

**ARCHAEOLOGICAL RESEARCH DESIGN
CUSTIS SQUARE
WILLIAMSBURG, VA**



**Department of Archaeology
Colonial Williamsburg Foundation
November 2018**

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I. INTRODUCTION

Ninety years of archaeological excavation at Colonial Williamsburg have contributed to a broad understanding of Williamsburg in the 18th century: its landscapes, both built and natural, and the varied persons who resided there. Among sites still to be explored, Custis Square ranks near the top in its potential to add significantly to this body of knowledge. Gardens established on these 4 acres by John Custis IV (alternatively referred to here as Custis, John Custis, and Custis IV) during the first half of the 18th century were described as “inferior to few if any in Virginia”, including those established by Governor Alexander Spotswood at the Governor’s Palace. Unlike Spotswood, whose gardens were characterized by architectural effect and “courtly, autocratic” design, Custis was drawn to the science of horticulture and to gardening’s “empirical” and “egalitarian” nature (Peter Martin memo to Ed Chappell June 9, 1982; Martin 1991:54). Through plant exchanges, Custis was connected to gardeners in Britain and Philadelphia, among other places. The Custis Square gardens, developed between 1717 and 1749, were the product of experimentation with a new climate, and with plant species still unfamiliar to British botanists. Garden historian Peter Martin (1991:54) identifies John Custis IV as among the boldest and most scientifically curious promoters of Virginia gardening and horticulture before 1750.

The distinctive qualities of both the man and the extraordinary garden he created have sustained interest in archaeological exploration of Custis Square for more than 50 years. Unlike some Williamsburg properties that have been cross-trenched, tested, and excavated repeatedly (to varying degrees of thoroughness), Custis Square has seen only two limited investigations in the 1960s. Reflecting the priorities of the time, excavations in 1964 and 1968 concentrated on identifying architectural elements of a notable house yet unreconstructed, and on the celebrity association between John Custis and George Washington, the second husband of Custis’s daughter-in-law. While the value and potential of a Custis Garden exploration was acknowledged at the time, archaeological methods and analytical techniques were simply unequal to the task.

By the 1980s archaeobotanical techniques, including phytolith and palynology studies, were expanding avenues of garden research. Reinvigorated interest in Custis Square was framed in a 1987 research proposal “A Garden Inferior to Few”, prepared by Staff Archaeologist Patricia Samford (re-released in 1992). Samford’s proposal has been invaluable in the preparation of this document, providing a summary of historical and archaeological information, an overview of then-recent garden and landscape studies, and an assessment of the potential held by new techniques for delineating garden layout and composition.

The daunting scale of a four-acre excavation, and the necessity of sustained commitment to support such a project has kept the Custis Project in a “reserved” status for more than thirty years. Ultimately this has proven fortuitous. The intervening three decades have seen refinement and maturation of the techniques of paleoenvironmental analysis and geophysical survey. Additionally, Colonial Williamsburg’s archaeologists have acquired essential experience in the excavation and analysis of gardens and landscapes. In addition to the Shield’s Tavern Garden (1985-6) and Peyton Randolph planting beds (1982-6) cited in the Samford proposal, St. George

Tucker's late 18th century formal garden was excavated between 1994 and 1996, and the Wren Yard gardens were explored between 2004 and 2007. Moreover, environmental studies in natural ravines bordering Richard Charlton's Coffeehouse (2009), the Secretary's Office (2010), and the Public Armoury (2011) have helped to establish important connections with a community of archaeobotanical specialists. It is this sort of collaboration in pursuit of greater gardening knowledge that places us in the frame of mind to approach the gardens at Custis Square.

Just as the ability to understand historic landscapes has become more sophisticated, so too has archaeological research into the lives of enslaved people. The development and maintenance of Custis Square depended on enslaved labor, an aspect that will form another focus of research during this project. Unlike most residential sites within the town itself where the refuse of white and black residents was comingled, it is anticipated that enslaved people at Custis Square had their own quarters that can be identified archaeologically with assemblages that are discreet from the white household. This provides an opportunity to understand the daily lives of enslaved people through their material culture.

The proposed multi-year archaeological investigation of Custis Square will consist of an interdisciplinary effort to understand the human impacts to the landscape while elucidating the lives of both free and enslaved people who once lived here. A more focused question addresses the Custis Garden specifically with an attempt to understand the structure, form, content of the garden, and how the garden(s) changed over time. Given the large scale of the project area, careful planning will be critical to the investigation's success. This document is intended to outline the primary research questions associated with an archaeological investigation of the property thereby guiding the field, laboratory, and analytical methods needed to answer these questions. The project will result in archaeological interpretations of Custis Square that will ultimately guide future programs, restorations, and the management of one of Colonial Williamsburg's most important properties.

Custis Square is located at 202 West Francis Street (Parcel #496-0A-00-016), Williamsburg, VA 23185 (Figure 1). It is part of a larger modern parcel called Custis Pasture which today encompasses 5.083 acres. The pasture is bounded by Francis Street to the north, Nassau Street to the west, the parking lot for Colonial Williamsburg's Art Museums to the south, and the right-of-way for the Colonial Parkway to the east. A split rail fence encloses the majority of the lot with the southeast corner in dense vegetation. A single building stands on the lot, a brick kitchen dating to the early 19th century often referred to as the Custis Kitchen. The lot is currently used as pasturage for Colonial Williamsburg's livestock program.



Figure 1: Custis Pasture (which contains Custis Square approximately outlined in red) is bounded by Francis Street to the north, Nassau Street to the west, the Art Museums of Colonial Williamsburg’s parking lot to the south, and the right-of-way for the Colonial Parkway to the east.

II. HISTORICAL BACKGROUND

John Custis IV was an eccentric and engaging central character. Born on Virginia's Eastern Shore in 1678, John Custis inherited Arlington, his grandfather's Eastern Shore plantation in 1701 (Zuppan 1982:178). He was educated in England, studying business with the London merchant Micajah Perry the elder, grandfather of the like-named agent on whom he would later depend for shipments of plants and other goods to Virginia. Custis' business acumen, honed in England, would bring him into the good graces of Daniel Parke, Jr, governor of the Leeward Islands and owner of more than 9,000 Virginia acres. In 1706 Custis married Parke's daughter, Frances, on the same day that her younger sister, Lucy, married William Byrd, II. Although stormy, the Custis-Parke union resulted in two children (Daniel Parke Custis, first husband of Martha Washington, and Frances Parke Custis), as well as the inheritance of Queen's Creek plantation following Daniel Parke's 1710 murder in Antigua (Zuppan 2005:1-4).

Famously irascible and querulous – even to the grave— John Custis IV was a complicated man. Ignoring his wife's desire to take up residence in Williamsburg, he relented only after her 1715 death from smallpox. Their married years were instead spent shuttling, unhappily, between isolated plantations at Arlington and Queen's Creek. At the age of 61, Custis fathered a son by his enslaved woman, Alice. He lavished attention on “my boy Jack,” commissioning his portrait to be painted alongside those of Frances and Daniel Parke Custis (Noel Hume 1996:29-30). In 1744 he petitioned the governor for permission to free the 5-year-old, and on Custis's death in 1749, Jack was given his freedom, 250 acres of land on Queen's Creek, and the promise of a house (Morgan 1999: 53). Jack's unfortunate death from apparent meningitis would nullify those intentions. Frequently ill, Custis is thought by some researchers to have suffered from yaws, a chronic bacterial infection (endemic to Africa) affecting the skin, bone, and cartilage (Zuppan 1982:195). Whatever the cause, his correspondence reveals him to be often out of sorts. Custis quarreled publicly with Lieutenant Governor Alexander Spotswood - godfather to his son, Daniel Parke Custis - over trees, but developed a relationship with Anne Moody, wife of a tavern-keeper (Noel Hume 1996:29; Zuppan 2005:7). Although commonly summarized as a wealthy planter, businessman, and government official, John Custis did not pursue the usual channels for amassing social or political capital.

Sometime between 1715 and 1717, John Custis IV moved his primary residence from Queens Creek to a 4 acre (8 lot) parcel on Williamsburg's southwestern periphery. Whether he built a house, or moved into an existing structure is unclear. The destruction of Court records pre-dating the Civil War leaves no paper trail for this, or other, James City County properties. Already the owner of three lots opposite the church (353, 354, 355) on Duke of Gloucester Street, the Custis Square purchase placed Custis beyond, and slightly above, activity in the developing capital. From this slightly elevated vantage point, accentuated by ravines to the north and east, Custis was able to look over the developing colonial capital.

The appearance of Custis's Francis Street house has long been a matter of speculation. A 1964 excavation at Custis Square identified the filled cellar of a building measuring roughly 50' x 24' at the center of the property (Noel Hume 1996:23). Destroyed, apparently by fire, around 1820, it was mined for bricks, and the cellar filled within a decade. Throughout the 19th and early

20th centuries, the property was known as the “Six Chimney Lot”, a reference to the only surviving architectural elements.¹ No images, sketches, or other views have surfaced to date, and there are few written details.

Former Director of Archaeology, Ivor Noel Hume, believed that it was built in a Jacobean-style, citing an 1844 letter from General John H. Cocke of Fluvanna Co., describing his recently completed cottage at Bremono-Recess (Figure 2). The design of that house, Cocke says, was copied “from the only two specimens of the like building I ever saw - the well-remembered, old six-chimney House in Wmsburg once the property of the Custis family - and Bacon’s Castle in Surry” (INH: undated ms. on file; Noel Hume 1996:23-24). Noel Hume builds an image of Custis’s Williamsburg residence by identifying elements missing either at Bremono-Recess or at Bacon’s Castle, and attributing these architectural features to Custis Square (Figure 3). Local historian John H. Millar’s conjectural drawing of the Custis Square house was used to illustrate a March 16, 1986 *Daily Press* article: “Historian believes Six-Chimney House part of Middle Plantation.” In that article Millar suggests a 1675 construction date for the Custis House. While no archaeological evidence supports this claim, Noel Hume suggests that fond memories of his childhood at Arlington may have influenced his choice of an outdated architectural style. Rarely influenced by trend or fashion, Custis made it a point to “always make my fancy my fashion” (Martin 1991:58).

More than thirty years after John Custis’s death in 1749, the house is advertised as “in tolerable good repair having two good rooms and a passage on the lower flower [sic]. The offices are a kitchen and a large stable, with a meathouse & etc.”(Dixon and Hunter, Nov 27, 1778). The Frenchman’s Map (1782), of roughly the same date, confirms the number of structures, depicting the house as a large rectangle nearly centered in the lot, with two dependencies along the southern property boundary, and a third shown northeast of the house (see Figure 19). The property is enclosed within a border of 31 dots, thought to represent trees.

At the point of his arrival in Williamsburg, John Custis seems to have had little previous experience as a gardener. That he describes himself in a 1717 letter to Micajah Perry as “lately got into the vein of gardening” suggests that this was not a pursuit carried over from his life at Queen’s Creek plantation (Stephenson 1959:5). The fact that he had not previously engaged in gardening, however, does not indicate that John Custis was ignorant of gardens, or of gardening aesthetic. Raised at Arlington, the Eastern Shore plantation he inherited from his grandfather, Custis was surrounded by a “handsome Garden and fine Orchard” (Tyler 1907). His education in England likely served as a secondary introduction to genteel society, exposing him to formal gardens in and around London. From these early, positive experiences, Custis almost certainly developed a template for his Williamsburg home, the first of his living situations that was not inherited from a prior generation.

¹ The name “Six Chimney Lot” comes from Lyon Gardiner Tyler’s 1907 book “Williamsburg, the Old Colonial Capital” in which he describes six chimneys as the only remnants of houses that had “perished by fire” on lots formerly owned by John Custis. What Tyler did not recognize is that all six chimneys were part of a single dwelling.

Because he had been exposed to established, formal gardens of the late 17th and early 18th centuries, it seems difficult to believe that Custis was unfamiliar with the attendant vocabulary-- words like view, vista, eminence, and situation (Kryder-Reid 1998:269). Nevertheless, in a 1717 encounter with Governor Alexander Spotswood, Custis seems to express ignorance of the governor's request to open a vista from the palace by cutting down trees on Custis's property. Relating his side of the dust-up to Phillip Ludwell, Custis says "I happened to be at the Governors, and he was pleased to ask my consent, to cut down some trees that grew on my Land to make an opening, I think he called it a visto..." (Martin 1991:38). In his developmental years as a gardener, it is possible that formal terms eluded him. On the other hand, Custis's somewhat sarcastic nature, on full display in his Letterbook, suggests another possibility. His feigned ignorance of a vista may, instead, have been a mocking reference to the governor's use of a more poetic, and perhaps arrogant, term for a vista.

By all appearances, John Custis was well aware of the benefits of a view, or vista, as he selected, and then laid out Custis Square. Williamsburg's topography affords little variance in elevation, yet Custis chose a parcel on the outskirts, slightly above the town. From this elevated vantage point, accentuated by ravines to the north and east, Custis was able to look out on the courthouse at the corner of South England and Francis Street, and perhaps on the newly constructed Powder Magazine, as well. He was proud of these views, remarking that "I myself have as strong and as high a house as any in the government. It stands on high ground" (Martin 1991:37).

That he owned three additional lots in Williamsburg prior to purchasing the Custis Square lots, introduces the possibility that Custis was engaged in creating his own vista. Lots 353, 354, and 355 on Duke of Gloucester Street, opposite Bruton Parish Church, occupied the line of sight between Custis Square and the church. Ownership of these lots enabled Custis to control the view toward Bruton Parish. Custis is not known to have had particularly strong religious ties (beyond his service as a vestryman), but in 1717, Bruton Parish church was certainly among Williamsburg's most prominent architectural features. Custis took full advantage of its proximity.

Within this carefully sited landscape, the appearance of the garden Custis designed and executed is only slightly better known than that of his house. Although the garden escaped record in the form of sketches, paintings, or maps, Custis (and those with whom he visited and corresponded) left a trail of written details from which an image of the garden can be assembled. William Byrd II, Custis's brother-in-law, mentions the garden occasionally in his published diaries. Letters between Custis and his London merchants contain a running order of plants that he desired for his garden. Charged primarily with getting the most advantageous price for his tobacco crop, these merchants were also Custis's source for goods not readily available in the colonies: prints, clothing, medicines, and plants. It was in Custis's best interest to have several British agents, both to insure the best price for his crop, and to broaden his access to material goods. Merchants recorded in his letterbooks include Perry, Lane, and Perry; Robert Cary; Bell and Dee; and John Hanbury, in London; Lyde and Cooper in Bristol; and John Starch in Glasgow (Zuppan 1982:186).

It is in Custis's twelve-year correspondence with Peter Collinson, a London Quaker and botanist, that we find the most comprehensive record of his requests, shipments, preferences, experiments, and disappointments (see Swem 1957). Collinson provided Custis with more than advice and a pipeline to carefully selected, expertly packed and shipped plant specimens. He provided introductions to other botanists and gardeners, including John Bartram and Mark Catesby, and he made certain that Custis's gardens were known on both sides of the Atlantic. Unlike the orders placed with his London merchants, Custis and Collinson engaged in plant *exchanges*. Among the specimens that Collinson requested for his Mill Hill garden outside of London were sorrel, umbrella tree (American magnolia), and pink and white dogwood. Custis received horse chestnut trees, and roses, as well as more familiar and requested evergreens, and bulbs and flowers. In 1734 Collinson suggested planting horse chestnuts in rows along the street, a possible indication of the type of tree seen outlining Custis Square on the Frenchman's map (Stephenson 1959).

From the pages of Custis's preserved conversation with Collinson we learn of his appreciation for vivid color, his preference for variegated plant varieties (though they may have been out of fashion), and about the hard-won but eventual successes of his imported tulips, foxgloves, chrysanthemums, lilies, polyanthus, hyacinth, crocus, narcissus, pinks, and cyclamen.

The overall appearance of Custis's garden can be found in small details. There were certainly formal components. William Byrd II volunteers that there were gravel walks in 1720 (Stephenson 1959:7). Custis's allusion to his Dutch box edging having been established for "many years" suggests well established, and framed planting beds. That there were formal elements is suggested by the yew, box, and privet which Custis clipped into pyramids, balls, and other decorative shapes (Martin 1991:63). Some of these were shipped already shaped, while others were cut when they reached sufficient size at Custis Square. A large yew tree stood at Custis Square up until several years ago and has been interpreted as being original to the garden. The stump remains in place and excavation around it may provide clues to the locations of other plantings. A poem by Robert Bolling in 1772 records statues of Venus, Apollo, and Bacchus, possibly made of lead (Martin 1984:111). Archaeological excavation in 1964 and 1968 recovered fragments of painted flower urns as well, aligning well with Custis' order of painted flower pots for use in the chimneys of the house during the summer (Martin 1984:111).

In addition to formal gardens, Custis likely had orchards and a vegetable garden as well. The arrangement of these spaces is largely a matter of conjecture. Garden historian Peter Martin, looks to architecture depicted on the Frenchman's Map for clues. Martin hypothesizes that Custis's working garden, planted with vines, vegetables, and orchards was likely located close to the kitchen, east of the house. Noting the archaeological discovery of a 7' ravine or draw running parallel to Francis Street at the "front" of the property, Martin finds the most probable approach to Custis's house to be from Nassau Street, to the west. If this arrangement proves true, the siting of formal gardens along the main approach on the property's west side would offer Custis's guests a magnificent first impression (Martin 1991:64).

This arrangement, like much in a garden, evolved over time. Undoubtedly, there was an evolutionary aspect to Custis's garden. From varied correspondence, and orders placed with

London merchants, a timeline of Custis's garden development emerges, beginning with a 1717 letter to Micajah Perry, requesting the shipment of hollys and yews, as he has "lately got into the vein of gardening". William Byrd II found Custis's garden "much improved" in early 1721, suggesting that it was still under development, but by 1725 Custis described for merchant Robert Cary his "pretty little garden." In 1730, naturalist Mark Catesby complimented Custis's garden. While responding with initial modesty, by 1734 Custis acknowledges that he is "a great admirer" of plants, and admits that his garden is "inferior to few, if any, in Virginia, in which my whole delight is placed" (Martin 1991:56).

The Custis gardens seem to have reached their full potential in the mid to late 1730s, due, largely, to the newly established interaction with Collinson. With the arrival of Collinson's first shipment of plants in 1734, Custis found that he had, for the first time, a reliable source of healthy plant specimens (Martin 1991:56). Although the difficulty of transatlantic shipment would continue to deliver plants with rotted roots, and salt-damaged foliage, the quality and variety of specimens improved dramatically. In 1738, Collinson also arranged for a meeting between Custis and John Bartram, a Philadelphia botanist, who was busy establishing the colony's first botanical garden. Bartram, Collinson later told Custis, was "Delighted with thy Garden which is the best Furnish'd & next John Claytons [a Gloucester Virginia clerk who published *Flora Virginia* in 1739] of any He Mett With-- in all that Journey" (Martin 1991:57).

A series of difficult weather events, including cold, wet winters, and hot dry summers, between 1737 and 1741, strained Custis's gardening practices. He notes that the cold has killed many of the pleasures of his garden and has caused "dreadful havock" in it (Martin 1991:61). The following summer of 1738 brought devastating heat and drought. Custis reported keeping "3 strong Nigros continually filling large tubs of water" with which to water the plants, and making "shades and arbors all over the garden almost" (Martin 1991:61). At the same time that he was battling the elements, Custis was facing a health crisis. He reports being afflicted "with pains in [his] shoulders and knees which dayly increased", so that he "often wished for death" (Zuppan 1982:195). It is these symptoms that have since been suspected as Yaws, a chronic infection affecting the skin, bones, and cartilage (Zuppan 1982:196). As Custis's health declined, so did his interest in his garden. By 1746, his correspondence with Collinson came to an end. John Custis removed himself from his seat on the governor's council during the summer of 1749. He died in November of that same year.

Custis Square After John Custis

Following John Custis' death, the property fell to his son, Daniel Parke Custis, who may have visited, but did not likely live permanently in Williamsburg. According to historian Mary Stephenson, Custis Square was managed by an overseer during these years; there is some suggestion that Custis's enslaved people remained on site (Stephenson 1959:21). Eight years after inheriting Custis Square (1757), Daniel Parke Custis died, leaving a young widow, Martha Dandridge Custis. Martha likely lived at Custis Square between 1757 and her marriage to George Washington in early 1759. Thereafter, Washington managed the Custis Square property until 1776, when Daniel and Martha's sons came of age (Samford 1987:4).

Tenants occupied the house and lots during that nearly 20 year period. The first, was lawyer, Bartholomew Dandridge, younger brother of Martha Dandridge Custis Washington. William Byrd III, great nephew to John Custis, followed, living on the property from 1762 until about 1769.

Tradesmen rented the Custis lots early in the 1770s. Joseph Kidd ran a lodging from 1770 until 1772, advertising that: “Gentlemen may be accommodated with good LODGINGS, exactly suitable to those who make Choice of Retirement after the Fatigues of Business. I have an excellent CLOVER PASTURE adjoining my House, well secured” (Virginia Gazette, June 20, 1771). It is interesting to note that it is pasturage, rather than gardens, that are promoted as an inducement to traveling gentlemen. It is possible that the absence of gardens on the Frenchman’s Map reflects their disappearance in the 30 years following John Custis’s death.

Peter Hardy, a coachmaker and metal worker, followed Kidd in renting Custis Square. His tenancy from 1773-1774 may be reflected in the recovery of brass waste, and in the excavated remains of what may have been a makeshift forge discovered by archaeologists in 1964. This building however could also have been a smokehouse.

Dr. James McClurg, a physician, delegate to the Philadelphia Convention, and later, a three-time mayor of Richmond, first rented, and then purchased the property. His association lasted from 1775 until 1811. John Parke Custis sold the property to McClurg in 1779. Although McClurg made repairs during his ownership, by 1815, the house, then owned by Samuel Tyler, was declared to be in “a ruinous and decaying state, the house not being habitable and can not be rented for anything.” (Tyler as quoted in Stephenson 1959:37). Although there is not confirming documentary evidence, archaeological excavation in 1964 suggests that the Custis Square house burned after 1820. In the time period when the property was owned by McClurg and subsequently by Tyler, a new kitchen was built partly on top of an earlier demolished kitchen. The new kitchen, which still stands, has become known as the “Custis Kitchen” despite having no relationship to John Custis or his heirs. For the context of this project it may be useful to begin referring to this kitchen as the “McClurg Kitchen”.

In December of 1851 the “Lunatic Asylum” located on the lots to the west of Custis Square, agreed to purchase the property for \$661. The Custis property was slowly assimilated into the grounds of Eastern State Hospital. New construction taking place during the second half of the 19th century includes the Thompson Building, which straddled Nassau Street, the Covington Building, Ward L, and a building known only as Building 22. For additional information on these structures, please see Samford, 1992.

The Colonial Williamsburg Foundation acquired Custis Square in 1966. There has been no development since that time, although Colonial Williamsburg’s landscape department has used the southwestern portion of the lot for dumping topsoil and today uses it to graze livestock.



Figure 2: Cottage at Bremo-Recess.

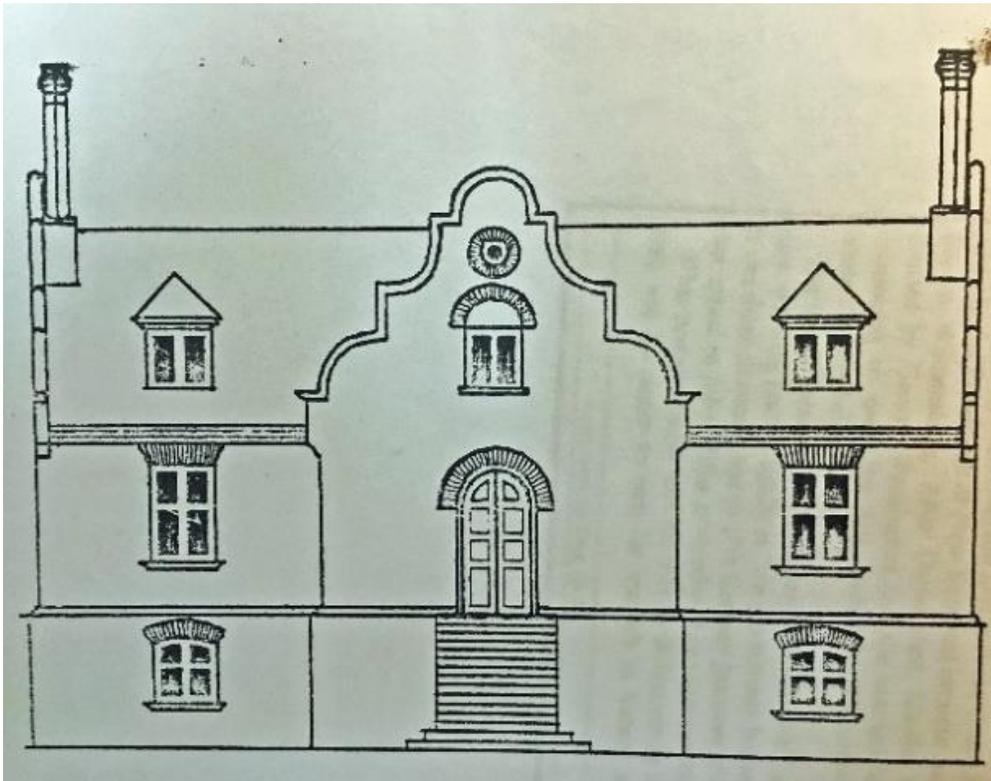


Figure 3: Conjectural drawing of the house at Custis Square.

III. PREVIOUS ARCHAEOLOGICAL RESEARCH

Archaeological investigation of Custis Square has largely been confined to two excavations in 1964 and 1968 (Figure 4)². The first of these excavations (1964), which focused on identifying the Custis house and outbuildings, began with gridding the entire property into 50' squares, then subdividing each into sixteen 10' square excavation units separated by balks (Figure 5). Between March 25 and December 1, 1964, 62 of the resulting 1,687 squares were excavated. (Monthly Reports 1964, on file; ANH memo to Trix Rumford March 29, 1984).

Four years later, in 1968, Ivor Noel Hume returned to the Custis property. The principal reason for this return was to shoot film footage for "Doorway to the Past". Initial digging (beginning in May 1968) was confined to previously excavated areas east of the house, and around the surviving "Custis Kitchen" (ca. 1810). By the time the project wrapped up on July 30, new areas had been opened: south/east of the extant kitchen (eleven 10' squares), and west of the extant kitchen (nine 10' squares and two 5' x 10' squares).

The results of these two excavations are summarized below by the primary features discovered.

Features

House

Excavation in 1964 established the size and location of John Custis' dwelling house. The cellar, measuring 48'9" x 23'3" was robbed almost entirely of brick, with only one 5' section of the east foundation surviving, close to the southeast corner (INH "Progress and Proposals" to E.M. Frank May 11, 1964 p. 1) (Figure 6). This small surviving section confirmed that the cellar walls were two bricks wide. Additional excavation east and west of the cellar hole recovered no evidence of uncellared portions of the house

Like the cellar walls, the cellar floor, encountered 3'9" below 1964 grade, was mostly robbed. A surviving portion, preserved just east of the western fireplace, revealed that the cellar was paved with 9" x 9" tiles, seated in shell mortar (Figure 7). Archaeological evidence suggests that the Custis house had interior chimneys at the east and west ends, based on the survival of a trace of the eastern hearth, and the south cheek of the western chimney.

During initial construction the cellar hole was apparently dug about 4' wider than the house constructed in it, resulting in a large, clay-filled builder's trench. Reasons for such a wide builder's trench are unclear but could indicate fitting a foundation into the cellar of an earlier, larger structure that had been demolished.

² In November 2016 a phase I archaeological reconnaissance survey was carried out of the southwest portion of Colonial Williamsburg's livestock pasture in advance of the construction of an entry pavilion on the east side of Nassau Street as part of the Wallace Gallery's expansion (Kostro 2016). The pasture includes the historic boundaries of Custis Square as well as Ireland Street to the south, although the survey area was limited to the portions of the pasture outside of Custis Square and is thus not included in the current review.

The previous archaeology suggests that the Custis house was destroyed, probably by fire, around 1820, after which all useable materials were salvaged. The cellar hole was left open sufficiently long for the sides to begin to erode, but artifacts recovered from the cellar suggest that it was filled by about 1830. Clearly the chimney stacks stood for some time; the Custis property, in the 19th century, came to be known as the “Six Chimney Lot” for the towering chimneys that were the only surviving architectural element on the property (Lyon Gardiner Tyler 1907: Williamsburg, the Old Colonial Capital).

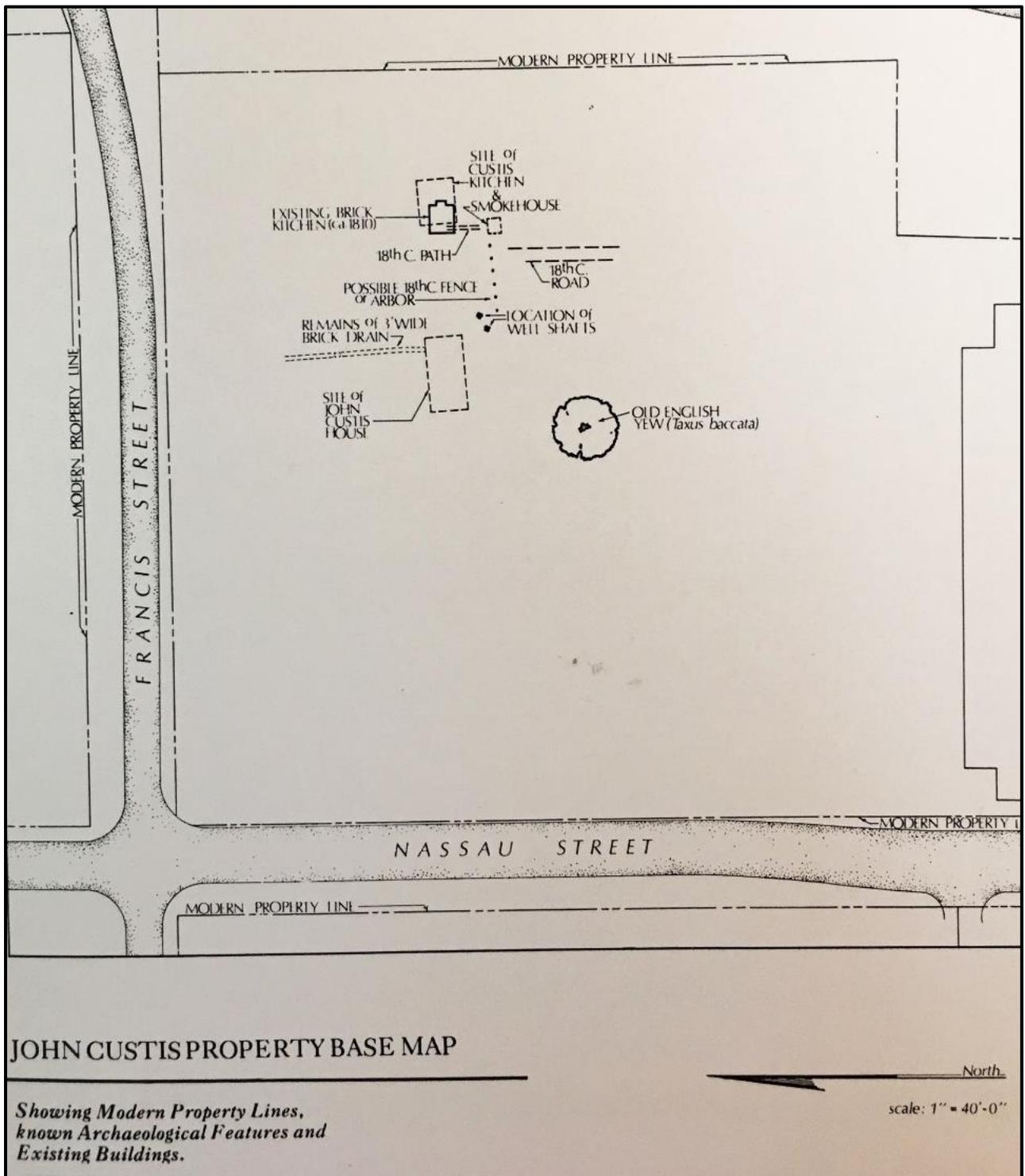


Figure 4: Map showing locations of primary features found in the 1964 and 1968 excavations (Samford 1992:4).

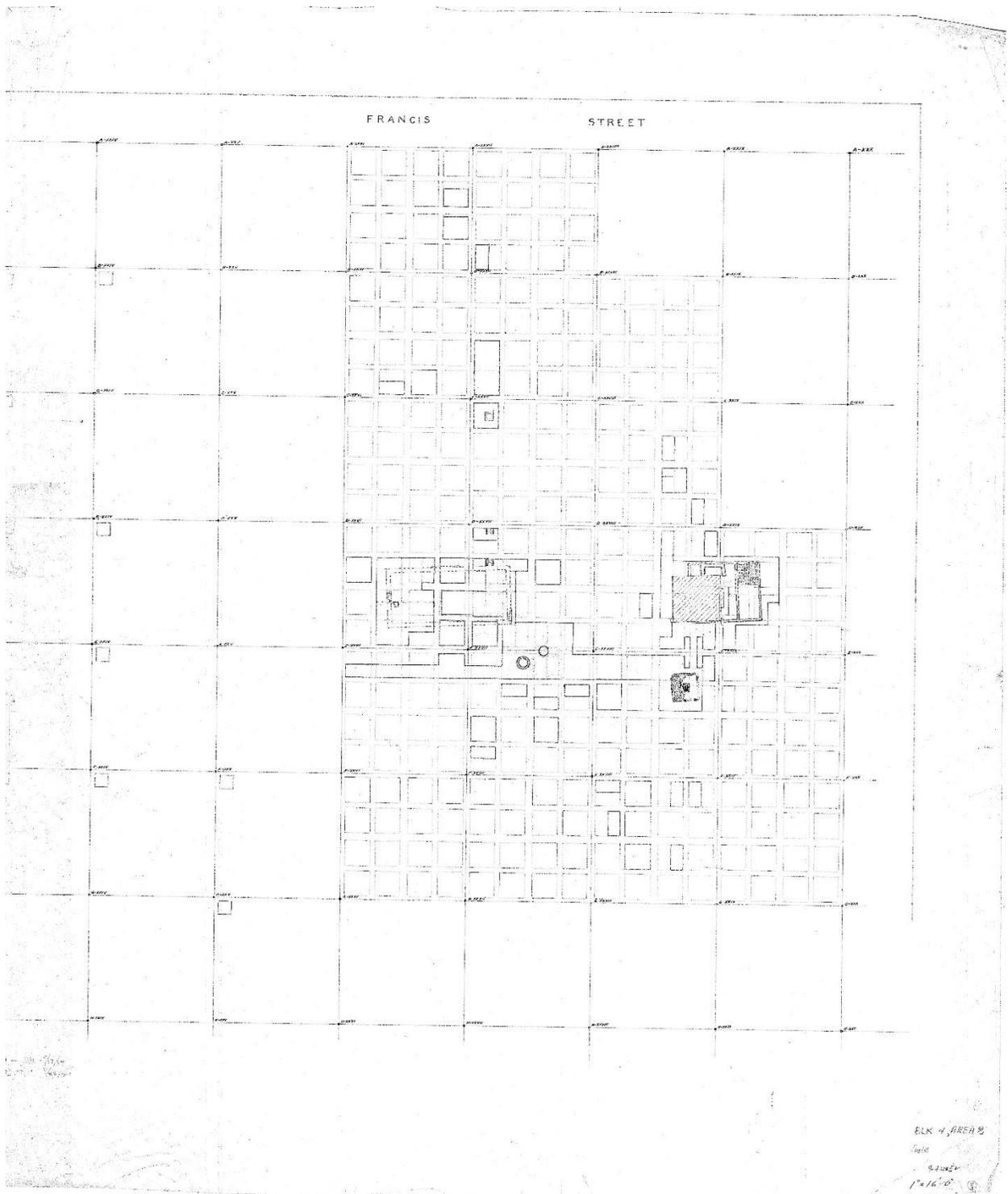


Figure 5: Excavation map showing site grid and the units excavated in 1968 (darker lines indicate excavated units). Francis Street is to the north.



Figure 6: Surviving section of foundation within the cellar.



Figure 7: Surviving section of cellar floor pavers.

Drain

The 1964 excavation also recovered an arched brick drain, filled with a “considerable quantity” of late 18th century artifacts projecting northward from the northeast corner of the Custis cellar (Figures 8-10). A manhole discovered partway along the length of this feature allowed the tunnel to fill with soil and brickbats, all of which were excavated. This filling took place around 1790, prior to the destruction of the house.

Traced northward, the drain reached an arbitrary end where it had been sheared off (leaving only the floor and base of the wall foundations) during 19th century grading. In the estimation of Ivor Noel Hume, this leaves little doubt that any perceived terracing along Francis Street was developed after the destruction of the Custis House. Importantly, he notes that this was “probably to obtain fill for elsewhere rather than for any ornamental purpose”.



Figure 8: Artifacts recovered from the tunnel include slate and fragments of crown glass. All items recovered belong to period 1770-1785 post-dating the John Custis period. Picture taken near the terminus of the drain where it began to be sheared off.



Figure 9: The manhole for cleaning out the drain.

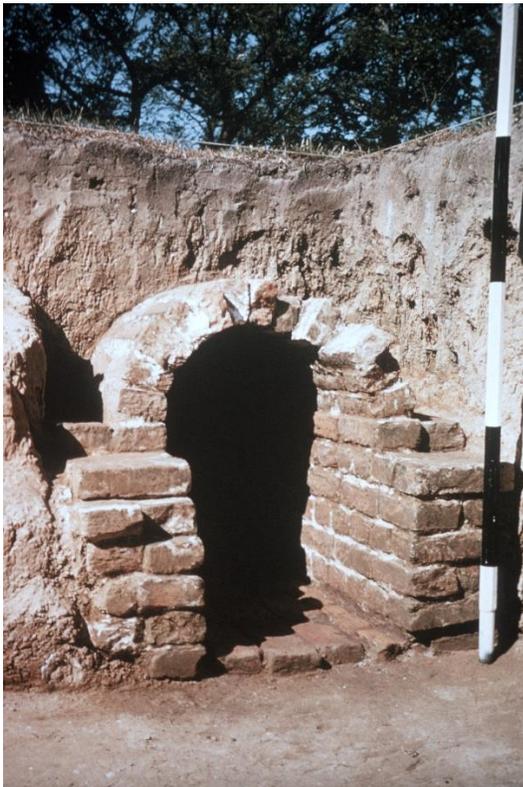


Figure 10: The arched opening to the drain.

Early Kitchen

The 1964 project recovered the remains of an earlier kitchen beneath the extant early 19th century “Custis Kitchen”, extending eastwardly. Measuring 28’7” x 24’, this kitchen was constructed on 9” foundations (coarse shell mortar) and featured an interior chimney against its north wall (Figure 11).

The kitchen consisted of three rooms. The westernmost was the largest, measuring 22’9”(n/s) and 18’9” (e/w). Two small rooms were situated in the building’s east end. The northeast room measured 7’5” (e/w) x 9’6” (n/s) and was paved with 9” square tiles similar to those found in the Custis cellar; while the southeast room measured 7’5” (e/w) x 8’6” (n/s) and had no visible flooring material (Figure 12). An unpaved passageway, 3’3” wide divided the two rooms and provided access to the kitchen.

In 1968 Ivor Noel Hume returned his attention to this earlier kitchen, discovering that the floor levels in all rooms differed appreciably. The initial floor across all three rooms was packed yellow clay. In the large west room, that floor was laid on a 3” thick layer of brown clay whereas natural subsoil underlay the clay floor applied to the east side rooms.

During use of the southeast room, ash mounds deposited on the floor eventually mixed with brown loam and mortar pieces to form a layer that sealed the clay floor. This occupation layer (E.R. 806H) contained material which dated c. post 1740. Brick tiles that survived as flooring in the kitchen’s northeast room were laid without mortar on a dirty yellow clay base, distinguishing them from tiles in the Custis cellar, which were laid on a mortar base.

In the smallest, southeast room, three holes were discovered cutting through the clay floor. One of these holes (E.R. 806M) was filled with mixed clay and artifacts dating c.1760, and capped with a mound of yellow clay. Embedded in the mound were window glass and fragments of roofing tile, along with datable artifacts suggesting a ca. 1790 deposition. Noel Hume postulates that this clay was likely dumped into the corner of the room after the building’s use-life, at which point discarded architectural materials were lying around the site to be incorporated. A post 1790s destruction date for the earlier kitchen coincides nicely with the ca. 1810 date attributed to its replacement.

No discussion of the use of these rooms or the kitchen is included in the monthly reports. The tiled floor at the front of the building could indicate that this small space was used as a dairy or buttery. Brass scrap and iron waste (possibly attributable to 1772-1774 tenant, Peter Hardy’s metalworking operation) were found overlying the floors in both small east-end rooms. This material was broadly scattered, however, and did not likely originate in the kitchen.

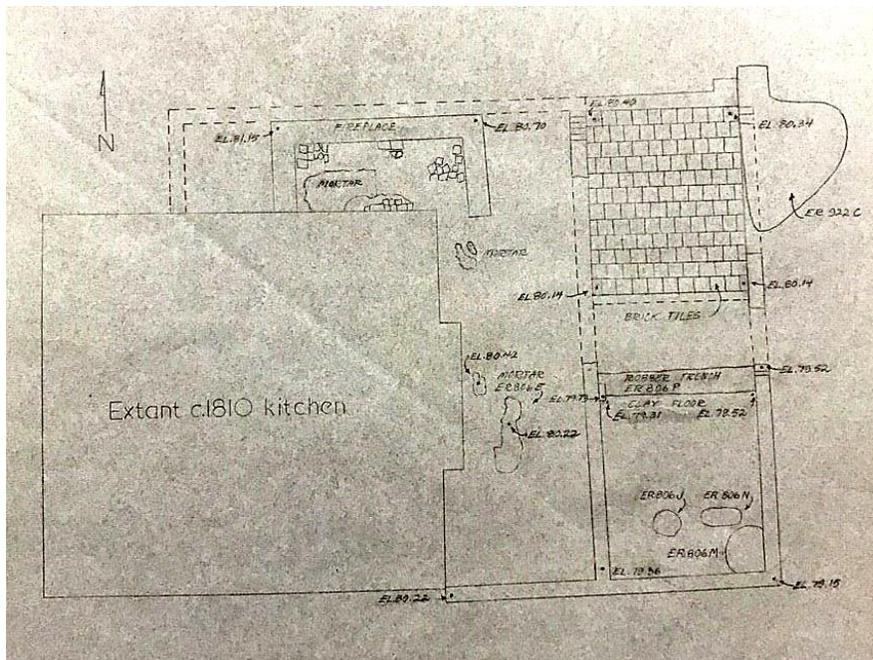


Figure 11: Plan of early kitchen features



Figure 12: Brick pavers and remnant foundations of the early kitchen. Picture taken looking southwest, the east wall and chimney of the extant kitchen is in the background.

Brick Roadway

Identified south of the kitchen, this 8' wide 18th century roadway, running north-south, may (in the estimation of archaeologist Patricia Samford) represent a Custis garden path (Figure 13; see also Figure 4). Constructed of rammed brick this feature runs between the house and kitchen. It is unclear whether the roadway was excavated to its full, surviving, extent. This portion of the site, which was only selectively excavated, appears to include several possible 18th century layers or features.



Figure 13: Brick rubble that may have been used as a roadway or path.

Smokehouse

Digging to the south of the kitchen produced the incomplete foundation of a 10'0" x 10'2" building initially thought to be a dairy (Figures 14 and 15). Noel Hume points to irregularities in its coursing to suggest almost total underpinning late in its life.

At the center of this building was a brick- and tile-lined pit, 3'9" square at the top, 2'9" in depth, and 1'10" square at the bottom. Shaped like an inverted (truncated) pyramid, the pit was filled with yellow clay and pockets of ash, but showed no evidence of heat damage or distortion. Noel Hume indicates that the pit appears to be inserted into an existing building, contemporary with the brickbat and tile floor, which seems to be associated with the underpinning. Ultimately, his assessment is that this structure was reused, perhaps by Peter Hardy between 1772-1774. The pit, in Noel Hume's scenario, may have served as an ash pit beneath a small forge.

Another possibility is that this dependency is a smokehouse. A 1778 Virginia Gazette advertisement listing the property for sale mentions a "meathouse" on the property (Dixon and Hunter Nov 27, 1778). No dairy is identified in that advertisement's list of "offices".

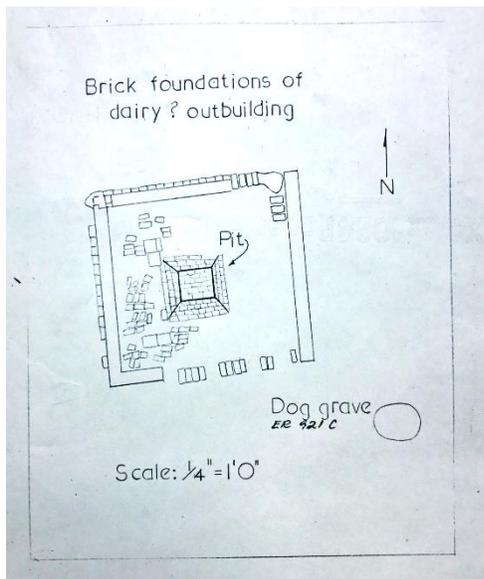


Figure 14: Plan of the possible smokehouse



Figure 15: Exposed foundation and floor for the possible smokehouse. Picture is taken looking east.

Wells

Two wells were identified on the Custis Site in 1964 (Figure 16). The first to be discovered was brick-lined, measured 3'4" in diameter, and was discovered 14'0" southeast of the southeast corner of the house, and approximately 60' from the kitchen. This well, filled in the late 18th c. contained a remarkable collection of stratified artifacts and plant material. In fact, at the time of its discovery, this feature was believed to contain "the most important single closely dated assemblage of cultural material known to come from any Williamsburg excavation." Moreover, "the collection of table glass is believed to be unparalleled by any previous discovery in America."

Beneath an 8' cap containing late 18th c. ceramics and glassware, the well shaft was filled with 15' of clean silt. The layer below the silt contained iron hardware, bottles, and ceramics of the last quarter of the 18th c. A massive deposit of organic material was recovered from this well, including shoes, a quantity of leatherworkers waste, a group of children's spinning tops, along with a large accumulation of plant materials.

Varieties of trees and shrubs represented in this well fill include black walnut, persimmon, hickory, ailanthus, peach, nectarine, linden, coconut, gourds, Virginia scrub pine, buckeye, red oak, grape, red or sugar maple, honey locust, American holly, Dutch box, domestic cherry, viburnum, loblolly pine, sassafras and smoke tree. The majority of these specimens, according to Audrey Noel Hume, are named in the Custis/Collinson correspondence (1974:31).

It is apparently this well to which Custis refers in a 1737 correspondence with Collinson: "I send you some things which I took out of the bottom of a well 40 feet deep; the one seems to be a cockle petrefyd one a Bone petrofyd: [this] seems to be the under beak of some large antediluvian fowl" (Noel Hume 1996:25). The stated depth is within an inch of the excavated shaft at which level the marl yielded a quantity of intact fossil shells.

Near the bottom of this well excavators recovered 2 wooden buckets, a collection of wine glasses, and a considerable number of intact wine bottles bearing seals of John Custis, the majority dated 1713.

In the monthly reports Noel Hume indicated that this well shaft, once fully excavated, was to be sealed under a concrete cover. This never happened. Apparently a wooden cover was placed over it in 1964, but in 2010 the area began to sink. The well shaft was re-exposed by landscape crew at that time, and is now securely covered.

A second well was identified 5' northeast of the brick-lined shaft. Measuring approximately 4'1" in diameter, the lining of this well had been robbed, and it was filled with clean clay derived from digging the adjacent shaft. This shaft terminated 21'0" below colonial grade. The bottom of this shaft was above modern water level. Noel Hume suggests that its water may have derived from surface drainage and dried up around 1737 when Custis experienced a severe drought (1996:25).

Artifacts at the top of the unlined well shaft include a tobacco pipe marked EVANS (probably a Bristol manufacturer working in the late 17th and early 18th c.) and part of a candlestick of the 1690-1710 period.

This well appears to have been abandoned in the first quarter of the 18th c., and replaced by the adjacent well. Notes indicate that it was hand excavated to a depth of 7'6". It was proposed that the remainder of the fill be dug mechanically until well-brick was reached. It does not appear, from photographs, that this proposal was carried out, however the note that the shaft was 21' deep suggests that it was excavated in some way.



Figure 16: Both wells are visible in the foreground, the brick-lined well is the later of the two. Also in this image is the cellar in the background and the opening to the brick drain on the right. Picture is taken looking northwest.

Postholes

An elaborate and deep series of postholes extends eastward from the well complex toward the smokehouse or dairy and extant kitchen (Figure 17). Noel Hume associated the postholes with a wooden frame, trellis, or arbor to support climbing plants (Noel Hume 1974:29). Alternatively, these holes may identify the locations of the arbors built by Custis in the summer of 1738 to shield his plants from excessive heat. Both of these interpretations are curious as the size of the postholes appears much larger than what is needed for a trellis or arbor. They appear more in keeping with a large earthfast building. These will need to be re-examined during the current project. Preservation in the holes themselves appears to be good as intact wood from the posts themselves was found, revealing that the structure was made of cedar.

The neck of a large earthenware garden urn was found while working on these postholes. This vessel was painted gray, and later, red. Paint colors match those on a body fragment found in the Custis stratum at the bottom of the later well.

Excavations around the well revealed a series of postholes suggesting that a later protective fence was constructed after the brick well-head was dismantled.



Figure 17: Looking east towards the extant kitchen and smokehouse foundation, large rectangular post-holes are visible along the southern edge of the excavation units. The later well is in the foreground.

General Site Conditions and Recommendations

Despite Garden Historian Peter Martin's argument that Custis Square has remained relatively untouched since the 18th century, the site has experienced significant disturbance, particularly during the 19th and 20th centuries. Construction, and perhaps more significantly, destruction of buildings associated with Eastern State Hospital have capped the site with a thick layer of brick rubble and debris encountered most recently in archaeological testing preceding expansion of Colonial Williamsburg's Art Museums.

- The 1964 Monthly Reports begin with the general observation that mid-19th century brick rubble covers the site, confusing the results of soil resistivity. This should be noted prior to undertaking any forms of geophysical testing.
- In a May 11, 1964 memo from Ivor Noel Hume to E.M. Fran, Noel Hume writes: "In short, the tested area southeast, south, and north of the Custis site showed that **all traces of earlier stratigraphy above "natural" had been destroyed.** In the few instances where disturbances had occurred into the natural clay, earlier deposits were located and found to be intact...Hopes that we might be able to pick up evidence of the Custis planting schemes were dashed when it was discovered that all the ground tested had been disturbed to natural subsoil. Nevertheless, it is still likely that careful scraping of the clay will reveal tree holes, post holes and rubbish deposits." As an addendum to this observation, there seems to be some evidence that 18th century layers do survive in the areas surrounding, and particularly south of, the kitchen.
- Writing to Beatrix Rumford, Vice President of Colonial Williamsburg's Museums in 1984, Audrey Noel Hume encapsulates archaeological potential of the Custis lots as follows:
 - o "Although the 1964 work found that the overburden had been significantly disturbed by 19th-century Eastern State Hospital usage, it was possible to trace major garden activity in an area in the immediate vicinity of the Custis House and its dependencies." The memo goes on to recommend that "future work must be undertaken at a relatively slow pace, though it might be possible to employ some form of mechanical equipment on the fringe areas and to remove late 19th-century intrusions." (ANH to Beatrix Rumford, Archaeological potential of "Custis Square", March 29, 1984 memo on file).
- During the 1968 excavation it was noted that during John Custis' occupancy of the lot, the area south/east of the extant kitchen sloped in a south-easterly direction as it does now, but in the 18th century the declivity was much more pronounced.
- Test digging at the north edge of the site revealed **a draw running more or less east/west beside Francis Street, and now totally concealed by 6'6" of 19th century silt and 6" of topsoil.**

- Test trenches were dug with a backhoe to the east, south, and west of the area currently being explored. None yielded evidence of colonial structures or strata.
- The longest of three cuts immediately north of Eastern State Hospital's Thompson building revealed what may be the north end of a cellar hole approximately 27'0" wide and totally robbed of brickwork. Tentatively believed to be the basement of the east hospital flanking building 19th c.
- Excavation in 1964 revealed no evidence for two structures depicted on the 1782 Frenchman's Map in the southeast corner of the lot.

IV. RESEARCH QUESTIONS

Archaeological research into Custis Square will strive to provide a comprehensive understanding of the people who lived and worked on this four acre lot over the span of 300 years. The primary focus will fall on the first half of the 18th century when John Custis IV transformed the property with the construction of the house and garden. Outlined below are a series of broadly defined topics that are expanded through specific research questions. Some questions focus on obtaining answers that will aid future reconstructions while others seek to expand our knowledge of the individuals, both free and enslaved, that shaped this four acre lot. Amongst other things, this research has the opportunity to provide one of the most detailed examinations of how pleasure gardening evolved in early colonial America. While the temporal focus of this research is primarily the early to middle 18th century, the project will also address changes in land use from the 17th century through the 20th century. Many of the topics and questions have threads that cross, with some questions asked multiple times in different iterations.

Topic 1: Landscape Structure

A primary goal of the archaeological research will be to understand how the four acre lot of Custis Square was laid out and what conventions were drawn upon to guide the placement of buildings, gardens, and people on the landscape. The following questions help to address this topic.

- Where are buildings, gardens, and activity areas located within the lot and how do they intersect with each other?
- Was the garden, for which Custis Square was well known, bounded or could the entire lot be considered the garden with the house and other buildings mixed in (i.e. a *ferme ornee*)? Is there a distinction between ornamental and kitchen garden?
- What were the design conventions on which Custis drew to order his garden? Was he following his individual fancy that may have been outmoded at the time or was he attempting to keep pace with early 18th century English and European landscape design? Did its measurements conform to geometric landscape “formulas” often seen in gardens and town plans from the period?
- Similar to the results of excavations at Charlton’s Coffeehouse can we confirm that the dots on the Frenchman’s Map are trees, and if so what is their interval? If not, can we determine what the dots represent?
- What are the pathways of movement through the property? What is the physical nature of paths (i.e. materials used)? Were they meant to be experienced in different ways by different people?

- How was the landscape altered topographically to suit Custis' goals for the property?
- Can excavations in the vicinity of the yew tree reveal other plantings that can reveal the structure of the garden?
- What are the viewsheds both too and from different points on the property and what can those views tell us about the ways people experienced Custis Square? Can we determine the viewshed impacts of Spotswood cutting down trees adjacent to Custis Square to improve his own vista?

Topic 2: Built Environment

The Desandroüins and Frenchman's maps indicate four to five structures standing on Custis Square in the 1780's (Figures 18 and 19). Previous excavations have located the main house, the first kitchen, two wells, and a substantial brick drain. An extant brick kitchen was built sometime in the early 19th century. Debate lingers as to the exact date of construction of the main house and its appearance. Documentary evidence suggests it was constructed around or prior to 1717 when Custis purchased the lots that became Custis Square and that it was built in a Jacobean style similar to Fairfield or Bacon's Castle (Noel Hume 1996:22-24). The structures indicated in the southern half of the lot on the Frenchman's and Desandroüins maps however have not been discovered and their functions are unknown. Documentary evidence mentions stables and a smokehouse also on the property, which these building's may be (Samford 1991:4-5). It is likely that other structures once stood on this property as well.

- How many buildings can be identified as belonging to John Custis IV's occupation? What are their functions?
- Can we identify residential structures associated with enslaved individuals? How were they constructed?
- Is there any additional evidence to indicate when the main house was built and what it looked like?
- What is the sequence of building campaigns on Custis Square during Custis IV's ownership?



Figure 18: A portion of the Desandrouins Map, Custis Square is outlined in blue by the authors.

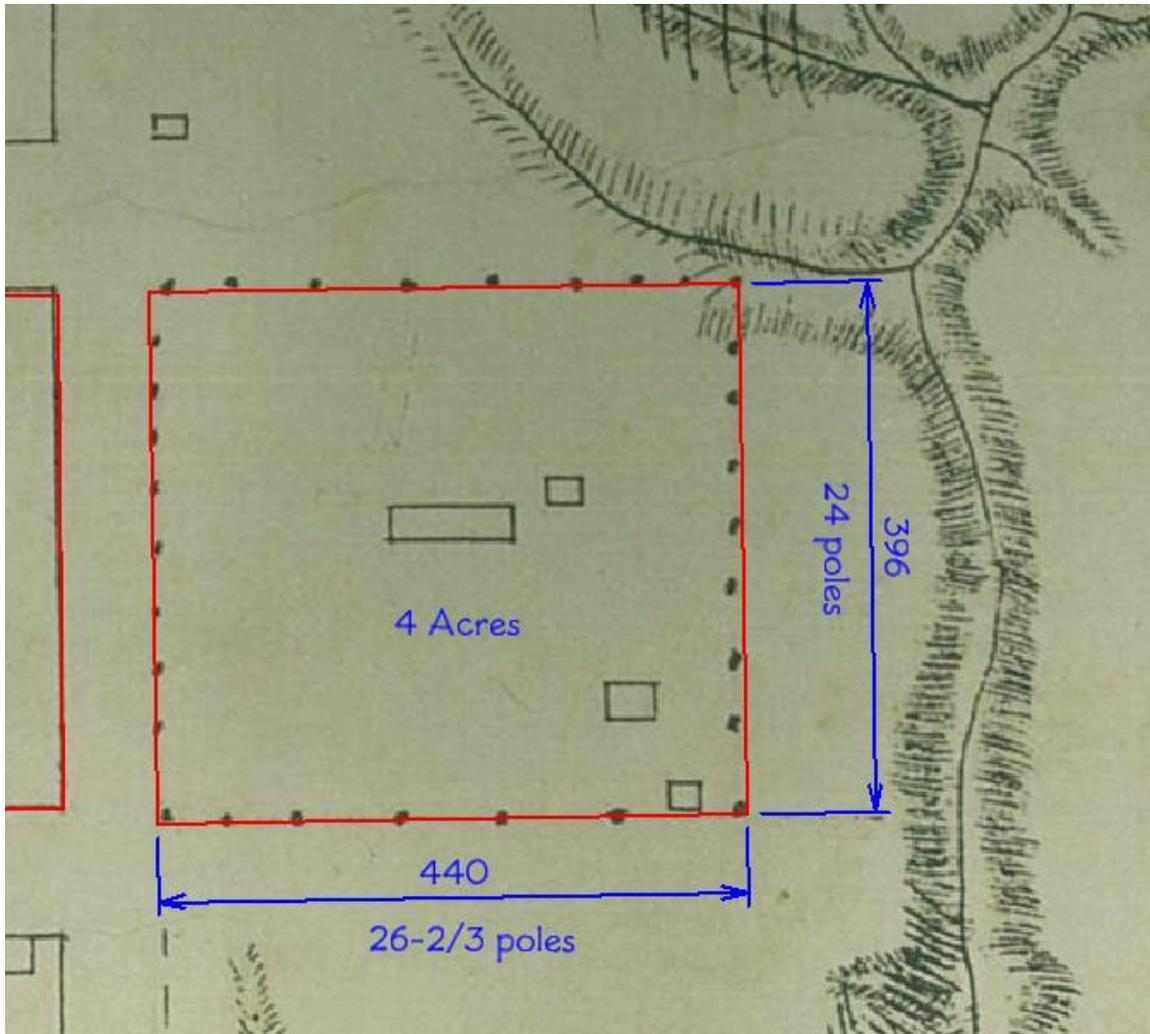


Figure 19: A portion of the Frenchman's Map showing Custis Square, measurements and outlines done by Will Rieley.

Topic 3: Enslavement

As a slave owner, John Custis IV utilized enslaved labor on his plantations and at his Custis Square property. Custis' attitude towards slavery appears similar to many of his contemporaries in that he lamented the institution but acknowledged its necessity to provide him with the level of comfort to which he aspired. He also had a relationship with an enslaved woman named Alice that produced a son, Jack, who he freed. Documentary evidence also reveals some of the labor enslaved men were engaged in to maintain the garden during times of drought.

- What is the evidence for enslaved laborers working in the garden to create and maintain it? Is there any evidence for specialized knowledge of enslaved gardeners?
- What do we know about Alice, Jack's mother? Can her history be traced and is it possible to identify her descendants?
- Can any connections be made with known enslaved gardeners in Williamsburg?
- Where do enslaved people live at Custis Square?
- If enslaved quarters can be isolated, how do the material remains compare to other enslaved contexts in Williamsburg? Other enslaved contexts on local plantations?
- What does the material culture tell us about the daily lives of enslaved people living at Custis Square? Do any objects suggest connections to other enslaved people living in Williamsburg?

Topic 4: Horticulture and Garden Design

Custis Square and John Custis IV are well known for their connections to gardening. Custis declared his garden to be second to none in Virginia and Bartram himself complimented the garden (Martin 1991:56-57). However little is known about the structure of the garden, how it lay on the Custis Square landscape, or what it looked like. Because it was an influential garden in America in the first half of the 18th century it has the potential to inform the broader topic of how pleasure gardening evolved in a new physical and cultural environment.

- What plants are being grown in this landscape? Can we identify plants documented by Custis? more importantly can we see plants that aren't documented that may have been part of the landscape design?
- What is the mixture of vegetation within Custis' landscape in terms of native versus exotic or imported? Herbaceous versus arboreal? Flowering versus evergreen?

- What is the larger environmental context in which Custis is designing, planting, and maintaining the landscape? Can past or current dendrochronology tell us anything about the climatic conditions Custis experienced as he attempted to create and maintain his garden? What can palynological analysis tell us about the vegetation within the regional landscape in which Custis was creating the garden?
- Is there any archaeological evidence for an orangery, greenhouse, cold frames, hot beds, or other specialized garden structures?
- Documentary evidence suggests that statuary stood in the garden. Is it possible to discover where these statues stood? What does their placement tell us about the design of the garden and how it was meant to be experienced?
- Is there any evidence for garden structures such as follies, seats, arbors, or necessities?
- How does the design of the garden (i.e. geometric, naturalistic, neo-classical) fall along the continuum of garden design in colonial America and England? How does its design compare to his contemporaries in Virginia and abroad?
- What types of planting elements can be identified? i.e. topiaries in pots, edged borders, grass plats, hedges, flower beds, parterres, clumps, etc. What do these elements and their arrangement tell us about John Custis IV and garden design?

Topic 5: Custis and Early Scientific Inquiry

As Custis created the landscape of his four acre square, he drew on knowledge derived from communicating with some of the early 18th century's most luminary horticulturalists, from both England and in the colonies. His friendship with Peter Collinson resulted in a brisk exchange of plants, with varieties from around the world exchanged for native Virginia species. Custis also engaged in grafting his orchard stock and experimented with new ways to plant or maintain plants. He was also an amateur physician, experimenting with different remedies for ailments amongst the enslaved people on his plantations and the poor within Williamsburg. He kept a book dedicated to home remedies where he documented his medicinal recipes (Zuppan 1990:87).

- Is there any material or environmental evidence for specialized gardening practices, experimentation, or innovation?
- Is there any botanical evidence for plants being grown specifically for medicinal purposes?

- Can we identify objects (i.e. phials, medical equipment) associated with Custis practicing medicine?

Topic 6: Custis' Relationships with People

A wealth of information can be gained by examining John Custis IV's relationships with other people, both locally and abroad. Custis' personality, as seen in the documentary record, suggests a complex individual whose mood was dependent on the person or people with whom he was dealing. In matters of business he was parsimonious, however he was documented as providing free medical treatment to the poor (Zuppan 1990:87). He alienated his white family, while embracing the child he fathered with an enslaved woman. He fostered his connections with men who could aid his horticultural pursuits and had no problem confronting Governor Spotswood about cutting down trees near his property. The documentary record that provides many of these insights will be drawn on deeply to set the context for the archaeological findings.

- Custis was renowned for his dislike of his wife and possible ambivalence to women, are there gendered objects that may reflect the presence or absence of women at Custis Square during his ownership?
- Custis was particular about goods received through merchants in England. In what ways does the material assemblage reflect his tastes and merchant connections? Does the material assemblage reflect his wealth or any aspect of his identity?
- How do the archaeological remains reflect Custis' relationship with horticulturalists such as Collinson, Bartram, and Catesby?
- Custis was close friends with individuals such as William Byrd II and John Blair, is there any evidence for their presence on the landscape?
- What trades in the town of Williamsburg are represented in the material remains that may suggest business or customer relationships with local tradesmen?

Topic 7: The Context of Williamsburg and the Tidewater

John Custis IV developed his property at a time when Williamsburg began to grow into its role as the colonial capital of Virginia. Additionally, planters in the Tidewater were beginning to develop their plantations in more sophisticated ways as they established gardens and structures that reflected their prosperity. Custis also continued to own Arlington, his ancestral home on the Eastern Shore, which could have influenced his landscape approach to Custis Square.

- How does the development of Custis Square fit within the larger framework of Williamsburg as a town and the development of its districts and neighborhoods?

- Why did Custis choose these lots?
- How does the layout of Custis Square compare to the spatial arrangement of other Williamsburg lots? To the arrangement of nearby plantations and the gardens found there?
- How does the garden compare to other known colonial American gardens in terms of scope and scale?
- Can any connection be seen between Custis Square and Arlington? Can they be compared in terms of spatial arrangement?
- How does the garden arrangement at Custis Square compare to later Williamsburg gardens (i.e. St. George Tucker garden) that may have been inspired by it?

Topic 8: Change Over Time/Pre and Post-Custis Activities

The four acres encompassed by Custis Square were the locus of many different activities after Custis' ownership. The main house was rented out, light industrial activities took place here, and eventually a portion of the site was occupied by buildings associated with Eastern State Hospital. The grounds were re-landscaped as a garden for the hospital in the mid-19th century and were used as a park in the 20th century (Samford 1992:2-8). Archaeological research may also be able to provide evidence of occupation during the Middle Plantation period in the 17th century prior to Custis' ownership. This project has the opportunity to trace the trajectory of the entire lot from the 17th through the 20th century.

- What is the earliest occupation of the site? Is there a prehistoric component?
- How did the use of space change in the years immediately after Custis' death? Particularly how did it change under the ownership of Daniel Park Custis and the management of Martha Custis and George Washington?
- When was the extant kitchen built? Is there any evidence of a subfloor pit?
- What types of industry took place onsite and where?
- What were the impacts of Eastern State Hospital's ownership?

V. FIELD AND LABORATORY METHODS

Field Methodology

Geophysical Survey

Geophysical survey, also known as remote sensing, consists of a suite of non-invasive “previewing techniques” that provide a glimpse into the ground prior to excavation. Geophysical surveys have been successfully used in Williamsburg and elsewhere to determine the locations of relict garden features or potentially fruitful areas for archaeological excavation. In the mid-1990s, ground penetrating radar and soil resistivity testing surveys were used to identify elements of St. George Tucker’s formal garden on Palace Green, focusing the work of archaeologists on areas of greatest potential. Likewise, a geophysical survey in 2004 of William and Mary’s Wren Garden revealed an 18th-century east-west pathway through the yard, as well as a long forgotten Civil War era earthworks.

Geophysical testing will be employed at the beginning of the project and cover the entire four-acre lot. Ground penetrating radar and magnetometry will be the two primary methods utilized for the current project. Both techniques have the potential to pick up structural and garden features such as foundations, paved paths and roads, planting beds, middens, and other large landscape features. The results of the survey will be used to guide the prioritization of fieldwork.

Excavation Strategy

Subsequent to the geophysical survey a close interval shovel test pit survey will be conducted across the area. Shovel test pits will be spaced every 10m on a grid across the entire four acre lot. Shovel test pits will be excavated by hand as 50 cm squares with all soil passed through ¼ inch mesh.

The data recovery phase of the Custis Square investigation will be an “open-area” excavation. On an open-area excavation, large horizontal areas are excavated simultaneously, and all excavators stay, in principle, at approximately the same stratigraphic level. This allows for the easy delineation of feature patterns such as fence lines and the outlines of post-in-ground buildings, and greatly simplifies stratigraphic interpretation.

Historical archaeologists excavate sites stratigraphically. That is, they use color and texture changes in the soil to guide them in the process of digging. The two major components of archaeological sites are *layers* and *features*. A layer is defined as a horizontal soil deposit that may be either natural or made or modified by humans. Layers of ‘sheet refuse’ are common on 17th and 18th-century Virginia sites, and may represent actual living surfaces. A feature, on the other hand, is the physical evidence of any human activity that interrupts the soil layer. Features can include foundation walls, builder’s trenches, trash pits, shrub or tree holes, postholes and postmolds, and any number of other intrusions.

During excavation, layers and features (which are together termed contexts) are given a sequential number, recorded, and removed in the reverse order from which they formed or were

deposited. In other words, the last layer or feature to be deposited is the first to be removed. For example, a posthole is removed by the archaeologist before the layer through which it cuts.

It is important to recognize an essential distinction between the fill of a deposit such as a posthole, which may have been deposited long after the hole was dug, and the cut. Although the cut has no physical reality in the sense that it can be excavated, it is a completely separate unit recorded separately, if for no other reason than that it otherwise introduces severe logical problems when trying to chart and understand the site's stratification.

Thus for each feature at least two context numbers are needed, one for the cut and one for each unit of fill (a cellar, for example, may have just one cut but several fill deposits). Of course this means that all portions of the context record sheet are not always applicable to all contexts; soil type and texture, for example, are meaningless in the recording of cuts.

Although in principle each layer also has its own interface, our typical layers on urban sites are 'sheet refuse' deposits representing many years of continuous buildup. It is impossible to define a single living surface, even though the 'layers' are subdivided based on characteristics of soil color or texture, inclusions, etc. Though necessary, these are essentially arbitrary divisions of living surfaces that were redefined daily as soil built up and trash was thrown into the yard. For that reason we normally do not assign context numbers to the interfaces where we separate our sheet refuse layers, and each layer is thus given just one context number.

An important 'layer type' is called plowzone. Plowzone is the result of the churning of soils caused by cultivation, as layers and features are mixed (especially vertically, though sometimes horizontally as well), destroying much of the stratigraphic relationships. Although a number of different episodes of deposition are mixed together in a plowzone layer, Chesapeake archaeologists have found that a good deal of information can still be extracted. For this reason, plowzone layers are often arbitrarily subdivided into smaller excavation units and analyzed as if they were undisturbed layers.

Feature and Layer Excavation

Virtually all layers and features are hand-excavated either by shovel or trowel. Artifacts, animal bone, and shell are collected when they are found, and the soil is collected in buckets. Before being discarded, this soil is screened through ¼-inch hardware mesh to recover small items which could not be seen while troweling. Some soil from significant layers or features may also be wet-screened or floated to recover important very small items including fish and amphibian bone, charcoal, carbonized seeds, and tiny beads or metalworking waste. Each layer, feature fill, or feature cut is recorded on a Context Record form. The boundary of the layer or feature is drawn on a single context plan, and the surface is photographed before removal of the fill. All features are bisected in a way that will provide the most illustrative profile. Opening and closing elevations are recorded with a total station.

The Context Record Sheet

Arguably, the context record is the single most important element in an archaeological recording system. The context record sheet is used to record the description of the context, its

location on the site grid, characteristics of its soil, inclusions, stratigraphic relationships, excavation methods, any samples taken, and interpretations. The form also includes spaces for notes to be taken by the excavator, which are likely to be the most detailed descriptive comments, and interpretive comments by the project archaeologist or staff archaeologist.

Master Context and Phases

The *master context* is a grouping of related contexts, such as the postholes that form an earthfast building, the components of a fence line, or the contexts that together form a coherent layer of sheet refuse. It provides a mechanism by which these contexts can be summarized on a Harris matrix, discussed as a unit in a report, and analyzed in the lab.

The *phase* is viewed as a grouping of master contexts. Often the phase will be a household-level association such as “John Custis IV Period” or “First Half 18th-Century”. Occasionally it may be functionally rather than temporally defined, with the phase representing an industrial complex as opposed to a domestic area. The important distinction is that contexts are the most specific units, followed by master contexts, followed by phases.

Harris Matrix

A Harris matrix is a diagrammatic tool for representing the temporal succession of archaeological deposits on an archaeological site that was developed by Bermudian archaeologist Edward C. Harris (1979). In constructing a Harris matrix, the latest (most recent) contexts sit on top of the matrix and the earliest (oldest) at the bottom with lines that link them together representing the stratigraphic relationship. Recognizing a stratigraphic relationship in the field is extremely important, and a ‘mini-matrix’ is included on each Context Record form to describe the primary stratigraphic relationships of that context: “context earlier” and “context later”. A master Harris Matrix for the entire site will be maintained by the project archaeologist.

Mapping

Each feature will be drawn in both plan and profile on graph paper as its excavation takes place as part of the recording process. Plan drawings may be completed using a planning frame which is laid over the context being drawn, or using tapes or folding rules to measure the distance of certain points on the boundary line from a specified pair of grid coordinates. In general, plan maps are drawn at a 1:10 cm scale. On occasion, this may be impractical, and it may be necessary to use a larger scale such as 1:20 cm. The scale should be clearly labeled on each drawing. Likewise, a north arrow (almost always pointing toward the top of the page) should also be included. The locations of nearby features may also be recorded to help locate the relative position of a feature. In addition, the approximate location of any section lines, labelled A1-A2 or A-B, should be included as well, along with a small “x” showing the location of the control point of the context (where the EDM point is shot). The feature should also be labeled with its context number.

Section drawings of feature cuts are made once a feature is sectioned; the half to be drawn is left intact with a vertical surface from top to bottom. Two survey pins or large nails are placed in the ground on both sides of the feature and a string is connected to them along the

vertical face. The location and orientation of this line is drawn on the plan map. A folding rule or tape is placed from pin to pin. The string is made perfectly horizontal by the use of a line level attached to the middle. A folding rule or tape is used to measure from the string to both the top and bottom of the feature. The measured points are connected, reproducing a section of the vertical surface. Like plans, the scale in section drawings is 1:10cm. An elevation is taken at the top of the feature and at the bottom if at all possible. Like plans, detailed context and locational information must be placed on each section drawing.

All field maps will be submitted to the Project Archaeologist for a final check for accuracy and then submitted to the GIS Analyst for digitization. The scanned images of the maps will then be catalogued in EMu. Above ground resources such as extant buildings, fencelines, and vegetation will be mapped using a total station and incorporated into the GIS and base maps. The outlines of archaeological features will also be mapped with the total station in addition to being drawn on paper maps. The resulting data will be regularly downloaded by the GIS Analyst and included into the GIS and compared with digitized maps for accuracy.

Photography

Photography has been an essential part of the archaeologists' tool kit since it was invented in the mid nineteenth century. Today it is a universal method of recording archaeological sites, features and artifacts, and is an important compliment to other forms of documentation such as field notes and field maps. High quality site photographs are especially important for presenting archaeological evidence in museum exhibits, in public presentations and to peer professionals. In most cases, field photos will be taken using Department of Archaeology-owned Nikon DSLR cameras which are available for use in the field on a daily basis. All photos should be taken using Nikon's RAW image file format (.NEF). Drone photography will be used to record large open areas and will be employed to create photogrammetric images of layers and features where necessary and practical. Best practice and protocols for drone photography are still being developed within the field of archaeology, therefore specific steps to employ a drone during the Custis Square project will be developed during the course of the project. The Project Archaeologist and Senior Staff Archaeologist will oversee all photography and documentation.

At Colonial Williamsburg, fieldwork photography can be divided into three general topics: working photos, site overviews, and feature photos.

Working Photos

Working photos are primarily candid photos for the purpose of documenting the process of excavation and site interpretation. They can be taken at both wide angles and at close range. Possible examples include overviews showing one or more archaeologists shoveling, troweling, monitoring a backhoe, taking environmental samples, screening for artifacts, or talking to a VIP or the general public. Working photos should be taken at various points to show how the project progresses over time. Another working photo type is a field crew shot documenting the team members involved with a signature event in the project, or period of time.

Site Overviews

Site overviews are wide angle photographs taken from a distance to document a particular moment in time in the course of the excavation such as the exposure of a cellar feature, a line of postholes, or the relationship between two or more groups of features. An ideal effect is to take a site overview from an elevated position such as a ladder, scaffold, bucket truck, or drone.

Ideally, a site overview is taken following the initial exposure of a feature or features (opening shot) as well as after they are excavated (closing shot). In contrast to Working Photos, every effort should be made to ensure that loose shovels, wheel barrows, buckets, tarps, etc. are out of the photo frame in order to not distract from the presentation of the site itself. Whenever possible, any onlookers should also move outside the photo frame, unless staged within the frame for scale. In addition, every effort should be also be made to ensure even lighting across the site – no hot spots or harsh shadow lines. Typically, the best time to take an overview is during the early morning hours while the sun is low on the horizon thus often requiring some advance planning. A black & white photo scale and north arrow should be included, although in some instances the camera may be too far away for them to be seen. In that case, the scale and north arrow are optional.

Feature Photos

Feature Photos are detailed photographs of an individual feature or layer typically taken at close range. Just like field notes, plan and profile maps, Feature Photos are part of the documentation process for each feature or layer encountered on an archaeological site. For that reason, Feature Photos are the most common type of photograph taken in the course of an archaeological investigation.

Feature photos should be taken upon the initial exposure of a feature or layer (opening shot), at the mid-point of its excavation (profile or section shot), and upon finishing its excavation (closing shot). As with Site Overviews, every effort should be made to ensure that any loose tools, feet, and onlookers are out of the photo frame in order to not distract from the presentation of the feature. Every effort should be also be made to ensure even lighting across the photo frame – no hot spots or harsh shadow lines. This can be accomplished by waiting for clouds to cover the sun, or the use of a tarp or plywood board to shade a photo subject. A black & white photo scale and north arrow should be also included. In addition, every opening, profile and closing photo should be taken once with a photo board and once without. The photo board should include the CW Block/Area/Context number, Site Name, Feature Description (Name), and Date. In low-light situations, a tripod should be used to minimize camera movement.

Upon downloading the camera a detailed photo log of every image file must also be generated. The photo log's purpose is to provide a detailed accounting of each image file's subject matter, as well as a record of the photographer. Microsoft Excel-based photologs are available for printing or direct entry. Information to be recorded in the photo log includes:

Image File Name - *Auto-generated by camera for each image file*

Block/Area – *Colonial Williamsburg's alpha-numeric site identifier*

Context Number – *Unique identification number for a particular archaeological context.*

Date – *Date of photograph*

Shot Type – *Working or Record shots (Overviews & Feature Shots)*

Photo Board – *Y/N, is one included in the image*

Direction – *Direction of the photo*

Image Subject – *Name of Feature or photo subject (e.g. Posthole, Layer B, etc.)*

Description – *Describe what is being documented (opening, profile, closing, overview, etc.)*

Notes – *Optional field.*

Photographer – *Photographer's Name*

Camera – *Brand/Model of camera*

The completed photo log and computer file folder of the downloaded .NEF files should be submitted to the supervising Senior Staff Archaeologists who will oversee the images' accessioning into the Department of Archaeology's fieldwork photo archive.

Artifacts

Artifacts are collected by context in plastic bags, each carefully labelled with the context number. In general all cultural material is saved, with the exception of brick, mortar, plaster, coal and charcoal unless instructed otherwise. Completed artifact bags are submitted to the archaeological collections lab for washing, identification and analysis.

Environmental Analysis and Soil Sampling

Soil Flotation

The most common type of sample is a soil flotation, or "flot" sample. This is a comparatively large volume of soil, usually upwards of 10 liters, which is then processed in an agitating tank of water, separating out buoyant ("light fraction") from non-buoyant ("heavy fraction") material. Light fraction samples may include charred seeds, animal bones, eggshell, and the hard parts of various insects. The heavy fraction includes small artifacts that would otherwise be missed during screening. In the context of the Custis Square investigation, plant remains recovered via flotation can help to identify site or feature function, agricultural production practices, plant utilization, and the environmental impact of human occupation.

Collection should take place when the potential for good preservation is observed and distinct context and stratigraphy is recognized. For example:

- Features such as pits, wells, builder's trenches, and cellars.

- Layers such as living surfaces, particularly those with chronological integrity.

Samples should be collected into poly sandbags. For each layer within a unit a target sample size should be 10-litres (approximately 2 bags). The amount of the sample taken from features will vary depending on the feature size, type, and preservation. Some features will be floated in their entirety while smaller samples could be taken from others. For each bag, the context information should be recorded on pre-printed Tyvek tags. In order to quickly process flotation samples, the flotation tank will be set up on site with processing overseen by the project archaeologist. Processed samples will be returned to the Archaeology Lab in order to be sorted and catalogued.

Phytolith/Soil Chemistry

A combination phytolith/soil chemistry sample is another staple of recent garden archaeology projects. Phytoliths are another type of plant remain. These are microscopic silica casts of plant cells which are formed during the plant's life. When the plant decays or is burned, the silica particles remain in the soil. These particles are chemically extracted from soil samples. Meanwhile, the chemistry of the soil can be tested for the presence of elements such as phosphorus, calcium, and magnesium, which can indicate the function of a particular deposit.

The phytolith/soil chemistry samples are to be taken in strategic locations within an excavated area that includes stratigraphic layers as well as layers within features. Samples should be collected into a 4-oz Nasco whirl-pak, filled to the line. Context information needs to be written on the side of the bag. Samples should be stored in the refrigerator in the Archaeological Collections Building for processing and analysis.

Grain Size and Micromorphology

Fine-grained soil studies such as grain size analysis and micromorphology have the potential to help better understand site formation processes. The efficacy of these analyses will be determined in the field based on layer and feature integrity. Due to the potential for disturbances in the upper layers, these techniques may be best applied to stratified features, intact living surfaces, and deeply buried deposits.

Pollen

Samples for palynological analysis will also be collected during this project. Due to the generally poor preservation of pollen in tidewater soils, samples will only be collected from contexts that exhibit characteristics for good preservation. There is much potential for conducting pollen analysis from mortar samples taken from standing structures or structural remains. In the context of this project samples of mortar may be taken from any brick structures or mortared features encountered during excavation. This could include the remains of the house cellar, the drain, wells, the extant kitchen, and any mortared floor surfaces. These samples would have the potential to provide an environmental snapshot across time depending on the dates of the structures. Additionally, samples will be taken from any filled gullies or ravines that exhibit distinct stratigraphy. These samples will be taken as a column on a regular arbitrary interval as

well as at stratigraphic breaks. Soil chemistry and grain size samples will be taken from these same layers. Similar to phytolith samples the soil will be collected in 4-oz Nasco whirl-pak bags.

Dendrochronology

While no dendrochronological cores are planned to be taken during this current project, existing data from previous dendrochronology studies on structures in Williamsburg contain a wealth of information about past climatic events. The data from the past studies will be examined with a specific focus on the years 1717-1749 in an attempt to reconstruct local environmental and climatic events that may have had an impact on John Custis' development of gardens at Custis Square.

Lab Methodology

As Colonial Williamsburg's archaeological excavations begin anew at Custis Square, laboratory work will also resume with three categories of artifacts at the center of our research; newly excavated Custis Square materials, previously excavated artifacts from Custis Square, and a collection of artifacts associated with archaeological excavations at Arlington Plantation, the 17th century seat of the Custis family.

Colonial Williamsburg's Department of Archaeology will undertake completion and synthesis of any previously excavated materials in need of processing, cataloging, conservation, photography, and analysis. These materials and the results of the data collection will be incorporated into the new Custis excavations and research.

As the excavations begin, artifacts including ceramics, glass, metals, organic materials and animal bone will arrive at the lab where they will be washed, dried, sorted and cataloged into the Foundation's new archaeology database, EMu. This database is an interactive data management program which has been customized for use as a complete archaeological documentation, analysis and collection management tool. The various modules which comprise EMu will allow the Department of Archaeology to catalog all information relating to Custis Square excavated objects. While all materials will be cataloged, decisions as to the order of priority for cataloging within the site will be governed by an archaeological appraisal of the integrity of the contexts and the questions being asked.

The process of cataloging is divided into two levels of data entry. Fragment or sherd/inventory level cataloging creates records with basic information about ceramic and glass types, metal or organic forms, quantity of fragments, and archaeological context data. As this information is recorded, materials in need of stabilization will be sent for conservation to the Foundation's Conservator of Archaeological Materials, and artifacts will be labeled with their unique provenience information. Should materials be discovered on site in a water logged environment or of seemingly fragile nature, those items will go through a "triage" assessment and treatment and be sent directly to the conservator. Consultation with the Conservator for Archaeological Materials will take place on a weekly basis and in the field when contexts or artifacts warranting specialized treatment are encountered.

Upon completion of the cataloging, fragments will undergo crossmending and/or a count of the minimum number of unique vessels (MNV). This data will then be added to the EMu database as additional object-level records including vessel form, physical condition, storage locations, function, measurements, and free-form text which describes the objects more fully. In addition, objects or a grouping of materials of particular interest will be further investigated, and all materials compared across the Custis Square site, against Arlington Plantation materials, and other comparable sites previously excavated by Colonial Williamsburg.

VI. TIMELINE OF RESEARCH AND FINAL PRODUCTS

The excavation of Custis Square is expected to take a minimum of five years with the work organized in phases. It is expected that an additional two years of work will be necessary to complete the analysis and reporting. An annual report will be produced for each year of excavation and a final synthesis will be produced within two years of the last year of excavation. Additionally a site management plan and program will be developed to help guide the future use of the lot. Other final products will include professional conference presentations, peer reviewed publications, onsite presentations, and online publications (i.e. blog posts, social media posts).

Timeline of Research

The timeline for excavation and research will be flexible given the unknown nature of archaeological discovery. Generally the process will address broad topics and areas at the outset before focusing on more specific questions, defined areas, or individual features. Specific tasks are provided for Year One, however detailed tasks for subsequent years will be developed during the course of the project and dependent on what is found.

Year One

The first year of excavation and analysis will focus on understanding the structure of the property and making preliminary interpretations for the locations of important elements of Custis Square, including outbuildings, gardens, and activity areas. The use of both geophysical and traditional archaeological survey methods will guide the understanding of property layout and which areas to address in more detail in succeeding years. The exception to this broad focus will be the need to investigate the extant 19th century kitchen which is in immediate need of structural repairs. Tasks associated with Year One include:

- Mapping existing site conditions
- Conducting geophysical survey across the entire 4-acre lot
- Conducting a Phase I shovel test pit survey across the entire 4-acre lot
- Incorporating all previous archaeological spatial data into the GIS
- Cataloguing artifacts from previous excavations
- Excavating the perimeter and interior of the extant 19th century kitchen

Years Two and Three

The second and third years of excavation and analysis will focus on areas and research topics that will provide information about the layout of the gardens, both formal and kitchen related. Large open-area excavations will be used to expose garden features such as paths, planting beds, planting holes, and manmade topographic features such as terraces. During this time period excavations will be tailored to recover samples for specialized analysis (i.e. pollen,

phytolith, geochemical) that will provide environmental context. Intensive documentary research to better understand the enslaved people owned by Custis will begin during this time period, with a focus on identifying potential descendants.

Years Four and Five

The fourth and fifth years of the project will focus on understanding other structures that once stood on the property (encompassing all time periods of occupation of Custis Square) and developing a better understanding of the enslaved people who once lived and worked here. Open-area excavation will continue to be employed to explore the remains of outbuildings. A particular emphasis will be placed on understanding the organization of space and activities around outbuildings. Depending on stratigraphic integrity this may require employing more fine-grained field techniques such as piece-plotting artifacts along with soil chemistry and phytolith analysis. During this phase of the project environmental samples taken during the previous years will be sent to consultants for analysis. Excavation will be completed by the end of year five.

Years Six and Seven

The final two years of the project will consist of report writing, final cataloguing and analysis of artifacts, and synthesizing the results of consultants. During this time period a management plan will be created to guide the future use of the property. A final report that synthesizes the results of the entire project and presents the final interpretations of the work will be created during this time.

Final Products

Several final products will result from the research. One primary outcome of this project will be a site management plan that provides recommendations for the future use or restoration of Custis Square. In addition to guiding the preservation of the historic resources uncovered during the project this plan will also provide programmatic themes and interpretations that can be implemented on the property. Annual reports of the excavations will be produced and made available online. Executive summaries of each year's work will be produced that can be distributed to donors, trustees, and other stakeholders. The capstone report for the project will be a final synthesis of the excavations and analysis. Ideally this report could be turned into a professional publication with an accompanying popular publication. Additional products could include but are not limited to:

- Consultant's analytical reports
- Regular social media updates and posts
- A comprehensive GIS with online interactive components

- Student projects
- Professional conference presentations
- Peer reviewed publications
- New onsite and offsite programs that serve as vehicles for visitor and local audience engagement

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