenue Bridge on the north side of St. Claude. This building is a large, two story, hipped roof structure with mild, Italianate undertones. Its modest construction techniques indicate a strict utilitarian approach to design, and in general, greater attention was focused on utility rather than style. The NRHP status of the building is discussed at the end of this chapter.

One additional engineering structure is located in the Middle Neighborhood. It is situated in the middle of the square bounded by Marais, Jourdan, Sister, and St. Claude. Toler (1979) evaluated the structure and considered it to be Of Major Architectural Importance. The Historic District Landmarks Commissions, in their 1980s study of the same area, placed the building into their second-highest category, which represents structures Of Major Architectural or Historic Importance. The NRHP status of this structure is discussed further at the end of this chapter.

The Transitional Position of the Middle Neighborhood. Perhaps the most interesting aspect of the Middle Neighborhood is the transitional role it plays within the study area. As one walks from Florida Avenue to North Claiborne and then to St. Claude Avenue, and finally to the Mississippi River, the historical development of the project corridor is reflected by the architectural assemblages. The area developed first was near the river. Development proceeded from that area lakeward (north). As a result, the Middle Neighborhood displays a mix of the components which predominate in each of the other two neighborhoods.

The effect is heightened by the "walls" presented by the up-ramps of the St. Claude and N. Claiborne Avenue Bridges. These make passage between the neighborhoods difficult, so that each of the areas has remained a separate entity. The barriers created by those ramps appear to minimize interchange between the neighborhoods, an impression that was confirmed by conversations with residents in the course of this survey. This phenomenon offers a valuable lesson for urban planners concerning community continuity and cohesiveness.

The Lower Neighborhood

The architectural assemblage of the Lower Neighborhood (between St. Claude Avenue and the Mississippi River), is dramatically different from that of either the Middle or Upper. Much of this area is included within the Holy Cross National Historic District.

Although a few historic structures (older than 50 years) are present in the more northern areas (above), they are relatively rare. In contrast, portions of the Lower Neighborhood are comprised of predominantly historic (pre-1937) structures. Architecture here is

similar to that of other historic residential areas of New Orleans. The proliferation of shotguns, cottages, and doubles creates a sense of the past. The streets are bordered by the syncopated rhythms of intently worked facades. Many of these historic buildings have been significantly altered, modified, or otherwise renovated. This is typical in New Orleans' subtropical climate where clinging vegetation crawls between weatherboards and peels paint. The other noticeable alteration is the addition of modern conveniences to historic buildings.

Many of the historic structures here still exhibit a high degree of historic architectural integrity. Beautifully carved brackets and frieze mouldings along with cornices and tracery millwork adorn practically every facade (Figure 55). In fact, the fronts of most homes exhibit at least one local ornamental tradition. Some homes have the roofs of their porches painted blue to suggest the sky above. Others exhibit the soft Italianate arches above windows which are typically associated with early-twentieth-century stylistic influences New Orleans.

Practically every historic dwelling is sheathed at the facade with a different material than was used on the sides. This differentiation of the front of the house is a widely observed tradition in the Creole Faubourgs:

> ...Here (1445 Pauger St.) as in many Creole cottages, the facade is plastered and whitewashed with weatherboard sides (Toledano et al. 1974:54-55)

Plastering the facade to differentiate it from the sides of a house represents a relatively expensive practice. It is interesting to note, then, the adherence to this stylistic tradition in the Lower Neighborhood with the use of different materials. Here, narrower weatherboards are almost always used on the facade of the house to produce a different texture and thereby accentuate the front. Further, the practice of placing small blocks on the corner posts of the porch (rustication) is also common.

Generally speaking, the architecture of the Lower Neighborhood consists of classic New Orleans architypes. The majority of the homes are single and double shotguns which possess either Italianate or Eastlake details. The language of the architecture here is spoken



Figure 55. Southern side of Dauphine looking west towards the Industrial Canal.

throughout all historic neighborhoods from Uptown to the Lower Ninth Ward. Several buildings are of particular note and will be discussed briefly. These structures illustrate the architectural typology of the neighborhood.

Examples of Important Architecture. One particularly interesting example of the Creole/Acadian Cottage type is located just outside the study area, at the Corner of North Rampart and Deslonde (Figure 56). This simple Creole Cottage and its setting are typical of the earlier housing types which were first built in the area that includes the Lower Neighborhood:

> Much of the character of the lower sections and faubourgs is the more rural-like attitude of the structures and the placement of buildings on the lots, some of them being larger than the usual lot size, in the more dense developments like the Marigny or the Vieux Carre (Toler 1979:35).

This house draws its influence from local Creole traditions and exhibits a grenier roof overhang at the front (simply a continuous pitch side gable roof). The house rests on brick piers and still possesses the original shutters. Also typical is a central brick chimney used to divide rooms and provide structural support. The house has had an addition placed at the rear, as have many of the homes in this area. It was typical to add a bathroom to the rear of older houses once a modern, city-wide sewage system was in place. Unlike other parts of the country, the modest architypes of Southeastern Louisiana are not specific to either rural or urban settings. It is as common to see a house of this type on a crowded New Orleans street as it is to see it in the country outside the city. A similar structure with historic modifications is present within the project corridor on the west side of Jourdan at the corner of Burgundy. One other similar but modified structure is located within the project corridor on the east side of Jourdan between Burgundy and Dauphine.

Several of the oldest houses in the project area present the appearance of having been severely modified. However, the nature of these modifications are not changes to the plan but to the skin. When modern building materials such as asphalt roofing and siding and aluminum frame windows became available, many

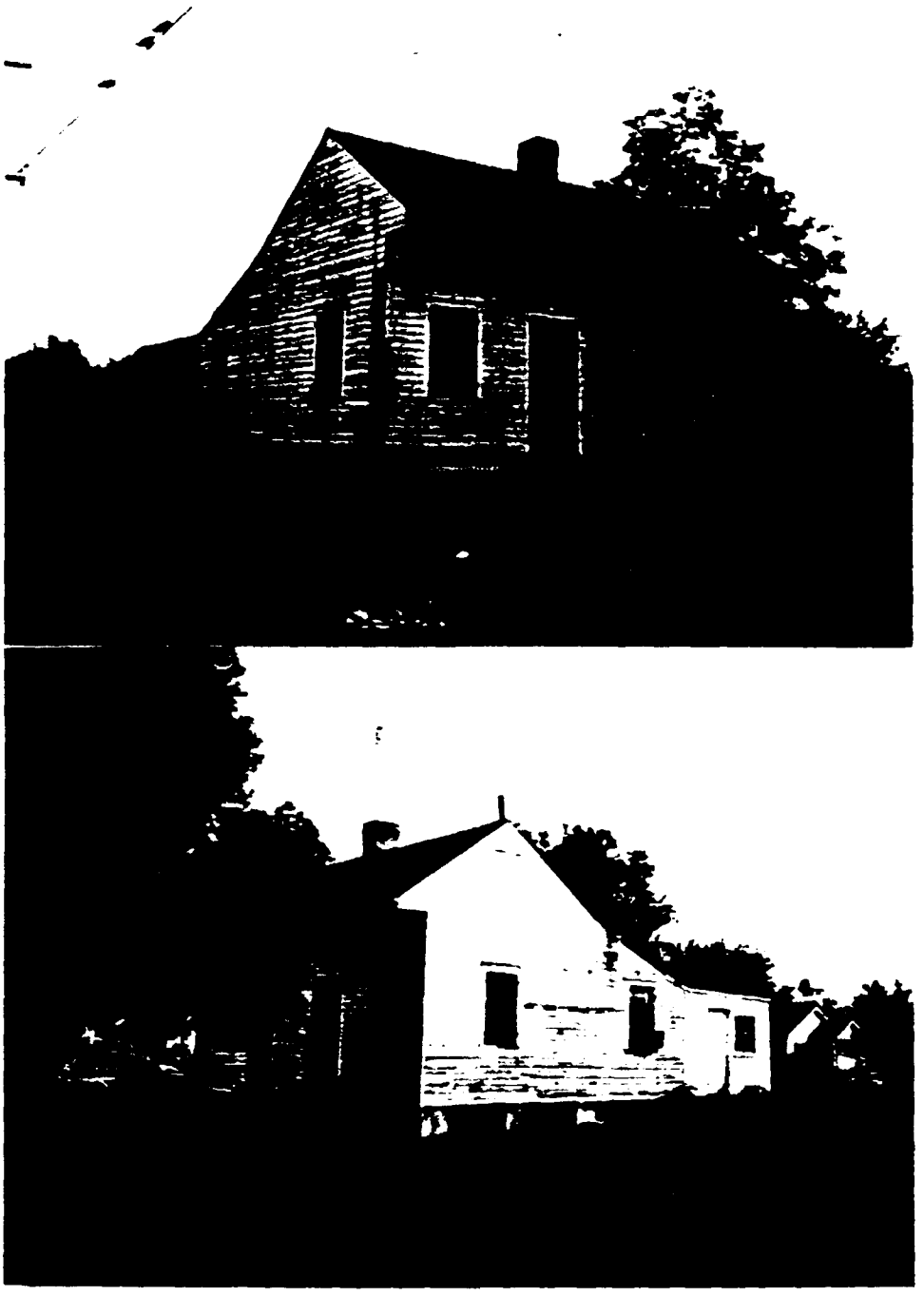


Figure 56. Acadian cottage at 1903 North Rampart (corner of Deslonde).

original components of historic buildings were lost. Basically, it was far more affordable to renovate than to rebuild or restore. One of the best examples of this practice is at 931 Deslonde Street (Figure 57). Here, aluminum frame windows have replaced the original wooden casement windows. In addition, the front has been sheathed with an artificial stone motif and the sides with aluminum siding. This practice appears to be more common within other portions of the Holy Cross National Historic District than is the case for that portion of the district within the project corridor.

There are many fine shotguns in the Lower Neighborhood. One of the best and oldest examples is at the corner of Dauphine and Deslonde Streets. Historic maps indicate that this house was constructed sometime between 1869 and 1896. It is currently in excellent condition. This L wing shotgun (Figure 58, 4902 Dauphine) is very delicate and possesses beautiful cornices, brackets, and facia tracery mouldings. The soft arched windows exhibit the Italianate influences widely observed in the Holy Cross District. The front porch of this house is heavily worked and finely detailed. The house rests on very old, original brick piers. All of the original windows are in place and most of the original cypress shutters remain.

Although 4902 Dauphine, which is painted aqua, is striking, it is by no means the only excellent shotgun in the Lower Neighborhood. Instead, it is discussed here to illustrate the typical level of detail extant on many of this area's historic homes. In New Orleans, industrial types such as the shotgun did not remain plain and unembellished as they did in the rest of the South. Instead, the facades of shotguns here are strong indications of the stylistic consciousness which defines New Orleans:

> ...Holy Cross' shotgun houses are distinguished from most other regional collections by their age and quality. The vast majority of shotgun houses in the Gulf Coast region date from the twentieth century and feature bungalow details, if they are styled at all. Holy Cross is one of very few areas which have a significant component of pre-bungalow era shotgun houses -- i.e., Eastlake and Italianate. Approximately 35% of Holy Cross' shotgun houses fall into this earlier period. Secondly, the shotgun house is normally thought of as a working class



Figure 57. Re-skinned house at 931 Deslonde.



Figure 58. L-wing shotgun at 4902 Dauphine.

> house type. Hence most collections of shotgun houses in the Gulf region are very plain. New Orleans is about the only place where shotgun houses are associated with the middle and even upper class. This is particularly true of Holy Cross, a lower middle class area. Most (70%) of the district's shotgun houses feature some sort of recognizable architectural style and many (at least a third) are fairly elaborately styled. This is in sharp contrast to most other collections across the Deep South (Holy Cross National Historic District National Register Nomination Form, p.7)

Another dominant housing type in the Lower Neighborhood is the double shotgun. These are simply two shotgun plan houses with a shared center wall. One of the finest of these is at 632 Deslonde (Figure 59). This fine double is rumored to be the former home of Marie Laveaux's granddaughter who allegedly choked to death in the house (Rosemary Sanrock, personal communication to Treffinger, 1989). The house has been recently renovated and repainted by a new owner. It is exquisite. Raised on brick piers, the foundation has been stuccoed and scored (rusticated) to appear as if it were made of large blocks. The house exhibits the local technique of differentiating the facade from the sides, discussed above. On this example, the siding at the front is drop leaf, while standard weatherboards sheath the sides. The original tongue in groove porch is still in place, as is all of the ornamentation. Renovation of this structure exemplifies a fairly common phenomenon within the Lower Neighborhood. Such efforts were already underway by 1979 (Toler 1979:57).

Another fine structure is the raised single shotgun at 701 Jourdan Street (Figure 60). It was noted by Toler (1979) as an important and striking example of architecture within the Lower Neighborhood. The house is currently being renovated by Gene and Martha Kasabon. This structure is exceedingly well-built, and may have been designed by a professional architect or contractor. The house is raised seven feet off the ground on a forest of brick piers. It is depicted on the 1909 Sanborn map, and the current owners indicated that the construction date is ca. 1908. This structure is in excellent condition, and shows no signs of structural fatigue. The front porch of the house is one of the most ornate in the entire Holy Cross National Historic District. All of the original window and "gingerbread" are still in place. There is an attention to detail



Figure 59. Raised double (former home of Marie Laveaux's granddaughter) at 632 Deslonde.



Figure 60. Raised shotgun at 701 Jourdan.

here which is well-ordered and proportioned. Although the plan of the house has been altered slightly, the integrity of the structure remains intact and the house represents one of the gems of the neighborhood.

The Semmes School. The Thomas J. Semmes School (Figure 61) is situated on the west side of Jourdan Avenue between N. Rampart and St. Claude. It is quite a remarkable building. Erected in 1900, the school is a three story, hipped roof, brick structure. There is a cupola at the top and a large dormer on the roof at the front. Some excellent masonry work may be observed around many of the windows, which exhibit brick arches and sills. The building is currently being renovated inside on the third floor and is otherwise in good condition. Toler (1979) and the New Orleans Historic District Landmarks Commissions (HDLC) have assessed the architectural importance of the Semmes School. The HDLC considered it to be of Major Architectural or Historic Importance, their second highest rating category, while Toler (1979) assessed it as being Of Local Importance.

NRHP Evaluations and Recommendations

Significant and potentially significant structures within the Middle and Upper Neighborhoods, i.e. the area bounded by the Industrial Canal, Deslonde Street, St. Claude Avenue, and Florida Avenue are discussed in this section. That entire area is also discussed in terms of NRHP guidelines (National Park Service 1982) concerning historic districts.

Because the majority of the Lower Neighborhood is within the Holy Cross National Historic District, NRHP-related issues related to structures and concerning that portion of the study area are presented in the following chapter.

Structures Associated with Fats Domino. Only two structures in the Upper Neighborhood were, upon initial examination, considered potentially significant in terms of NRHP criteria. Both structures are associated with the life and times of Fats Domino and are also New Orleans architypes. These structures are located at 1937 and 2405 Jourdan Avenue.

There is no denying the impact that Fats Domino has had in both performing and marketing the rhythm and blues of New Orleans. Many of his songs such as "Blueberry Hill" and "Walkin' to New Orleans" have



Figure 61. The Thomas J. Semmes School.

become music industry standards and are synonymous with the City's musical heritage.

As discussed above, Mr. Fats Domino built his present home on Caffin Avenue (outside the study area). When he purchased the lot on Caffin Avenue, he moved an old shotgun off of that lot and into the neighborhood in which he grew up. Domino moved the house that formerly stood on Caffin Avenue to 2405 Jourdan Avenue within the study area. It was a gift to his mother (deceased) and sisters who still live in this modest, moved shotgun. The structure has been altered so that its integrity is now questionable. Also, there is no direct association between this structure and Fats Domino. Therefore, under Criterion B (National Park Service 1982:19-22), the only criterion applicable to the structure, it warrants no further consideration for nomination to the NRHP. Because 2405 Jourdan Avenue is not eligible for nomination to the NRHP, no mitigative measures are recommended as being necessary should the proposed project result in destruction or removal of the property.

The birthplace of Fats Domino is located at 1937 Jourdan. However, Fats Domino is a living person, and

> Properties associated with living persons are generally considered not eligible for inclusion in the National Register... A property associated with a person who is of purely contemporary significance, or who is continuing to work in a particular field, or about whose work scholarly analysis has not yet been done is not eligible (National Park Service 1982:22).

Sufficient time has not yet passed to allow an adequate assessment of Fats Domino's contributions to his field. Also, his contributions have occurred within the last fifty years. Guidelines for interpretation of NRHP criteria state that

> Ordinarily... properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register... (National Park Service 1982:1).

Further, birthplaces are generally not eligible:

> ...in order for a birthplace or grave to qualify, it cannot be simply the birthplace or

> grave of a person significant in our past (Criterion B). It must be the birthplace or grave of an individual who was of outstanding importance in the history of the locality, state, or nation... The birthplace of an individual who was one of several people active in some aspect of the history of a community, a state, or the nation would not be eligible (National Park Service 1982:54).

Exceptions are made for birthplaces in such cases only when it is

> a birthplace... of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his productive life... (National Park Service 1982:2).

This is not the case with Fats Domino, who continues to occupy his long-term residence on Caffin Avenue.

For these reasons, the birthplace of Fats Domino, 1937 Jourdan Avenue, does not warrant further consideration for nomination to the National Register of Historic Places. Because 1937 Jourdan Avenue is not eligible for nomination to the NRHP, no mitigative measures are recommended as being necessary should the proposed project result in destruction or removal of the property.

The Florida Avenue Pumping Station (Drainage Station Five). The Florida Avenue Pumping Station is the other structure in the Upper Neighborhood which warrants further consideration. Its location is shown in Figure 62. Toler (1979) recommended that this building be considered Of Major Significance, his second highest category. It is located near the intersection of Florida and Jourdan Avenues and was completed by 1919 as part of the master plan for drainage of the City of New Orleans:

> The key element in the development of the areas to the rear of the St. Claude as well as other inside areas of the city, is the development of the drainage system. After the passing of the initial legislation in 1899 for drainage of the city did the development of this area begin. Most of the development within the city was dependent upon the topography of the land, the higher land being

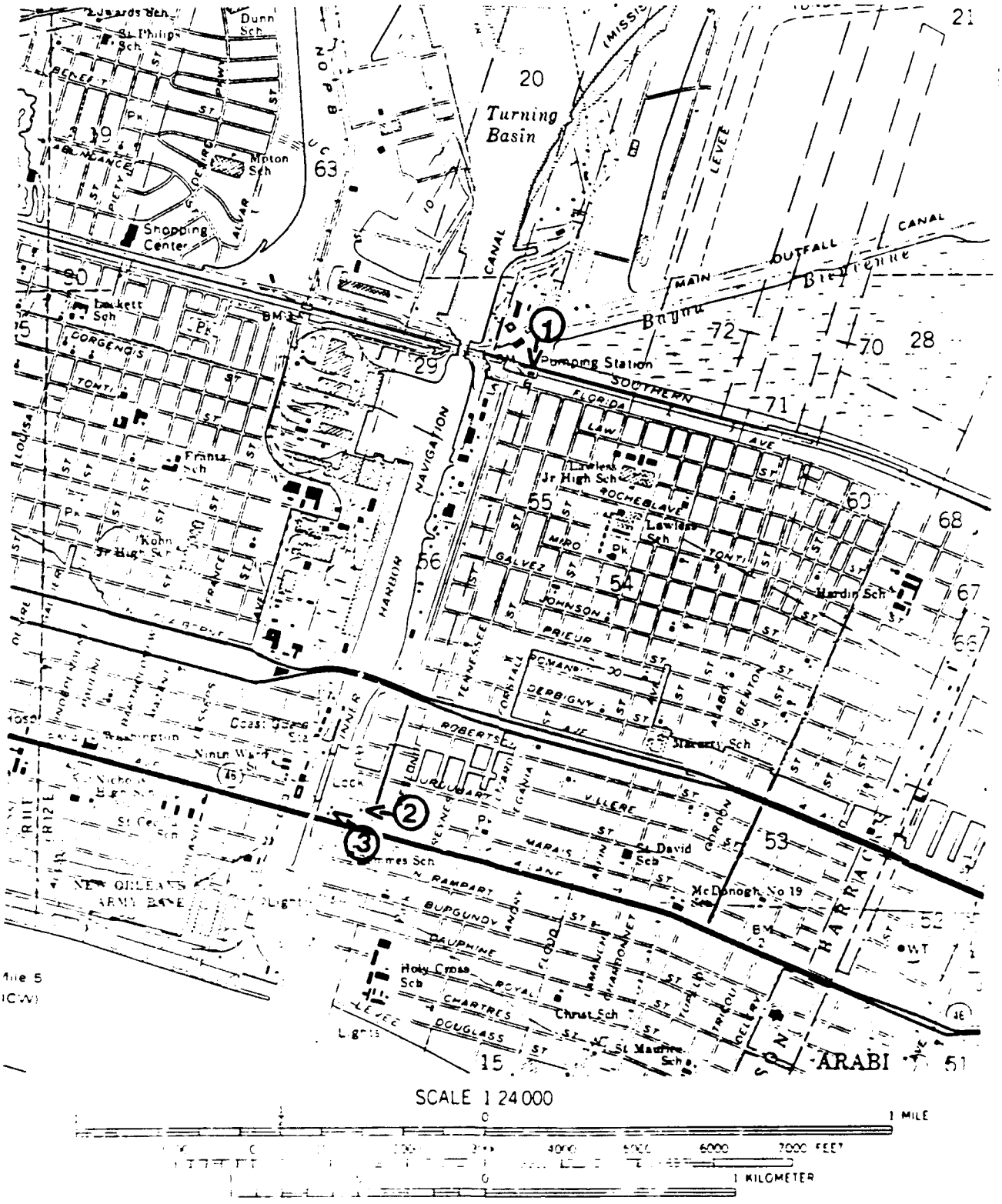


Figure 62. Excerpt from the New Orleans East 7.5' quadrangle showing the locations of the Florida Avenue Pumping Station (1), the Octagonal Building (2), and the former Corps of Engineers Administration Building.

> developed first and the lower parts much later... With the introduction of the canal system and the necessary pumps to remove the water from the canals to drainage canals on the other side of the protective levees, the city virtually became an island. A map prepared in 1919 shows the completed and proposed drainage system at that time. The pumping station planned for Florida and Jourdan Canals was complete at this time. This station pumped water from these canals and drained them into the Main outfall Canal which then lead into the remains of Bayou Bienview, which drained into Lake Borgne. This was one of the major pumping stations for the entire drainage system of the city....
>
> All of the pumping stations were vital elements of the city. The unique function of the machinery, the only kind of this type in the world and the best, demanded an appropriate structure to house it. All of the structures, the pumping houses, were designed by the same architectural format.... (Toler 1979:85-87, sic. throughout).

The early-twentieth century development of a master plan for the drainage of New Orleans was a significant event in the history of the City. Implementation of the plan occurred during the period when a variety of similar municipal improvements were undertaken (Chapter 5).

The Florida Avenue Pumping Station is potentially significant at the local level in terms of National Register criteria because of its apparent association with events that have made a significant contribution to the broad patterns of our history (Criterion A). The necessary first step for determining whether the pumping station qualifies for the National Register would be development of an historic theme or context within which the property would be evaluated (National Park Service 1982:9).

In terms of the Florida Avenue Pumping Station's architecture, Toler (1979) described the structure well:

> The late Italianate style was somehow appropriate for these structures and all carry the same kind of architectural motifs, each pumping station is unique in itself. The

> Florida and Jourdan Pumping Station is a large building, with a basement or a raised pedestal, on which the main floor rests. The large doors with its shutters admit great quantities of light and air for the machinery and the workers, while smaller attic windows ventilate the upper portion of the building. This building and others like it are unique in its architecture and vital in its function of draining the city of excess water (Toler 1979:87-88, sic. throughout).

As is true for its historical significance, in order to evaluate the building's architectural significance, it would be necessary to develop the historic theme to which it relates. Also, an area survey of other properties related to that theme should be conducted (National Park Service 1982:12) by an architectural historian. Part of the architectural evaluation of the pumping station should focus on the relationship of the historic pumping mechanisms housed inside (below) to the building's design. Because of the building's function, the appropriate level of HABS documentation, if warranted, would depend to a large extent on the degree to which function dictated form and the manner in which that form was integrated into an aesthetic design. Information to be included in the various HABS levels of documentation is specified in the Federal Register (1983, v. 48(190):44732).

The structure under discussion is also known as Drainage Station Five. It was probably in place by ca. 1915. The original pumps are still present within, although the original motors may have been replaced. Mr. Wesley Busby, who currently is in charge of this and other similar stations for the City of New Orleans, is in possession of files and photographic albums that date to the period of construction. These files were compiled by Mr. George Earl beginning in the 1890s when Earl was in charge of planning, designing, and operating the system (Wesley Busby, personal communication to Franks, 1990).

This structure, then, houses large-scale pumping mechanisms which are historic (pre-1919) and which, at the time of construction, were part of a unique plan integral to the development of a comprehensive drainage system for the City of New Orleans. That system allowed settlement in low lying areas that were formerly uninhabitable.

If proposed construction requires removal or destruction of this building and/or the disassembly of the engineering mechanisms housed therein, then further research should be conducted to develop a theme for the evaluation of significance of the mechanisms themselves. The theme would also allow a determination of "...the most important ways in which integrity applies to the properties included in the theme..." (National Park Service 1982:11).

After that theme is developed, the engineering mechanisms inside the Florida Avenue Pumping Station should be examined and their significance evaluated by an engineering historian or by a civil engineer experienced with NRHP evaluations. The focus of such an examination would be to determine whether the mechanisms and machinery are significant engineering achievements (Criterion C), whether they contain information important to our history (Criterion D), and whether they exhibit the quality of integrity necessary for inclusion on the NRHP (above). If so, then that study should include recommendations concerning the appropriate level of HAER documentation that should be undertaken.

In short, the Florida Avenue Pumping Station (Drainage Station Five) is potentially significant according to NRHP criteria for several reasons. First, it may be an individual property with integrity and which is associated with events that made a significant contribution to broad patterns of local history (Criterion A, National Park Service 1982:17). Second, it may embody distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or may represent a significant entity whose components may lack individual distinction (Criterion C, National Park Service 1982:22). Finally, it may be likely to yield information important in history (Criterion D, National Park Service 1982:28). Historical, architectural, and engineering issues are involved. If possible, then, impact to the pumping station should be avoided during proposed construction. If such avoidance is not feasible, then the necessary studies should be undertaken to determine whether the property qualifies for the National Register, and if so, what mitigative measures would be appropriate.

<u>The Octagonal Building within the Square bounded by Sister, Marais, Jourdan, and St. Claude.</u> This structure is associated with the City of New Orleans' sewerage system. Its location is shown in Figure 62. According to Mr. Wesley Busby (personal communication to Franks,

1990), it was probably built ca. 1905. It is still in use, and the original pumping mechanisms remain in place although the original motors may have been replaced. Originally, the pumps directed sewerage to the Mississippi River, but the system is now tied in to a treatment plant (Wesley Busby, personal communication to Franks, 1990).

Chapter 5 of this report summarized the history of early attempts to build a city-wide sewerage system and the importance of the effort that was ultimately successful. It is likely that a more detailed study of that history would indicate that this was an event that made a significant contribution to the broad patterns of our local history (Criterion A). Such a study would result in development of a theme which would represent the historical context within which the property under discussion could be evaluated (National Park Service 1982:9).

Both Toler (1979) and the Historic Districts Landmark Commissions (HDLC) consider this structure Of Major Architectural Importance. Toler (1979) did not discuss it within his text. Rather, he indicated its significance on a color-coded map, as did the HDLC. Toler (1979) did complete an "Architectural Survey Data Sheet" which correctly describes the building. It is an octagonal, brick, wood frame structure that is two stories high and is in excellent condition.

It is potentially significant at the local level for several reasons. First, it may be associated with events that have made a significant contribution to the broad patterns of local history (Criterion A). As noted above, further historical research would be necessary to make such a determination. Also, this property may be eligible for the National Register if it embodies distinctive characteristics of a type, represents the work of a master, possesses high artistic values, or represents a significant entity whose components may lack individual distinction (Criterion C). Evaluation according to Criterion C would include further examination of both the building and of the engineering mechanisms that it houses, as well as the relationship between these. Finally, it is possible that a study of the historic mechanisms housed in the building could yield information important in engineering history (Criterion D).

This structure lies within the area of direct impact as defined by the Scope of Services. Because it

is potentially significant according to several NRHP criteria, impact should be avoided during proposed construction if possible. If such impact cannot be avoided, then further study should be undertaken to determine whether the property is indeed eligible for the National Register. That study would include: (1) historical research to develop the relevant themes with which the property is associated; (2) further examination of the building by an architectural historian, ideally in the context of an area survey of similar and related properties; and (3) examination of the engineering mechanisms by an engineering historian or by a civil engineer experienced with NRHP evaluations. If that study results in a finding that the property is eligible for the National Register, then recommendations concerning mitigative measures should also be made.

The Former Corps of Engineers Administration Building. This brick structure is located adjacent to the St. Claude Avenue Bridge (Figure 62). It served at one time as an administration building for the Corps of Engineers. The building was not evaluated by Toler (1979) or by the HDLC.

Architecturally, it represents a two story, hipped roof structure with mild Italianate undertones. In terms of its design, concern was for utility rather than style. In and of itself, it exhibits no distinctive characteristics that would qualify it for the National Register according to Criterion C. Similarly, it does not represent the work of a master, nor does it possess high artistic values.

Although it is located adjacent to the St. Claude Avenue Bridge, which is significant, location is the only relationship between the two. Also, although it is located adjacent to the Register-eligible IHNC lock, it was not considered by Dabney et al. (1979) to be an important or even related part of the lock complex. Therefore, this building should not be considered significant due to association. Should proposed construction necessitate its destruction or removal, this will not represent an adverse effect.

NRHP Evaluations of the Upper and Middle Neighborhoods in terms of Districts. Neither the Upper nor Middle Neighborhoods, nor portions therein, warrant consideration as National Historic Districts. They are not significant entities, nor are they "...important for

historical... engineering, or cultural values" (National Park Service 1982:25).

The only concentration of historic (fifty years or older) structures is on the north side of St. Claude Avenue between Jourdan Avenue and Deslonde Street. There are four rather interesting, early-twentieth-century buildings here. One is a modest camelback shotgun. The other three defy typological or stylistic description. These three houses may be considered architectural oddities. Each seems to pull certain design traits from several stylistic influences. The resulting buildings are architectural hybrids of limited interest. One of these, located at the northwest corner of St. Claude and N. Rampart, has been evaluated by the Historic Districts Landmarks Commissions as an important building with some alterations. The present author's assessment is that even this building does not possess qualities delineated by Criterion C as necessary for inclusion on the NRHP (National Park Service 1982).

Neither individually nor collectively do these four buildings "...embody the distinctive characteristics of a type, period, or method of construction..." nor do they represent the work of a master or possess high artistic value. Neither do they "...represent a significant and distinguishable entity whose components may lack individual distinction" (National Park Service 1982:22). Therefore, this collection of four residential structures is not eligible for nomination to the NRHP as a district. It should also be noted that when the Holy Cross District was listed in the National Register, these structures were not included within the District's boundaries. Therefore, they should not be considered as contributing elements to that District. Similarly, their loss will not represent an adverse effect to the District.

CHAPTER 13
ARCHITECTURAL EVALUATION WITHIN AND RECOMMENDATIONS CONCERNING THAT PORTION OF THE STUDY AREA WITHIN THE HOLY CROSS NATIONAL HISTORIC DISTRICT

by Mr. Jeffrey Treffinger

Introduction

A portion of the project area is included within the Holy Cross National Historic District (Figure 47). Some or all of that area, from Sister to Deslonde Street, is subject to direct impact should the IHNC be modified on its eastern side to allow construction of a new lock. It was therefore necessary to determine the relative significance of this portion of the project area within the context of the larger Holy Cross National Historic District. Further, it was necessary to determine the effect on the district should historic structures between Sister and Deslonde Streets and within the district be lost.

For the portion of the project corridor located within this historic district, it was therefore necessary to determine the relationship of this area to the district as a whole. It was also necessary to determine the nature and degree of adverse effects, if any, of proposed construction on the Holy Cross National Historic District as an NRHP property.

The question posed initially is: how does the architecture within that portion of the study area included in the district contribute to the significant architectural assemblage of the district as a whole? Possible project effects then are considered in terms of the hypothetical loss to the district of this portion of the study area. Effects to the existing fabric of the district are considered in terms of both the loss of individual, significant historic structures as well as the loss of structures that represent contributing elements to the overall assemblage of structures that qualified the district for listing in the NRHP. Based on the results, recommendations are presented at the end of the chapter.

Methodology

The methodology used to address these issues and to objectively assess the effects that would result from the hypothetical loss of historic structures consisted first of a building-by-building survey of the entire

Holy Cross District (approximately 850 structures). Each structure was rated in accordance with an evaluation system similar to that developed by Mr. Jerry Toler in his 1979 survey of the Mississippi River-Gulf Outlet Shiplock Project (Toler 1979). In addition, results of the evaluation were compared to results of an evaluation by the New Orleans Historic District Landmarks Commissions (HDLC) of the same area.

A rating was assigned to each structure within the district. The rating classified the structure in terms of its architectural qualities. The highest rating is "A" which signifies National Significance according to NRHP guidelines (Criterion C) for architecture. The lowest rating is "F" which signifies a structure that is modern in nature and therefore intrusive in the context of the historic fabric of the district. Between these ratings were categories which included: Buildings of Major Significance (B), of Local Importance (C), Contributors to the District (D), and Twentieth Century Compatible Construction (E). Complete definitions for each category as well as the results of this aspect of the study are presented below.

In the course of the walking survey of the entire district, it became clear that certain streetscapes are stronger, i.e. more historic in nature, than others. Other blocks within Holy Cross are entirely intrusive, and there is a range of mixed streetscapes. In order to further examine this phenomenon, data collected during the pedestrian survey were re-analyzed in terms of block-faces. Again, methods for this exercise and its results are discussed in detail below.

An Overview of the Holy Cross National Historic District

Because of uneven historic development, and because much of the area was occupied by truck farms through the early-twentieth century, the Holy Cross National Historic District is a somewhat inconsistent assemblage of architecture. Nevertheless, groups of block-faces which convey historic contexts are present in certain key areas. The historic quality of the district depends heavily upon block-faces with multiple houses which have not been changed or where infill has been minimal. The NRHP Nomination Form for the district expresses this phenomenon in terms of a concentration:

> The Holy Cross Historic District is architecturally significant on the state level as well as in the Gulf Coast region as a

> whole. It has an unusually fine collection of shotguns, a noted regional type. Moreover, it is a superior concentration of 50+ year old structures within the context of Louisiana (NRHP Inventory-Nomination Form n.d.:7, emphasis added).

There were once generous lots of land surrounding many of the homes within the district. This was partly a result of the presence of truck farms. Infilling during the late-nineteenth and early-twentieth century was gradual. Also, that infilling was not dense. The rural feel that the district retains contrasts with the Creole faubourgs located further upriver:

> Although the area grew to resemble the urban character found in other New Orleans neighborhoods, there are two fundamental differences. The lots are somewhat larger and the blocks are somewhat less filled in. Moreover, until the 1940s parts of the neighborhood was given over to truck farming on vacant lots. In some ways the district is a village on the edge of a large city. This separateness was enhanced in 1912 when a wide industrial canal was built between Holy Cross and the rest of New Orleans (NRHP Inventory-Nomination Form n.d.).

Some of the later infill (primarily shotguns and doubles) is pleasant and consistent with historic building types common to the area. However, much of the infill consists of modern structures such as apartment buildings or single family suburban types which are intrusive in nature. Even these are considered to have minimal impact:

> Most of the district's intrusions are small ranch or apartment houses. Because of the aforementioned truck farming, there was still room to build in the neighborhood in the 1940s and 50s, hence the tract houses. Even so, the district has a 26% intrusion rate, which is within the normally acceptable rate for Louisiana historic districts... In addition, many of the intrusions are slab-on-grade, while the contributing elements are raised three feet or so. Moreover, in almost every case the district's intrusions are no larger than the contributing elements. And, of

course, intrusions which are modified older buildings conform to the district's historic streetscape and scale. Given these factors, it is fair to say that in most cases the impact of intrusions in the district is minimal (NRHP Inventory-Nomination Form n.d.:5).

Previous Studies within the District

Several previous architectural assessments have been conducted within the area that, in 1988, became the Holy Cross National Historic District. The architectural firm of Koch and Wilson surveyed the area in 1978, and produced an inventory of buildings according to twenty style/period categories. In 1985, urban planning students at the University of New Orleans (UNO), funded by the New Orleans Office of Housing and Community Development, simplified and updated that inventory. Their survey results provided the basis for the National Register nomination.

In 1979, Mr. Jerry Toler (1979), funded by the New Orleans District Army Corps of Engineers, assessed structures within the district and in adjacent areas. In addition to recording styles and periods of construction, he assessed buildings in terms of a six-category rating system. In the mid-1980s, the New Orleans Historic Landmarks Commissions conducted a similar study. Their rating system also included six categories, although these were defined slightly differently than Toler's (1979).

The Rating System Used for This Study

In the course of the present study, a rating system based on that used by Toler (1979) was created and applied to the approximately 850 buildings within the district. The application was designed to allow characterization of the district as a whole by determining the proportions of historic and/or important structures present. It was also designed to provide data to allow an assessment of groups of buildings that make up the various block-faces. These data were necessary in order to objectively characterize the relative importance of the project corridor to the district as a whole. That characterization was, in turn, necessary to objectively assess the effect on the district of possible loss of part or all of the portion within the project corridor.

Following Toler (1979), six categories were devised to characterize the architectural and historic importance of each structure within the boundaries of the Holy Cross National Historic District. Toler's (1979) own categories were based on a system in use by the National Park Service. The categories and associated symbols, as modified for the present study, are defined in the following paragraphs.

Of National Significance (A). Buildings within this category are those which possess the requisite qualities defined by Criterion C as necessary for inclusion on the National Register of Historic Places. That is, they possess stylistic or historic significance as well as integrity of design, setting, workmanship, location, and materials.

Of Major Significance (B). This category was well-defined by Toler (1979):

> These buildings are considered to be outstanding examples of the work of important architects and builders, unique or exceptionally fine examples of a particular style or period, or important examples of construction techniques substantially preserving the original fabric [of the district] (Toler 1979:166).

In general, buildings within this category would also be eligible for listing in the NRHP under Criterion C.

Of Local Importance (C). Buildings within this category are historic and may be understood as exemplars of the district which have been renovated and/or sited in such a way that they accurately portray historic conditions. Many of these are situated on generous pieces of property or are surrounded by gardens, thereby reflecting the former presence of farms and the historic rural character of the area. Buildings in this category are in very good structural condition, and they retain architectural integrity.

Of Value as Part of the Scene (D). Within the Holy Cross National Historic District there are many homes which were built in either the late-nineteenth or early-twentieth century. These buildings are historic and contribute to the character of the district. Homes within this category may be understood as those which possess most of their original materials and details. Many of the fine shotguns and double shotguns within the

district are placed within this category. Groups of these types make up the overall rhythms and textures of some of the best streetscapes.

Twentieth-Century Compatible (E). Structures in this category are those which were either constructed or modified in the twentieth century and are non-intrusive. Shotguns and doubles with bungalow details (a common early-to-mid-twentieth-century style/type) are common in this category. While structures within this category do not reflect the significant Holy Cross architectural vocabulary, the construction techniques and material of these builds are sympathetic to neighborhood traditions. These structures are not necessarily historic. As noted above, many examples of late-nineteenth and early-twentieth-century structures which have been renovated or otherwise modified are present within the district. Homes which have undergone "tasteful" renovations (renovations that entailed the careful use of modern materials and construction methods) are included in this category. Structures placed within this category do not detract from the overall impression of the historic nature of the Holy Cross District.

Intrusive Structures (F). Structures in this category are thoroughly modern and non-sympathetic in nature. These structures detract from the overall historic impression of the district. A good example of such a building would be a modern brick four-plex apartment or a suburban-type ranch. In addition, there are some examples of historic homes which have been renovated to the point that their historic character and details have been lost. Modern materials have replaced the historic facades and obscured or destroyed all integrity with the exception of the structure which lies beneath.

All structures within Categories A to D are considered important to the character of the district as a whole. Such structures contribute to the nature of the experience within the district.

As noted above, a similar survey was conducted by the New Orleans Historic District Landmarks Commissions in the mid-1980s. Results of that survey were examined and compared to those of the present effort. Table 48 presents the results of both surveys on a building-by-building basis. These are compared in a subsequent section.

Table 48. Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
826 Delery	F	B
820 Delery	F	B
812 Delery	D	R
810 Delery	C	G
730 Delery	E	Y
728 Delery	D	R
722 Delery	D	G
716 Delery	E	R
712/714 Delery	C	G
710 Delery	F	B
700 Delery	C	Y
636/638 Delery	F	B
630 Delery	D	R
628 Delery	E	Y
618/620 Delery	F	B
606/604 Delery	E	Y
600/602 Delery	F	B
524 Delery	C	Y
520 Delery	F	B
514/516 Delery	C	G
500 Delery	F	-
432/434 Delery	F	B
428 Delery	D	R
426 Delery	C	G
420 Delery	D	R
414 Delery	D	R
408/410 Delery	D	R
400 Delery	B	G
328/330 Delery	D	Y
324 Delery	F	B
316 Delery	D	R
308 Delery	C	G
302 Delery	C	Y
6321 Alhambra	C	G
6315 Alhambra	C	G

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
301/303 Tricou	D	G
305/307 Tricou	C	G
315 Tricou	C	G
319 Tricou	D	R
323 Tricou	C	G
327 Tricou	C	R
329 Tricou	C	G
335 Tricou	D	R
Warehouse, Tricou betw Alhambra & Bienvenue	F	G
6315 Bienvenue	E	B
6319 Bienvenue	E	B
6325 Bienvenue	C	G
6320 Bienvenue	F	B
6318 Bienvenue	E	Y
401/403 Tricou	F	Y
407 Tricou	F	B
411 Tricou	D	R
417 Tricou	E	R
421 Tricou	F	Y
431 Tricou	C	R
402 Tricou	D	Y
406/408 Tricou	D	G
410 Tricou	F	R
418 Tricou	D	G
420 Tricou	D	G
424 Tricou	D	G
426/428 Tricou	C	G
430/432 Tricou	C	G
6318 Douglas	C	Y
6320 Douglas	C	Y
6322 Douglas	F	-
6301 Douglas	E	Y
6307 Douglas	D	R
6311 Douglas	D	R
6315 Douglas	F	B
6317 Douglas	D	G

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
500 Tricou	F	R
522 Tricou	E	R
530 Tricou	F	B
519 Tricou	F	B
525/527 Tricou	E	Y
533/535 Tricou	E	Y
6330 Chartres	F	B
6319/6321 Chartres	E	Y
6323/6325 Chartres	F	B
601 Tricou	F	Y
603 Tricou	D	Y
611/613 Tricou	E	Y
617/615 Tricou	C	R
619/621 Tricou	C	R
623/625 Tricou	C	R
627/629 Tricou	C	R
631/633 Tricou	C	R
635/637 Tricou	C	R
6315 Royal	E	Y
6316 Royal	C	G
6318/6320 Royal	C	R
701 Tricou	E	B
703 Tricou	E	R
707 Tricou	D	R
719 Tricou	E	Y
721 Tricou	F	B
729 Tricou	D	B
700/702 Tricou	E	Y
704/706 Tricou	E	Y
708/710 Tricou	E	Y
728 Tricou	C	Y

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
6302 Dauphine	D	R
6304 Dauphine	F	B
6308/6310 Dauphine	C	G
6324/6326 Dauphine	D	R
6328/6330 Dauphine	D	R
6307 Dauphine	F	B
6311 Dauphine	C	G
6317 Dauphine	F	R
6323 Dauphine	E	R
811 Tricou	F	B
819 Tricou	F	B
823 Tricou	F	B
827 Tricou	C	Y
829 Tricou	F	B
810 Tricou	F	B
820 Tricou	F	B
822/824 Tricou	E	Y
830/832 Tricou	F	B
6303/6305 Burgundy	B	R
6319 Burgundy	F	B
6321/6323 Burgundy	E	Y
6329/6331 Burgundy	E	Y
6332/6334 Burgundy	E	Y
6328/6330 Burgundy	E	Y
6324/6326 Burgundy	E	Y
6320/6322 Burgundy	E	Y
6318/6320 Burgundy	E	Y
923 Tricou	F	B
925 Tricou	F	B
927 Tricou	F	B
931 Tricou	C	G
939 Tricou	C	Y

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
904 Tricou	D	Y
910 Tricou	F	B
916/918 Tricou	E	Y
920 Tricou	E	Y
924 Tricou	F	B
926 Tricou	E	Y
6223 Burgundy	F	B
6221 Burgundy	E	Y
6212 Burgundy	C	G
6210 Burgundy	C	R
837/839 St. Maurice	E	Y
825 St. Maurice	D	Y
821 St. Maurice	D	G
817/815 St. Maurice	D	R
813 St. Maurice	F	B
801 St. Maurice	F	B
836 St. Maurice	C	R
830 St. Maurice	D	Y
828 St. Maurice	C	Y
818 St. Maurice	E	Y
812/814 St. Maurice	F	B
725 St. Maurice	F	B
721 St. Maurice	C	Y
715/717 St. Maurice	D	Y
711 St. Maurice	D	Y
705/707 St. Maurice	E	Y
703 St. Maurice	F	B
730/732 St. Maurice	E	Y
726/728 St. Maurice	E	Y
722/724 St. Maurice	E	Y
718 St. Maurice	D	Y
714 St. Maurice	E	Y
710 St. Maurice	F	B
706 St. Maurice	D	Y
700 St. Maurice	E	Y
Church/School, St. Maurice	D	Y

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
605 St. Maurice	C	G
638/640 St. Maurice	E	Y
628 St. Maurice	F	B
626 St. Maurice	E	Y
622 St. Maurice	D	G
618 St. Maurice	F	R
612/614 St. Maurice	D	R
608 St. Maurice	D	Y
533 St. Maurice	F	Y
529/531 St. Maurice	E	Y
525 St. Maurice	F	B
521 St. Maurice	F	B
519 St. Maurice	F	Y
501 St. Maurice	F	B
Villa & Convent, St. Maurice	-	-
500/502 Tupelo	D	R
508 Tupelo	D	R
514 Tupelo	F	B
522 Tupelo	E	Y
526 Tupelo	E	G
528 Tupelo	D	G
530/532 Tupelo	F	R
6105/6107 Chartres	E	R
6115 Chartres	D	G
6117 Chartres	D	G
6125 Chartres	E	R
6135 Chartres	D	G
6139 Chartres	E	R
Villa St. Maurice, Chartres	-	-
617 Tupelo	D	G
619 Tupelo	D	G
623 Tupelo	E	Y
635 Tupelo	E	Y
637/639 Tupelo	E	R

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
600/602 Tupelo	D	R
604/606 Tupelo	D	R
608 Tupelo	E	R
610 Tupelo	D	G
612 Tupelo	E	R
622 Tupelo	F	B
630 Tupelo	F	B
632 Tupelo	E	Y
638/636 Tupelo	E	B
6001 Chartres	F	B
6011 Chartres	F	B
6105/6017 Chartres	F	B
6019 Chartres	F	B
6025 Chartres	E	Y
6000/6002 Chartres	F	B
6004/6006 Chartres	F	B
6008/6010 Chartres	F	B
6012/6014 Chartres	F	B
6018/6020 Chartres	F	B
6022/6024 Chartres	F	B
6028 Chartres	D	Y
6011 Douglas	F	B
6016 Douglas	D	R
6014 Douglas	F	B
6017/6019 Bienvenue	D	G
6013/6015 Bienvenue	C	G
417/419 Alabo	E	Y
421/423 Alabo	F	Y
427 Alabo	E	Y
429 Alabo	D	R
431/433 Alabo	D	R
501/503 Alabo	E	R
507 Alabo	F	B
511 Alabo	E	Y
515 Alabo	D	G

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
718/720 Alabo	F	B
722/724 Alabo	F	B
726 Alabo	F	B
5909 Dauphine	D	G
5901/5903 Dauphine	E	Y
5908 Dauphine	D	G
5902 Dauphine	D	G
5763/5765 Dauphine	C	R
5750 Dauphine	D	Y
5741/5743 Dauphine	E	Y
5737/5739 Dauphine	D+	Y
5744 Dauphine	F	B
5740/5742 Dauphine	E	Y
5736/5738 Dauphine	E	Y
5730 Dauphine	C	Y
705/707 Charbonnet	F	B
701/703 Charbonnet	F	B
724/726 Charbonnet	F	B
722/720 Charbonnet	E	Y
718/716 Charbonnet	E	Y
5807/5809 Royal	E	Y
5811/5813 Royal	D	R
624 Charbonnet	E	Y
5719 Chartres	F	B
5709/5711 Chartres	D	Y
5705/5707 Chartres	D	Y
5703 Chartres	D	Y
627/629 Lamanche	E	Y
604 Lamanche	F	Y
628 Lamanche	F	B

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
5709/5711 Royal	E	Y
5713/5715 Royal	E	Y
5717/5719 Royal	E	G
5721/5723 Royal	D	R
5725/5727 Royal	D	R
5700 Royal	D	Y
5706 Royal	F	B
5710 Royal	F	B
5714/5716 Royal	F	B
5728 Royal	E	Y
719 Lamanche	E	B
721/723 Lamanche	E	Y
725 Lamanche	F	B
718 Lamanche	F	B
720 Lamanche	F	B
5700 Dauphine	E	Y
5706 Dauphine	F	R
5710 Dauphine	D	R
5720/5722 Dauphine	D	R
931/933 Caffin	E	R
925/927 Caffin	E	Y
919/921 Caffin	E	Y
913/915 Caffin	E	Y
940 Caffin	F	B
936 Caffin	F	B
930 Caffin	F	B
918 Caffin	F	B
916 Caffin	F	B
5601 Burgundy	D	G
5609 Burgundy	E	Y
5613/5615 Burgundy	E	Y
5617 Burgundy	E	B
5623 Burgundy	F	B
5625 Burgundy	F	B
5629 Burgundy	F	B

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
835 Caffin	C	G
827/829 Caffin	E	B
823 Caffin	F	B
819/821 Caffin	E	Y
5639 Dauphine	D	R
5623/5625 Dauphine	E	Y
5617/5619 Dauphine	F	Y
5613 Dauphine	F	B
5609/5611 Dauphine	D	G
5605/5607 Dauphine	E	Y
5601/5603 Dauphine	E	Y
5638/5640 Dauphine	E	Y
5620/5622 Dauphine	F	Y
5616/5618 Dauphine	F	Y
5612 Dauphine	F	B
5608/5610 Dauphine	D	R
5604/5606 Dauphine	F	Y
5600/5602 Dauphine	D	G
727/729 Caffin	F	B
723 Caffin	C	G
717 Caffin	E	Y
711 Caffin	D	R
707 Caffin	E	R
701 Caffin	E	R
714 Caffin	F	B
704 Caffin	E	Y
702 Caffin	D	G
5615 Royal	F	Y
5621 Royal	F	B
5625 Royal	F	B
5629 Royal	F	B
5626 Royal	F	B
5630 Royal	F	B

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
641/643 Caffin	C	G
627 Caffin	E	R
617 Caffin	E	Y
607 Caffin	E	Y
601 Caffin	C	G
640 Caffin	C	Y
620 Caffin	D	Y
616/618 Caffin	C	R
610 Caffin	F	B
606 Caffin	F	B
5627 Chartres	E	R
5631/5633 Chartres	E	Y
5637 Chartres	E	Y
537/539 Caffin	D	G
535 Caffin	C	G
531 Caffin	C	G
523 Caffin	C	G
517 Caffin	F	B
511 Caffin	F	B
505 Caffin	F	B
501 Caffin	C	G
528/530 Caffin	D	Y
526 Caffin	E	Y
524 Caffin	E	Y
510 Caffin	D	G
502/504 Caffin	D	R
927 Flood	F	B
921 Flood	F	B
917/919 Flood	F	B
911 Flood	F	B
920 Flood	D	R
918 Flood	E	Y
916 Flood	E	Y
914 Flood	F	Y
910/912 Flood	F	B
906 Flood	F	B
900 Flood	D	G

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
Church on Burgundy, betw. Flood & Caffin	-	B
5505 Burgundy	F	B
5515 Burgundy	F	B
5519 Burgundy	F	B
5525 Burgundy	F	B
5531 Burgundy	C	G
Church on Burgundy, betw. Burgundy/Daupine	F	B
825 Burgundy	F	B
821 Burgundy	F	B
817 Burgundy	F	B
840 Flood	D	R
832 Flood	C	G
828/830 Flood	F	B
826 Flood	F	B
822 Flood	F	B
806 Flood	E	Y
5501/5503 Dauphine	D	Y
5507/5509 Dauphine	D	Y
5511 Dauphine	E	Y
5517 Dauphine	F	B
5527 Dauphine	F	B
5531 Dauphine	E	R
5514 Dauphine	D	Y
5516 Dauphine	D	R
5518 Dauphine	D	Y
5528 Dauphine	D	R
5530/5532 Dauphine	C	G
731 Flood	D	R
727/729 Flood	E	R
723/725 Flood	D	G
721 Flood	D	G
709 Flood	E	B
707 Flood	E	Y
703 Flood	F	Y

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
732 Flood	D	G
730 Flood	E	B
718 Flood	E	B
712 Flood	F	B
708/710 Flood	E	Y
700 Flood	F	B
5518 Royal	D	R
637/639 Flood	E	R
625/627 Flood	F	Y
623 Flood	D	R
619 Flood	D	Y
615 Flood	D	R
611 Flood	D	Y
607 Flood	D+	G
603 Flood	D	G
640 Flood	D	Y
634/636 Flood	D	G
628/630 Flood	E	R
622 Flood	D	R
618 Flood	C	G
612 Flood	E	Y
608 Flood	F	B
5510 Chartres	F	B
5512 Chartres	F	B
535 Flood	E	Y
531 Flood	F	R
527 Flood	C	R
519 Flood	F	B
513 Flood	D	R
503 Flood	C	G
534 Flood	D	R
524 Flood	F	B
520 Flood	D	G
514 Flood	E	G
506 Flood	D+	R

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
468/470 Flood	D	G
466 Flood	E	R
462 Flood	D-	R
458 Flood	D	R
454 Flood	D	R
440 Flood	D	G
436 Flood	D	R
404 Andry	F	-
5421 Douglas	F	B
5425 Douglas	F	B
5435 Douglas	F	B
5443 Douglas	F	B
5447 Douglas	E	B
5451 Douglas	F	B
5430/5434 Douglas	C	R
5452/5454 Douglas	D	R
5460 Douglas	E	Y
501 Andry	F	B
503 Andry	F	B
513 Andry	F	B
519 Andry	F	Y
500/502 Douglas	F	B
524 Douglas	E	Y
5419 Chartres	F	B
5425 Chartres	F	B
5433 Chartres	D	Y
5441/5443 Chartres	E	Y
5445 Chartres	E	G
5449/5451 Chartres	D	Y
5453 Chartres	F	B
5467 Chartres	F	B

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
5400 Chartres	F	Y
5402 Chartres	F	B
5404 Chartres	F	B
5422 Chartres	F	B
5430 Chartres	F	B
5438 Chartres	F	B
5442 Chartres	F	B
5446 Chartres	F	B
605 Andry	F	B
607 Andry	F	B
619 Andry	F	B
621 Andry	F	B
623 Andry	F	B
625 Andry	F	B
616 Andry	F	B
618 Andry	F	B
5420 Andry	F	B
5426 Andry	F	B
5428/5430 Andry	F	B
5432 Andry	E	Y
5444 Andry	E	Y
5446 Andry	F	B
5338 Royal	E-	B
5336 Royal	F	B
5326 Royal	F	B
5300 Royal	C	Y
625 Egania	E-	R
623 Egania	F	B
620 Egania	F	R
614 Egania	E-	Y
5300 Chartres	E-	B

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
5311 Chartres	F	Y
5317 Chartres	F	B
5321 Chartres	F	B
5329 Chartres	F	B
5335 Chartres	F	B
5337 Chartres	F	B
515 Egania	C-	G
503 Egania	A	P
5319 Douglas	F	B
5329 Douglas	F	B
5300 Douglas	F	B
5306/5308 Douglas	F	B
5316 Douglas	F	B
5330 Douglas	F	-
5332 Douglas	F	-
5225 Douglas	E	Y
400 Egania	A	P
5210 Douglas	F	B
5208 Douglas	F+	B
505 Lizardi	C	G
507 Lizardi	F	B
509/511 Lizardi	F	B
525 Lizardi	D	Y
520 Lizardi	E	Y
5201/5203 Chartres	F	B
5227 Chartres	E	Y
5235 Chartres	F	B
5202 Chartres	E+	R
5220 Chartres	F	B
5234/5236 Chartres	D-	Y
5238/5240 Chartres	D-	Y

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
609/615 Lizardi	F	B
617 Lizardi	D	R
619 Lizardi	D	G
627 Lizardi	D-	R
616 Lizardi	E	Y
622 Lizardi	E	Y
624 Lizardi	E	Y
628 Lizardi	D	R
630 Lizardi	D-	Y
636 Lizardi	E	B
638/640 Lizardi	D-	G
5211 Royal	C	G
5217 Royal	E	Y
5221 Royal	E-	B
5218/5220 Royal	F	B
701 Lizardi	F	Y
707 Lizardi	E-	B
709/711 Lizardi	D	G
725 Lizardi	D	G
727 Lizardi	D-	G
729 Lizardi	D-	G
708 Lizardi	C-	R
718 Lizardi	D	G
720 Lizardi	E	R
726 Lizardi	F	-
5205/5207 Dauphine	F	B
5213 Dauphine	E	Y
5219 Dauphine	F	Y
5223/5225 Dauphine	D	G
5208/5210 Dauphine	D-	R
5212 Dauphine	F	B
5214 Dauphine	F	B
5218 Dauphine	D-	R
5222/5224 Dauphine	E	R
5226/5228 Dauphine	D	R
5123 Dauphine (Church)	F	B

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
5119 Dauphine	F	-
5117 Dauphine	F	B
5111/5113 Dauphine	E	Y
5109 Dauphine	D	R
5101/5103 Dauphine	D	G
5124 Dauphine	D	R
5120/5122 Dauphine	D-	R
5118 Dauphine	F	Y
5116 Dauphine	D	G
5112/5114 Dauphine	D	G
5100 Dauphine	F	B
827 Forstall	F	B
819 Forstall	D-	R
813/815 Forstall	E	R
820/822 Forstall	E	Y
816/818 Forstall	E	Y
812/814 Forstall	E	Y
808 Forstall	E	Y
K. of C. Hall, Forstall bet Dau/Roy	F	B
725 Forstall	E	B
721 Forstall	F	B
713/715 Forstall	F	B
709/711 Forstall	F	B
705/707 Forstall	F	B
701/703 Forstall	F	B
722 Forstall	E	Y
716/718 Forstall	E-	Y
712/714 Forstall	D	Y
5100/5102 Royal	E-	Y
5104 Royal (Church)	F	B
5106/5108 Royal	E-	Y

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
629/631 Forstall	D-	Y
627 Forstall	F	B
625 Forstall	E	B
617 Forstall	D	Y
607 Forstall	E-	Y
605 Forstall	F	Y
603 Forstall	F	Y
638 Forstall	E	B
632 Forstall	F	Y
624/626 Forstall	E	Y
622 Forstall	F	B
616/618 Forstall	E	Y
612 Forstall	E	Y
606/608 Forstall	F	Y
5100/5102 Chartres	E	R
5104 Chartres	E	Y
5108 Chartres	D-	G
5110/5112 Chartres	[illegible]	R
5114 Chartres	D	-
5116 Chartres	F	B
5122 Chartres	F	B
5124 Chartres	[illegible]	Y
5130 Chartres (Church)	F	B
5105/5107 Chartres	D	Y
5123 Chartres	C	Y
5125 Chartres	F	B
5129 Chartres	F	Y
501/511 Forstall	F	Y
500/512 Forstall	F	Y
---- Chartres	F	Y
5025/5027 Chartres	E	Y
5019 Chartres	E	Y
5011 Chartres	E	Y

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
5024/5026 Chartres	D	Y
5022 Chartres	D	Y
5020 Chartres	F	B
5016 Chartres	F	B
5014 Chartres	F	B
50--/50-- Chartres	F	B
5012 Chartres	F	B
511 Reynes	F	B
515 Reynes	F	B
601 Reynes	F	B
619 Reynes	F	B
623 Reynes	F	B
627/629 Reynes	D	Y
631/633 Reynes	D	Y
633/635 Reynes	D	Y
639/641 Reynes	D	Y
5011 Royal	F	B
5021/5023 Royal	E	Y
5025/5027 Royal	E	Y
5029 Royal	E	Y
5110/5112 Royal	E	Y
5114/5116Royal	E	Y
5118/5120 Royal	D	Y
701 Reynes	D+	G
709 Reynes	D+	Y
719/721 Reynes	C	G
5005 Dauphine	E	R
5011/5013 Dauphine	D-	R
5000 Dauphine	D	G
5006 Dauphine	D	G
5012 Dauphine	D	G
5014 Dauphine	E	Y
5016/5018 Dauphine	D	R
5020 Dauphine	F	Y
335/337 Reynes	F	Y

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
5000/5002 Burgundy	E	Y
5006/5008 Burgundy	E	Y
5010/5012 Burgundy	E-	Y
5016 Burgundy	F	Y
5018/5020 Burgundy	E	Y
5022/5024 Burgundy	E	Y
5028 Burgundy	E	Y
4910/4912 Burgundy	D	Y
4906/4908 Burgundy	D	Y
4904 Burgundy	D	G
4900/4902 Burgundy	D	G
4915 Burgundy	E	Y
4911 Burgundy	F	Y
939 Deslonde	D	G
933 Deslonde	D	R
931 Deslonde	E	R
929 Deslonde	E	Y
925/927 Deslonde	F	B
915 Deslonde	E	B
911 Deslonde	E	Y
907 Deslonde (Church)	F	B
825 Deslonde	D-	G
821/823 Deslonde	D	Y
817/819 Deslonde	D	Y
840 Deslonde	F	B
838 Deslonde	D	R
830 Deslonde	E	Y
824 Deslonde	E	Y
816/814 Deslonde	E	R
4901/4903 Dauphine	D-	R
4905/4907 Dauphine	E	Y
4909/4911 Dauphine	D	Y
4900/4902 Dauphine	D	Y
4908 Dauphine	F	Y
4910/4912 Dauphine	D	G
4916 Dauphine	D	Y

Table 48 (*Continued*). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
721 Deslonde	F	B
717 Deslonde	C	G
711 Deslonde	F	B
705/707 Deslonde	D	R
701/703 Deslonde	D	G
718 Deslonde	D	G
712 Deslonde	F	B
706 Deslonde	C	Y
700/702 Deslonde	E-	Y
4900/4902 Royal	D	R
4904 Royal	D	G
4910 Royal	E	Y
4912 Royal	E	Y
619 Deslonde	E-	B
617 Deslonde	E-	B
611 Deslonde	E-	R
607/609 Deslonde	D	Y
605 Deslonde	D	Y
603 Deslonde	D	G
632 Deslonde	C	G
626/628 Deslonde	D	G
622/624 Deslonde	D	G
620 Deslonde	D	R
618 Deslonde	E	R
543 Deslonde	E+	R
539 Deslonde	D	G
537 Deslonde	E	B
535 Deslonde	D	R
4839 Chartres	C	G
4820 Royal	F	B
4816/4818 Royal	D	Y
4814 Royal	D	G
4819 Royal	F	B
679/681 Jourdan	D	Y
683/685 Jourdan	D	G

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
701 Jourdan	C	G
705 Jourdan	E	Y
715 Jourdan	F	B
719 Jourdan	D	Y
721 Jourdan	F	R
725 Jourdan	D-	R
4801 Dauphine	F	B
4819 Dauphine	E	Y
4821/4823 Dauphine	D	G
4825 Dauphine	E	R
4825-1/2 Dauphine	F	-
4804/4806 Dauphine	E	R
4810/4812 Dauphine	D+	G
4816/4818 Dauphine	D+	R
4820/4822 Dauphine	D	R
4826/4828 Dauphine	D	G
4834 Dauphine	E	R
4840 Dauphine	C-	G
807/809 Jourdan	E	Y
813 Jourdan	E	B
821 Jourdan	C	G
827 Jourdan	D	R
829 Jourdan	E	R
833 Jourdan	E	Y
839 Jourdan	E-	Y
820 Jourdan	D	Y
822/824 Jourdan	D	G
834 Jourdan	D+	G
838/840 Jourdan	D	G
4817/4819 Burgundy	F	B
4821 Burgundy	F	B
4829 Burgundy	F	B
4837 Burgundy	F	B
4820/4822 Burgundy	D	Y
4824 Burgundy	E	R

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
901 Jourdan	E	Y
911/913 Jourdan	F	B
915 Jourdan	F	B
900/902 Jourdan	D	G
908 Jourdan	F	B
914 Jourdan	D	G
916 Jourdan	D	R
922/924 Jourdan	D	G
934 Jourdan	C	G
938 Jourdan	D	Y
Semmes School	C	B1
4732 St. Claude	E	B
4728/4730 St. Claude	D	Y
4726 St. Claude	E	R
4720 St. Claude	E	Y
4716 St. Claude	F	B
4706 St. Claude	C	Y
4702 St. Claude	E	R
1031 Sister	D	Y
4700/4702 Rampart	D	Y
4708 Rampart	E	Y
4710 Rampart	E	Y
4714 Rampart	F	B
4701 Rampart	C	G
4709 Rampart	D-	Y
4711 Rampart	E	R
931 Sister	F	B
919 Sister	F	B
905 Sister	F	B
4715 Burgundy	F	B
4717/4719 Burgundy	E	Y
4708 Burgundy	D	Y
4714 Burgundy	E	Y
4716/4718 Burgundy	D	Y

Table 48 (Continued). Summary of Structure Ratings by Treffinger and by Historic District Landmarks Commission. See text for explanation of Symbols.

Structure	Treffinger	HDLC
829 Burgundy	F	B
827 Burgundy	F	B
819 Burgundy	D	R
4719 Dauphine	F	B
4725/4727 Dauphine	D+	G
4731/4733 Dauphine	D	G
4739/4741 Dauphine	E	Y

Results of the Architectural Pedestrian Survey of the Holy Cross National Historic District

A total of 848 structures were examined in the course of this architectural survey within the Holy Cross District. This number represents approximately one hundred percent of the total building stock, although neither this nor previous surveys examined the much larger number of small sheds and outbuildings present on the various lots.

Of the structures surveyed, only two were classified as being Of National Significance (Category A). These were the two Dollut Houses, which are sometimes referred to locally as the "Pilot Houses." Both of these houses were previously identified as "...by far the most significant houses in the district" (NRHP Inventory-Nomination Form n.d.:4). Neither lies within or near the project corridor.

Only two structures were classified as being Of Major Significance (Category B). These were at 400 Delery and 6303-6305 Burgundy, and both are outside the project corridor. Thus, less than one-half of one percent of the district's total housing stock was evaluated as being within the two highest categories.

The third category (Category C) represents buildings considered to be Of Local Importance. A total of 88 structures, including some within this project corridor (below), were placed in this category. Category C represents 10.4 percent of the district's total architectural assemblage.

A total of 237 structures were considered to be Part of the Scene (Category D). They represent 28.0 percent of all structures in the district. Categories C and D together represent 38.4 percent of the Holy Cross National Historic District's buildings, and represent the core of the historic housing stock there.

Of all buildings surveyed, 226 or 26.7 percent were classified as Twentieth-Century Compatible (Category E). Finally, 293 structures, or 34.6 percent, were classified as intrusive in nature (Category F). Table 49 summarizes these results.

Table 49. The Present Author's Ratings for the Holy Cross District as a Whole.

Rating	Number	Percent
A	2	.2
B	2	.2
C	88	10.4
D	237	28.0
E	226	26.7
F	293	34.6
	848	

The HDLC Rating System

The New Orleans Historic District Landmarks Commissions (HDLC) also used a six-tier rating system. The Commissions conducted a building-by-building inventory within the Holy Cross National Historic District, including the project area, and also within adjacent areas. Mr. John Ferguson of the HDLC allowed Treffinger and Franks to examine the resulting color-coded map. Treffinger and Franks thereby obtained the HDLC ratings as of the mid-1980s for the same area surveyed by Treffinger (Table 48).

The HDLC rating system is explained on a sheet entitled "A Guide for Rating of Buildings as to their Architectural Significance." This is quoted in full:

> Purple [P]: Buildings of National Importance. These nationally important buildings include works by architects having a national reputation; buildings or groups of buildings designated as National Historic Landmarks by the National Park Service; or unique examples illustrating American architectural development. In addition to the architectural significance of the buildings in this classification, they may be associated with historical events or persons that have national importance. It is of the utmost importance that these buildings be preserved, be properly maintained, and when needed, be carefully restored.
>
> Blue [Bl]: Buildings of Major Architectural Importance. Buildings in this classification include outstanding examples of works by notable architects or builders; unique or exceptionally fine examples of a particular style or period when original details remain; buildings which make up an important, intact grouping or row, even when some of the buildings within the group have been defaced; and noteworthy examples of construction techniques when the original fabric of the building is basically intact. All buildings included in this category should be preserved, be protected from unsympathetic modifications, and have original facade treatments properly restored when possible.

Green [G]: Buildings of Architectural or Historical Importance. This category includes buildings that are typical examples of architectural styles or types found in New Orleans, when the building retains its original architectural details and makes a notable contribution to the over-all character of a particular area of the City. In some cases, buildings of lesser architectural importance will be included in this category if they introduce an important keynote to an area or have specific historical significance related to either an historical event or person. It is important that buildings covered by this classification be preserved and when feasible, restored as closely as possible to their original appearance.

Red [R]: Important Buildings that have been Altered. This category includes important buildings that have had much of their architectural details removed or covered. Due to their scale and basic construction, however, these buildings still make a notable contribution to the overall character of an area. If a building in this classification were to be properly restored or renovated, the rating would automatically be raised. Though placed in a lower category, the significance of these buildings should not be overlooked or minimized.

Gold [G]: Buildings that Contribute to the Scene. These buildings generally date from the late nineteenth century or twentieth century and are typical examples of an architectural period or style. Though these buildings are of lesser stylistic importance, and are frequently quite modest in appearance, they are important to the character of the area due to scale, materials, and/or increasing age. If a particular section is to retain its present character, it is important that examples of buildings in this classification should be preserved as closely as possible to their original form and character. If the character of an area is to be changed, a selected number of these buildings might be worthy candidates for preservation.

Grey or Black [B]: Unrated Buildings. Buildings that have not been given a specific architectural rating are generally twentieth century structures that have no real architectural value. Although some of these buildings have a detrimental impact on the area in which they are located, others are sympathetic to adjoining buildings due to their texture, proportions and massing (Historic Districts Landmarks Commissions n.d.).

Table 50 summarizes results of the HDLC's survey of buildings included within the Holy Cross National Historic District.

Results of the survey by the HDLC were similar to those obtained by the present author. Only two structures, the Dollut Houses, were given the highest rating. As noted above, these are not located within or near the project corridor. However, the Semmes School, located on the west side of Jourdan within the project corridor, was rated Of Major Architectural Importance, the second highest category. It was the only structure within the district that received this level of classification.

A total of 145, or 17.3 percent of all structures rated within the district, were considered by the HDLC to be of Architectural or Historical Importance. A similar number, 153 representing 18.3 percent of all structures in the district were assessed as Important Buildings that have been Altered. There were 267 buildings (31.9 percent) that Contribute to the Scene, and 270 (32.2) percent) Unrated Buildings. The latter category is generally used for twentieth-century structures that have no architectural value.

Comparison of Results of the Present Survey and the HDLC Survey of the Holy Cross National Historic District

A comparison of Tables 49 and 50 indicates that the HDLC placed a higher number of structures within the third highest category and a lower number in the fourth highest category than did the present author. However, when these two categories are combined, percentage figures are very similar: 38.4% of the present author's total compared to 35.6% of the HDLC's total. Similarly, the tables indicate that the level of agreement is quite high concerning the number of intrusive structures, or

Table 50. HDLC's Ratings for the Holy Cross District as a Whole.

Rating	Number	Percent
Purple	2	.2
Blue	1	.1
Green	145	17.3
Red	153	18.3
Gold	267	31.9
Black	270	32.2
	838	

in the HDLC's terminology, Unrated Buildings with no architectural value.

Close agreement was obtained despite the fact that slightly different definitions were utilized for the two surveys. In order to examine the level of agreement further, each ranking was assigned a numerical value. The highest ranking category was assigned the value "1" and the lowest the value "6." The "average rating" for all structures in the district was then calculated using results of both surveys. This "average rating" is more accurately described as an index. If used in an area with relatively greater numbers of highly rated structures, the index value would be low. Conversely, when relatively greater numbers of low-rated structures are present within in an area, the index value will be higher. In the case of all structures surveyed within the Holy Cross National Historic District, the index based on the present author's effort is 4.87 compared to 4.78 for the HDLC's effort. Again, there is close overall agreement between the two surveys.

The low value of the overall index figure reflects intrusive infill within the district. It also reflects the fact that structures placed within the third and fourth highest categories within either rating system are important to the historicity of the district. These, rather than structures Of National Importance or Of Major Architectural Importance, represent the core of the district's historic building stock.

Analysis of Block-Faces within the Holy Cross National Historic District

Block-faces were examined on the basis of the results of the above-discussed surveys. An index for each block-face was calculated by obtaining the average value of structure ratings. A "block-face" is defined as structures fronting one side of a street between two perpendicular cross-streets (i.e. the west side of Delery between Douglas and Bienvenu). The purpose of this exercise was to determine on a block-by-block basis those block-faces which represent concentrations of historic structures. Such block-faces contribute to the district's identity as a "significant" and "distinguishable entity" (National Park Service 1982:25).

There are a total of 197 block-faces within the district. Using the present author's survey ratings, the index value for all block-faces (i.e. the "average"

or "mean" value of all block-faces when considered as an assemblage) is 4.92. Using the HDLC's survey ratings, that index value is 4.81. This low value, like the index for the assemblage of individual structures, results from the rate of intrusions and the fact that the district's significant assemblage is a concentration of the third and fourth rank using the present author's or the HDLC's six-tier system.

Method for Assessing Project Effects to the Holy Cross National Historic District in Terms of Loss of Structures

The original Scope of Services defined residential areas that may be directly impacted by IHNC modifications as lying between the downriver (east) Industrial Canal levee to and including the west side of Deslonde. Most of that area which is south of St. Claude Avenue is within the Holy Cross National Historic District.

The Code of Federal Regulations (36 CFR 800.9, Criteria of effect and adverse effect) provides guidelines for determining effect:

> (a) An undertaking has an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion on the National Register. For the purpose of determining effect, alteration to features of a property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered.
>
> (b) An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:
>
> (1) Physical destruction, damage, or alteration of all or part of the property.... (36 CFR 800.9, emphasis added).

The proposed project will clearly have an effect on the Holy Cross National Historic District if a construction corridor on the east side of the Industrial Canal is selected because of the possibility of altering

characteristics that qualified the property for inclusion in the National Register. The issue in terms of destruction or removal of structures, then, is whether that effect is adverse and whether it would diminish the integrity of the property.

In order to address that issue a "before and after" test is applied in the sections below. "Before" refers to present conditions within the district. These were characterized above according to numbers and percents of structures that have been rated Of National, Of Major, or Of Local Importance, as well as structures with lesser ratings. "After" refers to the condition of the district following hypothetical destruction or removal of structures within the project corridor and included within the district boundaries.

Ratings of Structures within the Portion of the Project Corridor that is Included in the Holy Cross National Historic District

Prior to applying the "before and after" test, it is necessary to examine the composition in terms of structures of the impact corridor. The present author rated 97 structures included in the Holy Cross National Historic District (Table 51). That number represents approximately eleven percent of all structures in the district. None of these buildings were placed into either the first or second highest categories.

Fourteen (14.4 percent) were ranked as being Of Local Importance, and 32 (33 percent) were classified as Part of the Scene. There were 27 Twentieth-Century Compatible, i.e. fifth category, buildings, representing 27.8 percent of the structures present. Finally, 24 structures (24.7 percent) were considered intrusive. It should be noted that the present author's intrusion rate for the district as a whole is 34.6 percent (n=293). Thus, the project corridor exhibits a lower intrusion rate than the larger district.

The HDLC rated 96 structures in this area (Table 51). Although they observed no Nationally Significant buildings, they placed the Semmes School in their second highest category, thereby indicating that it is a building Of Major Architectural Importance. They placed 23 structures (24 percent of the total present) in their third category, thereby indicating that these structures are buildings Of Architectural or Historical Importance. Again, buildings in this category "...are typical examples of architectural styles or types found in New

Table 51. The Present Author's Ratings for the Study Area as Compared to the HDLC's Ratings.

Rank	Author		HDLC	
	#	%	#	%
1	0	0	0	0
2	0	0	1	1.0
3	14	14.4	23	24.0
4	32	33.0	19	19.8
5	27	27.8	29	30.2
6	24	24.7	24	25.0
	97		96	

Orleans" (Historic Districts Landmarks Commissions n.d.) Nineteen buildings (19.8 percent) were rated as Important Buildings that Have Been Altered. Their fifth category, Buildings that Contribute to the Scene, is used for buildings "...of lesser stylistic importance..." and that generally date from the late-nineteenth or twentieth century. They included 29 buildings (30.2 percent) within this category. Finally, Unrated Buildings, which are generally intrusive in their scheme, numbered 24 (25 percent). As was the case for the present author, the HDLC found a lower intrusion rate within the project corridor than is the case for the district as a whole (32.2 percent, n=270).

Toler's (1979) ratings were not included in this table because they generally appear to be much higher than was the case for either the present author's or the HDLC's. This may be the result of Toler's earlier survey date, but this is unclear. An example of Toler's higher ratings is the fact that he counted only three intrusive structures, while the present author and the HDLC each noted the presence of approximately 25. Similarly, four shotguns on the south side of Dauphine between Jourdan and Deslonde were assessed as being Of Major Architectural or Historical Significance by Toler. Neither the present author nor the HDLC placed any of those structures in such a high category. The HDLC considered them either Important or Important with Alterations, while the present author classified them as Part of the Scene.

The HDLC ratings and those of the present author are identical concerning intrusive buildings. These represent approximately 25 percent of all structures within this portion of the Holy Cross National Historic District. It should be noted that the intrusion rate here is lower than that for the district as a whole (approximately 35 percent). The two surveys are also in close agreement concerning the second-lowest category, even though it is defined slightly differently.

The greatest area of disagreement between the two surveys is the number of structures classified in the third and fourth highest categories respectively. However, both of these represent historic structures. When the two categories are combined, agreement is closer (43.8 percent in the HDLC survey compared to 47.4 percent in the present author's assessment). As noted above, buildings in this category are the major contributors to the concentration of historic housing stock in the Holy Cross National Historic District.

Possible Project Effects to the Holy Cross National Historic District in Terms of Loss of Structures

As noted above, approximately 850 structures were enumerated and evaluated within the Holy Cross National Historic District by the present author and by the HDLC. There are approximately 97 structures within the project corridor defined by the Scope of Services, i.e. from the east side of the Industrial Canal through the west side of Deslonde Street, that are included within the historic district. Thus, the proposed project could result in destruction or removal of approximately 11.4 percent of the district's building stock.

The present author did not assess any of the project corridor buildings as being Of National (Category A) or Of Major Architectural (Category B) Importance. However, the HDLC did assess one structure within the corridor, the Semmes School, as being Of Major Architectural Importance. The Semmes School was described in Chapter 12. Recommendations concerning this structure are presented at the end of this chapter.

Fourteen structures were considered by the present author to be Of Local Importance (Category C). These represent 15.9 percent of all structures so rated in the larger district. Similarly, the present author considered 12 structures Part of the Scene (Category D). These represent 13.5 percent of all structures so rated in the district. HDLC rating results are similar but slightly different. They considered 23 structures as being Of Architectural or Historical Importance, their third highest category. These represent 15.9 percent of all structures so rated within the entire district. They classified 19 structures as Important Buildings that have been Altered. These represent 12.4 percent of all structures so rated. All of these structures may be destroyed or removed as a result of the proposed project. Table 52 summarizes the numbers and percentages of these hypothetical losses.

Clearly, then, the results of these two surveys indicate that potential loss of historic structures within the project corridor represents adverse effect to the Holy Cross National Historic District in the sense of "...Physical destruction, damage, or alteration of all or part of the property..." (36 CFR 800.9). The more important issue is whether the loss of these structures compromises the integrity of the district as a whole by altering "...characteristics of the property

Table 52. Number and Percentage of Hypothetical Loss that Would Result from Proposed Construction in the Project Corridor.

Rank	Author		HDLC	
	#	%	#	%
1	0	0	0	0
2	0	0	1	100.0
3	14	15.9	23	15.9
4	32	13.5	19	12.4
5	27	11.9	29	10.9
6	24	8.2	24	8.9
	97		96	

that may qualify the property for inclusion in the National Register" (36 CFR 800.9).

Table 53 summarizes data concerning the "before" and "after" composition of the district in terms of the present author's and the HDLC's rating systems. It shows that loss of all structures within the area from the east side of Industrial Canal to and including the west side of Deslonde would still leave approximately 750 structures in the District. More important, it shows that percentage compositions of historic structures would be little-changed. Especially important is the fact that percentage composition of the third and fourth categories, which represent the core of Holy Cross' historic building stock, is almost identical "after" the hypothetical loss compared to its present ("before") condition. This is important because the District's significance hinges largely on its "...superior concentration of 50+ year old structures within the context of Louisiana" (Statement of Significance, NRHP Inventory-Nomination Form n.d.).

The other issue that must be addressed in a "before and after" test is the high concentration of shotguns:

> Holy Cross is significant in the Gulf Coast area because of the preponderance of shotgun houses... The district is 58% shotgun houses which qualifies it as one of the more concentrated collections in the region...
>
> But beyond this, Holy Cross' shotgun houses are distinguished from most other regional collections by their age and quality. The vast majority of shotgun houses in the Gulf Coast region date from the twentieth century and feature bungalow details, if they are styled at all. Holy Cross is one of very few areas which have a significant component of pre-bungalow era shotgun houses -- i.e., Eastlake and Italianate. Approximately 35% of Holy Cross' shotgun houses fall into this earlier period... (NRHP Nomination-Inventory Form, Statement of Significance).

Toler (1979) provides data concerning 89 structures within the portion of the project area included in the district. Of these, 52 (58.4%) are shotguns. This compares with a district-wide total of 479 (55.9%) shotguns as enumerated on the NRHP Nomination-Inventory Form. (The percentage of shotguns was erroneously and

Table 53. "Before" and "After" Percentage Composition of the Holy Cross District.

Present Author:

Rank	Before		After	
	#	%	#	%
1	2	.2	2	.3
2	2	.2	2	.3
3	88	10.4	74	9.9
4	237	28.0	205	27.3
5	226	26.7	199	26.5
6	293	34.6	269	35.8
	848		751	

HDLC:

Rank	Before		After	
	#	%	#	%
1	2	.2	2	.3
2	1	.1	0	0
3	145	17.3	122	16.4
4	153	18.3	134	18.1
5	267	31.9	238	32.1
6	270	32.2	246	33.2
	838		742	

variously reported as either 57% or 58% on the Form. The corrected figure in the preceding sentence was calculated using raw frequencies provided on the Form).

If all the shotguns within the impact corridor were destroyed or removed, i.e. "after" construction, the district composition vis a vis shotguns would be 55.6% (n=427). The percentage composition is essentially unchanged. Thus, in terms of a concentration of shotguns, proposed construction will not compromise the integrity of the district as a whole by altering "...characteristics of the property that may qualify the property for inclusion in the National Register" (36 CFR 800.9).

Significance of the district derives not only from its concentration of shotguns, but also from the fact that a "significant component" are pre-bungalow. The NRHP Nomination-Inventory Form indicates that of all the buildings within the district, 30.9% (n=265) fit into either the Italianate or Eastlake style categories. Toler's (1979) data indicate that approximately 29% (n=26) of all structures within the project corridor and included in the district represent these style categories. The percentage compositions are similar.

If all of the buildings within the impact corridor and representing these style categories were lost or destroyed, i.e. "after" construction, there would be 31.1% (n=239) remaining structures representing these styles. Thus, in terms of style categories, proposed construction will not compromise the integrity of the district as a whole by altering "...characteristics of the property that may qualify the property for inclusion in the National Register" (36 CFR 800.9).

In summary, proposed construction will not compromise the integrity of the Holy Cross National Historic District in terms of the concentration of historic (50+ year old) structures, the concentration of shotguns, or the concentration of pre-bungalow era style houses. However, it will entail the "...physical destruction of... part of the property..." (36 CFR 800.9), and thus represents an adverse effect.

<u>Possible Project Effects to the Holy Cross National Historic District in Terms of Loss of Block-Faces</u>

As was discussed above, indices reflecting block-faces were calculated for the entire Holy Cross National Historic District. A low index value reflects a

concentration of historic structures with relatively high ratings.

The present author's ratings indicate that of the 197 block-faces within the entire district, 26 (13.2 percent) are located in the area from the east side of the Industrial Canal through the west side of Deslonde Street. The average index for these 26 block-faces is 4.65 compared to a value of 4.92 for the entire district. The lower value within the project corridor reflects the relatively lower intrusion rate as compared to the larger district.

Within the entire district, there are 25 block-faces with an index of 4.0 or less using the present author's ratings. Six of these (24 percent of the total) are within the project corridor despite the fact that only 13.2 percent of all block-faces in the district are located there.

Results are similar when the HDLC's data are used. Of the 197 block-faces within the district, 38 have an index of 4.0 or less. Eight of these (21.1 percent of the total) are within the project corridor.

Again, these figures reflect the relatively lower intrusion rate in the project corridor compared to the entire district. Although the net loss of block-faces to the district were this area to be lost would be roughly 13 percent, that loss represents approximately 20 to 25 percent of the block-faces representing concentrations of historic structures, i.e. block-faces with a lower intrusion rate.

Applying the "before and after" test, the proportion of block-faces with an index of 4.0 or less is 12.7 percent at present. If all structures within the project corridor are destroyed or removed, the percent within the remaining district will be 11.1 percent. The proportion is only slightly lowered, indicating that the integrity of the district is maintained.

Nevertheless, some aspects of a district's character and nature cannot be quantified. One of these is the "feel" and historic sense that the district conveys. The project corridor is an important component of the district because of the concentration of historic block-faces present in a small area. Thus, the loss of the area from the Industrial Canal to and including the west side of Deslonde Street and included within the

Holy Cross National Historic District would represent an adverse effect to the district as a whole. A disproportionate number of block-faces that include concentrations of historic structures would be lost. Recommendations concerning this effect are made below.

Adverse Effect in Terms of a Change in the Historical Character of the Holy Cross National Historic District

The NRHP Inventory-Nomination Form for the district briefly summarizes its history:

> The Holy Cross Historic District represents the final stanza in the eastward expansion of the old City of New Orleans to the St. Bernard Parish line... Opinions differ as to when the area began to develop as a suburb, but most agree that the process was underway by the mid-nineteenth century...
>
> In the early nineteenth century the area of Holy Cross was characterized by long narrow plantation parcels. The Maurice Harrison map of 1845 still shows this agricultural land use, but things were beginning to change (NRHP Inventory-Nomination Form n.d.).

Chapters 7 and 8 of Volume I of this report presented detailed information related to the history of the project corridor. The area from the east side of Industrial Canal through and including the east side of Deslonde Street represent a single parcel that was consolidated ca. 1820. It was subdivided in 1869, and by 1880 the U.S. Census enumerated 35 dwellings. The number of dwellings had increased to 96 by 1900, and to 142 by 1910.

Archival data are available but not yet collected to determine the identities of individuals who built residences in the project corridor during its early period of development. These included Blacks and native- and foreign-born whites. A large proportion of the latter group were German-born truck farmers. Research conducted to date (Chapters 8, 9, and 10) indicates that, based on occupational classifications, residents of the area ranged from upper to lower class.

The Inventory-Nomination Form suggests that "The overall shotgun collection denotes a lower-middle and middle class neighborhood." It further suggests that "The fact that relatively few [Side Hall Plan Houses]

were built in Holy Cross confirms its lower-middle to middle class status." However, most shotguns in the larger region are plain. This contrasts with the condition in Holy Cross:

> Holy Cross is one of the very few areas [in the Gulf Coast area] which have a significant component of pre-bungalow era shotgun houses -- i.e., Eastlake and Italianate. Secondly, the shotgun house is normally thought of as a working class house type. Hence most collections of shotgun houses in the Gulf region are very plain. New Orleans is about the only place where shotgun houses are associated with the middle and even upper middle class. This is particularly true of Holy Cross, a lower middle-middle class area. Most (about 70%) of the district's shotgun houses feature some sort of recognizable architectural style and many (at least a third) are fairly elaborately styled. This is in sharp contrast to most other collections across the South (NRHP Inventory-Nomination Form n.d.).

As was discussed in the preceding section, the project corridor includes a somewhat higher concentration of historic residences than the larger district. Because all of these structures represent the results of subdivision and residential development of a single large holding, the collection here offers an opportunity to study the relationship between social class and architectural types and styles during a well-defined period. Loss of all of this collection with the exception of the east side of Deslonde would constitute adverse effect in the sense of "a change in the quality of the historical... character that qualified the property [Holy Cross District] under the National Register criteria for listing in the National Register" (Federal Register 1969, v. 34(37):108).

The project corridor exhibits research potential in that it contains structures that would allow an exploration of the relationship between social classes and architectural types and styles. The Code of Federal Regulations states that:

> (c) Effects of an undertaking that would otherwise be found to be adverse may be considered as not being adverse for the purposes of these regulations:

> (1) When the historic property is of value only for its potential contribution to archeological, historical, or architectural research, and when such value can be substantially preserved through the conduct of appropriate research.... (36 CFR 800.9).

The appropriate research is discussed in the context of recommendations (below).

Introduction to Recommendations

This chapter has demonstrated that a significant concentration of historic buildings is present between the east side of the Industrial Canal to and including the west side of Deslonde Street. Also, most of that area south of St. Claude Avenue is included within the Holy Cross National Historic District. This chapter has demonstrated that the percentage of historic structures within this portion of the district is higher than is the case for the district as a whole. Also, loss of this area would represent loss of approximately 20 to 25 percent of the district's block-faces that include an above-average concentration of historic structures. The richness of this area, like that of the larger district, derives from the detail of the architecture and the proliferation of shotguns, doubles, bungalows, and cottages. The historic texture of this area has been preserved to date even though some modern intrusions are present. This is a cohesive area which in certain places still exhibits the original rural character associated with truck farms of the past.

Comparison of present and future percentage compositions of historic structures, should this corridor be lost, indicate that the percentage composition of the Holy Cross National Historic District will be relatively unchanged. This suggests that the loss would not compromise the integrity of the Holy Cross National Historic District. However, impact would be serious and adverse. First, the Semmes School, rated by the Historic District Landmarks Commissions as being Of Major Architectural Importance, would be lost to the district. In addition, almost 16 percent of the total number of structures within the district that were rated by the HDLC as being Of Architectural or Historical Importance would be lost. Similarly, over 12 percent of the structures considered Important Buildings that have Been Altered would be lost. The combined result of loss of these three categories would represent a reduction of

over 14 percent of the key categories of historic housing stock within the larger district.

Some aspects of the loss cannot be assessed with numbers. The value of the area comes from the contributions of many different individuals over time. The houses which they built, the fences they erected, and the trees they planted contribute to the overall rhythm and texture of this part of the district.

Avoidance of construction within this corridor is the preferred option, if at all possible:

> Actions that preserve historic properties in place are usually preferable to the preservation of data alone through data recovery activities, both because such actions usually extend the useful lives of the properties and their data and because they are often less costly (Federal Register 1977, v. 42(19):5375).

For this reason, alternative lock locations are discussed in the section that follows.

Alternative Lock Locations

In this section, alternative possibilities for placement of the new lock are discussed. These alternatives would avoid direct impact to the Holy Cross National Historic District in terms of loss of structures and block-faces. These alternatives are currently under study by the Army Corps of Engineers, New Orleans District (Mr. Michael Stout, personal communication to Shuman, Treffinger, and Franks, 1990). In this discussion "direct impact" refers to the physical destruction of structures and block-faces. Other aspects of direct impact are discussed in subsequent chapters.

Alternative 1: Placement of the New Lock on the Western Side of the Industrial Canal. This alternative provides for construction of a new lock while avoiding significant historic architectural properties. If the lock were located on the western side of the Industrial Canal, impacts to the Holy Cross National Historic District would be avoided. In addition, new construction could proceed without impact to the NRHP eligible lock that is currently in use. Plans currently under study at the Corps of Engineers indicate that this placement might be possible without direct impact to the

Bywater National Historic District on the western side of the canal.

Alternative 2: Placement of the New Lock on the Site of the Present Lock. This is a less desirable option than Alternative 1 (above). Although direct impact to the Holy Cross and Bywater National Historic Districts would be avoided, placement of the new lock on the site of the present lock would directly impact the existing lock which is eligible for inclusion in the NRHP. The current Industrial Canal Lock facility was constructed over seventy years ago and was determined to possess significance within the contexts of the economic growth of the City of New Orleans as well as the Histories of Mechanical and Structural Engineering (Dabney et al. 1987). Impact to that lock, then, would result in loss of a significant engineering structure. If this alternative is pursued, it will be necessary to prepare Historic American Engineering Record (HAER) documentation on the structure as recommended by Dabney et al. (1987).

Alternative 3: Placement of the New Lock Between the Present Lock and the River. Another alternative is to place the new lock on the river side of St. Claude Avenue rather than parallel to the old lock. This could conceivably be done without direct impact to significant historic properties. Preliminary drawings indicate that the new lock complex would necessitate use of an area adjacent to the river on the west side of the Industrial Canal bank. There are no significant historic properties there, and direct impact to the Bywater National Historic District might be avoided.

However, levee placement might be a problem within both the Bywater and Holy Cross National Historic Districts should this alternative be pursued. This assessment is based on examination of preliminary plans for the alternative. The plans suggest that the "take-line" might affect properties on Sister Street and the cross streets between Sister and Jourdan Avenue. However, the loss of Sister Street would represent only a minimal impact to the Holy Cross District (below).

Reduction of Impact through Reduction of the Size of the Impact Corridor

If the use of alternative sites for the proposed construction is not feasible, it is recommended that the width of the construction corridor between the east side of the Industrial Canal and the west side of Deslonde

Street be reduced. Plans for such reduction are currently being studied by the Army Corps of Engineers, New Orleans District (Mr. Michael Stout, personal communication to Shuman, Treffinger, and Franks, 1990). Adverse effect, in the sense of loss of buildings and block-faces would be reduced through reduction of the construction corridor width.

A 400-Foot Corridor. Plans are under study by the New Orleans District that would confine the final products of construction to an area from the east side of the Industrial Canal to and including the east side of Jourdan Avenue within the Holy Cross National Historic District (Figure 63). Use of this narrower corridor could reduce the total number of structures lost to 68, representing 8.0 percent of the 848 total buildings in the district.

Unfortunately, the Semmes School would still be lost. However, only eight buildings (9.1 percent of the district total for that category) classified by the present author as being Of Local Importance would be lost. Twenty-one structures classified as Part of the Scene would be lost (8.86 percent of the district total). Using the HDLC's ratings, 16 (11.0 percent of the district total) Buildings of Architectural Importance and 10 (6.5 percent of the district total) Important Buildings that have been Altered would be lost.

A total of 16 block-faces (8.1 percent of the district's total) would be lost. Of all block-faces with an index value of 4.0 or lower, a total of four, representing 16 percent of all such faces in the district, would be lost. Using the HDLC's ratings, five block-faces with an index value of 4.0 or lower would be lost. This represents 13.2 percent of the district total for block-faces indexed at 4.0 or lower.

Although the loss of historic structures and block-faces is not as great, effect would still be adverse. Also, current plans under study by the New Orleans District that have been discussed in this subsection do not account for a construction corridor on the east side of the projected eastern toe of levee. Thus, even if the new lock and levee could be placed within the area from the current eastern side of the canal to the eastern side of Jourdan Avenue, it is unclear whether there would be construction impacts to the west side of Deslonde Street. If not, use of the corridor defined in this subsection would not reduce adverse effect, defined

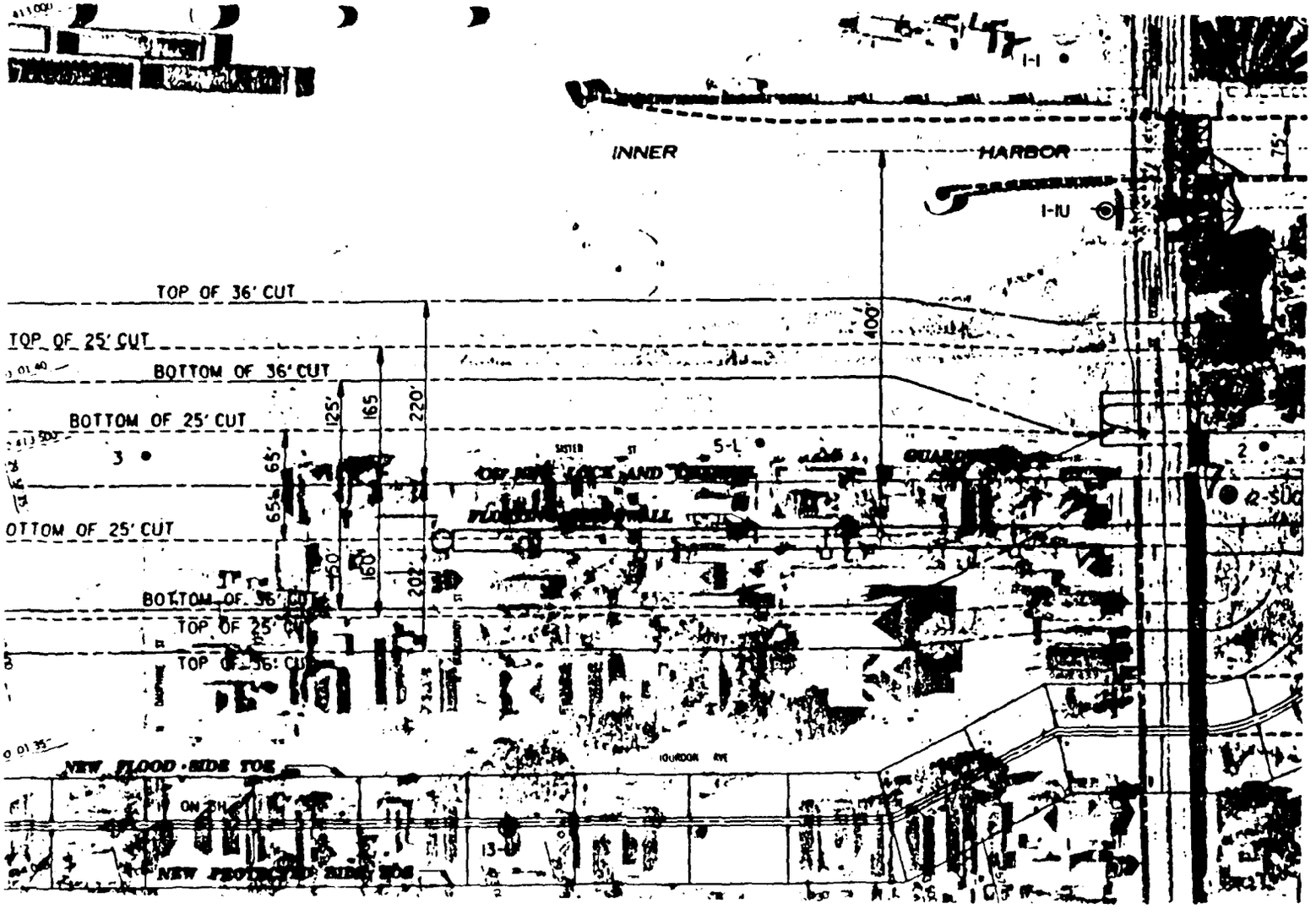


Figure 63. Plan of the 400-foot corridor.

as the loss of buildings and block-faces, to the Holy Cross National Historic District.

A 200-Foot Corridor. Plans are under study by the New Orleans District that confine the final products of construction to an area from the east side of the Industrial Canal to and including the west side of Jourdan Avenue within the Holy Cross National Historic District (Figure 64).

A corridor of this width would reduce the number of impacted structures to 42 (5.0 percent of the district's total). Again, the Semmes School would lie within the construction area. Using the present author's evaluation, six structures Of Local Significance (6.8 percent of the district total) would be lost. Also, 16 structures classified as Part of the Scene, representing 6.8 percent of the district total, would be impacted.

Results are similar when the HDLC survey ratings are used. Eleven structures of Architectural or Historical Importance (7.6 percent of the district total) and 4 structures classed as Important Buildings that have been Altered (2.6 percent of the district total) would be lost.

Using the present author's ratings, an analysis of block-face statistics reveals that use of this corridor would entail loss of 11 block-faces (5.6 percent) of the district total of 197. Of the 25 block-faces within the district which are indexed as 4.0 or lower, two (8.0% of the district total) would be lost. Using the HDLC's ratings, three block-faces with an index value of 4.0 or lower would be lost. This represents 7.9 percent of the district total for block-faces indexed at 4.0 or lower.

Although the loss of historic structures and block-faces is not as great, effect would still be adverse. Also, current plans for this corridor that are under study by the New Orleans District and that have been discussed in this subsection do not include a construction corridor on the east side of the projected eastern toe of levee. Thus, even if the new lock and levee could be placed within the area from the current eastern side of the canal to the western side of Jourdan Avenue, it is unclear whether construction impacts could be confined to the west side of Jourdan Avenue.

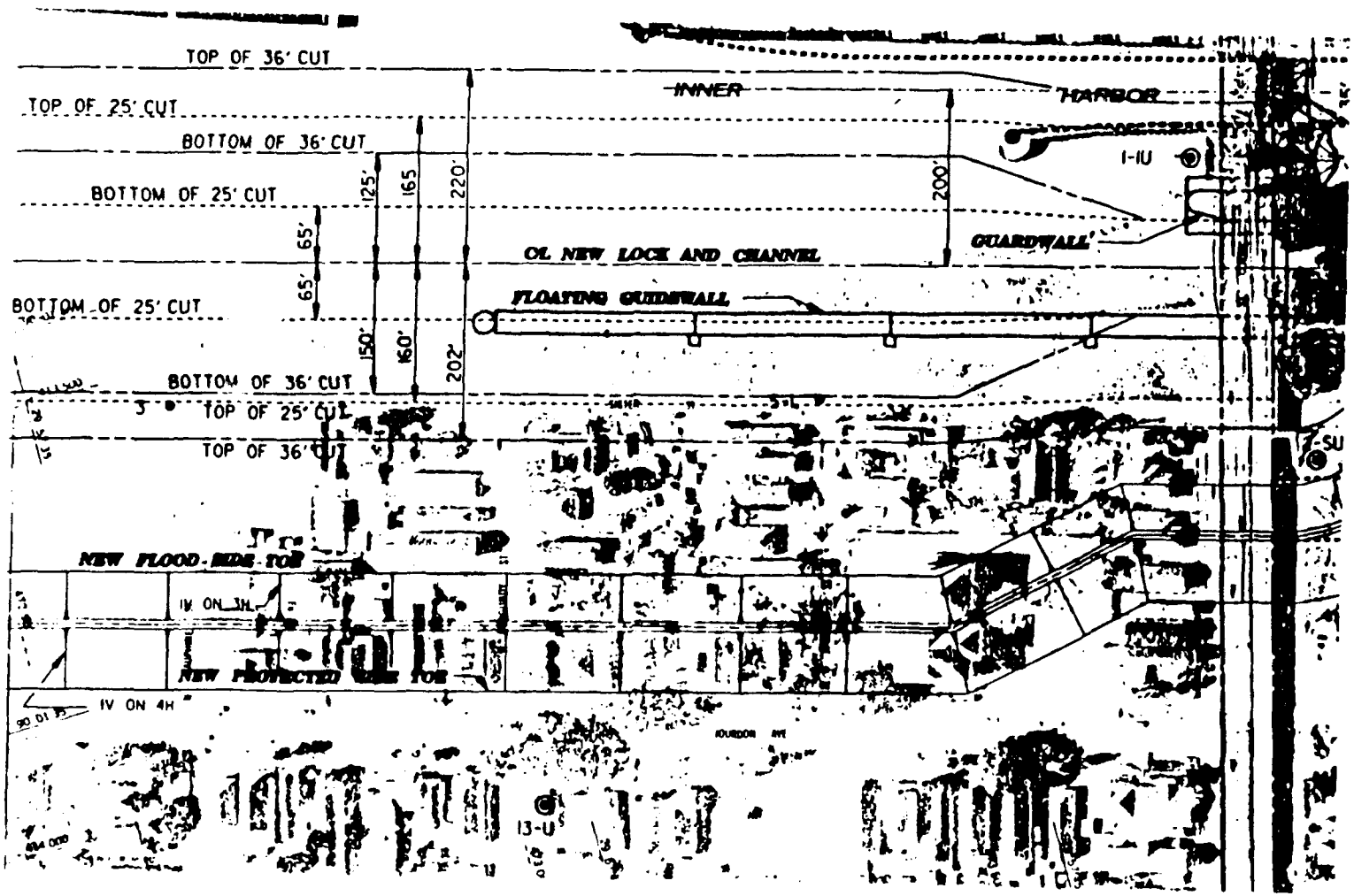


Figure 64. Plan of the 200-foot corridor.

A Corridor from the East Side of Industrial Canal to the East Side of Sister Street. A relatively high number of historic structures and block-faces are associated with Jourdan Avenue. Also, trees are present along this street, and yards are well-kept. Many are planted with shrubs. This street is an asset to the district as a whole.

If construction could be confined within a corridor from the east side of Industrial Canal to the middle of the cross streets between Sister and Jourdan, properties fronting on Jourdan Avenue could be avoided. A corridor so defined would result in the loss of structures on Sister Street and on the cross streets, but would not include the western side of Jourdan Avenue.

Approximately 19 structures would be impacted with this narrower corridor, representing only 2.2 percent of the district's total building stock. Also, the Semmes School is avoided. Using this author's ratings, only two structures Of Local Importance would be lost, representing only 2.3 percent of the district's total. Also, only 5 structures evaluated as Part of the Scene would be impacted, representing a loss of only 2.1 percent of this category to the Holy Cross District.

Using the HDLC's ratings, only two structures Of Architectural or Historical Importance would be lost, representing only 1.4 percent of the district's total. Also, only 2 Important Buildings that have been Altered (1.3 percent of the district's total) would be lost.

Results of block-face analysis are similar. Using the present author's ratings, the total number lost or impacted would be reduced to nine, representing only 4.6 percent of the district's total. Only one block-face with an index of 4.0 or lower lies within this narrower corridor, and its loss would represent only 4.0 percent of the total block-faces with comparable indices in the district. Using the HDLC's ratings, only one block-face with an index value of 4.0 or lower would be lost. This represents only 2.6 percent of the district total for block-faces indexed at 4.0 or lower.

Use of this narrower corridor would substantially reduce adverse effect to the Holy Cross National Historic District in terms of loss of historic structures and block-faces. This is largely due to the avoidance of such structures associated with Jourdan Avenue.

Mitigation of Impacts within the Selected Project Corridor

As discussed at length above, construction of a new lock and connecting channels within the project corridor as defined in the original Scope of Services as well as alternative, narrower corridors located on the east side of the present-day Industrial Canal, would result in adverse effect to the Holy Cross National Historic District. Although that adverse effect would not compromise the integrity of the district, mitigative measures are recommended for the loss of properties that contribute to the significant characteristics that qualified the district for inclusion in the NRHP.

The Semmes School. This structure was not recognized by name or address as a "landmark" within the district on the NRHP Inventory-Nomination Form. The Form states that

> Landmarks in the neighborhood tend to be institutional buildings... Most of the district's landmarks are noteworthy only for their size and scale and do not seem to be obvious candidates for individual listing in the Register. There are, however, a few exceptions. The following is a list of possibilities: 1. St. Maurice Church... 2. The main building at Holy Cross High School... 3. The two Dollut Houses..." (NRHP Inventory-Nomination Form, p.4)

The only recognition of the Semmes School's presence was a photograph attached to the form.

Toler (1979) considered the Semmes School to be only Of Local Importance. The present author also placed it in that category. However, the Historic District Landmarks Commissions assessed the structure as being a Building of Major Architectural Importance. That category is used for

> outstanding examples of works by notable architects or builders; unique or exceptionally fine examples of a particular style or period when original details remain... and noteworthy examples of construction techniques when the original fabric of the building is basically intact (Historic Districts Landmarks Commissions n.d.).

If alternative corridor plans do not allow preservation of the Semmes School, Historic American Building Survey (HABS) documentation should be undertaken. For the Semmes School, it is recommended that the appropriate level of documentation is HABS Documentation Level II. Content would thereby include:

(1) Drawings: select existing drawings, where available, should be photographed with large-format negatives or photographically reproduced on mylar.

(2) Photographs: photographs with large-format negatives of exterior and interior views, or historic views, where available.

(3) Written data: history and description (Federal Register 1983, v. 48(190):44732).

Level I HABS documentation would require preparation of a full set of measured drawings depicting existing or historic conditions. The Semmes School does not warrant such treatment. It is important for its scale, its detail, and its integrity. Photographs and existing drawings, if available, would represent "comprehensive documentation" for this building (Federal Register 1983, v. 48(190):44731-44732).

Treatment of Other Historic Structures within the Holy Cross National Historic District. Project construction in any portion of the corridor east of the Industrial Canal will impact historic structures within the Holy Cross National Historic District. As discussed above, that impact will not compromise the qualities that allowed the district to be listed in the National Register. However, loss of individual historic properties does represent an adverse effect to the district as a whole because it represents loss of elements that contribute to the district. Therefore, it is recommended that mitigative measures be undertaken.

Prior to undertaking mitigative measures, the New Orleans District should define the area in which structures must be destroyed or removed. That definition should include not only the post-project corridor but also areas where use of heavy equipment and large-scale movement of earth will require removal of structures. Therefore, plans for construction on the east side of the eastern toe of the completed levee should be delineated.

Once the area is defined, a more complete inventory of standing structures should be undertaken. That inventory should consist of completion of an "Historic Structures Inventory" form in the format used by the Louisiana Division of Historic Preservation. Figure 65 is a sample form.

The forms should be completed in detail for historic (over fifty years old) structures. More modern structures should receive less detailed treatment. Specific detail that should be included on forms for historic structures are: specific information concerning construction/modification date as indicated both by the architecture and archival research; overall building shape/massing should include exterior measurements; the "Basic Floor Plan Description" should include a sketch plan of the interior; and in the context of "Historical Significance" archival data should be obtained and reported in detail concerning former owners and how the building relates to the development of the community. Also, under "Related Features" the category "other" should note the presence of historic (over fifty years of age) sheds or outbuildings. These should also be photographed, characterized, and their location mapped in relation to the main structure. When historic exterior decorative elements are present, these should at least be photographed. In instances where more information is required, sketches should be used to supplement the photographic record. When historic interior decorative elements are noted in the course of preparing the sketch plan, these should also be photographed and/or sketched as appropriate.

Forms, photographs, sketches, notes, and maps should be curated at the Louisiana Division of Historic Preservation or at some other appropriate and qualified facility recommended by the Louisiana State Historic Preservation Officer. Paper used should be archival bond. Photographs and negatives should be archivally processed and stored, and they should meet the standards outlined in the Federal Register (1983, v. 48(190):44733).

Documentation proposed above represents the equivalent of HABS Documentation Level III (Federal Register 1983, v. 48(190):44732). This level of documentation is recommended because the majority of historic buildings within the project corridor as presently defined do not in and of themselves meet NRHP criteria of significance. Similarly, it is recommended

Figure 65.

HISTORIC STRUCTURES INVENTORY

Louisiana Division of Historic Preservation

P. O. Box 44247 Baton Rouge, LA 70804-4247 (504) 922-0358

A. ASSESSMENT

1. LOCATION INFORMATION:

Town/vicinity _____ Parish No. _____ Site No. _____

Address _____ Parish _____

_____

2. PHOTOGRAPHS:
In the space below mount two photos: one of the facade and one of another primary elevation. Any additional photos may be mounted on a separate sheet and attached to this form.

RECORDED BY _____ DATE _____

Figure 65, continued.

). TOPOGRAPHIC QUAD:
Name _____ Sect _____R _____ T_____
Size _____

). OWNERSHIP:
Name _____
Address _____
Phone _____

. HISTORICAL DATA:
Historic Name _____
Historic Use _____
Original Owner _____
Architect/Builder _____

. CONDITION:
Good _____ Fair _____ Deteriorated _____
Remarks _____
_____

. INTEGRITY:
Unaltered _____ Minor alterations _____ Major alterations_____
List Major alterations _____
_____

. RELATED FEATURES:
Historic fencing _____ Well/cistern _____ Cemetery _____
Historic garden/landscaping _____ Other _____
_____

. THREATS TO BUILDING OR SITE:
None _____ Development _____ Deterioration _____
Road construction _____ Vandalism _____ Zoning _____
Other _____

. PRIMARY REFERENCES:
Interviews _____
_____
Documents _____
_____
_____
Published Works _____
_____
_____

Figure 65, continued.

PHYSICAL DESCRIPTION

Describe the structures as completely as possible using the following categories and examples of features as general guidelines. Where applicable, note the location of each feature.

. CONSTRUCTION/MODIFICATION DATE:_____

. ARCHITECTURAL STYLE:
For example: Greek Revival, Italianate, Queen Anne, Colonial Revival, Bungalow, etc. or combinations and influences thereof

_____

_____

_____

. OVERALL BUILDING SHAPE/MASSING:
Note number of stories, plan shape, bays, wings, etc.

_____

_____

_____

. BASIC FLOOR PLAN DESCRIPTION:
For example: shotgun, bungalow, dogtrot, asymetric, open commercial space, office, gym, et

_____

_____

. FOUNDATION:
Note type (piers, slab, etc.) and material (wood, masonry, concrete, etc.)

_____

_____

. WALL CONSTRUCTION:
For example: log, balloon framing, bousillage, brick, etc.

_____

_____

. EXTERIOR MATERIALS:
For example: clapboard, shingle, stucco, etc.

_____

_____

. ROOF CHARACTERISTICS:
Note shape (gable, hip, shed, etc.) and material (slate, tin, tile, asbestos, etc.)

_____

_____

. ROOF FEATURES:
Note dormers, towers, cupolas, parapets, etc.

_____

_____

ROOF TRIM:
Note cornices, entablature, dentils, vergeboards, brackets, exposed rafters, etc.

_____

_____

Figure 65, continued.

9. WINDOWS:
Note type (casement, double hung, French), panes (6/6, 3/1, 1/1), trim/surrounds, shutters, colored panes, stained glass, etc.

10. DOORS:
Note type, trim/surrounds, shutters, fanlights, pediments, pilasters, transoms, etc.

11. PORCHES, GALLERIES AND PORTICOS:
Note location, materials

12. DECORATIVE PORCH/GALLERY/PORTICO FEATURES:
Note columns/posts, capitals, balustrade, spindles, brackets, etc.

13. OTHER DECORATIVE DETAILS:
For example: patterned shingles, quoins, half-timbering, etc.

14. MAJOR STYLISTIC ELEMENTS/ARTICULATION (if not already described)
For example: Gothic buttresses, open carriageway, Italianate tower, etc.

15. INTERIOR DETAILS (if accessible):

ARCHITECTURAL SIGNIFICANCE (describe important architectural features and evaluate in term of other buildings within community)

HISTORICAL SIGNIFICANCE (explain the role owners played in local or state history and how the building relates to the development of the community)

that documentation be curated within Louisiana rather than with the Library of Congress because

> Generally, buildings, sites, structures or objects must be listed in, or eligible for listing in the National Register of Historic Places to be considered for inclusion in the HABS/HAER collection (Federal Register 1983, v.48(190):44732).

However, for each historic structure with integrity, a HABS/HAER inventory card should be completed and filed in the Library of Congress HABS/HAER collections.

It is possible that a few structures within the corridor might qualify individually for inclusion in the NRHP. These properties are those which represent types important in the region and exhibiting levels of design and detail that are somewhat unusual. Structures discussed individually in Chapter 12 are possibilities. Even for such properties, the level of documentation recommended here is appropriate. HABS Level I would require preparation of measured drawings, while HABS Level II would require acquisition of existing drawings. The relatively simple types represented in the district, and represented in relatively large numbers in other historic districts in New Orleans, do not warrant such treatment. It should be noted again that the NRHP Inventory-Nomination Form did not identify any properties within the project corridor as being eligible for individual inclusion in the NRHP.

Treatment of the Spatial Relationships Between Structures. While the adequate completion of documentation outlined above serves to mitigate the adverse effect of the loss of individual structures that contribute to the Holy Cross National Historic District, it does not mitigate the loss of historic block-faces. The Historic Structure Inventory forms will not convey "the grouping of features and the... relationships among those features... [that] convey the sense of the historic environment" (National Park Service 1982:25).

Therefore, it is recommended that additional photographs be taken of individual block-faces as well as overall views of the impact corridor. Also, an accurate base map of the impact corridor showing individual structures and keyed to the Historic Structure Inventory forms should be produced. The Historic American Buildings Survey (1970:133) states that in the course of urban studies of this nature

"...an accurate base map is prepared, normally by aerial survey, to provide a concise contemporary record." These, along with archival-quality reproductions of historic maps of the area such as the 1896, 1909, and 1937 Sanborn maps, should be curated at the Division of Historic Preservation or some other qualified repository together with the Historic Structure Inventory forms.

Preparation of a Report. Results of archival research, architectural survey associated with the Historic Structure Inventory Forms, map preparation, and photographic views of selected block faces should be included in a report concerning architecture of the project corridor. That report should discuss the history and development of the project corridor in the context of New Orleans' social and economic development. The discussion would include information concerning former residents, developers, and commercial establishments within the project corridor. Data collected on the Historic Structure Inventory forms should be presented in a narrative architectural inventory, such as those provided in the New Orleans Architecture series by the Friends of the Cabildo (see, for example, Toledano et al. 1984:89-176).

The above-cited series should generally be used as a guide for report preparation. Attention should be focused on important information concerning the history of New Orleans architecture obtained through preparation of that series. The series represents the context, or current body of knowledge, to which this proposed report should contribute. The resulting report would thereby represent mitigation of adverse effects in the sense that data would be recovered that would otherwise be lost as a result of construction. The report would be suitable for dissemination to libraries, to professionals in several fields, and to the general public.

Relocation of Selected Structures. Table 48 summarized architectural assessments of all structures within that portion of the project corridor that is included within the Holy Cross National Historic District. Architectural assessments by the present author and by the Historic Districts Landmarks Commission are in general agreement concerning important structures, although the assessment of the degree of importance differ somewhat. Such disagreements are to some extent inevitable.

Research outlined in the preceding discussion would constitute mitigation of adverse effect to the Holy Cross National Historic District in the sense of loss of structures. However, it is recommended that the New Orleans District consider one additional action that might prevent the loss of some historic structures. Buildings ranked within the third and fourth categories of the present author's and the HDLC's systems would be the focus of this action. If alterations to such structures are minor and if proper restorative efforts could be undertaken, or if such structures retain their historic integrity, it is recommended that the New Orleans District discuss with the owners the possibility of relocating such structures to other areas within the Holy Cross National Historic District. One area that includes possible relocation sites is the squares in the vicinity of the Dollut Houses where the density of structures is generally low and where the intrusion rate is high. Relocation, if undertaken, should be done in such a way that it will not significantly alter the density of structures because the relatively low density of houses contributes to the character of the district (NRHP Inventory-Nomination Form).

CHAPTER 14
ASSESSMENT OF VISUAL IMPACTS TO THE BYWATER AND HOLY CROSS NATIONAL HISTORIC DISTRICTS THAT MAY RESULT FROM NEW BRIDGE CONSTRUCTION AT ST. CLAUDE AVENUE

by Mr. Donald Gaztzke and Mr. Jeffrey Treffinger

Introduction

Construction of a new lock and connecting channels within the project area may include replacements for the St. Claude, Claiborne, and Florida Avenue Bridges (Scope of Services 1989:4). Therefore, an assessment of visual impacts to the Holy Cross and Bywater National Historic Districts was prepared in the course of this project. Tentative plans prepared by the Army Corps of Engineers, New Orleans District, indicate that the bridges will be replaced by modern, mid-rise spans similar in height and dimensions to the Claiborne Avenue Bridge (Mike Stout, personal communication to Treffinger and Franks, 1989). Detailed visual assessment focuses on the St. Claude Avenue Bridge replacement because this is the only one of the bridges near and visible from the historic districts. Visual impact that may result from the new lock and levees was also examined.

Army Corps of Engineers Visual Resources Assessment Procedure (VRAP)

Procedures outlined in the U.S. Army Corps of Engineers Visual Resource Assessment Procedure (Smardon et al. 1988) were used as a basic guide for assessment of visual impacts. One of the initial steps is to define a "Landscape Similarity Zone" for the project area. This is done in order

> ...to provide a more specific framework with which to define and evaluate the visual resources of a study area. The Similarity Zone represents a physiographic area of land that has common characteristics of landform, water resources, vegetation/ecosystems, land use, and land use intensity (Smardon et al. 1988:17).

Similarity zones have four components: (1) landform, (2) water resources, (3) land use and/or intensity, and (4) vegetation/ecosystem distribution (Smardon et al. 1988:18). The Bywater and Holy Cross National Historic Districts are uniform in terms of

landform and water resources. Both are located on the Mississippi River natural levee, and the river itself represents the only important water resource. Land use and/or intensity is to some extent patchy, particularly within the Bywater National Historic District.

Within the Bywater National Historic District, land use in discrete areas is either predominantly industrial (warehouses and shipping), commercial, or residential. The latter use predominates. Within the Holy Cross National Historic District, land use is overwhelmingly residential, although associated with Holy Cross College are areas devoted to recreational use. Part of the district is bounded by an industrial area (warehouses).

The two districts differ also in terms of land use associated with the Mississippi River and its batture. Within Bywater, warehouses and wharfs concentrated at river's edge block access for recreational use. This is not true within the Holy Cross National Historic District where large areas, especially at the upriver end, provide access to levees for walking, jogging, etc. This is also true of the IHNC levee as far inland as St. Claude Avenue.

Within both districts, vegetation/ecosystem distribution is also patchy. Vegetation is generally that which is typical of the older residential neighborhoods within urban New Orleans. It ranges from small domestic plants to large, mature trees. Vegetation present is sufficient in many locations to "...determine the boundaries of a view, provide canopy cover, or screen particular project components" (Smardon et al. 1988:19).

Smardon (et al. 1988:20) indicate that a Visual Resource Inventory is a part of visual assessment. This is primarily a photographic record and

> ...it is important that these photos accurately reflect the diversity of the resources as they exist. This means that the photographer should be aware of the entire resource and not take photos that just 'look nice' (Smardon et al. 1988:20).

A range of photographic views were compiled for the present assessment. These are discussed in detail below.

The procedure takes note of the possibility of non-project-related changes:

> It is important to consider what the visual landscape resource will look like in the future in the absence of any new projects. Forecasting may not be necessary if no changes are anticipated in the visual resource components (Smardon et al. 1988:20.

For the present assessment, it was assumed that there would be no significant changes in the visual landscape that are not project related.

Assessment of visual quality is an important part of the VRAP procedure. Visual quality is assessed as:

> a. Distinct--something that is considered unique and is an asset to the area. It is typically recognized as a visual/aesthetic asset and may have many positive attributes. Diversity and variety are characteristics in such a resource.
>
> b. Average--something that is common to the area and not known for its uniqueness, but rather is representative of the typical landscape of the area.
>
> c. Minimal--something that may be looked upon as a liability in the area. It is basically lacking any positive aesthetic attributes and may actually diminish the visual quality of surrounding areas (Smardon et al. 1988:25, 27).

Within the Bywater and Holy Cross National Historic Districts, the dominant visual quality is "distinct," due to the concentrations of historic structures. Some areas, such as the St. Claude Avenue commercial corridor or industrial areas along the Mississippi River, might be classified as either average or minimal. The actual area for proposed construction is itself distinct. Within it are a historic (ca. 1920) bridge and lock, a canal with barge traffic, and a dramatic view of the Mississippi River.

Within the above contexts, the VRAP requires an assessment of the degree and nature of visual change in terms of:

a. Degree and type of visual change.
b. Degree of structure or project visibility.
c. Compatibility of visual change with study area landscape (Smardon et al. 1988:36).

These issues are discussed in detail in subsequent sections.

The VRAP provides categories for classification of project areas and adjacent areas. The relevant category for this assessment is "preservation class" defined in the excerpt that follows. The excerpt provides guidelines for the nature and degree of tolerable changes in the visual quality of the area. These guidelines are addressed in subsequent sections of this chapter.

> These areas are considered to be unique and to have the most distinct visual quality in the region. They are highly valued and are often protected by Federal and State policies and laws. These areas include... historic sites and districts...
>
> While limited project activity is not precluded, it should not be readily evident. Structures, operations, and use activities should appear to be extensions of the projected resource and should faithfully represent, repeat, or reinforce the visual character of that resource.
>
> Similarity Zones having a Total Assessment Value of 17 or more would be included in this class. Projects in these zones would have VIA Values of 0 (Smardon et al. 1988:36).

The VRAP delineates a method for determining whether basic or detailed procedures for assessment and mitigation should be pursued. In the case of the present project, procedures should be detailed because aspects of the project are larger in scale and novel in appearance in the landscape. Also, detailed procedures are necessary because this project represents a controversial study with high public interest and is proposed in an area where the landscape exhibits high visual sensitivity (Smardon et al. 1988:42).

Visual Quality Objectives for detailed procedures are:

> Reduce visual contrast with landscape as much as possible unless project has symbolic value, informative significance, creative design. Borrow at least partly from visual elements of surrounding landscape. Mitigation may be necessary to assure Compatibility (Smardon et al. 1988:42).

The VRAP identifies "significant visual resource considerations" (Smardon et al. 1988:43) for projects such as the one under study here. The considerations are designed to determine potentially significant visual impacts as a result of a project. Relevant considerations are:

> -Important urban landscapes include visual corridors, monuments, sculpture, landscape plantings, and urban "green space."
>
> -The area is easily accessible by a major population center.
>
> -The project type is typically highly visible and/or requires major changes in the existing landscape.
>
> -Project will create scenic easements, especially view to surface water.
>
> -Historic or archaeological sites are designated as such by the National Register or State Register of Historic Places
>
> -Important architectural elements and structures represent community style and neighborhood character (Smardon et al. 1988:43).

The VRAP notes that when several "significant visual resource considerations" are applicable to a project, then detailed procedures should be followed (Smardon et al. 1988:43).

One other important aspect of the VRAP is that

> Forecasting with-project conditions is required if visual impacts are to be assessed.

> The forecast of with-project conditions can be no more detailed than the level of proposed alternatives (Smardon et al. 1988:43).

The present assessment effort (below) used only a single bridge design. Recommendations concerning further studies using alternative designs and the appropriate personnel are made at the end of this chapter.

One other aspect of the VRAP not applied during the present effort was assignment of category designations for views of with- and without-project plans. The categories are Distinct, Average, or Minimal. Each is assigned a numerical value. The with-project values are subtracted from without-project values, and the difference represents an index of visual impact. The VRAP indicates that in the area under discussion that index should be zero. That is, the with-project visual assessment should be the same as the without-project.

The details of this aspect of VRAP procedures were not applied because forms provided within the VRAP are not applicable to the present project area. Recommendations are made at the end of this chapter for development of an appropriate form and for use of the form by professionals from a variety of relevant disciplines.

Description of the Imaging System

Equipment used to model visual impact consisted of a Zenith 80387 micro-computer with 2 Mb random access memory, a 80387 math co-processor, and a Truevision Raster Graphic Adapter (TARGA) running under MS-DOS 3.3 Software that included Truevision Image Processing Software (TIPS, v. 4.0). Autocad Release 11 and a TV/CAD ADI graphics driver were also part of the system used. Video recording was done on a Sony Betacam Videorecorder. Video input was taken from a Sony Superbeta cassette VCR via the TARGA Graphics Adapter. Output of the completed image was to a Truevision Filmrecorder, also via the TARGA adapter, and to 35mm color positive film at an image resolution of 500 X 400 pixels. The color positive images were then enlarged and printed on a Canon color photocopier. All software and hardware are commercially available products. No computer software or hardware were developed for this project.

Description of the Process

Images of selected views within the Holy Cross and Bywater National Historic Districts were recorded on videotape and subsequently digitally captured on the computer. The location of each camera station point and center of view was recorded on a map of the area. A three dimensional vector computer model of the proposed bridge and lock structure was created in Autocad, which was then inserted in a two dimensional map of the study area, also created with Autocad. Using the perspective view commands of the software, a set of views of the model was created which coincided with those of the video images. These images were saved in TARGA file format.

Using the TIPS software, the bridge/lock model file was merged with the video background image. Foreground masking functions enabled the bridge image to be placed in the proper spatial relationship. The bridge was then rendered using various paint and digital sampling functions. The completed image was then output to 35mm film via the filmrecorder and then reproduced as a photocopy.

View Selection Criteria

Camera location and view direction for the computer images of the proposed St. Claude bridge are shown in Figure 66. These locations were selected to model visual impacts from various locations within and at the boundaries of the Holy Cross and Bywater National Historic Districts. Short, middle, and long range views are included. In certain long range views, trees were removed to show the bridge in place and to illustrate its visual scale. No buildings or other permanent and seasonally unchanging obstructions were removed.

The method requires recordation of views which include sufficient visual references to allow accurate superimposition of the proposed construction into the context. Requirements for sufficient visual reference include plan location and elevation, view direction, and relative scale. These requirements constrain the choice of acceptable views. They eliminate some possible views that are unobstructed by tree lines or buildings, but which are of such an indeterminate view angle as to degrade the reliability of the resulting image.

Figure 66. View locations of computer imaging.

Results of Modeling

Figure 66 shows the locations of camera stations. It also shows the boundaries of the Holy Cross and Bywater National Historic Districts, and thus the relationship of the views to the various areas within those districts. Views from within the Bywater District are discussed first in this section.

Figure 67 is a without-project view from the corner of St. Claude and Montegut. The view looks east along St. Claude Avenue from the western portion of the Bywater National Historic District. The without-project view shows that, at present, foliage on the south side of St. Claude prevents the observer from seeing the current bridge.

In the with-project view (Figure 68), that foliage has been removed to provide a view of the replacement bridge. Had foliage not been removed, the new bridge would not be visible from this vantage. With the foliage removed, the scale and massing of the bridge are not obtrusive. From this vantage point, the visual impact of the new bridge on the visual landscape of the Bywater National Historic District is minimal. The two views dramatically illustrate the importance of vegetation for reducing visual impacts.

The vantage point in Figure 67 was selected because it represents one of the clearest, least obstructed views of the proposed new bridge from the western portion of the District. From the same distance west of the bridge, a vantage point one or more blocks north or south of St. Claude Avenue would not provide a view of a bridge with similar massing and scale as that in the simulation. The reason is that buildings superimposed between the viewer and the bridge would block the view of the bridge. Thus, from the western portion of the Bywater National Historic District, the simulated bridge would not represent the "Introduction of visual... elements that are out of character with the property or alter its setting" (36 CFR 800.9).

Figure 69 represents the without-project view from the corner of Dauphine and Desire Streets. This view was selected because it represents a location near the approximate geographic center of the Bywater National Historic District. The camera is looking towards the St. Claude Avenue Bridge. The present-day bridge is not visible in the view even though only 1 and 1-1/2 story structures are present.

Figure 69 also represents the with-project simulation because the simulation resulted in no change from this perspective. The new bridge is not visible, and no visual element has been introduced that is out of character with this portion of the Bywater National Historic District. It is important to note that the density and size of structures in this view are typical of the District as a whole:

> Vistas within the district are fairly channeled and directional rather than broad and spreading. This is because of the visual trench effect created by the aforementioned urban density and the massing of the district's abnormally tall houses. Despite the fact that most (about 90%) of the district's buildings are single story, virtually all are raised above grade and most have cornice lines because of their high ceilings (NRHP Inventory-Nomination Form, Bywater National Historic District).

Figure 70 is a without-project view from the corner of Chartres and France Street near the southeast corner of the Bywater National Historic District. The view is looking northeast towards St. Claude Avenue. This vantage point was selected because it represents one of the least-obstructed views of the present and proposed bridge from this part of the district. As noted in the VRAP, not all views used for visual assessment should "look nice." Rather, they should be selected to represent the array of without- and with-project vantages.

In Figure 70, the present bridge is in its "up" or "open" position. The with-project view in Figure 71 shows that the height, mass, and scale of the replacement bridge will make it a more striking visual element on the horizon than is the present bridge. The new levee is also simulated in the with-project view.

As noted in the preceding paragraph, this view represents one of the least-obstructed from within eastern portion of the Bywater National Historic District. The density and scale of structures within this portion of the district will obscure some, if not all, elements of the new bridge from some of the vantage points within this portion of the district. However, from other vantage points within this area, a new bridge has the potential to introduce a visual element that is



Figure 67. View location 1, without-project.



Figure 68. View location 1, with-project.



Figure 69. View location 2, without-project.



Figure 70. View location 3, without-project.



Figure 71. View location 3, with-project.

out of keeping with the historic property. The fact that the bridge will be visible, then, raises issues of design.

Although the mass and scale of the bridge will be largely dictated by projected boat and vehicular traffic needs, the design, type, and style of the new bridge are less constrained. One goal of project plans should be design of a bridge that is not "out of character" with the historic setting or that represents an aesthetically pleasing visual element.

The view in Figure 72 is taken from within the Holy Cross National Historic District. The camera is at the foot of Jourdan Avenue at the intersection with Royal. Original project plans would place that location within the new canal. However, modified plans may result in this location representing the with-project levee. In either event, this vantage point is within one block of the with-project edge of canal. It was deliberately selected because it is from this area that the clearest, least obstructed view of the new bridge and lock would be available.

At present, the view provides a vantage across an open, grassy field with historic residential structures visible between Sister and Jourdan. In the background at left, the present levee is visible. The view illustrates the typical low density of structures within the Holy Cross National Historic District. It illustrates also the somewhat rural character and feel of the District.

The with-project simulation from this vantage point is illustrated in Figure 73. The view represents that which would be available from the west-side toe of the post-project levee. It represents the only area of the District from which the new lock and bridge would be visible in their entirety. From this vantage point, new visual elements are introduced. However, to some extent these are "...not out of character with the property..." and do not greatly alter the setting:

> In some ways the district is a village on the edge of a large city. This separateness was enhanced in 1912 when a wide industrial canal was built between Holy Cross and the rest of New Orleans (NRHP Inventory-Nomination Form, Holy Cross National Historic District).

This view illustrates the necessity for a sympathetic bridge design. Although the mass and scale of the bridge will be largely dictated by projected boat and vehicular traffic needs, the design, type, and style of the new bridge are less constrained. One goal of project plans should be design of a bridge that is not "out of character" with the historic setting.

Figure 74 is the without-project view from the corner of Dauphine and Reynes looking northwest from within the Holy Cross National Historic District. In the background are historic structures associated with the west side of Deslonde and with Burgundy Street. Large trees that are typical of parts of the District obscure any view of the present St. Claude Avenue Bridge.

This vantage was selected for two reasons. First, the relatively unobstructed vantage across the recreational field provides a clear view of the site of the proposed replacement bridge. Also, the vantage point is only a short distance northeast of the main structure associated with Holy Cross College. That structure is the only historic building on the campus.

Figure 75 represents the with-project view from this vantage point. All of the elements of the new bridge are visible from this location. Although all of the elements will not be visible from most vantage points in this portion of the district, scale and mass of the new bridge in Figure 75 indicate that at least some elements will be visible. Once again, this emphasizes the necessity of a "sympathetic" bridge design.

This view also emphasizes the importance of vegetation to an accurate assessment of visual impact of the project. The without- and with-project views show a group of trees that is typical of parts of the Holy Cross National Historic District. These trees add to the "feel" of the District by contributing to its non-urban character. In terms of the project, trees will also serve to obscure views of the new bridge. Planting of trees should be considered in project plans. Even if immature trees are planted, within twenty years of construction these will be assets to the District and will shield some or all of the elements of the new bridge. Project plans should consider the issue of appropriate locations for planting and the appropriate species.



Figure 72. View location 4, without-project.

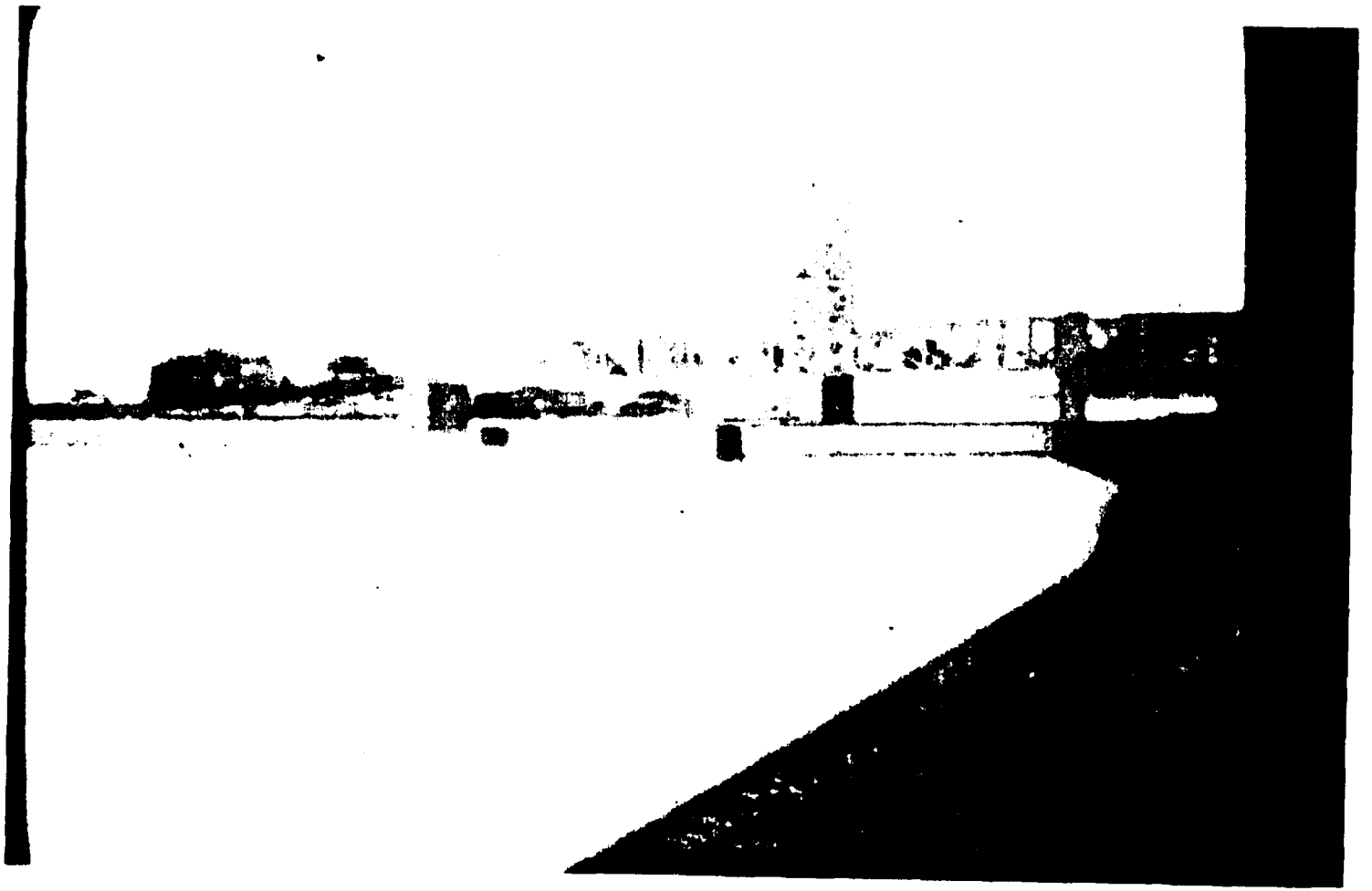
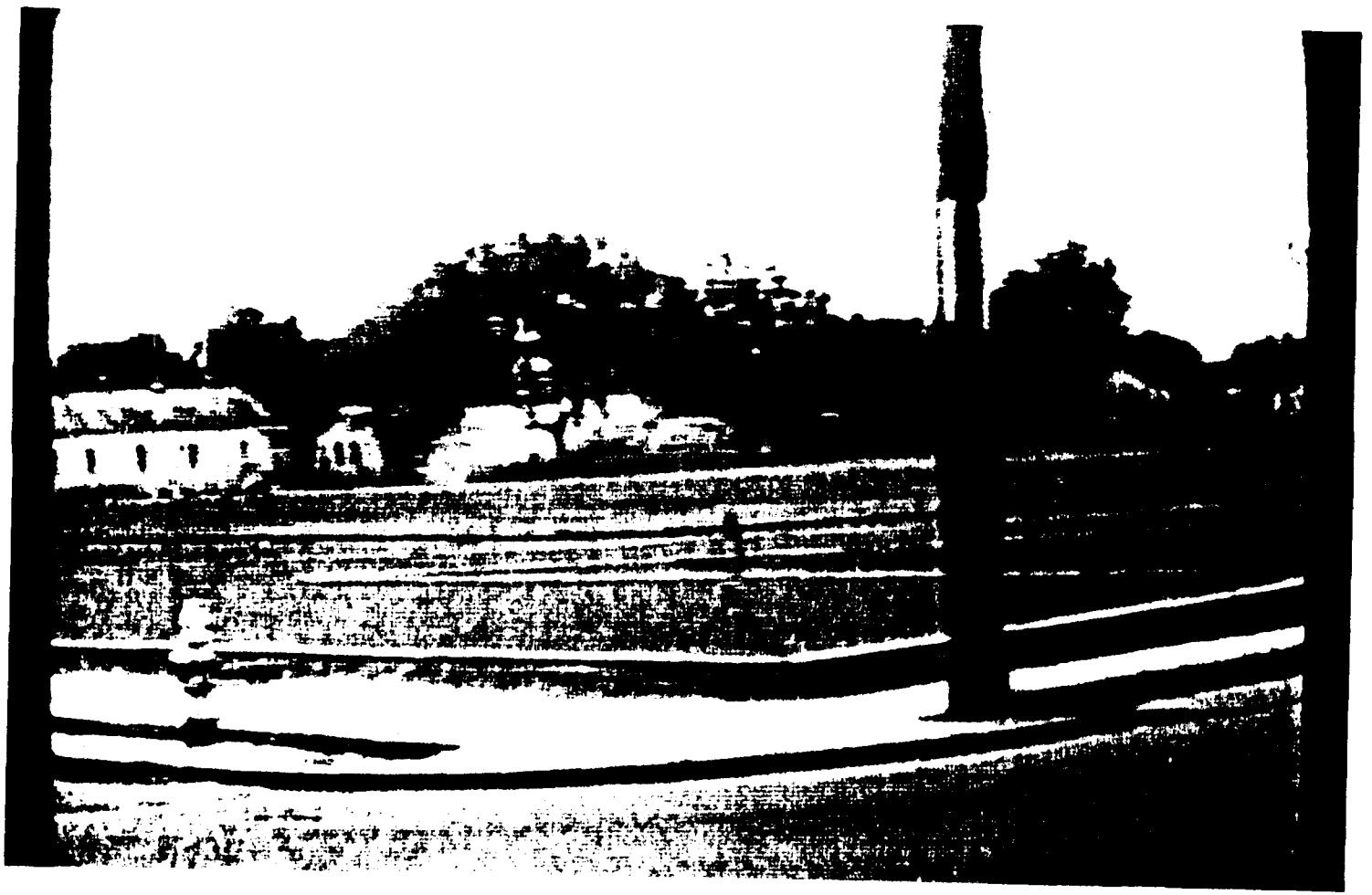


Figure 73. View location 4, with-project.



View location 5, without-project.

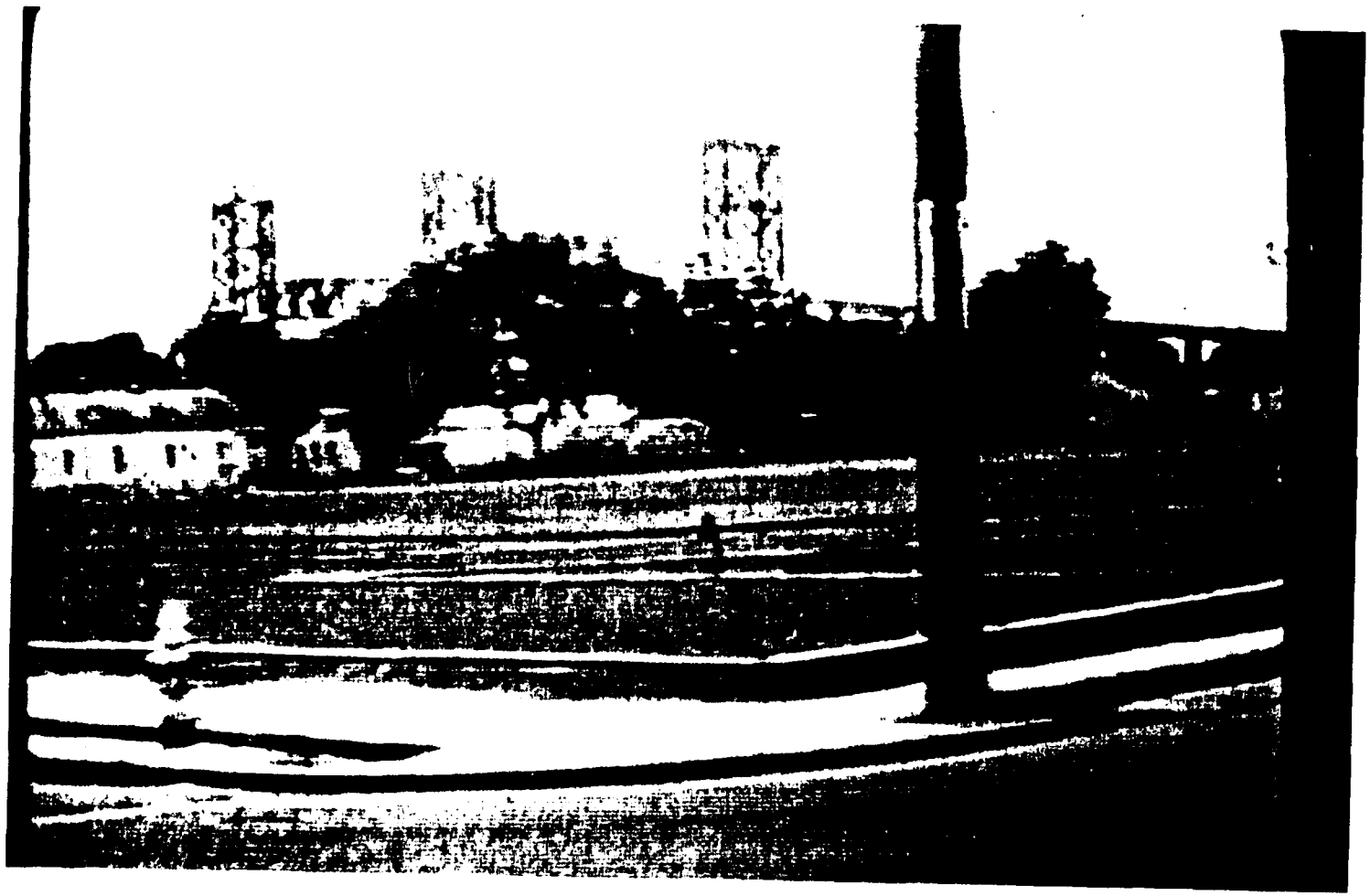


Figure 75. View location 5, with-project.

Figure 76 represents the without-project view from the corner of Marais and Deslonde. The view is taken from outside the Holy Cross National Historic District. It was deliberately selected, however, because it represents one of the clearest vantage points in the vicinity of the proposed construction. In terms of visual assessment, then, it represents a "worst-case scenario" for visibility of the new bridge and levee. The view is unobstructed because only a few one-story residential structures are present on Deslonde, and because beyond those are a city square with only a small pumping station. From within the District itself and at a similar distance, many more buildings as well as trees would lie between the viewer and the proposed construction.

Figure 77 represents the with-project view from this location. The bridge is a visual imposition. The view again emphasizes the necessity for a sympathetic bridge design and the importance of landscaping, particularly the planting of trees, for the project.

Figure 78 is an additional without-project view from a vantage point outside the Holy Cross National Historic District. However, this view is much closer to the District boundaries, which lie only one-half block to the south and the same distance to the east. The viewpoint was selected because it provides one of the most direct views of the proposed new bridge site from an area near the approximate east-west midpoint of the District. The reason it is a relatively unobstructed view is the location at N. Rampart and Caffin, only one block south of St. Claude Avenue.

Figure 79 is the with-project view from this location. The initial simulation from this point provided no view of the proposed bridge because foliage obstructed all elements of the structure. Therefore, for Figure 79, some vegetation was removed in order to depict the scale of the bridge from this portion of the District. The scale is relatively unobtrusive at this distance. Again, this view was selected in an effort to find a location where the bridge would actually be visible. Locations south of this point and within the District would interpose additional vegetation and structures between the viewer and the bridge. From this distance, then, the new bridge will not introduce visual elements that are out of character with the property or that will alter its setting insofar as the middle, interior portions of the District are concerned.

Figure 80 is a without-project view from the eastern edge of the Holy Cross National Historic District. It represents the view west along Burgundy from the corner of Delery. Although the camera location is just outside the District, it looks west into the district, which begins beyond the stop signs. Again, the foliage in this view is typical of many parts of the District. As was the case with Figure 78, the vantage point was selected to provide a relatively unobstructed view representative of conditions within the eastern portions of the District.

Figure 81 is the with-project simulation. As was the case for Figure 79, the initial simulation provided no view of the proposed new bridge because of foliage. This was removed to provide a view of the actual structure. Figure 81 shows that from this distance, the new bridge is only a minor element in the visual background. If the vantage point were moved to a location further south, i.e. within the district proper, additional foliage and buildings would be present between the viewer and the structure. The view indicates, then, that the proposed new bridge will not introduce visual elements that are out of character with the property or that will alter its setting insofar as the eastern portion of the District is concerned.

Discussion of Visual Effects on the Bywater National Historic District.

Results of the effort reported in this chapter indicate that the potential for visual impacts to the Bywater National Historic District that would result from a mid-rise bridge is greatest within the eastern portion of the District. From more central and western portions of the District, the bridge will not be visible or will be only a minor element of the visual landscape. Low visibility is the result of density and scale of structures, as well as the fact that streets are narrow. Wide vistas are rare within the District.

St. Claude Avenue is one exception to the above statements. It crosses the District, and at any point west of the bridge would provide a relatively unobstructed view of the new structure. Without- and with-project views presented and discussed above, however, indicate that foliage will serve to obscure or "break up" views of the bridge even along St. Claude. It is recommended, then, that landscape architects become involved in project design plans at early stages.



Figure 76. View location 6, without-project.

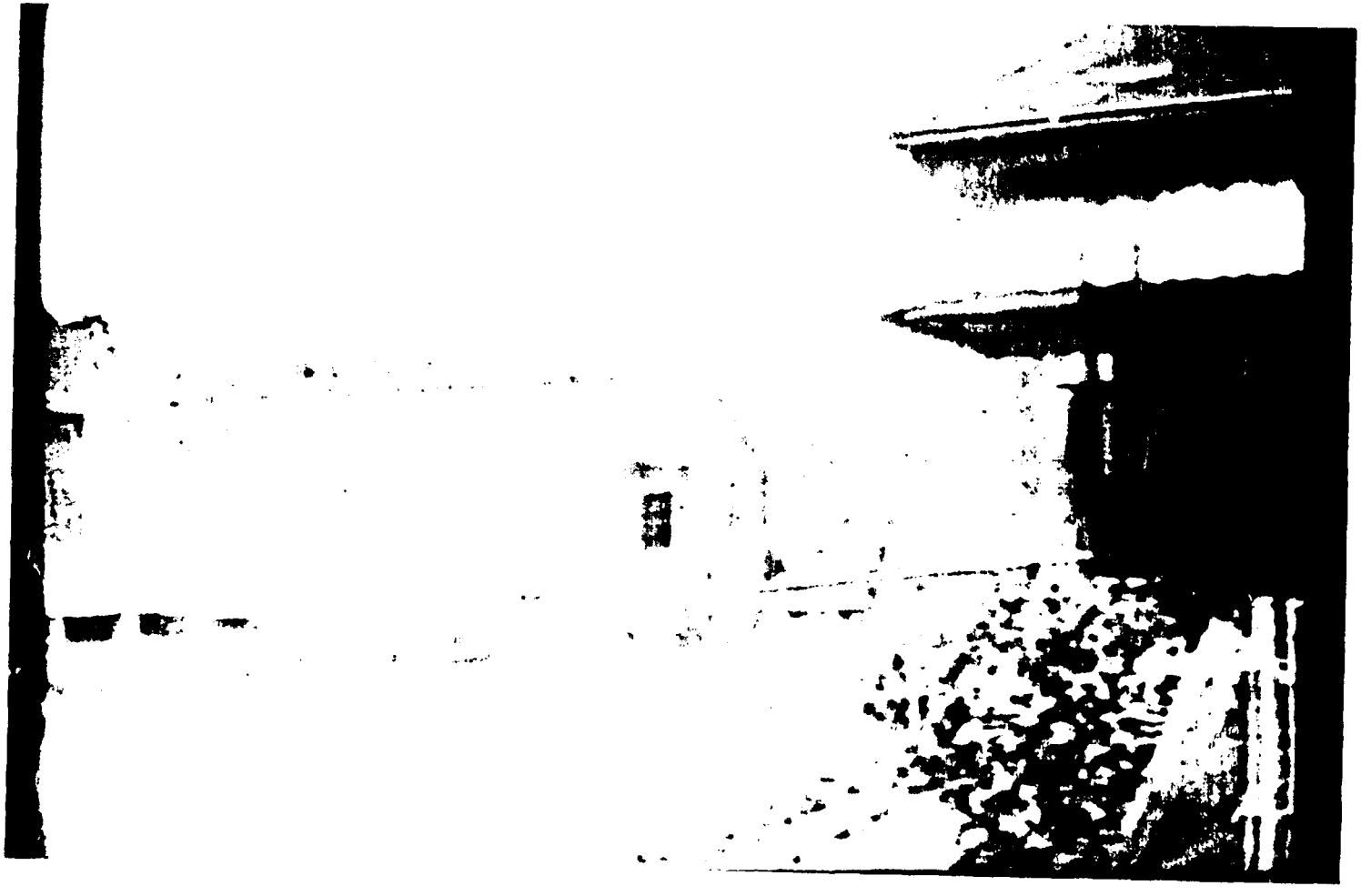


Figure 77. View location 6, with-project.



Figure 78. View location 7, without-project.



Figure 79. View location 7, with-project.



Figure 80. View location 8, without-project.



Figure 81. View location 8, with-project.

In order to reduce visual impacts of new construction on the eastern portions of the Bywater District, use of foliage is again a critical part of the planning process. In addition, elements of bridge type and bridge design should be considered. Civil engineers should be engaged in the planning process in order to allow consideration of alternative designs at an early stage of planning.

The effort reported in this chapter indicates that further use of computer-aided views would be valuable for visual assessments representing with- and without-construction conditions. These views could be used to provide a basis for Visual Impact Assessment Summaries (viz. Smardon et al. 1988:63) based on Visual Assessment Values (viz. Smardon et al. 1988:34-35). As recommended above, special forms should be devised for this project to account for the unique historic and architectural aspects of the area for which visual impact assessment is necessary.

When new forms are devised and a greater variety of views are assembled, experts could independently assign values to with- and without-project views. The appropriate team of experts would include at least one historic architect, one landscape architect, and one urban planner. A civil engineer should be assigned to work with that team to provide alternative bridge plans. Because of the sensitivity of the area (Smardon et al. 1988:27, 42-43), the goal of this aspect of the planning process should be to devise a plan that would result in as little change in visual assessment values as is possible (Smardon et al. 1988:36).

St. Claude Avenue and adjacent streets in the immediate vicinity of the new bridge present a particular problem. Width of the new bridge may result in loss of structures in this area, and that loss will increase effect to the Bywater District. Input from landscape architects and urban planners at an early stage of the planning process is particularly critical for this area. Sympathetic bridge design may help to minimize impacts here, and post-project landscaping can further reduce those impacts:

> Visual quality, scale, and loss of amenities impacts on areas west of the Canal along St. Claude Avenue can be anticipated because this bridge would span over Poland Avenue. This would create a very different environment at the intersection of Poland and St. Claude

Avenues with the urban design character of this area changing from one of high visibility along the St. Claude and Poland Avenue corridors to an enclosed feeling. Views across St. Claude Avenue would be blocked between Poland Avenue and France Street therefore lessenirg the existing qualitative character of these streets.

This would result in the quality of the living and shopping environment for the fifty-nine parcels front on St. Claude Avenue being considerably decreased, particularly if the areas beneath the structure develop in an unaesthetic manner. The views from these establishments and houses would be of bridge columns and an unused surface between the service roads where this had once been green space.

Due to the loss of two blocks of "green" St. Claude Avenue, a decrease in view quality and a change in the scale of this area, the impact magnitude would be medium to significant.

Mitigation for this decreased aesthetic quality in the vicinity of Poland Avenue would involve the inclusion of productive land use for areas beneath the structure such as recreation, additional parking, and the provision of color treatment in order to offset the potentially drab effect of concrete and steel. Where possible, landscaping should be included (EDAW 1982:4/38-4/39, sic throughout).

Figures used throughout this chapter demonstrate the potential benefits of landscaping efforts. These figures dramatically illustrate the shielding effects of mature vegetation, even in close-up views. Carefully designed plantings on St. Claude Avenue could shield some visual effects of new construction in both the short- and long-term. Fast-growing species should be considered for short-term reduction of impact. However, planting slower-growing species with wide branching patterns and greater height could dramatically reduce impacts over a greater period of time. Seasonal leaf loss must also be considered. New Orleans offers the opportunity to include some plantings such as live oaks that shed their leaves during periods when other species are fully leafed out.

The up-ramps within the Bywater National Historic District will to some extent result in a visual impediment in views from south to north across St. Claude. One goal of bridge design should be to minimize that impairment by reducing the mass of bridge supports if possible. In addition, the open area beneath the bridge should be planted with a variety of species. Creation of a "green space" below the bridge with walks and other amenities could actually introduce positive elements to the area and replace others, such as the present-day neutral ground, that would inevitably be lost. A park environment below and beside the new ramps might enhance the pedestrian environment and result in improving the viability of adjacent business locations. Careful planning of this aspect of the project is particularly imperative because the project has the potential to introduce a concrete and steel barrier that cuts through part of the historic district and that would appear to contain a portion of the District below a modern superstructure.

Visual impact to the Bywater National Historic District could be reduced by the use of a tunnel for the St. Claude Avenue crossing. This possibility has been seriously considered as recently as 1982 (EDAW 1982:4/41).

One other possibility for avoidance of visual impact to the Bywater National Historic District is to maintain a low-rise bridge here while building a major bridge at Florida Avenue. That larger bridge, located at a considerably greater distance, would not result in visual impact to either Bywater or Holy Cross. It could be designed to accommodate six or eight lanes of traffic, thereby allowing creation of a major artery for traffic between Orleans and St. Bernard Parishes. This could reduce the amount of traffic at the St. Claude crossing and thereby eliminate the necessity for a mid-rise bridge.

Discussion of Visual Effects on the Holy Cross National Historic District.

Figures 72 to 81 represent without- and with-project visual conditions from various portions of the Holy Cross National Historic District. The figures demonstrate that from the central and eastern portions of the district, new bridge construction has little potential for visual impact to the historic setting. A mid-rise bridge from these areas would generally be only

a minor element in the visual background. In addition, foliage that is present within these areas will from many vantage points totally shield the viewer from all of the elements of the new bridge.

The figures demonstrate, however, that within the western portion of the Holy Cross National Historic District there is greater potential for visual impact. From some vantage points, most elements of the bridge may be visible. From other points, at least some of the taller elements may be visible.

In order to reduce visual impacts of new construction within the western portions of the Holy Cross District, use of foliage is again a critical part of the planning process. Because of the relatively low density of structures in this area, plantings should be considered even on streets that are relatively distant from the actual project corridor. Recommendations concerning fast- and slow-growing species made for Bywater (above) also apply to this area. In addition, elements of bridge type and bridge design should be considered. Civil engineers should be engaged in the planning process in order to allow consideration of alternative, sympathetic designs at an early stage of planning.

The effort reported in this chapter indicates that further use of computer-aided views would be valuable for visual assessments representing with- and without-construction conditions. These views could be used to provide a basis for Visual Impact Assessment Summaries (viz. Smardon et al. 1988:63) based on Visual Assessment Values (viz. Smardon et al. 1988:34-35). As recommended above, special forms should be devised for this project to account for the unique historic and architectural aspects of the area for which visual impact assessment is necessary.

When new forms are devised and a greater variety of views are assembled, experts could independently assign values to with- and without-project views. The appropriate team of experts would include at least one historic architect, one landscape architect, and one urban planner. A civil engineer should be assigned to work with that team to provide alternative bridge plans. Because of the sensitivity of the area (Smardon et al. 1988:27, 42-43), the goal of this aspect of the planning process should be to devise a plan that would result in as little change in visual assessment values as is possible (Smardon et al. 1988:36).

CHAPTER 15
OTHER POTENTIAL IMPACTS TO THE BYWATER AND HOLY CROSS NATIONAL HISTORIC DISTRICTS

The Advisory Council on Historic Preservation states that:

> Adverse effects on historic properties include, but are not limited to:
>
> (1) Physical destruction, damage, or alteration of all or part of the property;
>
> (2) Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register;
>
> (3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
>
> (4) Neglect of a property resulting in its deterioration or destruction... (36 CFR 800.9)

This chapter addresses potential adverse impacts to the Bywater and Holy Cross National Historic Districts that have not been discussed in previous sections of this report.

Holy Cross National Historic District

The proposed project does not threaten to isolate the Holy Cross National Historic District from its setting. As was discussed in preceding chapters, the IHNC was present by ca. 1918 and resulted at that date in isolating the District. That isolation, to some extent, contributed to the character of the District (NRHP Inventory-Nomination Form, Holy Cross National Historic District). Modifications to the eastern side of the canal will not result in further isolation.

Destruction or removal of structures within the eastern portion of the Holy Cross District was discussed at length in Chapter 13. The other issue here, then, is alteration of the character of the property. An important aspect of the eastern portion of the District's character is the presence of a green-space on the crown and at the toe of the levee. This area provides dramatic views of the Mississippi River, the

Industrial Canal, the lock, and the St. Claude Avenue Bridge. Project planning should aim towards preserving that access and those views. This area offers an opportunity, in fact, to further the public's understanding of the importance to the history of New Orleans of the IHNC and related structures. The levee and adjacent cleared areas should be made as attractive as possible to encourage pedestrian traffic and other recreational activities.

If a new and larger St. Claude Avenue bridge is constructed, it will not isolate the Holy Cross National Historic District. The majority of the District is several blocks south of St. Claude Avenue. It is thereby shielded from traffic. Also, the below-ramp area is not an issue for the district because that ramp will not abut the portions of the district remaining after construction. For the same reasons, audible and atmospheric impacts are not at issue for the Holy Cross National Historic District.

There probably will be inevitable impacts during the period of construction. Noise and inconveniences may result from mobilization and use of heavy machinery. Project planning should include efforts to minimize that noise and those inconveniences.

Bywater National Historic District

Current plans for the new St. Claude Avenue Bridge are not complete. Construction may include a wider traffic corridor, thereby requiring removal or destruction of structures fronting on St. Claude Avenue. This issue should be considered when plans and alternate plans are considered for the bridge. It should be noted that the District includes over 2000 structures, so that even loss of one or two blocks fronting St. Claude will not compromise the integrity of the entire district.

A new bridge at this location may result in a higher volume and speed of vehicular traffic. This has some potential to adversely effect buildings located nearby due to vibration and its consequent result on structural integrity. Project planning should include consideration of this issue.

Modification of the Industrial Canal will not isolate the Bywater National Historic District from its present environment. However, increased speed and volume of vehicular traffic on St. Claude Avenue has the potential to isolate the southern and northern portions

of the district from each other. It is recommended that traffic volume and flow studies be conducted to assess without-project conditions. In addition, projections should be devised concerning with-project volumes and speeds. A comparison will then enable a determination of project effects. If this were done during an early stage of planning, ameliorative efforts could be undertaken.

Because the up-ramp of the new St. Claude Avenue bridge will abut the district's boundaries, and because speed and volume of traffic may be increased on all portions of St. Claude Avenue, the project has the potential to introduce audible and atmospheric elements that are out of character with the property. Issues concerning visual effects of the ramp itself were addressed in Chapter 14. Once again, with- and without-project comparisons will enable a further understanding of potential audible and atmospheric effects. If these comparisons are done during an early stage of planning, ameliorative efforts can be included in the process.

There is some potential for this project to result in deterioration of parts of the Bywater National Historic District located near the new up-ramps. Such deterioration could occur both during and after construction because of increased noise, pollution, and decreased access. Sympathetic bridge design (Chapter 14) will help reduce adverse effect of this nature. In addition, post-construction landscaping could further reduce such effect (Chapter 14). If these are included in project plans, the critical period, then, may be during construction. All possible efforts should be made prior to the beginning of construction to reduce such effects. It is recommended that urban planners be included during early stages of the project to provide advice concerning ameliorative efforts.

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