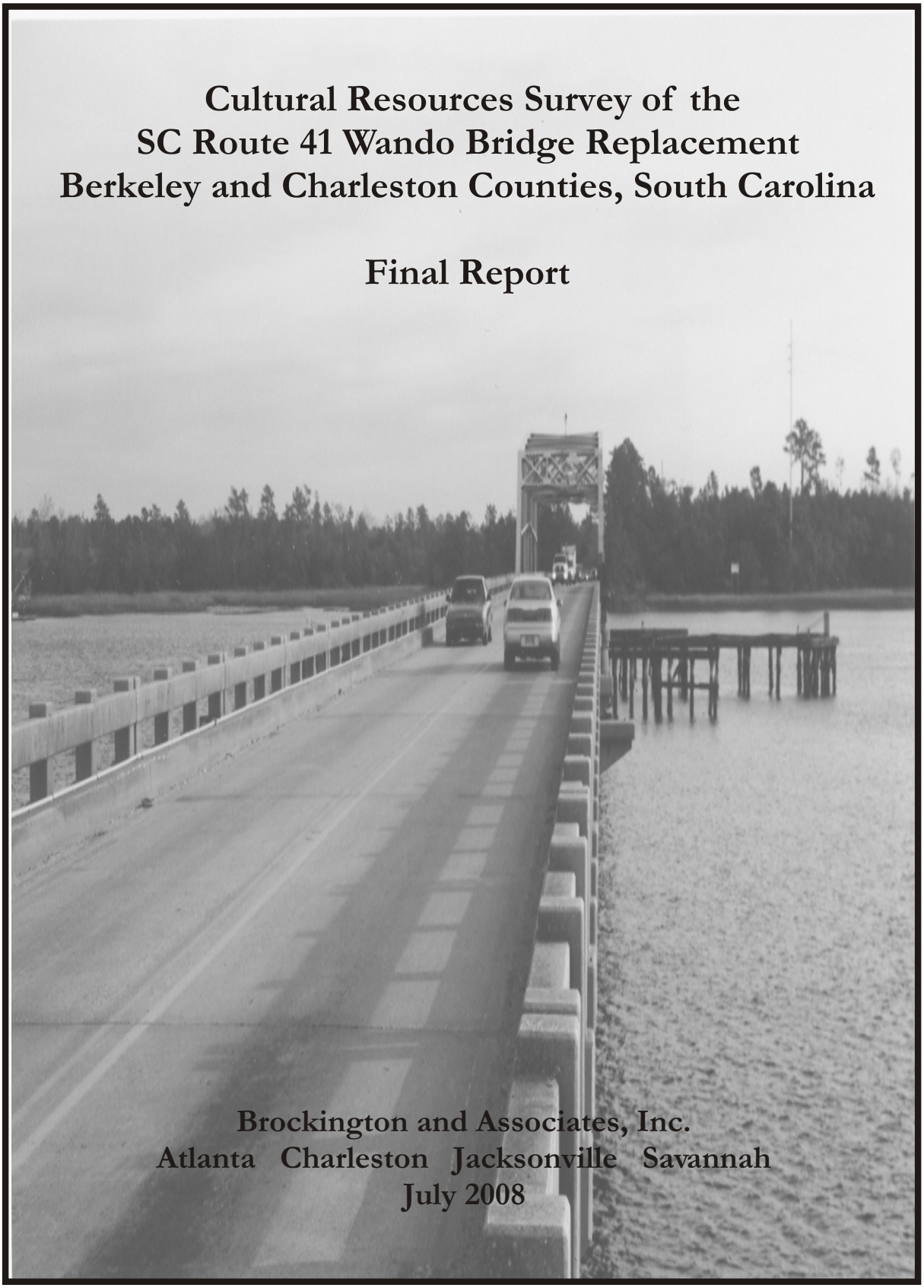
Cultural Resources Survey of the SC Route 41 Wando Bridge Replacement Berkeley and Charleston Counties, South Carolina

Final Report



Brockington and Associates, Inc.
Atlanta Charleston Jacksonville Savannah
July 2008

Cultural Resources Survey of the SC Route 41 Wando Bridge Replacement Berkeley and Charleston Counties, South Carolina

Final Report

PIN No.: 32098, File No.: 8.158, Project No.: BR-BR08(017)

Prepared for

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and

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Abstract

Brockington and Associates, Inc., undertook cultural resources investigations in support of the proposed replacement of the SC Route 41 bridge over the Wando River in Charleston and Berkeley Counties, South Carolina (PIN No.: 32098, File No.: 8.158, Project No.: BR-BR08[017]) in December 2004 and February 2005. The proposed replacement of the SC Route 41 bridge over the Wando River in Berkeley and Charleston Counties may affect historic properties. Phase I study, including intensive architectural survey and intensive archaeological survey, is necessary to determine if any historic properties exist in the project area. It is estimated that the project area will begin approximately 4,000 ft (0.76 mi) southeast of the existing bridge and continue through the SC Route 41/Clements Ferry Road intersection for approximately 2,000 ft (0.38 mi), with the likely relocation of the current intersection.

Archaeological investigations included the excavation of shovel tests measuring 30 by 30 cm (1.0 by 1.0 ft) at 30-meter (100-ft) intervals in the archaeological Area of Potential Effect (APE). During these investigations we revisited sites 38BK1810 and 38BK1621. Site 38BK1810 is a nineteenth-century brick kiln associated with the brickmaking facilities at 38BK1621 (O'Hear's Point). We conducted field investigations of site 38BK1810 concurrently, and unknowingly, with investigators from TRC (Grunden and Henry 2006). Grunden and Henry (2006) conducted a cultural resources survey of an adjacent tract. Grunden and Henry (2006) recommended site 38BK1810 not eligible for the National Register of Historic Places (NRHP). Based on the outcome of a meeting including staff from the South Carolina Department of Archives and History (SCDAH), the South Carolina Department of Transportation (SCDOT), Brockington and Associates, Inc., and TRC, it was determined that site 38BK1810 is not eligible for the NRHP. We also revisited site 38BK1621. Investigators excavated five shovel tests at 30-meter (100-ft) intervals along the shovel test transect parallel to SC Route 41 across the reported area of the northwest portion of 38BK1621; none of these shovel tests produced artifacts. Investigators noted no brick fragments or artifacts on the ground surface in this area. The area in which Wayne (1993) noted brick along the shoreline of the Wando River is approximately 244 meters (800 ft) to the east of the project area. It is apparent that the site does not extend into the proposed new right-of-way for SC Route 41. Wayne (1993) provided no assessment of NRHP eligibility for site 38BK1621; however, we recommended the site potentially eligible for the NRHP. Grunden and Henry (2006) also recommended site 38BK1621 potentially eligible for the NRHP. However, the site does not extend into the project area and will not be

affected by any proposed road improvement activities. Archaeologists identified no other archaeological resources in the archaeological APE.

The architectural historian identified six historic architectural resources in the architectural survey universe. We recommend five of the historic architectural resources not eligible for the NRHP. We recommend Resource 066 0006, a metal truss bridge, eligible under Criterion C because it embodies distinctive characteristics of a bridge type, bridge construction period, and method of construction; its replacement will be an adverse affect to the resource. To mitigate the removal of the bridge, we recommend that modified Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) documentation be completed for the bridge. The modified HABS/HAER documentation, prepared under consultation with SCDOT and SCDAH, should consist of copies of the original engineering drawings, large-format photography, and a history of the bridge. The report with photographs and drawings should be curated at SCDAH.

The underwater cultural resources survey conducted by Diversified Wilbanks, Inc., included magnetometer survey, side-scan sonar survey, and visual inspection of targets in the general area using scuba divers. Based on the underwater survey, Targets #1, #2, #3, and #4 do not constitute cultural resources sites. No further investigation of these four targets is recommended. No underwater archaeological sites were recorded.

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Chapter I. Introduction and Methods

Introduction

Brockington and Associates, Inc., undertook cultural resources investigations in support of the proposed replacement of SC Route 41 bridge over the Wando River in Charleston and Berkeley Counties, South Carolina (PIN No.: 32098, File No.: 8.158, Project No.: BR-BR08[017]), in December 2004 and February 2005. These investigations provide partial compliance with federal regulations and state guidelines concerning the management of historic properties (buildings, structures, objects, sites, or districts listed on or eligible for the National Register of Historic Places [NRHP]) that may be affected by proposed highway development as per Section 4(f) of the US Department of Transportation Act of 1966, as amended in 1983 (49 USC Section 303), the National Environmental Policy Act of 1969 (Public Law 91-190), and the National Historic Preservation Act of 1966 (16 USC 470), as amended through 1992.

The proposed replacement of the SC Route 41 bridge over the Wando River in Berkeley and Charleston counties may affect historic properties. Phase I study, including intensive architectural survey and intensive archaeological survey, is necessary to determine if any historic properties exist in the project area. It is estimated that the project area would begin approximately 4,000 ft (0.76 mi) southeast of the existing bridge and continue through the SC Route 41/Clements Ferry Road intersection for approximately 2,000 ft (0.38 mi), with the likely relocation of the current intersection. Figures 1 and 2 show the project location on the USGS map and the county highway map.

The present investigations involved architectural and intensive archaeological surveys of potential temporary easements along the project corridor. Archaeologists examined an archaeological Area of Potential Effect (APE) that extends 30 meters (100 ft) to either side of the existing right-of-way (ROW). The architectural historian examined an architectural survey universe that extends 90 meters (300 ft) from the existing ROW.

Archaeological investigations included the excavation of shovel tests measuring 30 by 30 cm (1.0 by 1.0 ft) at 30-meter (100-ft) intervals in the archaeological APE. During these investigations we revisited sites 38BK1810 and 38BK1621. Site 38BK1810 is a nineteenth-century brick kiln associated with the brickmaking facilities at 38BK1621 (O'Hear's Point). We conducted field

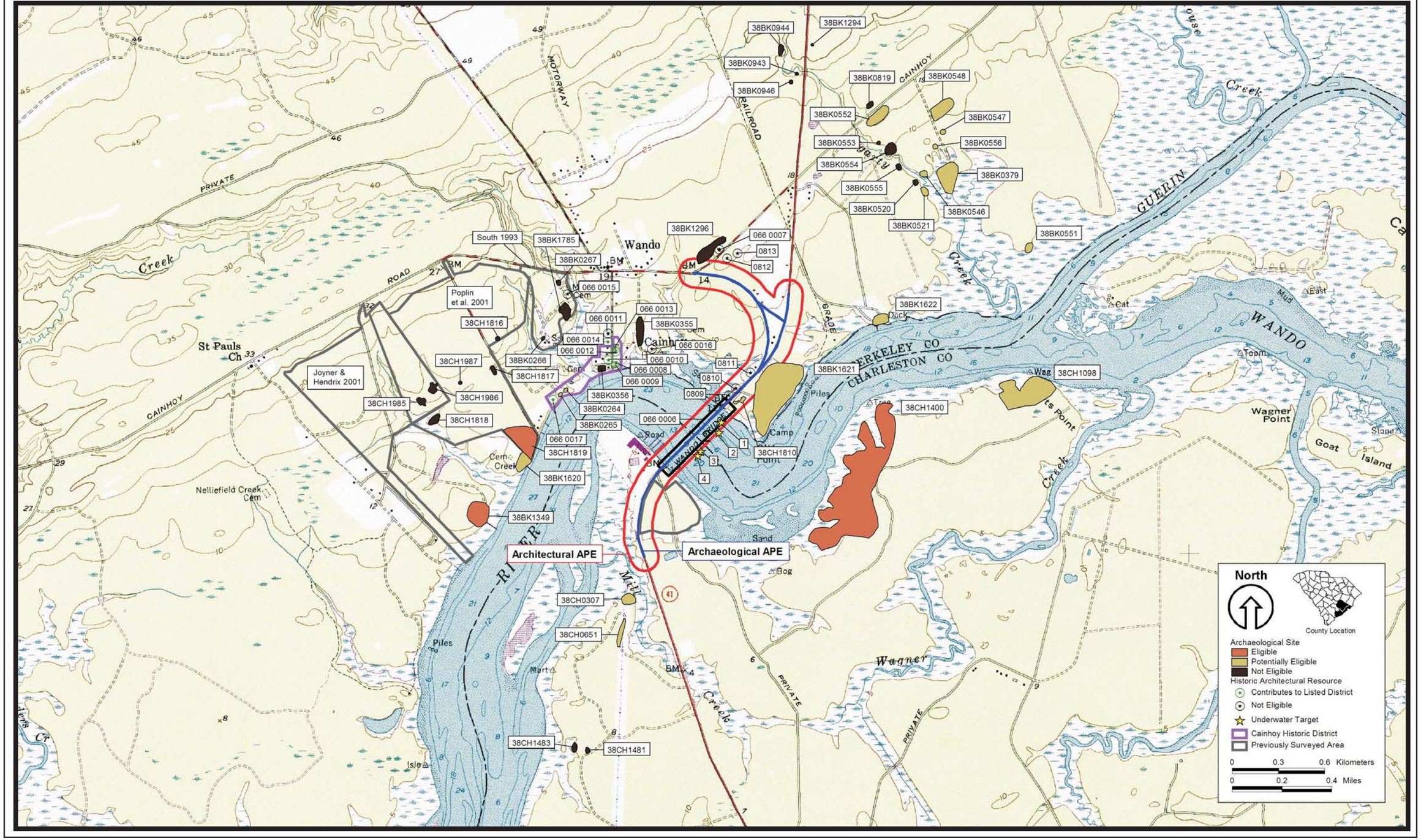


Figure 1. Location of the SC41 Bridge Replacement Project, Charleston and Berkeley Counties, South Carolina, and all identified cultural resources (USGS 1958/1971 *Cainhoy, SC* quadrangle).

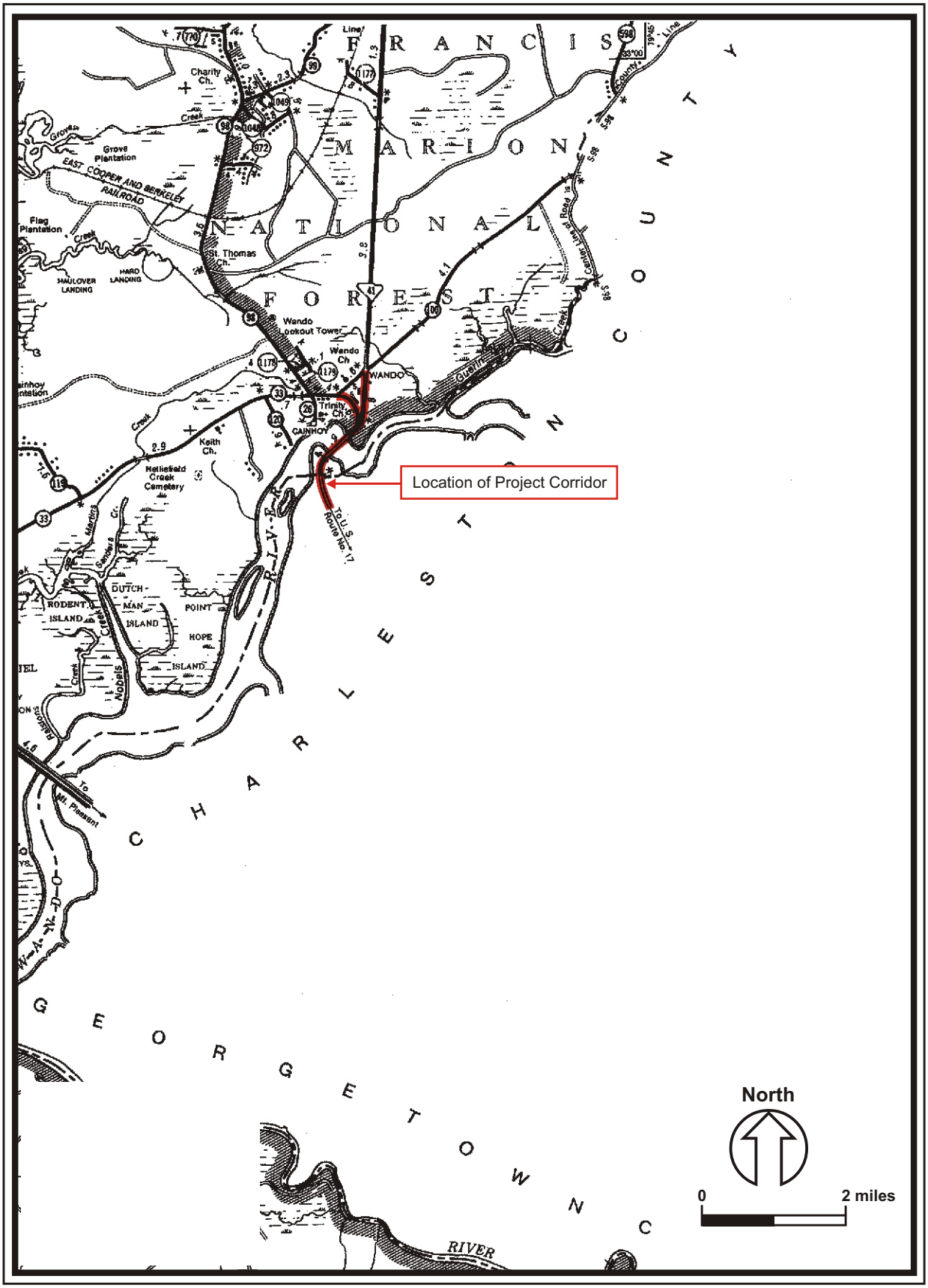


Figure 2. Location of the SC Route 41 Bridge Replacement Project on a portion of the General Highway Map, Berkeley County, South Carolina (1978).

investigations of site 38BK1810 concurrently, and unknowingly, with investigators from TRC (Grunden and Henry 2006). Grunden and Henry (2006) conducted a cultural resources survey of an adjacent tract. Grunden and Henry (2006) recommended site 38BK1810 not eligible for the NRHP. Based on the outcome of a meeting including staff from the South Carolina Department of Archives and History (SCDAH), the South Carolina Department of Transportation (SCDOT), Brockington and Associates, Inc., and TRC, it was determined that site 38BK1810 is not eligible for the NRHP. We also revisited site 38BK1621. Investigators excavated five shovel tests at 30-meter (100-ft) intervals along the shovel test transect parallel to SC Route 41 across the reported area of the northwest portion of 38BK1621; none of these shovel tests produced artifacts. Investigators noted no brick fragments or artifacts on the ground surface in this area. The area in which Wayne (1993) noted brick along the shoreline of the Wando River is approximately 244 meters (800 ft) east of the project area. It is apparent that the site does not extend into the proposed new ROW for SC Route 41. Wayne (1993) provided no assessment of NRHP eligibility for site 38BK1621; however, we recommended the site potentially eligible for the NRHP. Grunden and Henry (2006) also recommended site 38BK1621 potentially eligible for the NRHP. However, the site does not extend into the project area and will not be affected by any proposed road improvement activities. Archaeologists identified no other archaeological resources in the archaeological APE.

The architectural historian identified five new historic architectural resources (Resources 0809–0813) in the architectural survey universe and reassessed one previously recorded site, the Wando Bridge (066 0006), a metal truss bridge. We recommend the five new historic architectural resources not eligible for the NRHP and, after consultation with the South Carolina State Historic Preservation Office (SHPO), we recommend Resource 066 0006 eligible under Criterion C.

The underwater cultural resources survey conduced by Diversified Wilbanks, Inc., included magnetometer survey, side-scan sonar survey, and visual inspection of the targets and the general area using scuba divers. Based on the underwater survey, Targets #1, #2, #3, and #4 do not constitute cultural resource sites. No further investigation of these four targets is recommended. No archaeological sites were recorded.

Chapter II of this report discusses the natural and cultural settings of the region and the project corridor. Results of the archaeological, architectural, and underwater surveys and management recommendations are presented in Chapter III. The artifact inventory, architectural survey forms, and a summary of the underwater cultural resources survey are attached as Appendices A, B, and C, respectively.

Methods of Investigation

Brockington and Associates, Inc., employed a multi-disciplinary team to complete the cultural resources survey of the SC Route 41 Wando River Bridge Replacement Project. Edward Salo served as principal investigator/architectural historian and prepared the descriptions and evaluations of the historic architectural resources in and near the project. Jason Ellerbee was the project historian. He conducted the background research and compiled the Post-Contact cultural setting of the region. Dave Baluha directed the archaeological survey of the potential temporary easements and new ROW. Descriptions of each major task necessary to complete the survey follow.

Background Research

We conducted background research at the South Carolina Institute of Archaeology and Anthropology (SCIAA), SCDAH, the University of South Carolina's South Caroliniana Library, and the South Carolina Historical Society in Columbia. In addition, we reviewed documents at local repositories in Charleston and Berkeley counties. We performed background research to locate any NRHP properties within or near the APE, or any previously recorded cultural resources within or near the APE. We performed background research to locate any previously recorded archaeological resources or NRHP properties within or near the survey universe.

Architectural Survey

The architectural historian conducted an intensive architectural survey of all buildings and structures within a 90-meter (300-ft) area to each side of the centerline of the existing highway in the project corridor. This 180-meter (600-ft) wide area is the architectural survey universe. This survey was designed to record and evaluate all historic architectural resources (buildings, structures, objects, designed landscapes, and/or sites with aboveground components) in the project. Field survey methods complied with *Survey Manual: South Carolina Statewide Survey of Historic Places* (Vivian 2002) and *National Register Bulletin 24: Guidelines for Local Surveys: A Basis for Preservation Planning* (Parker 1985). In accordance with the scope of work and standard SCDAH statewide survey practice, the architectural historian drove every street and road in the architectural survey universe and conducted a pedestrian inspection of all potential historic architectural resources.

All historic architectural resources in the architectural survey universe that retained sufficient integrity to be included in the South Carolina Statewide Survey (SCSS) were recorded on SCSS site forms in digital format using *Microsoft Access 2000* database application. At least one black-and-white photograph was taken of each resource. The location of each historic architectural resource was recorded on USGS topographic maps. The completed forms, including the various maps and photographs, were prepared for SCDAH for review.

The principal criterion used by the SCSS to define historic architectural resources is a 50-year minimum age. In addition, certain other classes of architectural resources may be documented intensively and included in the SCSS (Vivian 2002:5):

- Architectural resources representative of a particular style, form of craftsmanship, method of construction, or building type.
- Properties associated with significant events or broad patterns in history.
- Properties that convey evidence of the community's historical patterns of development.
- Historic cemeteries and burial grounds.
- Historic landscapes such as parks, gardens, agricultural fields.
- Properties associated with the lives or activities of a person significant in local, state, or national history.
- Sites where ruins, foundation or remnants of historically significant structure are present.

The integrity of a historic architectural resource is a primary consideration for inclusion in the SCSS, as well as on the NRHP. In order to have integrity, Vivian (2002:4-5) maintains that:

> the resource must have retained, essentially intact, the physical identity from its historic period. It will either have few alterations or will have been maintained with the use of construction materials and methods that are consistent with the original. A rural district with integrity has a landscape that shows the historic land use patterns.

While in the field, the architectural historian evaluated the integrity of each identified historic architectural resource. Resources exhibiting poor integrity were not recorded. For the purpose of this project, four levels of architectural integrity were employed. These include:

Excellent - All original construction materials and design remain intact and unchanged.

Good - The majority of original construction materials remain intact and unchanged except for roofing and other renewable elements.

Fair - A substantial number of original architectural elements have been altered, such as the installation of aluminum, asbestos, or vinyl siding, the substitution of historic doors and windows with non-historic replacements, and the construction of non-historic additions.

Poor - Has been radically altered from its original design by non-historic renovations and/or additions.

References consulted for architectural style and architectural type descriptions include Blumenson (1977), Longstreth (1987), McAlester and McAlester (1998), Poppeliers et al. (1983), and Whiffen (1981).

Terrestrial Archaeological Survey

Archaeologists inspected an area adjacent to each side of the existing SC Route 41 ROW to determine whether any archaeological sites or isolated finds are present. Much of this area consists of frequently flooded swamplands. These areas were visually inspected unless there were known or potential sites, as indicated on historic maps or plats. We shovel tested upland areas (non-swamp or inundated lands) adjacent to the existing ROW to determine if archaeological materials were present. We excavated shovel tests at 15- and 30-meter (50- and 100-ft) intervals in the archaeological APE.

Areas of known or potential sites were examined in greater detail through close-interval shovel tests and/or probing, as appropriate for the kinds of artifacts and features suspected to be present. These shovel tests were excavated at 5-meter (16.4-ft) intervals. The boundaries of sites/isolated finds are determined by the excavation of two consecutive negative shovel tests or by natural or manmade landscape features that truncate the extent of the archaeological materials.

These investigations follow the recommendations published in the *Standards and Guidelines for Archaeological Investigations in South Carolina* (SCDAH 2000). Archaeological sites include locales that produce three or more artifacts within a 30-meter (100-ft) area; locales that produce one

or two artifacts are isolated finds (SCDAH 2000). Shovel tests measured 30 by 30 cm (1.0 by 1.0 ft). Fill from these tests was screened through ¼-inch mesh hardware cloth. All artifacts were placed in appropriately labeled archivally stable resealable plastic bags. Information on the depth, nature of soils, and artifacts encountered was recorded for each test. Upon acceptance of the final report, field notes, and photographs will be transferred to SCIAA for permanent curation.

Generally, areas producing three or more Pre-Contact or Post-Contact artifacts within a 30-meter (100-ft) radius or clusters of cultural features are archaeological sites. Usually, additional shovel tests are excavated at 7.5- and 15-meter (25- and 50-ft) intervals in cardinal directions around artifact-producing locales or suspected cultural features to define the limits of the artifact-bearing deposits and to determine the distributions of artifacts at each locale. Sufficient information is collected at the site to complete a SCIAA site form; this form is submitted to SCIAA at the completion of the field work for the assignment of a permanent site number. No archaeological sites or isolated finds were recorded during the present investigations.

Underwater Cultural Resources Survey

The underwater archaeology investigations of the project area were completed by Diversified Wilbanks, Inc. Diversified Wilbanks, Inc., has participated in numerous underwater investigations in the Charleston area. The underwater investigators conducted remote-sensing investigations, including magnetometer and side-scan sonar surveys. The sonogram record was monitored constantly to develop the most detailed bottom image possible. This permitted the underwater archaeologists to collect information on the nature of the Wando river bottom at the bridge and to determine the extent of any underwater archaeological sites that might be present. Magnetic anomalies were identified on survey data records as they were generated. The local environment also was noted on data log sheets. The local environment includes manmade features such as docks, wharves, pipelines, power lines, buoys, channel markers, and/or other conditions or objects that could influence magnetic or acoustic data. At the completion of the general survey, a field analysis of magnetic data was performed. The assessment of target signatures was based primarily on the nature and characteristics of the sonar and/or magnetic signatures. Exposed shipwrecks, large or small, often have distinctive sonogram signatures. Often sonar signatures have associated magnetic signatures. If the sonar signature demonstrates geometric forms or intersecting lines with some relief above the bottom surface and a magnetic signature of any sort, it is categorized as a potentially significant target signature. Often, modern debris near docks or bridges is easily identified based

solely on the sonar signature's characteristic. However, it is more common to find material partially exposed. These objects frequently produce a record that is obviously manmade but impossible to identify or date. In making an archaeological assessment of any sonar target, the history and modern use of the waterway must be taken into consideration.

NRHP Assessment of Cultural Resources

We assessed the significance of all cultural resources encountered in the project following the criteria of eligibility for the NRHP (36 CFR 60.4). In order for a resource to be eligible for the NRHP, it must meet one of the following criteria:

A. The resource is associated with events that have made a significant contribution to the broad pattern of history.

B. The resource is associated with the lives of persons significant in the past.

C. The resource embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.

D. The resource has yielded, or is likely to yield, information important to history or prehistory.

A resource may be eligible under one or more of these criteria. Criteria A, B, and C are most frequently applied to historic buildings, structures, objects, non-archaeological sites (e.g., natural features and designed landscapes), or districts. The eligibility of archaeological sites is most frequently considered with respect to Criterion D. Also, a general guide of 50 years of age is employed to define "historic" in the NRHP evaluation process. That is, all resources greater than 50 years of age may be considered. However, more recent resources may be considered if they display "exceptional" significance (Sherfy and Luce n.d.).

Following *National Register Bulletin*: *How to Apply the National Register Criteria for Evaluation* (Savage and Pope 1998:3), evaluation of any resource requires a twofold process. First, the resource must be associated with an important historic context. If this association is

demonstrated, the integrity of the resource must be evaluated to ensure that it conveys the significance of its context. The application of these steps is discussed in more detail below.

Determining the association of a resource with a historic context involves five steps (Savage and Pope 1998:7). First, the resource must be associated with a particular facet of local, regional (state), or national history; examples include Mississippian Utilization of the Pee Dee River Valley, Colonial Settlement of the South Carolina Backcountry, or Antebellum Agricultural Development in the Upper Coastal Plain of South Carolina. These facets will represent the context within which any particular resource developed.

Second, one must determine the significance of the identified historical facet/context with respect to the resource under evaluation. As an example, if the survey universe contained no resources dating from the early nineteenth century, then the antebellum agricultural context noted above would not be significant for the development of the project area or any of its internal resources. Similarly, a lack of Native American archaeological sites within the survey universe would preclude the use of contexts associated with the Pre-Contact use of the region.

The third step is to demonstrate the ability of a particular resource to illustrate the context. A resource should be a component of the locales and features created or used during the historical period in question. Early-nineteenth-century plantation houses, the ruins of African American slave settlements from the 1820s, and/or field systems associated with particular antebellum plantations in the region would illustrate various aspects of the agricultural development of the region prior to the Civil War. Conversely, contemporary churches or road networks may have been used during this time period but do not reflect the agricultural practices suggested by the other kinds of resources.

The fourth step involves determining the specific association of a resource with aspects of the significant historic context. Savage and Pope (1998:11-24) define how one should consider a resource under each of the four criteria of significance. Under Criterion A, a resource must have existed at the time that a particular event or pattern of events occurred, and activities associated with the event(s) must have occurred at the site. In addition, this association must be of a significant nature, not just a casual occurrence (Savage and Pope 1998:12). Under Criterion B, the resource must be associated with historically important individuals. Again, this association must relate to the period or events that convey historical significance to the individual, not just that this person was present at this locale (Savage and Pope 1998:15-16). Under Criterion C, a resource must possess physical features or traits that reflect a style, type, period, or method of construction; display high

artistic value; or represent the work of a master (an individual whose work can be distinguished from others and possesses recognizable greatness) (Savage and Pope 1998:20). Under Criterion D, a resource must possess sources of information that can address specific important research questions (Savage and Pope 1998:22). These questions must generate information that is important in reconstructing or interpreting the past (Butler 1987; Townsend et al. 1993). For archaeological sites, recoverable data must be able to address specific research questions.

After a resource is specifically associated with a significant historic context, one must determine which physical features of the resource reflect its significance. One should consider the types of resources that are associated with the context, how these resources represent the theme, and which aspects of integrity apply to the resource in question (Savage and Pope 1998:8). As in the antebellum agriculture example given above, a variety of resources may reflect this context (plantation houses, ruins of slave settlements, field systems, etc.). One must demonstrate how these resources reflect the context. The plantation houses represent the residences of the principal landowners who were responsible for implementing the agricultural practices that drove the economy of South Carolina during the antebellum period. The slave settlements housed the workers who conducted the vast majority of the daily activities necessary to plant, harvest, process, and market crops.

Once the above steps are completed and the association with a historically significant context is demonstrated, one must consider the aspects of integrity applicable to a resource. Integrity is defined in seven aspects of a resource; one or more may be applicable depending on the nature of the resource under evaluation. These aspects are location, design, setting, materials, workmanship, feeling, and association (Savage and Pope 1998:44). If a resource does not possess integrity with respect to these aspects, it cannot adequately reflect or represent its associated historically significant context. Therefore, it cannot be eligible for the NRHP. To be considered eligible under Criteria A and B, a resource must retain its essential physical characteristics that were present during the event(s) with which it is associated. Under Criterion C, a resource must retain enough of its physical characteristics to reflect the style, type, etc., or work of the artisan that it represents. Under Criterion D, a resource must be able to generate data that can address specific research questions that are important in reconstructing or interpreting the past.

Chapter II. Natural and Cultural Setting

Natural Setting

The project corridor extends across the Wando River, which divides Berkeley and Charleston counties (see Figure 1). The northern portion of the proposed project lies in Berkeley County on the Cainhoy peninsula. The southern portion of the proposed project lies in Charleston County on the narrow strip of land between the Wando River and the estuaries of Grays Bay and Copahee Sound. This peninsula is called the Wando Neck. The community of Cainhoy lies near the northern terminus of the proposed project. A brief description of the conditions within the proposed project follows, as well as summaries of the present and past regional settings.

Present Environment

A Brief Description of the Project Corridor. As noted above, the proposed project begins approximately 518 meters (1,700 ft) west of the intersection of Clements Ferry Road (S-8-33) and Cainhoy Road (S-8-98). Figures 3 and 4 display views of the project setting.

From the S-8-33 intersection, the easement curves to the south and east, following the southern edge of the S-8-33 ROW to the intersection of S-8-33 and SC Route 41 (see Figure 1). A few residential lots are located in this portion of the easement, although most of this area is wooded. At the intersection of S-8-33 and SC Route 41, the easement passes beneath SC Route 41. Once on the east side of SC Route 41, the easement continues south and west to the Wando River (see Figure 1). On the east bank of the Wando River, the proposed project easement continues through a heavily developed area that includes a convenience store and boat landing surrounded by extensive paved parking areas.

The climate of this area is subtropical, with mild winters and long, hot, humid summers. The average daily maximum temperature reaches a peak of 80.1°F in July, although average highs are in the 80°F range from May through September. A mean high of 46.8°F characterizes the coldest winter month, January. Average annual precipitation for Charleston and Berkeley counties is about 1.2 meters (3.9 ft), with most rain occurring in the summer months during thunderstorms; snowfall is very rare. The growing season averages 280 days, with first and last frosts generally occurring by

Figure 3. Representative views of the SC Route 41 Bridge Replacement Project Corridor.

Figure 4. Representative views of the SC Route 41 Bridge Replacement Project Corridor.

November 2 and April 3, respectively. Although droughts occur, they are rare. Also, the climate is very supportive of agriculture. Prevailing winds are light and generally from the south and southwest, although hurricanes and other tropical storms occasionally sweep through the area, particularly in the fall months (Long 1980:46; Miller 1971:46,93-94).

Soils in the project are described by Long (1980) and Miller (1971). The Cainhoy peninsula segment of the project contains soils characteristic of the Chipley-Echaw complex (Long 1980). These soils are characterized as fine sands occurring in broad areas adjacent to low, wet areas that formed in sandy Coastal Plain sediment (Long 1980:15). Site 38BK1810 contains Yonges loamy fine sands of the Chipley-Echaw complex.

The Wando Neck did not offer the most ideal conditions for monocrop agriculture in the region. Soils and saline conditions on the lower reaches of the Wando River precluded rice agriculture and apparently restricted cotton production (Brockington et al. 1985). However, Pleistocene marine clay deposits underlie most of the Wando Neck at 1.0 to 3.0 meters (3.0 to 9.0 ft) below the ground surface. These clays provided the principal raw material necessary to manufacture bricks. Wayne (1992:71-73) discusses the nature of soils and clay substrates along the Wando River following Robinson and Johnson (1960) and Johnson and Heron (1965). Robinson and Johnson (1960:9-13) define five classes of clays available to Charleston-area brickmakers. These include marls, clayey sands, sandy clays, rich clays, and vitreous clays. Sandy clays provide the best material for brick manufacture, possessing low shrinking rates (less than 4 percent) when dried/fired and good bonding strength. These clays generally occur in interriverine settings at elevations greater than 10 ft above sea level. Clayey sands, excellent for tempering and used during the hand molding of bricks, also are common in these same locales.

Rich clays and marls occur in the swamps and bottomlands along drainages at elevations less than 3.0 meters (10 ft) above sea level. Rich clays make excellent bricks but have high shrinkage rates; thus, they require highly skilled brickmakers. Marls cannot be utilized to make brick except as an additive to other clays to strengthen the product.

Vitreous clays possess higher frequencies of certain compounds or minerals (e.g., iron oxide) that permit fluxing of the silica in the clays. This results in the “leaching” of the silica to the surface of the brick, creating a glazed appearance. The sandy loam to clayey soils of the Wando Neck provided the additional raw materials necessary to manufacture brick, as well, particularly sand for tempering and fuel for firing. Most of the interior portions of the Wando Neck were covered by

mixed pine and hardwood forests. These forests were felled to provide lumber for the local construction industry and fuel for brick manufacture. Sandy soils, particularly those with clayey sands adjacent to the clay deposits, provided the sand for tempering bricks and were used during the molding process.

Regional Overview. Topography in the region generally consists of low ridges between meandering channels of the many streams that drain the Lower Coastal Plain. The ridges consist of sandy and loamy soils; more clayey soils and sediments occur in the drainages, marshes, and swamps that border the streams. The coast above and below the Wando River estuary consists of small to large barrier islands that form part of the Sea Island Complex in South Carolina (Kovacik and Winberry 1987:24). These low islands contain sandy uplands derived from eolian and marine sediments generally dating from terminal Pleistocene or early Holocene fluctuations in sea level. Networks of salt marshes, tidal flats, and small creeks have developed between the Sea Islands and the more interior landforms (Kovacik and Winberry 1987).

A series of terraces formed by late Tertiary- and Quaternary-period marine sediments characterize the Coastal Plain. The project corridor lies on the most recent terraces (the Pamlico and Talbot) that formed near the end of the Pleistocene epoch (Miller 1971:70).

Although much of the area has been developed, extensive stands of maritime forest remain. Widmer (1976) presents a model of late prehistoric and early historic-period vegetation patterns for the East Cooper area. Widmer's model follows major vegetation types presented by Braun (1950) and includes six major classes: Pine Savannah, Southern Hardwood Swamp, Longleaf Pine Forest, Freshwater Marsh, Southern Mixed Hardwood Forest, and Tidal Marsh.

Before intensive historic settlement and agricultural modification, the project area probably contained a similar series of vegetation communities. General sources such as Quarterman and Keever (1962) and Shelford (1963) summarize information on floral and faunal communities for the area. Most of the extant woodlands today are mixed pine/hardwood forests. A mixed forest supports an active faunal community including deer and small mammals (e.g., various squirrels and mice, opossum, raccoon, rabbit, fox, skunk), birds (e.g., various songbirds, ducks and wading birds, quail, turkey, doves, hawks, owls), and reptiles/amphibians (e.g., frogs, toads, lizards, snakes, turtles, alligator). Freshwater and saltwater fish are abundant in the streams and marshes of the region, and shellfish are present in large numbers in most of the tidally affected waters throughout the region.

Past Environments

Profound changes in climate and dependent biophysical aspects of regional environments have been documented over the last 20,000 years (the time of potential human occupation of the Southeast). Major changes include a general warming trend, melting of the large ice sheets of the Wisconsin glaciation in northern North America, and the associated rise in sea level. This sea level rise was dramatic along the South Carolina coast (Brooks et al. 1989), with an increase of as much as 100 meters (328 ft) during the last 20,000 years. At 10,000 years ago (the first documented presence of human groups in the region) the ocean was located 80 to 160 km (49.6 to 99.4 mi) east of its present position. Unremarkable Coastal Plain flatwoods probably characterized the project area. Sea level steadily rose from that time until about 5,000 years ago, when the sea reached essentially modern levels. During the last 5,000 years there was a 400- to 500-year cycle of sea level fluctuations of about 2 meters (6.5 ft) (Brooks et al. 1989; Colquhoun et al. 1981). Figure 5 summarizes recent fluctuations in the region.

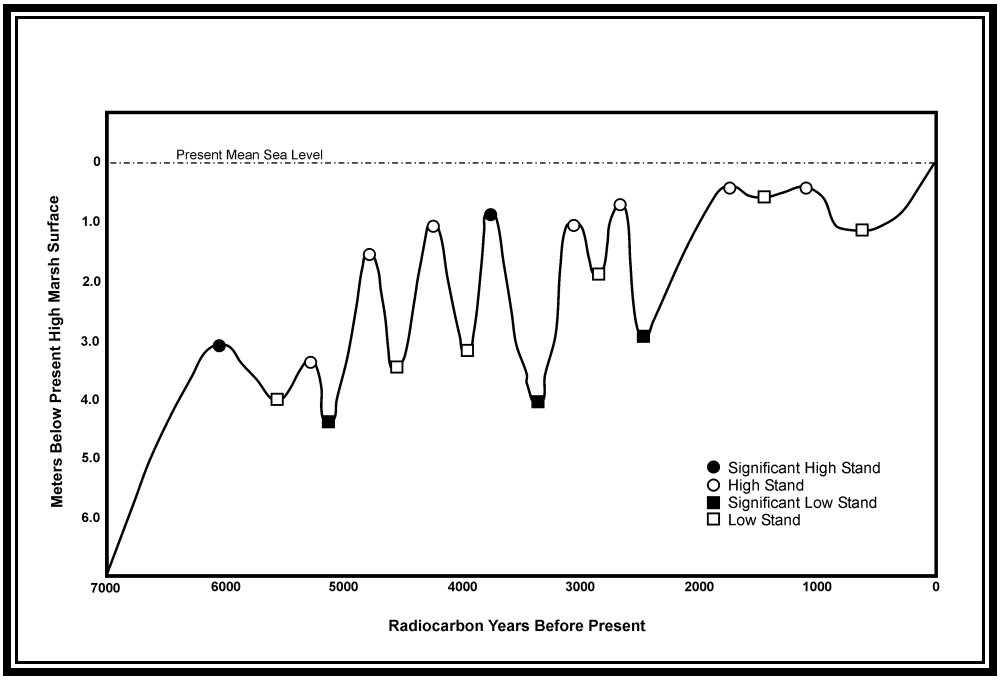


Figure 5. South Carolina sea level curve (after Brooks et al. 1989).

As sea level rose to modern levels, it altered the gradients of major rivers and flooded near-coast river valleys, creating estuaries like the Cooper-Ashley-Wando river mouths. These estuaries became great centers for saltwater and freshwater resources and thus population centers for human groups. Such dramatic changes affected any human groups living in the region.

The general warming trend that led to the melting of glacial ice and the rise in sea level also greatly affected vegetation communities in the Southeast. During the late Wisconsin glacial period, until about 12,000 years ago, boreal forest dominated by pine and spruce covered most of the Southeast. This forest changed from coniferous trees to deciduous trees by 10,000 years ago. Northern hardwoods, such as beech, hemlock, and alder, dominated the new deciduous forest with oak and hickory beginning to increase in number.

With continuation of the general warming and drying trend, oak and hickory came to dominate, along with southern species of pine; pollen data suggests that oak and hickory reached a peak at 7,000 to 5,000 years ago (Watts 1970, 1980; Whitehead 1965, 1973). Since then, the general climatic trend in the Southeast has been toward cooler and moister conditions, and the present Southern Mixed Hardwood Forest as defined by Quarterman and Keever (1962) has become established. Faunal communities also changed dramatically during this time. Several large mammal species (e.g., mammoth, mastodon, horse, camel, giant sloth) became extinct at the end of the glacial period, approximately 12,000 to 10,000 years ago. Pre-Contact human groups that had focused on hunting these large mammals readapted their strategy to exploitation of smaller mammals, primarily deer in the Southeast.

Cultural Setting

Prehistoric Overview

The prehistory of coastal South Carolina has received much attention from archaeologists. The present interpretations of that prehistory are presented briefly in this section. Readers are directed to Anderson (1977) and Anderson and Logan (1981) for detailed overviews of previous research in the region. Goodyear and Hanson (1989) provide a recent overview of particular cultural periods. The following discussion is divided into periods that represent distinct cultural adaptations in the region.

Paleoindian Period (10000–8000 BC). Human presence in the South Carolina Coastal Plain apparently began about 12,000 years ago with the movement into the region of hunter-gatherers. Goodyear et al. (1989) have reviewed the evidence for the Paleoindian occupation of South Carolina. Based on the distribution of distinctive fluted spear points diagnostic to the period, they see the major sources of highly workable lithic raw materials as the principal determinant of Paleoindian site location, with a concentration of sites at the Fall Line possibly indicating a subsistence strategy

of seasonal relocation between the Piedmont and the Coastal Plain. Based on data from many sites excavated over most of North America, Paleoindian groups were generally nomadic, with subsistence focusing on the hunting of large mammals, specifically the now-extinct mammoth, horse, camel, and giant bison. Groups were probably small, kin-based bands of 50 or fewer persons. As the environment changed at the end of the Wisconsin glaciation, Paleoindian groups had to adapt to new forest conditions in the Southeast and throughout North America.

Early Archaic Period (8000–6000 BC). The Early Archaic corresponds to the adaptation of native groups to Holocene conditions. The environment in coastal South Carolina during this period was still colder and moister than at present, and an oak-hickory forest was establishing itself on the Coastal Plain (Watts 1970, 1980; Whitehead 1965, 1973). The megafauna of the Pleistocene became extinct early in this period, and more typically modern woodland flora and fauna were established. Early Archaic adaptation in the South Carolina Lower Coastal Plain is not clear, as Anderson and Logan (1981:13) report:

> At the present, very little is known about Early Archaic site distribution, although there is some suggestion that sites tend to occur along river terraces, with a decrease in occurrence away from this zone.

Early Archaic finds in the Lower Coastal Plain typically are corner- or side-notched projectile points, determined to be Early Archaic through excavation of sites in other areas of the Southeast (Claggett and Cable 1982; Coe 1964). Early Archaic sites generally are small, indicating a high degree of mobility.

Middle and Preceramic Late Archaic Period (6000–2500 BC). The trends initiated in the Early Archaic, i.e., increased population and adaptation to local environments, continued through the Middle Archaic and Preceramic Late Archaic. Climatically, the study area was still warming, and an oak-hickory forest dominated the coast until after 3000 BC, when pines became more prevalent (Watts 1970, 1980). Stemmed projectile points and ground stone artifacts characterize this period, and sites increased in size and density through the period.

Ceramic Late Archaic Period (2500–1000 BC). By the end of the Late Archaic period, two developments occurred that changed human lifeways on the South Carolina Coastal Plain. The sea level rose to within 1.0 meter (3.3 ft) of present levels and the extensive estuaries now present were established (Colquhoun et al. 1981). These estuaries were a reliable source of shellfish, and the

Ceramic Late Archaic period saw the first emphasis on shellfish exploitation. It was also during this time that the first pottery appeared on the South Carolina coast. In the project region, this pottery is represented by the fiber-tempered Stallings series and the sand-tempered or untempered Thom's Creek series. Decorations include punctation, incising, finger pinching, and possibly simple stamping and dentate stamping.

The best-known Ceramic Late Archaic–period sites are shell rings, which occur frequently along tidal marshes. These are usually round or oval rings of shell and other artifacts, with a relatively sterile area in the center. Many of these rings are currently in tidal marsh waters, and they have been interpreted as actual habitation loci adjacent to or within productive shellfish beds. These sites attest to a high degree of sedentism, at least seasonally.

Early Woodland Period (1000 BC–AD 200). In the Early Woodland period, the region was apparently an area of interaction between widespread ceramic decorative and manufacturing traditions. The paddle-stamping tradition dominated the decorative tradition to the south, and fabric impressing and cord marking dominated to the north and west (Blanton et al. 1986; Caldwell 1958; Espenshade and Brockington 1989).

The subsistence and settlement pattern of the Early Woodland period suggests population expansion and the movement of groups into areas minimally used in the earlier periods. Early and Middle Woodland sites are the most common on the South Carolina coast and generally consist of shell middens near tidal marshes, along with ceramic and lithic scatters in a variety of other environmental zones. It appears that group organization during this period was based on the semipermanent occupation of shell midden sites and the short-term use of interior coastal strand sites.

Middle Woodland Period (200 BC–AD 500). The extreme sea level fluctuations that marked the Ceramic Late Archaic and Early Woodland periods ceased during the Middle Woodland period. The Middle Woodland period began as sea level was rising from a significant low stand at 300 BC, and generally remained within 1.0 meter (3.3 ft) of current levels (Brooks et al. 1989). The comments of Brooks et al. (1989:95) are pertinent in describing the changes in settlement:

> It is apparent that a generally rising sea level, and corresponding estuarine expansion, caused an increased dispersion of some resources (e.g., small inter-tidal oyster beds in the expanding tidal creek network ...). This hypothesized change in the structure

> of the subsistence resource base may partially explain why these sites tend to be correspondingly smaller, more numerous, and more dispersed through time.

Survey and testing data from a number of sites in the region clearly indicate that sites of the Middle Woodland period are the most frequently encountered throughout the region. These sites include small, single-house shell middens, more significant shell middens, and a wide variety of shell-less sites of varying size and density in the interior. Current data from the region suggest seasonal mobility, with certain locations revisited on a regular basis (e.g., 38GE46 [Espenshade and Brockington 1989]). Subsistence remains indicate that oysters and estuarine fish were major faunal contributors, while hickory nuts and acorns have been recovered from ethnobotanical samples (Espenshade and Brockington 1989; Drucker and Jackson 1984; Trinkley 1976, 1980).

The Middle Woodland period witnessed increased regional interaction and saw the incorporation of extralocal ceramic decorative modes into the established Deptford technological tradition. As Caldwell (1958) first suggested, the period apparently saw the expansion and subsequent interaction of groups of different regional traditions (Espenshade 1986, 1990).

Late Woodland Period (AD 500–1000). The nature of Late Woodland adaptation in the region is unclear due to a general lack of excavations of Late Woodland components, but Trinkley (1989:84) offers this summary:

> In many respects the South Carolina Late Woodland may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas there were major cultural changes, such as the continued development and elaboration of agriculture, the Carolina groups settled into a lifeway not appreciably different from that observed for the past 500 to 700 years.

The Late Woodland coincides with relatively stable sea levels; fluctuations during this period vary 0.39 to 0.6 meters (1.3 to 2.0 ft) (Brooks et al. 1989). It would be expected that this general stability in climate and sea level would result in a well-entrenched settlement pattern, but the data are not available to address this expectation. In fact, the recognition/interpretation of Late Woodland adaptations in the region has been somewhat hindered by past typological problems.

Overall, the Late Woodland is noteworthy for its lack of check-stamped pottery. Recent excavations at the Buck Hall Site (38CH644) in the Francis Marion National Forest suggest that

McClellanville and Santee ceramic types were employed between AD 500 and 900, and represent the dominant ceramic assemblages of this period (Poplin et al. 1993).

Typically, the Late Woodland, as defined by Anderson et al. (1982), has been separated into two phases: McClellanville (AD 500–700) and Santee I (AD 700–900). A revised chronology is offered by Poplin et al. (1993) that not only includes these phases but also incorporates ceramics previously assigned to the Santee II phase by Anderson et al. (1982). These ceramics include Santee Simple Stamped, McClellanville Cord Marked, McClellanville Fabric Impressed, and Wilmington Cord Marked pottery. Although these ceramics have been encountered in an Early Mississippian context, closer inspection reveals that they occur no more frequently than Deptford Cord Marked and Fabric Impressed sherds, which have been relegated to the Late Woodland period. The presence of these sherds in such a late context is more likely the result of bioturbation than the continuation of the ceramic technology.

The sea level change at this time caused major shifts in settlement and subsistence patterns. The rising sea level and estuary expansion caused an increase in the dispersion of resources such as oyster beds and a corresponding increase in the dispersion of sites. Semipermanent shell midden sites continue to be common in this period, although overall site frequency appears to be lower than during the Early Woodland. Instead, there appears to be an increase in short-term occupations along the tidal marshes. Espenshade et al. (1994) state that at many of the sites postdating the Early Woodland period, the intact shell deposits appear to represent short-term activity areas rather than permanent or semipermanent habitations.

Mississippian Period (AD 1000–1200). In much of the Southeast, the Mississippian period was a time of major mound ceremonialism, regional redistribution of goods, chiefdoms, and an emphasis on maize horticulture as a major subsistence activity. It is unclear how early and to what extent similar developments occurred in the region. The ethnohistoric record, discussed in greater detail below, certainly indicates that seasonal villages and maize horticulture were present in the area and that significant mound centers were present in the interior Coastal Plain to the north and west (Anderson 1989; DePratter 1989; Ferguson 1971, 1975).

Distinct Mississippian ceramic phases have been recognized for the region (Anderson 1989; Anderson et al. 1982). By the end of the Late Woodland period, cord-marked and fabric-impressed decorations are replaced by complicated stamped decorations. Anderson (1989:115) notes that "characteristically Mississippian complicated stamped ceramics do not appear until at least AD 1100,

and probably not until as late as AD 1200, over much of the South Carolina area." Recent excavations at the Buck Hall Site (38CH644) produced radiocarbon dates around AD 1000 for complicated stamped ceramics similar to the Savannah series (Poplin et al. 1993). This represents the earliest date for complicated stamped wares in the region.

Two distinct ceramic phases characterize the Mississippian period: the Early Mississippian Jeremy phase (AD 1000–1400) and the Late Mississippian Pee Dee phase (AD 1400–1550). The Jeremy phase includes Savannah Complicated Stamped, Savannah Check Stamped, and Burnished and Semi-burnished plain pottery. Previous sequences for the region have separated the ceramic types belonging to these two phases into Early, Middle, and Late Mississippian. However, a simpler characterization of the technological advancements made during the Mississippian period is more appropriate. Over the course of the Mississippian period, the decorative techniques that characterize the Early Mississippian period are simply evolving and do not result in a distinctly new ceramic type until the Late Mississippian period.

Early Mississippian sites in the region include shell middens, sites with multiple- and single-house shell middens, and oyster processing sites (e.g., 38CH644 [Poplin et al. 1993]). Adaptation during this phase apparently saw a continuation of the generalized Woodland hunting-gathering-fishing economy, with perhaps a growing importance on horticulture and storable foodstuffs. Anderson (1989) suggests that environmental unpredictability premised the organization of hierarchical chiefdoms in the Southeast beginning in the Early Mississippian phase; the redistribution of stored goods (i.e., tribute) probably played an important role in the Mississippian social system. Maize was recovered from an Early Mississippian feature at 38BK226, near St. Stephen (Anderson et al. 1982:346).

During the Late Mississippian Pee Dee phase (AD 1400–1550) the regional chiefdoms apparently realigned, shifting away from the Savannah River centers to those located in the Oconee River basin and the Wateree-Congaree basin. As in the Early Mississippian Jeremy phase, the Berkeley/Charleston County area apparently lacked any mound centers. Regardless, it appears that the region was well removed from the core of Cofitachequi, the chiefdom to the interior (Anderson 1989; DePratter 1989). DePratter (1989:150) specifies:

> The absence of 16th century mound sites in the upper Santee River valley would seem to indicate that there were no large population centers there. Any attempt to extend

the limits of Cofitachequi even farther south and southeast to the coast is pure speculation that goes counter to the sparse evidence available.

Pee Dee Complicated Stamped and Mississippian Plain ceramics mark the Pee Dee phase. Simple stamped, cord marked, and check stamped pottery apparently was not produced in this period.

Protohistoric Overview

The Protohistoric period begins in South Carolina with the first Spanish explorations into the region in the 1520s. Native American groups encountered by the European explorers and settlers probably were living in a manner quite similar to the late prehistoric Mississippian groups identified in archaeological sites throughout the Southeast. Indeed, the highly structured Native American society of Cofitachequi, formerly located in central South Carolina and visited by De Soto in 1540, represents an excellent example of the Mississippian social organizations present throughout southeastern North America during the late prehistoric period (Anderson 1985). However, the initial European forays into the Southeast contributed to the disintegration and collapse of the aboriginal Mississippian social structures; disease, warfare, and European slave raids all contributed to the rapid decline of the regional Native American populations during the sixteenth century (Dobyns 1983; Ramenofsky 1982; Smith 1984). By the late seventeenth century, Native American groups in coastal South Carolina apparently lived in small, politically and socially autonomous, semi-sedentary groups (Waddell 1980). By the middle eighteenth century, very few Native Americans remained in the region; all had been displaced or annihilated by the ever-expanding English colonial settlement of the Carolinas (Bull 1770, cited in Anderson and Logan 1981:24-25).

The ethnohistoric record from coastal South Carolina suggests that Protohistoric groups of the region followed a seasonal pattern that included summer aggregation in villages for planting and harvesting domesticates, and dispersal into one- to three-family settlements for the remainder of the year (Rogel 1570 [in Waddell 1980:147-151]). This coastal Protohistoric adaptation is very similar to the Guale pattern of the Georgia coast, as reconstructed by Crook (1986:18). Specific accounts of the Protohistoric groups of the region, the Sewee and the Santee, are summarized by Waddell (1980). It appears that both groups included horticultural production within their seasonal round, but did not have permanent, year-round villages. Trinkley (1981) suggests that Sewee groups produced a late variety of Pee Dee ceramics in the region; this late variety may correspond to the Ashley ware initially described by South (1973; see also Anderson et al. 1982).

Waddell (1980) identified 19 distinct groups between the mouth of the Santee River and the mouth of the Savannah River in the middle of the sixteenth century. Anderson and Logan (1981:29) suggest that many of these groups probably were controlled by Cofitachequi, the dominant Mississippian center/polity in South Carolina, prior to its collapse. By the seventeenth century, all were independently organized. These groups included the Coosaw, Kiawah, Etiwan, and Sewee "tribes" near the Charleston peninsula. The Coosaw inhabited the area to the north and west along the Ashley River. The Kiawah were apparently residing at Albemarle Point and along the lower reaches of the Ashley River in 1670, but gave their settlement to the English colonists and moved to Kiawah Island; in the early eighteenth century they moved south of Combahee River (Swanton 1952:96). The Etiwans were mainly settled on or near Daniel Island to the northeast of Charleston, but their range extended to the head of the Cooper River. The territory of the Sewee met the territory of the Etiwan high up the Cooper, and extended to the north as far as the Santee River (Orvin 1973:14).

Historic Overview of the Wando Basin

Spanish exploration on the South Carolina coast began as early as 1514, and a landing party went ashore in the Port Royal vicinity (now Beaufort County) in 1520 at a spot they named Santa Elena (Hoffman 1983:64; Rowland 1985:1). From that time on, the Port Royal area was of great interest to both the Spanish and the French. This was not a permanent settlement, however. The first Spanish attempt at a permanent settlement on the South Carolina coast, in 1526, was San Miguel de Gualdape. It appears to have been in the Winyah Bay area, near Georgetown (Quattlebaum 1955). The French, under Jean Ribault, also attempted to establish a settlement on the South Carolina coast in 1562. This settlement, on Parris Island, was called Charlesfort, and also was unsuccessful.

French presence on the South Carolina coast drew the Spanish back to protect their original interest. Spanish forces attacked Charlesfort and established their own settlement of Santa Elena in 1566. Recent archaeological evidence indicates that the Spanish built their new settlement of Santa Elena on top of the destroyed French settlement. The Cusabo, a local tribe, were less than friendly, but despite numerous attacks and several burnings, the Spanish settlers did not abandon Santa Elena until 1587 (Lyon 1984; Rowland 1978:25-57). The Spanish maintained their interest in Santa Elena as part of a series of missions on the Sea Islands from St. Augustine, Florida, through Georgia, and into South Carolina; Spanish friars were at "St. Ellens" when William Hilton visited the area in 1663

(Covington 1978:8-9; Hilton 1664). During its 20-year existence, Santa Elena served as the base for the first serious explorations into the interior of the state.

English Colonial Occupation. Settlers in the Carolina Lowcountry were caught up in and were an integral part of wide-ranging disputes and rivalries among the English, Spanish, Native Americans, and African slaves. These disputes and rivalries encompassed nearly all of the Lowcountry, an area that spanned hundreds of miles from Georgetown, South Carolina, to northern Florida. The Spanish had routed the French in East Florida in 1565, and established a settlement at what is now St. Augustine. This Spanish presence was a continual threat to the English settlers, particularly after the 1670s, when Spain learned of the Charles Towne settlement.

King Charles II of England disregarded Spain's claim to the region, and in 1663 he granted Carolina to the Lords Proprietors. The next year, a group of Barbados planters hired William Hilton to explore the acquisition. He spent over a month in the waters of both Port Royal and St. Ellens, leaving with a high opinion of the area's potential as a colony. Prompted by the account of tall pines and good soils, a small colony set out for Port Royal. Tales of hostile tribes convinced them to move farther north, though, where they founded Charles Towne in 1670 (Holmgren 1959:39). One of the first orders of business for the settlers was initiating trade with the native tribes as a way of ensuring both economic and physical survival (Covington 1978:9).

Scottish dissenters established Stuart's Town on Port Royal Island in 1684; it was short-lived and was destroyed by the Spanish in 1686. A series of large land grants beginning in 1698 signaled a renewed interest in settling Port Royal (Holmgren 1959:42). When the town of Beaufort was chartered in 1711, the Yamasee had 10 villages in what are now Beaufort and Jasper counties. Angered by mistreatment from traders, the Native Americans attacked in the Yamasee War in 1715 but did not succeed in dislodging the English (Covington 1978:12). At the time, the war was blamed on Spanish influence from Florida, but a more likely cause was the English traders' practice of seizing Native American women and children and holding them as slaves to meet tribal debts.

The conclusion of the Yamasee War also made settlement in the Charleston vicinity easier. The early economic development in the Wando Basin near Charleston initially focused on tribal trade. Trade with the Native Americans was pursued aggressively through the beginning of the eighteenth century, but by 1716 conflicts with the Europeans and disease had drastically reduced or displaced the local native population. As a result, naval stores and agricultural industries soon replaced the furs and other local commodities acquired from the aboriginal inhabitants of the region.

However, trade with the interior Catawba and Cherokee would continue throughout the eighteenth century.

Many early settlements and plantations in the area had focused on the Cooper and Wando rivers. These streams provided the best opportunity for profitable agricultural production (i.e., rice cultivation) and the best avenues for transportation to Charleston or other settlements in the region (South and Hartley 1985). Evidence of the many plantations along these rivers remains today primarily as archaeological sites, although some, such as Rice Hope Plantation near Moncks Corner, are still occupied.

Naval stores production flourished for a short period with the encouragement of bounties provided by the Crown. However, England failed to recognize the extensive supplies of the pine lands on the Carolina coastal strand, and the production of naval stores quickly surpassed demand.

The new colony was organized with the parish as the local unit of government by the Church Act of 1706. The church building itself served both religious and political purposes. As Gregorie (1961:5) explains, "The parish church as a public building was to be the center for the administration of some local government in each parish, for at that time there was not a courthouse in the province, not even in Charleston." The project area on the east side of the Wando River lies in Christ Church Parish. The boundaries of Christ Church Parish were established in 1708 as the Wando River, Awendaw Creek, and the Atlantic Ocean. On the west side of the Wando lies St. Thomas Parish, often referred to as St. Thomas and St. Denis after the immigration of many French Huguenots into this portion of Berkeley County during the early eighteenth century.

After 1720 the economy of the Wando region shifted to farming and stock husbandry. As early as 1720, rice accounted for half the colony's profits, and the importance of rice increased over the next 140 years. It was complemented by the introduction of indigo as a cash crop in 1740 (Pinckney 1976). While rice production was restricted to interior swamps and (later) river marshes, indigo grew best in well-drained soils. Plantations in Christ Church Parish were consistently located along the Wando River and its tributaries; most of the 700 slaves present in the parish in 1724 were also probably concentrated on the Wando River plantations.

The last recorded Native American skirmish of Christ Church Parish occurred in 1751. The location of the encounter between raiding northern tribes and the parish militia is described as "near the seaside, about two miles from the parish-church" (Drayton 1802 [cited in Gregorie 1961:44]).

This last encounter was significant for removing any final fears of the settlers and for prompting greater movement of people into the Lowcountry.

The colonies declared their independence from Britain in 1776, following several years of increasing tension due to unfair taxation and trade restrictions imposed on them by the British Parliament. South Carolinians were divided during the war, although most citizens ultimately supported the American cause. Those individuals who remained loyal to the British government tended to reside in Charleston or in certain enclaves within the interior of the province.

Britain's Royal Navy attacked Fort Sullivan (later renamed Fort Moultrie) near Charleston in 1776. The British failed to take the fort, and the defeat bolstered the morale of American revolutionaries throughout the colonies. The British military then turned their attention northward. They returned in 1778, however, besieging and capturing Savannah late in December. A major British expeditionary force landed on Seabrook Island in the winter of 1780, and then marched north and east to invade Charleston from its landward approaches (Lumpkin 1981:42-46). The rebel South Carolinians were not prepared for an attack from this direction. They were besieged and entirely captured in May after offering a weak defense. Charleston subsequently became a base of operations for British campaigns into the interior of South Carolina, Georgia, and North Carolina. However, the combined American and French victory over Lord Cornwallis at Yorktown in 1782 effectively destroyed British military activity in the South and forced a negotiated peace (Lumpkin 1981). The 13 colonies gained full independence, and the English evacuated Charleston in December 1782.

The project area was not directly involved in any battles of the Revolutionary War, and South Carolina saw little action between the failed British attempt to take Charleston in 1776 and their successful occupation of Charleston in 1780. An important outcome of the Revolutionary War was the removal of royal trade protection, which caused a drastic reduction in rice profitability. As a result, many planters along the Wando River and surrounding areas began to supplement their rice plantings with cotton agriculture. Unfortunately, Wando Basin soils were not as productive as those of the Sea Islands.

Christ Church Parish During the Antebellum Period. Christ Church Parish accounted for only 1.7 percent of the cotton production in the Charleston District by 1860, although the parish contained 10 percent of the improved land in that district. Furthermore, the rice production of the parish had decreased drastically from 1850 to 1860. Similar conditions prevailed in the neighboring portions of St. Thomas Parish. As Brockington et al. (1985:41) report:

> The heretofore principal economic base of the parish was lost in the 1850s as production of rice during that decade fell from 964,000 to 180,000 pounds, a precipitous drop of 81.3%. The Christ Church rice planters relied on the Wando River for cultivation of the crop, an estuary not ideally suited for the more efficient and productive method of tidal rice agriculture. The higher saline content of the Wando restricted the amount of freshwater tidal agriculture that could be conducted along the river. As a result, the rice planters in the parish could neither effectively compete with the tidal rice plantations in the other parishes of the Charleston District nor withstand the pressures of oversupply and outside competition (see various census data presented by Lees 1980:48).

Farmers in Christ Church Parish in turn put greater emphasis on ranching and truck farming (Brockington et al. 1985:41). Thus, as the Civil War approached, the economy of Christ Church Parish had already begun to move away from the old plantation system associated with rice agriculture.

Although the Civil War brought extensive battles to Charleston, the project area saw relatively little action. Confederate defensive works were constructed early in the war to prevent Union land forces from advancing on Charleston, but the Union strategy bypassed the Wando Neck and the Cainhoy Peninsula, and the earthworks did not see battle. The remains of this defense line are present east of US Highway 17, culminating in the Palmetto Battery (38CH953) on the edge of Copahee Bay (Espenshade and Poplin 1988).

Reconstruction and the Postbellum Period. The Civil War effectively destroyed the plantation system in South Carolina and the rest of the South. This meant profound changes for the area both economically and socially. The antebellum economic system disintegrated as a result of emancipation and the physical destruction of agricultural property through neglect and (to a lesser extent) military action. A constricted money supply coupled with huge debt made the readjustments worse. The changes were enormous. Land ownership was reshuffled as outsiders began purchasing plots and former plantations that had been abandoned in the wake of the Civil War. Newly freed slaves often exercised their freedom by moving, making the labor situation even more unsettled.

One result of this migration was a variety of labor systems for whites as well as freed African Americans; this fostered an period of experimentation and redefinition in the socioeconomic relationships between the freed African Americans and white landowners. The Reconstruction period also witnessed a drastic increase in the number of farms and a drastic decrease in average farm size as predominantly white landowners began selling and/or renting portions of their holdings.

Brockington et al. (1985:49) summarize the census data and report an increase in Christ Church Parish farms from 61 in 1860 to 517 in 1870, with 77 percent of the later farms containing 10 acres or less. Diversified land use was common within single farms in the parish; corn, cotton, and beef were the major products. In 1880, 55 percent of the farms in Charleston County were tenant operated.

The Twentieth Century and the Rise of the Sunbelt. Besides corn, cotton, and cattle, truck farming was a major element of postbellum agriculture in the region. Truck crops accounted for 24 percent of the agricultural value for Charleston County by 1900. The importance of truck farming in Charleston County grew significantly, and in 1930 truck crops represented 79 percent of all crops grown in Charleston County (Brockington et al. 1985:49). This level of importance has remained relatively stable through the present.

World War II had a profound impact on the entire Charleston area, as it had on so much of the South. The war created an economic boom throughout the nation, made more dramatic in the South by the number of military bases constructed there. The Charleston Navy Yard received new destroyers, shipbuilding plants, and other support facilities, while other military activities emerged in the city's surrounding region. While the population rose modestly in the central city, it rose dramatically in the suburbs and villages in the area. The area was put on a war footing as a result of the harbor and the Navy Yard, as German U-boats patrolled the harbor in the early years of the war (Fraser 1989:387-389). The area's waterways became important avenues for civilian patrols and other shipments.

Since World War II, the region has continued to possess many small farms. In addition, timber harvesting returned as a major industry, particularly in the northern and more inland portions of Charleston and Berkeley counties. Limited industrial developments occurred along the Wando; however, the greatest change is evidenced by the development of Mount Pleasant, at the mouth of the Wando, and adjacent areas as a bedroom community for the expanding greater Charleston area. Service facilities for these residents also have increased. Much of the agricultural and forest land of the lower Wando River is being developed as residential tracts.

A History of the Project Area

The land containing the project corridor has been owned, occupied, and divided among extended families throughout the eighteenth and nineteenth centuries. Tracts changed size and function with each successive generation. The results of these descendant occupations, in addition to a complex chain of title, are the archaeological remains that reflect several individual occupations scattered through the region.

The history of these plantations, moreover, replicates the varying degrees to which Christ Church Parish reflected the wider developments of the Lowcountry. As the preceding historical overview has demonstrated, planters in the parish were only rarely able to create the kinds of large-scale plantations that flourished in other portions of Charleston District, or in the Beaufort and Georgetown districts. The Wando River provided few opportunities for large and successful rice plantations, and the soil did not permit the successful cultivation of either short- or long-staple cotton. The parish during the antebellum period was at odds to some degree with its neighbors to the north and south. After the Civil War, however, as rice and Sea Island cotton production declined along the South Carolina coast, timber, truck farming, and phosphates arose to take their place. Christ Church Parish kept pace with these new developments.

The current project area is land historically owned by the O'Hear family. This plantation changed names and acreage a number of times as it was sold and resold in the eighteenth, nineteenth, and early twentieth centuries.

Starvegut Hall Plantation Before the Civil War. In 1704 Thomas Cary received a grant for 620 acres, including the project area, from the Lords Proprietors (Charleston County Deed Book [CCDB] XX:256-257). A plat of this grant shows a house at the edge of the property southwest of the project corridor. A person named Grant sold his Wando River property to Daniel Island planter George Logan in 1706. Logan also purchased the adjacent Francis Garcia grant and combined them to form one large plantation (CCDB XX:249-250). When Logan died in 1719, the Cary grant (including the project tract) was left to his eldest son, George Logan Jr. (Charleston County Will Book A3:651). George Logan Jr. owned the property until 1739, when he leased and then sold it to Dr. Lionel Chalmers, who was married to Logan's daughter, Martha (CCDB A3:651). In 1746 Chalmers resold the property to his father-in-law after several years of trying to sell it on the open market. An advertisement in the *South Carolina Gazette* stated that the plantation was "pleasantly situated" and furthermore "very convenient to settle Brick Works upon" (Wayne and Dickinson

1996:57). The ad, unfortunately, did not include a description of any buildings or possible land uses other than to say the property had excellent clay, steep landings, and wood for kilns. Figure 6 presents a McCrady plat showing the approximate location of the project corridor.

Logan's widow, Martha, conveyed the property to her son George Logan III in 1749 (CCDB A3:351). In 1753 George Logan III and his wife, Elizabeth, leased the property (including the project area) to William Vanderhorst (CCDB SS:200). Vanderhorst eventually bought the Logan property and again combined it with the Garcia grant to form one plantation. Vanderhorst sold the property in 1759 to successful business man, attorney, and public official William Hopton. When botanist John Bartram visited Hopton's plantation in 1760, he commented that he had "set out with Mr. Hopton to Starvegut Hall, on Wando River... he showed me rice ground and Salt swamps." The plantation also had a small brick house near the river, about one mile east of Cainhoy on the south side of the Wando. This location corresponds with a settlement shown opposite the present O'Hear's Point and east of the project area on a 1783 plat of William Hopton's plantation.

Hopton's Plantation consisted of 1,080 acres bordered by the Wando River, Mill Creek, and Wagner Creek and the additional 460-acre Garcia grant situated at the mouth of Wagner Creek. The plantation was conveyed to Hugh Smith following Hopton's death in 1786. The property was sold in 1808 to James Gregorie II, the Scottish-born son of Charleston merchant James Gregorie. James Gregorie II also purchased the Martin Tract immediately to the southwest between Mill Creek and Parkers Island. Gregorie operated a brickyard near the original Hopton settlement but lived in Charleston with his wife and children. The 1800 census listed plantation overseer Jacob Cherrytree, his family, and 20 slaves as the only residents of Gregorie's Wando Plantation. However, following his wife's death in 1834, Gregorie moved to his Wando property. The plantation's main settlement was located on a creek southwest of present SC Route 41. Gregorie also operated a ferry from his plantation to Cainhoy; the ferry was located east of the project area opposite the ferry's other landing at present-day O'Hear's Point. The majority of the Gregorie plantation remained wooded, including the project corridor, which was west of the main settlement (Wayne and Dickinson 1996:57-68).

After Gregorie's death, his heirs sold the bulk of his Wando holdings to Dr. John S. O'Hear in 1853. O'Hear's main property was located on the north side of the Wando opposite the tract purchased from the Gregories. O'Hear lived on his plantation on the north side of the river and left the Gregorie Tract (including the project tract) in the care of an overseer and slaves. O'Hear was a rice and cotton planter, brickmaker, and physician. He also continued to operate the ferry to Cainhoy while he owned the property. His extensive brickmaking operations were abandoned during the

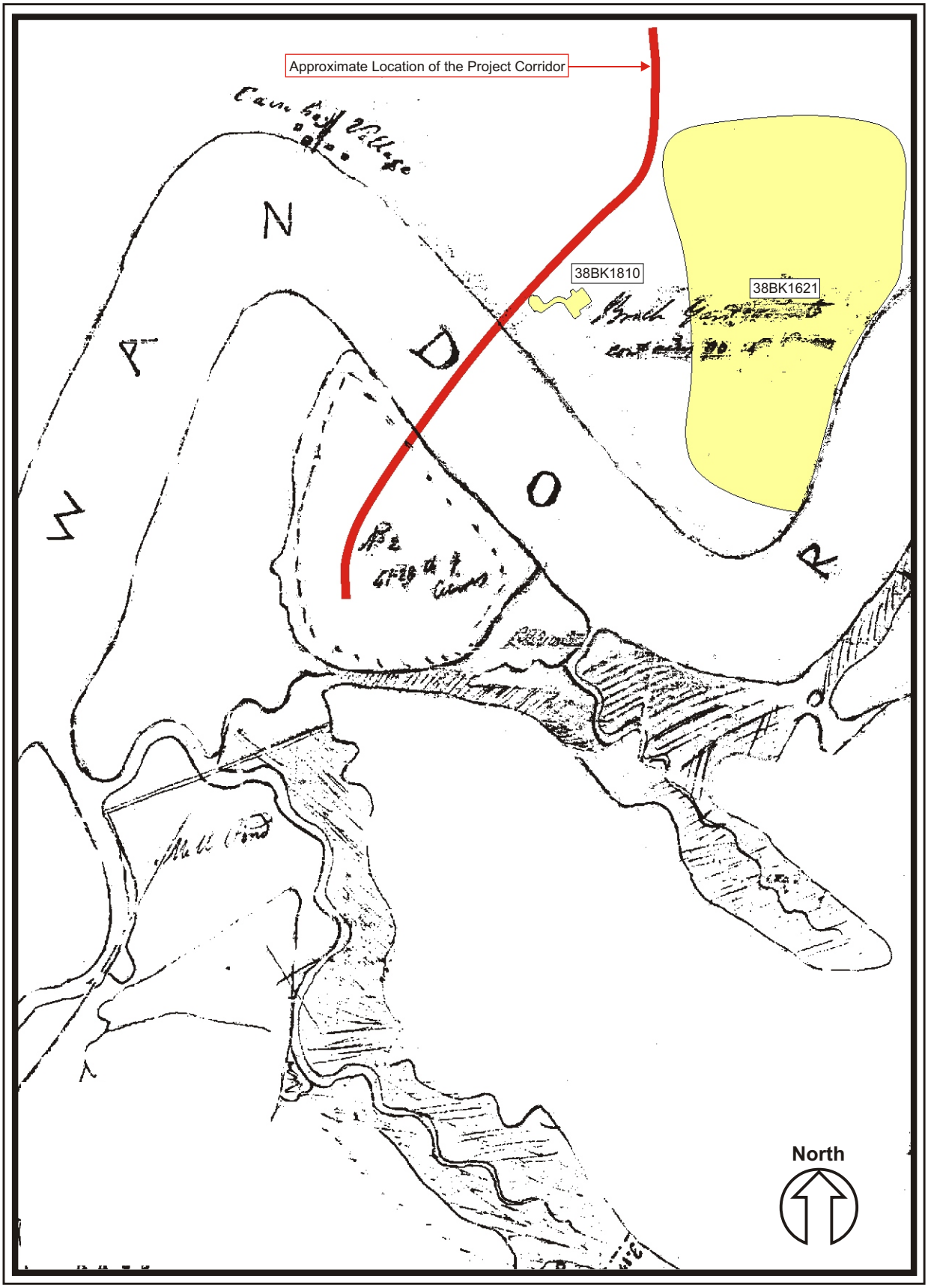


Figure 6. McCrady Plat showing the approximate location of the project corridor and sites 38BK1810 and 38BK1621.

Civil War as most planters fled to the interior of the state. O'Hear was a signer of the Ordinance of Secession, and as a result Union forces destroyed all standing structures on his plantation. The O'Hears managed to retain control of their property following the war, and the land was rented to tenant farmers or extensively logged (Wayne and Dickinson 1996:68-69). Figure 7 displays the tracts in the project area during the early twentieth century. The project is owned by Anna B. O'Hear and O'Hear, Trustee.

When John O'Hear died in 1876, his heirs sold his land on the south side of the Wando River to William Moultrie Ball. Ball renamed the property Jettywood Plantation. The plantation was of marginal value and appears only to have been used for timbering, if at all. The property was eventually bought during the Great Depression by Henrietta Hartford and combined into a 4,000-acre wildlife refuge. She built stables, a wharf, and a home east of the Wando River shore (Wayne and Dickinson 1996:69-72).

Henrietta Hartford married a Roman diplomat, Prince Guido Pignatelli di Montecaivo, in 1937. They divided their time between homes in Washington, DC, in New Jersey, and on the Wando River. After fire destroyed their Wando River mansion, the property was sold to the O. L. Williams Veneer Company. The Williams Veneer furniture company merged with Georgia-Pacific Corporation in 1973. The property, including a portion of the project corridor, was logged and leased to private hunt clubs before being subdivided (CCDB W183:725). Figure 8 presents a 1920 topographical map showing the project corridor and sites 38 BK1810 and 38BK1621; note that site 38BK1810 includes a structure. Figure 9 presents the 1940 Berkeley County highway map showing the project area; this map shows no structures or buildings in the area.

Previous Investigations

Archaeologists and historians have conducted numerous cultural resources studies in the vicinity of the SC Route 41 Wando River bridge, including areas of potential new ROW for the replacement project. Summaries of the studies and the NRHP listed, eligible, or potentially eligible resources identified during those studies are provided in Tables 1 and 2. The locations of these resources are shown in Figure 1. Sites that are particularly relevant to the bridge and its approaches are shown in bold.

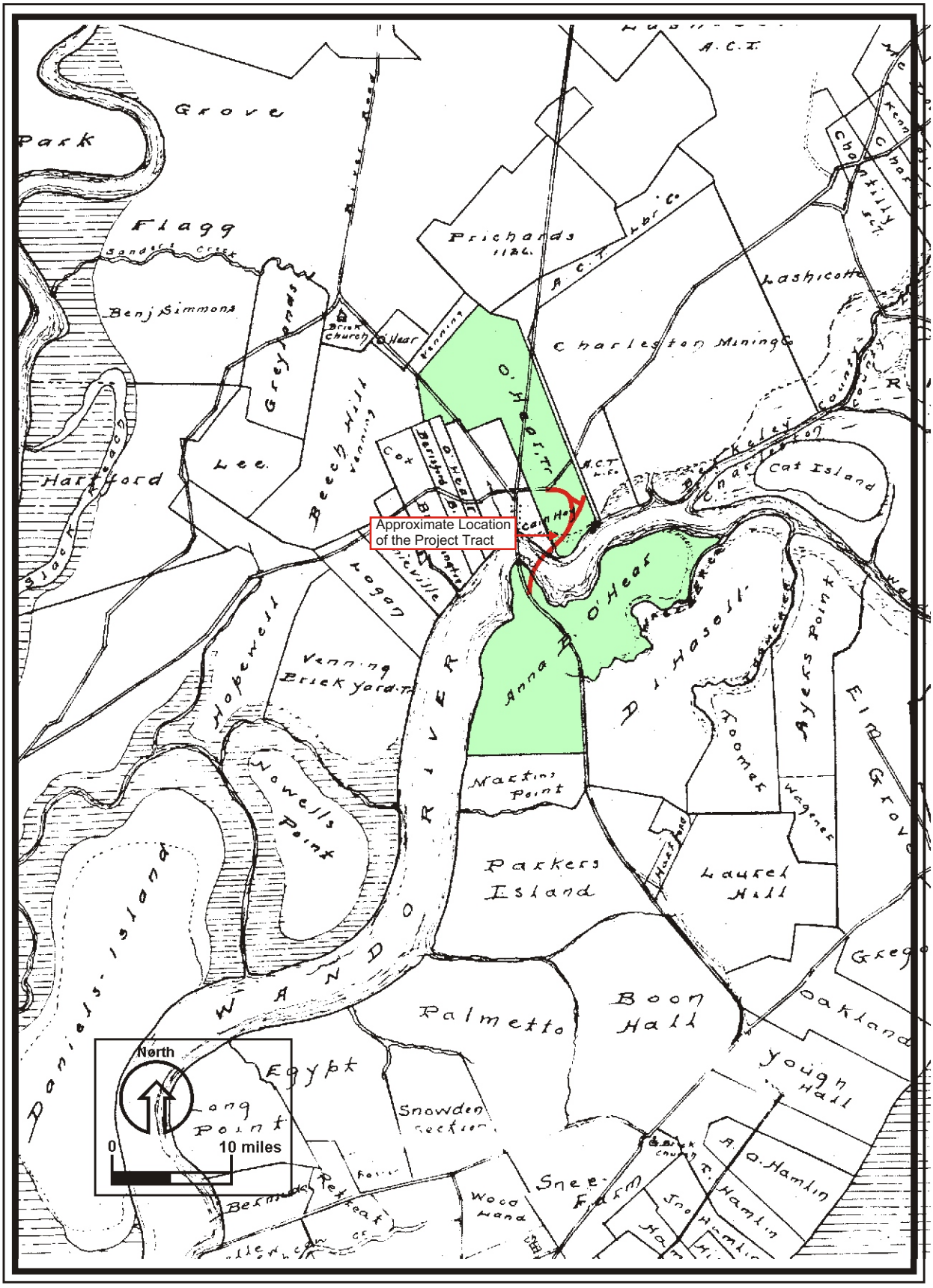


Figure 7. The location of the project tract in the early twentieth century (from Gaillard's 1900-1960 compilation of plats in Charleston, Berkeley, and Dorchester counties).

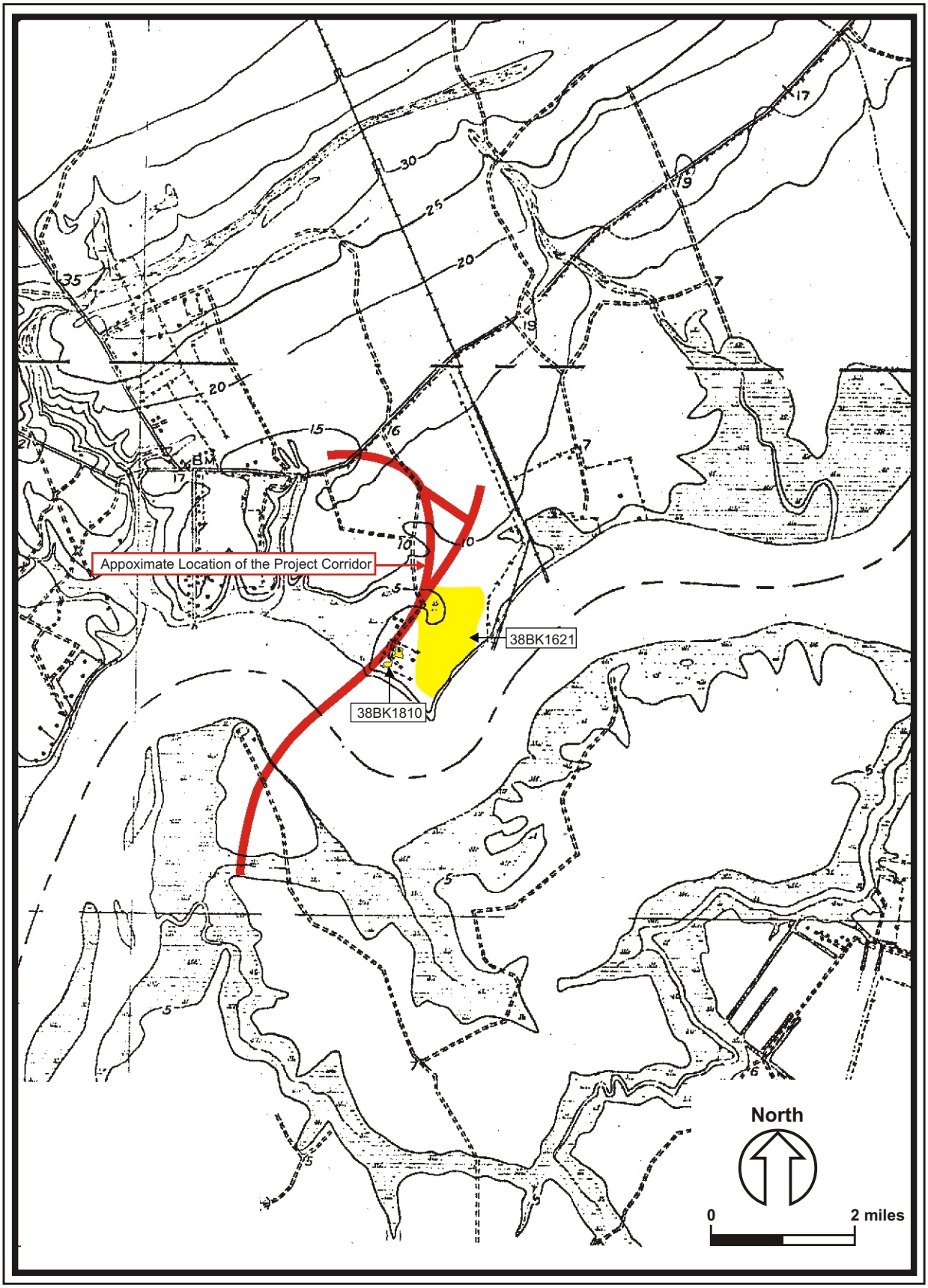


Figure 8. A portion of the 1920 topographical map showing the project corridor and 38BK1810 and 38BK1621.

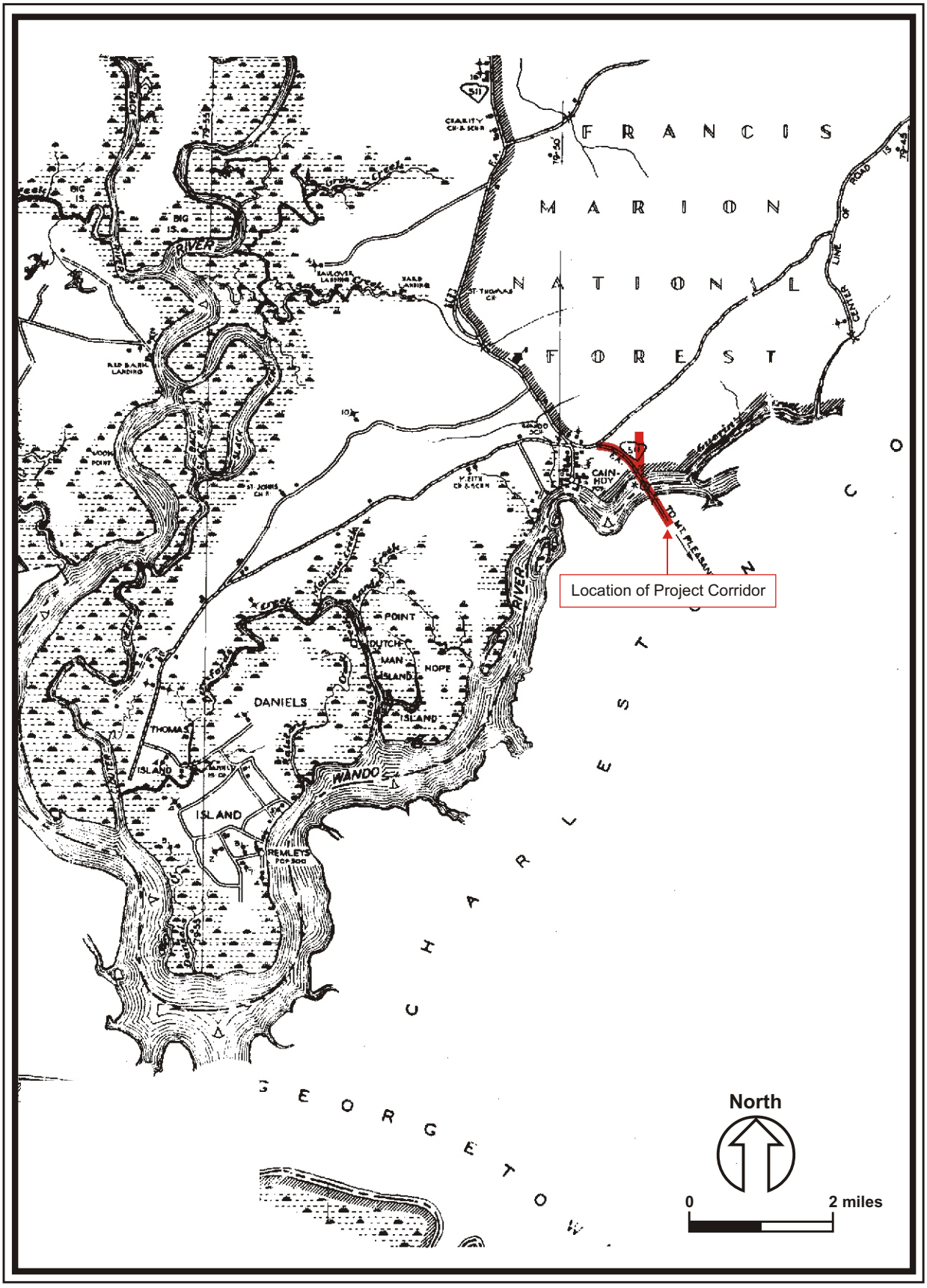


Figure 9. A portion of the Berkeley County Highway Map (1940) showing the project corridor.

Table 1. Archaeological Sites Within 1.6 km (1.0 mi) of the Project.

Site	Description	NRHP Eligibility	Proximity to Project km	mi	Reference(s)
38BK264	18th / 19th century scatter	Potentially Eligible	0.81	0.50	Wood (1977)
38BK265	18th century scatter	Potentially Eligible	0.81	0.50	Wood (1977)
38BK266	LA / LW scatter	Not Eligible	1.14	0.71	Wood (1977); Bailey (1997)
38BK267	LA - MW scatter	Not Eligible	1.30	0.81	Wood (1977); Bailey (1997)
38BK355	Woodland; 18th / 19th century scatter	Not Eligible	0.64	0.40	SCIAA site form
38BK356	Woodland/ 18th / 19th century scatter	Not Eligible	0.74	0.46	SCIAA site form
38BK379	18th / 19th century brick kiln	Potentially Eligible	1.18	0.73	SCIAA site form
38BK520	Woodland; unknown Post-Contact scatter	Not Eligible	1.05	0.65	Zierden (1981b)
38BK521	Middle Woodland scatter	Potentially Eligible	1.05	0.65	Zierden (1981b); Morgan (1983)
38BK547	Late 18th century scatter	Potentially Eligible	1.42	0.88	Zierden (1981a); Morgan (1983)
38BK548	18th / 19th century scatter	Potentially Eligible	1.61	1.00	Zierden (1981a); Morgan (1983)
38BK552	LW - MISS shell midden	Potentially Eligible	1.18	0.73	Zierden (1981a); Morgan (1983)
38BK553	20th century liquor still	Not Eligible	1.11	0.69	Zierden (1981a)
38BK554	18th century scatter	Not Eligible	1.11	0.69	Zierden (1981a)
38BK555	Unknown Pre-Contact scatter	Not Eligible	1.05	0.65	Zierden (1981a)
38BK556	18th / 19th century scatter	Potentially Eligible	1.37	0.85	Zierden (1981a); Morgan (1983)
38BK557	Unknown Post-Contact scatter	Not Eligible	1.61	1.00	Logan (1978)
38BK817	MW; 18th century scatter	Potentially Eligible	1.34	0.83	Pasquill (1985)
38BK819	Middle Woodland scatter	Not Eligible	1.30	0.81	Pasquill (1985)
38BK943	Prehistoric ceramic scatter	Not Eligible	1.58	0.98	Wise (1987a)
38BK944	Prehistoric ceramic scatter	Not Eligible	1.37	0.85	Wise (1987a)
38BK946	Historic tar kiln	Not Eligible	1.30	0.81	Wise (1987a)
38BK1294	18th / 19th century scatter	Not Eligible	1.58	0.98	Williams et al. (1992)
38BK1295	18th - 20th century scatter	Not Eligible	1.74	1.08	Williams et al. (1992)
38BK1296	LA; 18th / 20th century scatter	Not Eligible	0.03	0.02	Williams et al. (1992)
38BK1349	18th / 19th century brick kiln	Eligible	1.00	0.62	South (1993)
38BK1620	18th / 19th century brick kiln	Potentially Eligible	0.77	0.48	Wayne (1992); Poplin et al. (2002)
38BK1621	**18th / 19th century brick kiln**	**Potentially Eligible**	**0.00**	**0.00**	**Wayne (1992)**
38BK1622	18th / 19th century brick kiln	Potentially Eligible	0.56	0.35	Wayne (1992)
38BK1785	prehistoric/historic scatter	Not Eligible	1.18	0.73	Bailey (1997)
38BK1810	**18th / 19th century brick kiln**	**Eligible**	**0.00**	**0.00**	**Poplin and Wolf (1999)**
38BK1816	EW / MW scatter	Not Eligible	1.40	0.87	Poplin et al. (2002)
38BK1817	MW / LW scatter	Not Eligible	1.27	0.79	Poplin et al. (2002)
38BK1818	MW scatter	Not Eligible	1.42	0.88	Poplin et al. (2002)
38BK1819	18th / 19th century settlement	Eligible	0.77	0.48	Poplin et al. (2002)
38BK1985	Woodland; 19th / 20th century scatter	Not Eligible	1.55	0.96	Lansdell and Salo (2004)
38BK1986	Woodland/ 19th / 20th century scatter	Not Eligible	1.48	0.92	Lansdell and Salo (2004)
38BK1987	Unknown Pre-Contact scatter	Not Eligible	1.42	0.88	Lansdell and Salo (2004)
38CH307	Woodland scatter	Potentially Eligible	0.24	0.15	Wood (1977); Steen et al. (1983)
38CH651	Woodland; 18th century scatter	Potentially Eligible	0.50	0..31	Steen et al. (1983)
38CH1398	CLA - MW scatter; 18th / 19th century Hopton settlement	Eligible	1.48	0.92	Wayne and Dickinson (1994, 1996)
38CH1400	18th / 19th century Starvegut Hall settlement and brick kiln	Eligible	0.93	0.58	Wayne and Dickinson (1994, 1996)
38CH1481	Prehistoric and historic artifacts scatter	Not Eligible	1.37	0.85	Eubanks et al. (1994)
38CH1483	prehistoric shell and ceramics scatter	Not Eligible	1.30	0.81	Eubanks et al. (1994)

Table 2. Historic Architectural Resources Within 1.6 km (1 mi) of the Project.

Survey number	Name	Eligibility	Date of Construction	Reference
066 0006	Wando River Bridge	Not eligible	1941	Schneider and Fick 1989
066 0007	Wando Baptist Church	Not eligible	c.. 1930	Schneider and Fick 1989
066 0008	Lewis Fogarite House	Contributes to Listed District	c.. 1798	Schneider and Fick 1989
066 0009	George R. Sanders House	Contributes to Listed District	c. 1866	Schneider and Fick 1989
066 0010	Sanders House	Contributes to Listed District	c.1875	Schneider and Fick 1989
066 0011	Ward House	Contributes to Listed District	c.1890	Schneider and Fick 1989
066 0012	Village Store	Contributes to Listed District	c.1925	Schneider and Fick 1989
066 0013	Village Store-Blacksmith Sop	Contributes to Listed District	c.1875	Schneider and Fick 1989
066 0014	Cox House	Not eligible	1928	Schneider and Fick 1989
066 0015	Cainhoy Church Cemetery	Not eligible	c.1791	Schneider and Fick 1989

Berkeley County Above-Ground Survey. Stockton et al. (1990) conducted an aboveground historic resources survey of Berkeley County. This survey was funded jointly by Berkeley County and SCDAH. Twenty buildings and structures (sites 066 0001–066 0020) were recorded in the vicinity of Cainhoy. Most are located in the NRHP-listed Cainhoy Historic District, located approximately 701 meters (2,300 ft) northwest of the project (see Figure 1). Visually, the historic district is separated from the project by the Wando River, Detyens Shipyard, and the SC Route 41 bridge over the Wando River. Replacement of the bridge and widening of the road will not affect the Cainhoy Historic District. Stockton et al. (1990) recorded the SC Route 41 bridge over the Wando River as site 066 0006. This structure was built in 1941 and was determined not eligible for the NRHP.

SCE&G Pipeline. Steen et al. (1983) and Poplin and Wolf (1999) surveyed a 10.29-km (6.4-mi) long and 13.7-meter (45-ft) wide corridor from S-8-33 south along SC Route 41 to US Highway 17. Investigators identified no NRHP eligible or potentially eligible sites along the survey corridor. Site 38BK1810 is not eligible for the NRHP.

Cainhoy Historic District. In 1982 the Cainhoy or Lewisville (Louisville) Historic District was placed on the NRHP. This group of 12 buildings and an "open wooded space" reflect the development of an interior river port and village, with elements dating from the 1740s through the 1900s. Only nine of the buildings and the undeveloped wooded space contribute to the eligibility of the district. Cainhoy developed where Robert How operated a ferry over the Wando River, providing residents of St. Thomas Parish access to their lands and their neighbors in Christ Church Parish on

the opposite bank of the river. How built a tavern near the ferry landing in 1745. Between 1788 and 1801, Lewis Fogartie began selling narrow lots from his extensive lands on the Wando River, creating the current plan of land parcels along the river. Throughout the nineteenth century, Cainhoy served as a river port for Berkeley County planters and residents. Since the early 1980s, at least two of the buildings that contribute to the district have been lost. Renovations and repairs following Hurricane Hugo (September 22, 1989) also altered a number of the remaining buildings. What effect, if any, the bridge replacement has had on the historic district needs to be assessed.

Williams-Mt. Pleasant Transmission Line. Wood (1977) conducted an intensive survey of SCE&G's proposed Williams-Mt. Pleasant 230-Kv transmission line easement. Wood (1977) recorded five sites (38BK264–38BK267 and 38CH307) near the project corridor (see Figure 1). Sites 38BK264 and 38BK266 both contain subsurface eighteenth- to nineteenth-century artifacts in moderately disturbed contexts along the northern shore of the Wando River. Site 38BK266 was described as Late Archaic artifact scatters, and 38BK267 is a multicomponent historic and prehistoric site. Site 38CH307 was recorded as a surface and subsurface scatter of Middle Woodland ceramics. Wood (1977) recommended avoidance or testing of sites 38BK264–38BK267 and 38BK307, indicating that these sites are potentially eligible for the NRHP (Wood 1977:28-29).

Wayne's (1992) Study of Brickmaking Along the Wando River. Wayne (1992) summarizes the brickmaking industry on the Wando River during the colonial and antebellum periods. Her research resulted in the identification of numerous brickyards and kilns in the project area. These sites include 38BK1618–38BK1622; brickmaking facilities also are present in a number of sites in the Dunes West/Park West tracts, including sites 38CH1086, 38CH1400, 38CH1405, and 38CH1407. Most of these sites, including 38BK1621, were recommended potentially eligible for the NRHP based on their association with a significant historic industry in the Wando Basin and their ability to generate archaeological information concerning brickmaking.

Wando Bridge Tract Survey. Brockington and Associates, Inc., conducted an intensive cultural resources survey of a 20+-acre tract that is bound to the north by a gas station; to the east by the Wando River; to the south by marsh, an SCE&G 30.48-meter (100-ft) ROW, and the Charleston/Berkeley county line; and to the west by SC Route 41. Investigators identified no archaeological or architectural sites (Bailey and Hendrix 2000).

Hamlin Transmission Line. Steen et al. (1983) surveyed SCE&G's proposed Hamlin 230-Kv transmission line easement. They recorded five archaeological sites (38CH647–38CH651)

and revisited 38CH307 (see above). Site 38CH651 contains Woodland ceramics and eighteenth-century artifacts and architectural debris. This site is potentially eligible for the NRHP.

Dunes West. Wayne and Dickinson (1989a, 1989b) examined areas immediately south and west of the SC Route 41 bridge during their survey of the original Dunes West Tract. Subsequently, Dunes West has been subdivided into Dunes West and Park West. Wayne and Dickinson (1989a, 1989b) recorded 20 archaeological sites in this large tract; none of these sites are located within or adjacent to the Wando bridge. The remains of a portion of William Hopton's late-eighteenth-century Starvegut Hall plantation were recorded as 38CH1400. This site is located approximately 762 meters (2,500 ft) east of the bridge. Wayne and Dickinson conducted archaeological testing at the site; the site subsequently was determined eligible for the NRHP (Wayne and Dickinson 1993). The potential for this site to be adversely affected by future development on the site was mitigated through data recovery excavations completed in 1995 (Wayne and Dickinson 1996).

Cainhoy Area of Francis Marion National Forest. Williams et al.'s (1992) survey of 2,195 acres of US Forest Service land near Cainhoy identified one archaeological site. Site 38BK1296 is located on the north side of S-8-33, at its intersection with S-8-100. The site contains artifacts associated with three possible house sites, dating from the late nineteenth through early twentieth centuries. This site was determined not eligible for the NRHP.

Planter's Pointe and RiverTowne. Eubanks et al.'s (1994) survey and testing of the Planter's Pointe and RiverTowne (formerly Wando Plantation) tracts on the west side of SC Route 41 resulted in the identification of two sites (38CH1481 and 38CH1483). Site 38CH1481 is a very limited surface and subsurface scatter of historic and prehistoric artifacts. Site 38CH1483 is a sparse surface and subsurface scatter of Deptford and McClellanville ceramics indicative of a Middle to Late Woodland occupation. Both sites are not eligible for the NRHP.

John Bartlam Pottery Kilns. South's (1993) investigations to locate the pottery kilns of John Bartlam near Cainhoy resulted in the identification and study of 38BK1349. This NRHP-eligible site is a major asset for understanding the unique contribution Bartlam made to the story of ceramics in America (South 1993:4). This site is well away from the SC Route 41 bridge and contains no significant landscape or viewscape features; therefore, it is likely that the replacement project would not affect this resource.

Triton Real Estate Tract and Dobson Development Tract. Brockington and Associates, Inc., conducted an intensive survey of the Triton Real Estate Tract and Dobson Development Tract in March 2000 (Poplin et al. 2000a, 2000b). The tracts are adjacent to one another between Clements Ferry Road and the Wando River, east of the SC Route 41 bridge. One site (38BK1815) was recorded on the Dobson Tract and four sites (38BK1816–38BK1819) were recorded on the Triton Tract. Site 38BK1815 is a late-nineteenth- to early-twentieth-century site; investigators recommend this site not eligible for the NRHP. Site 38BK1816 is a small Middle Woodland ceramic scatter; investigators recommend this site not eligible for the NRHP. Site 38BK1817 is Middle Woodland-Mississippian, and 38BK1818 is a Middle Woodland scatter of Wilmington ceramics. Investigators recommend sites 38BK1817 and 38BK1818 potentially eligible for the NRHP. Site 38BK1819 contains the remains of the St. Thomas Parish rectory. Investigators recommend this site eligible for the NRHP. None of the eligible/potentially eligible sites contain aboveground elements that may be adversely affected by the replacement project.

Limerick Survey. Mike Harmon recorded sites 38BK355 and 38BK356 during survey work in the late 1970s (SCIAA site files, Columbia). Both sites were defined as prehistoric and eighteenth/nineteenth-century surface artifact scatters. No report was produced that documents these sites, and no NRHP recommendations were presented in the site forms; however, Harmon suggested that 38BK356 may contribute to the Cainhoy NRHP district. Both of these sites are buffered from the current project tract by extensive river and marsh as well as modern industrial development. The bridge replacement project is not likely to affect these sites.

Chapter III. Results and Recommendations

The cultural resources survey of the proposed SC Route 41 Wando River Bridge Replacement Project was designed to identify and assess all historic architectural resources, archaeological sites, and underwater sites in the APE. During the terrestrial archaeological survey, we revisited sites 38BK1810 and 38BK1621; we identified no new archaeological sites. Archaeologists relocated previously identified archaeological site 38BK1810 and expanded its boundaries. Site 38BK1810 is a nineteenth-century brick kiln associated with the brickmaking facilities at 38BK1621 (O'Hear's Point). We conducted field investigations of site 38BK1810 concurrently, and unknowingly, with investigators from TRC (Grunden and Henry 2006). Grunden and Henry (2006) conducted a cultural resources survey of an adjacent tract. Grunden and Henry (2006) recommended site 38BK1810 not eligible for the NRHP. Based on the outcome of a meeting including staff from SCDAH, SCDOT, Brockington and Associates, Inc., and TRC, it was determined that site 38BK1810 is not eligible for the NRHP. We also revisited site 38BK1621; none of the shovel tests produced artifacts. Investigators noted no brick fragments or artifacts on the ground surface in the reported area of site 38BK1621. The area in which Wayne (1993) noted brick along the shoreline of the Wando River is approximately 244 meters (800 ft) east of the project area. It is apparent that the site does not extend into the proposed new ROW for SC Route 41. Wayne (1993) provided no assessment of NRHP eligibility for site 38BK1621; however, we recommended the site potentially eligible for the NRHP. Grunden and Henry (2006) also recommended site 38BK1621 potentially eligible for the NRHP. However, the site does not extend into the project area and will not be affected by any proposed road improvement activities. We recommend the five new historic architectural resources identified in the architectural survey universe not eligible for the NRHP. We recommend Resource 066 0006, the Wando River Bridge, eligible for the NRHP under Criterion C because it embodies distinctive characteristics of a bridge type, bridge construction period, and method of construction; its replacement will be an adverse affect to the resource. Detailed descriptions of each resource and recommendations for their management follow. Figure 1 displays the locations of the APE and identified cultural resources.

Intensive Archaeological Survey

The archaeological survey of the SC Route 41 Wando River Bridge Replacement Project involved the pedestrian traverse of transects parallel to the existing SC Route 41 roadway, a portion

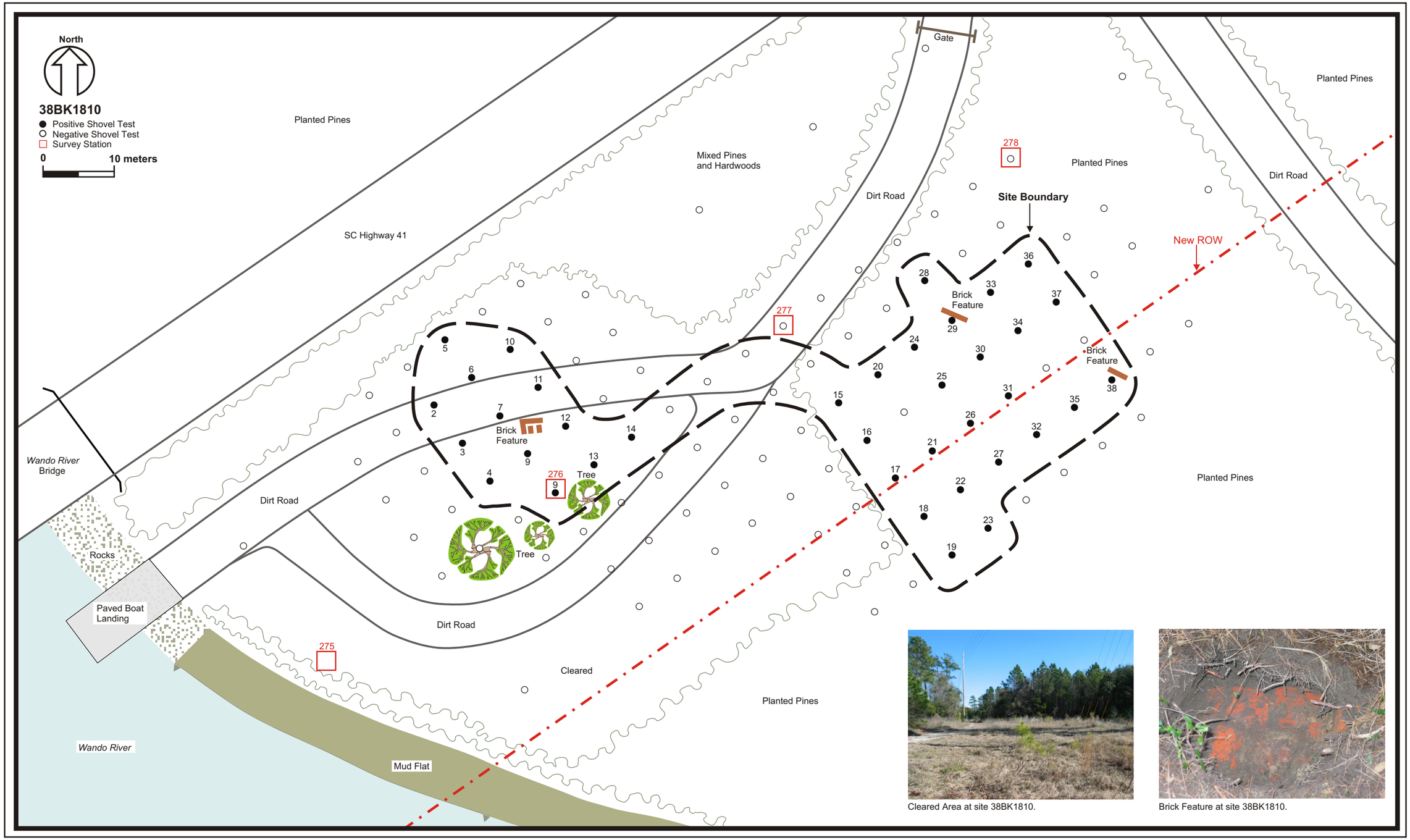
of Cainhoy Road, and an area of new ROW. The project archaeologist revisited two sites in the APE (38BK1810 and 38BK1621). The archaeological survey consisted of the excavation of 30-by-30-cm (1.0-by-1.0-ft) shovel tests every 30 meters (100 ft) along one survey transect on each side of the existing highway adjacent to the existing ROW. The archaeological survey identified no new archaeological sites or isolated finds.

Site 38BK1810 (Revisit)

Cultural Affiliation(s) *- Woodland; 19th century Post-Contact*
Site Type *- Pre-Contact ceramic scatter and Post-Contact brick kiln and scatter*
Site Dimensions *- 55 meters n/s by 65 meters e/w (180.4 ft by 213.2 ft)*
Soil Type *- Goldsboro loamy sands*
Elevation *- 4.6 meters (15 ft) amsl*
Nearest Water Source *- Wando River*
Present Vegetation *- Planted pine and mixed pine/hardwood forest*
NRHP/Management Recommendations *- Not eligible /no further management*

Site 38BK1810 is a multicomponent subsurface scatter of Pre-Contact ceramic artifacts and Post-Contact ceramic, glass, and metal artifacts and architectural materials. Poplin and Wolf (1999) recorded 38BK1810 during the archaeological survey of a proposed natural gas pipeline corridor for South Carolina Electric and Gas Company (SCE&G). The site is located east of SC Route 41 on O'Hear's Point overlooking the Wando River to the south (see Figure 1). The site measures 55 by 65 meters (180.4 by 213.2 ft). Poplin and Wolf (1999) reported an intact brick feature at 38BK1810; we located this feature in the western portion of the site and identified two additional brick features in the eastern portion of the site. These brick features are not bonded with mortar, indicating that they are probably former brick kilns. A heavy cable gate prevents access to the western portion of the site, which lies within a graded parking lot for a private boat ramp. The eastern portion of the site lies within planted pine forest. The site is heavily disturbed by modern activities associated with the boat landing, the SCE&G pipeline, and salvage logging operations in the aftermath of Hurricane Hugo in 1989. Two consecutive negative shovel tests at 5-meter intervals define the northern, eastern, and western site boundaries; the southern site boundary is defined by the edge of the archaeological APE. Figure 10 is a plan and view of 38BK1810.

We excavated 119 shovel tests in and around site 38BK1810; 37 (31 percent) of these shovel tests produced artifacts. Soils at 38BK1810 consist of a very dark grayish-brown Ap horizon at 0–20 cm (0–0.7 ft) below surface (bs) and a light yellowish-brown loamy sand A2 horizon at 0–40 cm (0.7–1.4 ft) bs, underlain by a yellowish-brown sandy clay loam Bt horizon at 40–60+ cm



Cleared Area at site 38BK1810.

Brick Feature at site 38BK1810.

Figure 10. Plan of site 38BK1810.

(1.4–2.0+ ft) bs. Long (1980) describes these soils as Goldsboro loamy sands. All of the artifacts were recovered from 0–30 cm (0–1.0 ft) bs. We identified evidence of at least three intact brick features. These brick features are probably former brick kilns. We exposed no other artifact concentrations at 38BK1810.

We recovered a total of 315 artifacts at 38BK1810. These include eight Pre-Contact ceramic artifacts and 307 Post-Contact artifacts. Additionally, we recovered 12,559.88 g of unglazed brick, 62.71 g of mortar, 15.01 g of tabby, 1.91 g of slate, 217.0 g of terra-cotta pipe, 53.71 g of unidentifiable twentieth-century building materials, 6.45 g of unidentifiable iron/steel, and 89.79 g of oyster shell. Table 3 summarizes the artifacts we recovered during shovel testing at 38BK1810. For a complete artifact inventory, see Appendix A.

Pre-Contact ceramic artifacts include seven grog-tempered eroded body sherds and one residual sherd. However, the scarcity and eroded condition of the Pre-Contact artifacts preclude a definitive temporal assessment of the site. However, the Pre-Contact ceramic artifacts are most likely associated with a Woodland occupation.

Post-Contact artifacts include a variety of ceramic artifacts, including creamware, ironstone, stoneware, whiteware, and yellowware. Additionally, we recovered numerous bottle glass fragments and window glass fragments. The most numerous artifacts at 38BK1810 are brown bottle glass fragments (n=64; 127.11 g), clear bottle glass fragments (n=71; 192.42 g), unidentifiable nails (n=80; 538.43 g), and brick (12,559.88 g). These artifacts account for 68 percent of the total artifact count and 95 percent of the total artifact weight at 38BK1810. The ceramic artifacts indicate a Mean Ceramic Date (MCD) of 1848. This date corresponds with the O'Hear tenure in and around 38BK1810.

Again, we conducted field investigations of site 38BK1810 concurrently, and unknowingly, with investigators from TRC (Grunden and Henry 2006). Grunden and Henry (2006) conducted a cultural resources survey of an adjacent tract. Grunden and Henry (2006) recommended site 38BK1810 not eligible for the NRHP. Based on the outcome of a meeting including staff from SCDAH, SCDOT, Brockington and Associates, Inc., and TRC, it was determined that site 38BK1810 is not eligible for the NRHP.

Table 3. Artifacts Recovered from Shovel Tests Excavated in 2005 at 38BK1810.

Era	Artifact Class	Artifact Type	Count	Weight (grams)
Pre-Contact	Ceramics	eroded sherds	**7**	**49.46**
		residual sherd	**1**	**1.81**
	Sub-total		**8**	**51.27**
Post-Contact	Architectural	brick fragments (grams)	**-**	**12559.88**
		common cut nails	**8**	**32.17**
		mortar / tabby (grams)	**-**	**77.72**
		slate (grams)	**1**	**1.91**
		unidentifiable nails	**80**	**538.43**
		terra cotta sewer pipe fragment	**1**	**217**
		20th century building materials	**4**	**53.71**
		window glass	**30**	**20.92**
	Firearms	center fire cartridge	**1**	**1.84**
	Kitchen	burned ceramic	**1**	**1.09**
		creamware	**2**	**5.19**
		ironstone	**1**	**6.60**
		stoneware	**4**	**15.3**
		whiteware	**10**	**15.91**
		yellowware	**1**	**2.14**
		amber bottle glass	**6**	**9.08**
		aqua bottle glass	**9**	**17.09**
		brown bottle glass	**64**	**127.11**
		burned glass	**1**	**9.90**
		green bottle glass	**2**	**2.16**
		clear bottle glass	**71**	**192.42**
		light green bottle glass	**2**	**0.35**
		dark olive green bottle glass	**6**	**18.96**
		milkglass fragment	**1**	**2.41**
	Metal	unidentifiable iron/steel fragments	**-**	**6.45**
	Tobacco	plain kaolin pipe stem	**1**	**3.54**
	Miscellaneous	coal (grams)	**-**	**1.19**
	Sub-total		**307**	**13940.47**
Unknown	Faunal	oyster shell (grams)	**-**	**89.79**
	Floral	charcoal (grams)	**-**	**1.98**

Site 38BK1621 (Revisit)

Cultural Affiliation(s) *- 18th to 19th century*
Site Type *- Brick kiln*
Site Dimensions *- 458 meters n/s by unknown meters e/w (1,500 ft by unknown ft)*
Soil Type *- Meggett loam*
Elevation *- 1.52 meters amsl*
Nearest Water Source *- Wando River*
Present Vegetation *- Mixed pine/hardwood forest*
NRHP/Management Recommendations *- Potentially eligible/preservation or testing*

Site 38BK1621 is the remnants of an eighteenth- to nineteenth-century brick kiln. Wayne (1992) recorded 38BK1621 during a survey of the Wando River basin for evidence of brickyards.

The site is located to the east of SC Route 41 along the Wando River (see Figure 1). The site measures approximately 458 meters (1,500 ft) north/south (along the bank of the Wando River) by an unknown distance east/west. Wayne (1992) noted that brick covered the shoreline of the Wando River in this area, though she did not examine the uplands to the west of the shoreline.

Wayne (1992) initially identified the approximate location of 38BK1621, as well as several other brickyards, through the review of historic maps and previously published reports. She followed this with an intensive review of aerial photographs of the region. Wayne (1992:16) sought two features on the photographs: "(1) evidence of shoreline modifications such as landings, and (2) wetlands which did not appear to be natural in configuration or location." She plotted possible locations of brickyards on maps and then attempted to find historical documentation at local repositories for each of these locales. Wayne (1992:20) located several sites

> via a small outboard boat in a two-day field effort…. It was immediately apparent that at high tide it might be difficult to discern sites, since the upland portions were heavily overgrown and the shorelines were flooded. After the tide changed, a second attempt was made. This time, the sites were very apparent, and the distinguishing site signatures were noted for future use. At most sites which were encountered, the site was photographed from the water and a landing was made in order to examine the upland portion of the site. When distinctive upland features existed, such as a kiln mound or a working surface, these were photographed. Field notes were maintained to record the approximate location, obvious features, and condition of each site. A map, either a navigation chart or a USGS topographic map, was marked with the site location. No attempts were made to delineate the site boundaries or expose features because of the limited time and resources available.

Besides noting the approximate length of the brick scatter along the shoreline of the Wando River on the state site form (Wayne 1993:1), Wayne (1992, 1993) reveals little more detail about site 38BK1621. Wayne (1992:107) does note that "When encountered, however, there was little doubt about the nature of the site due to extensive brick rubble. The kilns themselves appear as mounds up to five or six feet in height and of varying outer dimensions." As she noted in her field survey methodology, investigators did not delineate the site boundaries on the upland portion of the site. At this time, the full extent of the site is unknown.

During the current survey, investigators excavated five shovel tests at 30-meter (100-ft) intervals along the shovel test transect parallel to SC Route 41 across the reported area of the northwest portion of 38BK1621; none of these shovel tests produced artifacts. Investigators noted

no brick fragments or artifacts on the ground surface in this area. Soils in these shovel tests consisted of a very dark grayish-brown A1 horizon at 0–10 cm (0–0.33 ft) bs, over a gray clay loam B21tg horizon at 10–35 cm (0.33–1.2 ft) bs, underlain by a dark gray clay B22tg horizon at 35–50+ cm (1.2–1.67+ ft) bs. Long (1980) describes these soils as Meggett loams.

At this point, little is known about 38BK1621. The area in which Wayne (1993) noted brick along the shoreline of the Wando River is approximately 244 meters (800 ft) east of the project area. It is apparent that the site does not extend into the proposed new ROW for SC Route 41. Wayne (1993) provided no assessment of NRHP eligibility for site 38BK1621; however, given that the exact extent and nature of the site have not yet been definitively determined, the site should be considered potentially eligible for the NRHP at this time. Additional investigation of 38BK1621 could generate information about the configuration and use of the site. However, the site does not extend into the project area and will not be affected by any proposed road improvement activities.

Architectural Survey

The architectural historian conducted an intensive architectural survey of the SC Route 41 Wando River Bridge Replacement Project. The project lies in Berkeley and Charleston counties on either side of the Wando River. The project passes through developed and undeveloped lands. Some of the developed lands include residential, commercial, and industrial zones.

The architectural historian identified five historic architectural resources (Resources 0809–0813) in the architectural survey universe and reassessed one previously recorded site, the Wando River Bridge (066 0006) (see Figure 1). We recommend the five new historic architectural resources not eligible for the NRHP and, after consultation with SHPO, we recommend 066 0006 eligible for the NRHP. Table 4 summarizes the identified historic architectural resources. Brief descriptions of all surveyed historic architectural resources follow.

Table 4. Historic Architectural Resources in the SC Route 41 Wando River Bridge Replacement Project.

Site Number	Address	Historic Use	Date	NRHP Status	Effect
066 0006	SC Route 41	bridge	1941	Eligible	Adverse
809	2560 SC Route 41	House	c. 1955	Not Eligible	None
810	2561 SC Route 41	Restaurant	c. 1955	Not Eligible	None
811	2570 SC Route 41	Barber Shop	c. 1955	Not Eligible	None
812	1081 Reflectance Drive	Baptist Church	c. 1955	Not Eligible	None
813	Near 1081 Reflectance Drive	agricultural buildings	c. 1955	Not Eligible	None

Resource 066 0006 (Wando River Bridge)

Resource 066 0006 is a metal turn-style bridge. Stockton et al. (1990) recorded the SC Route 41 bridge over the Wando River as site 066 0006. Figure 11 provides views of the resource. This structure was recommended not eligible for the NRHP. During this survey, we reassessed the bridge and consulted with SHPO. Based on the reassessment, historic architectural resource 066 0006 is eligible for the NRHP under Criterion C because it embodies distinctive characteristics of a bridge type, bridge construction period, and method of construction; its replacement will be an adverse affect to the resource. To mitigate the removal of the bridge, we recommend that modified Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) documentation be completed for the bridge. The modified HABS/HAER documentation, prepared under consultation with SCDOT and SCDAH, should consist of copies of the original engineering drawings, large-format photography, and a history of the bridge. The report with photographs and drawings should be curated at SCDAH. Further management of the other resources in the SC Route 41 Bridge Replacement Project as currently designed is not warranted.

Resource 0809 (House, 2560 SC Route 41)

Resource 0809 is a side-gable, vernacular-style house. Based on its architectural style and its presence on the 1920 topographic map, the architectural historian estimates that it was constructed circa 1955. The one-and-a-half-story frame building with clapboard is square-shaped. It has a pedimented gable entryway. The side-gable roof is covered with composite shingles and has two

Figure 11. Resource 066 0006, looking north (top) and looking northeast (bottom).

pedimented dormer windows. Figure 12 provides views of the resource. The building is a common architectural style in the state and does not possess any unique characteristics that would make it eligible; therefore, we recommend Resource 0809 not eligible for the NRHP.

Resource 0810 (Wando Restaurant, 2561 SC Route 41)

Resource 0810 is a side-gable, vernacular-style commercial building, now the Wando Restaurant. Based on its architectural style and its presence on the 1920 topographic map, the architectural historian estimates that it was constructed circa 1955. The one-and-a-half-story concrete-block building has a a pedimented gable entryway and non-historic clapboard siding veneer. The side-gable roof is covered with composite shingles and has two pedimented dormer windows. Next door to the restaurant is a rectangular building with a front-gable roof; the concrete-block building has an entryway and two windows on the main facade. Figure 13 provides views of the resource. The building is a common architectural style in the state and does not possess any unique characteristics that would make it eligible; therefore, we recommend Resource 0810 not eligible for the NRHP.

Resource 0811 (Barber Shop, 2570 SC Route 41)

Resource 0811 is a cross-gable, vernacular-style house, now a barber shop. Based on its architectural style and its presence on the 1920 topographic map, the architectural historian estimates that it was constructed circa 1955. The one-story frame building with synthetic siding is square-shaped. The cross-gable roof is covered with composite shingles. Figure 14 provides views of the resource. The building is a common architectural style in the state and does not possess any unique characteristics that would make it eligible; therefore, we recommend Resource 0811 not eligible for the NRHP.

Resource 0812 (New Wando Baptist Church, 1081 Reflectance Drive)

Resource 0812 is an L-shaped masonry building designed in Colonial Revival style. The church has a three-bay main facade and is six bays deep, with each bay containing a six-over-nine light stained-glass window. The building has a front-gabled roof with composition shingles. The

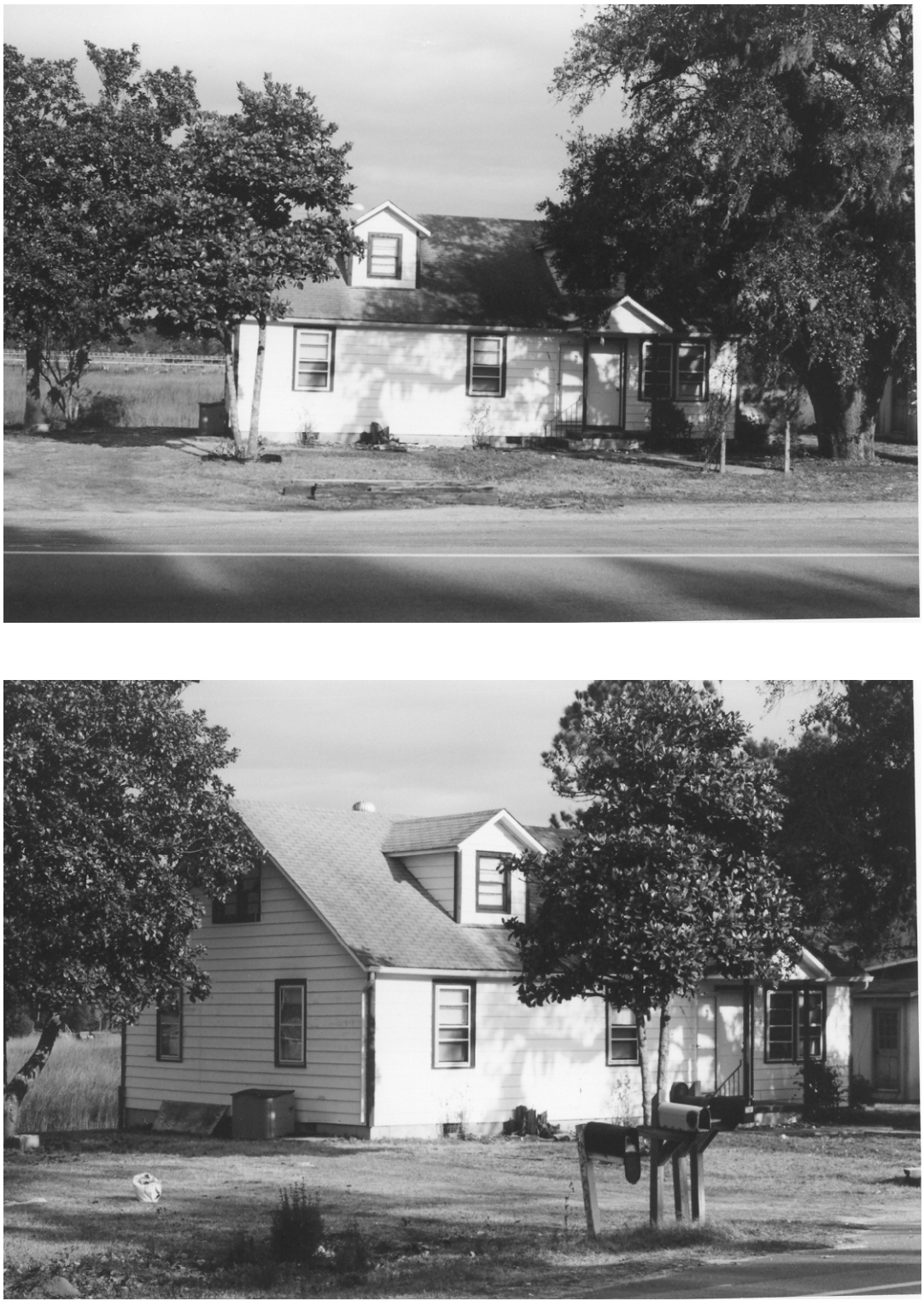


Figure 12. Resource 0809, looking northwest (top) and looking north (bottom).

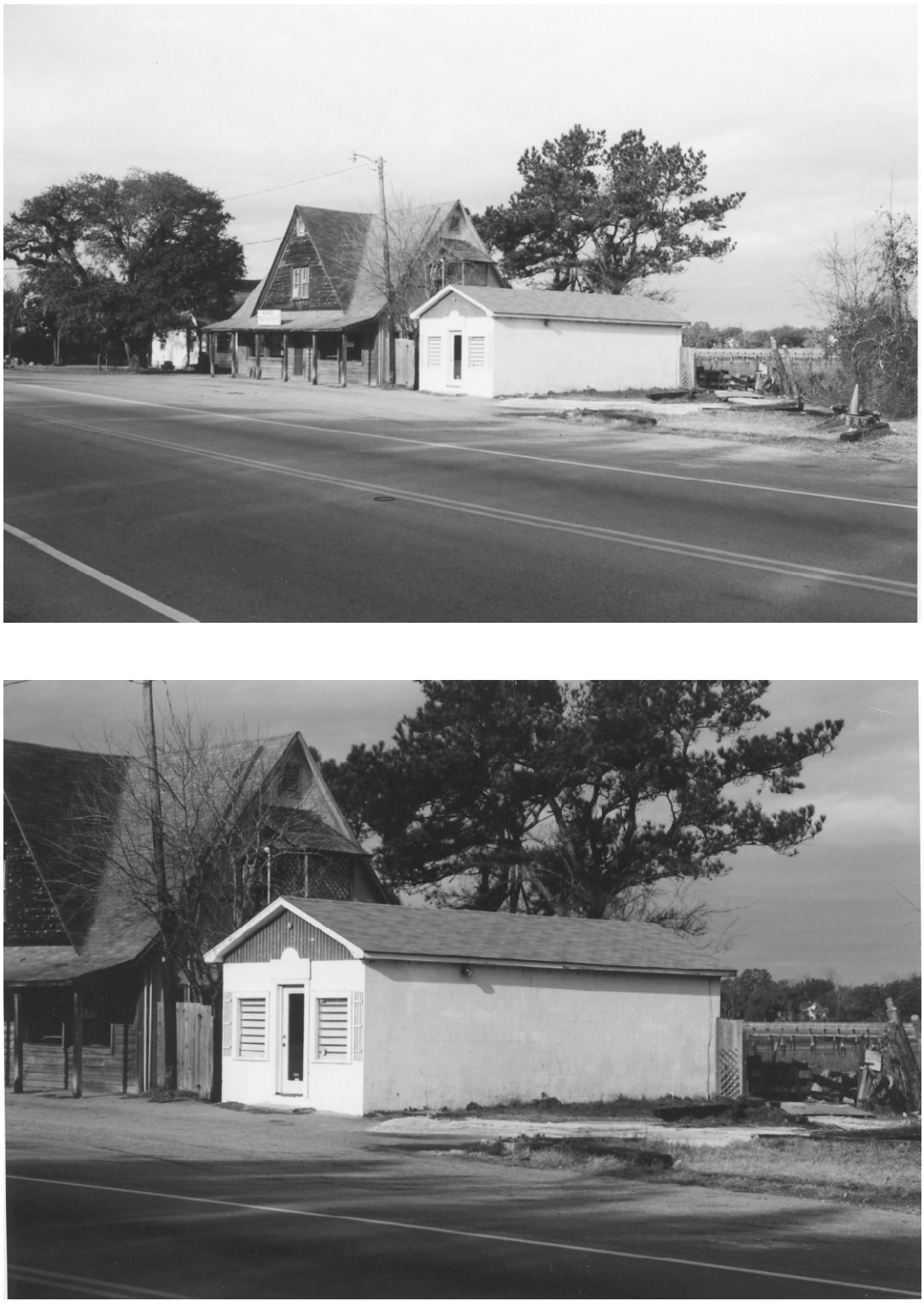


Figure 13. Resource 0810, looking southwest (top) and looking southwest (bottom).

Figure 14. Resource 0811, looking southwest (top) and looking northwest (bottom).

main facade has a four-story tower with steeple. Figure 15 provides views of main and rear facades of the resource. Based on its architectural style and its presence on the 1920 topographic map, the architectural historian estimate that it was constructed circa 1955. The use of the Colonial Revival style for a church in the mid-twentieth century is not unique. Architectural historian Carole Rifkind argues that with the rise of science and the political and social turmoil in the early twentieth century, ecclesiastical architects "sought an 'ecclesiastical atmosphere' for [their] buildings" (Rifkind 1980:157). Church architect Robert Adams Cram stated, "We must return for the fire of life to other centuries" (Rifkind 1980:157). Because of the inherent conservative nature of religious denominations and their links to the past, architects searched the past for styles, creating Gothic Revival, Colonial Revival, and other revival styles.

According to Criterion Consideration A, "A religious property is eligible if it derives its primary significance from architectural or artistic distinction or historical importance." This provides that the religious property be justified on architectural, artistic, or historic grounds to avoid any appearance of judgment by government about the validity of any religion or belief. A religious property's significance under Criterion A, B, C, or D must be judged in purely secular terms (NPS 1995). The building is a common architectural style in the state and does not possess any unique characteristics that would make it eligible; therefore, we recommend Resource 0812 not eligible for the NRHP.

Resource 0813 (Agricultural Building, northeast of 1081 Reflectance Drive)

Resource 0813 is a side-gable, vernacular-style agricultural building. Based on its architectural style and its presence on the 1920 topographic map, the architectural historian estimates that it was constructed circa 1955. The one-story frame building with metal siding is rectangular-shaped and has a porch across the front. The side-gable roof is covered with metal. Figure 16 provides views of the resource. The building is a common architectural style in the state and does not possess any unique characteristics that would make it eligible; therefore, we recommend Resource 0813 not eligible for the NRHP.

Figure 15. Resource 0812, looking southeast (top) and looking south (bottom).

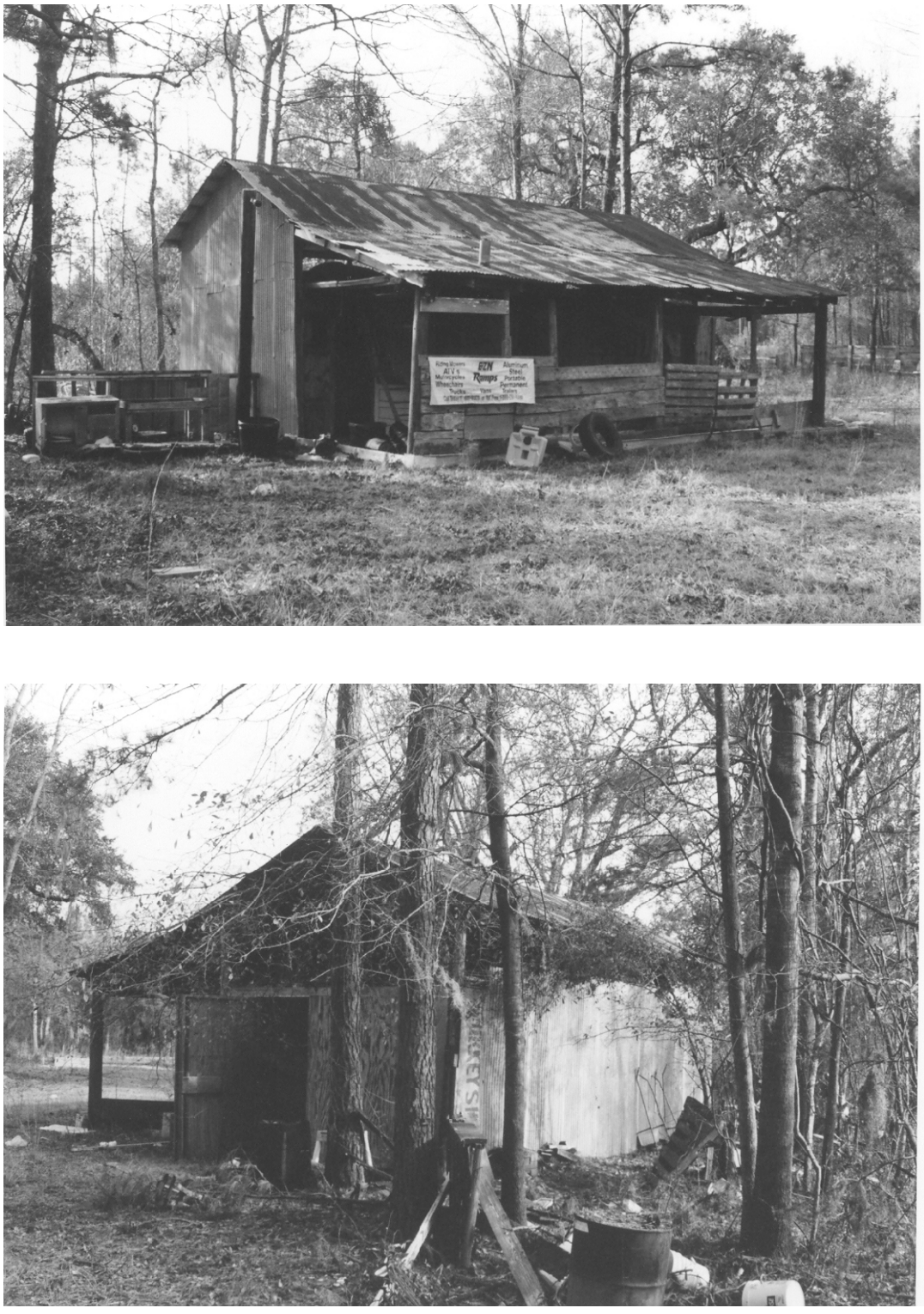


Figure 16. Resource 0813, looking southeast (top) and looking northwest (bottom).

Underwater Cultural Resources Survey

Archaeologist Ralph Wilbanks and boat operator Steve Howard conducted the underwater survey in February 2005. A survey grid was established over the 450-by-120-meter (1,500-by-400-ft) area. The 29 lanes were run east to west, following the flow and contour of the river, and spaced 50 ft apart. The bridge is a large ferrous object; to allow the magnetometer to be a useful tool, the investigators ran all the lanes toward the bridge, giving the most time for the acquisition of targets. The side-scan sonar looks out from the side of the boat and can be set to a variety of ranges. For this project, the side-scan sonar was set at 50 meters (164 ft) on each side of the boat, giving considerable overlap to the survey. Although the south bank contains a commercial boat landing with a dock and small jetty, limiting how close the investigators could maneuver the survey vessel, they were able to collect side-scan sonar data all the way to the shore. Sonar data shows that the bottom of the survey area appears to be mostly sand. To the west is the SC Route 41 bridge. The sonar mosaic of the survey area shows bridge pilings, a shallow area exposed at low tide, and the survey lanes.

The remote-sensing survey located four targets within the survey area. Although there were numerous submerged logs, these were not recorded as targets. Also, concrete rubble associated with the bridge or the shore landings were not recorded as targets. None of the four targets detected within the survey area produced electronic signatures representative of significant submerged cultural resources. Targets #1, #3, and #4 are likely all single objects such as anchors or construction debris. Target #2 is located in an area that is exposed daily at low tide. Target #1 is a small iron anchor-like object with a possible chain. Target #2 is a cluster of small iron objects within an area of approximately 45 meters (150 ft). Target #3 is a small iron object, 2.4 meters (8 ft) long. Target #4 is a small iron object, not visible. Surveying in shallow water places the magnetometer sensor very close to the object, giving it a magnified gamma value. For example, an 18-inch piece of iron rebar will produce a 400 gamma target when surveyed in 3 ft of water. No further investigation of these four targets is recommended. For a more detailed discussion of the underwater survey, see Appendix B.

Conclusions and Recommendations

During the terrestrial archaeological survey, we revisited sites 38BK1810 and 38BK1621. We conducted field investigations of site 38BK1810 concurrently, and unknowingly, with investigators from TRC (Grunden and Henry 2006). Grunden and Henry (2006) conducted a cultural

resources survey of an adjacent tract. Grunden and Henry (2006) recommended site 38BK1810 not eligible for the NRHP. Based on the outcome of a meeting including staff from SCDAH, SCDOT, Brockington and Associates, Inc., and TRC, it was determined that site 38BK1810 is not eligible for the NRHP. The investigations of 38BK1621 identified no intact subsurface or surface cultural features within the archaeological APE. Additional investigation of 38BK1621 could generate information about the configuration and use of the site. However, the site does not extend into the project area and will not be affected by any proposed road improvement activities. Archaeologists identified no other archaeological resources in the archaeological APE.

We recommend the five new historic architectural resources identified in the architectural survey universe not eligible for the NRHP. We recommend 066 0006, the Wando River Bridge, eligible for the NRHP under Criterion C because it embodies distinctive characteristics of a bridge type, bridge construction period, and method of construction; its replacement will be an adverse affect to the resource. To mitigate the removal of the bridge, we recommend that modified Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) documentation be completed for the bridge. The modified HABS/HAER documentation, prepared under consultation with SCDOT and SCDAH, should consist of copies of the original engineering drawings, large-format photography, and a history of the bridge. The report with photographs and drawings should be curated at SCDAH. Further management of the other resources in the SC Route 41 Bridge Replacement Project as currently designed is not warranted.

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Appendix A.

Artifact Inventory

Artifact Catalog

Brockington and Associates, Inc. uses the following proveniencing system. Provenience 1 designates general surface collections. Numbers after the decimal point designate subsequent surface collections, or trenches. Proveniences 2 to 200 designate shovel tests. Controlled surface collections and 50 by 50 cm units are also designated by this provenience range. Proveniences 201 to 400 designate 1 by 1 m units done for testing purposes. Proveniences 401 to 600 designate excavation units (1 by 2 m, 2 by 2 m, or larger). Provenience numbers over 600 designate features. For all provenience numbers except 1, the numbers after the decimal point designate levels. Provenience X.0 is a surface collection at a shovel test or unit. X .1 designates level one, and X.2 designates level two. For example, 401.2 is Excavation Unit 401, level 2. Flotation samples are designated by a 01 added after the level. For example, 401.201 is the flotation material from Excavation Unit 401, level 2.

Table of Contents

SITE NUMBER: 38BK1810

PROVENIENCE NUMBER: 2 . 1 Transect 1 Shovel Test 3 +5m West, (0-10cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	3.09	aqua bottle glass	
2	1	9.90	burned glass	
3		6.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 3 . 1 Transect 1 Shovel Test 3 +5m South +5m West, (0-20cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	5.51	dark olive green bottle glass	
2	2	8.03	unidentifiable nail	
3		21.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 4 . 1 Transect 2 Shovel Test 3 +5m North +5m West, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	2	13.37	unidentifiable nail	
2		1,507.00	unglazed brick fragments	discarded in field/lab

PROVENIENCE NUMBER: 5 . 1 Transect 1 Shovel Test 3 +5m North, (0-60cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	3.40	annular creamware	
2	1	6.60	undecorated ironstone	
3	6	22.19	clear bottle glass	
4	1	3.33	aqua bottle glass	
5	1	0.83	amber bottle glass	
6	4	28.16	unidentifiable nail	
7		55.31	mortar	discarded in lab
8		47.00	oyster	

Site Number: 38BK1810

9	2,213.00	unglazed brick fragments	

PROVENIENCE NUMBER: 6 . 1 Transect 1 Shovel Test 3, (0-15cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	3	11.31	common cut nail	
2	1	7.34	unidentifiable nail	
3		8.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 7 . 1 Transect 1 Shovel Test 3 +5m South, (0-15cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	5	20.86	common cut nail	
2	1	2.19	clear mold blown bottle glass	
3		1,026.00	unglazed brick fragments	discarded in field/lab

PROVENIENCE NUMBER: 8 . 1 Transect 2 Shovel Test 3 +5m North, (0-40cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	2	5.13	clear bottle glass	
2	4	31.58	unidentifiable nail	
3		1,110.00	unglazed brick fragments	discarded in field/lab

PROVENIENCE NUMBER: 9 . 1 Transect 2 Shovel Test 3, (0-50cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	12	17.42	clear bottle glass	
2	64	127.11	brown bottle glass	
3		1.98	charcoal	
4		3.71	unidentifiable iron/steel	
5		10.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 10 . 1 Transect 1 Shovel Test 3 +5m East, (0-35cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	2.32	aqua bottle glass	
2	2	4.70	clear machine made bottle glass	
3		1,271.00	unglazed brick fragments	discarded in field/lab
4	1	48.78	unidentified Twentieth century building materials	

PROVENIENCE NUMBER: 11 . 1 Transect 1 Shovel Test 3 +5m East +5m South, (0-60cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	6	25.75	unidentifiable nail	
2		15.01	tabby	
3	6	8.35	aqua bottle glass	
4		1.19	coal	
5		59.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 12 . 1 Transect 2 Shovel Test 3 +5m East +5m North, (0-40cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1		2.76	oyster	
2	42	134.50	clear machine made bottle glass	
3	2	2.47	amber bottle glass	
4		39.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 13 . 1 Transect 2 Shovel Test 3 +5m East, (0-45cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	4.69	unidentifiable nail	
2	1	217.00	sewer pipe	

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3		1,154.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 14 . 1 Transect 2 Shovel Test 3 +10m East, (0-40cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	1.28	clear bottle glass	
2	1	1.76	green bottle glass	
3	1	11.36	unidentifiable nail	
4		10.00	unglazed brick fragments	discarded in lab
5		2.74	unidentifiable iron/steel	

PROVENIENCE NUMBER: 15 . 1 Tansect 3 Shovel Test 5 +5m North, (0-35cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1		17.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 16 . 1 Transect 3 Shovel Test 5, (0-35cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	2.14	undecorated yellowware	
2	7	58.10	unidentifiable nail	
3		7.40	mortar	discarded in lab
4		317.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 17 . 1 Transect 3 Shovel Test 5 +5m South, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	4.01	alkaline glazed stoneware	

PROVENIENCE NUMBER: 18 . 1 Transect 3 Shovel Test 5 +10m South, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	1.10	dark olive green bottle glass	
2	1	2.50	unidentifiable nail	
3		9.00	unglazed brick fragments	discarded in lab
4	1	3.54	plain kaolin pipe stem	

PROVENIENCE NUMBER: 19 . 1 Transect 3 Shovel Test 5 +15m South, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	3.73	clear glazed stoneware	

PROVENIENCE NUMBER: 20 . 1 Transect 3 Shovel Test 5 +5m East +5m North, (0-40cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	2.02	lead glazed stoneware	
2	7	49.46	eroded body sherd, grog temper	3 mends

PROVENIENCE NUMBER: 21 . 1 Transect 3 Shovel Test 5 +5m East +5m South, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	2	3.25	undecorated whiteware	
2	1	5.54	clear glazed stoneware	
3	1	2.41	milkglass fragment	
4		6.59	oyster	
5	3	21.02	unidentifiable nail	
6		519.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 22 . 1 Transect 3 Shovel Test 5 +5m East +10m South, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	0.89	clear bottle glass	
2	1	2.88	unglazed brick fragments	discarded in lab

Site Number: 38BK1810

PROVENIENCE NUMBER: 23 . 1 Transect 3 Shovel Test 5 +5m East +15m South, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	1.79	undecorated creamware	
2	1	1.84	center fire cartridge	
3	1	12.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 24 . 1 Transect 3 Shovel Test 5 +5m North +10m East, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	5	28.38	unidentifiable nail	
2	3	4.93	unidentified Twentieth century building materials	
3		18.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 25 . 1 Transect 3 Shovel Test 5 +10m East, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	2	2.72	clear bottle glass	
2	1	0.31	aqua flat (window) glass	
3	6	41.24	unidentifiable nail	
4		83.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 26 . 1 Transect 3 Shovel Test 5 +10m East +5m South, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	0.40	teal bottle glass	
2	9	61.86	unidentifiable nail	
3	6	3.22	aqua flat (window) glass	
4		7.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 27 . 1 Transect 3 Shovel Test 5 +10m East +10m South, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	1.03	dark olive green bottle glass	
2	1	3.62	unidentifiable nail	
3	3	1.00	aqua flat (window) glass	
4		3.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 28 . 1 Transect 3 Shovel Test 6 +10m North, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1		33.44	oyster	
2		163.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 29 . 1 Transect 3 Shovel Test 6 +5m North, (just below surface)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1			unglazed, whole, handmade brick	brick foundation (not collected)

PROVENIENCE NUMBER: 30 . 1 Transect 3 Shovel Test 6, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	0.36	undecorated whiteware	
2	1	0.50	annular whiteware	
3	19	15.18	aqua flat (window) glass	
4	2	14.11	unidentifiable nail	
5		831.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 31 . 1 Transect 3 Shovel Test 6 +5m South, (0-35cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	0.90	amber bottle glass	

Site Number: 38BK1810

2	1	7.71	unidentifiable nail	
3	3	4.88	amber bottle glass	
4		83.00	unglazed brick fragments	discarded in lab
5	1	1.81	residual sherd	

PROVENIENCE NUMBER: 32 . 1 Transect 3 Shovel Test 6 +10m South, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	3	8.66	unidentifiable nail	
2		1.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 33 . 1 Transect 3 Shovel Test 6 +5m East +5m North, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	0.94	undecorated whiteware	
2	1	0.33	blue transfer printed whiteware	
3	2	20.24	unidentifiable nail	
4		18.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 34 . 1 Transect 3 Shovel Test 6 +5m East, (0-40cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	2.19	undecorated whiteware	
2	1	5.44	unidentifiable nail	
3		58.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 35 . 1 Transect 3 Shovel Test 6 +5m East +10m South, (0-35cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	0.85	dark olive green bottle glass	
2	1	0.35	light green bottle glass	
3	2	1.40	clear bottle glass	
4	17	122.37	unidentifiable nail	
5	1	1.91	slate, undetermined function	
6		8.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 36 . 1 Transect 3 Shovel Test 6 +10m East +5m North, (0-20cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1		58.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 37 . 1 Transect 3 Shovel Test 6 +10m East, (0-30cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	1.09	blue transfer printed whiteware	
2	1	5.70	annular whiteware	
3	1	1.09	unidentified burned ceramic	
4	1	7.72	dark olive green bottle glass	lip only
5	1	12.90	unidentifiable nail	
6	1	1.21	aqua flat (window) glass	
7		112.00	unglazed brick fragments	discarded in lab

PROVENIENCE NUMBER: 38 . 1 Transect 3 Shovel Test 6 +10m East +10m South, (0--35cm)

Catalog #	*Count*	*Weight (in g)*	*Artifact Description*	*Comments*
1	1	1.55	annular whiteware	
2	1	2.75	dark olive green bottle glass	
3		2,960.00	unglazed brick fragments	

Table . Mean Ceramic Dating for 38BK1810 (after South 1977: 210-212, with additional data from Brown 1982, personal communication Miller 1992, personal communication South 1993).

CERAMICS	DATE RANGE	MEDIAN DATE	TOTAL SHERDS	DATEABLE SHERDS	PRODUCT	RANGE	SHERDS W/ DATE RANGE
PORCELAIN							
CREAMWARES							
undecorated	1762 - 1820	1791	1	1	1791	58	1
annular	1780 - 1815	1797.5	1	1	1797.5	35	1
STONEWARES							
alkaline glazed			1				
lead glazed			1				
clear glazed			2				
WHITEWARES							
undecorated	1815 - 1925	1870	5	5	9350	110	5
trans. prntd. blue or brown	1815 - 1860	1837.5	2	2	3675	45	2
annular	1815 - 1860	1837.5	3	3	5512.5	45	3
IRONSTONE							
undecorated	1845 - 1925	1885	1	1	1885	80	1
YELLOWWARE	1827 - 1922	1874.5	1	1	1874.5	95	1
BURNED/UNIDENTIFIED			1				
TOTAL SHERDS			19				
TOTAL DATEABLE SHERDS				14	25885.5		14
MCD/SOUTH					1848.964		
MCD/RANGE**					1839.789		
MCD/RANGE SQUARE**					1832.451		
MINIMUM DATE RANGE	1815 - 1845						
MAXIMUM DATE RANGE	1762 - 1925						
TERMINUS POST QUEM	1845						
TERMINUS ANTE QUEM	1925						

* Carlson 1983

Appendix B.

Statewide Survey Forms

Statewide Survey of Historic Properties
State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Rd.
Columbia, SC 29223-4905 (803) 896-6100

Control Number: U / 15 / 0809
Status County No Site No

Quad Name: Cainhoy

Tax Map No.:

Intensive Documentation Form

Identification

Historic Name:

Common Name:

Address/Location: 2560 US Hwy 41

City:

County: Berkeley

Vicinity of: Wando

Ownership: Private

Category: building

Historical Use: Domestic

Current Use: Domestic

National Register of Historic Places Information

SHPO National Register Determination: Not Eligible

Notes on National Register Status:

Other Designation:

Property Description

Construction Date: c.1940

Commercial Form:

Stories: 1 1/2 stories

Alteration Date:

Historic Core Shape: rectangular

Roof Features

Shape: gable, lateral

Materials: composition shingle

Porch Features

Porch Width: entrance bay only

Shape: gable

Construction Method: frame

Exterior Walls: clapboard

Foundation:

Significant Architectural Features: Resource 0809 is a side gable, vernacular style house. Based on its architectural style and its presence on the 1920 topographic map, the Architectural Historian estimates it was constructed circa 1955. The one and one half story frame building with clapboard is square shaped. It has a pedimented gable entryway. The side gable roof is covered with composite shingles and has two pedimented dormer windows.

Alterations:

Architect(s)/Builder(s):

Historical Information

Historical Information:

Source of Information:

Photographs

Roll No.	Neg. No.	View of
1	10	NW
1	12	NW

Use Grid for Sketching

Att's

rogram Management

ecorded by: Edward Salo, Brockington and Associates

ate Recorded: 02/20/2005

Statewide Survey of Historic Properties
State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Rd.
Columbia, SC 29223-4905 (803) 896-6100

Control Number: U / 15 / 0810
Status County No Site No
Quad Name: Cainhoy
Tax Map No.:

Intensive Documentation Form

Identification

Historic Name:

Common Name: Wando Restaurant

Address/Location: 2561 US Hwy 41

City: County: Berkeley

Vicinity of: Wando

Ownership: Private Category: building

Historical Use: Vacant/Not In Use

Current Use: Commerce/Trade

National Register of Historic Places Information

SHPO National Register Determination: Not Eligible

Notes on National Register Status:

Other Designation:

Property Description

Construction Date: c.1940 Commercial Form: Stories: 1 1/2 stories

Alteration Date: Historic Core Shape: rectangular

Roof Features

Shape: cross gable

Materials: composition shingle

Porch Features

Porch Width: full façade

Shape: shed

Construction Method: masonry

Exterior Walls: weatherboard

Foundation: concrete block

Significant Architectural Features: Resource 0810 is a side gable, vernacular style house, which is now the Wando Restaurant. Based on its architectural style and its presence on the 1920 topographic map, the Architectural Historian estimates it was constructed circa 1955. The one and one half story concrete block building has clapboard siding veneer. It has a pedimented gable entryway. The side gable roof is covered with composite shingles and has two pedimented dormer windows. Next door to the restaurant is a rectangular building with a front gable roof. The concrete block building has an entry way and two windows on the main facade.

Alterations:

Architect(s)/Builder(s):

Historical Information

Historical Information:

Source of Information:

Photographs

Roll No.	Neg. No.	View of
1	8	SW
1	9	SW

Use Grid for Sketching

rogram Management

ecorded by: Edward Salo, Brockington and Associates

ate Recorded: 02/20/2005

Statewide Survey of Historic Properties
State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Rd.
Columbia, SC 29223-4905 (803) 896-6100

Control Number: U / 15 / 811
Status County No Site No

Quad Name: Calnhoy

Tax Map No.:

Intensive Documentation Form

Identification

Historic Name:

Common Name: Barber shop

Address/Location: 2570 US Hwy 41

City: County: Berkeley

Vicinity of: Wando

Ownership: Private Category: building

Historical Use: Commerce/Trade

Current Use: Domestic

National Register of Historic Places Information

SHPO National Register Determination: Not Eligible

Notes on National Register Status:

Other Designation:

Property Description

Construction Date: c.1955 Commercial Form: Stories: 1 story

Alteration Date: Historic Core Shape: rectangular

Roof Features *Porch Features*

Shape: cross gable Porch Width:

Materials: composition shingle Shape:

Construction Method: frame

Exterior Walls: synthetic siding

Foundation: not visible

Significant Architectural Features: Resource 0811 is a cross gable, vernacular style house, which is now a barber shop. Based on its architectural style and its presence on the 1920 topographic map, the Architectural Historian estimates it was constructed circa 1955. The one story frame building with synthetic siding is square shaped. The cross gable roof is covered with composite shingles.

Alterations:

Architect(s)/Builder(s):

Historical Information

Historical Information:

Source of Information:

Photographs

Roll No.	Neg. No.	View of
1	5	NW
1	7	N

Use Grid for Sketching

Attach Photos

rogram Management

ecorded by: Edward Salo, Brockington and Associates

ate Recorded: 02/20/2005

Statewide Survey of Historic Properties
State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Rd.
Columbia, SC 29223-4905 (803) 896-6100

Control Number: U / 15 / 812
Status County No Site No
Quad Name: Cainhoy
Tax Map No.:

Intensive Documentation Form

Identification

Historic Name:

Common Name: New Wando Baptist Church

Address/Location: 1081 Reflectance Drive

City: County: Berkeley

Vicinity of: Wando

Ownership: Private Category: building

Historical Use: Religion

Current Use: Religion

National Register of Historic Places Information

SHPO National Register Determination: Not Eligible

Notes on National Register Status:

Other Designation:

Property Description

Construction Date: c.1950 Commercial Form: Stories: 1 story

Alteration Date: Historic Core Shape: L

Roof Features

Shape: gable, end to front

Materials: composition shingle

Porch Features

Porch Width: over 1 bay but less than full

Shape: pedimented gable

Construction Method: masonry

Exterior Walls: brick veneer

Foundation: not visible

Significant Architectural Features: Resource 0812 is a L-shaped, masonry building designed in colonial revival style. The church has a three bay main facade, and is six bays deep, which each bay containing a six over nine light stained glassed windows. It has a front gabled roof with composition shingles. The main facade has a four story tower with steeple.

Alterations:

Architect(s)/Builder(s):

Historical Information

Historical Information:

Source of Information:

Photographs

Roll No.	Neg. No.	View of
1	20	S
1	21	S

Use Grid for Sketching

Attach

rogram Management

ecorded by: Edward Salo, Brockington and Associates

ate Recorded: 02/20/2005

Statewide Survey of Historic Properties
State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Rd.
Columbia, SC 29223-4905 (803) 896-6100

Control Number: U / 15 / 813
Status County No Site No

Quad Name: Cainhoy

Tax Map No.:

Intensive Documentation Form

Identification

Historic Name:

Common Name:

Address/Location: northeast of 1081 Reflectance Drive

City: County: Berkeley

Vicinity of: Wando

Ownership: Private Category: building

Historical Use: Vacant/Not In Use

Current Use: Agriculture/Subsistence

National Register of Historic Places Information

SHPO National Register Determination: Not Eligible

Notes on National Register Status:

Other Designation:

Property Description

Construction Date: c.1940 Commercial Form: Stories: 1 story

Alteration Date: Historic Core Shape: rectangular

Roof Features
Shape: gable, lateral
Materials: other metal

Porch Features
Porch Width: full façade
Shape: shed

Construction Method: frame

Exterior Walls: metal

Foundation: not visible

Significant Architectural Features: Resource 0813 is a side gable, vernacular style agricultural building. Based on its architectural style and its presence on the 1920 topographic map, the Architectural Historian estimates it was constructed circa 1955. The one story frame building with metal siding is rectangular shaped and has a porch across the front of the building. The side gable roof is covered with metal.

Alterations:

Architect(s)/Builder(s):

Historical Information

Historical Information:

Source of Information:

Photographs

Roll No.	Neg. No.	View of
1	17	S
1	19	S

Use Grid for Sketching

Attach Ph

Program Management

Recorded by: Edward Salo, Brockington and Associates
Date Recorded: 02/20/2005

Appendix C.

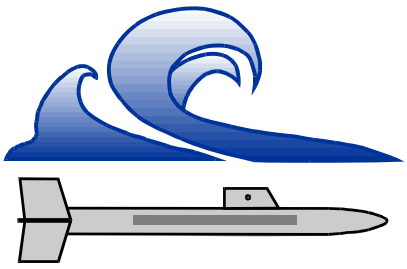
Underwater Cultural Resources Survey

An Underwater Cultural Resource Survey
US Hwy 41 Bridge
Cainhoy, S.C.

February, 2005

Prepared for
Brockington & Associates, Inc.

By
Ralph Wilbanks
Diversified Wilbanks, Inc.



A Remote Sensing Survey Company

Diversified Wilbanks, Inc.

Magnetometer • Side Scan Sonar • Sub-bottom Profiler • Precise Positioning

The Dept of Transportation of the state of South Carolina is planning to replace the swing bridge on US Highway 41 over the Wando River, Cainhoy, SC. Diversified Wilbanks, Inc. was contracted by Brockington and Associates, Inc. of Mt. Pleasant, SC to conduct an underwater cultural resource survey of the area just upstream or East of the existing bridge. The area between the existing bridge and the power transmission line to the east, generally defined the survey area.

The Wando River and the town of Cainhoy have been utilized since European settlement and certainly before. To attempt to locate any remnants of the past a survey was developed using a Geometrics, Inc. cesium vapor magnetometer and a Klein System 3000 side scan sonar. The magnetometer senses changes in the earth's magnetic field generally associated with ferrous metals while the side scan sonar provides high resolution electronic pictures of anything on or above the river bottom.

Archaeologist Ralph Wilbanks and boat operator Steve Howard conducted the survey in February 2005. A survey grid was established over the 1500 by 400-foot area. The 29 lanes were run east to west, following the flow and contour of the river, and spaced 50 feet apart. The bridge is a large ferrous object; to allow the magnetometer to be a useful tool we ran all the lanes towards the bridge giving the most time for the acquisition of targets. The side scan sonar looks out from the side of the boat and can be set to a variety of ranges. For this project the side scan sonar was set at 164 feet on each side of the boat giving considerable overlap to the survey.

Although the south bank contains a commercial boat landing with a dock and small jetty, which limited how close we could maneuver the survey vessel, we were able to collect side-scan sonar data all the way to the shore. Sonar data shows that the bottom of the survey area appears to be mostly sand. To the West was the Highway 41 Swing Bridge. We ran through the opening in the

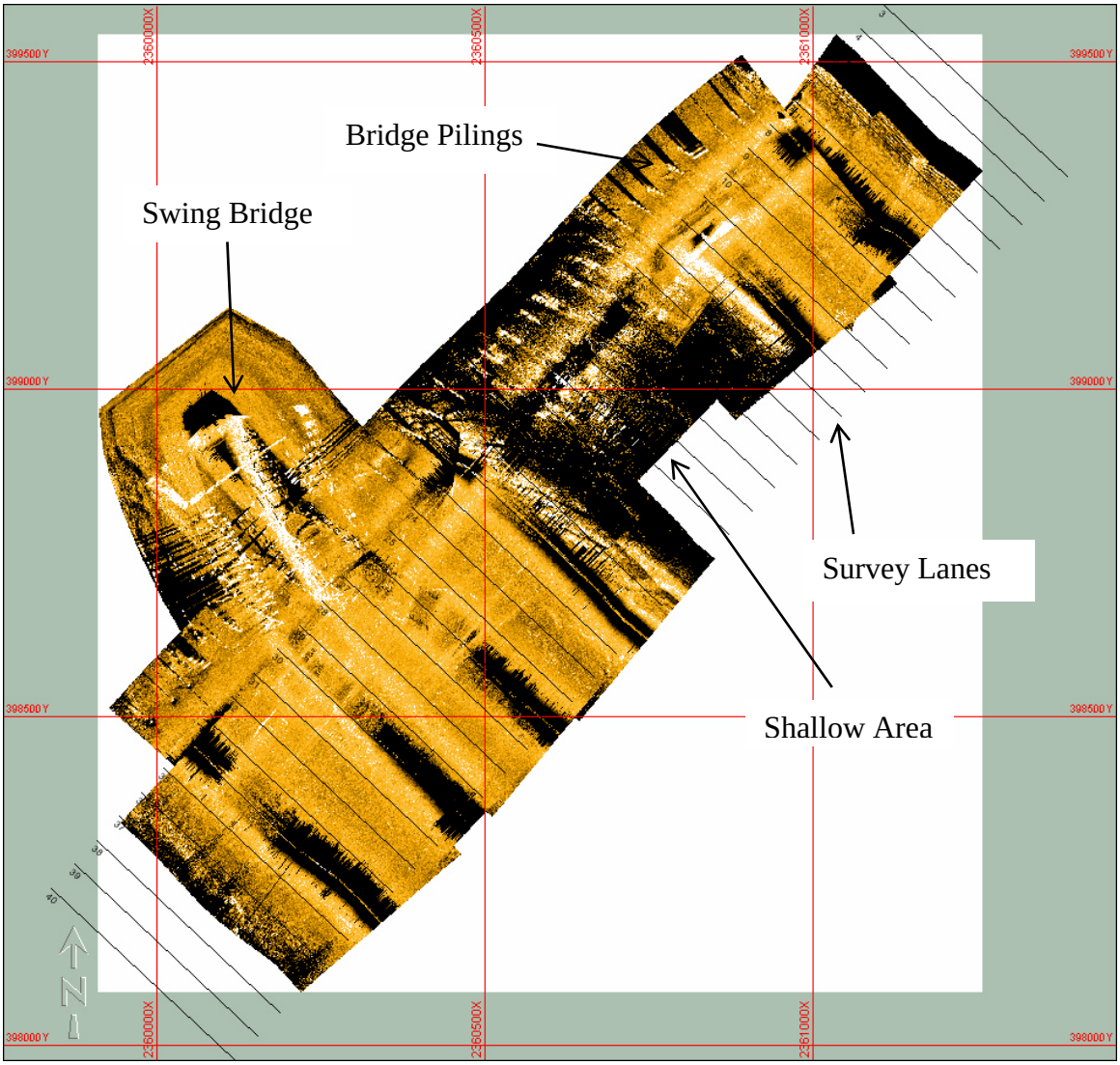


Figure 1. Sonar mosaic of survey area showing bridge pilings, shallow area exposed at low tide, and survey lanes.

bridge piers during the survey. On the North side of the river is a small boat landing and several hundred feet off shore is a large sand bar. This is partially exposed at low water and created some problems while conducting the survey. We were able to survey the entire area. No historic material was observed on any exposed bank.

The remote sensing survey located four targets within the survey area (Figure 2). Although there were numerous submerged logs, these were not recorded as targets. Also, concrete rubble associated with the bridge or the shore landings were not recorded as targets.

Table 1. TARGET LIST
(State Plane, South Carolina 3900, North American Datum 1983, US survey feet)

	East	North	Latitude	Longitude
1	2360918.68	399159.05	32.9247467	-79.8236672
2	2360869.1	398942.96	32.9241543	-79.8238368
3	2360487.72	398541.98	32.9230641	-79.8250945
4	2360418.21	398452.87	32.9228213	-79.8253243

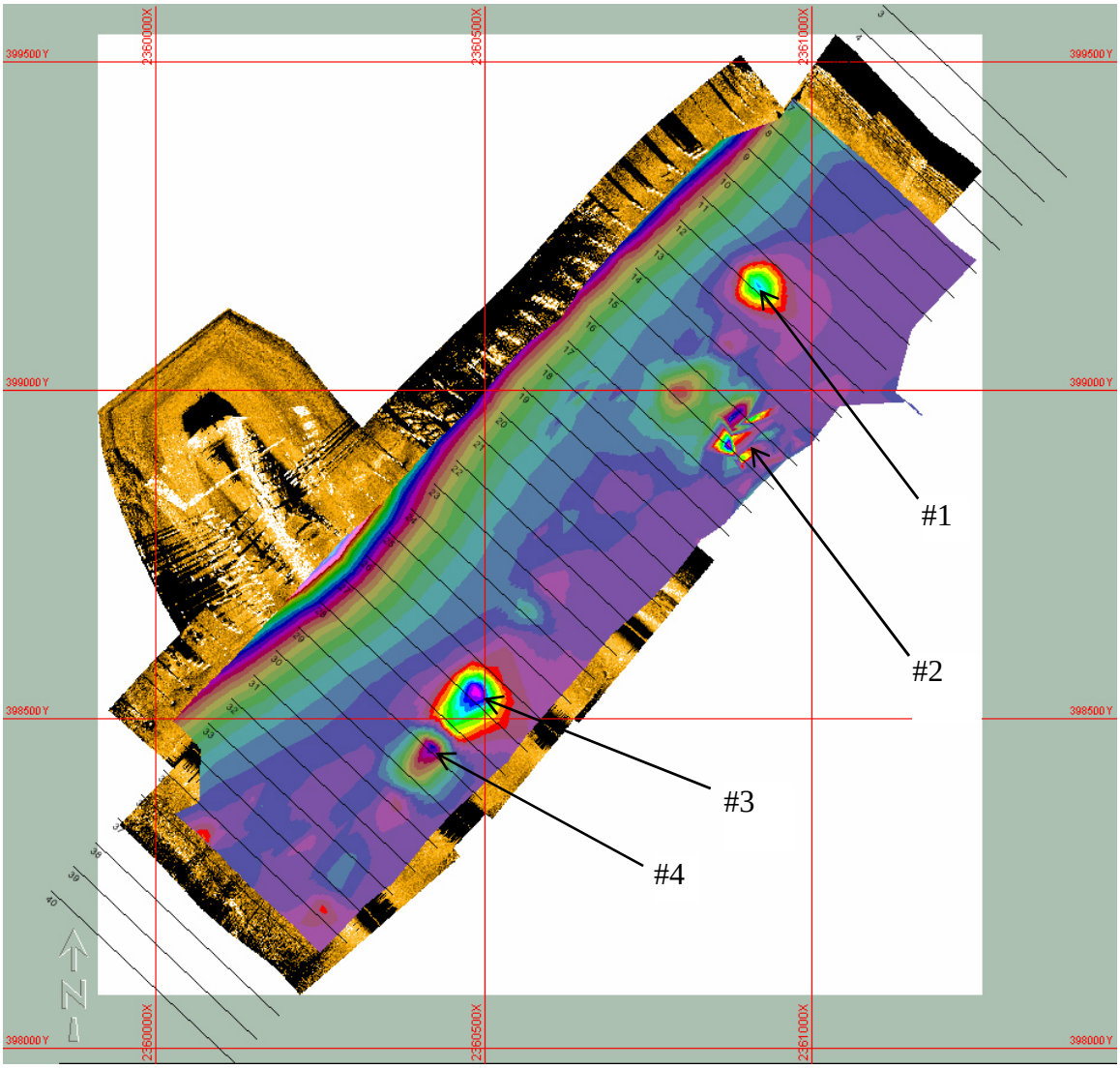


Figure 2. Sonar mosaic of survey area with 5 gamma magnetic contour overlay showing Targets 1-4.

The magnetometer recorded Target #1 as a small iron object with an area of magnetic influence of 50 feet, producing a monopole, 45 gamma, electronic signature. Sonar images of Target #1 show an anchor like object with possible chain or cable extending out (Figure 3).

The magnetometer recorded Target #2 as a cluster of small iron objects within an area of approximately 150 feet, producing a multi-component, 5 to 50 gamma, electronic signature. Target #2 was not visible in the sonar records.

The magnetometer recorded Target #3 as a small iron object with an area of magnetic influence of 100 feet, producing a monopole, 55 gamma, electronic signature. Sonar images of Target #3 show a small object approximately 8 feet long (Figure 4).

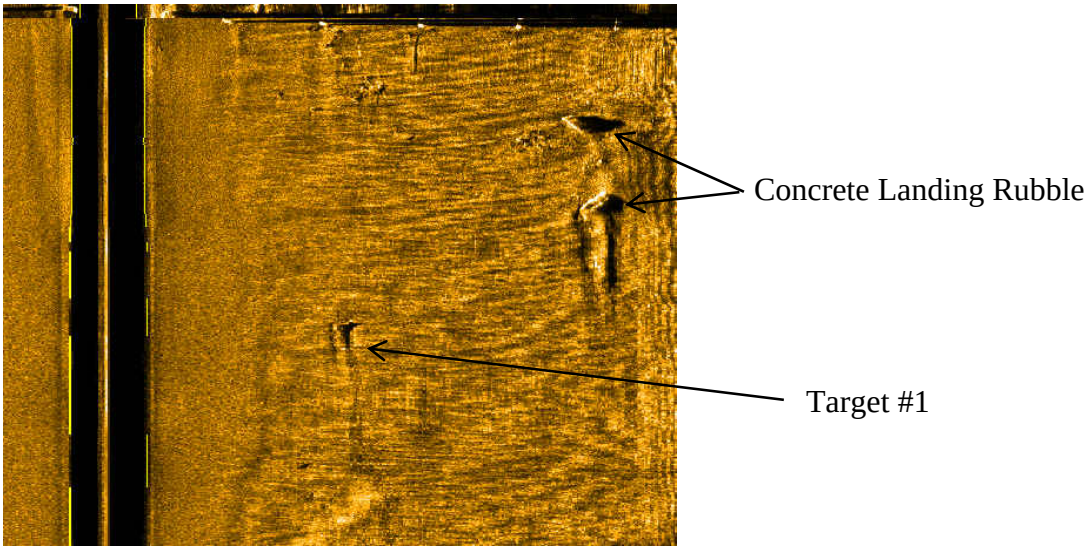


Figure 3. Sonar record showing Target #1.

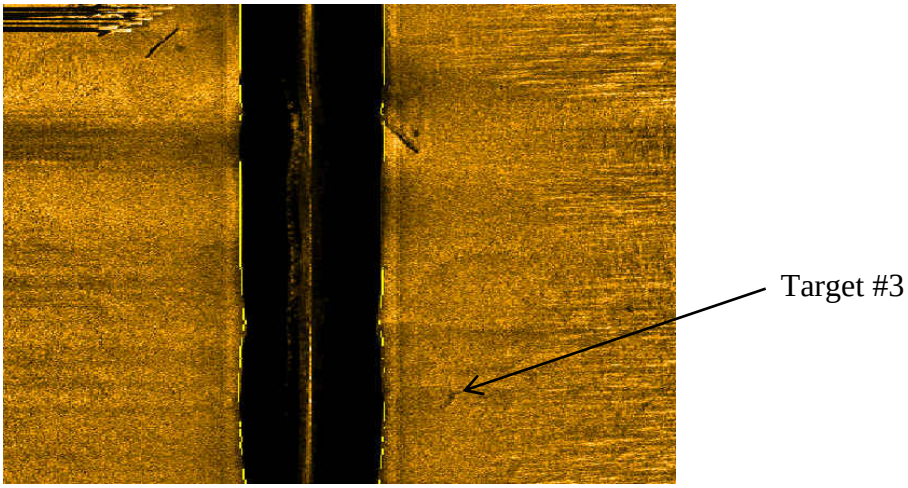


Figure 4. Sonar record showing Target #3.

The magnetometer recorded Target #4 as a small iron object with an area of magnetic influence of 100 feet, producing a monopole, 60 gamma, electronic signature. Target #4 was not visible in the sonar records.

CONCLUSIONS

None of the four targets detected within the survey area produced electronic signatures representative of significant submerged cultural resources. Targets #1, #3, and #4 are most likely single individual objects such as anchors or construction debris. Target #2 is located in an area that is exposed daily at low tide. Surveying in shallow water places the magnetometer sensor very close to the object giving it a magnified gamma value. For example, an 18-inch piece of iron rebar will produce a 400 gamma target when surveyed in 3 feet of water. No further investigation of these four targets is recommended.

Ralph Wilbanks
Underwater Archaeologist
Diversified Wilbanks, Inc.

AREAS OF SPECIALIZATION

Underwater field investigations including submerged site identification and assessment. Marine remote sensing, navigation and positioning. Historic watercraft identification and evaluation.

EDUCATIONAL BACKGROUND

B. S. Education, *University of South Carolina*, 1970
M. A. Maritime History, Vermont College, 2004
Harvey Lynch Sea Floor Engineering - Hands-on seminar in remote sensing, 1976.
The Mariner's Museum -Seminar on Ship Construction, 1980.
Klein Associates, Inc. - Hydroscan Operations and Maintenance, 1993.

PROFESSIONAL EMPLOYMENT HISTORY

1975-1984 Assistant Underwater Archaeologist
University of South Carolina Institute of Archaeology and Anthropology, Columbia, SC.

1984-present Underwater Archaeologist and/or Survey Technician contracting to various cultural resource management firms
Tidewater Atlantic Research, Inc.
John Milner & Associates
Dolan Research, Inc.
Mid-Atlantic Technology
Brockington & Associates, Inc.
Aetna Insurance for Lloyds of London
NUMA
Eason Diving & Marine Contracting
Friends of the Hunley
Naval Historical Center

PROFESSIONAL EXPERIENCE

Have participated in more than 210 archaeological projects since 1975.

Sample Projects:

Underwater Archaeologist. A Reconnaissance Level Underwater Archaeological Survey of the Hagan Plantation Tract, Cooper River, Berkeley County, South Carolina. Mid-Atlantic Technology, NUCOR Steel.

Survey Technician. A Cultural Resources Survey of Ponce DeLeon Inlet, New Smyrna, FL. Mid-Atlantic Technology, Jacksonville District, US Army Corps of Engineers.

Underwater Archaeologist. An Underwater Archaeological Investigation of a Wreck Site in San Juan Harbor, Puerto Rico. Mid-Atlantic Technology, Jacksonville District, US Army Corps of Engineers.

Survey Technician. A Side Scan Sonar and Magnetometer Survey of Proposed Borrow Areas, Ocean City, New Jersey. Dolan Research, Philadelphia District, US Army Corps of Engineers.

Survey Technician and Underwater Archaeologist. A Side Scan Sonar and Magnetometer Survey of Prairie Du Chien Harbor, Mississippi River, Prairie Du Chien, Wisconsin. Tidewater Atlantic Research, Inc., St. Paul District, US Army Corps of Engineers.

Underwater Archaeologist. Located the remains of *The General Slocum* off New Jersey.

Survey Technician. Location of World War II B-25C bomber in 147' of water, Lake Murray, Columbia, SC. Private Individual.

Survey Technician and Underwater Archaeologist. An Underwater Archaeological Investigation of a Proposed Bridge Replacement Site, Weems Creek, Annapolis, MD. Dolan Research, Inc., Maryland Department of Transportation.

Remote Sensing Specialist and Underwater Archaeologist. Participated in the 2003 & 2004 search for .*The Bonhomme Richard*, John Paul Jones ship lost in the North Sea.

Remote Sensing Specialist. Located an A-4 training jet that crashed in the Great Salt Lake, then located the ejection seat.

Survey Technician. A Remote Sensing Survey of Damage to Artificial Reefs near Charleston, SC, caused by Hurricane Hugo. Diversified Wilbanks, Inc., South Carolina Department of Natural Resources.

Survey Specialist. Located a plane lost 50 years ago in a mountain lake 200 miles from Anchorage, Alaska.

Underwater Archaeologist and Videographer. A Phase III Underwater Archaeological Excavation of the Hilton Wreck, NE Cape Fear River, Wilmington, NC. Tidewater Atlantic Research, Inc. Wilmington District, US Army Corps of Engineers.

Field Director. A Side Scan Sonar Survey of approximately 200 miles of rivers between Charleston and Hilton Head, SC, including mapping and establishment of reference stations using a Klein Associates 100 kHz side scan sonar. Seventy-three targets were located and evaluated in 1979 and 1980, South Carolina Institute of Archaeology and Anthropology, Columbia, SC.

Project Director. A successful Side Scan Sonar and Magnetometer Survey with identification of targets in Charleston Harbor, SC, in search of Confederate submarine HL Hunley in 1994-1995. NUMA and Clive Cussler.

Survey Technician. A Side Scan Sonar Survey of the World War II D-Day Beaches (Utah and Omaha) in Normandy, France. Naval Historical Center, Washington, DC.

EQUIPMENT AND OTHER SPECIALIZATIONS

Side Scan Sonar, sub-bottom profiler, video and still photography, proton procession and cesium magnetometers, fathometers, range/range positioning systems, laser-track positioning systems, differential GPS, computer navigation & mapping programs (HYPACK, Sextant), SCUBA, surface-supplied air diving supervisor for Assoc. of Diving Contractors, Nitrox, NOAA and EPA diving certifications, US Coast Guard licensed captain, dive safety supervisor, ROV pilot.