



United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).

1. Name of Property

historic name Callawassie Sugar Works
other names/site number 38BU0409

2. Location

street & number 29 Sugar Mill Drive not for publication
city or town Okatie vicinity
state South Carolina code SC county Beaufort code 013 zip code 29909

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property meets does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

national statewide local

Elizabeth M. Johnson 4/7/2014
Signature of certifying official Date

Elizabeth M. Johnson, Deputy State Historic Preservation Officer, South Carolina Department of Archives & History, Columbia, S.C.

In my opinion, the property meets does not meet the National Register criteria.

Signature of commenting official Date

Title State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I, hereby, certify that this property is:

entered in the National Register determined eligible for the National Register
 determined not eligible for the National Register removed from the National Register

other (explain:) _____

Jerri K. Mansueti 5/27/14
Signature of the Keeper Date of Action

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5. Classification

Ownership of Property
(Check as many boxes as apply)

- private
- public - Local
- public - State
- public - Federal

Category of Property
(Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
		buildings
		district
1		site
		structure
		object
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)

N/A

Number of contributing resources previously listed in the National Register

N/A

6. Function or Use

Historic Functions
(Enter categories from instructions)

- Agricultural/Subsistence
- Agricultural/Outbuilding
- Industry Processing/Manufacturing Facility
-
-
-

Current Functions
(Enter categories from instructions)

- Landscape/Park
-
-
-
-

7. Description

Architectural Classification
(Enter categories from instructions)

- N/A
-
-
-
-

Materials
(Enter categories from instructions)

- foundation: Tabby
- walls: Tabby
-
- roof: N/A
- other:
-

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Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Summary Paragraph

The Callawassie Sugar Works site, on Callawassie Island in Beaufort County, South Carolina, contains the tabby ruins of two historic structures (the sugar mill base, or foundation, and the boiling house) and archaeological evidence of a third structure (the curing shed). The sugar works, constructed of tabby ca. 1815-1816, was a complex for processing sugar cane into sugar. There are no wholly intact structures or buildings on the site, and the ruins contain no machinery or equipment.

Narrative Description

Mill Base (ca. 1815-1816)

The Mill Base, north of the Boiling House, is a symmetrical structure comprising two parallel tabby walls measuring 1'-10" in width distanced 2'-6 1/2" apart and rising to a maximum height of 4"-5" above present grade. Aligned approximately east/west, each wall is 27'-10" long and buttressed at right angles on its outer face by two tabby spurs. Each spur is 1'-10" wide and 4'-9" long and matches the two parallel walls in height. The form so created reproduces in tabby the footprint of a braced timber frame fabricated to support an animal-driven cane-crushing machine (no longer extant) comprising three vertically-mounted iron or perhaps oak cylinders. Comparison with late-18th-to-early-19th century West Indian examples, such as the horse-driven mill at Estate Whim, St. Croix (Brooker 1991, 119-21; Brooker, forthcoming) shows that a sweep arm would have allowed attachment of the machinery to teams of oxens, horses or mules. Cane was fed between the rollers by hand—a dangerous operation which could cause grisly accidents—crushed cane waste (*bagasse*) being collected up for fuel when enough accumulated. Nothing was found during an archaeological excavation by Dr. Larry Lepionka of the University of South Carolina in 1982-83 to suggest that the mill was ever enclosed, since palmetto fronds or some equally flimsy covering incapable of leaving any trace in the archaeological record sheltered the equipment, if not the enslaved operatives, from sun and rain.

Horizontal pour lines show that each half of the tabby feature was cast in three successive stages using timber "molds" or "boxes" fabricated to define the finished wall shape including its spur-like buttresses. The initial pour is partially concealed, making full vertical measurement impossible; however, the intermediate pour is fully visible and measures 2'-2 1/2' in height. The upper pour (eroded) was cast as a thin strip, measuring about 6' in height around a number of fired brick inserts of uncertain function. Small rectangular holes extending through the tabby indicate that inner and outer formwork faces were held together by removable timber "pins" each measuring about 3 1/4" x 2" in section. All tabby appears carefully set out and well-compacted by what must have been a skilled and well-supervised construction crew. No exact parallel for the Callawassie Mill Base is known, the only comparable examples being a massive "H"-shaped tabby mill base excavated at Elizafield Plantation, Glynn County, Georgia, by James A. Ford in 1934, and a similar tabby feature at The Thickets, located north of Darien, Georgia (Coulter, 196, 201; Linley, 294).

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Boiling House (ca. 1815-1816)

The Boiling House is a substantially ruined single-story building measuring approximately 45'-0" east/west x 25'-0" north/south. Where preserved, exterior tabby walls rise to a maximum height of about 12' above present grade. The roof and a presumed chimney, along with all boiling and cooling equipment, are no longer extant. Upper parts of the south elevation are missing and the north wall has collapsed. Doorways were centered on each of the end (east and west) elevations. A narrow brick pathway (still largely intact) bisected the building along its primary axis into two almost equal halves. Analogy with contemporary structures indicates that this marked a division between boiling and cooling operations. The interior south side was formerly occupied for more than half its length by a Jamaica boiling train consisting of a common closed flue principally built of brick with the requisite furnace at one end and chimney at the other. About 25'-0" long and nearly 8'-0" wide, the train bed was sunk approximately 2'-5" below general floor level. Low tabby walls of uncertain height defined the boiling area on its two interior sides (north and east), fired brick being substituted for tabby on the exterior. A brick-lined furnace (measuring about 3'6" x 4'0" in plan) was fed through an arch piercing the south elevation. Combustible materials (*bagasse* and wood) were doubtless supported on a metal fire grate (no longer extant). A second, elliptically-arched opening, positioned immediately below the furnace feed, allowed for the removal of ash. A set of four or five copper or iron kettles (no longer extant) was set linear fashion into the train's upper surface. The largest (*grande*) would have been positioned at the train's west end, juice being ladled successively from there into smaller kettles until it reached the smallest *teache*, or strike pan, positioned directly over the furnace. Heat passed beneath each kettle in turn, with three small arched flue openings on the exterior, or "copper wall," allowing temperature regulation. By closing and opening these with wooden or possibly iron dampers, individual pans could (in theory) be made to boil more or less rapidly. Another small opening piercing the building's lower west elevation probably communicated with an exterior free-standing chimney (no longer extant).

Opposite the boiling train, sufficient space exists to accommodate a series of coolers where concentrated juice from the boiler would have slowly crystallized. Coolers were usually made of timber, and in this case have left no trace. No window survives intact anywhere in the building, but there is clear structural evidence to indicate that above the line of coolers, the north wall featured three identical window openings measuring about 2'-9" or 3'-0" wide x 6'-2" high and spanned by a double or possibly single-timber lintel measuring 2 1/2" in depth. "Ghost" impressions show that window frames were cast in place as tabby construction proceeded and set back one or two inches from the exterior elevation. Nothing remains of the frames themselves, but quantities of glass found during excavation indicate that the windows were glazed. It is unknown if smaller windows pierced the heavily-damaged opposite (south) elevation at a level above the boiling pans.

On the west elevation, an incomplete window opening flanks the central doorway. This window probably matched windows on the north elevation in size and detail. Aside from its central doorway, the east elevation is blank.

All roof framing and eave details are lost. Quantities of nails found during excavation suggest that the roof construction featured a clerestory of some kind which allowed steam generated during boiling operations to escape the Boiling House.

Curing Shed (ca. 1815-1816)

This structure is represented by tabby foundations. Cast in a continuous strip 1'-3 1/2" wide, these define a structure measuring approximately 45'-1" north/south x 24'-10" east/west. The long north/south axis was aligned at a right angle to the short axis of the adjacent Boiling House, the two structures forming a "T"-shaped

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configuration in plan. A narrow gap measuring 5'-0 1/2" to 5'-6" wide separate the west face of the Curing Shed from the east face of the Boiling House. No superstructure survives, the lack of tabby or brick wall falls indicating that it was timber-framed.

Additional Context and Description

Archaeological and historical evidence suggests that the Callawassie Sugar Works was part of a larger settlement which included housing for slaves and possibly an overseer's house as well.

Although the unknown designer most likely followed the example of Thomas Spalding of Georgia by adopting his sugar mill drawings published by the Agricultural Society of South Carolina in 1816 (Brooker 2003, 14), the construction and layout of the sugar works is analogous to West Indian mills of that time period. Spalding also described sugar processing techniques that incorporated less costly alternative energy sources, such as the tide-driven mill, or animal power when the tides proved uncertain. It is likely that animals were used to power this mill. The Callawassie Sugar Works' location within yards of the shoreline may have been chosen for the ease of delivering sugar cane by boat. Also, the river breezes would be beneficial in cooling the boiling house and dispersing the clouds of water vapor produced by the boiling operations (Brooker 2003, 16). Tabby was the predominant building material. Tabby formwork on Callawassie Island reflected local usage with molds measuring 24" in height, suggesting that Beaufort District construction crews were used, rather than crews from the Georgia Sea Islands (Brooker 2003, 15).

Today, only the foundation of the mill and parts of the boiling house remain of the three structures of the sugar mill: the mill itself, boiling house, and curing shed. There is no evidence (either above or below ground) that the tabby mill base was ever enclosed within a permanent structure, even though the base survives in excellent condition. (Brooker 2003, 22). While the boiling pans and masonry that supported them have disappeared, the boiling train bed, constructed of fired brick, is still intact, together with an ash pit and wall vents. The arched vents, similar to sugar houses in the West Indies, suggest that the person responsible for the construction of this mill had seen sugar operations in the Antilles (Brooker 2003, 19). Fortunately, the long tabby wall on the north side of the boiling house collapsed outwards and retained enough integrity to enable theoretical reconstruction of the original layout of windows. Excavation of glass at the site suggests that the windows were glazed. Only tabby strip foundations remain of the curing shed which was most likely timber framed. All machinery and mechanical equipment is gone. Despite the degradation of the sugar mill site over time, the remnants are still illustrative of this level of pre-industrial sugar processing and production before the introduction of steam machinery in the late 1830s. There are no existing sugar works remains comparable in scale to the Callawassie Sugar Works complex, nor are there any historical images or photographs of sugar mills proportional to these sugar works. The remains retain sufficient integrity to warrant further archaeological investigations to learn more about this period's pre-industrial agricultural development.

Archaeological Investigations

The Callawassie Island Sugar Works (38BU0409) was first recorded as an archaeological site in 1981 during a reconnaissance survey of Callawassie Island conducted by James Michie. This investigation was sponsored by the Three Fountainview Corporation for early planning (Michie 1982, 29). At this time, Michie recorded three tabby structures, which he interpreted as residential, and conducted minimum archaeological testing.

Testing methods included surface inspections and the use of a post-hole digger (Michie 1982, 33). Post holes were placed parallel to the structures in five-foot intervals, with tests extending to a depth of 12 to 15 inches below ground surface (Michie 1982, 33). Unfortunately information, such as number of holes excavated remains unknown.

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Structure I, the mill base, was the only ruin to produce artifacts. Twenty-five pieces of light green window glass and one fragment of animal bone were found in the eastern edge of the structure (Michie 1982, 46, 49). No depths were recorded. A depression, interpreted as a well, was also identified. This feature was five feet in diameter and probing revealed it contained "tabby fragments, pieces of brick, and fragments of mortar" (Michie 1982, 49). Probing stopped at five feet, but the feature continues to an unknown depth (Michie 1982, 49). Michie (1982, 49) noted that the well would most likely produce time sensitive artifacts, such as ceramics and bottle. The only map produced during Michie's work is a sketch of the structures and depression (see attached map).

Larry Lepionka (1982) conducted background research on tabby structures and identified Structure I as a possible mill. In 1983, Lepionka began excavations at 38BU0409 for the Three Fountainview Development Corporation, Inc. It was at this time the tabby ruins were interpreted as a sugar processing complex. Lepionka's crew excavated the interior of the boiling house, curing shed, part of the storage base, put in units near the mill base, and exposed portions of the associated slave settlement south of the ruins (Grunden 2014). Artifacts recovered from the boiling house and curing shed were limited to nails and mill stone fragments (Brooker 1991, 46). At least eight domestic structures were uncovered (Brooker 1991, 46). Houses were typically tabby foundation with end chimneys and the ceramics recovered dated to the period of the sugar works operation (Grunden 2014). Excavations revealed the site was relatively undisturbed and artifact preservation was good. For example, a pig skull was recovered from one of the houses (Grunden 2014). Unfortunately Lepionka's field notes, maps, and sketches are missing; a revisit site form was never turned in; and a report was not produced. No further excavations have occurred since and archaeological site boundaries remain unknown.

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8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply)

Property is:

- A owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

Industry

Archeology-Historic-Non-Aboriginal

Period of Significance

ca.1815-ca. 1818

Significant Dates

Significant Person

(Complete only if Criterion B is marked above)

Cultural Affiliation

Architect/Builder

Unknown

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Period of Significance (justification)

In his 2003 addendum of "Written Historical and Descriptive Data" supplementing the original 1983 Historic American Building Survey documentation for the Callawassie Sugar Works (Historic American Building Survey, National Park Service, Washington, D.C., HABS No. SC-857), Colin H. Brooker provides detailed historical context (Part B) for sugar cultivation in South Carolina. Following the War of 1812, high tariffs levied on sugar provided incentive for local cane production and processing. Brooker states, "through his marriage James Hamilton acquired several close and influential West Indian connections who were heavily involved in the Caribbean sugar trade" (Brooker 2003, 21). Hamilton's sugar mill was built sometime before the end of 1816. Its construction was most likely based on plans and drawings in Thomas Spaulding's *Observations on the Method of Planting and Cultivating the Sugar-Cane in Georgia and South Carolina*, published by the Agricultural Society of South Carolina in 1816. Despite Hamilton's entrepreneurial hopes and Spaulding's professional expertise, the growing conditions in the South Carolina lowcountry were not ideally suited for the successful cultivation of sugar cane, which prefers a year-round temperature of 75° Fahrenheit with at least 60 inches of rainfall (Bagwell, 63). Also, during this period, the rising price of cotton was incentive to abandon cane production for a more lucrative crop. James Hamilton, Jr. sold the property and moved to Charleston in early 1819, leaving no documentation on the mill and its use. The Callawassie Sugar Works site is significant for its representation of pre-industrial sugar cane processing before the development of steam-driven machinery during the period ca. 1815-ca. 1818. There are no other sugar works known in coastal South Carolina.

Criteria Considerations (explanation, if necessary)

Statement of Significance Summary Paragraph (provide a summary paragraph that includes level of significance and applicable criteria)

The Callawassie Sugar Works, located on Callawassie Island, in the Okatie vicinity of Beaufort County, South Carolina, is eligible for listing in the National Register of Historic Places under Criterion A in the Area of Significance of Industry as a property associated with events that have made a significant contribution to the broad patterns of our history, specifically its representation of a pre-industrial process related to agriculture. It is a relatively rare example of tabby construction on the Southeastern coast and sea islands in the first half of the nineteenth century but is also significant at the state level of significance as the only known remnants of a sugar cane processing operation in early-nineteenth century South Carolina. The Callawassie Sugar Works included three principal buildings or structures: a sugar mill, boiling house, and curing shed with the boiling house and curing shed arranged in a "T"-shaped configuration. The Callawassie Sugar Works site is also eligible under Criterion D for Archeology (Historic-Non-Aboriginal) for its potential to answer questions about the technology and labor used in making sugar during the early nineteenth century.

Tabby, sometimes referred to as "poor man's masonry," is a building substance created by mixing locally available materials (such as oyster shells) with equal parts, water, sand, and homemade lime. The Spanish brought it to the New World before A.D. 1700. Shellfish remains available from aboriginal shell middens provided a plentiful source for tabby construction. Tabby wall construction involved up to six successive pours, each requiring a set of forms or molds. The sugar mill ruins (ca. 1815-1816) on Callawassie Island are a "unique example of industrial tabby . . . the only one of its kind to exist in South Carolina" (Brooker 2003, 2). The tabby "appears to have been well compacted and meticulously cast" (Brooker 2003, 25).

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Narrative Statement of Significance (provide at least **one** paragraph for each area of significance)

Industry

The Callawassie Sugar Works site illustrates an early state in the technology of sugar-making as it evolved across coastal areas of South Carolina and Georgia over the course of the nineteenth century. Most likely incorporating three vertically-mounted cylinders, the animal-driven cane-crushing mill employed here was of a type scarcely altered since the mid-seventeenth century. By contrast, whether it incorporated four or five kettles the Jamaican train installed in the Callawassie Boiling house represented an advance over what were termed Spanish trains (widespread in early Colonial Mexico), which normally comprised a set of four kettles, each provided with its own furnace. The Jamaican variety, developed before 1725, was characterized by a single furnace and enclosed flue, making more efficient use of fuel and labor, besides aiding in the manufacture of a more consistent product (Wayne, 27). Steam engines greatly improved output, as demonstrated by James Hamilton Couper at Hopeton Plantation, Glynn County, Georgia (Coulter, 95), speeding milling operations and allowing use of more powerful horizontal machinery. Steam power, however, involved considerable capital expenses, difficulties in finding suitable operatives, and problems associated with repair or maintenance, and such authorities as Thomas Spalding preferred to tinker with water power and tidal power on Sapelo Island as alternative energy sources. James Hamilton was less enterprising at Callawassie, and his complete reliance on animal-driven power suggests that sugar planting here was experimental and potential returns were considered too uncertain to justify heavy investment. The fact that only minor alterations were made to the Callawassie Sugar Works before they were abandoned tends to confirm that Hamilton's initial assessment was correct. Today the ruins represent sugar-making technologies of a kind that became outmoded by the 1840s, a technology not otherwise attested by physical infrastructure in South Carolina and only rarely in other early sugar planting area of the Southeast (coastal Georgia and northeast Florida, for instance.)

The Callawassie Sugar Works makes a significant contribution to the early manufacturing initiatives of our new nation as one of the few remaining resources from this early period of sugar production along the Atlantic Coast. Sugar was one of the few agricultural commodities protected by a tariff which levied three cents per pound duty on foreign raw sugar in 1816. This inspired wealthy planter entrepreneurs of the Georgia and South Carolina coastal areas to explore the efficacy of a local sugar industry. Thomas Spalding led the way with his sugar industry initiatives on Sapelo and St. Simons Islands, Georgia (Spalding; Coulter; Gray, 748, Sullivan, 43-50; Bagwell, 63-79). The Callawassie Sugar Works is the only example of such an early enterprise in the South Carolina lowcountry.

The complex is representative of the tabby method of construction practiced in the South Carolina lowcountry. Tabby proved to be an affordable building material making use of available raw materials. Brick was not easily obtained and was expensive during the seventeenth and eighteenth centuries, and building with lumber was labor intensive and required skilled carpenters. The basis for tabby buildings was shellfish remains, plentiful from aboriginal shell middens, and from oyster beds ubiquitous to the coastal islands' marshes. These remains were burned to make lime and mixed with sand and water to produce tabby which provided a durable and inexpensive building material. Tabby construction is a distinctive adaptive technology reflective of this early historic period and unique to the Southeastern coastal areas (Gritzner 1998, 7-14; Brooker 1998, 61-74).

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The architectural arrangement of the Callawassie Sugar Works has the same distinctive "T"-shaped relationship used in the Sapelo (Georgia) sugar works. Minor modifications at Callawassie included a wider passageway between the boiling house and curing shed, perhaps to enhance air flow from river breezes that would cool the boiling house and disperse the inevitable water vapor from boiling operations (Brooker 2003, 16). The exterior wall has three small arched openings that would have served as vents to regulate hot air emanating from the furnace. These and other features are common to sugar works architecture seen in the Antilles and reflect slight variations from Thomas Spalding's sugar works plans, as well as being similar to James Hamilton Couper's Hopeton Plantation large sugar complex in Georgia, but on a much smaller scale (Brooker 2003, 17).

Archeology (Historic-Non-Aboriginal)

Although there is little documentation on the archaeological work conducted at 38BU0409, what information is available reveals the site retains integrity within unexcavated as well as excavated areas. Investigations confirmed that the site contains intact archaeological deposits and features. The Callawassie Sugar Works is likely to yield important data providing details on South Carolina's history. In particular, information on sugar works operations, early nineteenth century industrial sites, and their workers. Analysis of the architectural remains and archaeology data together would provide answers to research questions, including:

What other structures were associated with the sugar works? How does the complex compare to other sugar works? Was the complex built with sugar in mind or were existing structures adapted?

Michie's (1982) work documented a feature other than the ruins, which he interpreted to be a possible well. Testing may reveal other features, such as builders' trenches and middens, which would help researchers understand the site and how the complex functioned. Tabby foundations require substantial trenching as the first step in construction. These trenches could contain datable artifacts and possible insight into the construction. Features and artifacts may also indicate a prior usage. Understanding the construction and components of the site would allow researchers to compare 38BU0409 to other sugar mills further south.

What type of equipment was used at the sugar works?

Archaeological investigations could reveal features or objects, such as machinery parts, which may be able to address this question.

What was life like at the sugar works? How, if at all, is the material culture different from that found on nearby cotton and rice plantations? Was there a seasonal aspect to the occupation?

Michie's (1982) and Lepionka's (Grunden 2014) excavations uncovered animal bone and shell, indicating faunal preservation is excellent. Studying faunal remains could help researchers understand the workers' diet or possibly what animals were housed at the site. Flotation samples may reveal seasonal variability in the diet. Excavations could also uncover personal and domestic items that would provide a glimpse into the lives of the enslaved workers.

Developmental history/additional historic context information (if appropriate)

The settlement was built ca. 1815-1816, while Callawassie Island was owned by James Hamilton, Jr. (1786-1857), a lawyer and planter who had been an officer in the War of 1812. He would later serve in the South Carolina House of Representatives 1819-1822, as intendant (mayor) of Charleston in 1822, and in the United States House of Representatives 1822-1829 before being elected governor of South Carolina 1830-32, at the height of the Nullification crisis. Hamilton gained legal control of the island when he married Elizabeth

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Heyward in 1813, and moved there in 1815. He planted rice, sea island cotton, and sugar on Callawassie Island, but was not all that enthusiastic about or successful planting or processing any of the three crops, preferring the life of a gentleman and at one point calling the plantation there "exceedingly irksome." The sugar mill complex, built sometime within the next three years, was based on plans similar to mill construction seen in the West Indies, as Hamilton had acquired several close and influential West Indian connections who were heavily involved in the Caribbean sugar trade. (Tinkler, 28-35)

Larry Lepionka's excavation of the site in 1982-83 established that the Callawassie Sugar Works was part of a larger installation comprising an overseer's house and an undetermined number of slave dwellings and storage buildings including at least one barn. All these ancillary buildings were subsequently broken up and otherwise destroyed by residential development. (Brooker 1991; Brooker 2003)

The *Southern Patriot and Commercial Advertiser* (Charleston) published a brief mention of Hamilton's sugar mill in January 1817, which was reprinted by the *City Gazette and Daily Advertiser* (Charleston) on January 24, 1817, and by the *Camden Gazette* (Camden) on February 6, 1817, both under the title "Cultivation of the Sugar Cane."

Cultivation of the Sugar Cane.

We understand from unquestionable authority, that SUGAR of an excellent quality was made at the plantation of Major James Hamilton, jun. on Callawassie Island, St. Luke's Parish, on the 6th of Jan. from Canes which had been cut and stacked since the 12th of Nov. last. It is remarkable that their exposure to a severe frost, on the night of the 11th, did not prevent a perfect *granulation* of the juice, notwithstanding some few of the more exposed ends of the canes were partially acidulated. We learn that the product in *quantity* per acre is sufficient (when the last most unfavorable season is considered) to warrant and encourage a continuance of its cultivation on a more extensive scale. . . .

City Gazette and Daily Advertiser (Charleston, S.C.), February 6, 1817

The *Camden Gazette* reprinted that paragraph and added a second one on sugar cultivation and processing in Georgia and the Carolinas:

Georgia and the Carolinas have boldly entered into the tide of experiment—they have succeeded. They possess what SOCRATES emphatically calls "the wealth of Nature." They have now the opportunity of bestowing a signal blessing on the whole union; by the extensive cultivation of the Sugar Cane. Its final success, of which we entertain no doubt, will in a great measure, if not altogether, exempt us from the pressure of those *colonial restrictions*, which the caprice or folly of foreign states has the power *at present* to enforce—and they will thus throw another granite on those bulwarks of real National Independence which are rapidly rising to encircle our country.—

Camden Gazette (Camden, S.C.), February 6, 1817

Unfortunately, that sort of optimism about the sugar industry—both in South Carolina in general, but especially about Hamilton's operation at Callawassie in particular—was wholly unwarranted.

Hamilton had acquired Callawassie Island in 1813 by marriage to Elizabeth Heyward, who had been awarded the island, along with Rose Island and other plantations) when still a minor in 1806, following the settlement of long-drawn-out family disputes over the estate of her great grandfather Daniel Heyward (d. 1777). Elizabeth Heyward Hamilton's stepfather, Nicholas Cruger, Jr. (1779-1826) was from the then-Danish island of St. Croix

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(Lesser Antilles, now the U.S. Virgin Islands), where his family had long established mercantile interests involving the wholesale shipment of sugar, rum and molasses to the northeastern United States (principally New York), in exchange for lumber, livestock, and foodstuffs. The birth of Elizabeth's half-brother Henry Nicholas Cruger on St. Croix in 1800 suggests that she lived there during childhood. Subsequently, Nicholas Cruger, Jr. moved to South Carolina, and ca. 1815 purchased two properties on the Back River just north of Savannah—Pennyworth Island and Rice Hope—with the potential for rice cultivation.

Given this background, it is likely that Cruger family members or their operatives had a hand in designing the Callawassie Sugar Works, a circumstance which would explain certain practical refinements including the small exterior vents along its boiling train which are features found in contemporary West Indian boiling houses, including several on St. Croix. Thomas Spalding of Sapelo was a more pervasive influence, the Callawassie Boiling House and Curing Shed exhibiting marked resemblance in dimension and organization to tabby structures for the processing of sugar-cane built on Sapelo Island, Georgia, as described and illustrated in Spalding's *Observations on the method of Planting and Cultivating the Sugar Cane in Georgia and South Carolina*, published by the Agricultural Society of South Carolina in 1816 (Reprinted in Coulter, 227-263). The "T"-shape relationship between the Sapelo boiling house and curing shed was distinctive, harking back to late-18th century Caribbean prototypes (Wayne, 49). On Callawassie, Spalding's arrangement was repeated with minor modification, the passageway separating the two structures being made wider, no doubt to facilitate circulation. There is also some dimensional difference between the boiling houses, the Callawassie example being larger (measuring 45' x 25') compared with Spalding's published plan, which measures approximately 38' x 23' overall. But the organization is very similar, both buildings having a wide doorway at opposing ends, a single "battery" (Jamaica train) on one long side with room for eight coolers on the other. The furnace is shown occupying almost the same relative position in the published plan as it does in reality on Callawassie, juice passing along the line of boiling kettles from right to left as seen from the operator's perspective. The most obvious difference between the two schemes is that Hamilton opted for a simple, unenclosed and inexpensive animal-driven mill. Spalding also relied on animal power but housed his milling operations in an octagonal structure built of tabby which functioned on two levels to facilitate removal of *bagasse*, this arrangement (common in the Antilles) having been copied, according to the builder's own testimony, from drawings obtained in Louisiana.

Assuming newspaper reports are accurate, then the Callawassie works were erected either just before or soon after Spalding's paper on the subject of sugar processing appeared in print. This could mean that Hamilton obtained an advance copy of the publication, or that Thomas Spalding, with his usual courtesy, had sent Hamilton drawings of his Sapelo complex. The latter possibility is supported by a June 1816 letter by Spalding to an unknown correspondent, enclosing a letter (no longer extant) that Spalding had sent "to Maj. Hamilton in South Carolina," giving detailed information about the construction of tabby roofs (Spalding Papers, Georgia Historical Society, Savannah).

Hamilton himself soon lost interest in Callawassie, which must have been too far isolated from urban centers and society for his restless ambition. Moreover, he probably became aware that Spalding's sugar making technology at Sapelo was primitive and unlikely to yield returns commensurate with those promised by rice or cotton unless aided by steam power (which Spalding himself resisted, even though steam engines were being exported from England to Jamaican sugar planters as early as 1803).

Hamilton sold the property and moved to Charleston in early 1819, beginning a successful career in public office at the local, state, and national levels. He left no documentation on the mill and its production during the brief period it was in operation (Tinkler, 28-34; Rowland, Moore, and Rogers, 317-19, 390; Busick, 416-17).

Callawassie Sugar Works

Name of Property

Beaufort County, South Carolina

County and State

The Callawassie Sugar Works complex was representative of small sugar mill operations of this period. While steam power was a promising option for sugar production, the required machinery was costly (Brooker 2003, 6). Thomas Spalding was aware of this and studied the use of alternative energy sources such as the tides. With marginal growing conditions for cane in South Carolina, sugar production was reduced to smaller operations using animals to power the mill.

Cane processing often required continuous operation involving three separate stages of processing: milling, boiling and curing. A set of four kettles was arranged in a line over individual fires. While the unknown designer of the Callawassie Sugar Works adopted the design and model drawings of those first published by Agricultural Society of South Carolina, the tabby construction is unique to Beaufort County and its sea islands. The molds used for the Sugar Works differed in size (measuring 24" in height) from Sapelo Island's tabby molds (measuring 10' to 12" in height (Brooker 2003, 15). It is further conjectured that local construction crews from Beaufort District were used rather than crews from the Georgia Islands (Brooker 2003, 15).

Extensive study of the mill base suggests that

the mill proper on Callawassie was not an expensive iron framed one but instead resembled Spalding's vertically mounted animal driven machine, incorporating three iron or perhaps, oak cylinders suspended within an oak frame built by plantation carpenters. Unlike Sapelo, animals driving the Callawassie mill and slaves feeding cane into the machine worked at the same level. (Brooker 2003, 15).

The boiling train, ash pit, and furnace and wall vents survive, along with an exterior wall (called a "copper wall" in Jamaica) that has three small, arched openings. The openings most likely acted as vents to regulate the hot air coming from the furnace. This feature resembles those found in sugar mills in the Antilles, providing further evidence of a West Indian influence in the design of the Callawassie Sugar Works. A footnote to Spalding's comments regarding the efficacy of sugar production on the coastal Sea Islands notes that, according to the *Southern Agriculturalist*, "West Indian overseers claiming knowledge of sugar-making found ready employment among would-be sugar cultivators in the Southeast during the early part of the nineteenth century" (quoted in Brooker 2003, 19).

The Callawassie Sugar Works is also distinctive as an example of a sea island sugar mill that utilized its location on a branch of the Chechessee River for the ease of delivering sugar cane by boat, reducing the number of animals needed for the mill's operation. The location's river breezes also contributed to the natural cooling of the boiling house and the disbursement of the clouds of water vapor created during the boiling process.

According to Colin H. Brooker, who has done extensive research on tabby construction and has a book on this topic currently in the process of publication by the University of South Carolina Press (Brooker, Forthcoming), there are no currently existing tabby sugar works or ruins in coastal South Carolina or the Southeastern United States comparable to the Callawassie Sugar Works. Other sugar works ruins in the Southeast and Louisiana represent much larger operations with more sophisticated manufacturing and production processes. These ruins are unique to this time period and this primitive level of sugar mill operation. The archaeological potential of this site, should proper archaeological research, investigation, excavation, and interpretation be conducted, could make it eligible for an addendum listing of the site under National Register Criterion D, as an archaeological site yielding or having the potential to yield more significant information in a way that a historical investigation cannot do.

Callawassie Sugar Works
Name of Property

Beaufort County, South Carolina
County and State

9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets)

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Bagwell, James. *Rice Gold : James Hamilton Couper and Plantation Life on the Georgia Coast*. Macon: Mercer University Press, 2000.

Brooker 1991

Brooker, Colin H. "Callawassie Island Sugar Works: A Tabby Building Complex." In Michael Trinkley, editor, *Further Investigations of Prehistoric and Historic Lifeways on Callawassie and Spring Islands, Beaufort County, S.C.* Chicora Research Series 23. Columbia: Chicora Foundation, 1991.

Brooker 1998

Brooker, Colin H.. "The Conservation and Repair of Tabby in Beaufort County, South Carolina." In Jane Powers Weldon, editor, *The Conservation and Preservation of Tabby: A Symposium on Historic Building Material in the Coastal Southeast, February 25-27, 1998, Jekyll Island, Georgia*. Atlanta: Georgia Department of Natural Resources, Historic Preservation Division, 1998. http://georgiashpo.org/sites/uploads/hpd/pdf/tabby_scanned.pdf.

Brooker 2003

Brooker, Colin H. "Written Historical and Descriptive Data," 2003, Addendum to Callawassie Sugar Works (HABS No. SC-857, 1983), Historic American Building Survey, National Park Service, U.S. Department of the Interior. Washington, D.C.: Historic American Buildings Survey, 2003. <http://lcweb2.loc.gov/pnp/habshaer/sc/sc1100/sc1115/data/sc1115data.pdf>.

Brooker, Forthcoming

Brooker, Colin H. *Tabby Architecture of Beaufort County, South Carolina and the Sea Islands*. Columbia: University of South Carolina Press, Forthcoming.

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Busick, Sean R. "James Hamilton, Jr." In Walter B. Edgar, ed., *The South Carolina Encyclopedia*. Columbia: University of South Carolina Press, 2006.

Coulter

Coulter, E. Merton. *Thomas Spalding of Sapelo*. University, La. [Baton Rouge]: Louisiana State University Press, 1940.

Callawassie Sugar Works

Name of Property

Beaufort County, South Carolina

County and State

City Gazette

"Cultivation of the Sugar Cane." *City Gazette and Daily Advertiser* (Charleston, S.C.), January 24, 1817, reprinting a portion of an article from the *Charleston Southern Patriot*, January 1817.

Camden Gazette

"Cultivation of the Sugar Cane." *Camden Gazette* (Camden, S.C.), February 6, 1817, reprinting a portion of an article from the *Charleston Southern Patriot*, January 1817.

Gritzner

Gritzner, Janet H. "Distributions of Tabby in the Southern United States: A Geographical Perspective." In Jane Powers Weldon, editor, *The Conservation and Preservation of Tabby: A Symposium on Historic Building Material in the Coastal Southeast, February 25-27, 1998, Jekyll Island, Georgia*. Atlanta: Georgia Department of Natural Resources, Historic Preservation Division, 1998. http://georgiashpo.org/sites/uploads/hpd/pdf/tabby_scanned.pdf.

Gray

Gray, Lewis Cecil. *History of Agriculture in the Southern United States to 1860*. Two Volumes. Washington: Carnegie Institution of Washington, 1933; Reprint Edition, Clifton, N.J.: Augustus M. Kelly Publishers, 1973.

Grunden

Grunden, Ramona, email communication with SHPO staff, 28 February 2014.

HABS 1983

Callawassie Sugar Works (HABS No. SC-857), Historic American Building Survey. Photographs by Jack E. Boucher, 1983. National Park Service, U.S. Department of the Interior. Washington, D.C.: Historic American Buildings Survey, 1983. http://memory.loc.gov/ammem/collections/habs_haer/.

Linley

Linley, John S. *The Georgia Catalog: Historic American Buildings Survey*. Athens: University of Georgia Press, 1982.

Michie

Michie, James L. "An Archaeological Investigation of Cultural Resources of Callawassie Island, Beaufort County, South Carolina," *Research Manuscript Series Book 168*. South Carolina Institute of Archaeology and Anthropology, 1982.

Callawassie Sugar Works
Name of Property

Beaufort County, South Carolina
County and State

Rowland, Moore, and Rogers

Rowland, Lawrence S., Alexander Moore, and George C. Rogers, Jr. *The History of Beaufort County, South Carolina. Volume 1, 1514-1861.* Columbia: University of South Carolina Press, 1996.

Spalding

Spalding, Thomas. *Observations on the Method of Planting and Cultivating the Sugar-Cane in Georgia and South Carolina.* Charleston: Agricultural Society of South Carolina, 1816. Reprinted in E. Merton Coulter, editor, *Georgia's Disputed Ruins.* Chapel Hill: University of North Carolina Press, 1937.

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Sullivan, Buddy. "Tabby: A Historical Perspective of an Antebellum Building Material in McIntosh County, Georgia." In Jane Powers Weldon, editor, *The Conservation and Preservation of Tabby: A Symposium on Historic Building Material in the Coastal Southeast, February 25-27, 1998, Jekyll Island, Georgia.* Atlanta: Georgia Department of Natural Resources, Historic Preservation Division, 1998. http://georgiashpo.org/sites/uploads/hpd/pdf/tabby_scanned.pdf.

Tinkler

Tinkler, Robert. *James Hamilton of South Carolina.* Southern Biography Series. Baton Rouge: Louisiana State University Press, 2004.

Wayne

Wayne, Lucy B. *Sweet Cane: The Architecture of the Sugar Works of East Florida.* Tuscaloosa: University of Alabama Press, 2010.

Wright and Wright

Wright, Barry and Barre. "Tabby passes test of time. Centuries-old ruins dot Beaufort County landscape." *Bluffton Today* (Bluffton, S.C.), February 16, 2011.

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67 has been Requested)
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # HABS SC-857
- recorded by Historic American Engineering Record # _____

Primary location of additional data:

- State Historic Preservation Office
 - Other State agency
 - Federal agency
 - Local government
 - University
 - Other
- Name of repository: S.C. Department of Archives and History

Historic Resources Survey Number (if assigned): Site #U-13-311, SCIAA Site File #38BU409 Beaufort County Historic Sites Survey 1997

Callawassie Sugar Works
Name of Property

Beaufort County, South Carolina
County and State

10. Geographical Data

Acreage of Property Less than one acre
(Do not include previously listed resource acreage)

UTM References
(Place additional UTM references on a continuation sheet)

1	<u> </u>	<u> </u>	<u> </u>	3	<u> </u>	<u> </u>	<u> </u>
	Zone	Easting	Northing		Zone	Easting	Northing
2	<u> </u>	<u> </u>	<u> </u>	4	<u> </u>	<u> </u>	<u> </u>
	Zone	Easting	Northing		Zone	Easting	Northing

Latitude/Longitude

Latitude 32.335405, Longitude -80.858163

Verbal Boundary Description (describe the boundaries of the property)

The Callawassie Sugar Works site is designated as the heavy black line marked "Callawassie Sugar Works" on the accompanying portion of a Beaufort County, South Carolina, GIS Map, depicting a portion of Parcel 29 on Callawassie Island (excluding the road access into the site from Sugar Mill Drive), drawn at a scale of 1.75" = 200'.

Boundary Justification (explain why the boundaries were selected)

The boundaries are restricted to the three ruined structures that make up the historic site of the Callawassie Sugar Works, and include the extent of the known, physical archaeological resources.

Form Prepared By

name/title Francesca L. Denton, with assistance from Colin H. Brooker and SHPO Staff
organization N/A date March 10, 2014
street & number 4 North Oak Forest Drive telephone (843) 987-1017
city or town Okatie State SC zip code 29909-4255
e-mail fdenton@gmail.com

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** (7.5 or 15 minute series) indicating the property's location.
A **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map. N/A
- **Continuation Sheets**
- **Additional items:** (Check with the SHPO or FPO for any additional items)

Callawassie Sugar Works

Name of Property

Beaufort County, South Carolina

County and State

Photographs:

Submit clear and descriptive black and white photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

Name of Property:	Callawassie Sugar Works
City or Vicinity:	Callawassie Island, Okatie vicinity
County:	Beaufort
State:	South Carolina
Photographer:	Eugene F. Durick
Date Photographed:	November 16, 2012

Description of Photograph(s) and number:

- 1 of 21
Boiling House (L) and Mill (R), looking west
- 2 of 21
Boiling House, looking west
- 3 of 21
Boiling House, southwest view
- 4 of 21
Boiling House, north view, with Mill in Right Foreground
- 5 of 21
Boiling House, northeast view, with Mill in Left Background
- 6 of 21
Boiling House, looking east
- 7 of 21
Boiling House, Interior, looking east
- 8 of 21
Boiling House, looking southeast
- 9 of 21
Southeast view from west end of Boiling House
- 10 of 21
Boiling House, looking south
- 11 of 21
Mill, looking south
- 12 of 21
Boiling House, Interior, looking west
- 13 of 21
Mill, west view

Callawassie Sugar Works
Name of Property

Beaufort County, South Carolina
County and State

14 of 21

Mill, looking west

15 of 21

Mill, looking south

16 of 21

Mill, looking southeast

17 of 21

Boiling House, west end, looking west

18 of 21

Mill, east view

19 of 21

East side of Sugar Works site, looking east toward the entrance on Sugar Mill Drive

20 of 21

Boiling House, southwest view

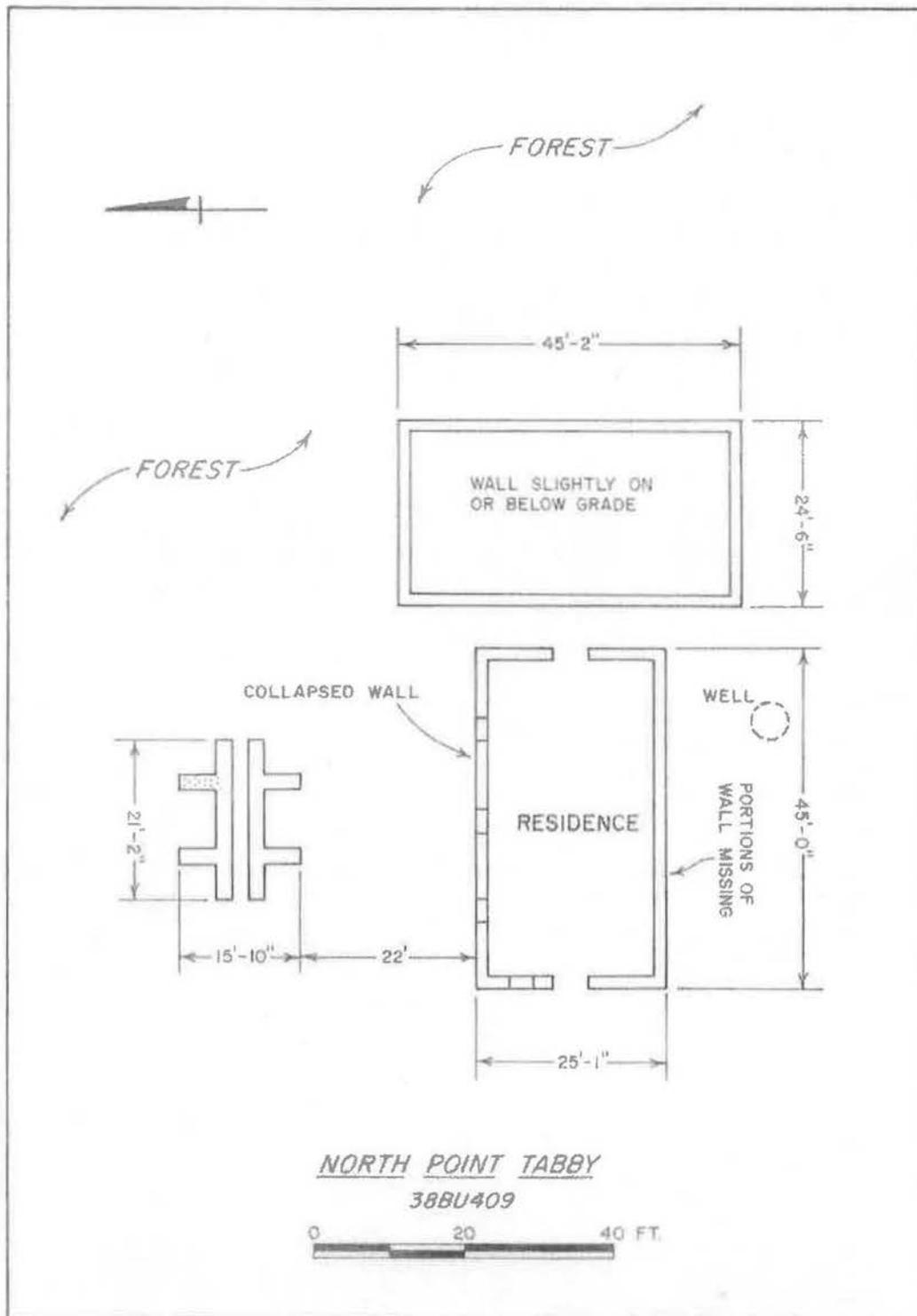
21 of 21

Boiling House (L), Mill (R), southwest view

[NOTE: Colin Brooker was contacted regarding the existence of photographs of intact sugar mills comparable to the Callawassie Sugar Works, or engravings of them in operation. Mr. Brooker stated that, to his knowledge, there are no photographs or engravings of sugar works similar in size and production technique to the Callawassie operation.]

Callawassie Sugar Works
Name of Property

Beaufort County, South Carolina
County and State



Callawassie Island Sugar Works (38BU0409) Site Plan (Image from Michie 1982, 48)

Callawassie Sugar Works
Name of Property

Beaufort County, South Carolina
County and State

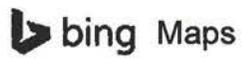
Property Owner:

(Complete this item at the request of the SHPO or FPO.)

name Callawassie Island Property Owners Association (CIPOA)
street & number 22 Callawassie Club Drive telephone 843-987-2142
city or town Okatie state SC zip code 29909

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.



Unsaved places

1. **Callawassie Sugar Works (Okatie vic., Beaufort Co., SC**
29 Sugar Mill Dr., Okatie, SC 32.335405, -80.858163





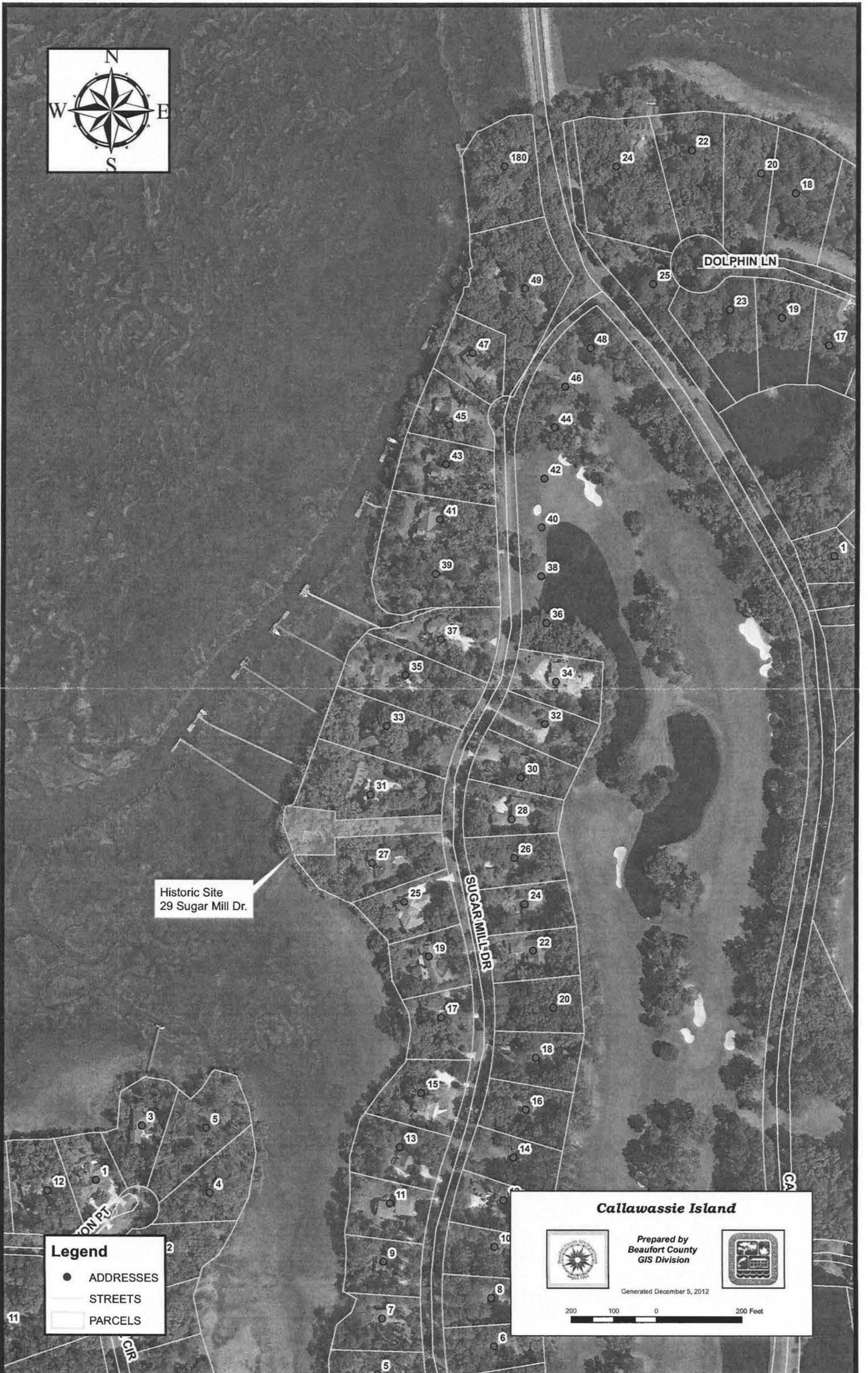
US Street Map County Base Map 2012 Aerial

Callawassie Sugar Works, Okatie vicinity



SHAWNEE WOODS DR





Historic Site
29 Sugar Mill Dr.

Legend

- ADDRESSES
- STREETS
- PARCELS

Callawassie Island

Prepared by
Beaufort County
GIS Division

Generated December 5, 2012

















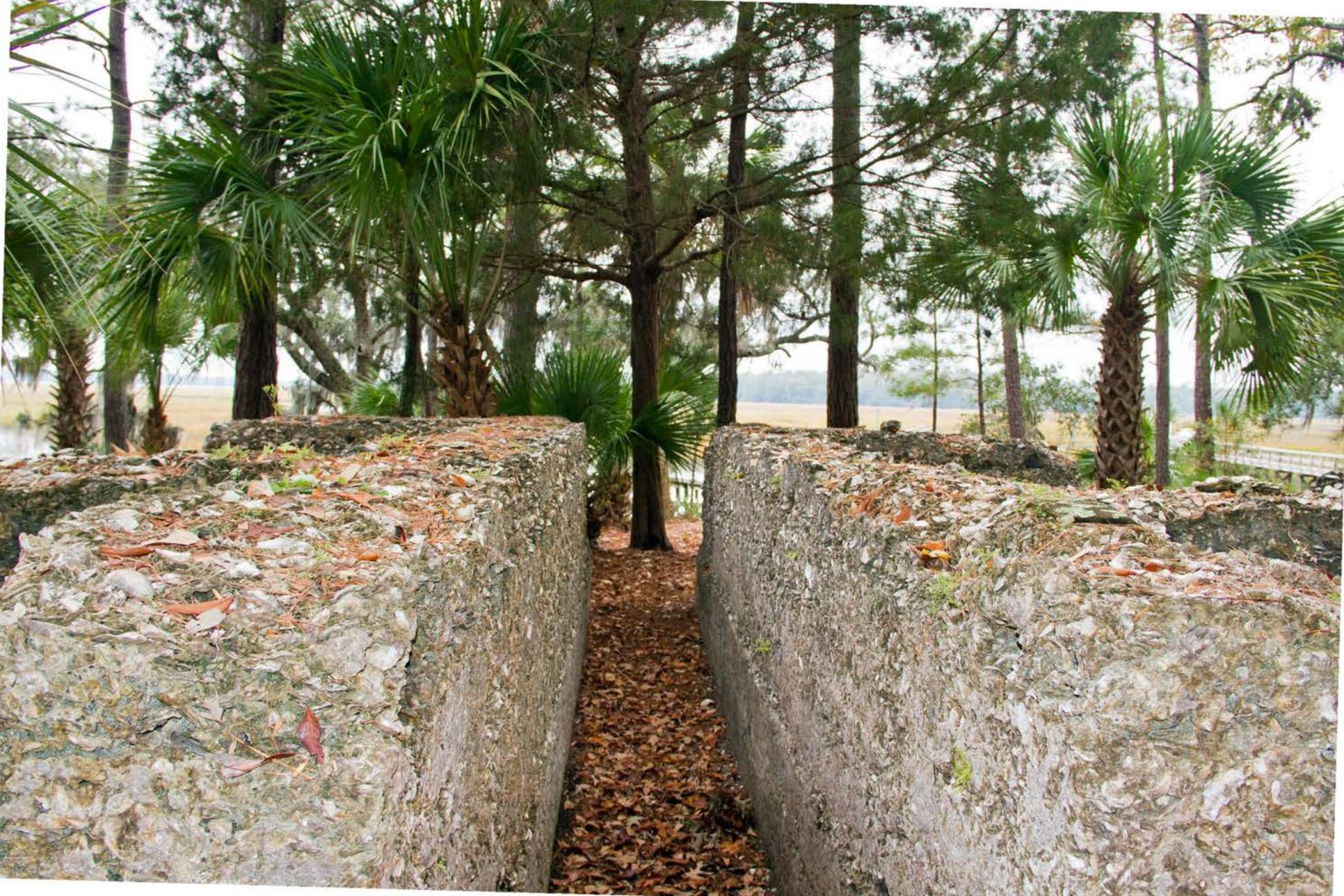


























National Register of Historic Places
Memo to File

Correspondence

The Correspondence consists of communications from (and possibly to) the nominating authority, notes from the staff of the National Register of Historic Places, and/or other material the National Register of Historic Places received associated with the property.

Correspondence may also include information from other sources, drafts of the nomination, letters of support or objection, memorandums, and ephemera which document the efforts to recognize the property.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: RESUBMISSION

PROPERTY NAME: Callawassie Sugar Works

MULTIPLE NAME:

STATE & COUNTY: SOUTH CAROLINA, Beaufort

DATE RECEIVED: 04/10/14 DATE OF PENDING LIST:
DATE OF 16th DAY: DATE OF 45th DAY: 05/27/14

REFERENCE NUMBER: 13001096

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: N
OTHER: N PDIL N PERIOD: N PROGRAM UNAPPROVED: N
REQUEST: Y SAMPLE: N SLR DRAFT: N NATIONAL: N

COMMENT WAIVER: N

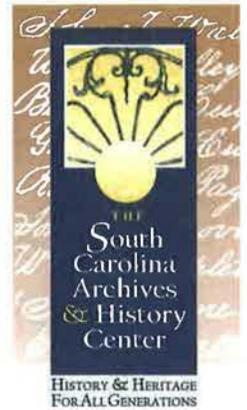
ACCEPT RETURN REJECT 5/27/14 DATE

ABSTRACT/SUMMARY COMMENTS:

RECOM./CRITERIA A, D
REVIEWER Seibert DISCIPLINE Archaeology
TELEPHONE _____ DATE _____

DOCUMENTATION see attsched comments Y N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.



Friday, November 22, 2013

Ms. Carol Shull
Interim Keeper, National Register of Historic Places
U.S. Department of the Interior
National Park Service
1201 Eye (I) Street, NW, 8th Floor
Washington, DC 20005

Dear Ms. Shull:

Here are the National Register nominations for the Callawassie Sugar Works, in Beaufort County; the Prosperity Cemetery, in Newberry County; and the Williamson's Plantation Battlefield, in York County, South Carolina, recently approved by the South Carolina State Board of Review.

We are submitting these nominations for listing in the Register.

If we may be of any further assistance, please do not hesitate to contact Andy Chandler at the address below, at (803) 896-6179, by fax at (803) 896-6167, or by e-mail at chandler@scdah.state.sc.us.

Sincerely,

J. Tracy Power, Ph.D.
Historian and National Register Co-Coordinator
State Historic Preservation Office



United States Department of the Interior

NATIONAL PARK SERVICE

1849 C Street, N.W.
Washington, DC 20240

RETURN

Callawassie Sugar Works
Beaufort County, SC
NR Ref # 13001096
1/2014

Review and Comment
Erika Martin Seibert
Archeologist
National Register/NHL Programs
202-354-2217
erika_seibert@nps.gov

The Callawassie Sugar Works is being returned for technical and substantive revisions. The property may be eligible as an archeological site under National Register Criterion D, however, the documentation does not address Criterion D at this time. This property is primarily an archeological property. The physical remains here are archeological features. As such, the property does not have enough integrity to convey its significance under Criterion A only. However, some archeological properties are eligible under additional Criteria, particularly if there are visible archeological features at the property (see below). This appears to be a very important archeological property and we would like to work with you to revise the documentation so that it can be listed. Please see the detailed comments below.

Not for Publication Box

The "Not for Publication" box on the first page of the form is not checked, however, there are clearly significant archeological resources at the property that may be at risk. Please check with your archeologist to determine if the release of any sensitive archeological information in this document could risk harm to the resource and if so, insert an "X" in this box.

The Secretary of the Interior can withhold sensitive archeological information, often location information found in the text, photos, or maps, under Section 304 of the National Historic Preservation Act, to ensure that sites are not harmed by looting. If accepted, the documentation will be digitized and made available to the public and documents that do not have an "X" in the Not for Publication box are released in full. In addition to locational information, other types of information that are commonly withheld includes information about the nature of the archeological deposits (ie, the types of artifacts likely to be found, the presence of human remains, etc). If there is sensitive information in the documentation, it would be helpful if, at the beginning of Section 7 some indication of what text should be redacted is given. This can be done by stating that text in **BOLD** or *ITALICS*, or whatever indicator you use, should be redacted. Maps and photos that should be withheld should be clearly marked "Confidential."

Section 7

The end of Section 7 should include a paragraph about any and all archeological investigations that took place at the property. Who performed the investigations? When? Why (ie, monitoring?)? What methodology was used (if known)? What did they find? This information should be available in the site report(s). If more than one investigation has taken place, then break this section into paragraphs that describe each one. It is perfectly fine if the archeological investigations were exploratory, Phase I, monitoring, surface collection, or basic drawings of visible features. There does not have to be extensive or even below ground investigations (particularly when you have a site with visible ruins) to nominate a property under Criterion D. The only requirement is that the author make a case for the availability of important information.

Applicable National Register Criteria

Criterion D should be checked. This is, first and foremost, an archeological property that does not include intact structures, but does have many significant archeological features that include the visible ruins of former buildings. The property is also likely to be eligible under Criterion A as the visible ruins at this archeological property can help the archeological remains both above and below ground convey significance about industry in the state.

Areas of Significance

Under, *Area of Significance*, the category (ies) should read: "ARCHEOLOGY-Historic-Non-Aboriginal," and, if you decide to use Criterion A, "INDUSTRY".

Criterion D; Possibly Criteria A

Your narrative statement of significance should include a statement about Criterion D. Archeological properties convey their significance through their ability to answer significant questions. This is generally presented in the form of research questions or a research design. There are clearly many important archeological questions of state significance that can be answered at this property including questions about the evolution of sugar making technology, specific information about the technology of sugar making during the early period (prior to 1840), significant information about the labor used at this property during this time, and, potentially, information about the enslaved labor at early sugar works. Working with the site report and historical archeologists, an argument for Criterion D should include specific questions that archeologists would ask of this site that are of state significance, some discussion of why these are appropriate for this site, and how it fits into a larger context of the archeological study of sugar works in South Carolina. This can be brief.

No above ground or visual integrity is required of archeological properties nominated only under Criterion D, as long as the property retains the ability to provide important information. Under Criteria other than D, an archeological property, or any property, should convey its significance, generally, under the National Register's seven aspects of integrity. A property should meet several, if not all, aspects to adequately retain enough integrity to qualify under the other Criteria. This often means that archeological properties nominated under other Criteria should retain some visual or above ground integrity to the extent that together, with the archeological resources, the property can convey its significance. Archeological properties that include major features that were intentionally built below ground, such as pit houses or mining properties, may

retain enough integrity to qualify under the other Criteria. Archeological properties with visible ruins and/or other above ground features, such as Callawassie Sugar Works may also qualify under other Criteria in addition to Criterion D.

In conjunction with the archeological resources and research potential at this property, under Criterion A, the visible archeological features (ruins), at Callawassie Sugar Works appear to illustrate the early industrial period and the role of sugar works during that period in coastal South Carolina and Georgia, particularly because these ruins are some of the few remaining above ground features from early sugar production in the state.

Maps

It would be helpful to include a sketch map that shows the location of archeological investigations, if available.

Please don't hesitate to contact me as you move forward with the revisions to the nomination. I am available at the e-mail and phone number above. We look forward to seeing the Callawassie Sugar Works nomination again soon so that we can list this important site.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY Callawassie Sugar Works
NAME:

MULTIPLE
NAME:

STATE & COUNTY: SOUTH CAROLINA, Beaufort

DATE RECEIVED: 11/29/13 DATE OF PENDING LIST:
DATE OF 16TH DAY: DATE OF 45TH DAY: 1/15/14
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 13001096

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: N
OTHER: N PDIL: N PERIOD: N PROGRAM UNAPPROVED: N
REQUEST: Y SAMPLE: N SLR DRAFT: N NATIONAL: N

COMMENT WAIVER: N

ACCEPT RETURN REJECT 1/15/14 DATE

ABSTRACT/SUMMARY COMMENTS:

RECOM./CRITERIA _____

REVIEWER Subert DISCIPLINE _____

TELEPHONE _____ DATE 1/15/14

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.

1096

United States Department of the Interior
National Park Service



National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).

1. Name of Property

historic name Callawassie Sugar Works

other names/site number _____

2. Location

street & number 29 Sugar Mill Drive not for publication

city or town Okatie vicinity

state South Carolina code SC county Beaufort code 013 zip code 29909

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,
I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property meets does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

national statewide local

Elizabeth M. Johnson 11/22/2013
Signature of certifying official Date

Elizabeth M. Johnson, Deputy State Historic Preservation Officer, South Carolina Department of Archives & History, Columbia, S.C.

In my opinion, the property meets does not meet the National Register criteria.

Signature of commenting official Date

Title State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I, hereby, certify that this property is:

entered in the National Register determined eligible for the National Register

determined not eligible for the National Register removed from the National Register

other (explain:) _____

Signature of the Keeper Date of Action

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5. Classification

Ownership of Property
(Check as many boxes as apply)

- private
- public - Local
- public - State
- public - Federal

Category of Property
(Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
		buildings
		district
1		site
		structure
		object
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)

N/A

Number of contributing resources previously listed in the National Register

N/A

6. Function or Use

Historic Functions

(Enter categories from instructions)

- Agricultural/Subsistence
- Agricultural/Outbuilding
- Industry Processing/Manufacturing Facility

Current Functions

(Enter categories from instructions)

- Landscape/Park

Returned

7. Description

Architectural Classification

(Enter categories from instructions)

N/A

Materials

(Enter categories from instructions)

foundation: Tabby

walls: Tabby

roof: N/A

other:

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Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Summary Paragraph

The Callawassie Sugar Works site, on Callawassie Island in Beaufort County, South Carolina, contains the tabby ruins of two historic structures (the sugar mill base, or foundation, and the boiling house) and archaeological evidence of a third structure (the curing shed). The sugar works, constructed of tabby ca. 1815-1816, was a complex for processing sugar cane into sugar. There are no wholly intact structures or buildings on the site, and the ruins contain no machinery or equipment.

Narrative Description

Mill Base (ca. 1815-1816)

The Mill Base, north of the Boiling House, is a symmetrical structure comprising two parallel tabby walls measuring 1'-10" in width distanced 2'-6 1/2" apart and rising to a maximum height of 4"-5" above present grade. Aligned approximately east/west, each wall is 27'-10" long and buttressed at right angles on its outer face by two tabby spurs. Each spur is 1'-10" wide and 4'-9" long and matches the two parallel walls in height. The form so created reproduces in tabby the footprint of a spaced timber frame fabricated to support an animal-driven cane-crushing machine (no longer extant) comprising three vertically-mounted iron or perhaps oak cylinders. Comparison with late-18th-to-early-19th century West Indian examples, such as the horse-driven mill at Estate Whim, St. Croix (Brooker 1991, 119-21; Brooker, forthcoming) shows that a sweep arm would have allowed attachment of the machinery to teams of oxens, horses or mules. Cane was fed between the rollers by hand—a dangerous operation which could cause grisly accidents—crushed cane waste (*bagasse*) being collected up for fuel when enough accumulated. Nothing was found during an archaeological excavation by Dr. Larry Lepionka of the University of South Carolina in 1982-83 to suggest that the mill was ever enclosed, since palmetto fronds or some equally flimsy covering incapable of leaving any trace in the archaeological record sheltered the equipment, if not the enslaved operatives, from sun and rain.

Horizontal pour lines show that each half of the tabby feature was cast in three successive stages using timber "molds" or "boxes" fabricated to define the finished wall shape including its spur-like buttresses. The initial pour is partially concealed, making full vertical measurement impossible; however, the intermediate pour is fully visible and measures 2'-2 1/2' in height. The upper pour (eroded) was cast as a thin strip, measuring about 6' in height around a number of fired brick inserts of uncertain function. Small rectangular holes extending through the tabby indicate that inner and outer formwork faces were held together by removable timber "pins" each measuring about 3 1/4" x 2" in section. All tabby appears carefully set out and well-compacted by what must have been a skilled and well-supervised construction crew. No exact parallel for the Callawassie Mill Base is known, the only comparable examples being a massive "H"-shaped tabby mill base excavated at Elizafield Plantation, Glynn County, Georgia, by James A. Ford in 1934, and a similar tabby feature at The Thickets, located north of Darien, Georgia (Coulter, 196, 201; Linley, 294).

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Boiling House (ca. 1815-1816)

The Boiling House is a substantially ruined single-story building measuring approximately 45'-0" east/west x 25'-0" north/south. Where preserved, exterior tabby walls rise to a maximum height of about 12' above present grade. The roof and a presumed chimney, along with all boiling and cooling equipment, are no longer extant. Upper parts of the south elevation are missing and the north wall has collapsed. Doorways were centered on each of the end (east and west) elevations. A narrow brick pathway (still largely intact) bisected the building along its primary axis into two almost equal halves. Analogy with contemporary structures indicates that this marked a division between boiling and cooling operations. The interior south side was formerly occupied for more than half its length by a Jamaica boiling train consisting of a common closed flue principally built of brick with the requisite furnace at one end and chimney at the other. About 25'-0" long and nearly 8'-0" wide, the train bed was sunk approximately 2'-5" below general floor level. Low tabby walls of uncertain height defined the boiling area on its two interior sides (north and east), fired brick being substituted for tabby on the exterior. A brick-lined furnace (measuring about 3'6" x 4'0" in plan) was fed through an arch piercing the south elevation. Combustible materials (*bagasse* and wood) were doubtless supported on a metal fire grate (no longer extant). A second, elliptically-arched opening, positioned immediately below the furnace feed, allowed for the removal of ash. A set of four or five copper or iron kettles (no longer extant) was set linear fashion into the train's upper surface. The largest (*grande*) would have been positioned at the train's west end, juice being ladled successively from there into smaller kettles until it reached the smallest *teache*, or strike pan, positioned directly over the furnace. Heat passed beneath each kettle in turn, with three small arched flue openings on the exterior, or "copper wall," allowing temperature regulation. By closing and opening these with wooden or possibly iron dampers, individual pans could (in theory) be made to boil more or less rapidly. Another small opening piercing the building's lower west elevation probably communicated with an exterior free-standing chimney (no longer extant).

Opposite the boiling train, sufficient space exists to accommodate a series of coolers where concentrated juice from the boiler would have slowly crystallized. Coolers were usually made of timber, and in this case have left no trace. No window survives intact anywhere in the building, but there is clear structural evidence to indicate that above the line of coolers, the north wall featured three identical window openings measuring about 2'-9" or 3'-0" wide x 6'-2" high and spanned by a double or possibly single-timber lintel measuring 2 1/2" in depth. "Ghost" impressions show that window frames were cast in place as tabby construction proceeded and set back one or two inches from the exterior elevation. Nothing remains of the frames themselves, but quantities of glass found during excavation indicate that the windows were glazed. It is unknown if smaller windows pierced the heavily-damaged opposite (south) elevation at a level above the boiling pans.

On the west elevation, an incomplete window opening flanks the central doorway. This window probably matched windows on the north elevation in size and detail. Aside from its central doorway, the east elevation is blank.

All roof framing and eave details are lost. Quantities of nails found during excavation suggest that the roof construction featured a clerestory of some kind which allowed steam generated during boiling operations to escape the Boiling House.

Curing Shed (ca. 1815-1816)

This structure is represented by tabby foundations. Cast in a continuous strip 1'-3 1/2" wide, these define a structure measuring approximately 45'-1" north/south x 24'-10" east/west. The long north/south axis was aligned at a right angle to the short axis of the adjacent Boiling House, the two structures forming a "T"-shaped

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configuration in plan. A narrow gap measuring 5'-0 1/2" to 5'-6" wide separate the west face of the Curing Shed from the east face of the Boiling House. No superstructure survives, the lack of tabby or brick wall falls indicating that it was timber-framed.

Additional Context and Description

Archaeological and historical evidence suggests that the Callawassie Sugar Works was part of a larger settlement which included housing for slaves and possibly an overseer's house as well.

Although the unknown designer most likely followed the example of Thomas Spalding of Georgia by adopting his sugar mill drawings published by the Agricultural Society of South Carolina in 1816 (Brooker 2003, 14), the construction and layout of the sugar works is analogous to West Indian mills of that time period. Spalding also described sugar processing techniques that incorporated less costly alternative energy sources, such as the tide-driven mill, or animal power when the tides proved uncertain. It is likely that animals were used to power this mill. The Callawassie Sugar Works' location within yards of the shoreline may have been chosen for the ease of delivering sugar cane by boat. Also, the river breezes would be beneficial in cooling the boiling house and dispersing the clouds of water vapor produced by the boiling operations (Brooker 2003, 16). Tabby was the predominant building material. Tabby formwork on Callawassie Island reflected local usage with molds measuring 24" in height, suggesting that Beaufort District construction crews were used, rather than crews from the Georgia Sea Islands (Brooker 2003, 13).

Today, only the foundation of the mill and parts of the boiling house remain of the three structures of the sugar mill: the mill itself, boiling house, and curing shed. There is no evidence (either above or below ground) that the tabby mill base was ever enclosed within a permanent structure, even though the base survives in excellent condition. (Brooker 2003, 22). While the boiling pans and masonry that supported them have disappeared, the boiling train bed, constructed of fired brick is still intact, together with an ash pit and wall vents. The arched vents, similar to sugar houses in the West Indies, suggest that the person responsible for the construction of this mill had seen sugar operations in the Antilles (Brooker 2003, 19). Fortunately, the long tabby wall on the north side of the boiling house collapsed outwards and retained enough integrity to enable theoretical reconstruction of the original layout of windows. Excavation of glass at the site suggests that the windows were glazed. Only tabby strip foundations remain of the curing shed which was most likely timber framed. All machinery and mechanical equipment is gone. Despite the degradation of the sugar mill site over time, the remnants are still illustrative of this level of pre-industrial sugar processing and production before the introduction of steam machinery in the late 1830s. There are no existing sugar works remains comparable in scale to the Callawassie Sugar Works complex, nor are there any historical images or photographs of sugar mills proportional to these sugar works. The remains retain sufficient integrity to warrant further archaeological investigations to learn more about this period's pre-industrial agricultural development.

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8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield, information important in prehistory or history.

Areas of Significance

(Enter categories from instructions)

Industry

Period of Significance

ca.1815-ca. 1818

Significant Dates

Criteria Considerations

(Mark "x" in all the boxes that apply)

Property is:

- A owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years old or achieving significance within the past 50 years.

Significant Person

(Complete only if Criterion B is marked above)

Cultural Affiliation

Architect/Builder

Unknown

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Period of Significance (justification)

In his 2003 addendum of "Written Historical and Descriptive Data" supplementing the original 1983 Historic American Building Survey documentation for the Callawassie Sugar Works (Historic American Building Survey, National Park Service, Washington, D.C., HABS No. SC-857), Colin H. Brooker provides detailed historical context (Part B) for sugar cultivation in South Carolina. Following the War of 1812, high tariffs levied on sugar provided incentive for local cane production and processing. Brooker states, "through his marriage James Hamilton acquired several close and influential West Indian connections who were heavily involved in the Caribbean sugar trade" (Brooker 2003, 21). Hamilton's sugar mill was built sometime before the end of 1816. Its construction was most likely based on plans and drawings in Thomas Spalding's *Observations on the Method of Planting and Cultivating the Sugar-Cane in Georgia and South Carolina*, published by the Agricultural Society of South Carolina in 1816. Despite Hamilton's entrepreneurial hopes and Spalding's professional expertise, the growing conditions in the South Carolina lowcountry were not ideally suited for the successful cultivation of sugar cane, which prefers a year-round temperature of 75° Fahrenheit with at least 60 inches of rainfall (Bagwell, 63). Also, during this period, the rising price of cotton was incentive to abandon cane production for a more lucrative crop. James Hamilton, Jr. sold the property and moved to Charleston in early 1819, leaving no documentation on the mill and its use. The Callawassie Sugar Works site is significant for its representation of pre-industrial sugar cane processing before the development of steam-driven machinery during the period ca. 1815-ca. 1818. There are no other sugar works known in coastal South Carolina.

Criteria Considerations (explanation, if necessary)

Statement of Significance Summary Paragraph (provide a summary paragraph that includes level of significance and applicable criteria)

The Callawassie Island Sugar Works, located on Callawassie Island, in the Okatie vicinity of Beaufort County, South Carolina, is a site eligible for listing in the National Register of Historic Places under Criterion A in the Area of Significance for Industry as a property associated with events that have made a significant contribution to the broad patterns of our history, specifically its representation of a pre-industrial process related to agriculture. It is a relatively rare example of tabby construction on the Southeastern coast and sea islands in the first half of the nineteenth century but is also significant at the state level of significance as the only known remnants of a sugar cane processing operation in early-nineteenth century South Carolina. The Callawassie Sugar Works included three principal buildings or structures: a sugar mill, boiling house, and curing shed with the boiling house and curing shed arranged in a "T"-shaped configuration.

Tabby, sometimes referred to as "poor man's masonry," is a building substance created by mixing locally available materials (such as oyster shells) with equal parts, water, sand, and homemade lime. The Spanish brought it to the New World before A.D. 1700. Shellfish remains available from aboriginal shell middens provided a plentiful source for tabby construction. Tabby wall construction involved up to six successive pours, each requiring a set of forms or molds. The sugar mill ruins (ca. 1815-1816) on Callawassie Island are a "unique example of industrial tabby . . . the only one of its kind to exist in South Carolina" (Brooker 2003, 2). The tabby "appears to have been well compacted and meticulously cast" (Brooker 2003, 25).

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Narrative Statement of Significance (provide at least one paragraph for each area of significance)

Industry

The Callawassie Sugar Works site illustrates an early state in the technology of sugar-making as it evolved across coastal areas of South Carolina and Georgia over the course of the nineteenth century. Most likely incorporating three vertically-mounted cylinders, the animal-driven cane-crushing mill employed here was of a type scarcely altered since the mid-seventeenth century. By contrast, whether it incorporated four or five kettles the Jamaican train installed in the Callawassie Boiling house represented an advance over what were termed Spanish trains (widespread in early Colonial Mexico), which normally comprised a set of four kettles, each provided with its own furnace. The Jamaican variety, developed before 1725, was characterized by a single furnace and enclosed flue, making more efficient use of fuel and labor, besides aiding in the manufacture of a more consistent product (Wayne, 27). Steam engines greatly improved output, as demonstrated by James Hamilton Couper at Hopeton Plantation, Glynn County, Georgia (Coulter, 95), speeding milling operations and allowing use of more powerful horizontal machinery. Steam power, however, involved considerable capital expenses, difficulties in finding suitable operatives, and problems associated with repair or maintenance, and such authorities as Thomas Spalding preferred to tinker with water power and tidal power on Sapelo Island as alternative energy sources. James Hamilton was less enterprising at Callawassie, and his complete reliance on animal-driven power suggests that sugar planting here was experimental and potential returns were considered too uncertain to justify heavy investment. The fact that only minor alterations were made to the Callawassie Sugar Works before they were abandoned tends to confirm that Hamilton's initial assessment was correct. Today the ruins represent sugar-making technologies of a kind that became outmoded by the 1840s, a technology not otherwise attested by physical infrastructure in South Carolina and only rarely in other early sugar planting area of the Southeast (coastal Georgia and northeast Florida, for instance.)

The Callawassie Sugar Works makes a significant contribution to the early manufacturing initiatives of our new nation as one of the few remaining resources from this early period of sugar production along the Atlantic Coast. Sugar was one of the few agricultural commodities protected by a tariff which levied three cents per pound duty on foreign raw sugar in 1816. This inspired wealthy planter entrepreneurs of the Georgia and South Carolina coastal areas to explore the efficacy of a local sugar industry. Thomas Spalding led the way with his sugar industry initiatives on Sapelo and St. Simons Islands, Georgia (Spalding; Coulter; Gray, 748, Sullivan, 43-50; Bagwell, 63-79). The Callawassie Sugar Works is the only example of such an early enterprise in the South Carolina lowcountry.

The complex is representative of the tabby method of construction practiced in the South Carolina lowcountry. Tabby proved to be an affordable building material making use of available raw materials. Brick was not easily obtained and was expensive during the seventeenth and eighteenth centuries, and building with lumber was labor intensive and required skilled carpenters. The basis for tabby buildings was shellfish remains, plentiful from aboriginal shell middens, and from oyster beds ubiquitous to the coastal islands' marshes. These remains were burned to make lime and mixed with sand and water to produce tabby which provided a durable and inexpensive building material. Tabby construction is a distinctive adaptive technology reflective of this early historic period and unique to the Southeastern coastal areas (Gritzner 1998, 7-14; Brooker 1998, 61-74).

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The architectural arrangement of the Callawassie Sugar Works has the same distinctive "T"-shaped relationship used in the Sapelo (Georgia) sugar works. Minor modifications at Callawassie included a wider passageway between the boiling house and curing shed, perhaps to enhance air flow from river breezes that would cool the boiling house and disperse the inevitable water vapor from boiling operations (Brooker 2003, 16). The exterior wall has three small arched openings that would have served as vents to regulate hot air emanating from the furnace. These and other features are common to sugar works architecture seen in the Antilles and reflect slight variations from Thomas Spalding's sugar works plans, as well as being similar to James Hamilton Couper's Hopeton Plantation large sugar complex in Georgia, but on a much smaller scale (Brooker 2003, 17).

Developmental history/additional historic context information (if appropriate)

The settlement was built ca. 1815-1816, while Callawassie Island was owned by James Hamilton, Jr. (1786-1857), a lawyer and planter who had been an officer in the War of 1812. He would later serve in the South Carolina House of Representatives 1819-1822, as intendant (mayor) of Charleston in 1822, and in the United States House of Representatives 1822-1829 before being elected governor of South Carolina 1830-32, at the height of the Nullification crisis. Hamilton gained legal control of the island when he married Elizabeth Heyward in 1813, and moved there in 1815. He planted rice, sea island cotton, and sugar on Callawassie Island, but was not all that enthusiastic about successful planting or processing any of the three crops, preferring the life of a gentleman and at one point calling the plantation there "exceedingly irksome." The sugar mill complex, built sometime within the next three years, was based on plans similar to mill construction seen in the West Indies, as Hamilton had acquired several close and influential West Indian connections who were heavily involved in the Caribbean sugar trade. (Tinkler, 28-35)

Larry Lepionka's excavation of the site in 1982-83 established that the Callawassie Sugar Works was part of a larger installation comprising an overseer's house and an undetermined number of slave dwellings and storage buildings including at least one barn. All these ancillary buildings were subsequently broken up and otherwise destroyed by residential development. (Brooker 1991; Brooker 2003)

The *Southern Patriot and Commercial Advertiser* (Charleston) published a brief mention of Hamilton's sugar mill in January 1817, which was reprinted by the *City Gazette and Daily Advertiser* (Charleston) on January 24, 1817, and by the *Camden Gazette* (Camden) on February 6, 1817, both under the title "Cultivation of the Sugar Cane."

Cultivation of the Sugar Cane.

We understand from unquestionable authority, that SUGAR of an excellent quality was made at the plantation of Major James Hamilton, jun. on Callawassie Island, St. Luke's Parish, on the 6th of Jan. from Canes which had been cut and stacked since the 12th of Nov. last. It is remarkable that their exposure to a severe frost, on the night of the 11th, did not prevent a perfect *granulation* of the juice, notwithstanding some few of the more exposed ends of the canes were partially acidulated. We learn that the product in *quantity* per acre is sufficient (when the last most unfavorable season is considered) to warrant and encourage a continuance of its cultivation on a more extensive scale. . . .

City Gazette and Daily Advertiser (Charleston, S.C.), February 6, 1817

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The *Camden Gazette* reprinted that paragraph and added a second one on sugar cultivation and processing in Georgia and the Carolinas:

Georgia and the Carolinas have boldly entered into the tide of experiment—they have succeeded. They possess what SOCRATES emphatically calls “the wealth of Nature.” They have now the opportunity of bestowing a signal blessing on the whole union; by the extensive cultivation of the Sugar Cane. Its final success, of which we entertain no doubt, will in a great measure, if not altogether, exempt us from the pressure of those *colonial restrictions*, which the caprice or folly of foreign states has the power *at present* to enforce—and they will thus throw another granite on those bulwarks of real National Independence which are rapidly rising to encircle our country.—

Camden Gazette (Camden, S.C.), February 6, 1817

Unfortunately, that sort of optimism about the sugar industry—both in South Carolina in general, but especially about Hamilton’s operation at Callawassie in particular—was wholly unwarranted.

Hamilton had acquired Callawassie Island in 1813 by marriage to Elizabeth Heyward, who had been awarded the island, along with Rose Island and other plantations) when still a minor in 1806, following the settlement of long-drawn-out family disputes over the estate of her great grandfather Daniel Heyward (d. 1777). Elizabeth Heyward Hamilton’s stepfather, Nicholas Cruger, Jr. (1779-1826) was from the then-Danish island of St. Croix (Lesser Antilles, now the U.S. Virgin Islands) where his family had long established mercantile interests involving the wholesale shipment of sugar, rum and molasses to the northeastern United States (principally New York), in exchange for lumber, livestock, and foodstuffs. The birth of Elizabeth’s half-brother Henry Nicholas Cruger on St. Croix in 1800 suggests that she lived there during childhood. Subsequently, Nicholas Cruger, Jr. moved to South Carolina, and ca. 1815 purchased two properties on the Back River just north of Savannah—Pennyworth Island and Rice Hope—with the potential for rice cultivation.

Given this background, it is likely that Cruger family members or their operatives had a hand in designing the Callawassie Sugar Works, a circumstance which would explain certain practical refinements including the small exterior vents along its boiling train which are features found in contemporary West Indian boiling houses, including several on St. Croix. Thomas Spalding of Sapelo was a more pervasive influence, the Callawassie Boiling House and Curing Shed exhibiting marked resemblance in dimension and organization to tabby structures for the processing of sugar-cane built on Sapelo Island, Georgia, as described and illustrated in Spalding’s *Observations on the method of Planting and Cultivating the Sugar Cane in Georgia and South Carolina*, published by the Agricultural Society of South Carolina in 1816 (Reprinted in Coulter, 227-263). The “T”-shape relationship between the Sapelo boiling house and curing shed was distinctive, harking back to late-18th century Caribbean prototypes (Wayne, 49). On Callawassie, Spalding’s arrangement was repeated with minor modification, the passageway separating the two structures being made wider, no doubt to facilitate circulation. There is also some dimensional difference between the boiling houses, the Callawassie example being larger (measuring 45’ x 25’) compared with Spalding’s published plan, which measures approximately 38’ x 23’ overall. But the organization is very similar, both buildings having a wide doorway at opposing ends, a single “battery” (Jamaica train) on one long side with room for eight coolers on the other. The furnace is shown occupying almost the same relative position in the published plan as it does in reality on Callawassie, juice passing along the line of boiling kettles from right to left as seen from the operator’s perspective. The most obvious difference between the two schemes is that Hamilton opted for a simple, unenclosed and inexpensive animal-driven mill. Spalding also relied on animal power but housed his milling operations in an octagonal structure built of tabby which functioned on two levels to facilitate removal of *bagasse*, this arrangement

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(common in the Antilles) having been copied, according to the builder's own testimony, from drawings obtained in Louisiana.

Assuming newspaper reports are accurate, then the Callawassie works were erected either just before or soon after Spalding's paper on the subject of sugar processing appeared in print. This could mean that Hamilton obtained an advance copy of the publication, or that Thomas Spalding, with his usual courtesy, had sent Hamilton drawings of his Sapelo complex. The latter possibility is supported by a June 1816 letter by Spalding to an unknown correspondent, enclosing a letter (no longer extant) that Spalding had sent "to Maj. Hamilton in South Carolina," giving detailed information about the construction of tabby roofs (Spalding Papers, Georgia Historical Society, Savannah).

Hamilton himself soon lost interest in Callawassie, which must have been too far isolated from urban centers and society for his restless ambition. Moreover, he probably became aware that Spalding's sugar making technology at Sapelo was primitive and unlikely to yield returns commensurate with those promised by rice or cotton unless aided by steam power (which Spalding himself resisted, even though steam engines were being exported from England to Jamaican sugar planters as early as 1803).

Hamilton sold the property and moved to Charleston in early 1819, beginning a successful career in public office at the local, state, and national levels. He left no documentation on the mill and its production during the brief period it was in operation (Tinkler, 28-3; Howland, Moore, and Rogers, 317-19, 390; Busick, 416-17).

The Callawassie Sugar Works complex was representative of small sugar mill operations of this period. While steam power was a promising option for sugar production, the required machinery was costly (Brooker 2003, 6). Thomas Spalding was aware of this and studied the use of alternative energy sources such as the tides. With marginal growing conditions for cane in South Carolina, sugar production was reduced to smaller operations using animals to power the mill.

Cane processing often required continuous operation involving three separate stages of processing: milling, boiling and curing. A set of four kettles was arranged in a line over individual fires. While the unknown designer of the Callawassie Sugar Works adopted the design and model drawings of those first published by Agricultural Society of South Carolina, the tabby construction is unique to Beaufort County and its sea islands. The molds used for the Sugar Works differed in size (measuring 24" in height) from Sapelo Island's tabby molds (measuring 10' to 12" in height (Brooker 2003, 15). It is further conjectured that local construction crews from Beaufort District were used rather than crews from the Georgia Islands (Brooker 2003, 15).

Extensive study of the mill base suggests that

the mill proper on Callawassie was not an expensive iron framed one but instead resembled Spalding's vertically mounted animal driven machine, incorporating three iron or perhaps, oak cylinders suspended within an oak frame built by plantation carpenters. Unlike Sapelo, animals driving the Callawassie mill and slaves feeding cane into the machine worked at the same level. (Brooker 2003, 15).

The boiling train, ash pit, and furnace and wall vents survive, along with an exterior wall (called a "copper wall" in Jamaica) that has three small, arched openings. The openings most likely acted as vents to regulate the hot air coming from the furnace. This feature resembles those found in sugar mills in the Antilles, providing further evidence of a West Indian influence in the design of the Callawassie Sugar Works. A footnote to Spalding's comments regarding the efficacy of sugar production on the coastal Sea Islands notes that, according to the *Southern Agriculturalist*, "West Indian overseers claiming knowledge of sugar-making found ready employment

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among would-be sugar cultivators in the Southeast during the early part of the nineteenth century" (quoted in Brooker 2003, 19).

The Callawassie Sugar Works is also distinctive as an example of a sea island sugar mill that utilized its location on a branch of the Chechessee River for the ease of delivering sugar cane by boat, reducing the number of animals needed for the mill's operation. The location's river breezes also contributed to the natural cooling of the boiling house and the disbursement of the clouds of water vapor created during the boiling process.

According to Colin H. Brooker, who has done extensive research on tabby construction and has a book on this topic currently in the process of publication by the University of South Carolina Press (Brooker, Forthcoming), there are no currently existing tabby sugar works or ruins in coastal South Carolina or the Southeastern United States comparable to the Callawassie Sugar Works. Other sugar works ruins in the Southeast and Louisiana represent much larger operations with more sophisticated manufacturing and production processes. These ruins are unique to this time period and this primitive level of sugar mill operation. The archaeological potential of this site, should proper archaeological research, investigation, excavation, and interpretation be conducted, could make it eligible for an addendum listing of the site under National Register Criterion D, as an archaeological site yielding or having the potential to yield more significant information in a way that a historical investigation cannot do.

Returned

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9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets)

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Bagwell, James. *Rice Gold : James Hamilton Couper and Plantation Life on the Georgia Coast*. Macon: Mercer University Press, 2000.

Brooker 1991

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Brooker 1998

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Callawassie Sugar Works

Name of Property

Beaufort County, South Carolina

County and State

City Gazette

"Cultivation of the Sugar Cane." *City Gazette and Daily Advertiser* (Charleston, S.C.), January 24, 1817, reprinting a portion of an article from the *Charleston Southern Patriot*, January 1817.

Camden Gazette

"Cultivation of the Sugar Cane." *Camden Gazette* (Camden, S.C.), February 6, 1817, reprinting a portion of an article from the *Charleston Southern Patriot*, January 1817.

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Gritzner, Janet H. "Distributions of Tabby in the Southern United States: A Geographical Perspective." In Jane Powers Weldon, editor, *The Conservation and Preservation of Tabby: A Symposium on Historic Building Material in the Coastal Southeast, February 25-27, 1998, Jekyll Island, Georgia*. Atlanta: Georgia Department of Natural Resources, Historic Preservation Division, 1998. http://georgiashpo.org/sites/uploads/hpd/pdf/tabby_scanned.pdf.

Gray

Gray, Lewis Cecil. *History of Agriculture in the Southern United States to 1860*. Two Volumes. Washington: Carnegie Institution of Washington, 1933; Reprint Edition, Clifton, N.J.: Augustus M. Kelly Publishers, 1973.

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Callawassie Sugar Works (HABS No. SC-857), Historic American Building Survey. Photographs by Jack E. Boucher, 1983. National Park Service, U.S. Department of the Interior. Washington, D.C.: Historic American Buildings Survey, 1983. http://memory.loc.gov/ammem/collections/habs_haer/.

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Callawassie Sugar Works
Name of Property

Beaufort County, South Carolina
County and State

Spalding

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Wayne, Lucy B. *Sweet Cane: The Architecture of the Sugar Works of East Florida*. Tuscaloosa: University of Alabama Press, 2010.

Wright and Wright

Wright, Barry and Barre. "Tabby passes test of time. Centuries-old ruins dot Beaufort County landscape." *Bluffton Today* (Bluffton, S.C.), February 16, 2011.

Previous documentation on file (NPS):

preliminary determination of individual listing (36 CFR 67 has been Requested)
 previously listed in the National Register
 previously determined eligible by the National Register
 designated a National Historic Landmark
 recorded by Historic American Buildings Survey # HABS SC-857
 recorded by Historic American Engineering Record # _____

Primary location of additional data:

State Historic Preservation Office
 Other State agency
 Federal agency
 Local government
 University
 Other
Name of repository: S.C. Department of Archives and History

Historic Resources Survey Number (if assigned): Site #U-13-311, SCIAA Site File #38BU409 Beaufort County Historic Sites Survey 1997

Callawassie Sugar Works

Name of Property

Beaufort County, South Carolina

County and State

Photographs:

Submit clear and descriptive black and white photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

Name of Property: Callawassie Sugar Works
City or Vicinity: Callawassie Island, Okatie vicinity
County: Beaufort
State: South Carolina
Photographer: Eugene F. Durick
Date Photographed: November 16, 2012

Description of Photograph(s) and number:

- 1 of 21
Boiling House (L) and Mill (R), looking west
- 2 of 21
Boiling House, looking west
- 3 of 21
Boiling House, southwest view
- 4 of 21
Boiling House, north view, with Mill in Right Foreground
- 5 of 21
Boiling House, northeast view, with Mill in Left Background
- 6 of 21
Boiling House, looking east
- 7 of 21
Boiling House, Interior, looking east
- 8 of 21
Boiling House, looking southeast
- 9 of 21
Southeast view from west end of Boiling House
- 10 of 21
Boiling House, looking south
- 11 of 21
Mill, looking south
- 12 of 21
Boiling House, Interior, looking west
- 13 of 21
Mill, west view

Returned

Callawassie Sugar Works
Name of Property

Beaufort County, South Carolina
County and State

14 of 21
Mill, looking west

15 of 21
Mill, looking south

16 of 21
Mill, looking southeast

17 of 21
Boiling House, west end, looking west

18 of 21
Mill, east view

19 of 21
East side of Sugar Works site, looking east toward the entrance on Sugar Mill Drive

20 of 21
Boiling House, southwest view

21 of 21
Boiling House (L), Mill (R), southwest view

Returned

[NOTE: Colin Brooker was contacted regarding the existence of photographs of intact sugar mills comparable to the Callawassie Sugar Works, or engravings of them in operation. Mr. Brooker stated that, to his knowledge, there are no photographs or engravings of sugar works similar in size and production technique to the Callawassie operation.]

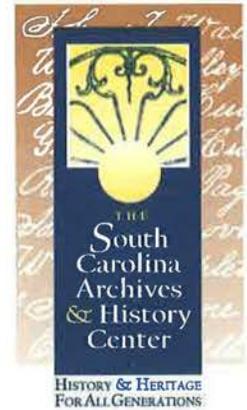
Property Owner:

(Complete this item at the request of the SHPO or FPO.)

name Callawassie Island Property Owners Association (CIPOA)
street & number 22 Callawassie Club Drive telephone 843-987-2142
city or town Okatie state SC zip code 29909

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.



April 7, 2014

Ms. Carol Shull
Interim Keeper, National Register of Historic Places
U.S. Department of the Interior
National Park Service
1201 Eye (I) Street, NW, 8th Floor
Washington, DC 20005

Dear Ms. Shull:

Please find enclosed the revised National Register nomination for the Callawassie Sugar Works (Okatie vicinity, Beaufort County, South Carolina), submitted by our office for listing in the Register on November 22, 2013, and returned to us for revisions on January 15, 2014.

We are now resubmitting this nomination for listing in the Register.

If I may be of any further assistance, please do not hesitate to contact me at the address below, call me at (803) 896-6172, fax me at (803) 896-6167, or e-mail me at sauls@scdah.state.sc.us.

I hope to hear from you soon.

Sincerely,

A handwritten signature in blue ink that reads "Bradley S. Sauls".

Bradley S. Sauls
Supervisor of Survey, Registration and Grants
State Historic Preservation Office