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DISCOVERY OF A
NECHES RIVER FERRYBOAT
BIG THICKET NATIONAL PRESERVE
TYLER COUNTY, TEXAS

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With an Appendix by
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INTRODUCTION

In September 1991, Big Thicket National Preserve staff received a report of remains of a river craft exposed in the west bank of the Neches River about a mile downstream from the Sheffield boat ramp (Figure 1). Rangers from the Upper Neches River Corridor Unit investigating the report found the remains of a small wooden craft projecting from the river bank--at that time about 6 to 7 feet above water level and almost 14 feet below the top of the river bank. Photographs of the craft were taken and sent to Regional Archeologist Ronald Ice. Although scheduling prevented immediate investigation by his staff, a visit to the park allowed documentation of the site on December 12, 1991. Site recordation was conducted by Mr. Ice and the author, both from the Division of Anthropology, with assistance by Mr. Jim Trott, Division of Conservation, Southwest Regional Office. Post-field consultations also were held with Dan Lenihan and Larry Murphy of the Submerged Cultural Resources Unit in Santa Fe. The remains are recorded as site 41TL39 in the Texas state site system.

METHODOLOGY

The feature was treated as an archeological site, with standard recording practices followed. Documentation included completion of a State of Texas Archeological Site Data Form that provides comments on location, environment, feature description, site condition, and recommendations. Additionally, a locational map, a measured plan map, and construction detail drawings were made. Black-and-white photographs were taken, and three field specimens (wood identification samples) were obtained from the side, a hull plank, and a deck plank. A wooden trunnel sample, however, was not obtained. All dimensions were taken in Imperial measurements. Wood identification was conducted by Paleo Research Labs of Golden, Colorado, and those results are presented in an Appendix to this report. Original notes and photographs are housed at the National Park Service, Division of Anthropology in Santa Fe. Copies are on file at Big Thicket National Preserve headquarters in Beaumont and with the Texas Archeological Research Laboratory in Austin.

SITE DESCRIPTION

The site consists of a single feature protruding from the west bank of the Neches River 1.6 miles downstream (south) of the Farm-to-Market Highway (FM) 1013 bridge and 1.2 miles below the Sheffield boat ramp, the location of the old Sheffield Ferry. The locality is at the north end of the first hairpin curve in the river below the highway. The river, about 100 feet wide at this point, is contained within high, sandy banks that

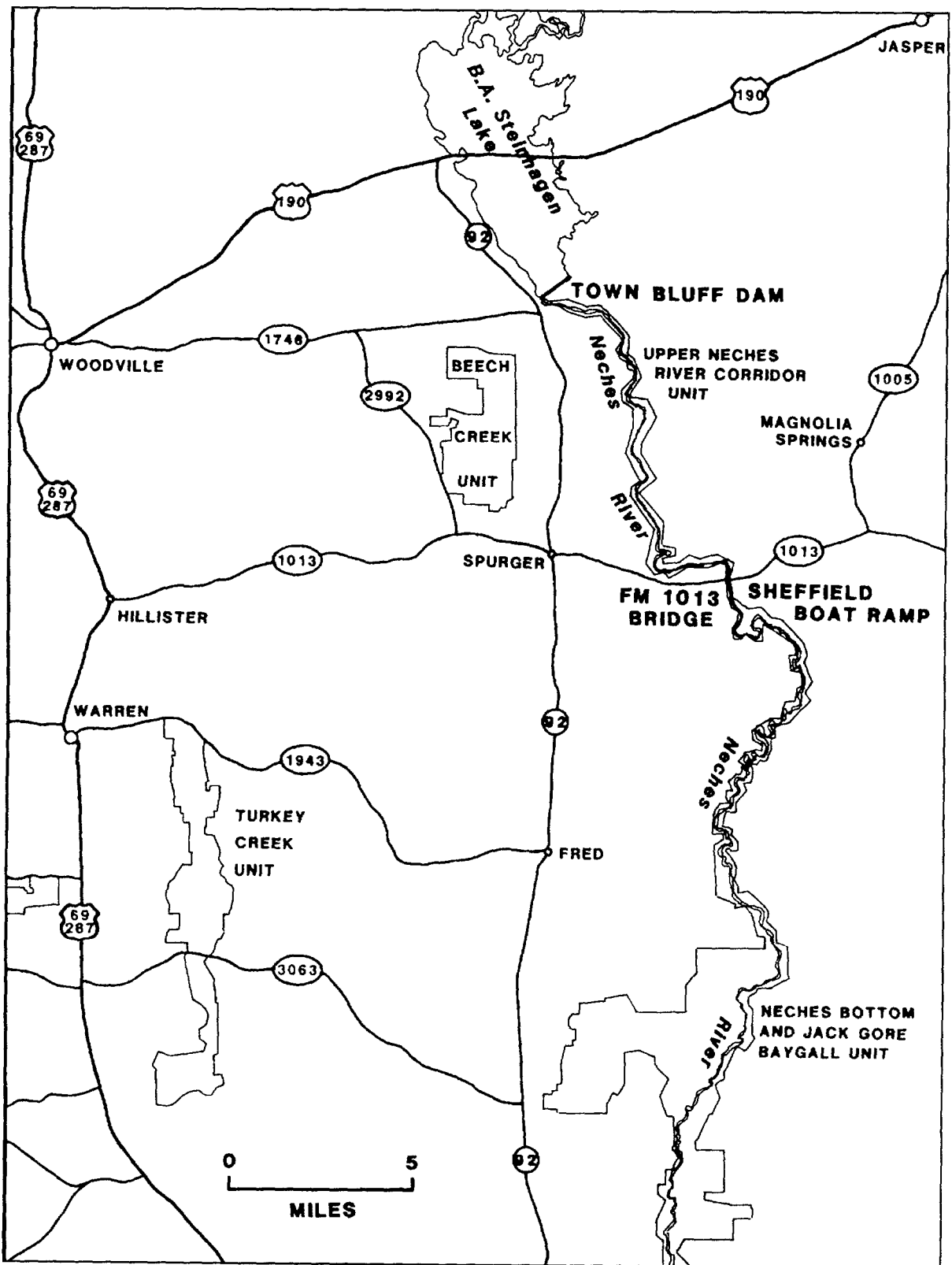


FIGURE 1: Map Showing the Area of Discussion in the Upper Neches River Corridor Unit.

support a thick cover of trees and shrubs. The bank is nearly vertical at the site because the feature is in the cutting side of the river. Photographs taken earlier during low water indicate the craft rests on a clay deposit that may delineate the river bottom at the time of loss. The clay deposit is distinct from the overlying sandy soil surrounding the craft. Exposure of the craft is not surprising. The Neches River is known for its significant fluctuations in water level, and flooding is common. A pattern of sandbar build up exists, which cuts off sections and forms oxbow lakes or "cutoffs".

The craft appears to be the nearly intact remains of a wooden ferryboat. Fourteen feet of hull, an estimated one-quarter to one-third of the total length, was found projecting out over the river with the remainder buried beneath 13.5 feet of river bank sand (Figures 2-5). Inspection revealed a flat bottomed, keel-less craft of basic barge construction (Figures 6 and 7).

CONSTRUCTION

The following description assumes that construction of the buried portion of the ferryboat mirrors that of the exposed section. The sides of the craft are formed by two chine logs, or side girders, connected by a series of cross-ties fastened either into or onto the chine logs. Both chine logs are single pieces of Southern Yellow (?) pine shaped to form the hull sides. The interior of each chine log is cut to form a shelf on which deck planking was fastened and notched on the bottom to accept hull planking (Figures 7a-b, 8 and 9). Total height of the chine logs is between 12 and 15 inches with the shelf measuring 4 inches wide by 4 inches high. The underside shelf notch is about 2 inches in height.

The cross-ties, or frames, are composed of two types: 1) a heavier piece measuring 4.5 inches wide by 1.5 inch thick that was fitted into a mortise in the shelf just aft of the run, or bow/stern rake, of the craft (Figures 6, 7c and 10); and 2) a slightly smaller board measuring 3.5 inches by 1 inch located 3 feet aft of the heavier frame (Figures 6 and 10). The method of attachment of the smaller piece to the chine logs could not be determined; no mortises were observed in the shelf at this point. In cross section the heavier frame is situated midway between the hull planking and flooring within the bilges (Figure 7a), while the smaller cross-ties were situated so as to lay directly on top of, and parallel with, the hull planking (Figure 7b). Based on this evidence, it is suggested that a series of three or four (depending on the actual length of the craft) of the smaller cross-ties are between the two larger end frames.



FIGURE 2: View downriver of one chine log extending out of the river bank and over the Neches River.

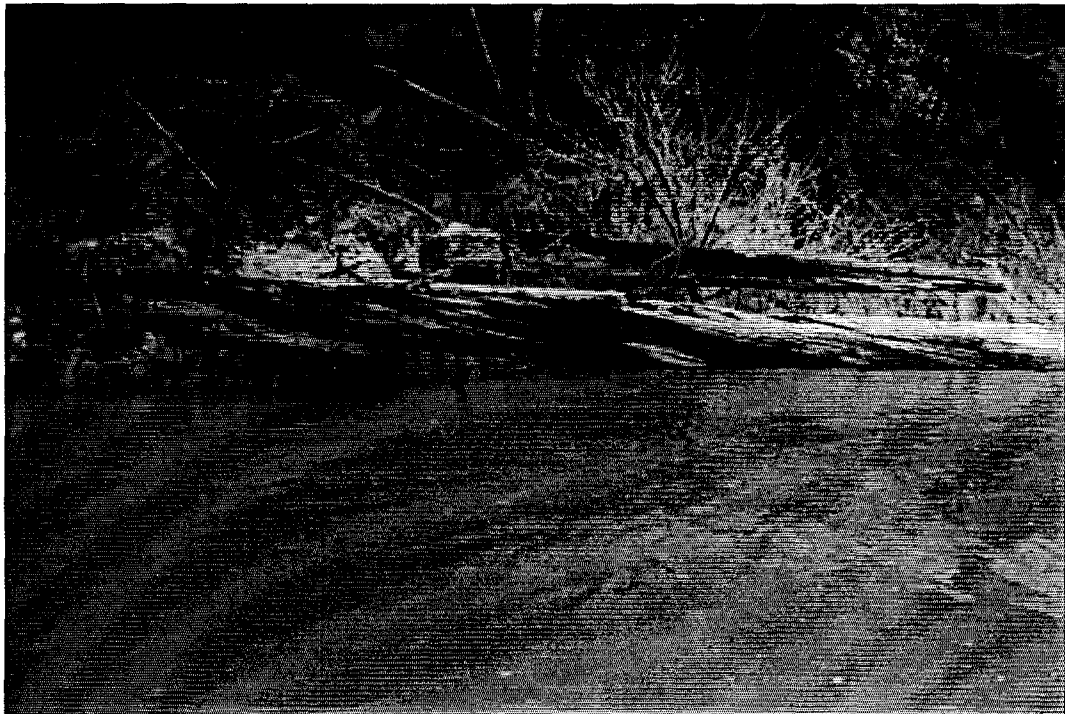


FIGURE 3: View west toward the river bank showing the chine logs protruding from the sandy river bank.



FIGURE 4: View from bank looking upriver showing the major exposed features of the ferryboat remains. The two chine logs bracket the three interior stringers.



FIGURE 5: Same view as Figure 4 with Jim Trott for scale. Note the single deck plank across the stringers.

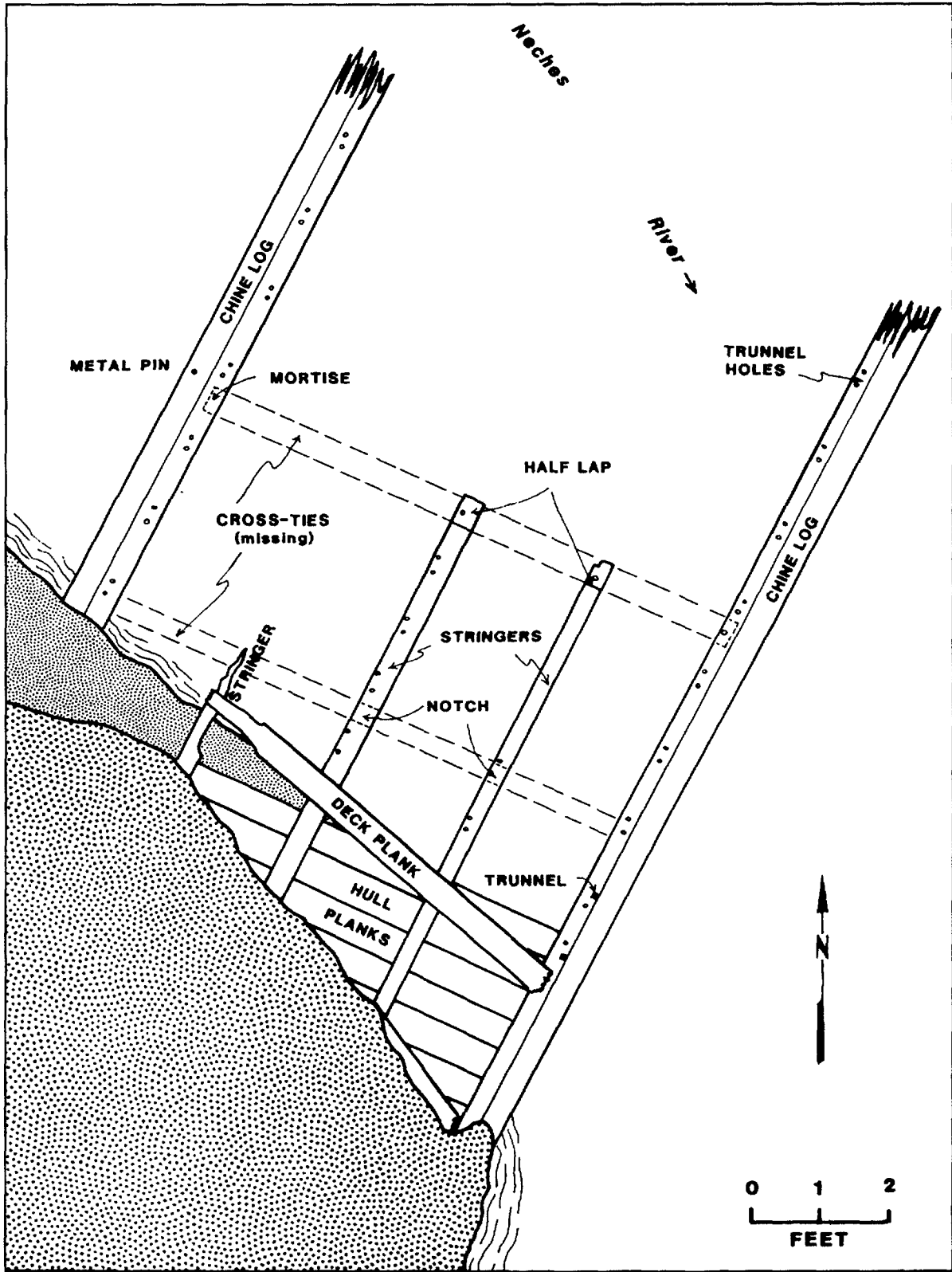


FIGURE 6: Plan Map of the Ferryboat Site.

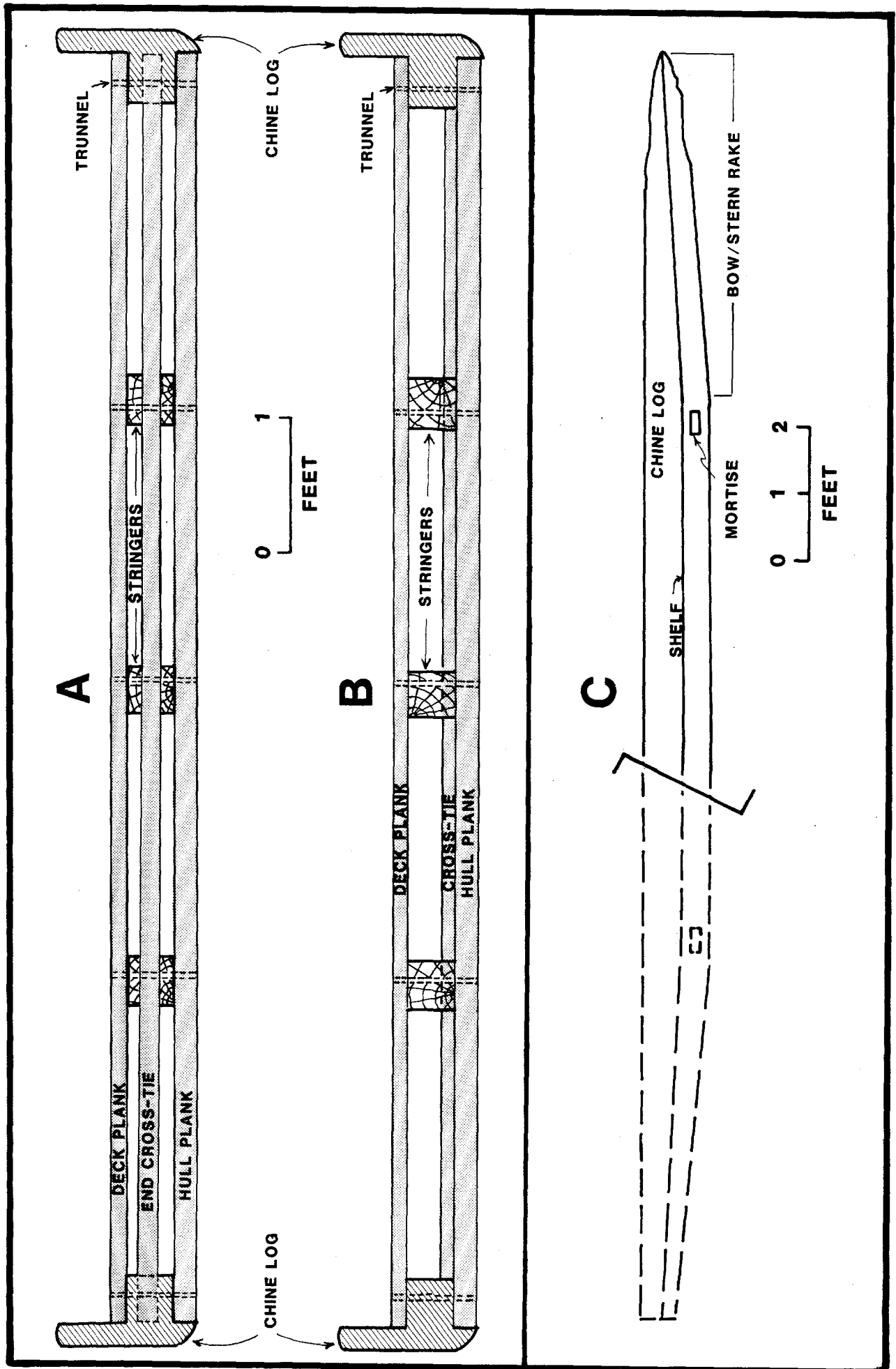


FIGURE 7: Reconstructed Cross Sections and Elevation of the Ferryboat.

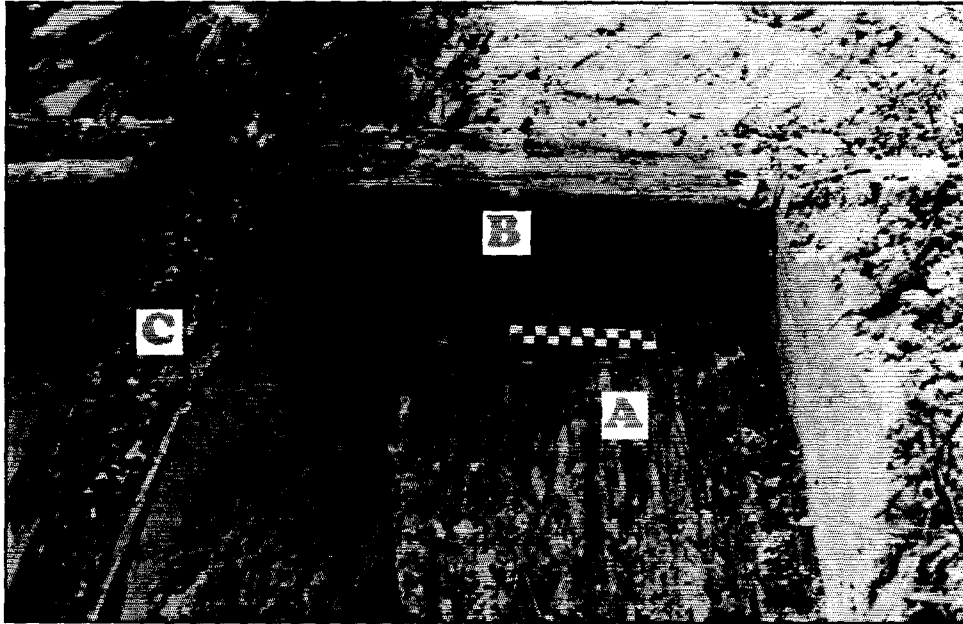


FIGURE 8: Closeup showing construction detail. Hull planking (A) exposed in river bank underlays, and is attached to, the stringer (B). Deck planking (C) overlays the stringer. Scale is 4.6 in/12cm.

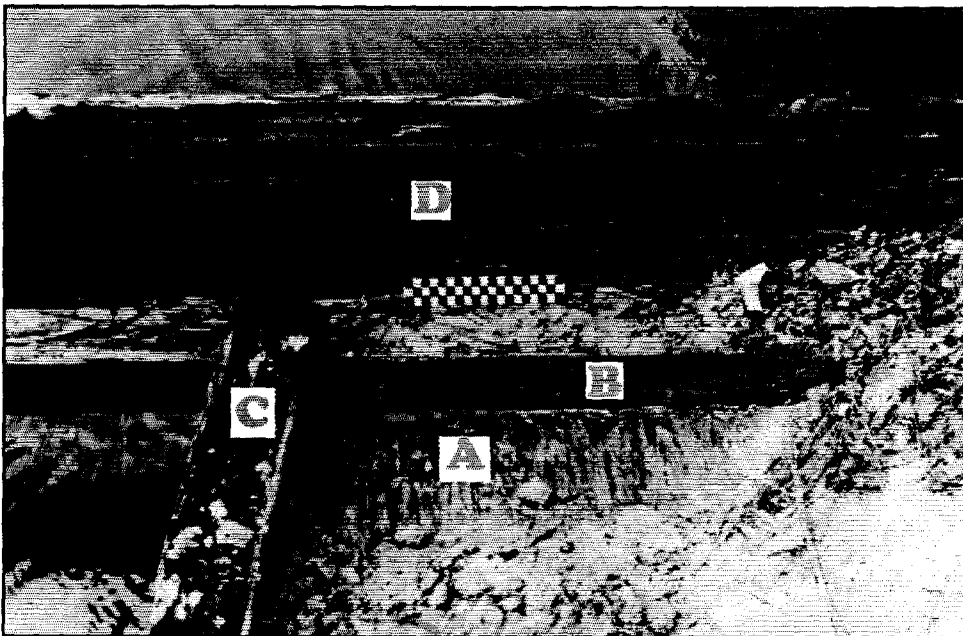


FIGURE 9: Closeup of construction detail. A - hull planking, B - chine log shelf, C - deck plank, and D - chine log. Scale is 7.5 in/19 cm.

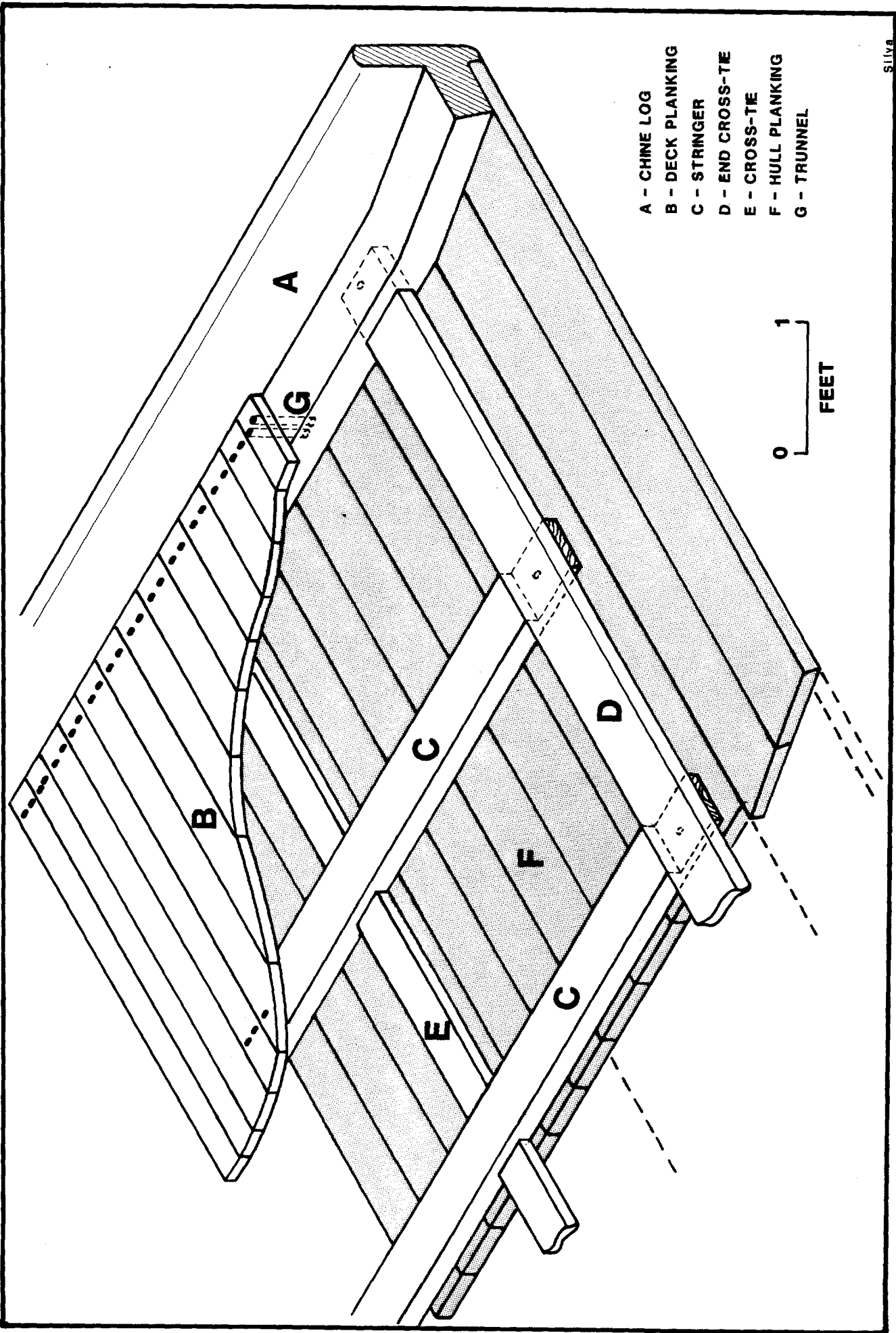


FIGURE 10: Cutaway View of Ferryboat Construction Detail.

The craft was strengthened longitudinally by three stringers between the chine logs: one on centerline, and one to either side. All three measure 4 by 4 inches and run at least the waterline length of the craft. Whether they continued up the stern/bow rake to a transom can only be answered by exposing the buried end. With the exception of the chine logs, all structural members in the last 5 to 6 feet are missing from the exposed end of the vessel. Where the larger cross-tie was located, a half lap was cut in the top of the stringers to support it (Figures 6, 10 and 12). With the smaller cross-ties, a single notch was cut in the underside of the stringers, thus allowing the stringers to overlay the cross-ties which, in turn, were flush with the hull planking below (Figures 6, 7, 10 and 11).

Flooring, or deck planking, was laid on the shelf of each chine log. Lumber used for the flooring measures 1 by 5 inches and spanned the 8.25-foot width between the chines. Slightly larger boards were used for the hull planking, these measure 1.5 by 6 inches and were fitted between the notches located on the underside of the chines. This lower width is closer to 9 feet. As with the chine logs, lumber for both decking and planking is also pine.

All planking, as well as the larger cross-ties, was secured with wooden trunnels. A pair of trunnels was used to fasten each end of the planking with each trunnel extending through the flooring, the chine shelf, and the hull planking. A point of interest regarding the trunnels is that, although the holes in the stringers and shelves are round, the ends of the trunnels are about 1-inch square. According to Larry Murphy (personal communication, December 1991) trunnels are usually octagonal in cross section with square ones rare in vessel construction. Possibly, that the trunnels were wedged on the ends, but evidence of this was not readily noted during the fieldwork.

The single piece of metal noted on the vessel is a 3/4-inch diameter pin driven in the gunwale of the north chine log (Figure 6). The function of this item is unknown, but the lack of any other metal in the construction of this vessel is noteworthy.

No clear evidence exists for additional features on the craft. Ferryboats of this style often had side railings that extended above deck level and served to keep vehicles and passengers on the craft. A photograph of a ferryboat at the Sheffield Ferry (see Moreley 1975:149) depicts such railing, but no evidence of such a feature was obvious on this exposed wreck. Ramps attached to the transoms at either end also were a common feature on ferryboats of this style, but no evidence to support this was noted because the exposed ends of the chine logs are splintered.

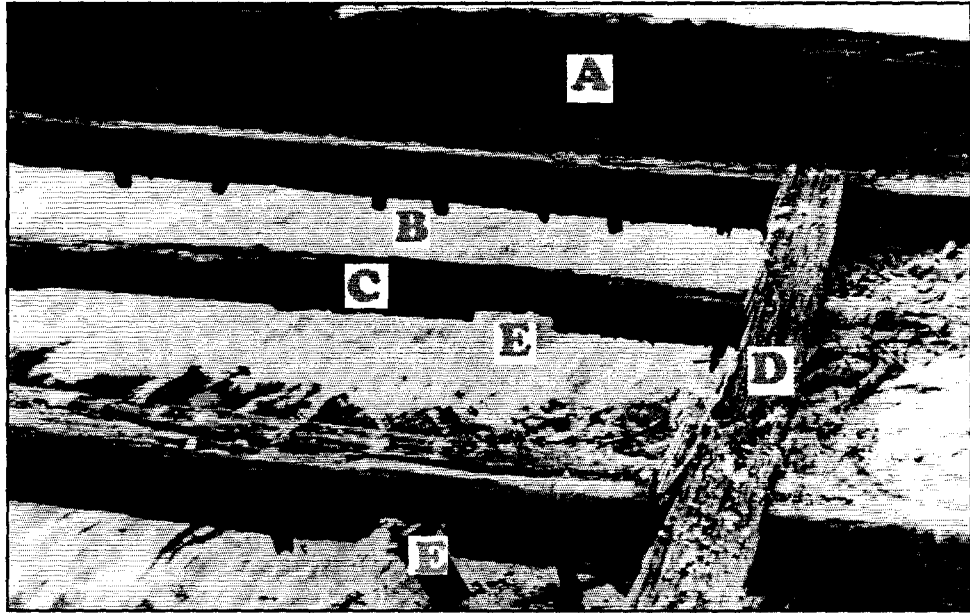


FIGURE 11: Construction detail. A - chine log, B - trunnels, C - stringer, D - deck plank, and E - notch in underside of stringer.

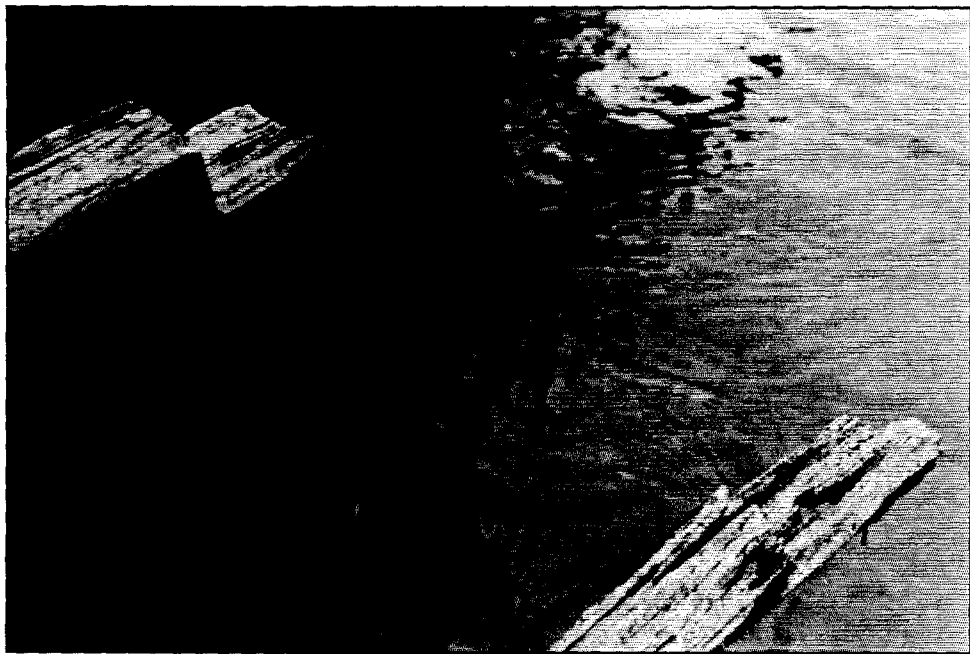


FIGURE 12: Construction detail. Half lap cut into the end of the center stringer. Note trunnel hole through stringer.

HISTORY

Very little time was available for researching potential ferry sites associated with the ferryboat. Additionally, the available sources sometimes contradict one another or suffer from a lack of precise information. Ferrying on the Neches River has a long history that began in the early 1830s. At least four ferry locations occur within 16 river miles upstream of the investigated site. The closest is the Sheffield Ferry, located just a mile upstream.

The immediate area of the FM 1013 bridge is probably the site of a ferry built by Ephraim Thompson around 1834 (Anonymous 1991:3). Thompson was an American citizen who received a league of land for settlement from a local Mexican landowner. Thompson owned land on both sides of the Neches River, which would have required a ferry crossing, and it is assumed to have been in this vicinity. Thompson died in 1836, and it is not known how long his land was owned and worked by his family. In 1852, however, Jeff Sheffield came to the area and established (or took over?) a ferry operation in the vicinity of what is now the FM 1013 bridge. Sheffield continued to operate his ferry as a private business until 1881 when the Tyler County Commissioners established it as a public ferry (Anonymous 1991:3). The ferry continued in operation until 1959 and has the distinction of being the last public ferry on the Neches River (Moseley 1975:147-148).

About 5.5 river-miles upstream from the Sheffield Ferry, and about 2.5 miles northeast of Spurger, is an unnamed ferry crossing for which little information has been found (Anonymous 1991:3).

Continuing upriver, somewhere between Spurger and Town Bluff, is the Works Bluff Ferry. This land was owned by Dr. John Works during the 1850s and possibly into the 1860s. When the ferry was established at this crossing is unknown, but it was being operated by Tom Bower from around the turn of the century until 1929 (Anonymous 1991:3).

The Town Bluff Ferry, in the vicinity of the Town Bluff Dam, is about 14 river-miles north of the FM 1013 bridge. This ferry is considered the oldest ferry on this portion of the river, having been operated by a man named Wyatt Hanks as early as 1833 (Anonymous 1991:1). The ferry served as an important link not only on the east-west road through the region but also the north-south road from Nacogdoches to Beaumont.

As is obvious by the number of ferry operations within a 16-mile stretch of the Neches River, ferryboats were indispensable links in the roads connecting the large and small

towns of southeast Texas and southwest Louisiana. Without them, travel and transportation of goods would have been nearly impossible and settlement and development of the "big thicket" region would have been severely curtailed throughout the nineteenth century.

Each ferry crossing served as a critical link in the regional trade and transportation networks. The Americanization of Texas in the 1820s and 1830s would not have been as marked as it were had not these vital links afforded the conduit of American goods, settlers and ideas into the Mexican state of Coahuila-Texas. The main artery from U.S. territory into Texas was the Camino Real, stretching from Natchez on the Mississippi River, through Louisiana to the Texas "port of entry" of Nacogdoches, then southwestward to San Antonio. Although most colonists and adventurers probably entered Texas via this route, many others would seek new lives in the area of the "big thicket" traversing the region between the Sabine and Trinity rivers. Small, local ferries provided necessary links for these travelers throughout the region. They also served to bring in fighters for the Texas rebellion, served as escape routes during the "Runaway Scrape" (Seale 1966:30) when it looked as though Santa Anna's army would retake Texas, and again channeled the same colonists back home when the Republic was created.

Ferryboats would continue as vital links in the trade and transportation necessary to take Texas through its years as a Republic, as a state within the Union, through the Civil War and toward the twentieth century. Although steamboats, keelboats, and flatboats carried the bulk of goods and passengers from north-to-south during this period, ferryboats would continue as critical links in the east-west movement well into the first half of the twentieth century. As such, their importance to both local and regional history is significant.

CONCLUSIONS

As a result of the investigations conducted in December of 1991, the following conclusions are offered regarding the exposed remains about 1 mile downstream from the Sheffield boat ramp. The remains are of a wooden vessel of barge construction that served as a ferryboat at one of at least four upriver locations. This use is based on construction evidence of the river craft and comparison with historic photographs of local ferryboats of similar design. Which ferry operation this particular craft was associated with is unknown. Somehow, the craft found its way downstream where it eventually came to rest on the river bottom, was covered with sand deposited by the river, and then the river changed course, only to return and uncover the wreck.

The craft, although simple in design, exhibits construction characteristics of a builder with some knowledge of ship or boat building; this was not a first effort of some local woodsman at boat making. The creation of the chine logs with the shelf and notch for planking took some forethought and skill to execute. Each chine long was carved from a single piece of wood as no scarfs appear in the exposed sections. The use of square trunnels in round holes is unusual though not unknown--it has been reported elsewhere in boat building (Larry Murphy, personal communication, December 1991). The use of wooden fasteners, implies the craft dates to the first half of the nineteenth century. After the Civil War, metal fasteners were widely available and affordable. This pre-Civil War date could associate it with one of the earlier ferry operations upstream (e.g., Thompson's Ferry, or the earliest years of the Sheffield or Town Bluff ferries). If so, such an association would make the vessel extremely significant in local and regional history.

RECOMMENDATIONS

Based on the above information and discussion, the following recommendations are provided.

1. Historical research should be conducted on the ferryboat operations of the Neches River, particularly those upstream from the vessel. This could result in obtaining more precise information on this vessel and could contribute to the interpretive program of Big Thicket National Preserve.

2. Protection of the site should be provided. Several factors currently pose threats to the site, including both natural and cultural impacts. The most obvious cultural impact is the destruction of the remains through vandalism and/or intentional removal. The protruding chine logs may be seen as a safety threat to boaters and could be cut off for river safety reasons. The same pieces could be perceived as a diving or fishing platform and suffer damage through recreational use. Natural threats include, first and foremost, fluctuating water levels in the river, resulting in a damaging wet/dry cycle of the vessel fabric. Once exposed to the open air, this alternating cycle would quickly destroy historic fabric. Such conditions are already in place; the river is known for its great fluctuations in water level caused both by natural flooding events and varying amounts of water releases from the Town Bluff Dam up stream. A secondary threat from flooding is the possibility of swift current carrying large trees or snags down river and colliding with the exposed vessel remains. This could result in the destruction of the exposed pieces of the

vessel. Flooding also could remove the overburden protecting the buried portion of the vessel and carry all remains down stream resulting in complete loss of the site.

Given the above threats, we recommended the site be investigated further through excavation and the materials be removed for preservation/conservation. An on-site visit by a qualified conservator would be necessary and a conservation plan prepared before any archeological excavation. Preparation of a research design also would be necessary, which would direct the study toward specific questions if the vessel's history, construction, and use. We see no other means of providing protection for this site.

ACKNOWLEDGEMENTS

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WOOD ANALYSIS OF THREE SAMPLES FROM THE FERRYBOAT SITE, EAST TEXAS

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INTRODUCTION

Three wood samples from a chine log, a hull plank, and a deck plank were collected from a ferryboat sunk in the Neches River in eastern Texas. These three samples were examined to determine what timber these parts of the ferryboat were constructed of.

METHODS

Pieces of each sample were placed in a non-ventilated drying oven and dried at 70 C for approximately 2 hours. The dried pieces were then broken to expose a fresh cross section and examined under a magnification of 60x using a binocular microscope.

DISCUSSION AND CONCLUSIONS

The sunken partial ferryboat was discovered in the Neches River in eastern Texas. Sample 1 was taken from the right chine log. This wood was identified as Pinus (pine). Sample 2 was taken from a hull plank and was identified as Pinus. The third sample was collected from a deck plank and was also identified as Pinus. These parts of the ferryboat, and possibly the entire ferryboat, were all constructed of pine wood, most likely Southern Yellow pine, although the species could not be confirmed microscopically. Pine is considered the most important genus in the world for timber and resin production (Record and Hess 1972:15). Southern Yellow pine is a name that applies to several species of Pinus growing in the southern United States, such as Pinus palustris, Pinus rigida, Pinus echinata, and Pinus elliottii. Wood from these trees has many uses, including hardboard, particle board, poles, mine timbers, piling, railroad ties, construction plywood, structural timbers, building construction, boxes, crates, agricultural implements, and ship- and boatbuilding (Panshin and Zeeuw 1980:446).

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