

DAVID BEARD

## Causeways and Cribbing: Now You Can Get There from Here

### Introduction

Much of South Carolina's history, prior to the Civil War, revolved around a plantation economy. In coastal areas, the Lowcountry, rivers and creeks were the major arteries of transportation.

Often the high ground was separated from navigable water by vast expanses of tidal marsh. Canals were generally impractical because of silting and fluctuating water levels. Exceptions to this were in cases where water-control structures such as large diamond gates associated with rice agriculture could be used to control water levels. The problem of getting people, produce, and supplies to and from the waterways was solved by building causeways across the marshes and then constructing fixed piers or wharfs at which vessels could tie up. Readily available slave labor made these engineering projects quite economical.

This report seeks to begin the development of a typology for these landing structures based on such variables as age, function, construction materials and techniques, and associated artifacts. This research will hopefully enhance the scope of research designs concerning South Carolina's Lowcountry plantations by adding a long overlooked, but significant, cultural resource to the equation.

### The Research

Recent work along South Carolina's rivers and creeks has brought to our attention an overlooked aspect of this state's maritime heritage: causeways and landing structures. For years these sites have been popular with sport divers who are in search of artifacts to collect under South Carolina's Hobby Diver licensing program. Much attention has been given to the artifacts collected at these sites but very little to the structures themselves. The Underwater Archaeology Division of the South Carolina Institute of Archaeology and Anthropology has therefore undertaken a research project which seeks to reach inferential conclusions about the function of individual causeway and landing sites based upon the variables mentioned above.

To date we have conducted field investigations on three examples of causeway/landing sites which represent three different uses: a general-use plantation landing, a brickyard landing, and a shipyard landing. Each exhibits distinct differences in fill materials and associated structures. As of yet, no systematic recovery of artifacts from these sites has been conducted, nor have the structures themselves been fully documented. Numerous other causeway/landing sites have been located through archival research but not investigated in the field.

Based on our observations, we have been able to formulate some general site characteristics which may be used in developing a causeway/landing typology. These are:

Construction Techniques: Packed Fill  
Packed Fill Around Punchions  
Filled Cribbing

Fill Materials:	Soil
	Brick
	Stone
	Shell
	Mixed
Age:	Colonial
	Antebellum
	Postbellum
Associated Artifacts:	Function-Specific
	General Types

Currently, we have some good indicators which can be used to infer the function of particular causeways and landing structures. The Cedar Grove Plantation causeway/landing (38DR155) on the Ashley River appears to have been used for general plantation purposes. The causeway fill is packed and consists mostly of soil but includes some shell, gravel, and a small amount of brick rubble. The pier/wharf structure at the causeway terminus seems to have been lightly built, consisting of a series of small pilings and finished timbers, possibly representing a fixed pierhead. A possible canal running along the upstream side of the causeway may have been used as a staging area for loaded or empty barges or other vessels (Beard 1990a:7-9).

The Lexington Kiln Site (38CH1086) causeways on Wagner Creek, a tributary of the Wando River, had a specific purpose: a landing for loading bricks from nearby kilns (Wayne and Dickenson 1989:Fig. 21). The causeway fill consists of a considerable amount of brick rubble, possibly indicating that as brick production increased the causeways were enlarged and strengthened by adding wasters from the kilns. Both causeways are covered with brick rubble. The terminus of one causeway consists of rough log cribbing filled with brick rubble. Heavier, finished timbers were apparently used as foundations for this cribbing (Figure 4). Between the two causeways is a canal which, like the one at Cedar Grove Plantation, may have been used to moor brick barges which were already filled or waiting to be filled (Beard 1990b:6-8). Another possibility is that as yet undiscovered structures may exist within these canals upon which barges could rest at low tides, making loading and unloading less dependant upon the tide. Similar structures have been documented in a tributary of the Delaware River near Philadelphia, Pennsylvania (Cox 1985).

The Linn's Shipyard (38CH444) causeway on Hobcaw Creek, another tributary of the Wando River, may have served a variety of purposes, but its method of construction shows signs of a ship-related activity. The causeway itself consists of a very heavily built, finished-timber cribbing filled almost entirely with ballast stone. This heavy construction may be the result of the availability materials (heavy timbers used in ship construction and ballast stone from vessels under repair) or possibly a conscious effort to make it strong enough to withstand the stress of supporting the mechanisms used to careen vessels and in other heavy lifting operations.

As has already been mentioned, some of the causeways may have gone through an evolutionary process as function and/or capacity needs changed. It may be possible through archaeology to trace the evolution of a causeway from small-scale colonial plantation use, through massive antebellum rice or cotton agriculture, to postbellum phosphate mining. Research at Archdale Plantation (Zierdon, *et al.* 1985:42) may indicate a landing which went through such an evolution.

The profusion of such structures in local rivers and creeks offers a rare opportunity to document variations of a site type in



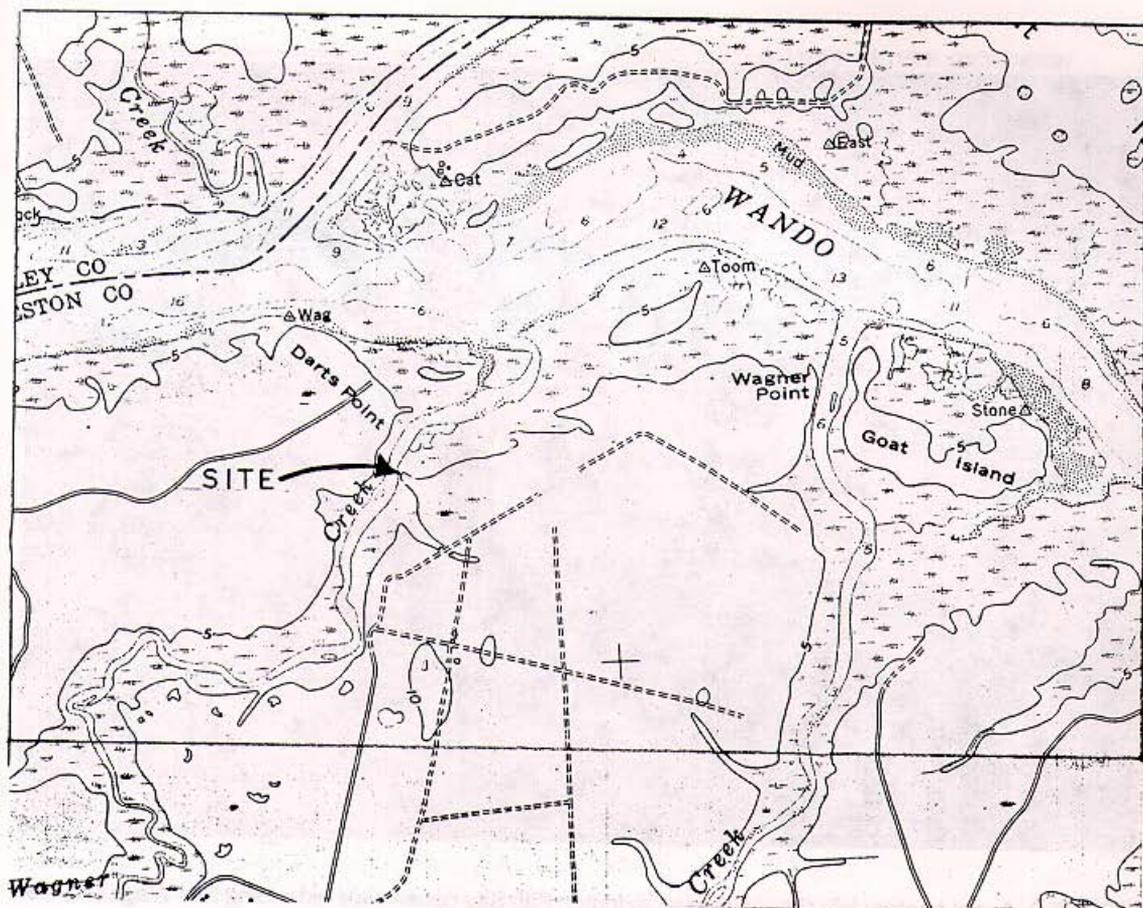


FIGURE 2. USGS Cainhoy, South Carolina Quadrangle showing protrusion of land which is the causeways.

some detail with a minimal amount of time, manpower, and site disturbance. Since many of the structures are exposed at low tide, diving is not required for the majority of this work. The locations of many of these causeway/landings are well documented on archival maps and some show up as distinct features on modern topographic maps and aerial photographs.

One question which needs to be considered in researching these structures is "what are the current threats to the sites?" At this time the greatest threat to plantation causeways and landing structures is residential development. Two of the sites mentioned above (Cedar Grove Plantation and Lexington Kiln Site) were located and documented as a result of reconnaissance level surveys conducted in response to Public Notices of imminent impact in the vicinity of the sites. Since old plantations are becoming prime targets for residential development, it is probable that the landings associated with these sites will come under increasing pressure from the threat of direct impact. The causeways at both Cedar Grove Plantation and Lexington Kiln Site have been physically altered by development since they offer access to deep water without the need for constructing long boardwalks across the marshes. While this minimizes the environmental impact to the marsh, it does adversely affect the causeways themselves. Archdale Plantation has also been transformed into a residential development, but so far the landing area has not been impacted. As this report was being written, devel-

opment plans for the area have now come to include the construction of a community dock at the original plantation landing site. SCIAA has made plans to survey the impact zone prior to approval of the permit. Linn's Shipyard is located on state property and is therefore not threatened by development in the near future.

Our future plans include continuing our survey of archival maps to locate causeway/landing sites, comparison of these with modern topographic maps and aerial photographs, and physical inspection and documentation of any remaining structures. Figures 1-4 illustrate this process when applied to the Lexington Kiln Site. It is hoped that a pattern of easily identifiable attributes will arise from this research so that when previously undocumented examples are encountered in the field, a more accurate assessment of site age and function may be possible based on certain physical attributes.

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FIGURE 3. Aerial photograph clearly shows Lexington Kiln Site causeways extending into Wagner Creek.

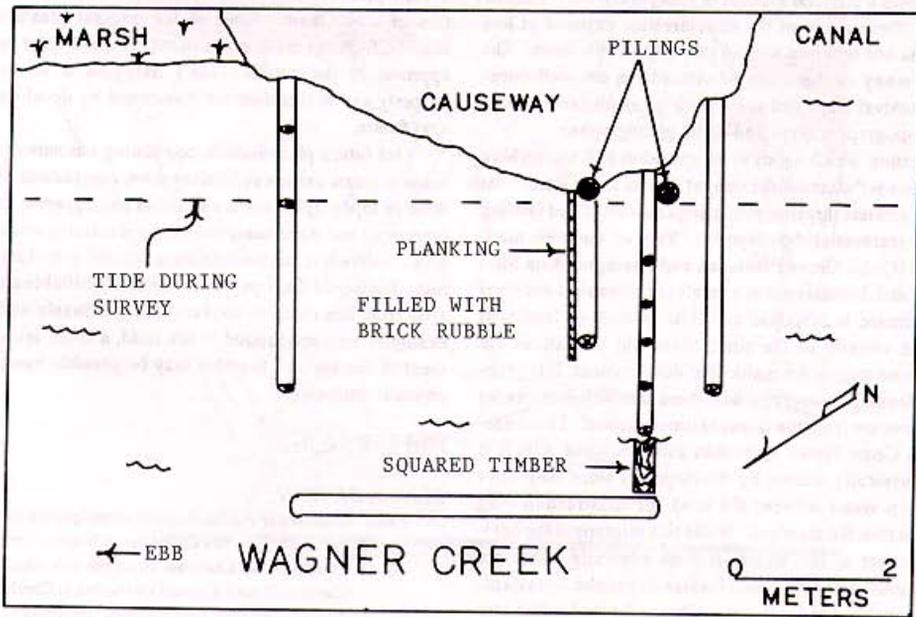


FIGURE 4. Plan view of brick-filled cribbing structure, Lexington Kiln Site causeway.

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DAVID V. BEARD  
SOUTH CAROLINA INSTITUTE OF  
ARCHAEOLOGY AND ANTHROPOLOGY  
1321 PENDLETON ST.  
COLUMBIA, SOUTH CAROLINA 29208