

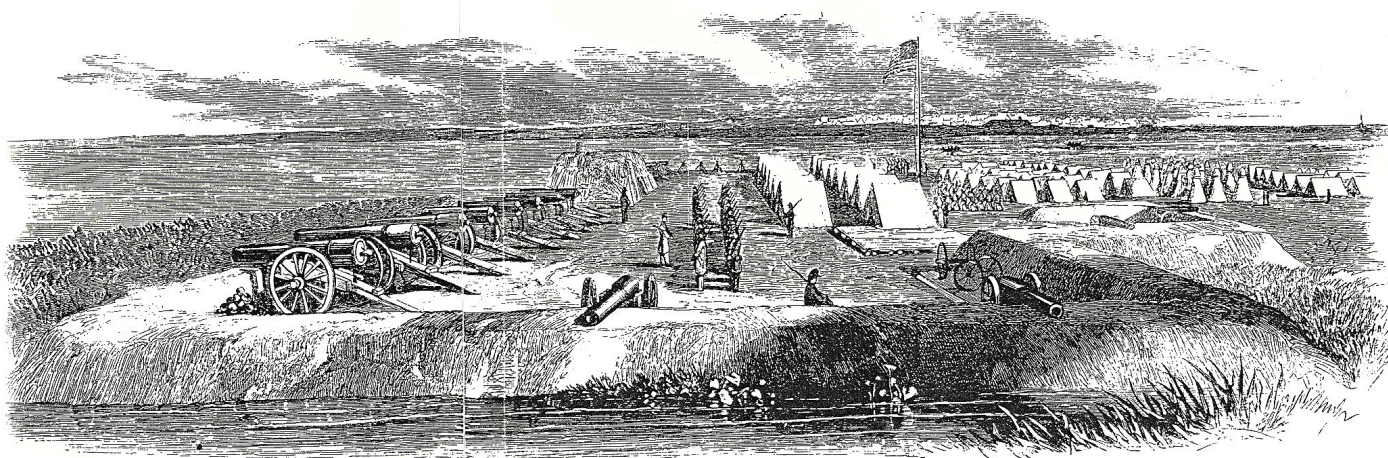
Archeological and Historical Investigations At Battery Hamilton (9CH953), Chatham County, Georgia

By:

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Preface

The Georgia Department of Transportation (GDOT) purchased Bird/Long Island, located in the Savannah River between the north and south channels, to supply spoil material from the island, of which there is approximately 423 acres, as fill for the proposed US 80/SR 26 widening and to utilize the existing 524 acres of salt marsh and newly reclaimed spoil areas as a wetland mitigation site. Battery Hamilton was identified by Tidewater Atlantic Research, Inc. in 2001 as part of the survey to identify cultural resources on the Bird/Long Island Wetland Mitigation Site.

Although Battery Hamilton would not be affected by the wetland mitigation project an archaeological and historical investigation was sponsored by GDOT and the Federal Highway Administration (FHWA). These efforts went beyond simple compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, to determine whether or not the historic property was still intact, if it was being impacted by the natural environment, and develop a preservation and stabilization plan for the site. This testing report, *Archeological and Historical Investigation at Battery Hamilton (9CH953), Chatham County, Georgia*, completed by Southeastern Archeological Services, Inc., under the direction of Chad O. Braley, provided the foundation for a preservation and stabilization plan developed by an interdisciplinary team consisting of then GDOT archaeologist, Shawn Patch, Robert M. Thorne, with the National Clearinghouse for Archaeological Site Stabilization, John E. Ehrenhard, with the Southeast Archeological Center of the National Park Service, and Chad O. Braley. Along with the foundational work this report also showcases the use of creative and flexible methodologies necessary when working in a marsh environment.

GDOT is pleased to publish this archaeological testing and historical research report as the twelfth in its *Occasional Papers in Cultural Resource Management* series. This project represents state and federal transportation efforts to enhance the future by being good stewards of the past.

Sara H. Gale
Archaeologist
Georgia Department of Transportation

Archeological and historical investigations of Battery Hamilton, a Civil War (Federal) gun emplacement, were undertaken in the early part of 2002. The site was first recorded in 2001, but the survey data were insufficient to determine if the site had intact deposits or if it was being adversely affected by natural forces. The current study was sponsored by the Georgia Department of Transportation and the Federal Highway Administration in order to answer these questions and to develop a preservation and stabilization plan for the site. The archeological site is located in the Savannah River on Bird Island about three miles upstream from Fort Pulaski. The environmental setting is unique:

Bird Island is composed entirely of marsh mud and several times a year it is inundated by high tides. Battery Hamilton directly participated in the siege and capture of Fort Pulaski in April of 1862 by preventing Confederate supply boats, reinforcements, or gunboats from descending the river. The investigations demonstrated that intact wooden gun platforms and other structural remains are preserved beneath 40 - 60 cm of marsh mud. Investigation of old aerial photographs, maps, and a Civil War sketch of the gun battery shows there has been minimal shoreline erosion over the past 140 years. In summary, the site is stable, despite its location in such a dynamic setting.

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It is a pleasure to acknowledge the people who either worked on this project or assisted in other ways. The field crew included Ron Schoettmer, Trent Myers, Gordon Martin, and Christie Cabe. They experienced the trials and tribulations of working in a salt marsh: sinking to the knees in black mud and bailing water from the excavation units. It was different and fun. Matt Williams was our boat captain, ferrying us to and from the site and coming to our rescue before thunderstorms got too close. John Breen, Tally Kirkland and other National Park Service employees at Fort Pulaski National Monument were of much help, providing copies of key documents relating to Battery Hamilton and by showing

a personal interest in our work. Thanks also goes to Shawn Patch, archeologist with the Georgia Department of Transportation. He visited us at the end of the project, on a day that coincided with a Spring tide when the site was under a foot and a half of water. He too, experienced the unique field conditions and understood that the research methodology had to be flexible. Finally, a big thank you goes to Judy Wood, archeologist with the Savannah District, U.S. Army Corps of Engineers. Few people have Judy's knowledge about the history of this stretch of the Savannah River. Thanks for the pictures of Battery Vulcan and the steamship, *Ida*.

To help develop a preservation plan, the Georgia Department of Transportation and Federal Highway Administration sponsored the archeological investigations of Battery Hamilton (9CH953), a Civil War (Federal) gun emplacement located on Bird Island in the Savannah River downstream from the City of Savannah (Figure 1). Bird Island divides the North Channel from the South Channel of the river. Because Savannah is Georgia's largest and busiest port, the North Channel sees heavy traffic from large ships. For the past century the North Channel has been modified by dredging and the construction of training walls paralleling the channel in order to maintain open shipping lanes. Logically, the margins of the islands became the repository for large amounts of dredge spoil.

The wetland mitigation project will partially restore the natural environment of the area by removing dredge spoil from the northern edge of Bird Island. Due to the fact that the archeological site is far removed from the spoil piles (over 425 m [1400 ft] away), it will not be affected by the restoration project.

Battery Hamilton, named for Captain John Hamilton, Chief of Artillery of General Thomas W. Sherman's staff, was constructed in February of 1862 during the initial investment of Fort Pulaski, located about three miles downstream. Made of marsh mud, sand bags and wooden planking, it was a well engineered field fortification despite its location. Today, the earthworks have largely been reclaimed by

marsh, and are perceptible as low berms that support a variety of small woody shrubs.

The archeological investigations took place during February and March of 2002. In general, the investigations were designed to be largely non-intrusive. The purpose was to assess the condition of the site and its preservation status. As specified by the scope-of-work, a topographic map (10 cm contour interval) was first prepared. This was followed by systematically investigating the area with a metal detector, which met with negative results. Then, the area was methodically explored with a steel probe. Although not called for in the scope-of-work, probing was extremely effective. First, the probing determined the location and extent of the sandbag layers that were associated with the gun platforms and powder magazine. Second, the probes encountered well preserved wooden timbers and planks beneath the 40 - 50 cm blanket of marsh mud. Close interval probing also allowed us to determine the orientation and dimensions of the wooden substructures, which were then mapped. To investigate these further, four small test pits were excavated which established that the timbers and planks are remarkably well preserved within the mud matrix. Timbers and planking were also exposed at the interior edge of the powder magazine, which is now a low mound within the gun battery.

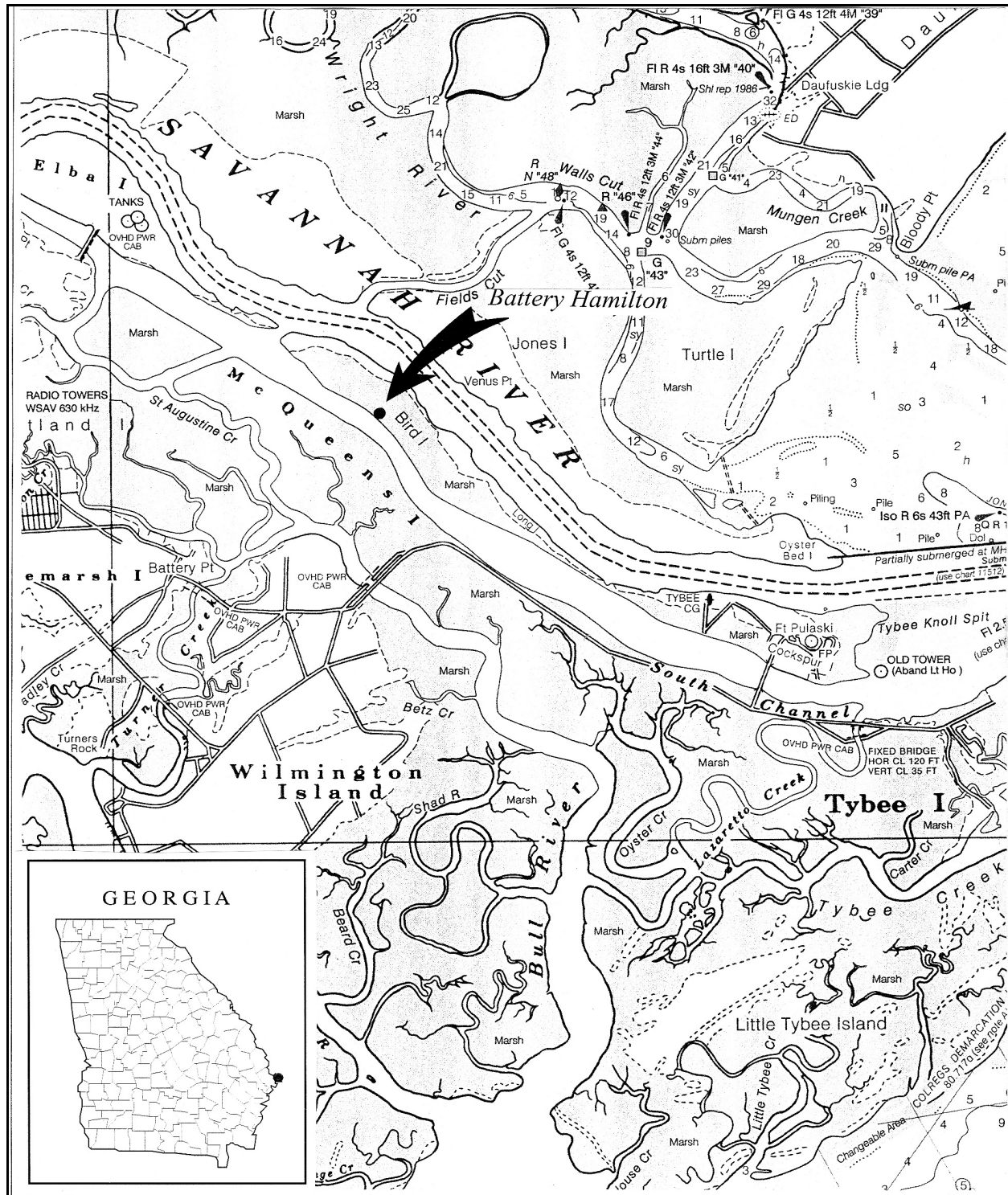


Figure 1. Location of Project Area. (Source: 1:80,000 US Department of Commerce Coast Survey, St. Helena Sound to Savannah River).

THE PHYSICAL SETTING

As a marsh island, Bird Island is composed of soft black mud resting on a substrate of sand. At high tide the island's surface becomes saturated, and it becomes wholly inundated by spring tides and those coinciding with the full moon. Figures 2 and 3 depict the setting.

The vegetation consists primarily of waist-high cordgrass (*Spartina alterniflora*), with the "high" ground such as the powder magazine and parapets supporting a low growth of woody shrubs and yaupon. The marsh mud teems with invertebrates such as marine worms, mussels, snails and fiddler crabs. During high tides the marsh becomes home to schools of small fish, shrimp and other marine organisms. Snakes, turtles and alligators are also found on the marsh islands, as are a wide variety of birds and small mammals.

As a result of over a century of dredging the North Channel of the Savannah River and other efforts to maintain shipping lanes, Bird Island is now incorporated into a long, mostly man-made island. Formerly, Bird Island was about 1.74 km (1.1 mi) long and 300 m (985 ft) wide (Figure 4). The outline of the original island can still be traced on modern aerial photographs due to differences in vegetation and elevations between the natural and made land (Figure 5). Cartographic sources and archival research (Watts 2001) reveal that modifications to the shipping channel began in the late 1870s with the addition of dams and training walls between Bird Island, "2nd Island," Oakley Island and Long Island. By the early 1900s the extent of the training walls had been substantially increased, effectively cutting off the South Channel of the river to

navigation and forcing more water through the North Channel.

HISTORIC OVERVIEW

The opening shots of the Civil War, the shelling of Fort Sumter, South Carolina, took place on April 12, 1861. In Savannah, four months earlier (January 3rd), Confederate forces took control of Fort Pulaski before it could be occupied by Union troops (Groh 2000:58). Fort Pulaski is a massive brick structure that was built between 1829 and 1845, but it had not been garrisoned by Federal troops before the war. In early 1861 it was occupied only by a caretaker and an ordnance sergeant (Ibid.). The Confederates quickly readied the fort for battle by repairing the few existing cannons and mounting others in the casemates and on the ramparts above.

In the summer of 1861 the Federals enacted a plan to recapture the coastal fortifications and blockade Southern rivers and harbors. Under the command of Samuel DuPont (U.S. Navy) and Thomas W. Sherman (U.S. Army), a convoy of 51 naval vessels sailed from Hampton Roads, Virginia to Port Royal Sound, South Carolina (Catton 1960). On November 7th the Union fleet sailed into the mouth of the Port Royal River and simultaneously attacked Fort Walker (at the north end of Hilton Head Island) and Fort Beauregard (on Bay Point, on the north side of the inlet). Both earthen forts were bombarded into submission. A few days later the town of Port Royal was occupied by the expeditionary force, and plans were developed for the investment and capture of Fort Pulaski. In Georgia, Confederate positions on Tybee Island were abandoned and reinforcements were sent to Fort Pulaski.



Figure 2. Photograph of Project Area. The South Channel of the Savannah River at dawn.



Figure 3. Photograph of Project Area. Salt marsh within Battery Hamilton.

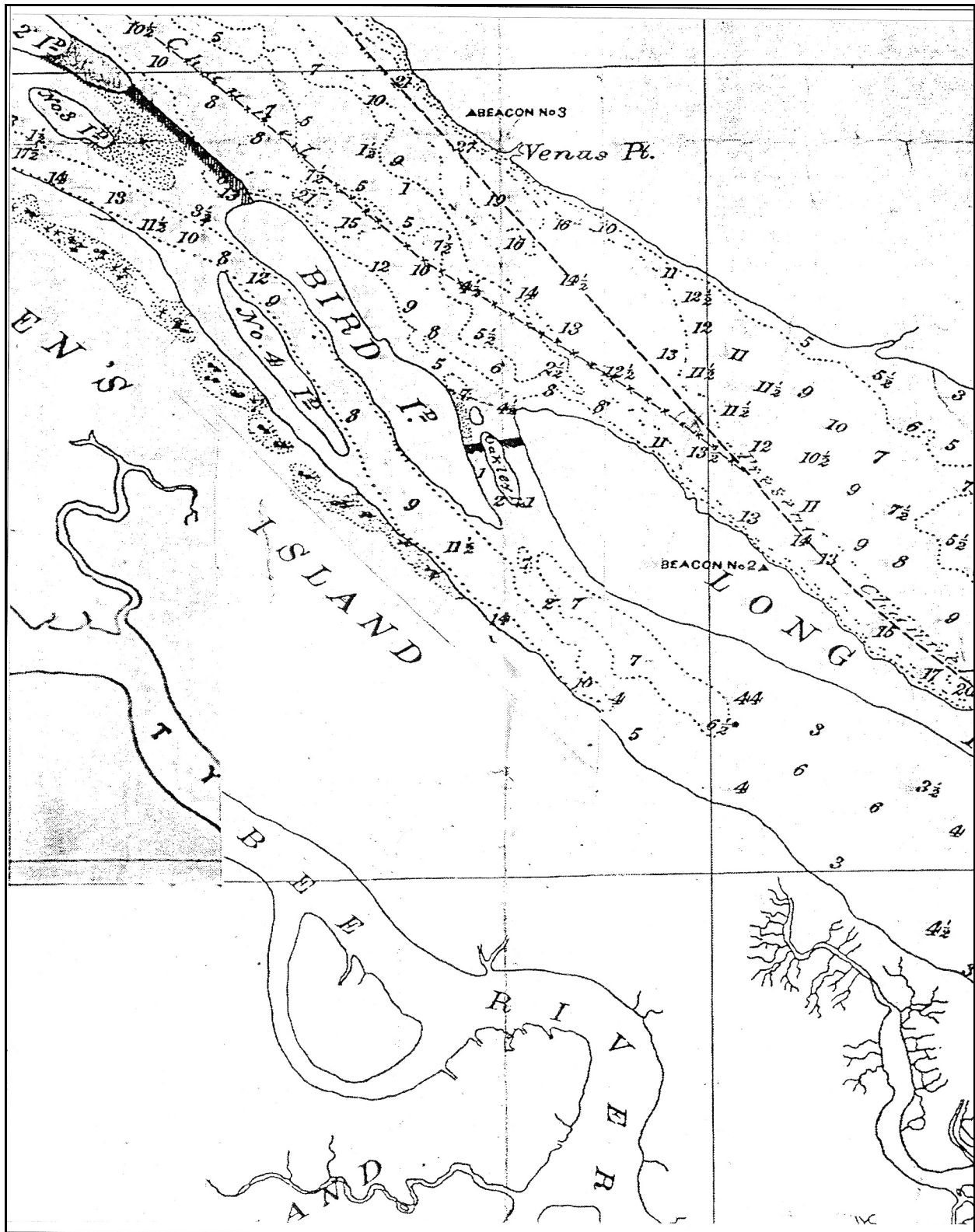


Figure 4. Gillmore Map of 1879 Showing Bird Island Before Channel Dredging.

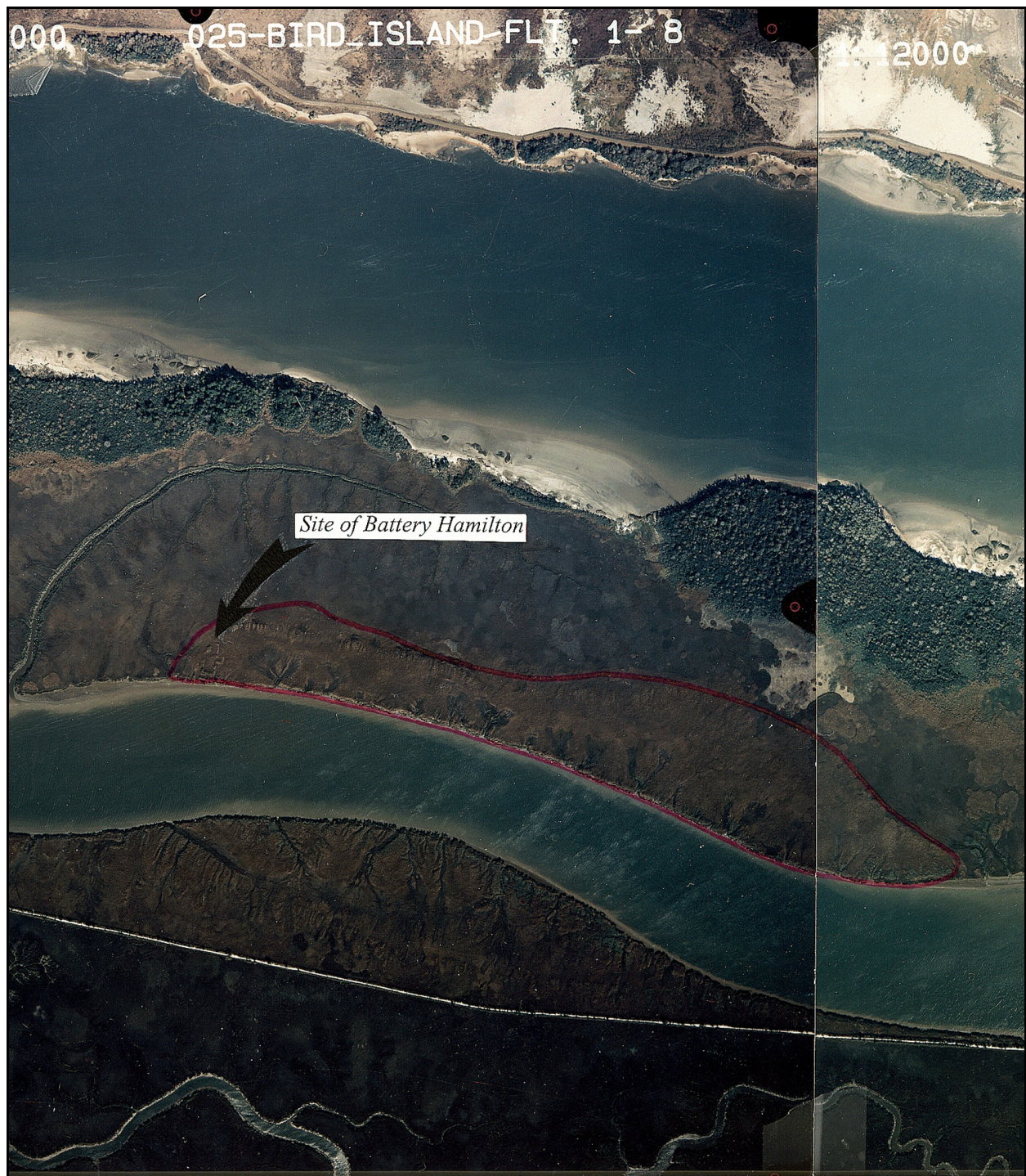


Figure 5. Aerial Photograph (1998) of Bird Island Showing Original Configuration (outlined in Red) Before Dredging.

Many Savannah citizens panicked and evacuated the town.

Robert E. Lee inspected the fort in November and ordered the abandonment of Tybee Island and other outlying defensive positions in order to better protect the approaches to Savannah. The Confederates knew that Federal gun batteries could be erected on Tybee Island, about a mile to the southeast, but Fort Pulaski was a "third system" fort, considered invincible to an artillery attack. It was General Lee's opinion that "...they will make it pretty warm for you here with shell, but they cannot breach your walls at that distance." To prevent Federal warships from assaulting the fort, or bypassing it through the maze of tidal streams to capture Savannah, the Confederates blocked key channels with sunken vessels, pilings or other obstructions.

Blockading Union ships made their appearance off Tybee Roads in late November of 1861 and Federal troops were landed on Tybee Island on the 24th of that month. Union gunboats patrolled the tidal streams around Savannah, occasionally exchanging fire with Confederate pickets.

As the first step in retaking Fort Pulaski, the Federals had to prevent ships from coming down the Savannah River that could resupply the garrison or attack Union positions. Consequently, two six-gun batteries were constructed upstream from the fort. During the second week of February, 1862, Battery Vulcan was constructed at Venus Point on Jones Island, commanding the North Channel of the Savannah River (Figure 6). Within a day or two Battery Hamilton was placed about 1200 m (3900 ft) south of Battery Vulcan. Its placement was on the northern end of Bird Island, overlooking the South Channel of the Savannah River. To avoid detection by Confederate

gunboats, which regularly plied the river, both batteries were erected under the cover of darkness.

The standard size Civil War artillery battery consisted of six guns, so these batteries were nothing out of the ordinary. But, at Battery Hamilton, the ordnance was atypical, consisting of heavy artillery, including three 24-pounder James rifles, one 30-pounder Parrott rifle, one 20-pounder Parrott rifle and an eight-inch howitzer. If the gun tube was elevated to 25° the larger Parrott rifle had a range of 3.8 mi, truly a threat to any wooden-hulled vessel that came within distance. Originally these artillery pieces were manufactured as smooth-bores. After being rifled, they fired elongated shells instead of spherical shot. Thus, a 24-pounder James rifle actually fired a shell that weighed about 44 pounds.

Battery Hamilton was built and occupied by Company E and a detachment from Company A of the Third Rhode Island Heavy Artillery. According to the *Official Records of the War of the Rebellion* (1882:(6):237) the Savannah River contingent of Company E was comprised of two officers and 60 enlisted personnel (63 additional enlisted men also belonged to the company but apparently were posted elsewhere). Assuming that the personnel were evenly divided between batteries Hamilton and Vulcan, and with the detachment from Company A, the Bird Island defenses probably were manned by over 50 artillerymen.

Figure 7 is a copy of an etching published in *Frank Leslie's Illustrated Newspaper* (1862) and is an artist's view of Battery Hamilton. The original drawing was done by W.T. Crane, who sketched many Civil War battle scenes for Leslie. Crane also sketched Battery Vulcan, guarding the North Channel

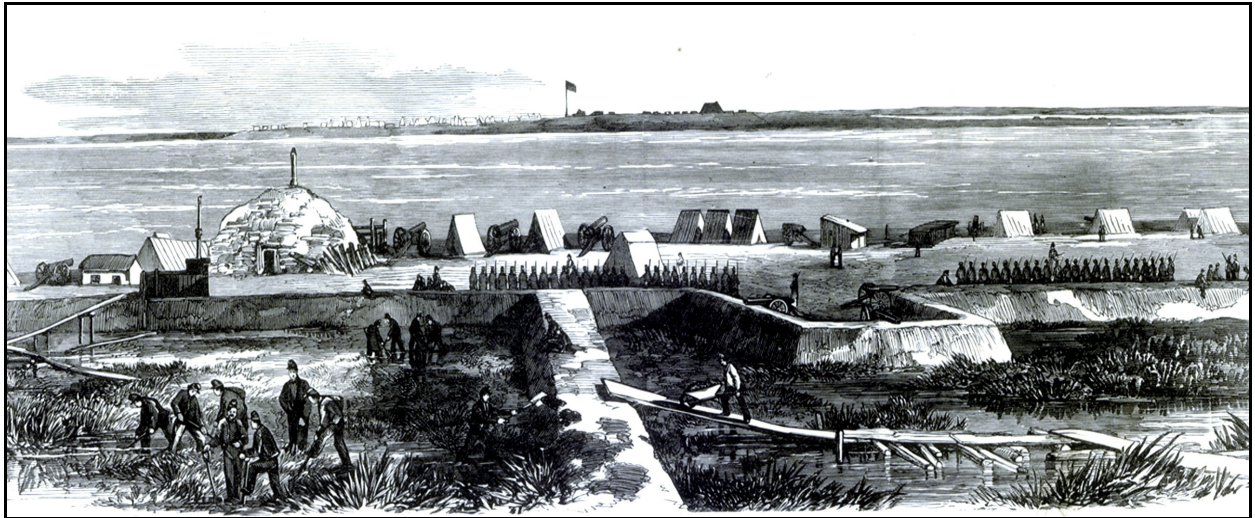


Figure 6. Artist's View of Battery Vulcan. After a sketch by W.T. Crane, published in *Harper's Weekly*.

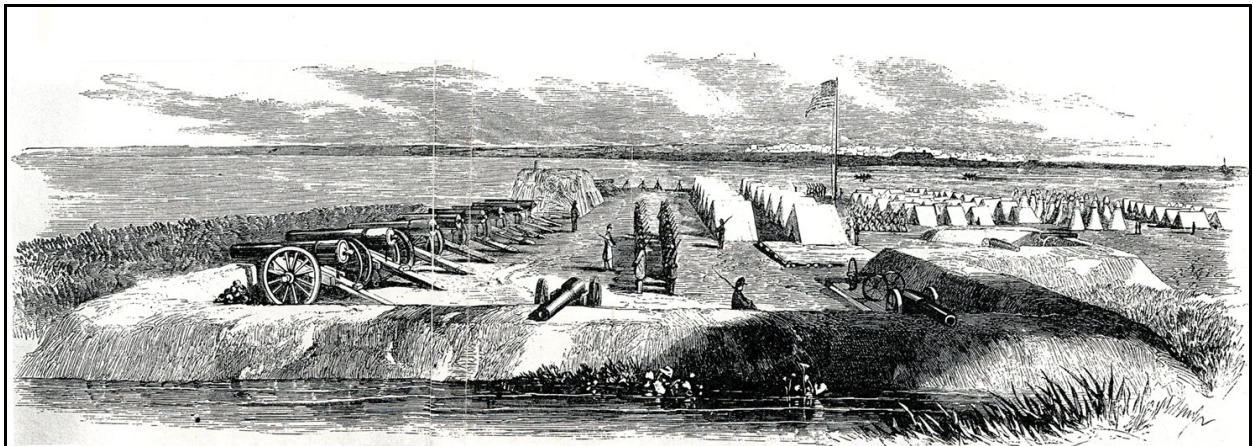


Figure 7. Artist's View of Battery Hamilton. Based on a sketch by W.T. Crane, published in *Frank Leslie's Illustrated Newspaper*.

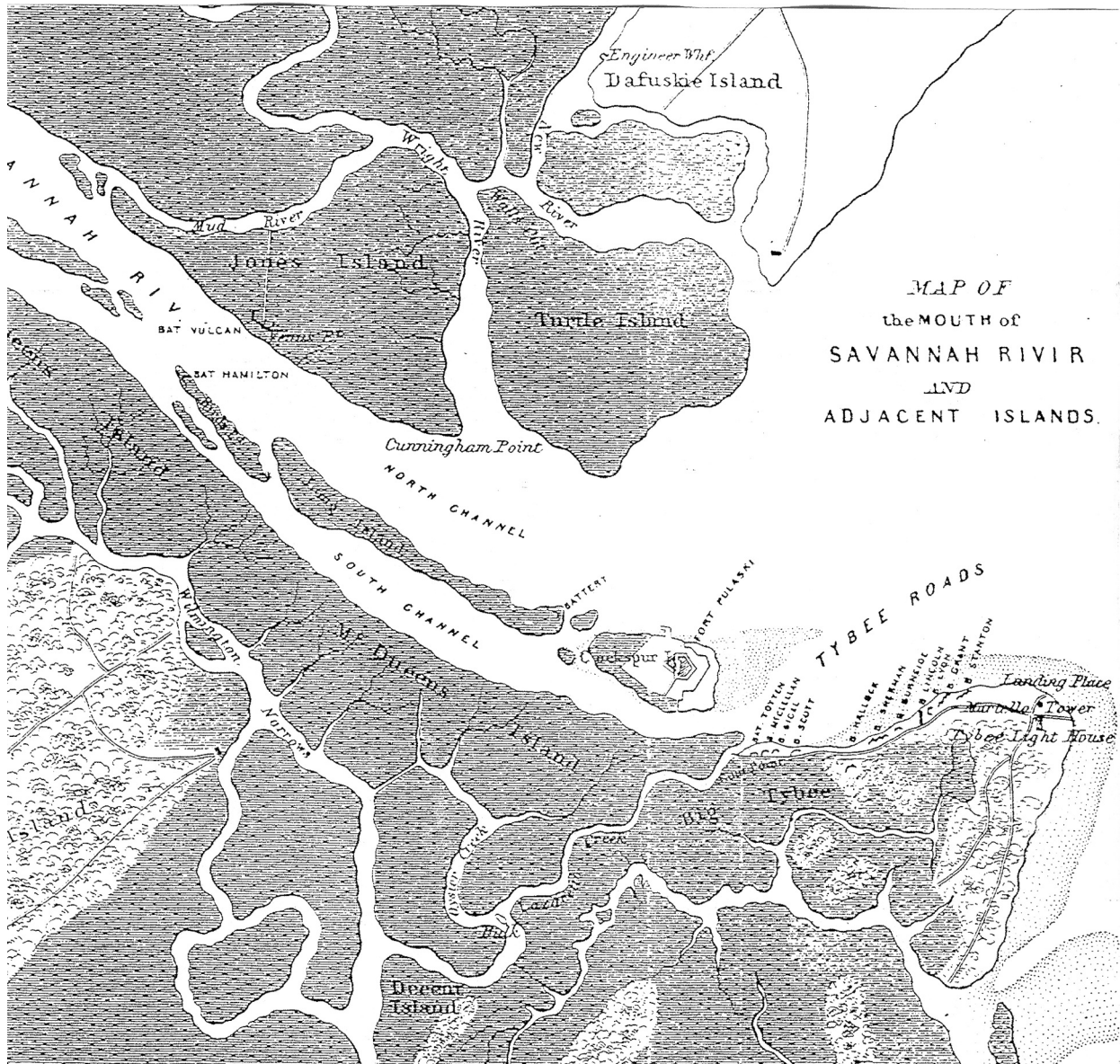


Figure 8. Map by General Quincy A. Gillmore Showing the Locations of Batteries Surrounding Fort Pulaski.

of the Savannah River (Figure 6). It seems that Crane (or his publisher) embellished the facts: both batteries were typical six-gun batteries, yet the captions to the illustrations state that Battery Hamilton was armed with 11 cannons and that Battery Vulcan sported nine artillery pieces. The Battery Vulcan sketch may depict Battery Hamilton in the background because some sort of military fortifications are shown on the horizon.

During these initial maneuvers, Daufuskie Island, the southernmost sea island in South Carolina (Figure 8), served as the secondary base of operations. Some of the houses on Daufuskie were demolished in order to provide lumber for the gun platforms; the island also supplied the sand for the sandbags that underlay the gun platforms and powder magazines. The material was transported to the site from the south end of

Daufuskie Island, 12 km (7 mi) away following the twisting tidal streams. From the "Engineers Wharf" on Daufuskie, the flats were towed by a shallow-draft steamboat for part of the journey. Their route took them southwest down New River, through Wall's Cut, northwest for a short distance upstream on Wright River, then southwest following Mud River to its confluence with the Savannah. At high tide, under the cover of darkness and with muffled oars, the flats and their cargo of men and munitions were rowed across the North Channel of the Savannah River to the north end of Bird Island where began the grueling task of off-loading and dragging six cannons across 100 yards of marsh mud.

The two batteries effectively bottled-up the river but saw limited action. On February 13, a few days before Battery Hamilton was in place, the Confederate supply ship, *Ida* (Figure 9), steamed past the newly constructed Battery Vulcan. The battery opened up, but the guns had not yet been sighted in. The *Ida* survived this encounter, only to be sunk by a federal artillery battery (Battery Winegar) upriver during the final battle for Savannah in December of 1864. On the 14th of February, Battery Vulcan also exchanged artillery fire with four Confederate gunboats, one of which was severely damaged in the barrage. The battery fired about 30 shots at the vessels that were about a mile upstream (Gillmore 1862). The only recorded action seen by Battery Hamilton took place when a Confederate vessel sailed out of the mouth of St. Augustine Creek (three miles upstream) and headed upriver toward Savannah. Several rounds were fired in its direction, but none hit the vessel. Appendix A provides firsthand accounts of events at Batteries Hamilton and Vulcan.

With Batteries Hamilton and Vulcan guarding the approach from Savannah, in early March and April the U.S. Army began placing 11 cannon and mortar batteries on

Tybee Island, opposite of Fort Pulaski. The bombardment began on April 10, 1862, and the "invincible" fort surrendered after a day and a half of being shelled by rifled cannons and mortars. This was the first time that rifled cannons had been used against a masonry fort, and the results demonstrated that such fortifications were obsolete. Despite the heavy bombardment (over 5000 rounds) and return fire, there were very few casualties. Only three Confederates were wounded, and one Union soldier was killed when a shell burst over Battery McClellan (Schiller 1997). With the capture of the fort, Batteries Vulcan and Hamilton had outlived their purpose, so they were abandoned after two months of service. Fort Pulaski was garrisoned by Union troops and the blockade remained in place until Savannah was captured nearly three years later, in late December of 1864.

PREVIOUS ARCHEOLOGICAL INVESTIGATIONS OF GUN BATTERIES ASSOCIATED WITH FORT PULASKI

Battery Hamilton

The site of Battery Hamilton (9CH953) was first recorded by Tidewater Atlantic Research, Inc. (TAR) in early 2001 (Watts 2001:55-63). Figure 10 is TAR's sketch map of the site, and their site description is quoted in its entirety:

Historical research indicated that Battery Hamilton was located on the western end of Bird Island. Examination of aerial photographs of the area from 1941, 1952 and 1998 shows, as an area of slightly different color, the original outline of Bird Island prior to its merger with Long Island, and the presence of

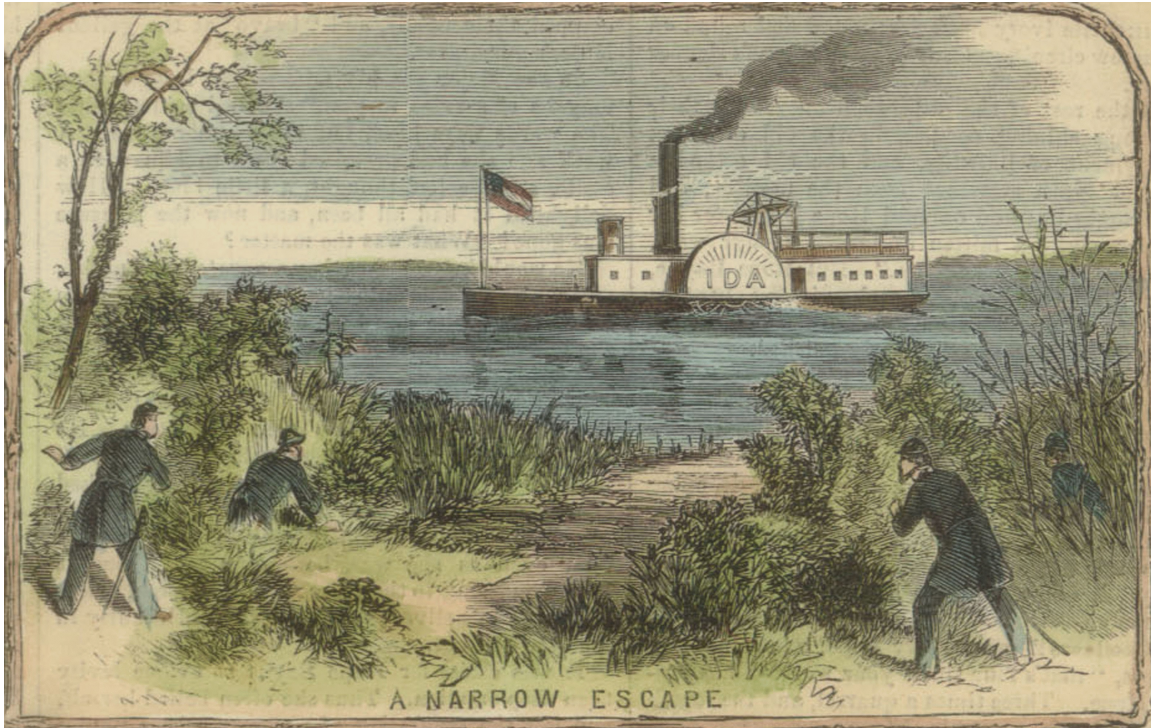


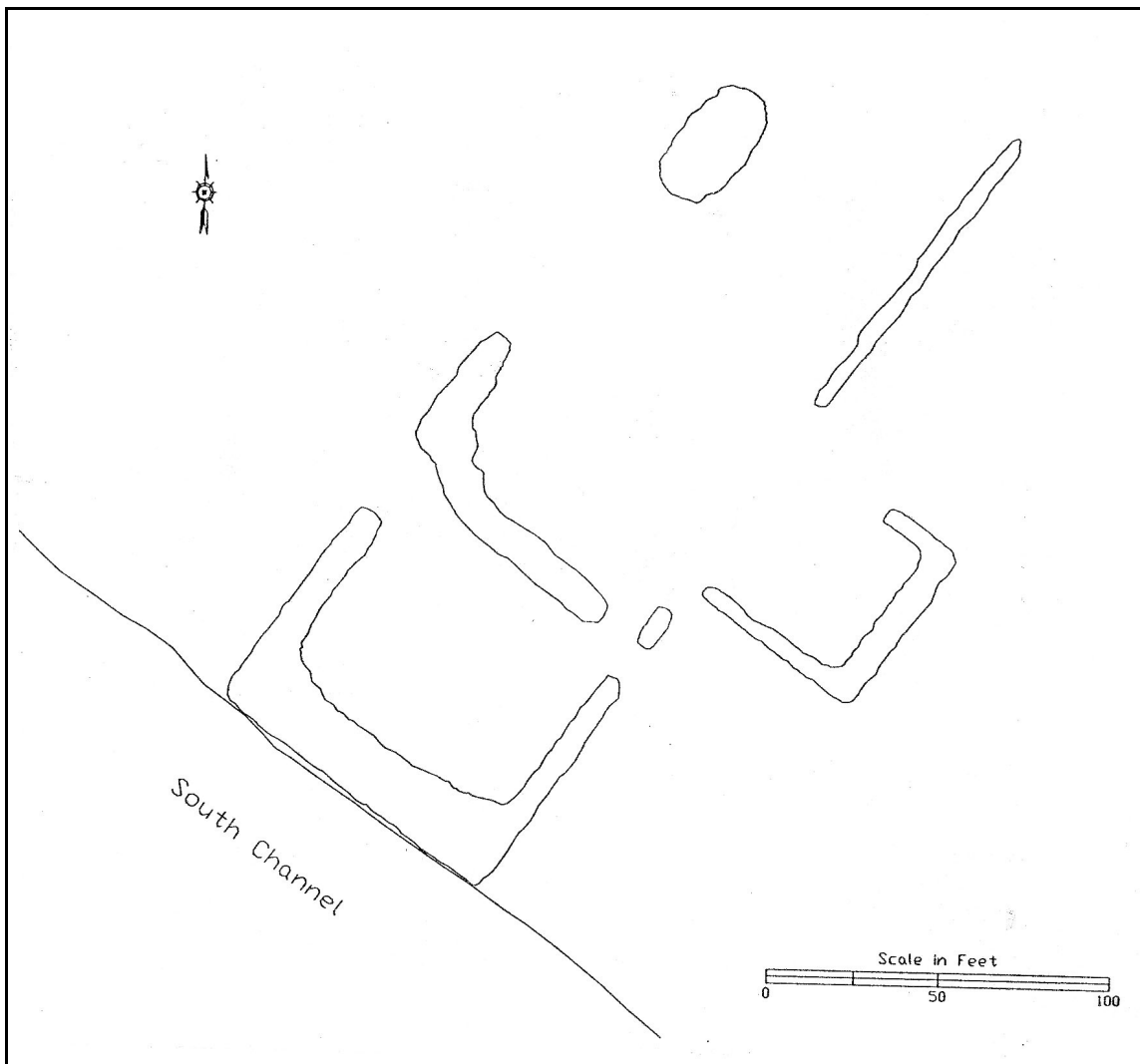
Figure 9. The Confederate Packet Boat, *Ida*. Source: *Harper's Weekly*.

a linear feature in the marsh adjacent to the south shoreline. The photographs clearly show a rectangular outline in the marsh with an adjoining square line of vegetation on the site's southeastern side. The 1952 aerial indicates that the site was nearly intact with only the northwest corner exhibiting any signs of degradation. By 1998, the level of deterioration had increased. The outline of the feature is less distinct and much of the northwest quarter had been reclaimed by marsh.

Investigation of the site revealed patches of tall shrubs growing in straight lines, on ground approximately 2 feet higher than the surrounding marsh. The site borders South Channel and is most intact along its river face. The main rectangular structure measures 272 feet long and 98 feet wide. The

square shaped addition, possibly the location of the magazine, extends out from the center of the southeastern side. That addition measured 55 feet long and 50 feet wide. A visual survey of the site revealed drift wood and trash scattered around the lower portions of the site but no evidence of any associated cultural material.

Systematic probing of the feature was carried out to locate and determine the extent of any cultural material preserved below the surface. The entire site was probed with a metal rod on 10-foot intervals to a depth of 8 feet. No cultural material was located by the probe, however, one spot exhibited a change in the consistency of the marsh sediment. That spot, located in the square extension, contained what appeared to be a sandy lens



approximately 1 ½ feet below the surface. A shovel test was dug at that location. The soil consisted of soft, nearly liquid black mud with the water table located just below the surface. The test was terminated at 4 feet. Sand was noted mixed within the mud at 1 ½ feet below the surface but it did not form a distinguishable layer. No cultural material was located during excavation. The sandy lens might have been the remains of sandbags used in creating a foundation for the gun platform.

As Watts indicates, the remnants of Battery Hamilton are clearly discernible on aerial photographs (Figures 11 and 12). The powder magazine is also visible as a circular clump of vegetation midway along the west parapet. Comparing the 1952 with the 1998 aerial photographs shows that there has been little or no erosion of the bank of the South Channel. It does appear that during the past five decades the surface features have been degraded by tidal flooding. In particular, a

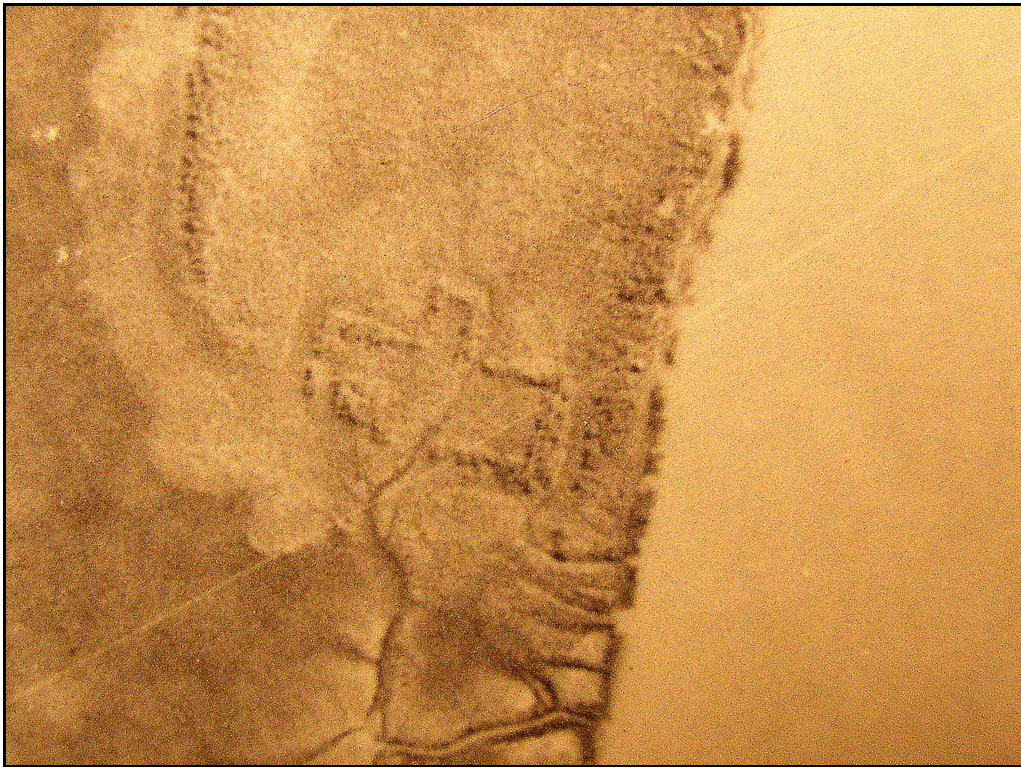


Figure 11. 1952 Aerial Photograph Showing Battery Hamilton.



Figure 12. 1998 Aerial Photograph Showing Battery Hamilton.

portion of the west parapet has been leveled. Yet, comparison of enlarged copies of the aerial photographs reveals that the deterioration is not as severe as indicated by TAR.

National Park Service Investigations at Battery Halleck

Directly participating in the siege of Fort Pulaski were the cannon and mortar batteries erected on the northwest shore of Tybee Island (see Figure 8 for location). Battery Halleck was a mortar battery located on Spanish Hammock. In 1990 the National Park Service conducted an archeological study of the site (Anderson et al. 1995). The site occupies a natural sandy dune remnant surrounded by salt marsh approximately 1.7 km (1 mi) southeast of Fort Pulaski. Fieldwork included surface reconnaissance, preparation of a topographic

map, a metal detector survey, the excavation of shovel tests, and the excavation of larger test units in four depressions that were interpreted as the mortar batteries and the antechamber of the powder magazine. Unfortunately, no definitive Civil War period artifacts were identified. Anderson et al. (1995:8) noted that Battery Halleck represented, at that time, the only preserved gun battery associated with the siege of Fort Pulaski. Technically they are correct; the other ten batteries that participated in the shelling of the fort have been destroyed by road building and an old landfill. However, Battery Hamilton, even though it was too far away to shell Fort Pulaski, helped make the siege possible. As will become clear, it is the best preserved Federal battery on the Savannah River.

LITERATURE REVIEW

A variety of historic documentary resources provided information about Battery Hamilton and the taking of Fort Pulaski. Research began with the survey information provided in the Tidewater Atlantic Research report (Watts 2001). At the University of Georgia Libraries we researched firsthand reports in the *Official Records of the War of the Rebellion*, micro-filmed copies of Civil War newspapers (*Harpers Weekly* and *Frank Leslie's Illustrated Newspaper*), and other accounts relating to fortifications. At Fort Pulaski, the National Park Service personnel kindly provided a photocopy of Alonzo Williams' (1879) account of life at Battery Hamilton (see Appendix 1). Williams served with the Third Rhode Island Heavy Artillery, helped build the fortifications and was stationed at Battery Hamilton for two months. Also at Fort Pulaski three extremely relevant reports were obtained: *Fort Pulaski and the Defense of Savannah* (Schiller 1997), *Test Excavations at Civil War Period Battery Halleck* by David Anderson et al. (1995), and Lou Groh's (2000) *Fort Pulaski National Monument: Archeological Overview and Assessment*. General histories of the Civil War were also consulted (e.g. Catton 1960). Via the internet information about Civil War artillery was researched, such as the ranges of the various types and sizes of the guns.

FIELDWORK

The field portion of the project took place between February 11 and March 28, 2002. Just by chance, the work was done in the

same time of year that the battery was constructed and manned in 1862. This was fortunate because work temperatures were ideal and it was too early in the year to be swarmed by mosquitoes or biting flies. Like the Union soldiers, the archeologists also experienced spring tides, one of which inundated the site with 30 - 40 cm of water (Figure 13).

Access to Battery Hamilton required a 10 km (6 mi) boat trip from a marina on U.S. 80. Fieldwork began by establishing a 10 m grid with an optical transit and tape measures. The grid was oriented 30° east in order to be aligned with the parapet remnants of Battery Hamilton. Wooden stakes were driven along the 500N and 600N lines after a sling blade was used to cut the cordgrass (Figure 14). The remainder of the grid was established by placing wire pin flags at 10 m intervals around the perimeter of the gun battery, then using a metric tape and a plumb bob to establish the grid within the interior of the earthworks. After mapping the remnants of the parapets and powder magazine from these points, elevations were recorded for the grid points, along the top of the earthworks and powder magazine, and along the broad but shallow ditches paralleling the parapets. These permitted the preparation of a detailed topographic map of the site (10 cm contour interval). The vertical profiles of the parapets were recorded by taking elevations at 1 m intervals along four transects across the berms. Grid point 520N 530E, near the center of the battery, became the datum. This was arbitrarily assigned the elevation of 2 m above mean sea level. A 1.5 m (4 ft) section of two-inch PVC pipe, spray painted fluorescent orange



Figure 13. Spring Tide. Georgia Department of Transportation Archeologist Shawn Patch visits site.

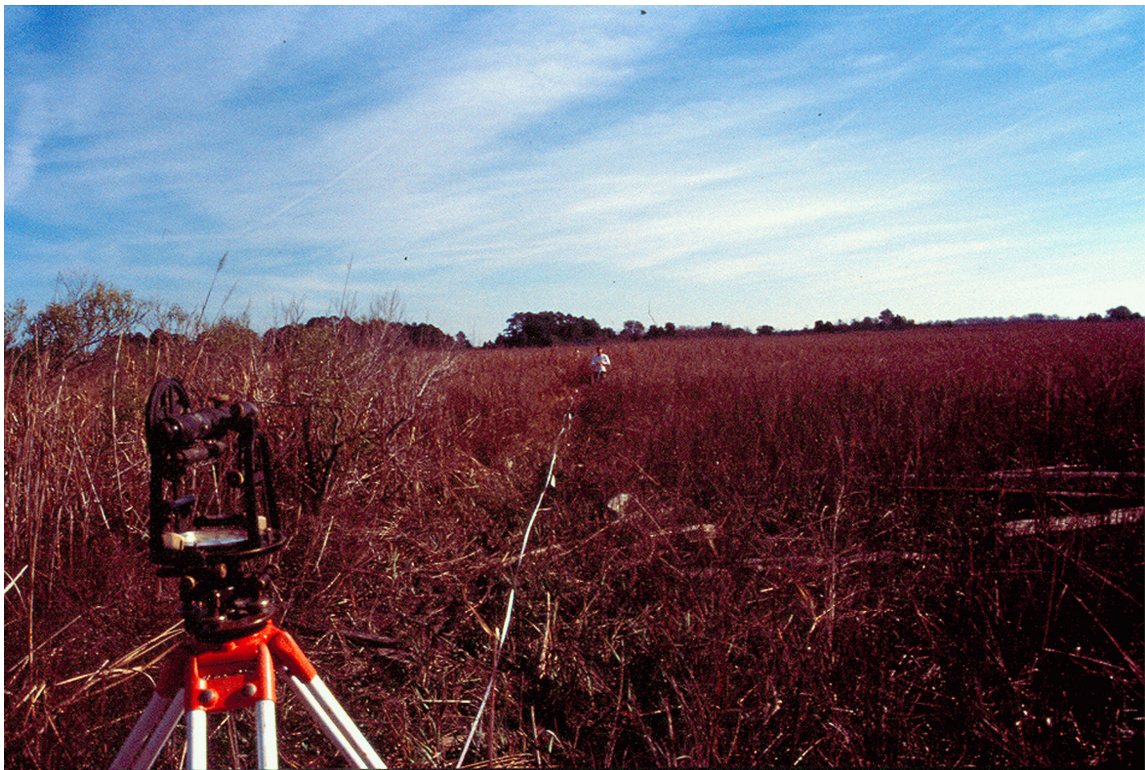


Figure 14. Establishing the Grid.

and marked with the grid coordinates, serves as a permanent datum.

Figure 15 is the contour map of the gun battery. The earthworks are 72 m (235 ft) long and 32 m (105 ft) wide. When originally constructed the parapets rose approximately 1.5 m (5 ft) above the marsh surface (Figure 16). Today, they are only 30 cm (1 ft) high. In the middle of the east side is a rectangular projection of the battery which held two artillery pieces. This measures approximately 18 x 18 m (60 x 60 ft). In addition to protecting the occupants and artillery pieces from incoming fire, the parapets served as a dike or levee to keep out high tides (Gillmore 1862).

Remnants of the powder magazine, consisting of a low mound of marsh mud, are located in the northwest quadrant of the gun battery. Based on historic descriptions of magazines (see Appendix 1), they consisted of an interior chamber framed with timbers that was encased in a thick layer of sandbags and marsh mud (Figure 17). A newly constructed magazine would have stood approximately 2.5 - 3.0 m (8 - 10 ft) high. Battery Hamilton's magazine is still the highest point on the site, but it now rises a mere 50 cm (1.6 ft) above the salt marsh. Also inside the earthworks is another low mound, in line with the east parapet and within the rectangular projection. This may have been a "traverse," or a mound of earth designed to protect the guns and personnel from enfilading fire.

Other features associated with the site consist of broad, shallow ditches that parallel the outside of the east and west parapets. These are visible close to the South Channel but are not detectable (visually) elsewhere. There is little doubt that the ditches completely encircled the battery and provided the

fill for the parapets (see Alonzo William's description in Appendix 1). Thus, the ditches originally would have been about 1.5 m (5 ft) deep.

METAL DETECTOR SURVEY

As specified in the scope-of-work, the next task was to use a metal detector across the site (Figure 18). We used a Fisher M-Scope (model number 1266-X) to search for metal artifacts, concentrating these efforts to the southwest quadrant of the battery, along the parapet facing the South Channel and in the rectangular battery along the east wall, where we knew that some of the cannons were placed. The metal detector was also used along the sides and summit of the powder magazine. Because the W.T. Crane sketch shows the tent camp extending east of the battery, the metal detector also investigated this area. Various control settings were used, such as high sensitivity with moderate discrimination, to no discrimination with moderate sensitivity. Surface metal artifacts that had been washed in by the tides (such as aluminum cans and bottle caps still attached to plastic containers) were easily pinpointed, but no subsurface metal artifacts dating to the Civil War were located. The failure of the metal detector survey may be attributed to several factors: there has been an accumulation of about 40 - 60 cm of marsh mud over the Civil War occupation zone; the stalks of cordgrass prevented a regular sweeping pattern which is necessary for detection; few large metal artifacts (such as shot and shell) were left behind when the site was abandoned in 1862; and wet soil affected the sensitivity.

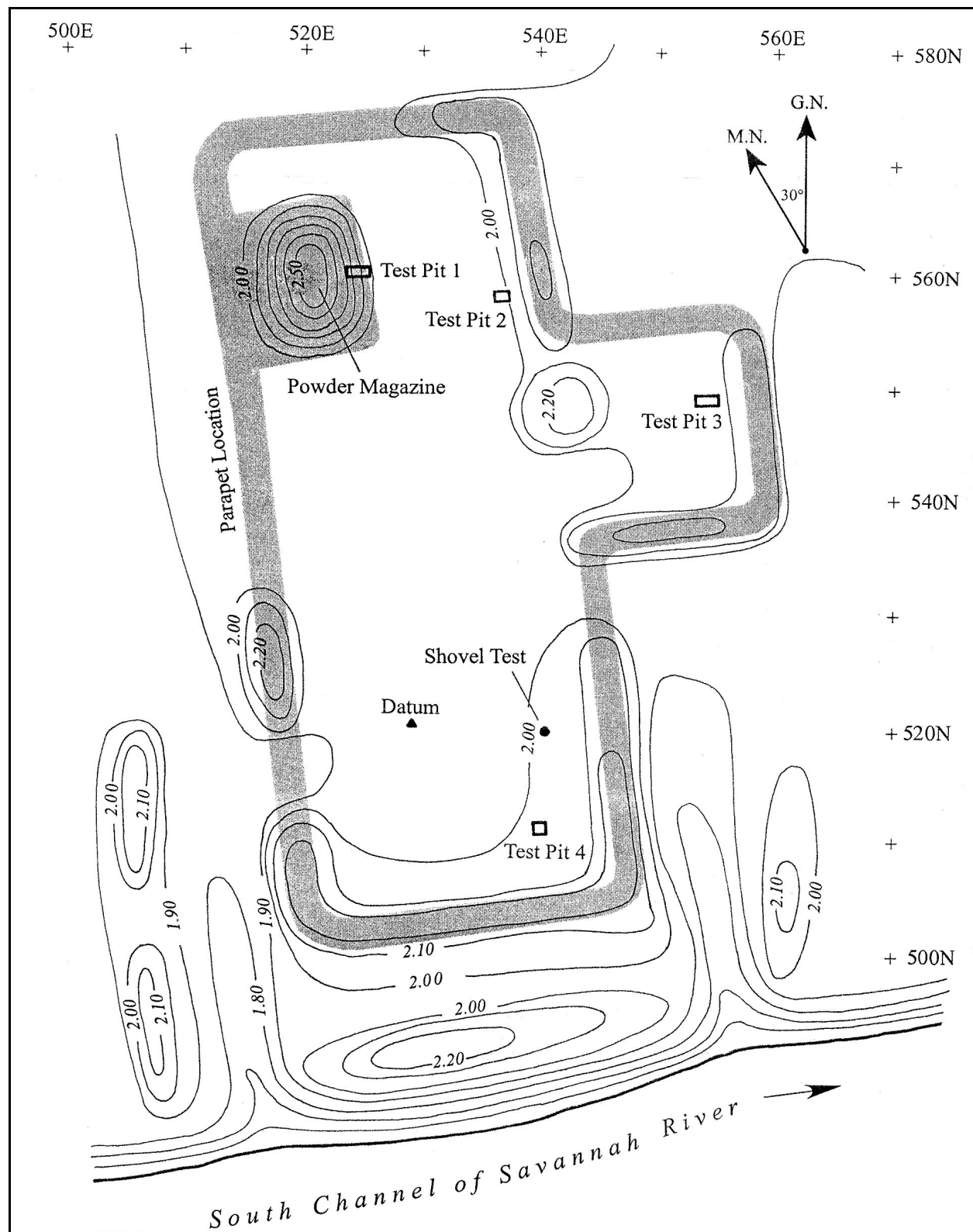


Figure 15. Topographic Map of Site. Contour interval = 10 cm.

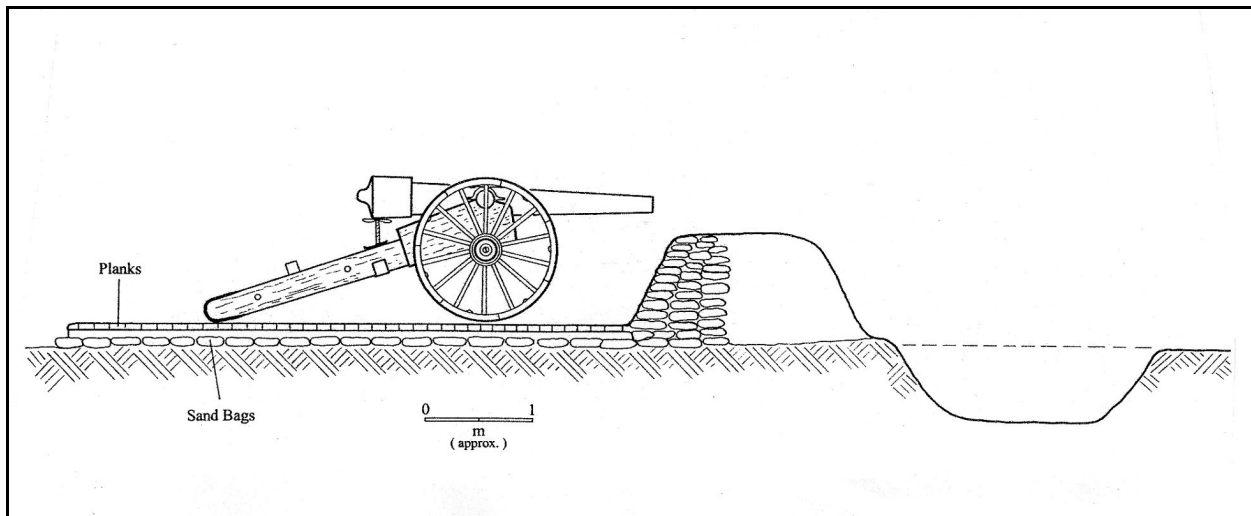


Figure 16. Idealized Cross Section of Parapet with a 30-Pounder Parrott Rifle.

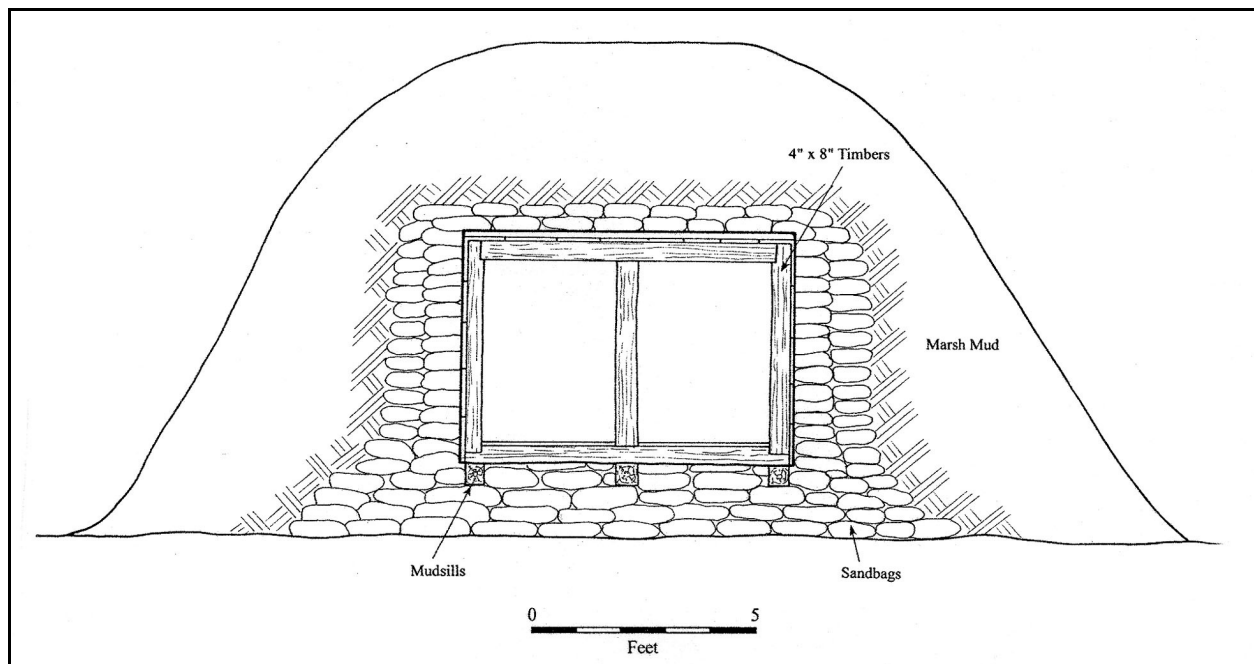


Figure 17. Idealized Cross Section of a Powder Magazine.



Figure 18. Metal Detecting.

PROBING AND MAPPING SUB-SURFACE REMAINS

The interior of the battery was then systematically probed to determine if preserved boards or timbers were present, or if remnants of sandbags could be identified; recall that a possible sandbag layer was identified through probing during the initial survey (Watts 2001). A 42-inch-long steel probe was used. Probing began on the interior of the south side of the battery (Figure 19). Almost immediately we detected that a layer of sand was present. A shovel test was excavated in the southeast corner of the battery, which revealed that the sand layer was buried beneath about 40 cm of marsh mud. Probing also located a buried sand layer adjacent to other portions of the earthworks. Figure 20 depicts the distribution of

sand within the earthworks and the locations of other subsurface features.

Based on the documentary descriptions, the gun platforms were built on a layer of sandbags by placing boards or timbers perpendicular to the parapets (a "grillage"), then decking these with boards placed parallel to the earthworks. Instead of nails, the decking was secured by only a few bolts placed through two boards located along the outside edges of the platforms. Army artillery manuals specified that the gun platforms should measure 9 x 17 ft, but the guns recoiled off the platforms. Consequently they were enlarged to 18 x 17.5 ft (Gillmore 1862).

Gun Platform 1

The buried boards or timbers in the southwest corner of the battery were designated as Gun Platform 1. The main elements consisted of



Figure 19. Probing.

five long boards or timbers oriented with the west parapet and grid north. These ranged in length from 5.6 - 6.2 m (18.4 - 20.4 ft) and were spaced about 80 cm (32 in) apart. These were embedded in the sand layer approximately 60 cm below the current ground surface.

Gun Platform 2

This platform is buried beneath 50 - 60 cm of marsh mud. It consisted of the sand lens and seven boards or timbers averaging 6.4 m (21 ft) long. They formed a platform that was 5.8 m (19 ft) wide.

Gun Platform 3

Gun Platform 3 was comprised of sand and 10 boards or timbers that ranged from 5.5 - 6 m (18 - 19.7 ft) long. Together, they formed a platform that was at least 5.4 m (17.7 ft) wide, east to west. Probing revealed that the boards

or timbers were buried beneath 45 cm of marsh mud and also that they were 15 - 20 cm (6 - 8 in) wide.

Gun Platform 4

Six buried boards or timbers were detected at Gun Platform 4, just south of the powder magazine. Probing established that these varied from 5.9 - 6.6 m (19.4 - 21.7 ft) long and formed a platform that was at least 5.6 m (18 ft) wide. The platform remnants are buried beneath 50 cm of marsh mud.

Gun Platform 5

The buried boards or timbers within the easterly projecting earthworks were designated Gun Platform 5. According to W.T. Crane's sketch of Battery Hamilton, two cannons may have been placed here. If so, then we have accounted for the location of

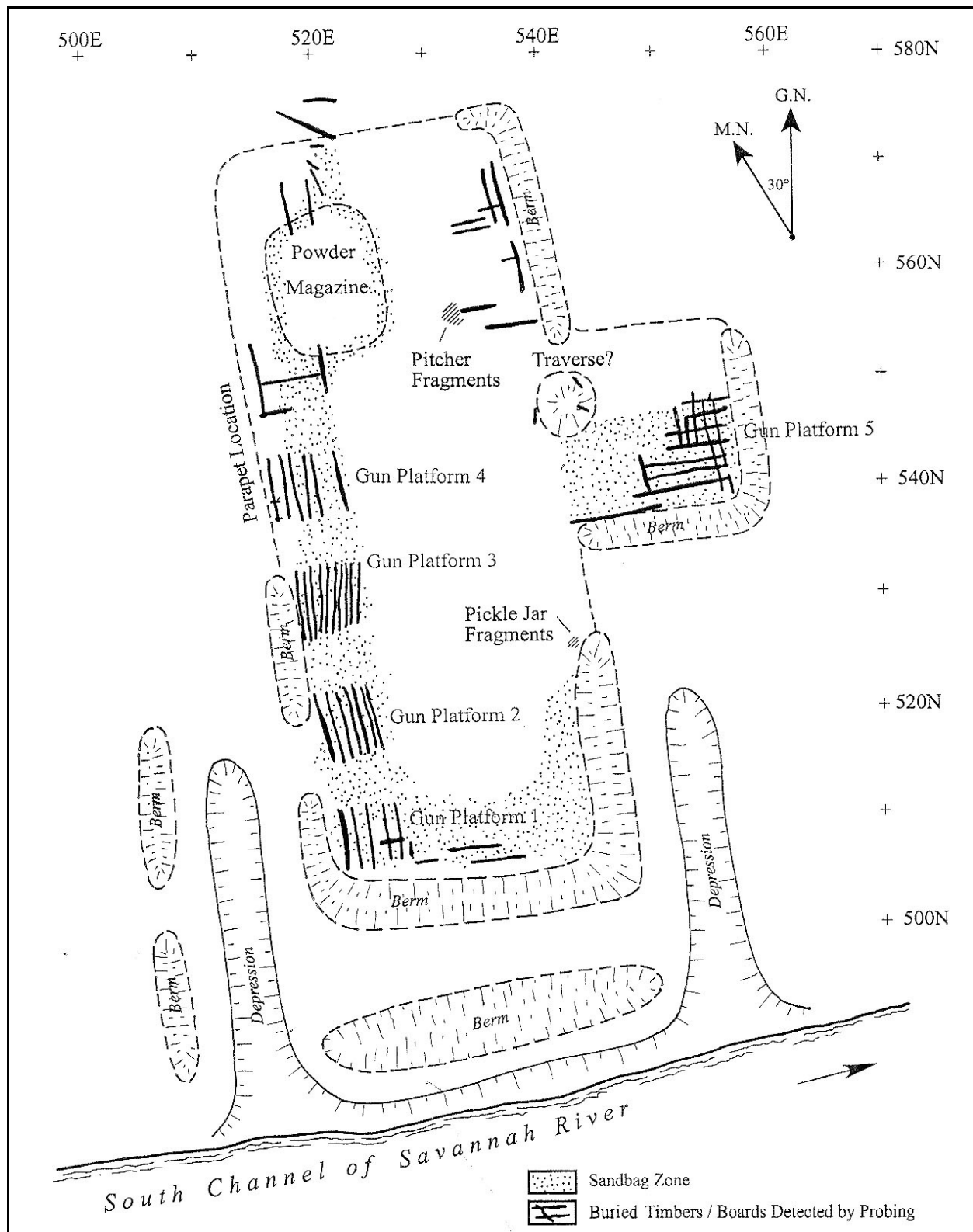


Figure 20. Site Map Showing the Locations of Gun Platforms, Sandbags and Artifacts.

all six guns. The dimensions of the platform are larger than the others, also suggesting that two guns were in position. The maximum dimensions of the platform are 10.3 m (33.8 ft) east-west, by 9.7 (31.8 ft) north-south. The boards or timbers are embedded in and surrounded by a layer of sand. Probing reveals that the sand zone forms a distinct rectangle measuring 14 x 9.5 m (46 x 31 ft). This is also where the previous survey identified a buried sand lens (Watts 2001).

Boards or Timbers Adjacent to the Powder Magazine

Probing also located a rectangular arrangement of four boards or timbers at the south edge of the powder magazine. These are in alignment with Gun Platforms 1 - 4, but differ in the numbers and orientation. The longest is 6.1 m (20 ft). Like the other buried boards or timbers, these are 15 - 20 cm (6 - 8 in) wide. If this structure did not function as a gun platform, it may have been associated with activities at the powder magazine, such as a platform for stacking and preparing ordnance.

Five additional boards or timbers were located at the north edge of the mound. Two are roughly parallel and are about 2 m apart. Both are about 50 cm below the present ground surface. The three other buried boards or timbers do not appear to be associated with any specific structures, and it is possible that they were dislodged from elsewhere by tidal flooding.

Other Boards or Timbers

Along the interior of the northeast corner of the battery are nine boards or timbers, the longest of which is 6.8 m (22 ft). Probing also reveals that they are 15 cm (8 in) wide. These probably are the remnants of a platform for people, not artillery pieces, because no sand layer is present along this parapet. Once again,

the W.T. Crane sketch of Battery Hamilton provides corroborative information, depicting a platform next to a row of tents on the east side of the enclosure.

TEST PITS

Four test pits were excavated during the project; one was placed in the southeast corner of the battery to examine the sandbag layer, and the remainder were positioned to intercept buried wooden remnants of the gun platforms and powder magazine. Refer to Figure 15 for locations. Excavation techniques were modified to suit the field conditions. Screening the overburden was not feasible because the soil consisted of black ooze held together by a tangled mass of cordgrass roots. Therefore, the top layer was shoveled off and buried wood was exposed by troweling and scooping out the mud by hand. All four units soon filled with water which had to be bailed out before the features could be photographed. The inflow of ground water also caused some of the profiles to slump.

Test Pit 1

Test Pit 1, measuring .75 x 2 m, was placed on the east side of the powder magazine where probing hit buried wood (Figures 21 - 24). The grid coordinates of Test Pit 1 were 560.3-561.05N, 523-525E. Soil stratigraphy consisted of 30-40 cm of very dark grayish brown (10YR3/2) organic muck, overlying dark gray (4N) marsh mud. Water began to seep into the unit during the excavation, causing part of the north profile to collapse. This unit probably intercepted the entrance to the magazine because long boards (designated Board C and Board D), placed on edge and associated with two square posts (Posts A and B), were encountered. The boards lead toward the center



Figure 21. Excavation of Test Pit 1 at East Edge of Powder Magazine.

of the magazine. Two possible flooring boards (Boards A and B) were also partially exposed.

Test Pit 2

This test pit measured .5 x 1 m and was placed at grid coordinates of 558 - 558.5N, 537 - 538E in order to expose some of the buried boards along the east wall of the gun battery. These boards are not believed to be associated with any of the gun platforms. Level 1 consisted of dark bluish gray (5B 4/1) clay and the dense cordgrass root mat. It was 24 cm thick and rested just above the water table. Level 2 consisted of dark bluish gray (5B 4/1) clay to a depth of 40 cm below surface, where four preserved wooden boards were exposed (Figure 25). All of the boards were 2.5 cm (1 in) thick, but had widths of 10 and 25 cm (4 and 10 in).

Test Pit 3

Test Pit 3 was a 1 x 2 m unit that was placed at 548.5 - 549.5 N, 553 - 555 E. Its placement was designed to expose the northeast corner of Gun Platform 5, in the easterly projecting portion of the fortifications. Once again, sifting the marsh mud and masses of cordgrass roots through .64 cm (.25 in) mesh was not feasible, so the overlying muck was shoveled out. Level 1 consisted of the root mat and very dark gray (7.5YR3/1) saturated clay. Level 2 was dark bluish gray (5B 4/1) clay. Ground water began flooding the pit at about 40 cm below surface. At 45 cm below the surface the boards were encountered as was a 10 - 20 cm layer of sand in the southern half of the unit. The sand had taken on the color of the marsh mud (4/5PB). The excavated fill was inspect-



Figure 22. Photograph of Wooden Boards in Test Pit 1.

ed with the metal detector but no metallic artifacts were present.

Four well preserved boards were exposed in Test Pit 3 (Figures 26 and 27). The first was 17 cm (7 in) wide and 5 cm (2 in) thick. It overlay the ends of the other boards which were 16 cm (6.5 in) wide and 2.5 cm (1 in) thick.

Test Pit 4

This test pit measured 1 x 1 m and was placed at grid coordinates 511 - 512 N, 540 - 541E in order to sample the sand bag layer. Level 1, consisting of 40 cm of marsh mud and cordgrass roots, was removed with a shovel without screening. Then, the sand bag zone (20 cm thick) was reached. No fabric associated with the bags was found. This level was screened through .64 cm (.25 in) mesh but no artifacts were present. At 57 cm below surface the sand zone gave way to very dark gray (N3/) silty clay. Excavation halted at 60 cm below surface.

ARTIFACTS

Only two Civil War-period artifacts, in several fragments, were recovered during the archeological investigations of Battery Hamilton. Both were located by probing. We then removed the overburden with a shovel, and located the artifacts by feel. The first (Figure 28) is a large white stoneware water pitcher, decorated with blue roses and gilded or lustered leaves, and the second is an aqua-colored glass condiment ("pickle") jar. Although there are not enough fragments to restore the pitcher, we can determine that it was 32 cm (12.5 in) high and had a maximum inside diameter of 17 cm (6.75 in). The base of the pitcher is numbered "323," which could be a pattern number, and has a small maker's mark that resembles a twig with three leaves (Figure 29). Both the number and maker's

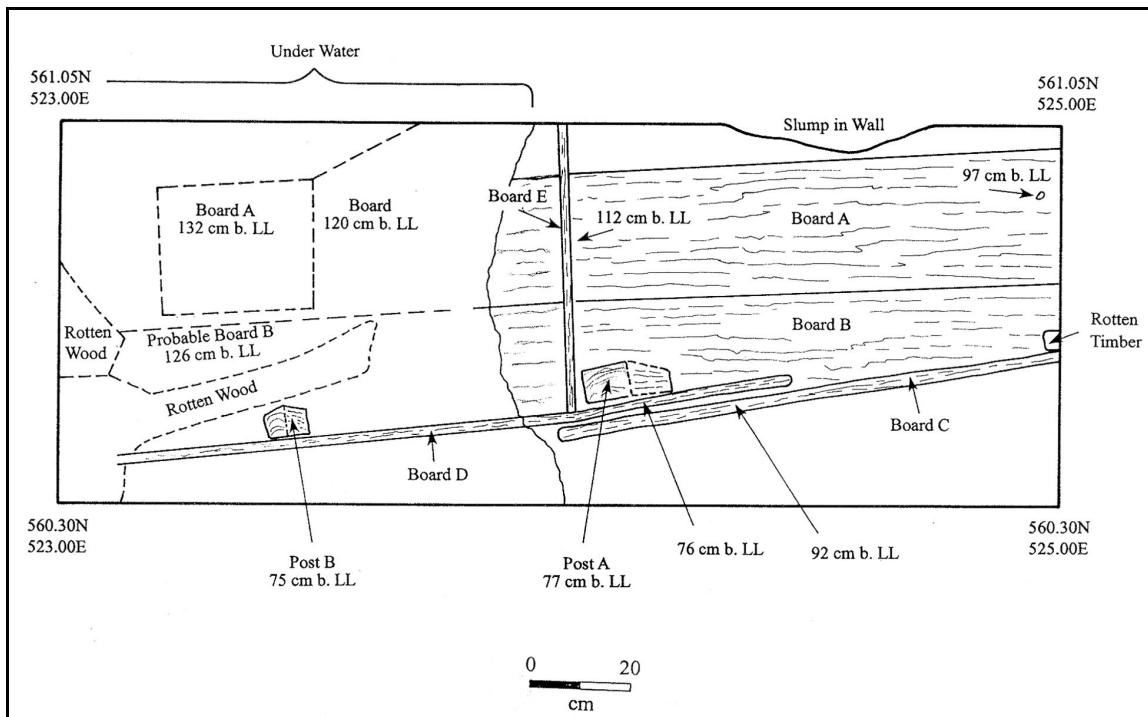


Figure 23. Plan View of Test Pit 1.

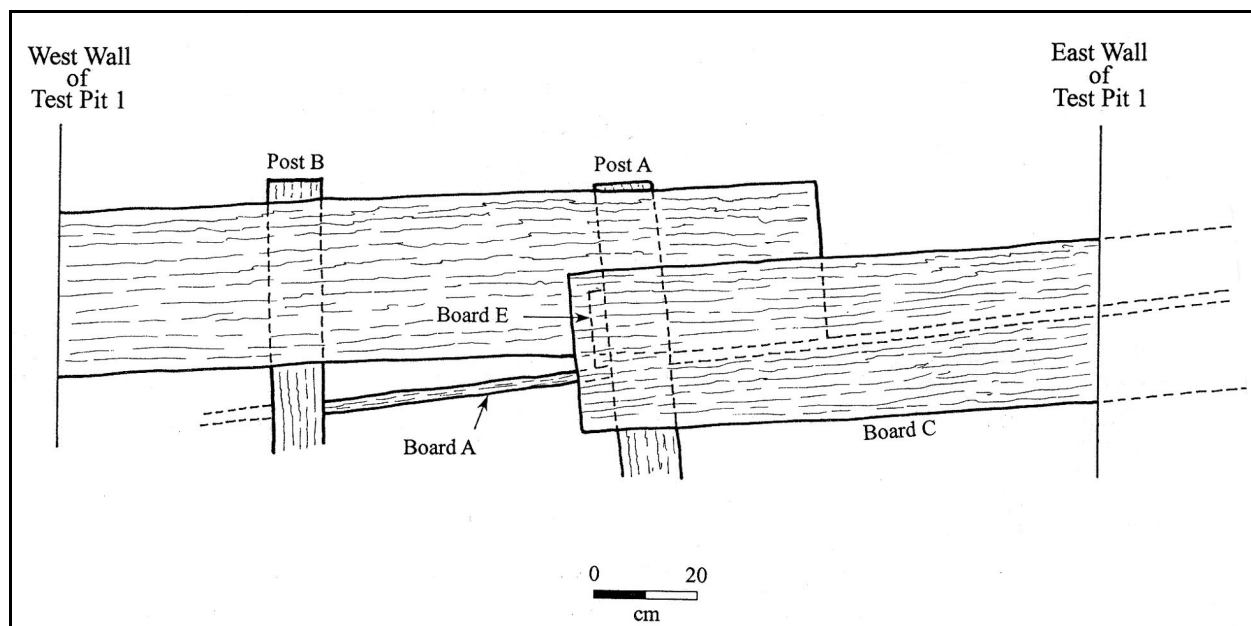


Figure 24. Profile of Boards in Test Pit 1.

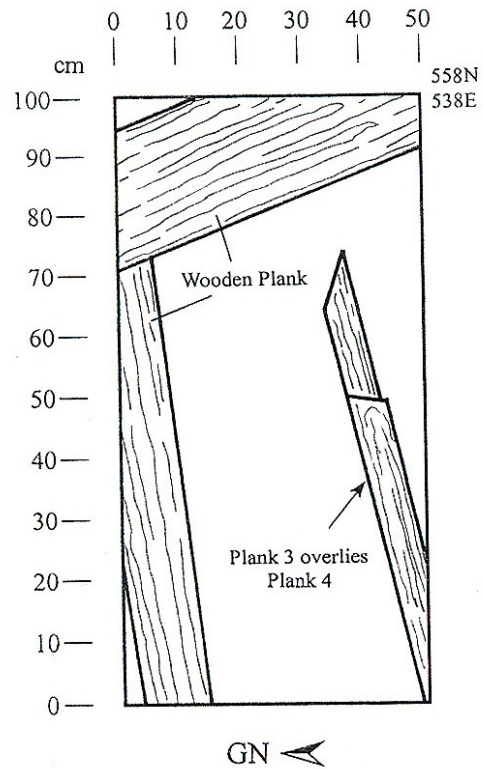


Figure 25. Boards in Test Pit 2.



Figure 26. Photograph of Boards in Test Pit 3.

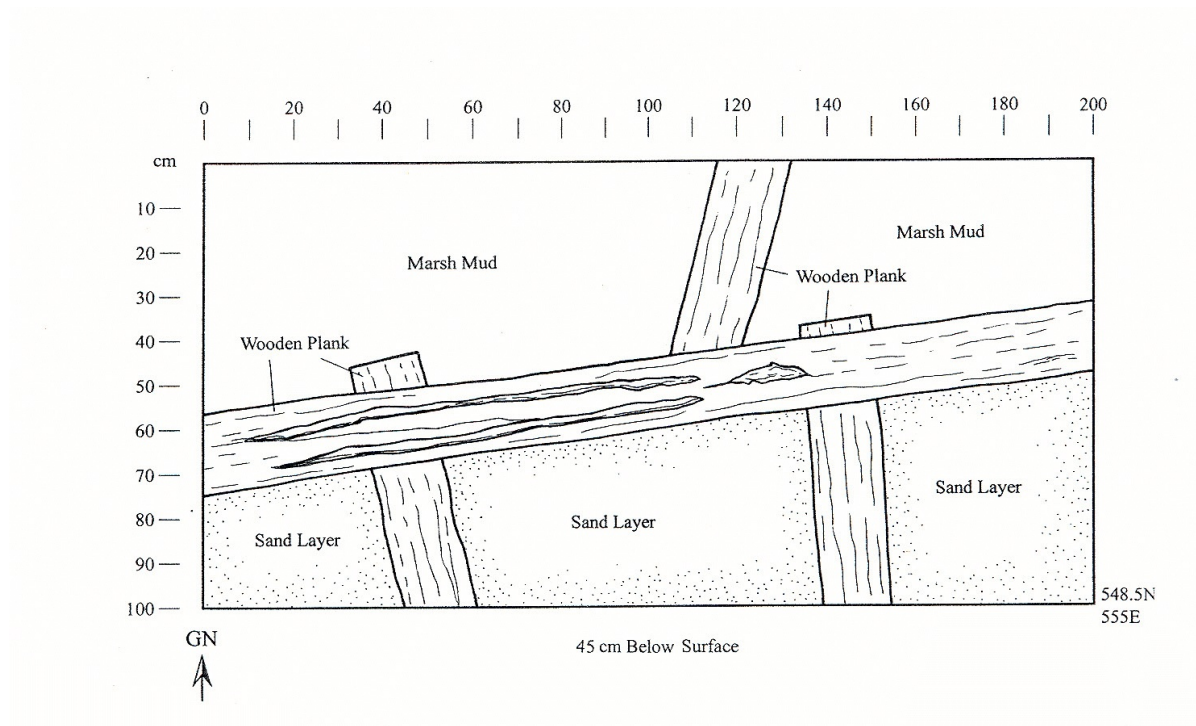


Figure 27. Plan View of Boards in Test Pit 3.



Figure 28. Photograph of Pitcher Fragments.



Figure 29. Photograph of Maker's Mark on Base of Pitcher.

mark are painted. This mark is not depicted in Godden's *Encyclopedia of British Pottery and Porcelain Marks* (1964), raising the possibility that it is American made. The pitcher is glazed on the interior but the exterior is unglazed except for the handle, the base, around the spout of the vessel and the floral decorations. The artifact obviously is not of military issue. It is possible that Federal troops liberated it from a residence on Daufuskie Island (Haig Point Plantation? [Michie 1983]) or at Port Royal. The fragments centered around grid point 556N, 533E and were found beneath 30 - 40 cm of marsh mud.

The condiment jar (Figure 30) is square in cross section and has beveled corners. It was

hand blown into a two-piece mold and the four sunken panels have designs resembling gothic cathedral windows. The jar has a wide cylindrical neck and an applied, rolled collar. Nearly identical examples have been found at Civil War camp sites (Phillips 1974:60). The glass is very thin, averaging about 1 mm except at the mouth of the container. A pontil scar is on the base of the jar. Whole, the jar would have stood 18.5 cm (7.3 in) tall and had a capacity of a little less than a pint. This artifact was found near the southeast corner of the battery at grid point 528.2N, 542.6E beneath 30 cm of marsh mud. The fact that both the jar and the pitcher were deposited along the east wall of the battery suggests that this was the location of the camp for the artillerymen as indicated in W.T. Crane's sketch of Battery Hamilton.

CURATION

The artifacts, maps, photographs and other data will be curated at the Antonio J. Waring, Jr. Archaeological Laboratory on the campus of the State University of West Georgia, Carrollton.



Figure 30. Photograph of Condiment (Pickle) Jar.

SUMMARY

The field investigations demonstrate that despite the dynamic fluctuations of the estuarine environment, significant portions of Battery Hamilton are preserved. In fact, a primary reason that wooden timbers have survived at all is because they are waterlogged and buried by a blanket of marsh mud, essentially sealed in anaerobic conditions. Secondly, remnants of the battery are preserved because of the nature of the fortifications: they were designed to protect heavy artillery and over 50 soldiers from an attack by artillery or small arms. This was not the typical, expedient, field fortification. Consequently, the components had to be fairly massive, such as the powder magazine, gun platforms (though mostly constructed of sandbags and wooden planks) and surrounding parapets made of a natural aggregate of marsh mud and cordgrass roots.

Both the historical research and field work provided rich information about the site. The 1862 W.T. Crane drawing of Battery Hamilton (allowing for a certain amount of artistic license) is fairly accurate, showing the positions of the guns, the powder magazine and the encampment for the men. Alonzo William's memoirs provided important data about daily life and hardships faced by the men on Bird Island, and the Official Records also yielded interpretive data.

The unusual field conditions dictated a flexible approach to the archeological field methods. Due to the marsh mud and thick mat of cordgrass roots, it was not feasible to systematically shovel test and screen for artifacts. Metal detecting did not locate any Civil War period artifacts. In the end, it was low, non-intrusive, technology that produced results.

Through feel and sound, close-interval probing with a metal rod located and determined the dimensions of buried wooden timbers, delineated areas that contained sand bags, and found the stoneware pitcher and glass condiment jar fragments which were the only Civil War period artifacts recovered.

THE SIGNIFICANCE OF BATTERY HAMILTON

Without doubt, Battery Hamilton is the best preserved Federal gun emplacement associated with the siege of Fort Pulaski. It is possible that its sister battery, Battery Vulcan is also preserved; if so, it is buried beneath a thick layer of dredge spoil on the South Carolina side of the river.

In addition to being well preserved, Battery Hamilton is associated with significant events in American history (the Civil War in general, and specifically with the capture of Fort Pulaski); it is a good example of a Federal heavy artillery battery; and it contains important archeological and historical information. Battery Hamilton, along with Battery Vulcan, held Confederate naval forces in check and allowed the build up of troop strength on Tybee Island, thus permitting the construction of 11 gun and mortar batteries that eventually pounded Fort Pulaski to the point of surrender.

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**Excerpts from *The Investment of Fort Pulaski*
(Williams 1879): 41-51.**

THE PLANTING OF BATTERY HAMILTON

It was now decided to plant a battery in the middle of the river on the upper end of Bird Island, directly opposite Venus Point, in order to close the south channel and St. Augustine Creek. Company E and the detachment of Company A were selected to man the guns, and the flats with the armament and material were brought from Daufuskie into Mud River February fifteenth. About midnight we reached the mouth of the river, and on the change of tide at one A.M. pulled into the Savannah, under the very noses of the rebel gunboats. It was a perilous passage. The solemn injunction that no one should speak was superfluous. We held our breath, our hearts stopped beating, our hair stood on end:

*"Obstupui, steteruntque comae et vox
faucibus haesit;"*

nothing moved but the even swing of our muffled oars, and uncertainty which beat its thousand-fold dark pinions about our anxious heads. Major Beard and Captain Hamilton led in a small boat, and by a preconcerted system of signals indicated the proper direction to Captain Bailey, Sergeant Williams and the other flats. As the tide was running strong and the night exceedingly dark, we found it difficult to keep our course, but succeeded about two A.M. in reaching the point designated, and commenced at once to construct the platforms and magazine and to land the arma-

ments. Such silence was preserved that the enemy was not aware of the movement till daybreak, when it was too late to attack us with impunity. At daybreak an eight-inch howitzer was in position, and by three P.M. we had in battery six pieces:

Three 24-pounder James rifles.
One 30-pounder Parrott rifle.
One 20-pounder Parrott rifle.
One 8-inch howitzer.

Thus, all communication by Savannah, between the city and the fort, was effectually closed on the twenty-first day of February, and on the same day the first vessel with ordnance from the North for the siege batteries on Tybee Island arrived off the harbor. This side was blockaded, and hence the fort invested on this side first. Early in December the Forty-sixth New York, under Colonel Rosa, had been secretly landed, as a precautionary measure, on Tybee, and where they had lain all this while, as it were *sub rosa*. Two companies of this regiment were sent the next day to occupy Decent Island, in order to close Lazzaretto Creek, and thus was completed on February twenty-second the absolute investment of Fort Pulaski. The erection of the breaching batteries on Tybee, the bombardment and capture of the fort, and the important, nay leading role played therein by the officers and men of the Third Rhode Island I leave to another and abler pen.

LIFE ON BIRD ISLAND

Our life, or vegetation, of nearly two months on Bird Island with its attendant privations and sufferings and frequent contests with the fleet, was very trying. These vicissitudes must be left untold. I will add one or two characteristic incidents and from these you may judge of them all.

The first night I well remember. Exhausted by the unceasing labors night and day for two weeks, especially the exertions of the ravenous night, and the unremitting toil of the day, we began to long for darkness and rest. But where could we lie down? The platforms were sinking and we forbidden to stand on them. We were ever ready to die standing, but to sleep standing required more nerve than any of us possessed, though our sergeant had been seen to perform that feat. To add to our discomforts a rain came on with the darkness. Each man was left to care for himself. The narrator went out into the marsh and broke a bundle of reeds and grass to make a bed on the spot, and weaving together the tops of some of the tallest reeds and spreading them apart he formed a shelter in the shape of an A tent, under which he crawled and was soon dreaming like a child in its mother's arms. Good and bad are largely relative terms. The next few hours were among the happiest in life. The world, however, moves and our relations are ever shifting. Moon and tide wait upon no man's pleasure. It was about two A.M. I felt a moisture beneath me, but when I remembered where I was, I did not think it strange, and rolled over to continue my dreams of home. Soon, however, I awoke to find the pockets and all the vacant and sinuous labyrinths of my regulation trousers filled with water. Deeming it prudent to make a reconnaissance, I found all the island about me flooded. I

started instinctively in the direction of the battery, forgetting that a ditch had been begun there until I landed at the bottom of it up to my neck in water.

The early hours of February twenty-second were passed, not as had been our custom in former years, in preparing to honor the Father of his Country, but in frantic endeavors to avoid the alligators which were out for their early morning exercise. If what I say in this connection may seem incredible, please call up my comrades to verify it. The layer of mud on these islands was the regular habitation of this amphibious tribe, and it will show the nature of the mud if I tell you that when the tide went out they sank easily right down out of sight, and the firing of the guns often brought them to the surface. We discovered the nose of one of these carnivorous reptiles near the cook's kettle, and digging about him we lassoed him and drew him out with hawsers. He measured about ten feet, and the boys have not forgotten what tender steaks he made, as this kind of meat was at a premium for a few days. The high winds and strong tides due to the storm, as also the renewed vigilance of the enemy prevented us getting supplies via Mud River across the Savannah, and we were compelled subsist on native products and faith. The boys drew the line, however, at alligators, and refused to prolong life by eating the snakes that abounded. I always thought this distinction was not so much a matter of taste as of prejudice inherited from our distinguished ancestress. Captain Bailey succeeded later in conquering a prehistoric crocodile which measured fourteen feet and provided a trifle ancient for our digestive apparatus even under such stimulating circumstances.

Reduced to extremities we sent a boat to Mud River to report our distress and to bring

immediate relief. The next night we stood waiting, cold and hungry, at the water's edge, peering with dilated pupils into the impenetrable darkness and listening with ears acute to catch the dip of the muffled oars, for our comrades were true and we knew they would attempt the passage that night, even were all Tatnall's fleet in the river. Slowly the hours passed and midnight came and went. Only hollow tones of the distant breakers give answer to our longing. Most of the men have fallen in the mud, asleep. A few of us stand shivering still, and on the flood of the tide, ere we are aware of its approach, a boat is rowed right up on to the island into our midst. The men are aroused, and half crazy they rush for the boat. The provisions brought are soon distributed. What is it? Could you have looked upon it and have witnessed the scene that followed, it would give you a more vivid conception of what the Union soldier was called upon to suffer in that long, terrible war than any painting of words can portray. When shipped from the North, it was supposed to be a barrel of yellow meal, presumably for horses. That was all. It had evidently been thrown out into the surf at Port Royal and towed ashore months before, and had since been floating around the mud rivers on flats in the rain, who could tell how long. It was green with mould and cobwebby, but now fully alive to its important mission. We broke it up with our shovels, regardless of the sacrifice of life it cost, and each man received a piece—a piece? No, that is too nice a word, a chunk,—a hunk, that fits the case better. What could we do with it you ask? Trust a hungry soldier for that. A stampede was made for the old barrel into which we had thrown pork rinds, skimmings and superfluous grease. This we mixed with our *shorts*, and adding a sufficient quantity of the brackish river water, we re-

duced the mass to a paste, and the small hours of the night were spent round the fire, each with his little tin pan in which he turned from time to time in his Johnny cake until it was baked to a crisp brown. *That was a genuine "Camp Fire,"* of which those who have seen only the simulated ones of these degenerate days, consisting of scalloped oysters, ice cream and horticultural rhetoric, can form but an indistinct conception.

Since then it has been my privilege to sit at rich banquets in many of the great capitals of the world, but I am unable to recall one which I enjoyed with such a keen relish as I did that brown Johnny cake seated with my comrades in Bird Island mud. Surely happiness is largely a relative state. The water we drank was from the river, of which we had our choice, either at high tide when it was fresh from the Atlantic and about as palatable as a dose of Epsom salts, or at low tide when charged with all the mud of the swollen creeks above, a choice as difficult as the one imposed upon the renowned Mr. Hobson. We had no change of clothing, or none to speak of, and as it was well nigh impossible to wash what we had on in the heavily impregnated water, our condition may be more easily imagined than admired. It was equally impossible to make any satisfactory impression upon the successive deposits which had become encrusted upon our bodies. Indeed, it became rather a matter of pride to carry these evidences of our heroic service as one does honorable scars, and he who succeeded in removing them was looked upon much as a dude is in our day. Thus ever does our environment determine largely our fashions.

One of our gravest discomforts was the various kinds of animal life that insisted on sharing the island with us. There was one animal who had come with us, landed with us,

stayed with us, sticking closer than a brother; a wingless, hemipterous animal known to scientists as the *pediculus vestimenti*, better known to soldiers as “the gray back” [lice]. You can form an idea of the sufferings from cold and hunger, from sickness and wounds, but you cannot gain any adequate estimate of a soldier’s sufferings if you leave out of account this sturdy camp follower. Where it is possible to boil one’s clothes, the encroachments of this pest may be warded off, but on a campaign, such as this, it is simply out of the question, and no one, from the commanding general down, is exempt. It is only a question of degrees of multiplicity. Herod as well as Philip II. of Spain, died from the attacks of these ridiculous *pediculi*. Most of my comrades were in condition to envy the happy lot

of those two royal sufferers. Among all the tortures we were called upon to endure in this siege, none were more aggravating than the insistent incursions of this pest. As we had no kettle in which to boil our clothes except the cook’s, who stubbornly refused to loan them of the purpose, and as washing them in cold water seemed only to invigorate the robust constitution of their tenacious tenants, the only recourse left us was, as it was euphemistically called in the army, to “go skirmishing,” and this pleasant duty became one of the chief recreations during our stay on Bird Island.

**Excerpts from Quincy A. Gillmore's
*Official Report to the United States Engineering
Department, of the Siege and Reduction of Fort
Pulaski, Georgia, February,
March, and April, 1862.***

[The following passage concerns the battery on Venus Point, but also should be applicable to Battery Hamilton]:

The platforms were made by raising the surface five or six inches, with sand carried over in bags. On this sand foundation, thick

planks, perpendicular to the line of the battery, were laid, nearly but not quite in contact with each other. At right angles to these, deck planks were laid, giving a platform nine by seventeen feet. The floor of the magazine was twenty inches above the natural surface, and rested on sand-bags.

Appendix D. Excerpts from the report of Lieutenant Horace Porter, Ordnance Department, to Brigadier-General Gillmore. *In* Gillmore (1862).

13. An order was received February 20th to place six guns in battery on Bird's Island, opposite Jones' Island, in the Savannah. Boats had been collected and loaded during the two previous days, and select crews chosen for the row-boats.

14. About five o'clock P.M., on the above day, flats were towed through Walls Cut and Mud River, with an 8-inch siege howitzer, one 30-pounder Parrott rifle, one 20-pounder Parrott rifle, and three 24-pounder James rifles, each flat carrying the implements, equipments, and thirty rounds of ammunition for each of its guns. The boats reached the mouth of Mud River about twelve o'clock, and after waiting an hour for the change of tide, pulled out into the Savannah. Major Beard, who had again volunteered his services, acted with his accustomed energy. He and Captain John Hamilton, 3d U.S. Artillery, Chief of Artillery of General Sherman's staff, kept in advance in a small boat, and, by signals given from time to time, indicated to the line of flats the proper direction, and enabled them to reach the island at the proper point, which was attended with some difficulty during the night, and while exposed to a strong tide. Such perfect silence was preserved by the men that the enemy's gunboats in the river were not aware

of the movement until daylight, when it was too late to attack us.

15. We arrived at the upper end of the island at about two o'clock. The platforms and magazines were constructed by the engineers during the remainder of the night, and at day-light an 8-inch howitzer was in position. The rest of the pieces were placed in the battery during the day, and by three o'clock could have opened fire. A hundred yards of marsh had to be crossed by the same method as that used on Jones' Island. The guns were placed by details of men from Captain Bailey's Company of Third Rhode Island Artillery, and the Volunteer Engineers, Lieutenant Dalrymple of that regiment, and Major Beard labored faithfully in the discharge of this duty.

16. Fifty rounds of ammunition per gun were placed in the magazine, and the remainder left in the schooner [the *Winfield Scott*?], from which it could be readily supplied.

17. In firing for ranges upon different points in the channel, I found that the Parrott guns fired with their usual accuracy with the exception of the 30-pounder, from which half of the projectiles turned end over end. The 8-inch siege howitzers gave very good

results at 1,300 yards [.7 mi]. The fuses were exceedingly uniform.

**Report of Brigadier-General Egbert L. Viele,
U.S. Army (OR 1882(6):141-142).**

**HEADQUARTERS U.S. FORCES
Savannah River, April 11, 1862**

SIR: I have the honor to submit the following report of the operations of the troops under my command in connection with the investment and reduction of Fort Pulaski.

The plan of operations assigned to me comprised the erection of batteries on the Savannah River, to cut off communication between the fort and the city of Savannah, from which supplies of ammunition and men were drawn, and to establish batteries on the islands adjacent to the fort, against the gorge and left flank, with which, in conjunction with the batteries on Tybee Island, the fort could be reduced. The expedition for these purposes was fitted out at Port Royal, and consisted of a detachment of the Third Rhode Island Artillery, a detachment of Volunteer Engineers, a battalion of the Eighth Maine Regiment Volunteers, and the Sixth Regiment Connecticut Volunteers, the Forth-eighth New York Volunteers, and a supply of heavy ordnance and entrenching tools.

A full reconnaissance and report had previously been made by Lieutenant J.H. Wilson, Topographical Engineers, of the water communications with the Savannah River, by which it was developed that the rebels had sunk the hulk of a brig, securely fixed in its position by means of heavy piles in what is

known as Wall's Cut, an artificial channel connecting Wright River (one of the outlets of the Savannah) with Bull River, which last, by its connection, forms a direct communication with the harbor of Port Royal, thus serving as a thoroughfare between that harbor and Savannah.

The removal of the hulk was the first thing to be accomplished, and was intrusted to Major O.T. Beard, Forty-eighth New York Volunteers, who, with the aid of a company of the Volunteer Engineers, and by means of mechanical appliances, suggested by his own ingenuity, succeeded after three weeks of unremitting night labor, and in close proximity of the rebel forces, in removing the piles and hulk from the channel, so as to admit the passage of gunboats and light-draught steamers. This being accomplished the expedition proceeded to the north end of Daufuskie Island, at which point a camp and depot were established for operations in the Savannah [Note: the north end of Daufuskie Island was the location of Haig's Point Plantation, 38BU153 (Michie 1983)].

Reconnaissance for suitable locations for the batteries were then made under the superintendence of Captain and Acting Brigadier-Gen-

eral Gillmore, during which the telegraphic communications between fort Pulaski and Savannah was cut, and the wires, both land and submarine, removed for a distance of 1 mile. Venus Point, on Jones Island, on the north side of the Savannah, and the upper end of Long Island, in the Savannah River, were recommended as the most feasible positions to be occupied. These islands, as well as all others in the river, are merely deposits of soft mud on sand shoals, always covered at high tide and overgrown with rank grasses.

The occupation of points so unfavorable for the erection of batteries was rendered still more difficult by the presence in the Savannah of a fleet of rebel gunboats, constantly passing and always on the alert. To have floated ordnance in the flat-boats in which it had been placed into the Savannah River would have exposed it to capture by the gunboats. To move it over the swamps seemed almost impossible, while at the same time it would have been constantly exposed to view from the river. The alternative was adopted by moving the armament of one battery by hand at night on shifting tramways across Jones Island, and it was accomplished on the

night of the 11th of February. A drenching storm added to the difficulties, the men sinking to their waists in the marsh, and the guns sometimes slipping from the tram-ways. By morning the guns were in position on the river, and the next day resisted, with unfinished platforms and without cover, an attack from the rebel gunboats, disabling them and driving them off.

Three days after, another battery was erected on Bird Island, in the Savannah, under the cover of the battery on Jones Island. Bird Island was selected in preference to the upper end of Long Island, as affording a more uninterrupted command of the south channel of the river. Since the erection of the batteries the works have been completed on both islands, the one on Jones Island being called Fort Vulcan, and that on Bird Island Battery Hamilton, and although the material of which they are composed (mud highly saturated with water) is of the most unfavorable description, they are both most creditable specimens of field works, and evidence of the great labor and perseverance of the troops under most trying circumstances, the fatigue parties always standing in water twenty-four hours.

Excerpts from the report of Lieutenant P.H. O'Rorke, U.S. Engineers, of condition of the works of investment on February 28, 1862 (OR 1882:(6):143).

...About the 7th of this month it was determined by you to wait no longer the long delayed entrance of the naval force into the Savannah River. It was at the same time directed that a battery should be planted, under the cover of the night, at Venus Point, on Jones Island, at the earliest practicable moment. The next day the proposed battery was staked out, and on the same evening an attempt was made to transport the guns and material to the landing on Mud River. This movement, after the greatest exertions to carry it into execution, had to be abandoned for that night, in consequence of the severe storm which came up and the extreme darkness of the night. The attempt was made again on the ensuing evening, and was most successful. Five Parrott guns and an 8-inch siege howitzer were landed on Jones Island, and two of the guns were moved about 200 yards toward their intended positions. Four platforms were laid the same night, two others commenced, and a magazine built. As it was not deemed expedient to show ourselves in the daytime, the work was suspended until the next night. The following morning saw our guns in position and ready for action.

Fatigue parties were now set at work to throw up a parapet as rapidly as possible, and by night a parapet 8 feet wide and about 3 feet high was thrown up in front of the guns. At the same time a thin covering of earth was thrown around the magazine, in addition to the sand bags which had been placed around it at

first. In consequence of the softness of the mud of which the island is made, it was found impossible to make the parapet sufficiently high at once or to give it a regular shape. The first occasion for using the guns showed that the platforms furnished by the Ordnance Department were too narrow to allow them to be traversed sufficiently. Immediately steps were taken to provide the lumber necessary to enlarge the platforms. A grillage was formed of longs, and upon these planks were laid, increasing the width to 20 feet. Some of the lumber used had to be transported from the *Winfield Scott*, and other pieces obtained by pulling down houses on Daufuskie Island.

The subsequent engagement with the gunboats of the enemy showed that our platforms were now sufficiently wide and firm. The spring tides now coming on, the whole island was covered with water, and our efforts were immediately directed to the completion of a level (sic-- levee?) around the work. After having the battery twice flooded this was accomplished. The work for some days could be prosecuted only at low water, and then with great difficulty, in consequence of the softening of the surface. Thence then the work has been progressing constantly, though slowly.

There is now a parapet around the work over 1000 feet in length, from 6 to 10 feet thick, differing on different faces, and from 3 to 4 feet high. The magazine is covered on top by 5 feet of earth and sand bags, and on the sides by about 10 feet in thickness of the same

material. It is not entirely completed. A board walk has been built about 6 feet in the rear of the platforms, to extend the whole length of the work, with other walks leading from this to the platforms. A good wheelbarrow road has been made across the island by laying poles about 2 feet apart and placing boards upon them. Some of the lumber last brought from Hilton Head has been applied towards making the garrison as comfortable as possible.

About the 19th of this month it was decided by you that a battery should be placed on the north end of Bird Island. It was staked out on the next day, and the same night guns and material were taken from Daufuskie Island to that point and landed. On the following day the platforms were laid out and the guns put in position. Since then the levee has been built around the work, and in addition to this another has been built for the protection of the camp of the infantry sup-

ports against the high tides. A magazine has also been built here, and secured as far as practicable. A strong wind prevented our flats from being towed backward and forward for two or three days, and consequently has prevented us from supplying the battery with sufficient lumber up to this time. Some of the platforms have begun to sink, and will have to be relaid.* Profiles have been put up on this battery, and it is steadily progressing. Timbers for the foundation of the platforms for the columbia have been got out of the houses pulled down on this [Daufuskie] island, and are ready as soon as transportation can be had for them.

*[Note to researchers: Be sure of your sources. In the on-line version of the Official Records **relaid** is instead spelled **railed**. To a casual observer this implies that the gun carriages were mounted *en barbette* with the rear of the carriage tracking on a metal rail, a characteristic of permanently mounted coastal guns].

**Report of Brig. Gen. Thomas W. Sherman,
U.S. Army.**

**HEADQUARTERS EXPEDITIONARY CORPS,
Port Royal, S.C., February 17, 1862
(OR 1882:(6):90).**

SIR: A rebel steamer, the *Ida*, ran by our battery [Vulcan] on the Savannah River on the 14th instant for Fort Pulaski. The guns had not been worked nor the ranges obtained. On the next day she attempted to return, and four of Tattal's gunboats came down from Savannah to cover her. They were all sent

back to their places of departure, and one of them seriously crippled.

I inclose herewith the copy of General Viele's report on the subject.

Very respectfully, your obedient servant,

T.W. Sherman,
Brigadier-General, Commanding.

**Report of Brig. Gen. Egbert L. Viele,
U.S. Army (OR 1882(6):90).**

**HEADQUARTERS U.S. FORCES,
Savannah River, February 16, 1862.**

SIR: I have the honor to report that the batteries on Venus Point were attacked at 3 o'clock on yesterday by four rebel gunboats with a view of effecting a passage from Fort Pulaski for the rebel steamer then at that place. After an engagement of one hour the rebels were driven off, the flag steamer being

disabled and taken in tow, and the steamer that attempted the passage of the river returning to Fort Pulaski. The guns were manned by the Third Rhode Island detachment under Captain Gould, and effectively worked. There was no loss on our side.

**Excerpts from the report of
Lieutenant Colonel John H. Jackson,
Third New Hampshire Infantry
(OR 1882(6):98).**

...The next morning (Sunday, the 9th) I was ordered to embark and proceed to Savannah River, with my entire command, on a reconnaissance. I proceeded to Savannah River and some distance up the river, without seeing any signs of rebel pickets. I then returned and landed at the battery opposite Jones' Island [i.e. Battery Hamilton], letting the men leave the boats a short time to rest them. While there a rebel steamer came out of Saint Augustine Creek in sight of our batteries and steamed up the river towards Savannah. Our batteries opened on them, making some good line shots, though they did not appear to strike the steamer, but they quickened her

speed. [Note: from Battery Hamilton to the mouth of St. Augustine Creek the distance is almost 3 miles; at 15° elevation a 20 pound Parrott rifle had a range of 2.5 miles, while the 30 pound Parrott rifle could fire a round up to 3.8 miles (at 25° elevation). The conclusion is that the artillery in Batteries Hamilton and Vulcan had the potential to inflict severe damage to any wooden vessel that came within three miles. Only an ironclad could go toe-to-toe with these batteries but none were available; the *C.S.S. Georgia*, Savannah's massive ironclad, was not launched until April of 1862, after Fort Pulaski was captured].

**Exerpts from the report of Brigadier-General
Quincy A. Gillmore (OR 1882(6):152-153).**

...Operations for investing the place by the erection of batteries on the Savannah River above the work were set on foot about the middle of January, 1862.

After the removal of the Wall's Cut obstructions a joint expedition of land and naval forces for the investment was organized by General Sherman and Commodore DuPont. This expedition consisted of one regiment of infantry (the Forty-eight New York Volunteers), two companies of the New York Volunteer Engineers, and two companies of the Third Rhode Island Volunteer Heavy Artillery, with 20 guns of all caliber, viz, two 8-inch siege howitzers, four 30-pounder Parrotts, three 20-pounder Parrotts, three 12-pounder James rifles, and eight 24-pounder field howitzers, and was accompanied by three gunboats.

...It is a soft unctuous mud, free of grit or sand, and is incapable of supporting a heavy weight. Even in the most elevated places the partially dry crust is but 3 or 4 inches in depth, the substratum being a semi-fluid mud, which is agitated like jelly by the falling of even small bodies upon it, like the jumping of men or ramming of earth.

February 5 and 6. Nothing specially new. Engineer force engaged in cutting poles, filling sand bags on Daufuskie Island, building a temporary wharf of poles and sand bags on Mud River, and constructing a wheelbarrow track of planks laid end to end from Venus Point to Mud River Wharf. The Forty-eighth New York, Seventh Connecticut Volunteers, and a portion of the engineer forces engaged in transporting poles and planks and carrying

filled sand bags from Daufuskie Island to Jones Island (a distance of about 4 miles) in row-boats.

February 7 and 8. Finished temporary wharf on Mud River. Carried several hundred filled sand bags to Venus Point; also a quantity of planks and other battery materials. Had the balance of the engineer materials required for the Venus Point battery put into lighters [flat boats], so as to be ready whenever the gunboats should move. There appears to be no immediate prospect of their moving.

February 9. I visited Commander Rodgers to consult in regard to his moving into the Savannah. He said he intended to attempt the Mud River passage that night on the high tide. The signal for his starting would be one note from his steam-whistle. Returned to Daufuskie and consulted with General Viele and Captain Hamilton, the chief of artillery. It was arranged that the flats, with the guns and ammunition on them, should be towed by the steamer *Mayflower* through Wall's Cut and up Mud River into the Savannah, just behind the gunboats. They were accordingly taken in tow in the evening after dark from the engineer wharf. The night was windy, rainy, and very dark. The *Mayflower*, after several attempts, failed to reach Wall's Cut, and cast anchor near the spot she started from. The gunboats did not move on account of the weather.

February 10. The gunboats *Pembina* and *Unadilla* are at anchor in Wright River, near Wall's Cut. The gunboat *Hale* has taken up position in Mud River about 200 yards to the eastward of the temporary wharf, in order to protect the landing and cover us if driven

back. Captain Hamilton quite ill from last night's exposure in the *Mayflower*. I consulted with General Viele in the afternoon, and it was determined to establish the Venus Point battery at once, and wait no longer for the gunboats to go ahead of us. Orders from General Sherman to that effect were subsequently received that same evening, also to effect this by landing the guns on Jones Island from Mud River and hauling them over the marsh instead of towing them into the Savannah in flats, as first contemplated.

During the night of the 10th, Lieutenant O'Rorke, of the Engineers, with a party of volunteer engineers, commenced the magazine and gun platforms at Venus Point. The party concealed their work at daybreak (11th) and withdrew. The platforms were made by raising the surface 5 or 6 inches with sand, carried over in bags. On this sand foundation thick planks at right angles to the line of the battery were laid, nearly, but not quite, in contact with each other. At right angles to these deck planks were laid, giving a platform 9 by 17 feet. The floor of the magazine was 20 inches above the natural surface, and rested on sand bags.

February 11. Continued getting battery and road materials to Jones Island during the day. Early in the evening I went to Jones Island with fresh men, to finish the labor of getting the guns over. Lieutenants Wilson and Porter and Major Beard took charge of the fatigue parties as before. The work was done in the following manner: The pieces, mounted on their carriages and limbered up, were moved forward on shifting runways of planks about 15 feet long, 1 foot wide, and 3 inches thick, laid end to end. Lieutenant Wilson, with a party of 35 men, took charge of the two pieces in advance, one 8-inch howitzer and a 30-pounder Parrott, and Major Beard and Lieu-

tenant Porter, with a somewhat larger force, of the four pieces in the rear, two 20 and two 30 pounder Parrotts. Each party had one pair of planks in excess of the number required for the guns and limbers to rest upon when closed together. This extra pair of planks being placed in front, in prolongation of those already under the carriages, the pieces were then drawn forward with drag-ropes on after the other the length of a plank, thus freeing the two planks in the rear, which in their turn was carried to the front. This labor is the most fatiguing kind. In most places the men sank to their knees in the mud, in some places much deeper. This mud being of the most slippery and slimy kind and perfectly free from grit and sand, the planks soon became entirely smeared over with it. Many delays and much exhausting labor were occasioned by the gun-carriages slipping off the planks. When this occurred the wheels would suddenly sink to the hubs, and powerful levers had to be devised to raise them up again. I authorized the men to encase their feet in [empty] sand bags to keep the mud out of their shoes. Many did this, tying the strings just below the knees.

February 12. After giving directions for the fresh relief to be put to work in throwing up a dike around the battery to keep out the spring tides, which were beginning to flow, I returned to Daufuskie Island. The high tide today came within 8 inches of the surface at Venus Point.

...I soon received official information, however, that a second battery, consisting of one 8-inch siege howitzer, one 30-pounder Parrott, one 20-pounder Parrott, and three 12-pounder James rifles, was established on Bird Island, just above Long Island. This was done on the night of February 20, the flats, with the guns, ammunition, &c, on them, being towed up Mud River and across the Savannah by

row-boats. Lieutenant O'Rorke, of the Engineers, was present as engineering officer,

and Lieutenant Porter as ordnance officer. Capt. John Hamilton, General Sherman's chief of artillery, was also present.

**Excerpts from Report of Brigadier-General
H.W. Benham
(OR 1882(6):140)**

...yet it is undoubted that the formidable operations for the accomplishment of this object on the main line of communication by the two channels of the Savannah River were accomplished by the incessant watchfulness and arduous labors of General Viele's command; and for this purpose these were prepared upon each of two marsh islands-frequently overflowed at the high spring tides-a strong battery of eight or nine guns, seventeen in all, with suitable magazines and splinter-proofs to protect the material and men, and in one case [Battery Vulcan], for the proper security of the works, a causeway road was required over one-half mile in

length, for the passage of ordnance and material, which of itself-with the constructions of the parapets, &c., of the batteries-was a work of extraordinary labor and exposure, and meriting the highest commendation to all the officers and men engaged.

[Note: General Benham's report is the only one that states that the batteries had more than six guns apiece. He probably is in error. A third battery was constructed on the south end of Long Island, within range of Fort Pulaski. Perhaps General Benham was including these guns in the total].

**Excerpts from Report of A.B. Ely,
Aide-de-Camp and Acting Assistant Adjutant-General
(OR 1882(14):343)**

**HEADQUARTERS U.S. FORCES, COCKSPUR,
DAUFUSKIE, AND TYBEE ISLANDS
Fort Pulaski, May 20, 1862**

GENERAL: The dismantling of the Jones Island battery was completed last night. Four of the guns are now here. The scow in which the other two are is aground at the head of Cockspur Island... [this appears to refer to Battery Vulcan, and suggests a total of six guns].

**Excerpts from Report of First Lieutenant T.B. Brooks,
New York Volunteer Engineers to
Brigadier-General Q.A. Gillmore,
Commanding on Tybee and Cockspur Islands, Ga.
(Gillmore 1862:81-95).**

VI. MAGAZINES

The timber used for the frames, was four by eight inch scantling. The bents (frames) were usually eight feet wide, and five or three feet high, resting on mudsills of the same stuff, one under each post. The bents were placed three feet apart horizontally, and were framed at the corners.

The sheathing and flooring were made of one and a quarter inch plank; two thickness used on top and one elsewhere. On this shell, seven feet of earth was placed, its sides sloping one on one and a half.

Entrances, with one and two doorways, were used, all so placed that if a shell burst outside, its fragments, moving in straight lines, could not reach the interior. Adjoining the magazine, the entrance was made five feet wide, to be used as a filling room for cartridges, and was arranged with shelves for cartridge bags.

The frames above described were not found strong enough, giving indications that they would fail by the breakage of the beams supporting the roof, and by the splitting of the shoulders of the posts on which the cross-timbers rested. Both difficulties were, in part, remedied, by placing an upright post in the

center of each bent, reducing the bearing of the cross-pieces supporting the roof to four feet, and relieving the vertical pressure on the side posts.

With this addition, none of the magazines failed, but there was evidently not surplus strength enough.

I think, had the bents, made of four by eight inch scantling, been placed two feet apart instead of three, the centre post being retained, and a centre mudsill added to support the centre post, and the proper mining joint substituted for the very defective one used, no risk would have been run from the simple weight of the earth.

What effect a heavy mortar shell falling on such a structure, might have, was not experienced at Tybee.

The same difficulty was experienced in the magazines as in all structures where fine dry sand is exposed to the wind. It blew off very rapidly, thus not only diminishing the cover on the magazine, but filling up the covered ways, &c., &c. No permanency can be obtained except by sodding, or spreading over the surface a heavy coating of manure, which will cause grass and grain to grow. [Of course, at Battery Hamilton, the soil consisted of marsh muck containing a dense mat of cordgrass roots. Except for being saturated with water, the soil was suitable for the construction of earthworks and magazines. Controlling the humidity inside the magazine must have been a problem. The contemporaneous engraving shows that Battery Hamilton's powder magazine apparently was vented by a length of pipe].

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