THE HOMELOT ON THE SEVENTEENTH-CENTURY CHESAPEAKE TIDEWATER FRONTIER

by

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This is a study of the homelot, one aspect of the settlement pattern on the seventeenth-century Chesapeake tidewater frontier. The homelot was the area around the dwellings of seventeenth-century plantations. The yards, fences and outbuildings which made up a plantation homelot were the focal points for a variety of domestic activities and were a vital element in the material culture of the early Chesapeake colonists.

The study begins with a consideration of the frontier as a distinct socio-cultural phenomenon and process and presents the Chesapeake tidewater region in the seventeenth century as an example of a frontier. The Chesapeake frontier homelot provides an excellent opportunity for the combination of archaeological and documentary data in an interdisciplinary study of human behavior in the seventeenth century. The advantages and problems of such an

approach are outlined and the utility of a material culture perspective is considered.

Following this discussion is an analysis of the organization and use of space within seventeenth-century Chesapeake frontier homelots. The main body of data for this analysis consists of the archaeological remains of the homelot at St. John's, a seventeenth-century plantation in St. Mary's City, Maryland. Other archaeological sites in the seventeenth-century Chesapeake tidewater region are also considered. Various archival sources provide material for interpreting the archaeological remains of human activities and expand the quantity of information available concerning homelots on the seventeenth-century Chesapeake tidewater frontier.

These various data sources, archaeological and documentary, are combined to create an image of homelot organization and activity in the seventeenth-century Chesapeake tidewater region. Changes in homelot layout and use through time are delineated and interpreted as material manifestations of cultural change and development in a maturing frontier context.

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And to all the colonists who came to the Chesapeake tidewater frontier;

This work is dedicated.

Between archaeology and history there are
no fenced frontiers.

Sir Leonard Woolley

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INTRODUCTION

This is a study of the homelot, one aspect of settlement pattern and material culture on the seventeenth-century Chesapeake tidewater frontier. It emphasizes the organization and use of space in the area near the dwellings of seventeenth-century tidewater plantations. This group of yards, fences, and outbuildings was a vital element in the material culture of the early Chesapeake colonists. This analysis of the layout and use of the homelot involves three related problems: (1) the consideration of the Chesapeake homelot as an element of a frontier cultural system; (2) the use of archaeological and documentary data together in research; and (3) the application of artifactual and geochemical analyses to an historical site.

The main data for this study are the archaeological remains of the homelot of St. John's, a seventeenth-century plantation in St. Mary's City, Maryland (Fig. 1). The analysis of the data from St. John's includes the delineation and identification of features in the yard such as trash pits, fencelines and outbuildings, and the interpretation of distributions of artifacts and soil chemicals as indicators of cultural activity. These data provide an impression of the organization of the St. John's homelot and a temporal sequence of its change and development.

Other archaeological sites within the Chesapeake tidewater are also considered. They provide useful comparative data for understanding the homelot and its variability in this region. Various documentary sources yield further material for interpreting the archaeological remains of human activities. The documentary information relating to homelots is limited,

but archaeological data shed considerable light on the unrecorded aspects.

This dissertation uses combined archaeological and documentary data in creating an image of the arrangement of the homelot on the seventeenth-century Chesapeake tidewater frontier. The changes through time in the homelot's organization and use correspond to the gradual maturation of the Chesapeake frontier and appear to be correlated with this process.

CHAPTER I - THE CHESAPEAKE FRONTIER

It is not so difficult to label the Chesapeake tidewater region in the seventeenth century as a frontier. Billington's (1967) definitions of the frontier as both a geographic area and as a cultural process apply. It certainly was a region

> adjacent to the unsettled portions of the continent (with) a low man-land ratio and abundant natural resources . . . (where) individuals and their institutions were altered through contact with an environment which provided unique opportunity to the individual by making available to him previously untapped natural resources .
>
> (Billington 1967: 7)

The Chesapeake tidewater region was a frontier during the seventeenth century, but it requires a much closer examination to learn what sort of frontier it was and why.

The first step in any analysis of the seventeenth-century Chesapeake tidewater region as a frontier must be to establish the fact that this region supported a cultural system of sufficient homogeneity to allow examination as a single entity. The anthropological concept that first comes to mind is the "culture area" (Kroeber 1939). Marvin Harris states that the culture area concept originated "as a heuristic device for mapping and classifying the tribal groups of North and South America" (Harris 1968: 374). This classification system allows the grouping of cultural entities according to some geographically delineated aspect of the environment. Harris goes on to caution that the culture area concept lends itself to overly simplistic environmental determinism as an explanation for cultural phenomena and points out that "it is the techno-environmental interaction which

is decisive, not merely the environment" (p. 375). The Chesapeake tidewater region in the seventeenth century may be considered as a single cultural area to isolate it for analysis because the environment and, more importantly, the economic system of the seventeenth-century Chesapeake colonists was the same throughout the entire region. Craven makes the point nicely in the following statement: "Joined closely by waterway communication, separated only by lines principally of political and legal significance, the Chesapeake colonies formed essentially one community, its life drawn chiefly from the soil and its people tending to ever wider dispersal as they took advantage of waterways carrying on all sides to new and better land" (Craven 1970: 208).

The entire region was linked by the waterways and by the agricultural system which gave the Chesapeake tidewater its nickname: "the Tobacco Coast" (Middleton 1953). The tobacco economy was joined closely with the system of navigable waterways and, together, they gave the region a geographical and cultural homogeneity sufficient to classify it as a single culture area.

Billington's definitions of the frontier (1967: 7) specify two of the main distinguishing characteristics of frontiers and hint at the third. Perhaps the first and foremost trait distinguishing the frontier is that it necessitates a return to a simpler, more generalized lifestyle and that from this base, a new and different society emerges. The frontier is an essential element of the American national myth. It is seen as a continuing source of cultural renewal and as a wellspring of individual freedom, responsibility and opportunity. Frederick Jackson Turner (1893) expressed this viewpoint and others have followed in his footsteps with new words and

phrases, but little in the way of new explanations. Albert Keller (1908) wrote that colonization is a creative process of selection, attrition, and innovation. James Leyburn described the frontier process as a process of cultural growth rather than cultural decline. The cultural baggage brought to the frontier is modified by the environment, influenced by the indigenous culture and the result is neither a form of the parent culture, nor of the indigenous culture, but a new entity with an identity of its own (Leyburn 1935).

More recently, historian Daniel Boorstin has written that the "American experience produced a regression to earlier, less differentiated ways of life" (Boorstin 1965: 84). All of these authors are getting at the same points expressed in Billington's definition of a "frontier". Cultural adaptation is a major feature of frontier society and the cultural changes which occur on the frontier provide a relatively open situation in which individuals have an opportunity for increasing their social, economic, and political status.

Leyburn adds an additional note. He suggests that it is in the technological and subsistence aspects of the culture that changes occur most frequently and rapidly. The other aspects of the cultural system tend to remain somewhat more conservative. He sums up this viewpoint with the wry observation that "mans' most sensitive nerves seem to run to his stomach and to his pocketbook" (Leyburn 1935: 235).

The theme of adaptation appears repeatedly in studies of the seventeenth-century Chesapeake frontier. Adaptation was necessary in virtually every aspect of life and the changes gave birth to a society and economic system which had its roots in England, but which was in fact, quite different from

the parent culture. The Chesapeake frontier was a land of dispersed plantations with an economic base centered around the production of a single money crop: tobacco. The cultivation of tobacco was labor-intensive and the Chesapeake colonies were easily able to absorb new immigrants during the early and middle decades of the seventeenth century. For those who survived the travails of the long ocean voyage and the endemic diseases of the region, opportunity existed to become independent planters and achieve economic success, social prestige, and political power far beyond what they could aspire to in England (Menard 1975: 24).

Complementing the ideas of cultural adaptation and individual opportunity on the frontier is the concept of the frontier as a transient cultural phenomenon. Frontiers are characterized by impermanence in nearly every aspect. Demographically, frontier populations have high mortality rates, unbalanced age and sex distributions, and population growth occurs (if it occurs) primarily by immigration rather than by natural increase (Lefferts 1976). The personnel on a frontier are constantly changing. New faces replace old ones before the old have had a chance to become familiar. This results in a loose and shallow social structure. Social institutions, brought from the parent country or urban center, prove to be cumbersome and ill-suited to the frontier situation. They are stripped down and altered until they often are quite different from their original form. The loose social structure may be reinforced by a dispersed settlement pattern and a low population density.

The frontier is marked by abandoned equipment. Material waste seems to be a feature of the transient frontier society. Daniel Boorstin (1965: 92-97) describes the American West as a series of settlements abandoned

before they are worn out. He states that present rather than future needs were the main concern of settlers in the American West and that this perspective led people to regard material items and resources as expendable.

The seventeenth-century Chesapeake frontier fits this pattern of transience and material waste quite well. The earliest colonists at Jamestown really were not even settlers at all. Rutman states that they were "consciously transients, temporary sojourners in the New World, anxious for quick profits and a sure return to England to spend them" (Rutman 1971: 41-42). Later, when colonists came to the Chesapeake region to settle, they still lived highly impermanent and unsettled lives. The chances of an individual's survival were appallingly slender and the turnover of new immigrants kept the Chesapeake society in a constant state of flux. New immigrants, property changing hands, and diseases constantly altered the structure and composition of the society and inhibited the establishment of any pervasive social hierarchy, until the closing years of the seventeenth century.

The transient nature of the Chesapeake frontier also appeared on the land and in the material culture of the region. Farming and building practices were markedly impermanent and waste of the seemingly limitless resources of the land was a regular feature of Chesapeake frontier life. Land was cleared, farmed for a period of seldom more than five years, then abandoned for new clearings as the soil became exhausted (Kelly 1972: 122). Few buildings were constructed to last beyond an individual's lifetime. Many were built on pilings or with posts set in holes rather than on brick or stone foundations (Carson 1975: 19). Land was cheap and the rich, but thin soil was rapidly consumed. Craven notes that wasteful farming practices led, by the middle of the seventeenth century, to the appearance of "old

fields" and "old field (second growth) pine". These, along with rotting, abandoned, impermanent houses gave a curious "sense of age in a society that was really new" (Craven 1970: 222).

The three major themes of frontier societies: (1) cultural adaptation; (2) individual opportunity; and (3) transience, appear repeatedly in the history of the seventeenth-century Chesapeake tidewater region. The cultural baggage which the colonists brought with them underwent drastic alterations, deletions, and additions in the New World frontier context. For a time, the unsettled conditions of frontier life created a situation of opportunity for individuals to attain wealth, status and power beyond what they could hope for in England. The Chesapeake cultural system developed amid rapid social and economic fluctuations which fostered a spirit of impermanence and geographic and social mobility.

The process of cultural unsettlement and rapid change is quite evident in the development of the Chesapeake frontier during the seventeenth century. From the purely English culture which the colonists brought with them, grew a flexible but transient cultural system adapted to the open wilderness of the tidewater region. As the seventeenth century drew to a close, the Chesapeake culture became gradually more permanent and rigid in its structure. The first Euro-American frontier passed from the Chesapeake, westward, toward the Appalachians.

This process of change is common to frontiers and frequently has been described as a succession of cultural stages. The initial idea for viewing the frontier in this way goes back to Frederick Jackson Turner and is embodied in this often-quoted statement:

> Stand at Cumberland Gap and watch the procession of civilization, marching single file--the buffalo following the trail to the salt

> springs, the Indian, the fur-trader and hunter, the cattle-raiser, the pioneer farmer--and the frontier has passed by. Stand at South Pass in the Rockies a century later and see the same procession with wider intervals in between. The unequal rate of advance compels us to distinguish the frontier into the trader's frontier, the rancher's frontier, or the miner's frontier, and the farmer's frontier. When the mines and the cow pens were still near the fall line the trader's pack trains were tinkling across the Alleghanies, and the French on the Great Lakes were fortifying their posts, alarmed by the British trader's birch canoe. When the trappers scaled the Rockies, the farmer was still near the mouth of the Missouri.
>
> (Turner 1893: 208)

Turner's graphic prose expresses the central point common to his and later conceptions of the process of frontier development. He notes that there are stages of growth through which frontier societies pass and that different parts of the frontier are in different stages of development at any given time (p. 206).

Robin Wells regards the frontier as a systemic network of communities rather than as just a thin edge of settlement. He states that:

> A frontier system is a dynamic social network of a particular kind which covers an extensive geographic area and which links a number of culturally diverse societies . . . A frontier society is any society within a frontier system. The dynamic nature of the frontier system is a consequence of continuous, structured change which occurs throughout the system.
>
> (Wells 1973: 6)

The central theme in these contributions to the understanding of the frontier is their attention to the processes of culture change. The frontier is a locus of rapid and, often, radical culture change and the frontier process is essentially a process of cultural adaptation. The edge of frontier settlement is characterized by social and cultural instability and impermanence. The frontier process is the gradual development of a stable social entity and a permanent cultural system. Just as community stability is an ecological goal (Odum 1971: 38), social stability is a cultural goal

and the process of cultural maturation on the frontier is a good example of the pursuit of this goal. This process of cultural maturation is evident in the gradual development of a stable and permanent social structure and should appear in the realm of material culture in a frontier context.

The analysis of the layout and use of homelots on the Chesapeake frontier provides an excellent opportunity for perceiving and delineating some of the hallmarks of the frontier process in an aspect of the material culture of the region. The ground plan, the architecture, and the activity areas of the homelot reflect the three primary characteristics of frontier societies: (1) adaptation; (2) opportunity; and (3) impermanence. New building materials, new methods of construction and the requirements and opportunities of a new agricultural system resulted in a new form of settlement: the tobacco plantation, of which the homelot was the center. The sequence of changes in the organization and use of the homelot correlates with the gradual maturation of the Chesapeake frontier society and the trend toward permanence and stability as the seventeenth century drew to a close.

The frontier concept provides a useful framework for understanding the cultural system of the Chesapeake region during the seventeenth century. As one aspect of the settlement pattern and material culture of that system, the homelot is important because it was a center of human domestic activity. The analysis of the homelot in this historical frontier context is best approached through a combination of archaeological and documentary data. Together these two information sources provide a more complete image of the Chesapeake frontier homelot than either could provide alone.

CHAPTER II - THE COMBINATION OF ARCHAEOLOGICAL AND DOCUMENTARY DATA

The study of human behavior and material culture in historical contexts suffers from the partitive nature of past research. Scholars approach this area of enquiry from a variety of backgrounds, principally history and anthropology. From these differing academic origins, people bring varying theoretical and methodological perspectives to the study of complex societies. Rarely do workers in these disciplines combine their efforts in problem-oriented research. The main reason for this seems to be a mutual ignorance, misunderstanding, and mistrust of one another's aims, methods, and data. The need for increased communication and cooperation among students of human behavior in historical contexts has been recognized recently by a number of authors (Wilderson 1975). Wilderson (p. 115) notes that some historians recently have turned to other disciplines such as sociology, psychology, anthropology, and economics to overcome the limitations of a total reliance on documentary data. Anthropologists, on the other hand, increasingly are making use of documentary sources as the study of complex societies becomes a more common area of anthropological research.

We no longer can afford to divide the study of human behavior in historical contexts into mutually exclusive academic disciplines. The same questions of social structure, material culture and economic organization, asked by workers from diverse academic backgrounds, are answered best by interdisciplinary, problem-oriented research. Documents such as estate inventories and tax lists offer insight into the lives and social position of individuals and, when taken as a group, provide a cross-section of the

social structure of an historical society. Problems of demography, economic opportunity and culture change may be approached by statistical manipulation of these documentary data. Archaeological data provide information about material culture and its relationship to the non-material aspects of cultural systems. The substance, patterning and changes in material culture reflect and influence the non-material culture and are perceived best in an archaeological context. Many facets of a past cultural system which were not recorded in documents are available archaeologically. Together these studies form an holistic approach to the study of human behavior in historical contexts which neither could provide alone.

The field of historical archaeology is in a good position to profit from and contribute to this kind of interdisciplinary cooperation and research. Historical archaeology is a relatively new field in the New World and is still feeling its way and carving its niche in the academic world. There is an uncertainty about subject matter and approaches which is common to new disciplines as they attempt to sort themselves out and decide which problems have priority over others. Historical archaeology is having perhaps more than its share of difficulties because it is drawing people from at least two academic niches. Historians and anthropologists both are finding interesting problems in the realm of historical archaeology and the interchange promises to be a productive one in spite of the difficulties and misunderstandings which occur.

Robert Schuyler (1970: 86) calls historical archaeology an anthropological discipline that deals specifically with the material aspects of the historical past. The emphasis is on the short term cultural changes which predominate in historical archaeological contexts. Spatial variation and

the complex interaction of cultural variables in a limited temporal span is the characteristic processual situation encountered in historical archaeology. The historical archaeologist deals with strata which are almost completely the product of cultural processes. It is these processes in which anthropologically-oriented historical archaeologists are interested. We are students of human behavior as perceived in the material remains of that behavior.

Within an historical context, archaeology as a material cultural perspective can operate in close conjunction with the materially-oriented documentary studies of many historians. The combination of archaeological material and primary documents is a powerful one. It facilitates a deeper understanding of the society under investigation than either approach could yield alone.

One of the more intriguing aspects of material culture is the organization and use of space. It generally is accepted that there is a significant relationship between people and the space around them. Different people perceive, organize and utilize space in different ways and these ways, for the most part, are culturally patterned. In turn, the space itself influences the people who exist within it. Writing about architecture, Sir Winston Churchill put this relationship in a most succinct form: "We make our buildings and they make us" (quoted in Hall 1966: 106).

Edward T. Hall has been a central figure in the study of human spatial behavior, or proxemics. He says that the "perception of space is dynamic because it is related to action--what can be done in a given space--rather than what is seen by passive viewing" (Hall 1966: 115).

Technology is an important element in this behavioral relationship between people and the space around them. Murdy points out that a person's

capacity "to affect the environment beyond himself . . . . enables (people) to modify environments to suit their needs . . . ." (Murdy 1976: 1168). This human capacity for modifying the environment includes the conscious manipulation of space. People create functional divisions of space. Areas are bounded conceptually and physically in an effort to specify particular spaces for particular activities. Walls and fences serve as boundaries and spatial dividers, while pathways and streets serve as connecters between activity areas.

The study of an aspect of material culture such as space needs to be approached from a combination of the technological and the behavioral viewpoints. It is necessary to consider both the technological factors of spatial organization and the behavioral factors of spatial utilization. Such a combination of technological capabilities and human activities provides a useful perspective for studying the spatial aspects of material culture. Leone (1973) provides an excellent case study of the spatial aspect of human behavior in his analysis of nineteenth-century Mormon town plans and fencing. He demonstrates that the Mormon perceptions, organization and uses of space were all related in a complex system of technology. The town plans and fences erected by the Mormons facilitated ecological, social and religious goals and, as elements of Mormon material culture, these can be studied as reflections, manifestations, and determinants of these goals.

Animal behavioralists have dwelt at considerable length on the ways different species deal with spatial problems. Patterns of spatial perception and use have been studied in some detail and have been used to account for many aspects of animal behavior. Simonds points out that "animals follow regular and ordered patterns in their daily activities of gathering food,

sleeping, playing, mating, and resting. Such regular patterns conserve energy and make it possible for animals to predict the behavior of their conspecifics . . . . In general, positive advantages of predictibility within the species are so great that few animals rely on random movement or behavior in their daily activities" (Simonds 1974: 61).

Concepts which have been developed through studies of animal behavior, have also been applied to human behavioral patterns. Simonds notes that patterns of animal spatial dispersion "are not unlike those that emerge when human habitations, lots and farmlands are charted on a map" (Simonds 1974: 61-62).

Among the concepts which seem to have some utility in the study of homelot organization and use are the ideas of core areas and foci of activity. Simonds defines the core area of a group as that area within a group's territory which is intensively or frequently occupied (p. 64). The foci of activity are small areas used for specific activities such as feeding, sleeping, etc. (p. 65). These definitions seem to be applicable to the homelot and the specific activity areas within it.

Many of the activities on colonial farms took place in the area near the dwelling, often termed the "homelot" in New England (Rutman 1967: 36). The Compact Edition of the Oxford English Dictionary (1971) provides some interesting examples of the use of the word "homelot" and several other words which can be used in much the same way. A survey of these definitions and examples is instructive in that they clarify the concept of the homelot and give a very good image of the homelot as a type of human activity area.

The Oxford English Dictionary gives two words as possible alternatives for the term "homelot". These are "houselot" and "homestead" (p. 1322). All three of these terms place central emphasis on the dwelling house and

imply that the dwelling functions as the hub of the homelot activity area.

Other words are listed which apply quite closely to the concept of the homelot. One such term is "messuage". This is defined as being "originally, the portion of land intended to be occupied, or actually occupied, as a site for a dwelling-house and its appurtenances. In modern legal language, a dwelling-house and its outbuildings and curtilage and the adjacent land assigned to its use" (p. 1779). The word "curtilage" referred to in the quotation above is defined as "a small court, yard, garth or piece of ground attached to a dwelling-house, and forming one enclosure with it, or so regarded by the law; the area attached to and containing a dwelling-house and its out-buildings" (p. 630). The Oxford English Dictionary lists several examples of usages of the term "curtilage". A 1769 reference (p. 630) equates "curtilage" with "homestall" a word harking back to a 1655 reference to "a homestall of 6 acres with a dwelling house, barnes . . . and orchard upon it" (p. 1323). Nineteenth-century usages of "curtilage" also refer to barns and houses within an enclosure (p. 630).

Another term of value in understanding the concept of the homelot is "toft". A "toft" is defined as being "originally, a homestead, the site of a house and its outbuildings; a house site. Often in the expression "toft and croft', denoting the whole land holding, consisting of the homestead and attached piece of arable land" (p. 3341). Perhaps the most interesting reference to the phrase "toft and croft" carries a moral indictment of wastefulness in addition to providing a view of land use and division in the early seventeenth century. "I have . . . observed . . . that many croftes, toftes, pightes, pingles, and other small quillits of land, about farm houses, and Tenements, are suffered to lie together idle" (p. 3341).

From this exercise a useful concept emerges. The central point to be

gleaned from these definitions and examples is that the homelot was regarded as a separate part of the entire farm holding. It was differentiated from the farmland itself because the activities which took place there were different from those of the farm itself. This separation is embodied in a 1797 usage which states that "John Sutton certifieth, that he is the occupier of a messuage and a farm" (p. 1779). The homelot was the locus of the domestic end of the farm family's life and labor. The hub of this activity area was the dwelling house itself. The homelot generally was fenced off from the fields and pastures and, frequently, was subdivided by fences and buildings into activity areas with a variety of specific functions.

Because the homelot was the focal point for domestic activities on colonial farms, it provides an excellent situation for studying the relationship between spatial technology and human behavior.

The data analyzed in this dissertation are the archaeological remains from seventeenth-century homelots within the Chesapeake tidewater region, primary archival information pertaining to this region, and other documentary data concerning European and colonial American agricultural and domestic activities during the seventeenth century. The starting point for this analysis is the archaeological site of St. John's, a seventeenth-century plantation homelot in St. Mary's City, Maryland. St. John's has been investigated in more detail than any other seventeenth-century plantation in the Chesapeake tidewater region and has yielded a wealth of information about material culture and plantation homelot life on the seventeenth-century Chesapeake tidewater frontier.

CHAPTER III - THE ST. JOHN'S HOMELOT

Introduction

This chapter presents the archaeological and documentary data from St. John's, a seventeenth-century plantation homelot in St. Mary's City, Maryland. This body of information provides the main basis for the interpretations of homelot organization and use on the Chesapeake frontier. This is not a complete report of the excavation and analysis of the St. John's site. It is a descriptive and interpretive study of the features and activity areas in the yard. Manuscript reports and a comprehensive report will complete the investigation of this site.

The author was not the principal investigator at St. John's. Most of the field work in the area of the yard was done during the 1974 field season when I served as a graduate field assistant. Analysis of the features in the yard and the distributions of artifacts and soil chemicals comprise the major part of the data used in this dissertation. I carried out these analyses under the direction and with the support, encouragement and infinite help of Garry Wheeler Stone, Archaeologist, St. Mary's City Commission.

Background

A document exists describing the estate attached to the Parsonage of Laverton in Somerset County, England in 1638 (Somerset Record Office). This was the parsonage that John Lewger gave up to become Provincial Secretary of Lord Baltimore's colony of Maryland. It is interesting and instructive to compare Lewger's estate in England with St. John's, the plantation

he established in St. Mary's City. Lewger left an established, working estate of fair size and diversity for a large tract of unsettled wilderness on which he was able to build a modest-sized dwelling house and a working tobacco plantation. The following description of Lewger's estate in England suggests something of the kind of home he might have desired in Maryland. This was a part of the cultural baggage which Lewger brought to America and certainly influenced the layout and construction of his homelot at St. John's. The comparison of Lewger's Laverton with St. John's clearly shows the cultural adaptation necessary on the Chesapeake frontier of the seventeenth century.

Lewger's estate at Laverton included "The Parsonage house consisting of seaven Roomes . . . .ffower under, and three upper, one orchard, one garden, and one courte, with a barton adjoininge to the streete, about halfe an acre of ground by estimacon". In addition, he had one barn, one hay-house, one stable, and a number of small parcels of land totaling "by estimacon" over fifty-three acres (Somerset Record Office).

St. John's, Lewger's dwelling in Maryland (Fig. 46), was a simple hall and parlor structure which probably had chambers in the loft above the two main rooms. The house had a small cellar beneath the east end and an attached dairy was added soon after the house was built, probably during Lewger's residency. The outbuilding found archaeologically at the northeast corner of the main house may have been built by John Lewger. Its original configuration seems to have included no fireplace. The rest of Lewger's homelot seems to have consisted of simple yards enclosed by wattle fences. The remains of a possible shed, surrounded by a wattle fence, were found at the northwest corner of the homelot. Lewger's biggest assets in Maryland were his job as Provincial Secretary and the land included in his

plantation. How much of this land was used for productive agriculture is unknown.

Lewger's estate, St. John's, has been the subject of intensive archaeological investigation and is the centerpiece of the data analyzed in this dissertation. The history of St. John's appears in an article by Garry Wheeler Stone (1974: 146-168), from which the following two paragraphs are condensed.

St. John's was built in 1638 by John Lewger, the Provincial Secretary for the new colony of Maryland. The house served as a meeting place for the Provincial Council, Courts, and various other governmental bodies until the capitol was moved to Annapolis in 1695. During all this time, St. John's also functioned as a working tobacco plantation and residence. The property changed hands several times. One of its residents was a Dutch merchant named Simon Overzee and another was Charles Calvert, one of the Governors of the colony. After Calvert moved to another home, St. John's was leased to a series of innkeepers, but continued to be used from time to time for affairs of State. The house gradually fell into disrepair and either collapsed or was torn down sometime prior to 1720.

The location of the site has been known since the house was abandoned. The land around the structure was farmed up until the early part of this century and since then has accumulated an impressive growth of sycamore, cedar, underbrush, and poison ivy. In 1972, the St. Mary's City Commission began the first full-scale professional excavation of St. John's. Field work has continued each season since then and is now virtually complete. The foundation of the main house and its cellar will be stabilized to prevent further deterioration and the site will be used as an outdoor archaeological exhibit in the State historical park at St. Mary's City. The

architectural data and the information about the yards around the house will be used in recreating a working seventeenth-century tobacco plantation in another part of the park.

In addition to these "public-oriented" plans, St. John's provides a wealth of information about life on the seventeenth-century Chesapeake tidewater frontier. The site offers an adequate case study for the analysis of homelot activities and organization in the seventeenth-century Chesapeake region. It obviously is not a "typical" or "average" dwelling of the period. St. John's occupants were the pinnacle of seventeenth-century Maryland's social and economic hierarchy. It is not possible simply to analyze the St. John's homelot and say that this was the way colonial Marylanders lived. The key to St. John's usefulness in any study of seventeenth-century Chesapeake tidewater society lies in its longevity. This house and homelot spanned almost the entire existence of St. Mary's City; a period of nearly seventy-five years. The homes of many less wealthy colonists in this region were temporary and impermanent structures which have left few traces in the ground. A study of the growth and development of the house and homelot at St. John's provides a sequence of continual change at a single site that is useful in understanding the cultural changes taking place in this maturing frontier region. This single-site perspective is important, though it is necessary to account for the upper class bias when extrapolating from St. John's to the seventeenth-century Chesapeake society as a whole.

The data for understanding the organization and use of space around the seventeenth-century dwelling of St. John's consist of a small number of documentary references and a large body of archaeological material. The methods used in handling the archaeological information are discussed in detail, followed by a presentation of the documentary and archaeological

data which combine to form an image of the St. John's homelot and its growth and development during the seventeenth century.

Archaeological Methods

The utility of any body of archaeological data depends to a great extent upon the methods of excavation and analysis. Excavation of the St. John's homelot began in the summer of 1972 and was completed in the fall of 1976. The excavations were carried out by the St. Mary's City Commission under the direction of Garry Wheeler Stone, Archaeologist, and Alexander H. Morrison II, Assistant Archaeologist. The author served as a Graduate Field Assistant at St. John's for nine weeks during the 1974 summer field season.

The site was surveyed on a grid. Points within the grid were designated with measurements in feet and tenths of feet along the grid axes. These axes were identified by the cardinal compass points, but were not aligned precisely with either true or magnetic north. This system provided any point on the site with a unique label (eg. N520.1/W460.3). Horizontal excavation units were not necessarily square in shape, but were called "squares" for the sake of convenience. These units were numbered consecutively as excavation proceeded beginning with Square 1. Excavation was carried out by natural and cultural stratigraphic units within each square beginning with the plow zone and digging in the reverse order of deposition. Each stratigraphic unit, except the plow zone, in each square was given a letter designation in addition to the square number (eg. 71A). The plow zone was identified simply by the square number (eg. 71). The letters "I", "O", "Q", "Y", "X" and "Z" were not used to avoid possible confusion with other letters and numerals. For cases in which a square contained more stratigraphic units than there are letters in the alphabet, labeling

continued with a new numeric square designation and a new series of letters beginning again with "A". For example, if one stratigraphic unit were labeled "20Y", the next feature excavated in that square would receive a new square number, say "52" and the first letter in a new run through the alphabet, making it "52A".

In addition to alpha-numeric labels, each square was meticulously described as to its horizontal dimensions and each stratigraphic unit was given a descriptive verbal name, such as "post hole" or "paling ditch", and a complete stratigraphic definition identifying its position in relation to other stratigraphic units and its composition. Munsell color charts were used to insure standardization of soil color identification and description. The process of excavation proceeded essentially in reverse order of deposition. The most recent deposits were removed first, then backwards until the entire square was excavated to undisturbed subsoil. This technique produced a site that was criss-crossed and pock-marked with excavated features, but it was the only way to insure that all cultural materials were recovered in their proper stratigraphic contexts; a critical matter when dealing with the complex cultural stratigraphy of an historical site.

Meticulous and detailed records were kept on all aspects of excavation. Plan drawings were made of the features below plow zone in each square at a scale of 1 in. equal 2 ft. and a plan and cross-section were made of each stratigraphic unit at a scale of 1 in. equals 1 ft. Cross-sections at this scale were also drawn across major portions of the site such as the cellar and the chimney bases after excavation. Photographs were made in 4 by 5 in. black and white, $2\frac{1}{4}$ by $2\frac{1}{4}$ in. black and white, and 35 millimeter color slide formats. Photographs were made of stratigraphic units and features judged to be of cultural significance. Overall photographs of various parts

of the site and of the entire site at various stages of excavation were made from a photo tower. The written descriptions, scale drawings and photographs provide the documentation for the analysis and interpretation of the site.

The plow zone was removed by hand-shoveling in all areas except three in which a front-end loader was used. The plow zone in all areas except these mechanical cuts was screened through $\frac{1}{4}$ in. or $\frac{1}{2}$ in. mesh hand-screens. Most other stratigraphic units were excavated with small hand-tools and the dirt screened through $\frac{1}{4}$ in. mesh screen. Soil from several large features containing an abundance of cultural material was washed through window screen facilitating the recovery of very small artifacts such as pins and buttonhooks and small organic remains such as fishbones, crab claws and seeds.

Because fences were a vital element in the structure of the St. John's homelot, a few words must be said about their excavation. The archaeological evidence for fences generally involved post-holes and fence ditches. The information acquired through careful excavation of these features provided a basis for inferring the types of fences that these features represent. Several points were noted when excavating fenceline features in order to extract the full measure of their potential cultural information. The first point was to distinguish between the post-hole or ditch and the post- or fence-mold. Every dug post-hole or fence-ditch is larger than the post or fence which is set in it. The empty space around the post or fence is filled in to add support. This fill is called the hole fill and its contents date to the time when the fence was built. The post- or fence-mold is made up of material either from the rotted post or the fill which washed or was put back in when the post was pulled out. The post- or fence-mold

dates to the time when the fence was either dismantled or rotted. This date is often significantly later than the date of the post- or fence-hole. The mold may be obliterated in many cases, or only a shallow depression at the bottom of the hole may remain.

Other information noted in excavating fenceline features included the size and shape of the hole and mold. These factors provide information on the size and shape of fence posts and offer clues about erosion of the edges of the hole. Occasionally it is possible to see tool marks from the original digging implement. Such marks can suggest the type and size of the tool used and the techniques used in digging post- and fence-holes. It is sometimes even possible to identify sets of post-holes that likely were the work of a single individual. The nature of the hole and mold fill provides evidence for the date of the feature and the condition of the site at that date. An abundance of architectural debris in a post-hole might indicate that either construction or destruction was taking place nearby and the type of architectural debris might tell which. An abundance of garbage bone might indicate that the area was littered with kitchen refuse when the hole was filled. Relatively clean soil with few artifacts in a post-hole might indicate that the hole dates to an early period in the site's history or that the hole was in an area away from the main activity areas of the site.

Ivor Noel Hume (1969: 135) notes that a pointed, tubular post-mold with no hole around it is indicative of a driven post and that hand-driven posts generally are no more than four or five feet long and have maximum diameters of six or seven inches. He continues to state that holes dug with post-hole diggers begin to appear only after the mid-nineteenth century and still consist of a post-hole and a post-mold, though both are round and the diameter of the mold is only slightly smaller than that of the hole.

Soil samples were taken from all stratigraphic units judged to be culturally significant and from the plow zone throughout the site. Samples for pollen analysis were also taken from a number of places and now await inspection and analysis. Cultural material was bagged according to stratigraphic unit provenience and sent to the laboratory where it was washed and catalogued in preparation for analysis.

The result of all this is a laboratory full of boxes of artifacts and several shelves of field records. The process of analysis at St. John's is an ongoing concern. This paper is a part of that process and draws upon it for the substantiation of cultural interpretations.

The archaeological data from St. John's have been studied in a number of ways. The house itself has been the object of architectural analysis and various classes of artifacts have been examined in their own right. This paper is specifically concerned with the cultural features outside the main dwelling house; the yards surrounding the house which make up the St. John's homelot.

An analysis of these features has been carried out with several objectives in mind. Groups of related features have been defined according to the cultural phenomena of which they are the remains. These groups have been defined on the basis of vertical stratigraphic relationships, horizontal relationships, size, shape, depth, type of fill and cultural contents. All of these factors entered into the decision to include or exclude a given feature from a given group. The obvious aspects were considered first. For instance, several post-holes aligned with one another at regular intervals were hypothesized to be the remains of a single fence unless other factors such as the cultural contents or the vertical stratigraphic relationship could disprove the hypothesis. Analysis proceeded in this

way from a hypothetical grouping, through tests of the hypothesis against all of the available data, to a modified hypothesis and more testing, and so on, until a hypothetical grouping could not be disproved by any of the available data. In some cases, several alternative hypothetical groupings were equally acceptable given the available data. In these cases all the possible alternatives are presented.

The grouping of features in the yard also provided the basis for hypothesizing sequences of these features. In some cases, a vertical stratigraphic relationship obtained between or among features. The care exercised in excavating and recording overlapping features generally allowed the definite determination of which feature intruded and therefore post-dated another. Other cases were not so easy. At times no definite stratigraphic relationship could be determined because of identical fills. In many cases, it was possible to determine the stratigraphic sequence in one small area, but impossible to demonstrate how that sequence related to sequences in other parts of the site. In these cases, hypotheses were generated, tested and eliminated as far as possible on the basis of the available data. Those hypotheses which could not be disproved are presented as possible alternatives.

One aspect of the archaeological analysis at St. John's has yielded especially exciting results and must be discussed at some length. The analysis of soil has been a largely neglected aspect of historical archaeology. Much more attention has been paid to soils work by prehistorians. Hole and Heizer list three major uses for soil analysis in archaeology: stratigraphic dating, identification of processes of deposit formation, and characterization of past environments (Hole and Heizer 1969: 197). These authors write from a prehistorian's perspective, but the uses they give for

soil analysis apply equally well for historical sites, with a few qualifications.

The main point of difference between the soils of historic and prehistoric sites is that most historical sites involve relatively brief terms of occupation and their stratigraphy is largely cultural in origin. Most prehistoric sites, on the other hand, involve relatively longer spans of occupation and their stratigraphy is primarily natural in origin. Obviously, there are exceptions to this dichotomy. There are historical sites which incorporate such natural strata as flood sediments or products of vulcanism, just as there are prehistoric sites which contain complex occupation strata. In spite of this, the point still holds that historical archaeologists deal most often with soil strata and soil processes of cultural origin whereas prehistoric archaeologists most often encounter natural soil strata and processes.

Prehistoric archaeologists often are faced with soils which reflect environmental changes over thousands of years. Historical archaeologists in America are not confronted with large scale environmental changes over vast spans of time. The environment of the recent past was enough like that of today so that "the environmental aspect of soil-investigation becomes less important than the purely stratigraphical" (Cornwall 1963: 119). The historical archaeologist must still be concerned with the relationship between people and the land. Limbrey says that "soil science and archaeology together contribute to the study of the landscape and its population" (Limbrey 1975: v). She continues by saying that soils can illuminate the effects of human habitation on the land, and provide data on waste disposal, erosion, and many other aspects of human habitation (p. v).

There is a wealth of information to be gained from the soils of

archaeological sites but most archaeologists are not trained to extract the most data from the dirt in which they dig. The scope of archaeological soil analysis is quite broad and encompasses a variety of analytical techniques ranging from visual field inspection to chemical and mechanical laboratory tests. It is vital that the archaeologist consult a soil specialist who can examine and describe the soils encountered and suggest which avenues of analysis might prove most fruitful. The importance of field investigation by a soil expert is repeatedly stressed in writings on archaeological soil analysis. No quantity of bagged samples can substitute for in situ examination of soil profiles by a specialist. It is also important for the archaeologist to acquire some familiarity with soils and soil processes, both natural and cultural. The analysis of soils should play an important role in all phases of an archaeological project.

The analysis of soil at St. John's began with a field examination by Doctor John Foss of the Department of Agronomy at the University of Maryland. This was followed by the collection and testing of soil samples from both features and plow zone from various parts of the site. These samples were analyzed by the Soil Testing Laboratory at the University of Maryland. The analysis consisted of a series of quantitative chemical tests usually performed on agricultural soil samples. These tests involve a weak-acid extraction process and measure the amounts of available inorganic phosphates (P_2O_5), the available potash (K_2O) and the available calcium (Ca). The results of these tests indicated that the levels of calcium and phosphates varied significantly from one sample to another and that this variation seemed to correlate positively with areas of past cultural activity. These encouraging results led to the collection of plow zone samples from all remaining areas of the site.

Our initial group of soil samples came mainly from various features within the site. Their analysis indicated some interesting possibilities for inferring cultural activity areas from soil chemistry. The samples from two large pits in the back yard at St. John's show that a difference exists in the quantities of calcium and phosphates in trash versus organic waste strata. One of these pits was a privy and the organic waste stratum mounded at the bottom had a phosphate count more than ten times greater than that of the trash strata above it. The quantities of calcium in these strata have an inverse distribution. The calcium counts in the trash strata were nearly twice that of the bottom organic waste stratum. A second feature in the back yard at St. John's, a large circular trash pit, exhibited a similar distribution pattern for calcium and phosphates. The organic strata were high in phosphates and low in calcium, while trash strata were just the opposite.

The calcium and phosphate variation in these two features suggested the possibility of using these two soil chemicals as indicators and even predictors of cultural activity areas. Doctor Foss, our soils consultant from the University of Maryland, informed us that phosphates leach very slowly and ordinarily do not migrate significantly in the soil. From this we reasoned that by taking frequent and regular soil samples from the plow disturbed soil all over the St. John's homelot, we would be able to create "contour" maps of the distribution of each of these soil chemicals (Figs. 27-29).

These maps and similar ones showing the distributions of a number of artifact classes have aided in the delineation of waste disposal areas and pathways at St. John's. They provide further data for understanding the organization and use of space around this seventeenth-century dwelling.

These distributions are patterned according to the cultural behavior which led to their deposition.

The artifact classes selected for distributional analysis are those for which reasonably large plow zone samples exist from St. John's and which might be expected to show culturally significant patterning in their distribution. The soil chemicals used were selected from those which comprise the standard battery of tests performed on agricultural soil samples. Three of these, phosphate, calcium and potash, seem to be especially useful for cultural interpretation. Other soil chemicals might be studied with useful results, but the cost of expanding our testing program is prohibitive at the present time.

The maps which illustrate these plow zone distributions are contour maps which show areas of the site having high and low concentrations of the artifact class or soil chemical under consideration (Figs. 8-29). Before discussing the interpretation of these maps, it is necessary to describe the methods used in creating these gems of graphic alchemy. The data points for the artifact distribution maps correspond to the approximate center of each excavation unit. Certain units could not be used in this analysis because the plow zone was mechanically stripped and not screened. Similarly, the area encompassing the main house has been excluded, except for the red brick and pantile distributions, because the complex stratigraphy in this area makes statistical comparison with the yard areas of the site impossible.

The data points for the soil chemical distribution maps correspond to the actual location of each soil sample on the site. There are more of these data points than there are excavation units. They are spaced more closely and cover a larger area. For these reasons, the maps created for the soil chemical distributions are of higher quality and seem to be more

reliable as reflections of past cultural activity areas than the artifact distribution maps.

The values used for each data point on the soil chemical maps are given as parts per two million. This is the standard measure used in agronomy because it equals pounds per acre. There appears to be no reason why this unit of measure should not be used in archaeological soil analysis.

The values used for the artifact maps take one of three forms. Such items as ceramics or clay pipes are measured in artifacts per square foot of excavated area. Items such as nails and glass are measured in grams per square foot of excavated area. Oyster shell and architectural debris such as red brick and pantile are measured in cubic feet of rubble per hundred square feet of excavated area. The use of square footage is necessary because of the varying size of the excavation units. Only in this way could the quantity of material recovered from one unit be accurately compared with another. Square footage of excavated area is used rather than cubic footage of plow zone because the plow zone depth varied insignificantly across the site and could be effectively factored out of the calculations.

The contour intervals for all of these maps have been selected to accentuate areas of very high and very low values. Rather than using intervals of equal range, as on regular topographic maps, we have selected intervals of unequal range based upon the distance of values above or below the mean. For most of the maps, the values within 0.5 standard deviation of the mean have been grouped together in one rather large interval, representing an "average" degree of cultural activity. Intervals above and below this central interval have smaller ranges of 0.5 standard deviation. The upper extreme interval is open at the upper end and is defined as including all values greater than 1.5 standard deviations above the mean.

The lower extreme interval is expressed as including all values less than 1.5 standard deviations below the mean unless a value of zero is reached first.

Seven contour intervals seem to produce maps with the greatest degree of graphic clarity. The red brick distribution is such that it is difficult to use the same seven intervals as for the other maps. For this distribution, the central contour interval ranges from 0.25 standard deviation below the mean to 0.25 standard deviation above the mean. The next interval ranges from 0.25 - 0.75 standard deviation above the mean, then from 0.75 - 1.25 standard deviations above the mean, and finally greater than 1.25 standard deviations above the mean. The key for each map indicates the contour intervals used both in terms of mean and standard deviation and in actual numerical values according to the type of data under consideration. Graduated shading is used to display graphically the distribution pattern on each map. Progressively darker or lighter patterns demarcate areas of greater or lesser deposition and cultural activity. This method highlights areas of very high and very low deposition and activity in stark black and white, while causing areas of nearly "average" activity to recede unobtrusively into grayness.

How do we make the leap from these patterns on the maps to understanding the human cultural behavior that produced them? The key is in the interpretation of artifact and soil chemical intensities as indicators of patterned human activities and in the correlation of this information with other kinds of archaeological evidence.

The patterns on these distribution maps mostly reflect patterns of cultural waste disposal rather than areas in which regular plantation activities took place. The shifting areas of high waste deposition mark changing

patterns of use for yard areas and buildings. Patterns of low deposition may indicate communication routes or pathways between the various parts of the site. Certain soil chemicals, artifacts, and groups of artifacts seem to represent specific kinds of waste disposal activity. Each of these plays a part in the interpretation of the use of the St. John's homelot.

The patterns are not perfect reflections or manifestations. They are images blurred by successive phases of deposition and by the mixing of the plow after the site was no longer occupied. Even so, it is possible to utilize the patterns of plow zone artifact and soil chemical distributions to identify some past cultural activity areas and understand their spatial organization.

White clay tobacco pipes are exceptionally useful artifacts for a distributional study. They were common, fragile and quickly thrown away. The series of distribution maps made for this analysis (Figs. 8-14) stems from a pattern first described by J. C. Harrington (1954). Harrington noticed that the stem bores of white clay tobacco pipes became smaller and smaller during the course of the seventeenth and early eighteenth centuries.

Lewis Binford carried this work a step further when he used a straight line regression formula to approximate the gradually decreasing bore size (Binford 1962). Binford's formula was improved upon by Heighton and Deagan (1972), who substituted a curve for the straight regression line and found that the curve fit the data much better, especially for seventeenth-century material.

To use these regression lines and curves in reckoning the mean date of a group of pipe stems, two requirements must be met. The sample must be large enough to be statistically meaningful; and the deposit from which they came must have accumulated at a relatively constant rate. The plow

zone at St. John's, obviously does not represent a constant rate of deposition; but the broad fact that pipe stem bores did become smaller during the course of the seventeenth century allows at least a rough breakdown of the pipes by stem bore size.

The first map in this series depicts the distribution of all the white clay tobacco pipe fragments recovered from plow zone units at St. John's (Fig. 8). This map illustrates the overall patterns of pipe deposition during the entire history of the site. These patterns clearly indicate the areas of the site which received high and low amounts of pipe deposition, but it is difficult to infer which of these areas are early or late in the site's history. By breaking the total distribution into overlapping groups of stem bore sizes and making maps of the distribution of each of these groups, it is possible to interpret roughly which areas received early pipe deposition, which received late pipe deposition, and how the patterns changed through time. The earliest and latest pipe deposits filter out quite readily, whereas the middle periods remain somewhat obscure. Six overlapping groups of pipe stem bore diameter distributions have been mapped to create a continuous series from earliest to latest (Figs. 9-14).

The distribution maps in this series have been compared statistically using the Wilcoxon Matched-Pairs Signed Ranks Test. This test was selected because it is "useful in situations where we have an interval-scale level of measurement but where the sample size is too small to justify the normality assumption", (Blalock 1972: 266). The matched pairs for each test consisted of the data points in each of the three areas of major cultural activity: (1) the area behind the hall of the main house; (2) the area around the kitchen; and (3) the area between the front door of the main house and the west side fenceline (Figs. 9-14).

Each member of each pair was assigned a value ranging from one to seven depending upon the contour interval at that point. Differences between the values of the members of each pair were calculated and then ranked, discarding zero differences. The ranks of positive differences and negative differences were each summed and the smaller of the two was taken as the value of T, the test statistic. This value was then compared with a table of significance (Blalock 1972: Table H). If T was smaller than the critical value in the table, the null hypothesis was rejected and the two maps being compared were assumed to be significantly different.

The tests suggest that overall changes in the pattern of white clay tobacco pipe deposition occurred between the Very Early and Early Patterns (Figs. 9-10) and between the Late Middle and Very Late Patterns (Figs. 12, 14). Only in these cases could the null hypothesis of no significant difference be rejected. When the front and back yard areas were tested separately, the changes show up more distinctly. In the back yard, significant changes occur between the Very Early and Early Patterns (Figs. 9-10) with lesser changes between the Early and Late Middle Patterns (Figs. 10, 12) and between the Late Middle and Very Late Patterns (Figs. 12-14). In the front yard, significant differences appear between the Very Early and Early Patterns (Figs. 9-10) and between the Late Middle and Late Patterns (Figs. 12-13).

It is difficult to assess the value of this statistical test in comparison with visual inspection of the maps. The small number of data points in each area of activity make the test extremely gross. Subtle shifts in contour configuration do not show up very well in the statistical analysis because a value increase in one spot tends to be cancelled by a value decrease in another, resulting in no statistical change. The tests do indicate

the major changes in white clay tobacco pipe distribution and tend to confirm the validity of these maps for plotting gross spatial variation through time.

The changing patterns of pipe deposition will be interpreted later, along with the distributions of other artifacts and soil chemicals. White clay tobacco pipes are only one of many classes of artifacts that can be analyzed in this fashion. They have been mapped in greater detail than other materials because the decreasing bore diameters allow a degree of temporal grouping not possible with such items as nails, brick, or ceramics.

Ceramics are less useful than pipes for dating features at St. John's because most of the ceramic types found span the entire existence of the site. Ceramics are very useful, however, for identifying areas of domestic waste deposition. Three distribution maps have been made for ceramics from the plow zone at St. John's (Figs. 15-17). A map of the total ceramic distribution indicates general areas of the site where household and kitchen debris was deposited (Fig. 15). By dividing the ceramics into two broad categories, coarse earthenwares (Fig. 16) and fine wares (Fig. 17), it is possible to identify differences in their patterns of disposal. These differences may be the result of use by different classes of people and their use in different phases of the food preparation and consumption process.

Other classes of domestic refuse include terra cotta tobacco pipes, bottle glass, animal bone and flint debitage. The terra cotta pipes (Fig. 18) cannot be dated by shape or bore size like the white clay pipes; but their distribution may reflect their use by lower social classes.

Bottle glass is useful for dating features in which whole bottles or large fragments are found. Unfortunately, these cases are rare. Round bottles first appear in about the middle of the seventeenth century and

their shape changed through time. Prior to the introduction of round bottles, liquids were contained in square sided bottles. Unfortunately, square bottles continued to be used throughout the occupation of the site and many bottle glass fragments are too small to be identified as either from round or square bottles. The distribution of bottle glass (Fig. 19) in the plow zone is useful for indicating patterns of domestic refuse deposition.

Faunal remains from St. John's have been analyzed by Henry Miller (1976). Miller's study suggests a major change from a heavy reliance on wild game in the early years of the site's history to a nearly total reliance on domestic meat sources in the later occupation phases. This pattern provides a useful indicator for dating features when combined with the artifactual evidence. The distribution of animal bone in the plow zone (Fig. 20) helps in identifying patterns of kitchen refuse disposal.

Flint debitage is present in many features of St. John's and its distribution (Fig. 21) identifies areas of the site where gunflints and strike-a-light flints were produced. The flint debitage has been separated from the other lithic materials on the site and virtually all of it may be considered to be of European rather than aboriginal origin (Tyler Bastian 1976: personal communication).

Architectural debris is a second major category of rubbish, separate from household refuse. Red brick, pantile, nails, and window glass are the classes of architectural artifacts for which distribution maps have been created in this study. Patterns of construction, repair and destruction waste deposition are suggested by these distribution maps (Figs. 22-25). Detailed studies of these artifact classes plus mortar and plaster play a vital role in sorting out the phases of construction, renovation and destruction of the main house and the kitchen.

Pantile is an especially useful dating aid at St. John's because of a documentary reference concerning roofing the house with pantile in 1678 (Patent Liber 19: 627-628). While it is uncertain from the document whether or not the house was first pantiled at this time, the archaeological evidence suggests that this was so. None of the early features at the site contain pantile, suggesting that its presence in a feature may provide a terminus ante quem of 1678. As with any single-artifact date, the association between pantile and the post-1678 period is to be used with caution.

The plow zone distribution of oyster shell (Fig. 26) is especially interesting when compared with the calcium soil chemical distribution (Fig. 27). The patterns have overall similarities, but the soil chemical pattern seems to be a more accurate reflection of depositional activity because it is less affected by archaeological data recovery techniques. Oyster shells break into small pieces in the plow zone and are subject to crushing and loss in screening. On the other hand, the calcium from oyster shells remains in the soil even after the shell midden is plowed away.

The plow zone distribution of potash (Fig. 28) at St. John's reflects the deposition of wood ash from the fireplaces.

Perhaps the most useful plow zone soil chemical distribution is the map of phosphates (Fig. 29). Henry Glassie has written lyrically that "the spoor of culture on the land is amazing and easily followed" (Glassie 1972: 30). The phosphate distribution traces the "spoor of culture" in its most literal form. The identification of the origin of any particular phosphate concentration must rest upon the correlation of the phosphate data with other soil chemical and artifact distributions. The patterns created by the deposition of organic refuse constitute a very useful delineator of cultural activity areas.

Each of these classes of material remains yielded information in a variety of ways. Datable artifacts from features provide time spans for these features and for the feature groups to which they belong. The quantity and variety of these and other artifacts provide a means of comparing and grouping features on the basis of their material contents. Distribution maps for various artifact classes and soil chemicals aid in identifying and characterizing activity areas throughout the St. John's homelot.

The delineation of waste disposal areas and pathways helps to clarify the structure and function of the St. John's homelot by focusing on activity areas and patterns of traffic flow among them. When this information is combined with data about the fences and buildings at the site, an image emerges of this Chesapeake frontier homelot. At first glance, the St. John's homelot appears to have developed without rhyme or reason. Indeed, it did not grow in the rigid, mechanistic fashion of many later tidewater plantations. St. John's development occurred largely in an organic and functional way within the parameters of a folk cultural tradition and in response to the wants and needs of a household within a maturing frontier society. In order to understand the pattern in this process, it is necessary to perceive not only the obvious remains of buildings, fences, and pits; but also the more subtle remains of refuse scattered about the yard, the non-architectural areas of activity, and the pathways which linked all of these structural elements into a dynamic and patterned whole.

The remainder of this chapter consists of a presentation of the documentary and archaeological data from St. John's and concludes with a summary of the organization and use of this seventeenth-century tobacco plantation homelot on the Chesapeake tidewater frontier.

Documentary Data

Documentary data relating to St. John's are scarce and lacking in descriptive detail. No good descriptions or maps exist for the plantation and no narrative accounts provide explicit information about the day-to-day activities which took place there. But because St. John's was a working plantation, some of the early documents do provide some data on crops and livestock. These are useful for providing details of the range of plants and animals raised at St. John's. The earliest such mention of St. John's is a 1639 letter from John Lewger to Lord Baltimore indicating that he could provide fifty or sixty breeding hens at any time (Calvert Papers #1: 198-199). A second letter from Lewger to Lord Baltimore dated 1644 states that the wolves had reduced the sheep flock to four ewes and two rams (Calvert Papers #1: 198-199).

A later record of livestock is contained in the estate inventory made in 1661 for the widow of St. John's second major resident, Simon Overzee. This list was made in Virginia after her husband's death and includes:

> 37. ewes & 2. rams 4 cows
> 3 calves--3. mares & 1. mare
> Foale. 3. younge horses of 2. yeares old
> 1. old horse
> (Northumberland County, Virginia, Record Book 1658-1666, f. 84).

Letters from Charles Calvert, the third major resident of St. John's, include several references to crops and livestock. Calvert, as Governor of the Colony, attempted to diversify the production of this tobacco-centered society by raising other crops. In a letter to Cecil Calvert dated April 27, 1664, he mentions grafts for fruit trees, garden seeds, wheat, oats, peas, barley, flax and hemp (Calvert Papers #1: 245-46).

Calvert's letter also mentions feeding straw to young cattle and to

keeping horses in stables during a bad crop year in which meat was scarce (p. 246). He thanks Cecil Calvert for sending "harnesse for Three plough horses, & other necessarys for a plough" (p. 247), indicating his desire to expand the agricultural foundation of his plantation beyond the cultivation of tobacco and, thereby, set an example for the other colonists.

Several references give tiny bits of information about the buildings and layout of St. John's. The Provincial Court Proceedings record that John Lewger's son sold the estate "with all the Houseing and tenemts herevnto belonging" (Archives 10: 70) to Henry Fox in 1650. This legal wording implies the presence of more than a single dwelling and probably refers to a servant's quarter in addition to the main house.

During the occupancy of Simon Overzee, between 1654 and 1660, several documents refer to different aspects of the physical layout of St. John's. A visitor to the estate, Augustine Herrman, recorded that he had to obtain passage across the creek to reach Mr. Overzee's house from Philip Calvert's dwelling a quarter of a mile to the north (Stone 1974: 157).

Two rather sordid court cases also provide a few details about the layout of St. John's in the 1650's. In the first case (Archives 41: 190-213), the owner of the site, Simon Overzee, was accused of murdering a slave named Antonio by hanging him by his wrists in front of the house. The testimony of various witnesses includes mention of a pear tree near the house from which Overzee cut a branch to beat Antonio, and a quartering house located such that a woman within the quarter could not have been an eye witness to the alleged crime in front of the main house. The jury decided that Overzee was not guilty because Antonio could have died from an infected hand rather than from his punishment. The presence of the pear tree near the house correlates with a later reference by Charles Calvert

to a possible map of St. John's including "the House & Orchard of St. John's" (Calvert Papers #1: 236). Unfortunately, if such a map actually was made, it has not come to light.

A second court case in 1658 mentions a loft in the main house, a kitchen and a dairy. It is unclear from the recorded testimony whether the kitchen is a separate structure or simply one of the rooms of the main house (Archives 41: 190-213). Archaeological evidence suggests that it was a separate building.

No more details of the plantation layout appear in documents of Charles Calvert's residency between 1661 and 1665. Calvert encouraged industrial development in his colony and leased a man named Jackson "a spott of ground hard by me for his Tan Fatts & lent him a House to putt his Bark in" (Calvert Papers #1: 238). No archaeological evidence of this tannery has come to light and its location is unknown.

The most informative document relating to the physical appearance of St. John's is a lease granted to Henry Exson by Charles Calvert in 1678. In return for using St. John's as an inn, Exson was to perform certain repairs to the buildings and grounds. Exson leased St. John's Manor with "all houses Edifices, buildings, Barnes Yards, Orchards, Lands Meadows pastures feedings, Commons profites and appurtenances" (Patent Liber 19: 627-28).

A list of the repairs Exson was to make was appended to the lease and provides the most complete image of the St. John's homelot that we are likely to find in documentary sources. It reads:

> A particular of the Reparations and other things to be made and done at the Mannor house and Lands at St. Johns agreed upon to be done by Henry Exson in Consideration of the Grant to him thereof made by the right Hon'ble the Lord Propry, and Hereunto annexed.

"Imp.[8] These Henry Exson is to underpin the great House and to make a new porch and Chamber over it.
"Item. . .He is to new Cover the said House with pantile to repair the old Chimneys and plaister the House.
"Item. . .He is to repair the Room called the Nursery and underpin it with Bricks and new Cover it and repair the plaistering.
"Item. . .He is to repair, pull down and Rebuild the Staircases if there be any necessary occasion for it.
"Item. . .He is to repair the Room called the Kitchen and the Store & chamber over them and to brick the Chimneys up to the Wall plate and daub and lath it up to the Top and Brick the Floor.
"Item. . .To repair the little House near to the Gate for a Quarter.
"Item. . .To Repair the Henhouse in the orchard in the house next to the pasture and the Stables.
"Item. . .To Build a good new Oven and Build a Shade over it.
"Item. . .To impale with good Clapboards a convenient piece of Ground for a Garden in the place were the Garden was formerly.
"Item. . .To make a Sufficient fence Round the Orchard and Pasture.
"Item. . .To make such good fruit Trees as shall happen to dye or be blown down in orch. by planting others in their places and neatly prune all the fruit Trees.
(Patent Liber 19: 627-28)

Archaeological Features in the Yard

Introduction

The documents, scanty though they are, are useful in interpreting some of the archaeological remains at St. John's and for associating various features with various residents of the site. St. John's had four major occupants during its history and it is tempting to correlate the yard's phases of evolution with these residents. Such an association must be made with caution and yet the known dates of each resident's occupation are not far out of line with the archaeologically-inferred phases of homelot development and use. As each of these archaeological phases is described for the back, then the front yard, correlations will be made with the few dated

documentary references we have available. The division of the yard into front and back yards is partly a matter of convenience, but also seems to have been a culturally meaningful distinction during the seventeenth century.

The features in the back and front yards have been grouped according to the structural form of which they are the remains. For instance, all the post-holes in a single fence-line are considered as a unit. The discussion proceeds in chronological order according to phases of the yard's development. Each element included in a given phase may not be precisely contemporary with other elements of that phase, but the division and grouping of features has proceeded logically on the best stratigraphic and artifactual data available.

Feature designations are given in parentheses as each is discussed, and the complexity of the discussion necessitates constant reference to the plan map of the site (Fig. 46) and to the interpretive maps for each phase of the yard's development (Figs. 3-7). With these visual aids, it should be fairly easy to follow the discussion and understand the pattern of home-lot growth and development at St. John's.

Back Yard Phase I

The earliest feature in the back yard at St. John's is a large borrow pit (52B,L) which seems to have been dug as a source of the clay loam used in the mortar of the chimney bases of the main house. This pit was filled with unused lumps of clay loam. Virtually no artifacts were found in the fill of this pit and its very early date is indicated because it is stratigraphically intruded by a fence-ditch of fairly early date. This pit probably dates to the time of the construction of the main house in 1638 and was filled within a very brief period of time.

The earliest fences in the back yard (Fig. 3) form a rectangular enclosure measuring about 38 ft. by 52 ft. (28H;29C;52F,W;54N), with a secondary enclosure measuring about 24 ft. by 35 ft. (52K;53M,R;55S) extending from the northwest corner of the larger enclosure.

The southeast corner of the main yard may have been enclosed by one wall of an outbuilding supported by posts (34G,L/M;50N/L;77L,R/S). The date of construction for this building is uncertain, but it definitely was built early in the site's history. It is unclear whether the fence was built up to an existing structure or whether the structure obliterated a part of an existing fence when it was built. Whichever interpretation is correct, both the outbuilding and the fence were essentially contemporary and were functionally related.

The outbuilding was an unheated structure supported by pilings set into relatively deep post holes. Garry Wheeler Stone has analyzed the architectural remains of this structure and has described a building two bays long and measuring approximately 19 ft. 3 in. by 15 ft. (Stone 1976: 3). Stone states that the evidence suggests, but does not prove, a box frame structure set on very low pilings. The building corners were not quite at right angles and the two bays seem to be slightly different in size (p. 4). No evidence for a framed wooden floor remains and it is reasonable to hypothesize a floor made either of loose planks, puncheons or simply of bare dirt (p. 5).

A second architectural addition also fits into this first stage of homelot development at St. John's. A small shed-like appendage (7A,B,C,D,E,F,G,H,J,K,L;30C,D,E,F,G,H;31C,D,E,F,G,H,J) was added to the rear of the main house early in its history. This small room was a semi-subterranean structure with a cobble floor. Access was from the hall of the main house

down three steps. The room probably was a dairy where milk and other perishables could be stored. The location of this dairy at the rear of the hall suggests that the hall functioned as a cooking area during this early period.

The secondary enclosure at the northwest corner of the back yard appears to be early and may be structurally related to the main yard enclosure, though their stratigraphic relationship is unknown. The ditch of this secondary fence is both narrower and shallower than that of the main fence. It also has a series of relatively small and deep post-holes spaced at approximately 11 ft. intervals along its length. It is possible that these post-holes are the remnants of a later fence, but the paucity of cultural material in their fills suggests that they are contemporary with the ditch. The most likely explanation is that these post-holes and their associated ditch are the remains of a post-reinforced wattle fence, while the larger ditch is the remnant of an un-reinforced wattle fence around the main part of the back yard. Wattle fences, made by weaving brush or branches between small stakes, were common in the seventeenth century. References to their use, both in Europe and in the Chesapeake region, are discussed in the next chapter concerning documentary data.

This secondary enclosure appears to have surrounded a small post-supported structure measuring about 20 ft. by 9 ft. (53A/B,F/G,H/J,K/L; 55A/B,J/K,L/M,R), with an even smaller appendage on its west end (53D/E; 55D/N,E/F). The function of this structure is unknown. It may have been a woodshed or a shelter within a fenced compound for the protection of young and/or sick livestock. The small quantity of cultural material recovered from these post-holes suggests a fairly early date for this structure.

This first phase of development in the back yard at St. John's

corresponds roughly to the occupation of John Lewger, the builder and first resident of the site. Lewger lived at St. John's between 1638 and 1647/48. It is impossible to say for certain how much of the construction described above can be attributed to Lewger. It is reasonable to conjecture that he built the unheated outbuilding at the northeast corner of the main house. Lewger's son occupied St. John's only for a short time after his father returned to England and neither he nor Henry Fox, the man to whom he sold St. John's, was likely to have needed, or been able to afford, the extra space. The second major occupant of the site, Simon Overzee, did not acquire St. John's until 1654 and all indications are that he added a fireplace and chimney to an already existing structure rather than building his kitchen from scratch.

Back Yard Phase II

The second phase in the back yard sequence at St. John's (Fig. 4) involved the widening and deepening of the fence-ditch running east-west across the yard (52F). This ditch was recut on the inside of the original fence leaving a rather distinctive step in the ditch profile. The fence may also have been reinforced with a set of posts at this time. There is a series of post-holes along the course of this ditch and it is difficult to sort out which ones belong with which phase of building. They all either intrude the ditch or have an undetermined stratigraphic relationship with it. Therefore, discussion of these post-holes will appear in the section on the third phase of back yard development.

The east-west fence was also extended eastward for an unknown distance (52J;56N;73B;74B). Unfortunately, our excavation had to be stopped at the point where the ditch was truncated by a modern road cut. This fence-ditch

contained more cultural material than the fences of phase I. Artifacts included both architectural and domestic refuse, but not in such quantities as to suggest intentional filling with trash and garbage. More likely, this material represents simply the normal accumulation of refuse in the back yard over a fairly extended period of time. The faunal material recovered from this ditch consisted of a fairly high percentage of cow and swine bones, and some seem to have been chewed, probably by a dog (Miller 1976: Table 3).

The east side of the back yard also seems to have changed at this time. The fence-ditch connecting the northwest corner of the unheated outbuilding and the east-west fence (52W;54N) appears to have been filled in and a second fence-ditch (56P,Y) was dug connecting the east-west fence with the northeast corner of the outbuilding. This new ditch was dug to the same depth as the new east-west fence-ditch. The configuration of post-holes 56S, 56Y, and 74A suggests the presence of a gate at this northeast corner of the back yard, but may represent only the confusing stratigraphy of post replacement and fence repair.

One of the major features on the St. John's site fits into the homelot plan at this time period. This is a large sub-rectangular pit just north of the east-west fence which served as a privy and then was filled with garbage and hearth sweepings (53W,Y;55C,G,H,T;76A,B). The bottom stratum (76B) was a dark mound of organic material. Above this rather obvious deposit of human waste, was a thick layer of rain-washed silt (55H), probably deposited during a single heavy rainstorm, because it contained little cultural material. This layer of silt also suggests that the privy was neither covered nor enclosed at this time. Above the silt were interfingered lenses of fireplace ash and hearth sweepings (55C,G;76A), then a

thin, deliberately deposited stratum of dirt fill (53Y) and a final layer of kitchen garbage and fireplace ash (53W;55T). All the deposits of garbage and trash appear to have been tipped in from the east side of the pit. The filling of this pit seems to have taken place in a very short span of time, perhaps no more than a month. The white clay tobacco pipes suggest a filling date between 1645 and 1660. This date is based on stem bore measurements and bowl shape, though the small sample size makes the stem bore dating less than certain (Binford 1962; Harrington 1954; Heighten and Deagan 1972). Other materials in the fill included numerous terra cotta tobacco pipes, case bottle glass, Rhenish stoneware sherds, tin-glazed earthenware sherds, coarse earthenware milkpan fragments and table glass. Faunal material consisted of fish remains, deer bone and oyster shell.

It is unclear whether this pit was dug intentionally as a privy or whether its use as a privy came about simply as a means of filling it. The hole may have been dug as a clay borrow pit for the construction of the daub chimney which was added to the outbuilding in the back yard at about this time.

The addition of a fireplace and chimney to this outbuilding probably coincides with the change in function from a store room and possible servants' quarter to a kitchen. Stone (1976) describes this structure as having a brick fireplace and a wood and daub chimney and places this stage of construction between 1650 and 1655 (p. 7). He suggests that post-holes and molds 54D/A,F/G, and 55P/M are the remains of scaffolding posts set up for the construction of this chimney (p. 9).

Associated with this phase of the kitchen was a pit (50M,P) dug just outside the east wall of the kitchen. This pit may have been dug as a

source of the clay loam used as daub for the kitchen chimney. The pit was filled with waste daub and with other architectural and domestic debris. A second, smaller pit (50E) was dug about 2 ft. to the north of 50M/P, though the artifacts in its fill do not indicate whether the two are contemporaneous.

Also falling within this second phase of the St. John's back yard sequence is the filling in of the small, shed-like dairy attached to the backside of the main house. The stone-floored pit of this little structure was filled in, at least partially, during this period of time. The shed itself may have continued in use for a while longer because the upper strata of fill seem to date to a later period of time. In any case, the function of this appendage seems to have changed. Food storage and preparation activities were moved from the hall and dairy of the main house to the outbuilding with its new fireplace and chimney in the back yard. This was the kitchen of a larger and more complexly laid out plantation homelot.

It is possible to roughly correlate this second phase of back yard evolution with the occupation of Simon Overzee, St. John's second major resident. The addition of the fireplace to the outbuilding and the use of this building as a kitchen fit the scanty documentary data suggesting that Overzee's kitchen was separate from his house. The partial filling of the dairy also dovetails with the removal of food preparation activities from the main house. The privy may or may not have belonged to Simon Overzee. Its estimated date falls within at least the early part of Overzee's occupation, but none of the artifacts in the fill can be identified positively with Overzee's household.

The general size and shape of the back yard enclosure changed only

slightly during this phase. Fences seem to have been strengthened and renewed and the northeast corner of the enclosure was shifted from the west to the east side of the kitchen, probably in relation to the newly added chimney and the altered function of this building. The only other change seems to have been the abandonment and destruction of the small shed and enclosure at the northwest corner of the main back yard. Unfortunately, there is no way to date the demise of these elements and they may have persisted longer than the scarcity of artifacts in their archaeological remains suggests.

Back Yard Phase III

The third phase in the evolution of the back yard at St. John's (Fig. 5) involved the replacement of the old ditched wattle fence with a post and rail fence, probably faced with clapboard pales. Such fences were common during the seventeenth century both in Europe and in the Chesapeake region. Documentary references relating to their construction and use are discussed in the next chapter on documentary data.

It is difficult to sort out which features belonged to this fence. The stratigraphy is complex and a significant portion of the fence remains unexcavated. The area at the northwest corner of the main house is complicated by the construction of a small, post-supported addition to the house (9B,C,D,E;11H,J,K;30M,N;68E,D). This room measured approximately 10 ft. by 10 ft. and is believed to be the room referred to as the "nursery" in a 1678 document (Patent Liber 19: 627-28). The nursery was constructed on top of the earlier wattle fence (28H;29C) and perhaps after the first post and rail fence was built. At any rate, the construction of this room

greatly disturbed the archaeological remains of any earlier fences beneath it. Three post-holes and molds are possibly the remains of a post and rail fence in this area (28C/D;68J/K,L/M). The molds of two of these (28C and 68L) were about 6 in. in diameter and were almost exactly $7\frac{1}{2}$ ft. from center to center. The third mold (68J) was also about 6 in. in diameter and was $8\frac{1}{2}$ ft. from 68L and 5 ft. from the corner of the house. This post may have been a support post for the nursery rather than a part of the post and rail fence. The gap between fence post- mold 68L and the northwest corner of the nursery is about $3\frac{1}{2}$ ft., suggesting the possibility of a gate in the fence at this point.

Interpretation of the east-west part of this post and rail fence is hampered by stratigraphic complication as well. The post-holes along this fence (52C,G,N,P,S,T,Y;56S,Y;73A) all appear to intrude the ditch of the earlier wattle fence, but it is unclear which posts, if any, might have reinforced that wattle fence and which might have replaced it entirely. The artifactual material from these post-holes is undiagnostic and the shapes and sizes of the holes themselves give few clues as to their proper interpretation. They form three vague pairs: 52G and a slightly wide rectangular spot in the ditch (52F), 52P and 73A, and 52Y and 52S,T. These pairs may represent post replacement in each panel along the entire fence-line, but it is unclear which set might be the earliest. The only satisfactory way of handling this indeterminate situation is to regard all of these post-holes as representing essentially the same fence, recognizing that post replacement may have taken place at some point in time. Even with possible post replacement, the configuration of the area enclosed by this fence remained the same during this phase of development in the back

yard at St. John's.

This third phase of back yard development corresponds roughly to the occupation of Charles Calvert between 1661 and 1667. It is difficult to separate this phase from the following period when St. John's was used as an inn and government office. This span of time marks the most intensive use of the site, but most datable features seem to be either earlier than 1660 or later than 1678, the date of a fairly detailed document describing St. John's as an inn (Patent Liber 19: 627-28). Features that do date between these years frequently cannot be pinpointed as early or late. The post-holes of the post and rail fence in the back yard are a good example of this confusing situation. Artifact distributional data also suffer from this lack of temporal precision during these middle years of St. John's history. The breakdown of the white clay tobacco pipe distributions by stem bore diameter illustrate this problem and will be discussed in detail later in this paper.

The difficulty seems to be a combination of blurred data due to intensive cultural activity within a relatively confined space, and a possible similarity between the material refuse of Governor Calvert's household and a seventeenth-century Maryland inn. This similarity is apparent in a statement by Calvert included in a letter to his father in 1664 in which he laments that "I haue thirty to prouide victualls for, w^{ch} does putt me to some care & trouble besides the expence w^{ch} is the least" (Calvert Papers #1: 246). Such a crowd might well have produced refuse similar in quantity and quality to that produced by the guests at an inn.

Back Yard Phase IV

The fourth phase of back yard development at St. John's (Fig. 6)

involved a number of modifications to the kitchen and to the fences enclosing and sub-dividing the back yard area.

A new fence (56C,D,F,G,L,M) was constructed at about this time to the east of the kitchen. The extent of this enclosure is unknown, but it was solidly built of round posts, measuring 3-4 in. in diameter and set somewhat irregularly at slightly less than one foot intervals. These posts were set in a ditch averaging over 1 ft. in depth and may have been interwoven with brush to create a sturdy and tight enclosure. The function of this fence is undetermined, though a livestock pen is strongly suggested by its construction and by the high concentration of phosphate in the plow zone of the area, without a corresponding high concentration of artifacts. These distributions will be discussed more fully later in this paper. A light wattle fence, set in a shallow ditch, connected the corner of this stockade with the northeast corner of the kitchen and the end of the post and rail fence described earlier.

The kitchen underwent a further modification sometime during this period. The structure seems to have been shortened and a new brick chimney built in place of the old wood and daub chimney. The shortening of the building may have been the remedy for a rotting support post (50N). The length of the building was reduced from 19 ft. 3 in. to 15 ft. 6 in. and the new end was built square with the sides (Stone 1976: 12). This modification may correspond with that mentioned in a 1678 lease by which the innkeeper, Henry Exson, was directed "to repair the Room called the Kitchen and the Store & chamber over them and to brick the chimneys up to the Wall plate and daub and lath it up to the Top and Brick the Floor" (Patent Liber 19: 627-28).

An interesting feature within the kitchen at this time was a "rectangular sub-floor pit. . .partially in front of the fireplace and exactly in the middle of the structure" (Stone 1976: 14). This small pit (34C;77C), approximately 3 ft. by 5 ft. and having an estimated original depth of between $1\frac{1}{2}$ ft. and 2 ft., had six small post-holes at the corners and in the center of the long sides (59B;77F,G,M,N). The pit probably was lined with wood and covered. It may have served as the foundation for a heavy table, supported by the six small posts. The location of this feature is puzzling because it is neither in a position for maximum warmth nor is it out of the way of normal kitchen activity. Similar pits associated with hearths have been found at Bennet's Point, another seventeenth-century site in Maryland (Ludlow 1973: 15).

The function of this feature is unknown. Stone (1976: 15-17) has reasoned that it was a domestic rather than an industrial feature because no industrial wastes such as iron slag were found. He conjectures a function related to cooking, brewing, or laundering associated with the operation of an inn and suggests the possibility that the posts supported a wort trough used for brewing. A possible explanation for the pit is suggested in a 1705 statement by Robert Beverley of Virginia, who warned that sweet potatoes "are so tender, that it is very difficult to preserve them in the Winter; for the least Frost coming at them, rots and destroys them; and therefore People bury 'em under Ground, near the Fire-Hearth, all the Winter, until the Time comes, that their Seedlings are to be set" (Beverley 1947: 145). Stone concludes his wort trough hypothesis by observing that "a leaky wort trough might not be compatible with the storage of seed potatoes" (p. 17).

The only alteration within the main back yard itself during this fourth phase was the construction of a new post and rail fence beginning at the center of the backside of the main house and extending northward for an unknown distance (31B,N,S). These posts were set at $4\frac{1}{2}$ - 5 ft. intervals. This fenceline appears to formalize the division of the back yard into two distinct areas; a division that seems to have existed in practice for the entire history of the site.

A major feature dating to this phase is a large, irregularly circular trash pit in the northwest corner of the back yard, outside the fenced enclosure. This pit was filled in several strata, but no significant time seems to have elapsed between their deposition. The very bottom of the pit was a rather amorphous pocket of dark, humic soil. Above this was a lens of silted topsoil. The next stratum consisted of a series of tips of architectural, domestic and butchering refuse, one following another in rapid succession. The top stratum consisted of hearth sweepings and miscellaneous trash. The entire pit seems to have been filled in a very brief span of time, perhaps a few days and certainly no more than a month.

One possible explanation for this pit on a site where trash generally was dumped around the yard, is that the hole resulted from the blowdown of a large tree during a violent storm (the likes of which still occur in southern Maryland)! Such an event could leave some tap root material decaying in the very bottom of the pit and, if rain accompanied the wind, topsoil would wash into the cavity left by the fallen tree. After the storm, the tree would be cut into usable wood and the hole could become a convenient receptacle for trash and garbage.

Such a storm could have caused damage to the buildings of the homelot

and the tree itself might have damaged either the kitchen or the main house. This damage could account for the abundance of architectural debris in the pit fill. If such a storm occurred during the fall butchering season, the pit could also have been used as a dump for the butchering waste. This would account for the presence of several individual cows among the faunal remains in the pit fill (Miller 1976). The top stratum of the pit fill might simply represent the sealing and leveling of the ground surface over top of the pit.

Such a scenario is appealing and accounts for the archaeological facts, but it is still an unprovable hypothesis. This large trash pit dates between 1690 and 1700 on the basis of the white clay tobacco pipes and other artifacts in its fill.

Back Yard Phase V

This final phase of back yard evolution at St. John's (Fig. 7) represents the late years of the inn and the shadowy period after the capital was moved to Annapolis and St. Mary's City was a dying village. St. John's stood at least a decade into the eighteenth century and may have been occupied by squatters for at least a part of that time. No new construction seems to have taken place in the back yard during this period and the yards, fences, and buildings fell gradually into disrepair.

Front Yard Phase I

The earliest fences in the front yard at St. John's (Fig. 3) were two sets of ditched fences that probably were wattles set in the ditches. One (8K) extends southward from the west side of the front door to the main

house. This ditch was excavated for a distance of about 14 ft. from the house but did not continue southward as far as a square dug between 20 ft. and 25 ft. from the house (Square 21). Neither did it turn westward and connect with a somewhat later wattle fence extending southward from the southwest corner of the house. This central fence (8K) seems to have either ended about 15 ft. from the house, or else it turned eastward toward a second wattle fence extending southward from the southeast corner of the house (39D;40W;69C). This early fence is conjectured on the basis of very fragmentary ditch-like features which later were almost obliterated by the construction of and activity around a post-supported outbuilding which will be discussed later in this section of the paper.

The area around the front door of the main house seems to have been a sort of forecourt, whether simply screened by fenceline 8K or actually enclosed by it. This fence-ditch seems to have been filled intentionally with garbage, including a great deal of animal bone. The early date assigned to this fence is based largely on the abundance of wild animal species represented, especially deer and sheepshead (a kind of fish). The only domestic species identified in the fill of this ditch was swine (Miller 1976).

This initial phase of front yard development at St. John's can be correlated with the occupation of John Lewger on the basis of the early faunal and stratigraphic date of these two fences. Lewger had a very simple front yard in the late 1630's and 1640's, but he apparently was able to preserve some semblance of English cultural tradition in the form of a tiny and perhaps unenclosed forecourt.

Front Yard Phase II

The second phase of development in the front yard (Fig. 4) is marked by two new fences. One begins at the southwest corner of the main house and runs southward until it vanishes due to plow disturbance (12G;19B; 24B; 47R,N;48C). The second fence replaced the earlier conjectured fence which began at the southeast corner of the house (39D;40W;69C). This second fence (39G;40E;69E;90B) was connected to the new, outside entrance to the cellar. This entrance was not an original feature of the main house and it is conjectured that the first entrance may have been a trap door in the floor of the parlor. The outside cellar entrance was a fairly early modification and was perhaps correlated with the expansion of the cellar to its final size. The fence emanating from the cellar entrance clearly directs traffic flow from the cellar eastward, away from the door of the house. This seems to represent a continuation of the use of the area around the front door of the main house as a forecourt and links the cellar with the service part of the homelot, and perhaps with the unheated outbuilding which was constructed in the back yard at about this time. Both fences in this phase of front yard evolution seem to have been wattle fences set in ditches.

This phase may be correlated with the latter part of John Lewger's occupation and, perhaps the interval between Lewger's return to England and the early years of Simon Overzee's occupation beginning in 1654.

Front Yard Phase III

The third phase in the evolution of the front yard at St. John's (Fig. 5) involved the replacement of the wattle fence on the west side with

a post and rail fence constructed about one foot to the east (19G/24E;24C; 37J,T;47M;48N/T). The posts for this fence were set at approximately 9½ ft. intervals. This fence was probably faced with clapboard pales and extended an unknown distance southward from the southwest corner of the main house. Our excavation traced this fence for nearly 65 ft. southward from the corner of the house.

The wattle fence on the east side of the front yard (39G;40E; 68E;90B) was removed at about this time and a post-supported outbuilding measuring approximately 30 ft. by 20 ft. was erected so that its west wall formed the eastern edge of the front yard enclosure (39C; 39E/69G; and unexcavated post-holes in square 81;83;84;86;87;89). This structure may have been the servants' quarter mentioned in a 1678 document (Patent Liber 19: 627-628). There is some suggestion of a wattle or a ditched post and rail fence (90C,D,G/M) filling the 15 ft. gap between the northwest corner of the quarter and the brick bulkhead of the cellar entrance at the southeast corner of the main house. There may have been a gate in this short section of fencing.

A new configuration in the front yard appeared at about this time in the form of a fence (37F,G,L/K;38C,D,F,G,J/K,R,S;39R;44C,E/J,D/K/H;45J,K; 46F,G/H;69B,F), running east and west from the southwest corner of the new servants' quarter to the west side fenceline. These two segments of fence were not constructed in the same way, suggesting that they were not built at exactly the same time, though the cultural material recovered from their fills indicates no great temporal separation.

The east-west fence consisted of a ditch with post-holes cut as integral parts of the ditch. The post-holes were spaced between 10 ft. and

11 ft. apart and it is likely that the rails were faced with clapboard pales with their lower ends set in the ditch. Stone (1975: 1) argues that the post-hole and ditch configuration suggests a top rail mortised into the posts with pales nailed to the south side of the top rail and their bottoms set in the ditch. A gate was inserted, almost as an afterthought, after construction of the fence had begun. This gate was slightly more than 5 ft. wide and was located in the middle of the south side fenceline. This fenceline also had a post (39R;69F) set at the southwest corner of the servants' quarter and turned southward at this point for an unknown distance (40H, M/N,P,T;69H,J;70A). Our excavation traced this ditch for about 25 ft. south from the corner of the quarter.

A further elaboration of the east-west fence was a ditch about 2-2½ ft. wide, dug on the south side of the fence (38P;39F,J;44L;45A;46B). The small sample of white clay tobacco pipe stems from this ditch suggest a date around 1670. This is in line with the faunal evidence which includes an abundance of cattle and swine bones, suggestive of the inn period of occupation. The ditch seems to have been rapidly and intentionally filled in with garbage. The fence itself may have been built on a low bank of dirt removed from the ditch. The use of a ditch and banked fence created a satisfactory barrier having a degree of aesthetic value as well. This unit enlarged and formalized the forecourt area around the front door of the main house.

This phase is difficult to date. The garbage-filled ditch with an estimated date of 1670 marks the approximate end of this phase, but the beginning date is uncertain. Either Simon Overzee or Charles Calvert could have made the changes in fenceline configuration and either occupant could have constructed the servants' quarter which antedates the new fencing.

This confusing situation is not unlike the confusion described in the back yard between the Calvert and the inn periods. In the front yard, the confusion is between the Overzee and Calvert periods, dating between 1654 and 1667.

Front Yard Phase IV

The fourth phase of development in the front yard at St. John's (Fig. 6) involved the replacement of the west side post and rail fence with a new fence of the same type (12D/E;24A;37D,S;47B/C,D/E/F;48A/D/19A/E/F). This new fence had posts set at approximately 10 ft. intervals and was built just to the west of the earlier post and rail fence. In fact, the new post-holes were dug directly along the line of the early wattle fence.

The area along the outside of this west side fence is complicated by a group of miscellaneous post-holes and molds (35A,E/H/J/K/L/M;43A,F/G; 47A,G;48F,J/K). These seem to be somehow associated with the main fence, but their configuration and function is unclear. Their estimated dating to this fourth phase is based on the late period artifacts in their fills; especially the presence of pantile.

The east-west fence was renewed with a new set of posts (38A/B,L;44A/B; 45B/C;46C/D,J) set at approximately 7 ft. intervals with a new gate superimposed over the old one but slightly narrower. This fence seems to have been attached directly to the southwest corner of the quarter rather than to a post set next to the building. Neither does this fence seem to have extended southward from the quarter. Both the west and south side fences of this phase appear to have been constructed of posts with two rails and clapboard pales nailed to the rails (Stone 1975: 1).

No other changes are apparent in this phase of yard development. The ditch in front of the earlier east-west fence had been filled by the beginning of this phase, but few other changes seem to mark the transition from Governor's home to public inn.

Front Yard Phase V

Two very late segments of fencing appear in the front yard in this phase (Fig. 7). They do not seem to relate to the earlier configuration of the yard and may have been small enclosures set up on a temporary basis during the very late occupation of the site when the buildings were falling into ruin. Both were simple wattle fences set in shallow ditches. One corner segment in the southeast corner of the front yard (40D) seems to be oriented on the same axes as the servants' quarter, suggesting that this building still existed when the fence was constructed. The extent of this fence is unknown. The second small segment is even more baffling. It appears in the southwest part of the yard, just outside the earlier west side fenceline (19J;35D;43C). It is not oriented with the earlier fences or the buildings of the site. Unlike the other fences at St. John's, this segment is curved. Two post-holes may be associated with the ditch. These post-holes are about ten feet apart (19C;35F/G) and the extent of this fence is unknown.

These buildings, fences, and other features make up the structural framework of the St. John's homelot. The temporal phases into which they have been grouped reflect a sequence of growth and development in spatial organization and use on a maturing frontier. The patterns of artifact and soil chemical distributions fill in this structural framework by delineating

areas of human activity; particularly waste disposal areas and pathways.

Artifact and Soil Chemical Distributions

Several overall patterns appear in looking at these distribution maps (Figs. 8-29). The yard to the rear of the main house appears to have been divided into two distinct functional areas during most of the history of the site. Behind the hall, the yard seems to have been used as a trash and garbage dump and perhaps a public privy as well. Virtually every distribution map shows an area of artifact or soil chemical concentration in this area. The most notable exception is the distribution of potash (Fig. 28). This map indicates only a moderate concentration in this area. Since potash reflects the deposition of wood ash, we can infer that this area behind the hall was used primarily as a dump for kitchen garbage and trash, and perhaps as a privy. Hearth sweepings seem to have been dumped elsewhere. The maps of red brick and pantile (Figs. 22, 23) seem to show less of a tendency to cluster strongly in this area than the maps of domestic debris, reinforcing the interpretation of this area as a trash and garbage dump.

While most of the distribution maps show a concentration of material behind the hall, the size of the area and shape of the contours vary. This variation seems to be related to different times of deposition, and perhaps to a change in the location of a rear door in the hall of the main house. The set of white clay tobacco pipe maps provides the best evidence for this kind of temporal variation within a single area (Figs. 9-14).

The Very Early pattern (Fig. 9) shows deposition behind the hall centered about 18 ft. from the north side of the house and extending eastward near the house, encompassing the dairy, a small and rather early addition

to the main structure. The second map in this series, the Early pattern (Fig. 10), shows this area in a slightly different configuration. The dairy area is no longer encompassed by the higher contour intervals and the shape of the area follows somewhat of a southwest to northeast axis, suggesting a door in the hall near the northwest corner of the house from which refuse could be tossed. The next patterns in this set, the Early Middle, Late Middle, and Late patterns (Figs. 11-13), indicate a gradual shift in deposition from the hall doorway near the corner of the house, to a possible later doorway closer to the center of the main house. This change in the location of the door corresponds to the addition of a small room at the northwest corner of the main house. The configuration of the contours in this area shows a gradual change from an oval shape to a roughly triangular shape with one apex at the hypothesized doorway. The final, Very Late pattern (Fig. 14) continues slightly more to the east.

The other artifact distributions follow much the same pattern in this trash and garbage dump behind the hall. The distribution of terra cotta pipes (Fig. 18) shows a high value area encompassing the dairy similar to the Very Early white clay pipe patterns. Flint debitage (Fig. 21) and, to a lesser extent, bottle glass (Fig. 19) exhibit distributions similar to the Early pattern for the white pipes, marking the possible early doorway near the west end of the main house. Refuse such as bone (Fig. 20), coarse earthenware (Fig. 16), and window glass (Fig. 25) have distributions similar to the Middle and Late patterns for white pipes and seem to relate to the possible later doorway closer to the center of the main house. The calcium map (Fig. 27) also reflects this pattern, while the phosphate map (Fig. 29) and the total white clay pipe map (Fig. 8) indicate that this entire area

received a high rate of deposition over an extended period of time.

The eastern side of the back yard is an area of generally low deposition. This is the part of the back yard behind the parlor of the main house and does not seem to have been used extensively as a trash and garbage dump. This area may have been kept relatively clean as a traffic artery between the main house and the kitchen. It may also have served as a more private area than the yard behind the hall. This seems probable for the inn period at St. John's when the two halves of the back yard were actually separated by a small fence.

The area of the kitchen itself yielded high readings of potash (Fig. 28) and Late and Very Late pattern white pipes (Figs. 13, 14). These seem to be a reflection of artifacts and woodash deposited in the kitchen fireplace.

The area near the southeast corner of the kitchen and extending in all directions away from the structure seems to have been a dump for domestic refuse during at least part of the occupation of the site. The location and spread of this midden suggests the presence of a kitchen door near this corner, from which rubbish was tossed into the yard. Most artifact distributions show a spread from this kitchen door southward toward the east side of the main house. Refuse found in quantity in this area includes window glass (Fig. 25), ceramics (Figs. 15-17), bones (Fig. 20), nails (Fig. 24), and oyster shell (Fig. 26). Interestingly enough, the calcium in the soil (Fig. 27) indicates a massive concentration of oyster shell all around the east side of the kitchen, a much larger area than that suggested by the oyster shell that was recovered. Even after the midden itself is gone, the calcium remains as a clue to the archaeologist. The distribution of flint debitage (Fig. 21) shows a spread both to the south and north of the kitchen

door, while the terra cotta pipe pattern (Fig. 18) is strongly centered around the door itself. The white clay pipes indicate only a little about the temporal span of activity in this area. The Late and Very Late patterns (Figs. 13, 14) spread from centers within the kitchen to encompass this area outside the doorway, while the earlier patterns (Figs. 9-12) show only a moderate degree of deposition here.

The phosphate distribution (Fig. 29) is important in understanding the use of this area. It shows a concentration near the door, but the pattern spreads to include a large area to the east of the kitchen; much larger than any of the artifact concentrations and spreading into areas that seem to have relatively low quantities of artifactual refuse. This pattern can be interpreted as indicating an animal tethering area or a stock pen. This area does not seem to have been a trash dump like the high phosphate area behind the hall because it is not an area with high concentrations of artifacts and household debris. Animals tethered or penned would produce organic wastes and high phosphate levels without a corresponding high concentration of discarded artifacts.

The east side of the front yard is, on the whole, an area of relatively low deposition. Small spots of high concentration appear near the cellar entrance at the southeast corner of the main house and near the southeast corner of the quarter. The area near the southeast corner of the quarter seems to have been a refuse dump even before the quarter was built. This spot is at the point where the ground begins to slope fairly rapidly away from the house. Our distribution maps may be picking up only a hint of a much larger and more extensive trash deposition area further down the slope toward the lower end of the ravine. Only further excavation in this area

will clarify the pattern. The quarter may have been built adjacent to the upper edge of this trashy area and further dumping simply added to what was already there.

The cellar entrance seems to have received trash from the later periods of occupation. Corresponding with the deposition of material at this corner of the main house are similar small spots of trash at the other corners of the building. The white pipe distribution maps pinpoint this kind of disposal in the Late and Very Late patterns (Figs. 13, 14). The potash (Fig. 28), pantile (Fig. 23), nail (Fig. 24), and window glass (Fig. 25) distributions also show this pattern of refuse deposition around the edges of the main house, especially near the corners of the building.

The front yard at St. John's is a rather complex area. Disposal patterns relate to the presence of two major fence gates, the changing configuration of the fenced enclosure, and to the two buildings in the area, the main house and the quarter. Changing traffic patterns, resulting from alterations in the configuration of the yard, led to overlapping patterns of refuse disposal.

The distributions of white clay pipes show these changes quite clearly. The Very Early pattern for the front yard (Fig. 9) shows isolated concentrations in front of the door to the main house and at a point near the western edge of the excavated area. The area around the middle of the southern edge of excavation shows a slight high and there is a valley of low values between these two deposits. This suggests a pattern of refuse disposal at a fair distance from the house; one straight out from the front door and another slightly to the west. The area between may have been a pathway leading down the hill toward a ship landing.

The Early white pipe pattern (Fig. 10) shows a different configuration and suggests the presence of the first fence running southward from the southwest corner of the main house. The highest concentration of material is centered just on the outside of this fence, but the pattern spreads over a fairly large area from this center. The shape of the contours suggests deposition out of the front door and along the west side fence. The Early Middle pattern (Fig. 11) follows the same configuration but the spread is less and the highest deposition is concentrated more closely around the westside fence. The Late Middle pattern (Fig. 12) shows the same deposit again, but the spread is even further reduced so that the highest deposition is restricted to a small spot near the front door and another just beyond the fenceline. This distribution is reminiscent of the Very Early pattern. Such a spread of deposition over such a long period of time indicates the continued presence of the fence on the west side of the front yard. Apparently refuse was carried from the house to the fence, then tossed just outside the enclosed yard.

The gate in the middle of the south side fenceline is a vital element in the structure of the front yard. The artifact and soil chemical distribution maps provide some information about the use of this area. The Middle patterns of the white pipe distributions (Figs. 11, 12) show slightly low values here while the Very Late pattern shows a somewhat high value (Fig. 14).

The calcium map (Fig. 27) shows a high value in the gateway itself and a lower value just to the west of the gateway, perhaps indicating the use of oyster shell paving at this point on the path.

The bone distribution (Fig. 20) suggests a pattern of non-intensive deposition along the walkway from the front door to the south fence gate.

A similar pattern appears on the ceramic distribution maps (Figs. 15-17). Such a pattern could result from the casual dropping of material along a pathway rather than intentional use of the area as a refuse disposal area.

A second fence gate appears in the distribution maps in the west side fenceline. This gate shows very clearly in the phosphate map (Fig. 29) and in the calcium map (Fig. 27). The spots of high phosphate concentration appear on both sides of the west side fence and indicate an accumulation of waste just off the pathway on both sides of the fence gate. The calcium concentration occurs squarely in the pathway at this gate, suggesting the use of oyster shell as a paving material, an interpretation strengthened by the similar concentration of calcium in the south fenceline gateway.

The bone distribution (Fig. 20) shows a slight high spreading from the main door through this west gate area just like the spread of bone through the south gate area. Ceramics (Figs. 15-17) also reflect this sort of non-intensive deposition along pathways and around fence gates.

The main area of refuse deposition in the front yard is to the outside of the west fence between the gate and the southwest corner of the enclosure. This area received intensive deposition during the middle to late occupation of the site, as indicated by the white pipe distributions (Figs. 11-14). Concentrations of material in this area show up in many categories such as bottle glass (Fig. 19), potash (Fig. 28), oyster shell (Fig. 26), nails (Fig. 24), bones (Fig. 20), terra cotta pipes (Fig. 18), and ceramics (Figs. 15-17) suggesting a general household trash dump including some kitchen waste and some architectural debris, but consisting mostly of hearth sweepings and broken artifacts.

These patterns of artifact and soil chemical distributions reflect

patterns of waste disposal and routes of communication within the structural framework of buildings, fences and other features. Together with the documentary information, these archaeological data constitute a broad basis for creating an image of the organization and use of space around this seventeenth-century Chesapeake frontier homelot.

Conclusions

St. John's was built near a small spring on the crest of a spur of land overlooking the mouth of Mill Creek; an estuary of the St. Mary's River. John Lewger, the Provincial Secretary, built his home in a fashion not surprising for a high governmental official on the Chesapeake frontier.

> Lewger's dwelling was an import from the mainstream of English farmhouse architecture. The great house was fully framed and constructed squarely, following a carefully worked-out bay system after a modern design. While a few short cuts were taken (inadequately low foundations and ground-laid floors), these were minor concessions to the frontier. Far more remarkable are the glazed windows, brick fireplaces, plastered walls, cellar, and generous room proportions.
>
> (Stone 1976: 22)

The area surrounding the great house at St. John's was divided into two major segments. The front yard seems to have been used as a courtyard and received only moderate trash deposition. The back yard was a service area. The kitchen was at one side of this yard and a major waste deposit was on the other side. The back yard seems to have been divided into two distinct areas. The yard behind the hall was a trash and garbage dump and perhaps a privy area as well. The yard behind the parlor seems to have been kept cleaner and was perhaps a traffic artery between the great house and the kitchen.

The St. John's homelot seems to have extended from the house toward

the east; probably encompassing the spring. The excavation did not extend that far and the fencelines, outbuildings and other features which probably are there remain undiscovered. The western edge of the homelot seems to have been bounded by the westside fencelines in the front and back yards. Two test pits (Squares 22, 23) excavated to the west of these fencelines revealed no subsurface features. This area may have been a garden or orchard, but no archaeological or documentary evidence confirms this idea.

The sequence of homelot growth and development at St. John's is marked by a gradual change from a simple wattle enclosure to a more elaborate yard complex enclosed with clapboarded post and rail fences. The number, kind and structure of outbuildings at St. John's also follow a sequence of increasing complexity. These homelot changes are correlated with overall cultural changes taking place in the maturing frontier society of the seventeenth-century Chesapeake region. The gradual shift from transient to more permanent forms of fencing and building construction; and the increasingly structured and formalized division of space on the homelot may be the tangible, material representations of a pervasive cultural change toward a more stable, permanent and structured society. The sequence of homelot development at St. John's might be interpreted simply as the maturation of an individual plantation rather than as a part of a frontier process. Certainly farmsteads in non-frontier contexts often seem to become more complex and elaborate over time. The frontier may not be the cause of the developmental sequence at St. John's; but the sequence is characteristic of, if not limited to, frontier situations. The analysis of the homelot at St. John's provides a starting point for examining the organization and use of homelot space in the seventeenth-century Chesapeake

region and the evolution of the Chesapeake homelot through time.

CHAPTER IV - COMPARATIVE DOCUMENTARY DATA

Introduction

The interpretation of archaeological remains depends to a great degree upon the use of ethnographic analogy. Ethnographic analogy is simply the use of ethnographically observed or historically documented aspects of human behavior as models for interpreting archaeologically derived patterns of material culture.

The use of ethnographic analogy in historical archaeology is a special case, but involves many of the same problems and methods as in prehistoric archaeology. The historical archaeologist is working essentially with the material remains of the ethnographic present. Historical documents provide many of the same kinds of source material for ethnographic analogy that firsthand ethnography provides. The most common form of analogy in historical archaeology is, of course, the direct historical form. Documents generally can be found which provide data on the cultural system under investigation, and frequently on the specific locality or site being studied. Documentary references sometimes can be identified with specific archaeological features. Such data might best be referred to as ethnographic or historical "identities" since they involve the identity rather than the analogy between documentary and archaeological information.

The use of direct historical analogies and historical identities does not preclude more general analogies. In historical, as well as prehistoric archaeology, it is vital to consider the total cultural context for

analogies and it is important to think in terms of cultures which manipulate similar environments in similar ways, whether or not they are culturally related.

The documentary sources used in this paper provide analogies and identities for interpreting the archaeological remains and expand the sample of homelot features and activities analyzed. The documents pertaining directly to St. John's were used to hypothesize direct historical identities for certain archaeological features on the site. Unfortunately, no complete descriptions, drawings, or maps of St. John's have come to light; so these identities provide only a fraction of the information needed to understand the organization and use of this homelot on the seventeenth-century Chesapeake frontier.

Other documentary sources include archival records which mention homelot features and activities at other places in the tidewater region. These include the Archives of Maryland, cited as "Archives", the Charles County Court and Land Records, cited as "CCC&L", the Ejectments of St. Mary's County, cited as "Ejectments SMC", and the St. Mary's County Annual Valuations and Indentures, cited as "SMC Annual Valuations and Indentures". These provide the same kind of information as the references to St. John's, and are useful for expanding the sample of Chesapeake homelots available for examination.

In addition to these archival sources, analogies can be made using more general written data. Books on agriculture and gardening were popular during the seventeenth century and later. These works offer useful descriptions of homelot organization and activities which provide a basis for further interpretations of archaeological remains. One specific and

somewhat unusual source of analogies which should be mentioned in this general documentary data category are the Dutch genre paintings of the seventeenth century. Many of these paintings depict house, yard and farm scenes with a degree of realistic fidelity seldom equalled until the advent of photography. The depiction of the details of everyday life make these paintings a treasure-trove for students of seventeenth-century material culture and human behavior. Analogies may be proposed from the features pictured in these paintings in the same way as from written documents.

A final category of written data useful in making analogies with archaeological features is the category of secondary written sources. Numerous historical works provide information about homelot organization and activities. Some data are available which pertain directly to the Chesapeake tidewater region. Other sources deal with the New England colonies or with England itself. Time spans dealt with include, but are not limited to, the seventeenth century. These secondary sources are most useful in their summary and descriptive passages. They provide useful overviews of homelot organization and activities which have been gleaned, combined and condensed from the sorts of primary sources discussed above. The various types of documentary sources have been discussed in terms of their usefulness in providing ethnographic and historical analogues and identities for archaeological features. It should be clear that these documentary data also can be studied in their own right without specific reference to any archaeological site.

Examples of homelot features, layouts and activities may be gathered from all the types of documentary sources discussed above. The volume of

data available from such sources as archival records makes the task of data collection valuable but difficult. The remainder of this chapter is devoted to a description of the various kinds of buildings, fences, plants, animals, and activity areas which made up the homelots of the seventeenth-century Chesapeake frontier. Each of these structural elements is briefly described, using the documentary sources as a base. In the concluding chapter, these descriptions are combined with the archaeological data in the creation of an image of the organization and use of space within the homelot on plantations of the seventeenth-century Chesapeake frontier.

One documentary source of data has not been mentioned. This is the set of Orphans' Court Valuations which exist for the counties of tidewater Maryland during the eighteenth and early nineteenth centuries. These records have not been analyzed as a part of this study, because they are rather removed in time from the seventeenth century. I mention them because they provide a great deal of the type of information that I wish existed in seventeenth-century documents for the tidewater region. The Orphans' Court Valuations are descriptive inventories of real property made for the purpose of keeping an official eye on the estates of orphans which were entrusted to legal guardians.

Unlike many estate inventories which list moveable property for inheritances, the Orphans' Court Valuations provide information on the size, type, number and conditions of buildings, fencing and lands. Sometimes details of architecture are given and in many cases it is possible to roughly infer the spatial organization of the various buildings. Changes in a single farm through time are also possible to perceive because the court required periodic updates to make sure that the guardian was doing his

duty until the orphan reached majority.

In spite of the gap in time between the seventeenth century and the eighteenth- and early nineteenth-century dates of the Orphans' Court Valuations, these documents are of some use in this study because the counties of southern Maryland had not changed drastically during that time. They were still isolated rural areas with dispersed farmsteads devoted largely to the raising of tobacco. The outline in Fig. 30 notes the types of farm buildings, land uses, and fences recorded in the Orphans' Court Valuations. Most of these can be documented as existing in the tidewater region during the seventeenth century and their presence provides a vocabulary for analysis and an indication of the variety of homelot features and activities in the Chesapeake region prior to the advent of mechanized agriculture.

Features in the Homelot

Domestic Outbuildings

Domestic outbuildings found on seventeenth-century plantations in the Chesapeake region include servants' quarters, kitchens and dairies or butteries.

Two Maryland references mention quarters for tenants or servants. One in 1663 simply lists "two quarters" (Archives 44: 57), and another in 1674/75 mentions "houses" at the east end of an orchard (Archives 65: 507). Reps' book on tidewater settlement patterns includes a description of a Virginia plantation in 1686 which refers to three quarters in addition to the main dwelling house (1972: 60-62).

Attached kitchens were quite common on the larger plantations of the

seventeenth century tidewater. Reps includes a kitchen in his reference to a 1686 Virginia plantation (1972: 60-62). Dairies and butteries are occasionally mentioned as elements of the homelot (Rutman 1967: 33). The term "Milke house" is also used (Archives 69: 139). No dimensions or details are given for these structures other than a note that one Captain Matthewes in Virginia had "a brave Dairy" as part of his plantation (Anonymous 1649).

Other Outbuildings

Other agricultural outbuildings on early Chesapeake homelots include cornhouses, "stores", and a "wain house" (Archives 60: 251-54; Ejectments SMC, 1727). The first two are simply mentioned and no dimensions or other details are noted. The "wain" or wagon house is listed as being 20 ft. long (CCC&L V#1: 363). Barley (1967: 744) mentions hovels and helms for storage in seventeenth-century England. These are described simply as covered structures with raised floors. Seebohm (1927: 244) describes English storage hovels as having four or six support posts 3 ft. high with a framework on top to keep stored crops off the ground. The whole structure was covered with thatch. Seebohm (p. 244) also mentions a cartshed on the farm of Henry Best, an early seventeenth-century English agriculturalist.

One Maryland reference of 1672 notes a shed attached to a dwelling (Archives 51: 71-72), and Rutman (1967) mentions lean-tos projecting from the rear of houses as common in seventeenth-century Plymouth (p. 30). Other references simply note "outhouses", "outbuildings" and "appurtenances" without specifying form or function (Rutman 1967: 24; Archives 65: 507).

Industrial

The term industrial may be misleading in this context because what little industry that existed on seventeenth-century tidewater plantations was primarily to supply the needs of the plantation itself rather than a commercial venture. Only the larger, more prosperous plantations had industries of any real sort. William Berkeley's "Green Spring" plantation had a bakehouse, a blacksmith shop and pottery kilns (Hudson n.d.: 2). Captain Matthewes, another wealthy Virginia planter, had spinning and weaving operations, and a tannery and shoemaking shop (Anonymous 1649).

A Maryland document of 1674/75 mentions a landing at "Bushwood" plantation used for transferring merchandise and tobacco between shop and shore (Archives 65: 507). Rutman (1967: 33) mentions slaughterhouses as being components of seventeenth-century Plymouth farms. Seebohm (1927: 244) refers to malthouses and kilns in England.

Tobacco Houses

Tobacco houses were not strictly parts of seventeenth-century Chesapeake homelots. Functionally they belong with the field crops and field fencing rather than with the gardens, yards, outbuildings and orchards surrounding the dwelling house. However, they must be considered in a discussion of homelot organization because archaeological evidence indicates that they often were constructed quite close to the plantation dwelling house and were an integral part of the homelot layout, if not of the homelot activities (William P. Doepkens 1976: personal communication; Kelso 1974: Fig. 6).

Tobacco houses are by far the most frequently mentioned outbuildings

in the colonial records. Unfortunately most are simply passing references and give few details of tobacco house architecture and organization. Several references do, however, give dimensions and it is apparent that the sizes of tobacco houses followed rough standards. A brief look through the Archives of Maryland and the Charles County Court and Land records for the seventeenth century indicates that tobacco house length was generally in some multiple of 10 ft., the smallest recorded being 30 ft. (CCC&L Y#1: 143). The majority seem to have been either 40, 50 or 60 ft. in length. The width is recorded less frequently. One tobacco house is listed as being 20 ft. wide; three are noted as being 22 ft. wide, and two others are recorded at 32 ft. in width. The 20 ft. wide tobacco house was 40 ft. long. Two of the 22 ft. structures were 50 ft. long, and one was 30 ft. in length. Of the two 32 ft. tobacco houses, one was 90 ft. long and the other 100 ft. in length.

There are even fewer references to building materials. One document of 1677/78 refers to frames and boards for covering and weatherboarding a tobacco house (CCC&L G#1: 146-147). The only roofing material mentioned is thatch, as in a 1679/80 reference to obtaining "seidge to cover ye tobaccoe houses" (CCC&L N#1: 259).

Barns

The second large agricultural outbuilding which was associated with seventeenth-century Chesapeake homelots was the barn for housing livestock. Only one seventeenth-century reference to barns in the Chesapeake tidewater was found. This dates to 1700 and describes "one Good thirty foot house twenty foot wide well lofted with sufficient Racks and Mangers"

(CCC&L E#1: 100). Another good description of a seventeenth-century barn comes from England. Seebohm (1927: 243) describes Henry Best's barn at Elmswell in 1607 as having a timber framework 126 ft. by 33 ft. with wattle and daub walls. This barn was 27 ft. from ground to ridge and had interior supports at 18 ft. intervals. The roof was thatch and the floor was made of puddled earth. Large folding wagon doors completed this structure. Barley (1967: 744) states that the Medieval tradition of building barns with central aisles continued in the seventeenth century. Other references to barns are simply passing mentions of their existence as integral parts of the homelot.

Stables

Only two references to stables were found from the seventeenth-century Chesapeake tidewater. One document from Maryland in 1674/75 mentions a stable behind a garden (Archives 65: 507). Reps (1972) lists another as a component of a Westmoreland County, Virginia plantation in 1686 (p. 60-62). Singer's agricultural guide (1812) states that the stable should be located near the house and the hay yard (p. 92).

Animal Shelters & Pens

Several other types of outbuildings were constructed as elements of homelots on the seventeenth-century Chesapeake frontier. Shelters for various types of animals are mentioned in documents of the period, the main ones being hog houses and hen houses. No references give dimensions for hog houses except for one reference in 1669 to a 40 ft. tobacco house which was later used as a hog house (Archives 60: 353-54). Closely

associated with hog houses were hog pens. An English reference of the early seventeenth century refers to "paylinge the swyne sty with sawen ashe payles" (Best 1357: 153). Rutman (1967: 36) lists the pig pen as an element of the Plymouth homelot in the seventeenth century, and Singer's guide (1812) notes that the "piggery" should be located near the kitchen and have access to a special yard or pen (p. 92). Seebohm (1927: 252) notes that pigs were useful for keeping the yards clear of garbage.

Chickens were an important part of the domestic fauna of seventeenth-century homelots in the Chesapeake region. Numerous documents refer to hen houses and several give their size as 10 ft. square (Archives 60: 353-54; Archives 51: 71-72). Seebohm (1927: 255) mentions an English henhouse with latticed windows and states that they generally were located near the kitchen. He also mentions pens for fattening geese, dove houses and quail houses in English barnyards of the seventeenth century (pp. 256-57). Reps (1972: 60-62) refers to a "dovecot", in a 1686 description of a plantation in Westmoreland County, Virginia.

No references to cow houses were found for the seventeenth-century Chesapeake region, but mentions of cowpens do appear in the documents (Archives 10: 508; Archives 65: 507). Rutman (1967) refers to cowsheds and cattleyards (p. 36) in seventeenth-century Plymouth. Singer's agricultural guidebook (1812) states that the cowhouse should be adjacent to a hay yard and near the calf house which should open on a grassy yard (p. 92).

Fences

Fences are one of the primary ways in which people visually demarcate

the exterior space around them. Spatial marking by visual means sets boundaries which are easily recognized by other members of the same species and tends to be less ambiguous than auditory or olifactory means of spatial marking (Simonds 1974: 66). Fences are elements of material culture which involve the conscious manipulation of space to facilitate ecological and social goals (Leone 1973: 149). They create functional divisions of space or human activity areas. They also create econiches by separating competing domestic species from one another and from wild or feral organisms. In many circumstances, the use of fences enables an individual or group to occupy land that would otherwise be uninhabitable (p. 144).

Different types of fences serve different purposes and may be divided into two general categories of inclusive and exclusive enclosures. Some fences are built to keep animals <u>in</u> an area, while others are built to keep them <u>out</u>. The diversity of fence types is amazing and is an example of the versatility of human technology and creativity in coping with the environment (Meredith 1951).

The development of laws pertaining to fences in seventeenth-century Maryland is indicative of the prevailing attitudes of the colonists toward inclusive and exclusive enclosures. The evolution of these laws reflects the evolution and maturation of the cultural system on the seventeenth-century Chesapeake tidewater frontier.

The earliest fencing laws in Maryland were passed in 1640 (Archives 1: 96) and set the precedent that was to prevail for the rest of the century. Crop land was to be fenced in against free-roaming animals. Craven states that:

> All agricultural communities face a fundamental problem in the question of whether to fence in the crop or to fence in the

> livestock. Since the latter solution calls for a heavy investment of time and labor to provide feed or to fence an area large enough to permit stock to feed itself, it is not surprising that under conditions existing in early Virginia and Maryland the colonists elected, as men of a later generation put it, to 'fence in the crop and put out the stock'. (Craven 1970: 212)

In 1654 the law was elaborated by the requirement that fences around corn crops must be $4\frac{1}{2}$ ft. high and strong and sufficient enough to deter cattle, pigs and horses (Archives 1: 344). This set of requirements is best summed up in the old axiom that a good fence must be "pig-tight, horse-high, and bull strong". In 1661 the law was changed to require a fence to be 5 ft. high around corn fields (Archives 1: 413). This increase in required height may have been the result of an increasing population of horses in the colony which were able to jump over lower fences or lean over them to graze. The 5 ft. high fence law continued throughout the rest of the seventeenth century and was renewed in 1692 and 1699 (Archives 12: 487; Archives 22: 477). The records state that the most common cause of complaint concerning fences at this time was "the intollerable number of horses and mares that are usually suffered to run at Liberty in the Woods and other places thereby going so wild that they are not only prejudiciall to most of the neighborhood but also are of little or no use to their Owners" (Archives 22: 477). In 1704 the law was modified slightly so that between May and November of each year, the primary crop season, all horses were required to be kept in fenced enclosures to prevent crop damage by free-roaming animals (Archives 26: 309). This final law of the period indicates the beginning of a shift toward inclusive fencing where animals were to be kept within fenced enclosures. This is a manifestation of the trend toward a more formally structured environment which seems to

be characteristic of a frontier society that is maturing.

Fences in the seventeenth century were built in a variety of ways depending upon their function and the materials available. Written documents provide a few details of fence building in this period and the genre paintings of seventeenth century Holland provide some graphic details about fencing.

Several types of fences may be defined on the basis of ethnographic sources for the seventeenth century. These definitions are taken from Webster's Seventh New Collegiate Dictionary (1971). The four major types are:

1) wattle - "a fabrication of poles interwoven with slender branches, withes, or reeds and used esp. formerly in building" (p. 1008).
2) paling - "a fence of pales or pickets" (p. 606).
3) railing - "a barrier consisting of a rail and supports" (p. 707).
4) palisade - "a fence of stakes esp. for defense" (p. 606).

Wattle Fences

Wattle or brush fences were known in Europe during the seventeenth century. Fitzherbert (1882: 79) describes the process of making such a fence in detail. He suggests that heart-of-oak stakes are best and directs that they be cut with pointed tips and driven into hard soil at intervals of no more than two and a half feet. Brush "ethers" are then woven between the stakes and the stakes driven again to set them firmly in the ground. Finally, the top is tightly bound. Such fences are pictured in various Dutch genre paintings of the period (Nash 1972: pl. 1, pl. 171,

pl. 126), but these show no details not included in Fitzherbert's description. Kerridge (1973: caption pl. 28) describes wattle fences in seventeenth-century England and mentions their use for containing flocks of sheep. A wattle fence also appears in a woodcut by Mattioli dated 1598 (Fussell 1965: 96). This fence sprouts from the corner of an unidentified farm building.

No references to wattle fences were found in seventeenth-century Chesapeake tidewater documents, but these fences are mentioned in later documents from this region. A document from St. Mary's County refers to a "bresh fence" in 1751 (Ejectments SMC, 1751). Philip Fithian described the building of such a fence at "Nomini Hall", Robert Carter's plantation in Westmoreland County, Virginia in 1774. His journal entry for March 7, 1774 reads: "I walked to see the Negroes make a fence; they drive into the Ground chestnut stakes about two feet apart in a strait Row, & then twist in the Boughs of Savin which grows in great plenty here" (Fithian 1957: 74). Savin was probably Eastern red cedar, Juniperus virginiana (p. 74).

A brief reference in an 1804 estate valuation in St. Mary's County, Maryland mentions "one small garden enclosed with brush" (SMC Annual Valuations and Indentures 1780-1808: f. 176).

A final Chesapeake tidewater reference appears in 1864 and describes "a wattling fence, with posts driven in the ground about every three feet and cedar branches woven like a basket" (Mettam 1972: 8).

Peter Kalm referred to the use of wattle construction for outbuildings and sheds in England in 1748, but no documents mention their use in the Chesapeake region (Kalm 1892: 144-5).

Palings

The second type of fence used during the seventeenth century on the Chesapeake tidewater frontier was the post and rail fence either with or without paling or clapboarding. Several Dutch paintings illustrate this type of fence and attest to its variability. Hendrick Avercamp's A Winter Scene with Skaters near a Castle painted around 1609 (Nash 1972: pl. 1) shows a fence constructed of posts spaced at odd intervals ranging from about one to three feet with a single rail fastened to the side of the posts about one-third of the way down from the top. Aert Van der Neer's painting A Landscape with a River at Evening dated c.1650 (pl. 92) illustrates a fence consisting of slender posts and two rails with reeds or brush filling the space between the rails like matting. This fence also has a gate made from seemingly heavier wooden members and having no matting. Jan Van der Heyden painted a fence composed of fairly closely spaced pickets with two rails in his work entitled The Approach to the Town of Veere dated about 1665 (pl. 102). Landscape with Huntsmen painted in 1666 by Jan Wynants (pl. 171) shows a fence made of vertical posts and two horizontal planks set in conjunction with a wattle fence. The posts appear to be squared and the rough, wide planks are nailed to them. The fence seems to be in a romantically exaggerated state of rustic disrepair.

English engravings of the seventeenth century, principally those of Wenceslaws Hollar, show fences of the post and rail type. Hollar's View of Islington done in 1665 (Van Eerde 1970: p. 80) shows a strong fence made of heavy posts set in the ground three or four feet apart and connected near the top with a single heavy rail. Another of Hollar's works (Urzidil 1936: pl. 20) shows a fence constructed of posts and a single

rail about a third of the way down from the top with wide vertical boards fastened to the rail so that no space remains between them. The bottom of this fence is not clearly shown and the ends of the clapboards could rest either in a narrow ditch or in a wooden ground sill.

English author Henry Best (1857) referred to "paylinge the swyne stye with sawen ashe payles" (p. 153) in 1641 and divided the task of paling a yard into four easy steps:

1) saw rails and posts
2) set them in a groundsill
3) rabbitt them to rail above
4) pale the yard

(p. 153)

References to paling fences appear quite early in the documents of seventeenth-century Maryland. Thomas Cornwallis, the wealthiest man in early Maryland, had a house surrounded by pales in 1644/45 (Archives 10: 353-54). Other seventeenth-century Maryland documents mention "garden pailes" in 1651 (Archives 10: 157), and a "pall fence" around several graves in 1663 (Archives 53: 372). This type of fence also occurred in Plymouth, Mass., where seventeenth-century letter writers mention clapboard gardens behind houses and courtyards before (James 1963: 76).

Later references to this type of fencing include the description given in 1788 by Jean Pierre Brissot during his visit to Massachusetts. There he observed several kinds of fences including those made "of long pieces of hewn timber supported at the ends by passing into holes made in an upright post" (quoted in Handlin 1964: 78).

A final mention should be made of similar fencing observed archaeologically at the site of a nineteenth-century Hudson's Bay Store in Saskatchewan: "The fence appears to have been made of small sapling pickets set in a trench approximately one foot wide and one foot deep. Small

posts of two inches in diameter were spaced every four feet with closely spaced pickets of one inch diameter set in between " (Perry 1972: 18-19).

Palisades

Two seventeenth-century documents refer to "Pallisades" and "Pallisadoes" seeming to imply a heavier type of fencing perhaps more closely associated with defensive fortification than domestic or agricultural needs (Archives 41: 500; Kammen 1975: 38-39).

Worm Fences

The final type of fencing to be considered for the Chesapeake tidewater frontier is the worm or rail fence. This type of fence seems to have been a seventeenth-century American frontier innovation as it does not appear in European references, either written or graphic. Bruce (1935: 316) states that rail fences were being built in Virginia by the mid-1620's and cites a Virginia General Court order of 1626 requiring that people "rail, pale, or fence" their tilled land to keep cattle out. Craven (1970) discusses the importance of worm fences in the seventeenth-century Chesapeake frontier. He says that "whatever inclination may have existed at first to follow traditional methods of fencing, there was an early trend toward a common use of the rail fence that would lend to the American farm one of its distinctive marks for generations to come" (p. 213).

Many variations in worm fence construction techniques have been documented and many can still be seen in some parts of the U. S. The most common variant in the Chesapeake region seems to have been the stake and rider worm fence. Tatham describes the method of building such a fence in

graphic detail:

> The worm or pannel fence, originally of Virginia, consists of logs or malled rails from about four to six or eight inches thick, and eleven feet in length. A good fence consists of ten rails and a rider, or perhaps nine rails and two riders; and the law requires a fence to be maintained good of a certain regulated height, before a proprietor can be justified in distraining cattle, damage feasant, or support an action of trespass. It is called a worm fence from the zigzag manner of its construction, which is as follows: The lowest rail is laid upon the ground, then one end is raised up and a similar rail placed under it in an oblique direction; another rail is alternately added in succession in the same way, until the length of fence required is described; the ends of each rail being suffered to overlap each other about a foot; and these corners of the fence are generally raised upon a stone or short block, to save them from decay.
>
> The worm (as it is called) being thus laid, the same process is repeated until the fence rises to the height of nine or ten rails; two stakes (somewhat shorter than the rails will do) are then brought to each corner or intersecting angle of the rails which compose the fence, and one end of each being let into the ground with a hoe or mattock on each side of the fence, the other ends are suffered to lean against it, forming a crotch or cross over the interlapping corner: into this cross one or more courses of heavy rails are laid (termed riders), which serve to lock and keep the whole partition secure. It is in allusion to this zigzag foundation that a drunken man is said to be laying out Virginia fences.
> (Tatham 1969: 10-11)

The worm fence reflected the conditions of the Chesapeake frontier environment. It made copious and even wasteful use of land and wood; the two cheapest and most abundant resources. It required little skill in construction and was easy to move as tobacco fields wore out and new land was cleared. Raup (1947) refers to this frontier aspect of rail fencing in saying that "it is possible that when the snake or worm fence is still in evidence as part of the farm landscape, it is empirical evidence of the presence of a relic frontier condition" (pp. 3-4).

Several seventeenth-century Maryland documents refer to aspects of rail fence building such as "splitting a cutt of rayles" (Archives 41: 27)

and "cutting and malling two thousand good sufficient fencing logs fourteen feet long" (Archives 65: 253-54).

The Rev. John Clayton (1968: 425) noted that worm fences in Virginia in 1687 were built to a legal height of eight rails using rails of "cloven timber about 9 foot long" (p. 425). Clayton also noted the use of "great timber trees at the bottom of the fences all around the field so that piggs may not creep into it" (p. 425).

The use of worm fences has continued in the Chesapeake region down to the present day. Two references in 1801 mention a "stake & rider fence average 8 rails" (SMC Annual Valuations and Indentures 1780-1808, f. 106), and "pennels of stake & rider fence average 8 rails" (SMC Annual Valuations and Indentures 1780-1808, f. 104). Such fences also were built in New England where Jean Pierre Brissot described them in 1788 as being made "of long pieces of wood, supporting each other by making angles at the end" (Brissot 1964: 78).

Ditches

Ditches and trenches have long been elements of fencing and property demarcation. A Maryland document refers to the building of a fence in 1758 using a ditch and rails. It reads: "The Deponant Asked the Said Maddox what he cut the Ditch for and Maddox Told him it was in Order to Save Rales. . . . . and after the Said Ditch was Cut the fence was moved upon it " (Ejectments SMC, 1774). Another reference in 1804 mentions that an entire piece of land was "enclosed with a ditch" (SMC Annual Valuations and Indentures 1780-1808). Fitzherbert (1882) indicates standard dimensions for ditches in seventeenth-century England. He states that a 4 ft.

wide ditch should be 2½ ft. deep; a 5 ft. wide ditch should be 3 ft. deep, and so forth (p. 79). In the eighteenth century ditches were used as elements of landscape architecture to create barriers to livestock in places where fences would obstruct long open vistas. These were known as Ha-Has (Meredith 1951: 123). A brief reference to a ditch for a picket fence comes from a nineteenth-century Hudson's Bay Store site in Saskatchewan. This ditch was excavated archaeologically and was "approximately one foot wide and one foot deep" (Perry 1972: 18-19).

Pathways and Walkways

Very few references to homelot pathways and walkways exist for the seventeenth-century Chesapeake tidewater. Official documents of colonial Maryland record two remarks dating from the second half of the seventeenth century which contain references to paths or "alleys" leading from landings to dwellings (Archives 65: 507; Archives 52: 28), and a third reference to a common path separating two adjacent plantations (CCC&L B#1: 150-54). The only reference to possible paving appears in a court case involving a man "beating (a woman's) head against the oyster shells" (Archives 10: 400). It is unclear whether the oyster shells were paving for a walkway or constituted a kitchen midden. Gravel walks are referred to on William Byrd II's Virginia Estate in 1738 (Marambaud 1971: 158), but this is considerably later than the time under consideration in this paper.

Gardens

Gardens in the Chesapeake tidewater region were among the most important elements of the homelot. More information is available concerning

the gardens in New England than those in the tidewater, but the data suggest that gardens in both areas were similar. Ann Leighton (1970: 162-66) states that the early colonial gardens in New England generally were not in the tradition of ornate, formal English gardens. Instead, they were functional areas organized to provide both vegetables for the table and a degree of aesthetic nicety. They were located close to the dwelling and were fenced to prevent the loss of plants to free-roaming livestock, both wild and domestic. James (1963: 76) quotes letters from visitors to seventeenth-century Plymouth which mention clapboard gardens behind houses and courtyards before. Favretti (1974: 12-45) lists an extensive variety of plant material grown in colonial New England gardens and specifies which ones are known to have been grown during the seventeenth century. Rutman (1967) lists garden plants in Plymouth including garden peas, cabbages, radishes, carrots, garlic, onions, leeks, melons, artichokes, herbs, and skirret (p. 7). Primary documents provide information on the garden plants grown in the seventeenth-century Chesapeake tidewater, especially on the larger more prosperous plantations. William Berkeley's "Green Spring" plantation garden is known to have been located near the main house and contained potatoes, asparagus, carrots, turnips, onions, artichokes, peas, and beans (Hudson n.d.: 4-6). References to William Byrd I's garden mention Savoy cabbage, gooseberries, currants, and flowers such as Iris, Crocus, Tulips and Anemones, all imported from England (Durand 1934: 115; Byrd 1848: 114-116; 1916: 35).

Speaking more generally of the gardens of Virginia in 1686, Durand (1934: 115) lists peas, beans, sweet potatoes, and turnips as being grown. A single reference in the Archives of Maryland (Archives 10: 508) mentions

strawberries in passing but it is unclear whether these were cultivated or wild.

Several references note the structure of gardens in the seventeenth-century Chesapeake tidewater. Durand (1934: 115) simply notes that the Virginia gardens were similar to those in Europe. Fox (1963: 72-73) describes an English garden of this period as having raised beds with narrow alleys between beds. These beds are reminiscent of the kind of beds used today for starting tobacco seedlings. The size of gardens during the seventeenth century is not well-documented. Rutman (1967: 36) suggests that those in Plymouth were between a quarter and a half acre in size. Documents from St. Mary's County in 1801 list one garden as being "80 feet square" and another as "70 by 56 feet" suggesting a somewhat smaller size (SMC Annual Valuations and Indentures, f. 106).

Little is known about the factors influencing the layout and organization of seventeenth-century gardens. Seebohm (1927) refers to a seventeenth-century agricultural treatise which advises that the homelot be arranged so that the house overlooks the flower garden rather than the farmyard (p. 243), and that flowers and vegetables be grown separately (p. 271). A similar recommendation appears in a later agricultural guide (Singer 1812: 92). It is uncertain how far such advice was followed on the Chesapeake frontier in the seventeenth century.

Orchards

Orchards were common features on seventeenth-century Chesapeake plantations. They are referred to frequently and often seem to have been planted adjacent or close to the homelot. The exceptionally elaborate

plantation built by Virginia Governor William Berkeley at "Green Spring" is reported to have had an orchard of fifteen hundred fruit trees, including apples, pears, cherries, apricots, peaches, quinces, Wardens (winter pears), and Mellicotons (grafts of quinces on peach stocks) (Hudson n.d.: 2). Apple trees are by far the most frequently mentioned fruit trees. Few references indicate the size of orchards. One in Maryland in 1677 had about one hundred and fifty trees (CCC&L H#1: 71-72) and another in 1681 consisted of one hundred apple trees (Archives 70: 87).

Vinyards, Nurseries, and Greenhouses

Vinyards also appear in the historical documents though they seem to have been limited mostly to the larger plantations (Hudson, n.d.: 4). Also on the grounds of the wealthy were nurseries and greenhouses. William Berkeley's "Green Springs" had a nursery with orange, lemon, and lime trees. (Hudson, n.d.: 4). In the eighteenth century William Byrd II's "Westover" had "a little greenhouse with two or three orange trees with fruit on them" (Marambaud 1971: 158).

Barnyard

Rutman (1967: 36) refers to the barnyard vaguely as the area immediately surrounding the barn. Singer's agricultural guide (1812) recommends that the stockyard should be contiguous with the barn for easy access and should be cleared of trees and hedges (p. 93). He further advises that stockyards be located on dry soil to reduce the quantity of mud in the barnyard (p. 89).

Crops & Animals

Tobacco, the money crop of the seventeenth-century Chesapeake tidewater tends to overshadow the other crops grown, but documentary references demonstrate the diversity of crops grown on at least some tidewater plantations. Field crops included hemp, flax, indigo, wheat, barley, rye, rice, corn, beans, peas, mulberries, and grapes in addition to the ubiquitous tobacco (Hudson, n.d.: 4; Anonymous 1649; Durand 1934: 115). Many of these crops were minor and some little more than agricultural experiments, but a listing is useful in pointing out the fact that the Chesapeake colonists were virtually self-sufficient with regard to foodstuffs from a very early date.

A similar diversity appears in an examination of references to livestock on seventeenth-century Chesapeake plantations. Cattle, oxen, horses, goats, sheep, swine, chickens, turkeys, capons, ducks, geese, doves, and bees--all were kept on various tidewater plantations during the seventeenth century (Hudson, n.d.: 5; Reps 1972: 60-62). Of these, cattle, swine, sheep, and chickens seem to have been the most common domestic animals.

General Landscape Description

An interesting description of the rawness and desolation of a frontier plantation appears in an account by Sir Henrye Colt of his visit to Barbados in 1631. He describes the landscape and the plantations by saying that

> . . . in. 10. dayes trauayle about them, I neuer saw any man at work. Your grownd & plantations shewes whatt you are, they lye like y^{e} ruines of some village lately burned,--heer a great timber tree half burned, in an other place a rafter singed all black. Ther stands a stubb of a tree aboue two

> yeards high, all y^{e} earth couered black wth cenders nothinge is cleer. What digged or weeded for beautye? All are bushes, & long grasse, all thinges carryinge y^{e} face of a desolate & disorderly shew to y^{e} beholder.
>
> (Colt 1925: 66-67)

This commentary is, of course, about the West Indies, but the scene may not be so far removed from the appearance of the Chesapeake settlements in their early stages.

Homelot Descriptions

Several seventeenth-century documents give descriptions of complete homelots in the Chesapeake tidewater region. These vary in comprehensivness and detail, but provide a good impression of the kinds of structures and activity areas found on seventeenth-century Chesapeake plantations.

In 1649, Captain Matthews' Virginia plantation was described as follows:

> He hath a fine house, and all things answerable to it; he sowes yeerly store of Hempe and Flax, and causes it to be spun; he keeps Weavers, and hath a Tan-house, causes Leather to be dressed, hath eight Shoemakers employed in their trade, hath forty Negroe servants, brings them up to Trades in his house: He yeerly sowes abundance of Wheat, Barley, &c. The Wheat he selleth at four shillings the bushell; kills store of Beeves, and sells them to victuall the ships when they come thither: hath abundance of Kine, a brave Dairy, Swine great store, and Poltery.
>
> (Anonymous 1649)

Reps (1972) quotes a 1686 description of a 1000 acre plantation in Westmoreland County, Virginia as having:

> . . . three quarters well furnished with all necessary houses, grounds and fencing, together with a choice crew of negroes at each plantation . . . there being twenty-nine in all with stocks of cattle and hogs in each quarter. Upon the same land is my own dwelling house . . . and all houses for use furnished, with brick chimneys, four good cellars, a dairy, dove cot, stable, barn, henhouse, kitchen and all other conveniences . . .
>
> (p. 62)

Reps notes that this was a very large plantation for the period and states that few Maryland plantations of the seventeenth century exceeded 250 acres; the modal size being 50-150 acres (Reps, 1972: p. 60).

A Maryland document dated 1663 describes a plantation in St. Mary's County as having "three Messuages, two tobacco houses, two quarters, one store, one henhouse, one orchard, (and) one garden . . ." (Archives 49: 57).

Brief descriptions of two plantations in Dorchester County, Maryland appear in a 1672 document. One consisted of a 25 ft. dwelling with a shed, four 40 ft. tobacco houses, and a 10 ft. henhouse. The second had a 50 ft. dwelling, a 50 ft. tobacco house, and a 10 ft. henhouse (Archives 51: 71-72).

In 1679, the estate of the deceased William Drury of Anne Arundel County, Maryland comprised fifty acres with two tobacco houses, one old dwelling and "worthless" fencing plus a few apple trees and a small hog house. The entire estate was considered to be worth 150 lbs. of tobacco a year rent (Archives 51: 300-30).

Another Maryland plantation described in 1679/80 consisted of one dwelling house, two tobacco houses, one "Milke house", one hog house, one hen house, a nursery and orchard, a planted cornfield, tobacco ground and enough fenced land for three workers (Archives 69: 139).

A lengthy and detailed description of "Bushwood" plantation in St. Mary's County, Maryland appears in a 1674/75 document. It reads:

> . . . That the said John Coode and Susanna his wife & their Assignes shall from hence forth haue hold & peaceably Enjoy in severalty to them & their Assignes for & during the Terme of the naturall life of her the said Susanna for & in lieu of their Moiety or halfe parte of the Plantacon trace of land & prmisses aforesaid the ancient dwelling house with

> the houses & Appurtennces thereunto belonging standing att the East end of the Orchard of the said Plantacon, the Stable standing att the back of the Garden Payles only Excepted, And that the said John Coode & Susanna his wife in right of her the said Susanna shall haue all that peece or tract of land belonging to the Plantacon of Bushwood that lyes vpon the right hand of the path coming from the landing to the Orchard fence on the Westward of the said Orchard And all that parte of land belonging to the prmisses aforesaid that is on the right hand of the Swamp nexte adjoyning to the said Orchard on the South & from the head of the said Swamp within the Said Orchard to the West Cowpen-gate, thence the direct road or path now used going round the land along to Bramly race-house then due East into the Woods soe farre as the said Plantation reacheth and further itt is Agreed That the said John Coode & Susanna his Wife in right of her the said Susanna during her naturall life as aforesaid shall haue all that parte of the Orchard belonging to the said Plantacon with the Appurtennces that lies on the Eastward of a line drawne from the Orchard fence on the North close by the East side of the store directly through the Swamp to the fence on the South side of the said Orchard . . .
> (Archives 65: 507)

Rutman (1967) gives a good composite description of seventeenth-century farms around Plymouth, Massachusetts which is useful for comparison with the contemporary plantations of the Chesapeake tidewater. He describes a homelot consisting of barns and outbuildings clustered around the dwelling. Several kinds of outbuildings and yards are mentioned. A dairy, cowshed, slaughterhouse, and chicken coop provided shelter for livestock and specialized activities. A barnyard, cattleyard, garden, orchard and fields complete the picture (p. 35-36).

A final farm description containing useful insight into farm layout is from a survey of agriculture in Dumfries County, Scotland (Singer 1812). The author had set ideas of how farms should be laid out and found the older ones of Dumfries County severely lacking in proper arrangement.

> The old plans are scarcely worth mentioning, very few of them being well arranged. Some buildings have been put up to suit others which had been erected before, without any general plan having been so much as formed; and others, through ill-judging

> avarice or parsimony; one little better than rikles of dry stone. It is very common to see a stock-yard incommoded with trees and hedges, or placed in damp soil; while the dung-hill is as frequently a nuisance to the dwelling-house; or emits its most fertilising juices into the highway.
>
> (p. 89)

Singer advocated a square form for the homelot. He states that: "The farm house is often placed in the square, on the south side, and the sheds on the north, to admit the sun; but unless a wall and space intervene betwixt the farm house and the farm-yards, inconvenience and nuisance must be the consequence " (p. 90) .

Conclusions

The references to and descriptions of homelot structural elements such as fences, buildings, and activity areas provide a valuable source of information concerning homelot organization and use. These documentary data can be used as historical analogues for interpreting archaeological features and for shedding light on those aspects of the homelot which have not survived in the archaeological record. The documents supplement and complement the archaeological data and provide a good opportunity for integrating these two information sources into a more complete whole than either could yield alone.

CHAPTER V - COMPARATIVE ARCHAEOLOGICAL DATA

Introduction

The descriptions of various archaeological sites in the Chesapeake tidewater region provide a data base for comparisons with St. John's. Each of these sites was occupied during the seventeenth century and, with the exception of one possible warehouse and trading post, all were individual residences. Some of these dwellings seem to have been tenant or servant quarters while others were the main houses for plantations. Each site is briefly described as to its situation on the landscape and its structural and functional layout. Features in the yard, fences and enclosures have been described in more detail than architectural remains, because they are the structural framework for the human activity areas of the homelot. Comparisons between these sites, St. John's and the homelot features and activities mentioned in documents will be made in the concluding chapter of this paper.

The Sites

Flowerdew Enclosed Settlement

The enclosed settlement at Flowerdew Hundred Plantation (Fig. 31) was built between 1617 and 1619 and lasted until about 1640. The site consists of the foundations of three post-supported structures within a palisaded enclosure. The enclosure seems to have been a substantial wattle fence set in a ditch averaging 9 in. wide and 6 in. deep into subsoil.

(Barka 1976: personal communication) The excavation of this ditch is incomplete, but there is some suggestion of a bastion-like structure at the southeast corner of the enclosure and a wall-walk all around the inside of the fence. The unexcavated features at the northeast corner of the enclosure may represent some sort of pier structure leading to a dock or wharf extending out into the river. Within this enclosed area is evidence of several spatial divisions demarcated by wattle fences or planted hedgerows. A well was dug inside the enclosure. The site yielded large quantities of military hardware, perhaps indicating a role as a trading post or warehouse facility rather than a purely domestic plantation.

The site is located along the south bank of the James River and the long axes of the enclosure and the structures within it are parallel with the river which flows roughly from southwest to northeast at this point. The site is very close to the river and part of the enclosure has already eroded away. The functional orientation of this fortified settlement seems to be toward the river, lending further support to its interpretation as a trading post or warehouse and docking facility rather than a purely domestic plantation.

Maine Site

The Maine site (Fig. 32) is being excavated and analyzed by the Virginia Research Center for Archaeology under the direction of Alain Outlaw who has generously provided the information used in this homelot description (Outlaw 1977: personal communication). The Maine site dates between c.1617 and c.1630. The site is located on a flat area of land about 1000 feet from the fairly steep north bank of the James River. The

source of water for the occupants of this site probably was a spring near the river bank. The Maine site consists of several small post-supported structures and several borrow pits and trash pits. No evidence of fencing was found, perhaps because the area has been deeply disturbed by modern plowing. The main structure measures about 16 ft. by 20 ft. and is aligned on a roughly northwest to southeast axis with three other small structures, one of which measures about 14 ft. by 16 ft. The outlines of the other two are unclear. About 40 ft. north of the main structure is another building measuring about 30 ft. by 25 ft. This structure is not aligned with the others and may be somewhat later in time. Near the main building are several large, rather amorphous, pits. The pits probably were dug to obtain clay for a daub chimney and then refilled with daub waste and domestic trash. Outlaw has postulated that the area around the main structure was primarily a domestic activity area because of the concentration of domestic artifacts in this area. He believes that the area around the smaller structures to the southeast was largely a storage area due to the lack of domestic debris and the presence of quantities of military hardware. Interestingly enough, Outlaw has discovered concentrations of colonial flintknapping debitage and lead shot casting debris on the river side of the main building. Such activity could be interpreted either as domestic or military in nature.

Pasbehegh Tenement

Outlaw has investigated a second structure about half-way between the James River and the Maine site itself. This structure is later than the Maine site and dates c.1635-50 (Fig. 33). The building is a post-supported

rectangle about 16 ft. by 20 ft. with a probable daub chimney on the northwest end. One borrow pit, filled with trash, is quite close to the chimney and another is near the east side of the structure. A single ditch was excavated near this structure and is believed to be associated. This ditch may be the remnant of a palisade fence, but the organic fill is puzzling and may represent a hedge instead. A small post-supported outbuilding about 10 ft. by 10 ft. is superimposed with the palisade/hedge. This structure and a small root cellar nearby may or may not be contemporary with the main house.

Stone House Foundation

This site within Flowerdew Hundred Plantation (Fig. 34) is unusual in that its stone foundation suggests a degree of architectural permanence rarely seen on the early seventeenth-century Chesapeake frontier. The site dates to the second quarter of the seventeenth century. The wooden frame of the house rested on support posts set into holes in the ground rather than resting on the stones themselves. The form of the house was a rectangle approximately 40 ft. by 24 ft. with a central H-shaped chimney offset toward the west end, dividing the structure into two rooms of unequal size. A small appendage on the north side may be a stair tower or some sort of small storage room. At the east end is an addition apparently built on ditch laid ground sills with support posts set in the corners. This room also has a fireplace in the southeast corner. (Barka 1976: Fig. 2)

Several fences begin at the corners of this house and extend out into the yard. Unfortunately, excavation of the yard area has not been completed and the extent and configuration of these fences is unknown.

Ditches, presumably for wattle fences, extend from the northwest corner of the house and comprise a small enclosure on the north side of the east side addition. A series of post holes at 10-11 ft. intervals extends from near the southeast corner of the house. This post and rail fence enclosed at least a part of the land side of the homelot while a palisade set at the top of the steep riverbank enclosed the homelot on the north side (Barka 1976: personal communication).

Other features at this site include a possible kiln for firing roofing tiles. This kiln is only about 40 ft. northeast of the house and is near the edge of the steep riverbank. Three colonial period burials were found about 50 ft. west of the main house.

The house is located a little more than 100 ft. from the present high tide line of the James River. The long axis of the structure lies parallel to the river which flows roughly from southwest to northeast. Little can be said about the functional orientation of the homelot. Not enough yard area has been excavated to indicate whether the river or the land side of the dwelling was used as the primary work area.

Kingsmill Tenement

The Kingsmill Tenement site (Fig. 35) was probably the home of a tenant or servant of Richard Kingsmill, a James River planter (Kelso 1974: 10). The site dates c.1620-1650 and consists of five post-supported structures shown in Kelso's Fig. 2 (1974).

Southwest of building number 2 and aligned with it is a post-supported structure measuring 30 ft. by 18 ft. This building is close enough to structure number 2 that they may have been connected. To the west of this

building are two additional structures which seem to be outbuildings. Kelso (1974) states that the "lack of any fireplace remains, either in the form of burned areas, foundations, or unusual post-hole spacings, suggests the buildings served a utilitarian function" (p. 9). The largest of these two structures measured 40 ft. by 20 ft. and may have been a barn or granary (p. 9). This building is approximately 90 ft. west of the houses. Kelso describes the unusual spacing of the support posts for this structure. He says that "the plan included twelve post-holes with a 10' spacing between the four central posts. These gaps may mark the locations of barn doorways or perhaps a passageway between two equal sized cribs " (p. 9). Just to the northeast of this barn-like structure is a post-supported building containing a series of pits which Kelso says were "perhaps dug for root or seed storage" (p. 9). Three large pits occur in the yard near the houses. These are circular in shape, measure from 4-8 ft. in diameter, and average 4 ft. in depth. They were filled with domestic refuse suggestive of the first half of the seventeenth century. Kelso hypothesized that "the pits may have originally served as exterior root or seed storage bins before becoming trash depositories" (p. 10).

The final features to consider at the Kingsmill Tenement site are a series of ditches which averaged 9 in. wide and were dug 6 in. into the subsoil. Kelso interprets them as "probably marking the location of barriers such as woven sapling fences or hedgerows setting apart the living area from domestic animals" (p. 10). Unfortunately, the complete extent of these enclosures could not be traced due to the limits of the excavation and the obliteration of several fence ditches through plowing (p. 10).

Littletown Quarter Site

Littletown Quarter site (Fig. 36) dates from the second quarter of the seventeenth century and probably was a tenant or servant quarter linked to a larger plantation (Kelso 1973: 7). Kelso's Fig. 2 (1973) shows a single structure supported by posts 11 in. square and measuring 41 ft. by 18 ft. The two southeast post-holes show signs of re-digging representing possible repair or replacement (p. 6). Within the structure was a rectangle of smaller posts measuring $12\frac{1}{2}$ ft. by $16\frac{1}{2}$ ft. The northeast post-hole in this series cuts through one of the main support post-holes, thereby post-dating it (p. 6). Kelso states that these smaller post-holes may represent either the supports for a wood and daub H-shaped central chimney, or else scaffolding for the erection of a central chimney (p. 6). Kelso's Fig. 2 (1973) indicates that the only other seventeenth-century feature on the site is an irregular trash pit measuring roughly 12 ft. by 8 ft. This pit was only 12 ft. from the southwest corner of the structure and possibly could be a clay borrow pit which was subsequently filled with trash. No well was found within 100 ft. of the structure. This may be because of a nearby ravine that might have harbored a spring (p. 6). No fence lines or outbuildings were discovered at Littletown Quarter in spite of extensive excavation.

Pettus Plantation

The Pettus Plantation site (Fig. 37) probably is the archaeological remnant of Littletown Plantation built by Col. Thomas Pettus during the mid-seventeenth century (Kelso 1973: 2). The site spans the period c.1640-1690 (Kelso 1976: personal communication). "The plantation plan, uncovered

by archaeology, included a main house with several additions . . ., three minor outbuildings, and a well, all assymetrically arranged 'around' a rear yard area " (Kelso 1973: 2). The site overlooks the James River from a spot near the water on the north shore. The main house was a post-supported structure measuring 50 ft. by 18 ft. with its long axis roughly parallel to the river. The 10 in. square support posts were set on 10 ft. centers. No evidence of a fireplace survives. The fill in the post-holes was relatively sterile indicating that this structure was built very early, perhaps first, in the history of the site. Ashes in the post-molds suggest that the structure burned (p. 2).

A post-supported addition was built perpendicular to the main house on the north side. It seems originally to have been built as a separate structure but was later connected to the main house. The 8 in. diameter support posts were set on approximately 10 ft. centers (p. 2). A 6 ft. by 12 ft. chimney was built at the north end of this structure. The post-holes for this building were also nearly sterile indicating an early construction date. Each of these post-holes shows evidence of at least one post replacement and the cultural material from these later post-holes indicates that these repairs took place during the second half of the seventeenth century (p. 3).

Adjacent to the west side of this structure was a small addition measuring $14\frac{1}{2}$ ft. by 10 ft., built on 9 in. diameter support posts on approximately 7-8 ft. centers. Between this and the second structure discussed above was "a brick feature with a recessed tile floor measuring 3 ft. 8 in. by 13 ft. 9 in." . . . The tile floor sloped slightly to the north toward a set of brick steps and a brick-lined sump or drain" (p. 3).

This brickwork covered part of the T-section post-holes, therefore it post-dates the T-section. The brick-lined sump or drain was filled c.1680-1700.

At the east end of the main house was another post-supported structure aligned perpendicular to the long axis of the main house and measuring 32 ft. by 22 ft. This structure "consisted of eight post-holes, an exterior, dry-laid brick chimney base on the south, and a 6 ft. deep cellar on the north" (p. 3). This cellar was shored up with brick and cuts through four of the post-holes for the structure, obliterating two of them. The cellar, therefore, was dug after the construction of the building (p. 4). A wine glass fragment dating from c.1620-50 was found in a builder's trench associated with this eastern structure. Therefore, this building was constructed early in the site's history and it is possible that it was built before the main house (p. 4). There is some suggestion of a light frame-built addition between this eastern structure and the main building, thus creating a very large house under one roof (p. 4).

Three outbuildings were built north of the east wing (pp. 4-5). The nearest was a post-supported structure 20 ft. by 17 ft. The posts were 10 in. in diameter. The second structure was 10 ft. by 10 ft. square with 8 in. diameter posts. Surrounding this structure was a ditch for either a drain or a wattle fence. This feature was open on the west side and closely resembles the enclosure at the southwest end of the main house at the Hallowes site described later in this paper. All around this small structure was a marl yard which leads Kelso to interpret the structure as a possible hen house. He notes that marl was "commonly used to supplement the diet of poultry" (p. 5). A third outbuilding occurs just to the east of this marl yard area. It was a small post-supported structure measuring

8 ft. by 9 ft. surrounding a 5½ ft. square brick box. The abundance of woodash and bone associated with this brickwork suggests to Kelso that the structure may have been a smokehouse (p. 5). All three outbuildings seem to have been built during the second half of the seventeenth century (p. 5).

The final feature at the Pettus site was a brick-lined well just to the northwest of the possible hen house (p. 5). Archifactual evidence suggests that this well was abandoned and filled around 1690, probably as the site was abandoned in favor of "the more elaborate plantation complex to the northwest, i.e., the Bray Plantation" (p. 5).

No fence lines were discovered at the Pettus site in spite of excavations outside the foundations of the structures. The orientation of the homelot is clearly aligned with the James River. The long axis of the main dwelling is roughly parallel with the river and the homelot appears to be divided between a front yard on the river side of the house, and a back yard on the land side. The outbuildings excavated at Pettus Plantation are all on the land side of the main house, suggesting some division between a work-oriented back yard and a more formal front yard. However, this may not be a true distinction since the excavation did not proceed much beyond the foundations of the buildings on the river side.

Utopia Cottage

Kelso (1974: 5) states that "it is possible . . . . that Utopia was the house of a tenant or slave . . ." The Utopia Cottage site (Fig. 38) is about a half mile east of the Pettus site and dates between c.1660-1710 (p. 4). The site plan (Kelso 1974: Fig. 1) shows the house itself as a simple post-supported dwelling measuring approximately 37 ft. by 18 ft.

with a brick cellar beneath the west end. A single post-supported outbuilding lies about 35 ft. to the northeast of the house and measures about 18 ft. by 12 ft.

A post and rail fence ran around the south and east sides of the house. This fence consisted of 6-9 in. diameter posts set on 10 ft. centers. Kelso states that "it is probable the fence line completely enclosed a 130 ft. by 40 ft. garden area; the north line obliterated by subsequent plowing" (p. 5). Just outside this fence line, the site plan (Kelso 1974: Fig. 1) indicates a ditch 1 ft. 8 in. wide which sloped toward the southwest and terminated in a 13 ft. by 15 ft. pit or basin. Kelso interprets this ditch and basin as a drainage system. He says that "the ditch was evidently used to drain the garden area while the pit may have been used to water stock" (p. 5). Artifacts indicate that the basin was filled between 1680 and 1710. Near this catch basin, but inside the fence, the site plan shows a well, filled with alternating strata of silt and trash (Kelso 1974: Fig. 1).

Hallowes Site

The Hallowes site (Fig. 39) is a late seventeenth-century habitation site in Westmoreland County, Virginia. It "occupies a low bluff at the mouth of Currioman Bay, a minor estuary on the south shore of the Potomac" (Buchannan and Heite 1971: 38). The excavation was carried out in 1968 and 1969 as a salvage effort by a volunteer crew working mostly on weekends and holidays. The site plan published by the excavators (Buchannan and Heite 1971: Fig. 2), shows a post-supported frame structure with an off-center H-shaped brick chimney. The authors state that this structure is

"approximately 50 ft. by 20 ft." (p. 41). There is a single intriguing post-hole/mold off the southeast corner of the 40 ft. structure. From the site plan (Buchannan and Heite 1971: Fig. 2) the post-mold appears to be very much the same as the support posts for the house. It is also 10 ft. away from the southeast corner post; this being the regular interval between each of the house's support posts. Unfortunately, this single feature is near the edge of the excavation and it is purely speculative to suggest that it might be part of an architectural addition or elaboration of the main rectangular structure.

The other features at the Hallowes site are interesting as remnants of homelot activity areas. The small enclosure at the southwest corner of the house is labeled by Buchannan and Heite as "the south wing" (p. 41) and interpreted as a possible buttery because "most of the domestic artifacts were found within it" (p. 41). This assymetrically squarish enclosure, approximately ten feet on a side was made of wattling set in a small ditch (p. 41). Buchannan and Heite suggest that the wattling was covered with a mud daub, but they do not mention any archaeological evidence of daub. Half of the side of this enclosure facing the house seems to have opened toward the main dwelling. Within this small enclosure is an "irregular pit" (p. 40) approximately 6 ft. by 8 ft. Unfortunately, Buchannan and Heite do not indicate the depth of this feature, but they do state that it "contained considerable trash" (p. 40). It seems most reasonable to interpret this enclosure and pit as a possible dairy attached to the main house. A similar structure appears on the late seventeenth-century Pettus Plantation at Kingsmill, Virginia, on the James River. This structure is discussed as part of the Pettus Plantation and has been

interpreted as a possible hen house (Kelso 1973: 5).

At the north end of the main structure is "a linear brown stain" (p. 41) which may be a remnant of a small shed or wing built on a ground-laid sill. This linear feature may also be some sort of drain or perhaps a small wattle enclosure. The feature is roughly trapezoidal in shape and its function is unknown.

There is no direct evidence for doorways in the main house or for pathways within the homelot. The only clue may be in an area around the northwest corner of the house identified on the site plan as an area of "hard clay" (Buchannan and Heite 1971: Fig. 2). Perhaps this was either a prepared clay pavement or at least an area of soil compacted by traffic. This area may represent a doorway.

A large assymetrical trash pit, roughly 10 ft. by 17 ft., is approximately 20 ft. from the north side of the main house. This pit stratigraphically underlies a probable fence ditch and, therefore, predates it. Buchannan and Heite do not give the depth of this feature, but state that it

> was filled with brick fragments, oyster shells, and a quantity of decayed organic matter. All of the trash had been tipped in from the south side. The presence of unused building materials . . ., indicate(s) that the pit was open when the chimney was being built. We first guessed that the pit had been a clay pit for the construction of the house, but a chemical comparison of the bricks with the surrounding soil eliminated this possibility. Maybe it was a temporary pit-house, used while the house was under construction.
> (p. 41)

More likely this pit was initially dug as a clay borrow pit, not for the manufacture of the bricks used in the chimney, but for making the "very coarse mud mortar" (p. 41) used to hold the chimney together. The first chimney at St. John's exhibits a similar use of mud or loam mortar and an

early pit at that site has also been interpreted as a clay borrow pit. This pit seems to have served a secondary function as a trash disposal area for both domestic and architectural debris.

The final features of interest at the Hallowes site are several linear ditches. Buchannan and Heite interpreted these as "drains" (p. 40), but readily concede that "these could also have been ditched fencelines" (p. 40). This interpretation seems more likely in light of more recent excavations at other seventeenth-century sites in the Chesapeake tidewater region. Most likely, these ditches are the remains of wattle fences which enclosed and subdivided the Hallowes site homelot. The excavation of the Hallowes site did not extend very far from the house, therefore, only the tantalizing ends of these fences were exposed (Buchannan and Heite 1971: Fig. 2). One fence begins at the northwest corner of the house and extends in line with the long side of the house toward the northwest. The published site plan indicates that this feature overlies and therefore post-dates the post-hole at the corner of the house and the large borrow/trash pit discussed earlier.

A small fragment of a fence ditch appears at the northeast corner of the trapezoidal enclosure and may have originally terminated at the northeast corner post of the main house. It extends toward the northeast on the same axis as the gable end of the house. A third fence ditch sprouts from the center post-hole on the east side of the main house. This feature intrudes and post-dates the post-hole just like the fence at the northwest corner of the house. It extends away from the house approximately parallel to the fence starting at the northeast corner. Both of these fences run generally from the house toward the water of Currioman Bay. A final fence

ditch appears off the southwest corner of the house and may represent some sort of fence surrounding the entire homelot area. However, this is speculative since only a brief segment of this fence was exposed.

The Hallowes site occupies a topographic situation quite similar to St. John's. The site lies atop a low spur overlooking the waters of a navigable, but protected, estuary; at a distance of less than 100 ft. The long axis of the main house lies parallel to the ridge of the spur on which it sits, rather than being parallel with the shoreline as most tidewater sites on relatively flat land seem to be (e.g. Pettus Plantation, Maine site, Flowerdew Plantation). Not enough excavation was carried out in the areas around the building to determine the functional layout of the homelot.

The Clifts Plantation

The Clifts Plantation site (Figs. 40-42) is being excavated and analyzed by the Virginia Research Center for Archaeology under the direction of Fraser Neiman who has generously provided the information used in this homelot description (Neiman 1977: personal communication). The Clifts Plantation site dates between c.1670 and c.1730. The site is located at the crest of a small hill about 1300 ft. from the Potomac River. The hill crest runs generally North-South and the main dwelling is situated perpendicular to it with its east end almost exactly on the hill crest. The land slopes gently downward to the east, dropping about six feet over a horizontal distance of about 100 ft. West from the hillcrest, the land is relatively flat for more than 100 ft. Beyond this is a deep ravine with springs which probably provided a water source for the occupants of the site.

At about the time this site was abandoned, around 1730, a road was built across it, following the hill crest and leading to a mill and landing on the bank of the Potomac River. It is quite possible that the landing site was also used by the occupants of the Clifts Plantation site as there are few places along this stretch of the Potomac with easy access to the water. This fact provides at least a clue as to the direction of orientation and traffic flow at the Clifts Plantation during the late seventeenth and early eighteenth centuries.

The Clifts Plantation site is quite complex. The site was occupied for at least fifty years and there are several phases of building and rebuilding which must be sorted out. Most of the other seventeenth-century sites excavated in the Chesapeake tidewater region are largely single period occupation sites with relatively simple structural features. St. John's, in St. Mary's City, Maryland, is an exception as is the Clifts Plantation. Both of these sites have lengthy spans of occupation and complex, overlapping sequences of homelot growth and development.

The initial phase of construction at the Clifts Plantation site dates c.1670 (Fig. 40) and consists of a post-supported dwelling measuring about 50 ft. by 18 ft. and what appears to be an 8 ft. by 10 ft. porch tower in the middle of the south side. This area is incompletely excavated as yet and is subject to a more complete interpretation later. The structure probably had a central chimney made of wood and daub, though the central area of the house has not been completely excavated. Surrounding this rather typical seventeenth-century plantation house was a palisade with what appear to be bastions on the northwest and southeast corners. This military-like feature is slightly trapezoidal in shape and is about 75 ft.

long on the south side, 65 ft. long on the north side, and 60 ft. on the east and west sides. The purpose of this structure may have been defense against Indians, as this part of Virginia was part of the frontier fringe in the 1670s. The palisade seems to have given way rather quickly to a more normal plantation layout. A large post-supported structure measuring about 38 ft. by 18 ft., with a couple of small shed-like appendages, was built just outside the formerly palisaded area, probably not long after the main structure was built. This building may have been a servants' quarter or a barn. At about the same time several small outbuildings averaging 8-10 ft. square were built to the west of the main house. One or more additions were made to the north side of the main dwelling between 1690 and 1700.

The fencing pattern changed dramatically during this period from the small, tight palisade described above, to a complicated and extensive set of wattle or pale fences enclosing what may have been garden, orchard, and paddock areas to the east of the main house (Fig. 41). The pattern here is a service yard in the flat area at the west end of the main house and a planting and grazing area on the gentle slope at the east end of the dwelling. Subsequent to the building of the east side fence, a series of graves were placed along it on the outside. After the turn of the eighteenth century, several new features appeared and the homelot expanded somewhat. On the south side of the site, adjacent to the fenceline, a small post-supported structure was built measuring 14 ft. by 20 ft. with a small shed-like appendage on the northwest corner. Segments of several fencelines appear in the west side yard area. These are too fragmentary to provide much information, but they seem to indicate an elaboration of

the homelot layout by subdivision of activity areas.

The final phase of evolution in the yards at the Clifts Plantation (Fig. 42) occurred in the 1720s and involved a change in the fencing style and configuration. Whereas the old fencing was either wattle or made of planks set in a ditch, the new fence was a post and rail fence which may have been clapboarded as well. This fence encompassed roughly the same area as the earlier one, except that it enclosed the grave area and the 14 ft. by 20 ft. outbuilding and apparently excluded much of the area to the north of the main dwelling. The division between service area to the west of the house and a planting and grazing area to the east seems to have still been in effect at this time. The Clifts Plantation apparently was abandoned around 1733 because Thomas Lee built a road to his landing and mill directly through the main dwelling at about this time.

The distributions of plow zone artifacts from the Clifts have been mapped in a preliminary fashion and suggest some striking parallels in homelot usage with St. John's. The distribution of white clay tobacco pipes shows a high concentration at the west end of the main house. Such a pattern is similar to the high concentration of household debris behind the hall at St. John's and seems to confirm a functional division of space between a service yard and a courtyard or garden area. At the Clifts, the division is oriented with the gable ends of the main house, while at St. John's, the division is between the front and back sides of the house. Neiman's preliminary distribution maps indicate that later period waste disposal was more tightly concentrated than earlier period deposits and he suggests that this may reflect an "increasingly functional compartmentalization of living space through time" (Neiman 1977: personal

communication). This pattern is similar to the increasingly formalized and compartmentalized divisions of space traced in the St. John's homelot developmental sequence. When the Clifts Plantation site is fully excavated and analyzed, it will provide an extremely important supplement to the homelot data available for the Chesapeake tidewater region.

Middle Plantation

An excavation in Anne Arundel County, Maryland, is interesting both from the standpoint of seventeenth-century homelot organization and use and because the project has been carried out entirely by an amateur archaeologist. William P. Doepkens has taken upon himself the excavation and analysis of a late seventeenth- and early eighteenth-century plantation site occupying a portion of the land which he farms. Mr. Doepkens and his family have patiently excavated the remains of a number of post-supported buildings, trash deposits, and several fencelines in their spare time over the past several years. Mr. Doepkens' documentary research indicates that the site is probably "Middle Plantation", built by Maureen Duval in the late seventeenth century (Doepkens 1976: personal communication).

Through the courtesy of Mr. Doepkens, archaeologists from the St. Mary's City Commission, have studied the excavation records and artifact inventories and with Mr. Doepkens, have worked out a tentative interpretation of the sequence of building and the functions of some of the structures (Figs. 43-44).

The earliest structures at Middle Plantation appear to be structures 2, 7, and 18 (Fig. 43). These three small post-supported buildings may

not have been constructed at the same time, but all three appear to predate the later buildings on the site. Structure 18, measuring approximately 20 ft. by 15 ft., is the largest of these buildings and is interpreted as a dwelling. The other two buildings are closely associated with several pits which may have been clay borrow pits. None of these features can be accurately dated, but all appear to date to the final quarter of the seventeenth century. No details of yard layout or use could be assigned to this period.

The second phase of development at Middle Plantation (c.1700-1725) involved the building of several new structures, including a new and larger dwelling. It is unclear whether structure 1 or structure 3 was the main dwelling of this period. Both may have served as residences. Judging from material in the fill of structure 18, it was still in use at this time and three new outbuildings were constructed. These are structure 19 at the southern edge of the homelot and structures 5 and 6 near the northern edge. A wattle fence set in a shallow ditch extended from the southwest corner of structure 3 and surrounded the western side of structures 1 and 3 creating a small yard or, perhaps, a garden.

The final phase (Fig. 44), dating roughly between 1725 and 1750, involved the building of structure 10, a small outbuilding with a shallow cellar and structure 11, which was little more than a shed off the southeast corner of structure 3. The material in the fills of structures 5, 10, and 18 indicates that they were filled around 1745. In a brief survey of ceramics from the site, Stone (1976: personal communication) noted a number of sherds which provide a terminus post quem for the abandonment of the site. These include molded white salt-glaze stoneware, scratch-blue

salt-glaze stoneware, cream-colored earthenware, and soft paste English procelain. These sherds suggest an abandonment date around 1755-1760.

Nearly forty human burials were excavated outside the southwest corner of the wattle fenceline. The date of these is unknown, but it is likely that they span the entire occupation of the site. A complex set of post and rail fencelines and two large post-supported structures at the northwestern corner of the site may be associated with this plantation, but the post-holes were virtually sterile and it is quite possible that they may be part of a later farm complex with a homelot located elsewhere.

Middle Plantation was situated on a gentle slope above a small spring. This spring probably was used as a water supply and definitely served as a trash disposal area. The majority of the artifacts came from secondary trash deposits in this spring area. The site apparently was located near a major colonial road (Doepkens 1976: personal communication), and its link with navigable water is unknown.

The only indication of spatial division is the fact that the service area for the seventeenth-century plantation appears to have been toward the northwest of the dwelling (structure 18). The configuration of the eighteenth-century plantation was different. The new main house was built near the former service area and the new service area spread to the east and northeast. The fenced yard or garden area was on the west side of the dwelling, similar to the homelot division found at the Clifts Plantation in Virginia.

Other Sites

Several other seventeenth-century plantation sites have been

investigated in the Chesapeake tidewater region. Some of these yielded information on the architecture of the houses themselves, but little on the yard areas surrounding the dwellings. Others are still in the process of investigation and little more than tantalizing bits of information are available at this time.

Colonial Williamsburg is in the process of excavating an extensive seventeenth-century site near the eighteenth-century plantation, "Carter's Grove", a few miles from Williamsburg. No details have been published, pending completion of the investigation, but the excavation is extensive and has exposed fenced enclosures around the structures as well as the buildings themselves (Noël Hume 1976: personal communication).

Other excavations that should be mentioned have uncovered house foundations but little more. Further investigation of these sites could reveal outbuildings and yard features that might add significantly to our knowledge of homelot organization and use in the seventeenth-century Chesapeake.

Bennett's Point, a seventeenth-century plantation house with a central H-shaped chimney was excavated as a salvage operation. Two storage pits were found, one in front of each hearth, in addition to a possible "safe" (Ludlow 1973: 15).

Other post-supported houses with central chimneys have been investigated including Matthews Manor in Denbigh, Virginia (Noël Hume 1969: 133), and Maycock, on the James River excavated in 1970 by Barka and Gregory (Buchannan and Heite 1971: 41).

Buchannan and Heite (1971: 41) also mention "the seventeenth-century John Washington house", in their report on the Hallowes site, but do not

give any descriptive details or references. Outbuildings have been excavated at "Green Spring" Plantation. The structures found there included a nursery, a bakehouse, a blacksmith shop, and a pottery kiln (Hudson, n.d.: 4). Clearly, "Green Spring" was not a Chesapeake plantation of the "middling" sort!

Perhaps the most famous seventeenth-century "site" in the Chesapeake region is Jamestown, the first permanent English settlement in the New World. Unfortunately, the archaeological data from the Jamestown excavations are very spotty and difficult to use, in spite of John Cotter's monumental effort at collating the masses of field records from the excavations in the 1930s (Cotter 1958). These excavations concentrated on uncovering the foundations of buildings. Features in the yards and fencelines seldom were recorded. Lewis (1975: 241-243) notes that Cotter records nineteen dwellings, one barn, and nine "other" outbuildings. The only mention of fencing in Jamestown is the use of ditches as property boundary markers (Cotter 1958: 166). The organization and use of space in Jamestown was, of course, quite different from that of the plantation homelots described in this paper. Jamestown began as a fortified settlement and developed as a town rather than as an individual plantation. The functions of the community were different than those of plantation households and the structure of each kind of settlement was different as well. Jamestown provides little information for a comparative study of homelot organization and use in the seventeenth-century Chesapeake region.

Conclusions

The salient feature of the archaeologically investigated homelots

described in this section is their variability. Each site is unique so comparisons are difficult. These few sites are, however, vital to furthering our understanding of homelot organization, use and change through time. The sample size is miniscule; but, clearly, the differences between one homelot and another are functions of at least two major variables: chronological position and socio-economic status. The integration of data from these sites with the information from St. John's and from documentary sources is the subject of the final chapter in this dissertation. The glimpse of the wide range of homelot layouts and activities offered by these other archaeological sites provides us with a broader view of homelot organization and use in the seventeenth-century Chesapeake region than would otherwise be possible.

CHAPTER VI - THE HOMELOT ON THE SEVENTEENTH-CENTURY CHESAPEAKE TIDEWATER FRONTIER

The various archaeological sites and documentary references provide the basis for understanding the organization and use of space around dwellings on the seventeenth-century Chesapeake tidewater frontier. The documentary sources provide a useful inventory of building types, sizes, and functions; kinds of fences and their construction techniques; and varieties of landscape features and plantings in use in this region during the seventeenth century. They also provide analogues for interpreting archaeological features. The documents do not provide much information about the spatial arrangement of these structural elements, nor about the day-to-day activities which took place around, between, and within them.

The seventeenth-century archaeological sites excavated in the Chesapeake region, provide some of the data lacking for an understanding of the spatial arrangement of the homelot. The remains of buildings, fencelines, and various kinds of activity areas have been unearthed with their spatial relationships essentially intact. Unfortunately, there is only a handful of such sites that have been investigated and fewer still have been dug with the objective of studying homelot organization and use in mind. Interest in these problems is growing in the Chesapeake region and several sites are currently in one stage or another of investigation. When these are analyzed more fully, they should add considerably to the outline put forth in this paper.

Each of the sites excavated thus far in the Chesapeake region is unique in its total configuration. The attempt to systematize these into any

overall scheme of organization or development suffers from a sample that is far too small. Instead of creating a grand, all-encompassing scheme of homelot structure, function and development, I have pointed out the similarities that do exist among these sites; suggested some of the factors that may have been involved in the process of site selection, layout, and use; and postulated a general trend from the earliest para-military fortified sites through a growing sense of permanence and formalism as the Chesapeake society matured and the frontier moved westward up the rivers of the region.

Perhaps the most striking characteristic of the various sites examined in this study is the overwhelming use of impermanent forms of architecture, particularly post-supported structures. Every site investigated had at least one post-supported structure and only at St. John's and the Stone House of Flowerdew were the main dwellings not built entirely upon simple posts or pilings set in post-holes. The kitchen at St. John's is described by Stone with regard to this impermanent character. He says that "presumably its prototype came from English traditions of impermanent construction. But the resurrection of a dying European tradition in the Chesapeake represents an adaptation to new resources and needs " (Stone 1976: 22).

No artifact could speak more eloquently of the transience of the frontier and the prevalence of early death in this region than these patterns of post-holes, marking the spots where houses once stood. Though the architectural details are beyond the scope of this paper, these buildings provide the necessary starting point for a look at the structure and function of the homelot. However impermanent these buildings might have been

as dwellings, each one was the hub of a homelot; an area of activity basic to our understanding of life on the Chesapeake tidewater frontier.

The form and layout of outbuildings and fencelines varied from site to site, but it is possible to construct a very crude chart illustrating the factors which are likely to have been involved in the process of plantation homelot site selection and layout (Fig. 45). The critical factors in determining the layout and orientation of each site seem to have included such variables as the fresh water source, the nearest ship landing site, land slope and drainage. Other factors probably played important roles in this process as well. The direction of the sun and prevailing wind, type and quality of vegetation, soil quality and the aesthetics of the view are natural factors that may have been a part of the process of site selection and layout. Cultural factors might have included the availability of land, the amount of labor available for clearing land and building, proximity and direction to neighbors and towns, and the location of roads or paths. This list is superficial because the data needed to determine the effects of these cultural and natural factors are not available for most sites and, unfortunately, they may be unobtainable with the archaeological and documentary resources we have.

To these specific site characteristics must be added more general influences. The overall environment and geography of the Chesapeake region fostered a view of the region geared to transportation by water rather than by land. The Chesapeake Bay provided a center of focus for the tidewater region. It served as a giant traffic circle with the various creeks and rivers functioning as spokes of the wheel reaching far inland (Craven 1970: 74). This vast system of waterways was vital to the seventeenth-

century colonists. Their entire conception of the region hinged upon the navigable waterways. Today we may stand at the tip of a peninsula and look outward at the Chesapeake Bay or one of its tributaries and perceive the water as a barrier to travel. Craven states that the modern viewer "naturally thinks of land surrounded by water but they (the colonists) thought of water surrounded by land" (p. 73). Today we think of the expansion of settlement in terms of the acquisition of contiguous territory. In the seventeenth century, the colonists thought of the expansion of settlement in terms of the security of navigation (p. 73).

The experiences of previous settlers in the region and the input of aboriginal knowledge and techniques also provided material for the process by which people selected their plantation sites and organized them. Last, but not least, the traditions of English vernacular architecture and farm layout came in the minds of the Chesapeake colonists and incluenced their decisions about plantation building. The other factors mentioned constitute some of the modifications to the cultural system which have come to be a hallmark of the frontier.

The type and configurations of fences varied from site to site. Most fences around and within homelots seem to have been either wattle fences or post and rail fences, probably faced with clapboard paling. These two types of fencing appear frequently in the documentary sources discussed earlier and are fairly easy to recognize archaeologically. A third type of fence, the worm or split rail fence, seems to have been used mostly for fencing fields rather than yards. However, this may be a false impression since worm fences seldom leave detectable archaeological remains. Wattle fences seem to be characteristic of the impermanent, early or poor

plantation, whereas post and rail fences suggest permanence, a later time period, or prosperity. This pattern is based on the evolutionary sequence at St. John's, where early wattle fences were replaced by post and rail fences as the century progressed and the ownership of the site passed from Provincial Secretary to prosperous merchant to Provincial Governor. A similar sequence took place at the Clifts Plantation on the Potomac River in Virginia. This site was not occupied until the 1670s, yet it seems to have gone swiftly through each phase of Chesapeake frontier fencing. The first fencing was a substantial ditched wattle enclosure with what appear to be bastions at two corners. This para-military configuration, reminiscent of the enclosed settlement at Flowerdew fifty years earlier, soon was replaced by a set of wattle or plank fences similar to the early fences at St. John's. In the early eighteenth century, these were replaced by post and rail enclosures. Middle Plantation in Anne Arundel County, Maryland, follows the same sequence of early wattle and later post and rail fencing. The only very early site with a post and rail fence is the Stone House at Flowerdew in Virginia. This house is unusual because of its stone foundation and is believed to have been the residence of a fairly prosperous individual.

The outbuildings on excavated sites in the tidewater region conform quite well to the general sizes and types indicated in the documentary sources. It is impossible to be certain of the function of more than a handful of these structures. At St. John's, a post-supported structure at the northeast corner of the main house can be identified as a kitchen because of its large fireplace and the distribution of kitchen waste. A second outbuilding at the southeast corner of the house probably was a

servants' quarter. A small early addition on the rear of the main house was a dairy or cool storage room. It was identified by its semi-subterranean construction.

The Pettus Plantation site in Virginia has several outbuildings and attached wings, three of which can be identified as to function with some confidence. A narrow space between two buildings had a sloping tile pavement and a recessed area at one end. Kelso (1973: 3) interprets this feature as either a drain and sump or a buttery or dairy. Also at the Pettus site was a small outbuilding measuring about 10 ft. by 10 ft. surrounded by a wattle enclosure and an area of marl. The dimensions of this structure are the same as those listed in several documents as the common size for a hen house. The marl yard strengthens this interpretation. A third outbuilding at the Pettus Plantation was about 10 ft. by 10 ft. with a brick firebox in the center. This has been interpreted as a smokehouse.

Small post-supported structures measuring about 10 ft. by 10 ft. also appear at the Clifts Plantation site in Virginia and at Middle Plantation in Maryland. None of these can be identified as hen houses or smokehouses, but several of them at Middle Plantation may have served as springhouses because of their location around a spring. Several of the dwellings at these sites had nondescript shed-like structures added on. These do not seem to conform to any standard shape or size and may have served a variety of functions.

Barns, probably for the curing of tobacco rather than the sheltering of livestock, occur at Kingsmill Tenement and the Clifts in Virginia and at Middle Plantation in Maryland. These structures correspond to the usual range of dimensions given in seventeenth-century documents and their size

and shape are familiar in the tobacco raising areas of the tidewater today. The barn at Kingsmill Tenement is either made up of two small structures side by side or, more likely, of two equal halves with drive-through doorways for bringing a tobacco-laden wagon inside for unloading.

Other features that show up on maps of archaeological sites are pits. Several kinds have been identified on Chesapeake sites including human burials, clay borrow pits, storage pits, and garbage and trash pits. Frequently, borrow pits and storage pits ended up as trash and garbage deposits. The location of pits in relation to the other elements of the homelot varied from site to site. At St. John's, borrow pits were dug in several parts of the back yard, apparently at different times. These were then filled with miscellaneous household and architectural rubbish. One definitely was used as a privy before being filled with trash. Other possible borrow pits were found around the buildings at the Hallowes site, Kingsmill Tenement, Littletown Quarter, the Maine site, and the Clifts Plantation. In fact, large pits, probably dug to obtain clay for bricks, daub, or mortar then filled with trash and garbage, were found at nearly every seventeenth-century plantation site so far investigated. Kelso interprets some of the pits found at Kingsmill Tenement as storage pits (1974: 9). One pit at St. John's may have had a different origin. Its shape suggests that it may have been the cavity left by a large blown-down tree.

Human burials are a specialized kind of pit and generally are found clustered at one edge of the homelot, if at all. Burials have been excavated at the Stone House in Flowerdew, Utopia Cottage, Middle Plantation, the Clifts Plantation, and at the Maine site, where three individual graves

were found in three different areas of the site.

Springs and wells provided the sources of fresh water for seventeenth-century plantations. Wells were located at three sites all situated in fairly lowlying areas along the James River. Springs were the preferred water source if available and this seems to have been an important factor in homelot site selection, especially at St. John's, at the Clifts Plantation, and at Middle Plantation.

The topography of the seventeenth-century homelot sites so far examined provides some clues as to the importance of this factor in building site selection. Most of these plantations were built either on the crests of low hills or on fairly high river banks. The enclosed settlement at Flowerdew is an exception and its location in a fairly low, flat area may have been selected because it offered a landing for ships adjacent to the enclosure. St. John's and the Hallowes site are situated on remarkably similar spurs overlooking the estuaries at the mouths of creeks flowing into large rivers. Such a location would have afforded easy access for shipping.

The function of the various yard areas around the buildings of these seventeenth-century plantations is an interesting problem. At St. John's the enclosed and relatively clean front yard is clearly different from the cluttered back yard. The front yard seems to have functioned as a court yard, especially during the occupancies of the site's wealthiest owners. The back yard was a service area; the place where the work of the homelot took place. This kind of spatial division also occurs at the Pettus Plantation site, though the hypothesized forecourt remains unexcavated. The outbuildings at this site are grouped around the backside of the house

and would seem to form a service area or yard.

A somewhat different pattern is found at the Clifts Plantation. Instead of a functional division between sides of the house, there seems to have been a difference between the areas at each end of the house. The area at the west end was occupied by a number of outbuildings and fragments of small fenced enclosures. The eastern part of the site was divided into several larger fenced enclosures which may have been gardens and/or paddocks for livestock. At Utopia Cottage, the scant evidence suggests an outbuilding on one side of the house and a fenced enclosure for a garden on the other.

This two yard division of space was a part of English cultural tradition in the seventeenth century and is still apparent today in the layout of any suburban neighborhood. The front yard, or forecourt, is a more tidy and formalized area than the back yard or service area; today given over to patios and barbeques.

The yards also were used as trash and garbage disposal areas. The artifact and soil chemical distribution maps from St. John's clearly show the patterns of differential deposition in various parts of the yard. Similar analyses from other seventeenth-century sites currently under investigation may provide enough data to begin making generalizations about waste disposal practices. The data from St. John's and other sites suggest that trash and garbage were dispatched with as little bother as possible. Borrow pits, post holes, and ditches frequently were filled with trash and garbage. Naturally occurring cavities such as tree blowdowns and ravines also were used for waste disposal. No archaeological features on the sites examined can be clearly identified as having been intentionally dug as

trash pits. Such features do occur on eighteenth-century sites (Stone 1977: personal communication). This may reflect the difference in concepts of orderliness and structure between the attitudes of the seventeenth century and the Georgian tradition of the eighteenth century.

Neither documents nor archaeological data provide much information on other activities within the homelot. We are forced to speculate on the locations of such tasks as washing, churning, bullet-making, butchering and a host of other day-to-day chores. The Dutch genre paintings and drawings suggest that many activities took place outside of the main dwelling, either in outbuildings or in the open air. Unfortunately these events were not recorded in documents and seldom leave identifiable remains to mark their locations for the archaeologist. Our image of the Chesapeake frontier homelot is far from complete and so is our understanding.

A general sequence of homelot evolution has been proposed from the evidence at St. John's. This sequence correlates with the general process of cultural maturation in a frontier context. It is possible to follow this trend at St. John's, because it is one of the very few seventeenth-century plantation sites with a long span of occupation.

The trend is from a very simple set of early enclosures, generally with wattle fences and few, if any, outbuildings, through stages of greater and greater elaboration and increasingly formalized spatial division. Wattle fences were gradually replaced by more durable post and rail fences faced with clapboard. Outbuildings increased in number and variety and the distinction between forecourt and service yard became more structured and rigid.

The only other seventeenth-century plantation excavated so far that has yielded a sequence of occupation comparable to St. John's is the Clifts near the Potomac River in Virginia. The Clifts was settled in the 1670s, thirty or more years later than St. John's, and was occupied until around 1730, about fifteen or twenty years after St. John's was abandoned. In spite of this time difference, the sequences of yard development are remarkably similar, with one major exception. The Clifts was a fortified site during the early years of its history. This is a bit surprising considering that it was first built in the 1670s and that, by water, it was only about 25 miles from St. Mary's City where the 1670s saw the flowering of the village as a colonial capital. At about the time the Clifts was being built with its post-supported dwelling huddling inside a bastioned palisade, the brick Statehouse and the brick mansion called St. Peter's were being erected in St. Mary's City, less than a day's sail away. This emphasizes the isolation of the Chesapeake frontier, even in the later part of the seventeenth century. A place 25 miles from a thriving settlement was still a raw wilderness.

St. John's did not include a fortified stage in its development. By the time John Lewger built his house, St. Mary's City had been settled for about five years and the para-military phase of the colonization process had passed. Another example of this para-military stage of settlement is the fortified site at Flowerdew in Virginia. This site seems never to have progressed beyond this stage, perhaps because of its riverside location and possible use as a warehouse and trading facility rather than as an ordinary plantation homelot. Another site with possible bastion-like fortifications is being investigated by Colonial Williamsburg at Carter's

Grove Plantation. This project is still in the early stages and no details are available except to note that the site does include outbuildings and fencelines. It should be quite interesting to compare with the handful of other excavated sites in the region.

The para-military phase seems to have lasted in the James River area of Virginia until some time in the 1620s when the Powhatan Confederacy was finally broken and the threat of Indian attack became less of a problem. This phase lasted in St. Mary's City only a year or two at the very most. The fort was built simply because the colonists believed that new colonies had to begin with a fort. Only after it was built did they realize that it wasn't really needed, and that they could begin raising tobacco on individual plantations right away. The Maryland colony in 1634 passed through the same initial phase of settlement evolution as the James River colonies had after 1608. The difference was that St. Mary's City passed through this stage in less than two years, while the Virginia settlements took about fifteen years. Clearly, the Marylanders were able to profit from the experience and mistakes of their predecessors.

The Clifts Plantation with its initial bastioned palisade is a microcosm of this same process. It seems to have undergone the transition from fortress to plantation even more quickly than St. Mary's City, but the fact that the site was fortified at all in the 1670s illustrates the point that the Chesapeake frontier was really a series of frontiers; new to each new group of immigrants. Only as the native born population began to increase toward the end of the century, did the frontier really leave the tidewater edge and a more stable, permanent lifestyle begin.

An interesting continuation beyond the evolutionary sequence at

St. John's will one day come from the site of St. Peter's, a 54 ft. square brick structure built in St. Mary's City in 1678; roughly at the time that St. John's ceased to be the Governor's residence and became an inn. St. Peter's represents an architectural style as far removed from St. John's as St. John's is from the small post-supported dwellings at such sites as Utopia Cottage or Littletown Quarter. The difference is not in the wealth or status of the two sites' residents. Both were homes of Provincial Governors. The difference is the difference between St. Mary's City in 1638 and in 1678; between a frontier settlement only five years old and a colonial capital that was becoming more stable and permanent.

St. Peter's has not yet been the subject of a full-scale professional excavation. The size and shape of the main house are known and it is known that the structure was enclosed by a brick wall. Future work may tell something of the organization and use of space within and around this enclosure, and should provide an important link between the highest class of housing in the mid-seventeenth-century Chesapeake and that of the Georgian tradition in the eighteenth century.

This study of the Chesapeake homelot, one aspect of human settlement in a frontier cultural context, has utilized data from both documentary and archaeological sources in an inter-disciplinary attempt at delineating the cultural processes involved. The documents and the archaeological information complement one another. Each sheds light on aspects of the problem about which the other remains silent. Such a method is vital to perceiving the patterns of material culture and in using these patterns for understanding the human behavior and cultural processes which produced them.

A material culture perspective is useful for studying past human

behavior because it is both a cause and a product of that behavior. It is often easier to perceive patterns in the tangible realm of material culture than in the misty world of cultural ideas and ideals. The relationship between the two is not always clear and straightforward but the delineation of how people lived can help us to understand why they did so. The cultural traditions of the seventeenth-century Chesapeake colonists, in the setting of the tidewater frontier, resulted in a particular pattern of spatial organization and use which followed a particular course of development as the frontier society matured. The dynamics of interaction between the English cultural tradition and the Chesapeake frontier setting produced a pattern of cultural maturation that is reflected in this sequence of homelot growth and development.

ARCHAEOLOGICAL SITES SHOWN ON FIG. 1

1. ST. JOHN'S
2. FLOWERDEW (Enclosed Settlement, Stone House Foundation)
3. GOVERNOR'S LAND (The Maine, Pasbehegh Tenement)
4. KINGSMILL (Kingsmill Tenement, Littletown Quarter, Pettus Plantation, Utopia Cottage)
5. HALLOWES SITE
6. THE CLIFTS PLANTATION
7. MIDDLE PLANTATION
8. CARTER'S GROVE
9. BENNETT'S POINT
10. MATTHEWES MANOR
11. MAYCOCK
12. JOHN WASHINGTON HOUSE
13. GREEN SPRING
14. JAMESTOWN

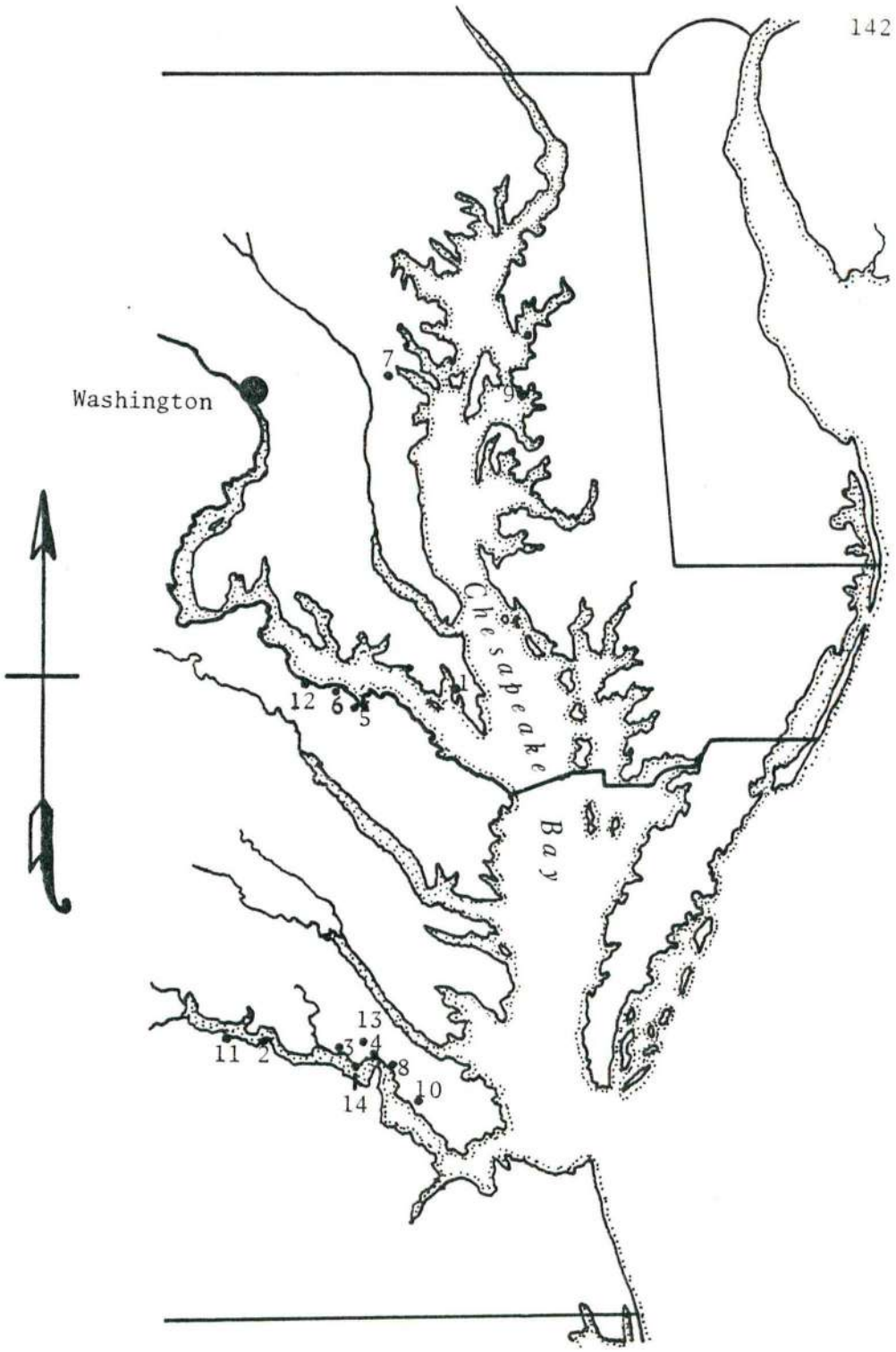
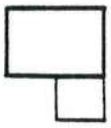


FIG. 1 CHESAPEAKE REGIONAL MAP

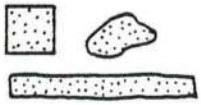
DWELLINGS

ADDITIONS AND OUTBUILDINGS



PARTITIONS, OUTBUILDING ADDITIONS, ETC.

FIREPLACE



CELLARS, PITS, AND DITCHES

FENCES

Post, rail, and board

Board palings

Board or wattle palings

Palisades

Conjectured worm fence

CONTOUR ISOBARS

STREAM

CONJECTURED FEATURE

SUPERIMPOSED FEATURE

ITALIC DOCUMENTED DESIGNATIONS

FIG. 2 KEY TO SITE MAPS

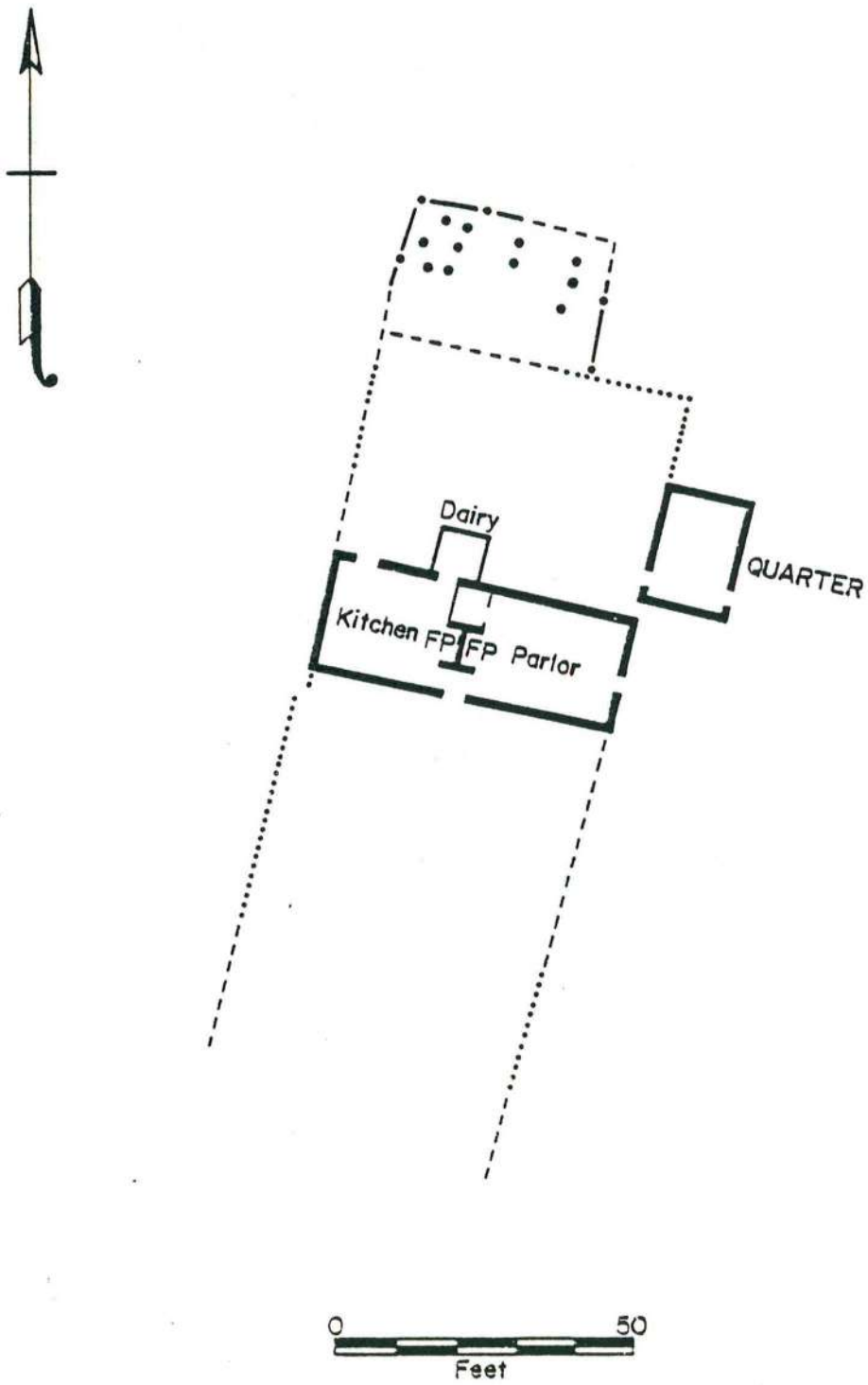


FIG. 3 ST. JOHN'S PHASE I c.1640-1650

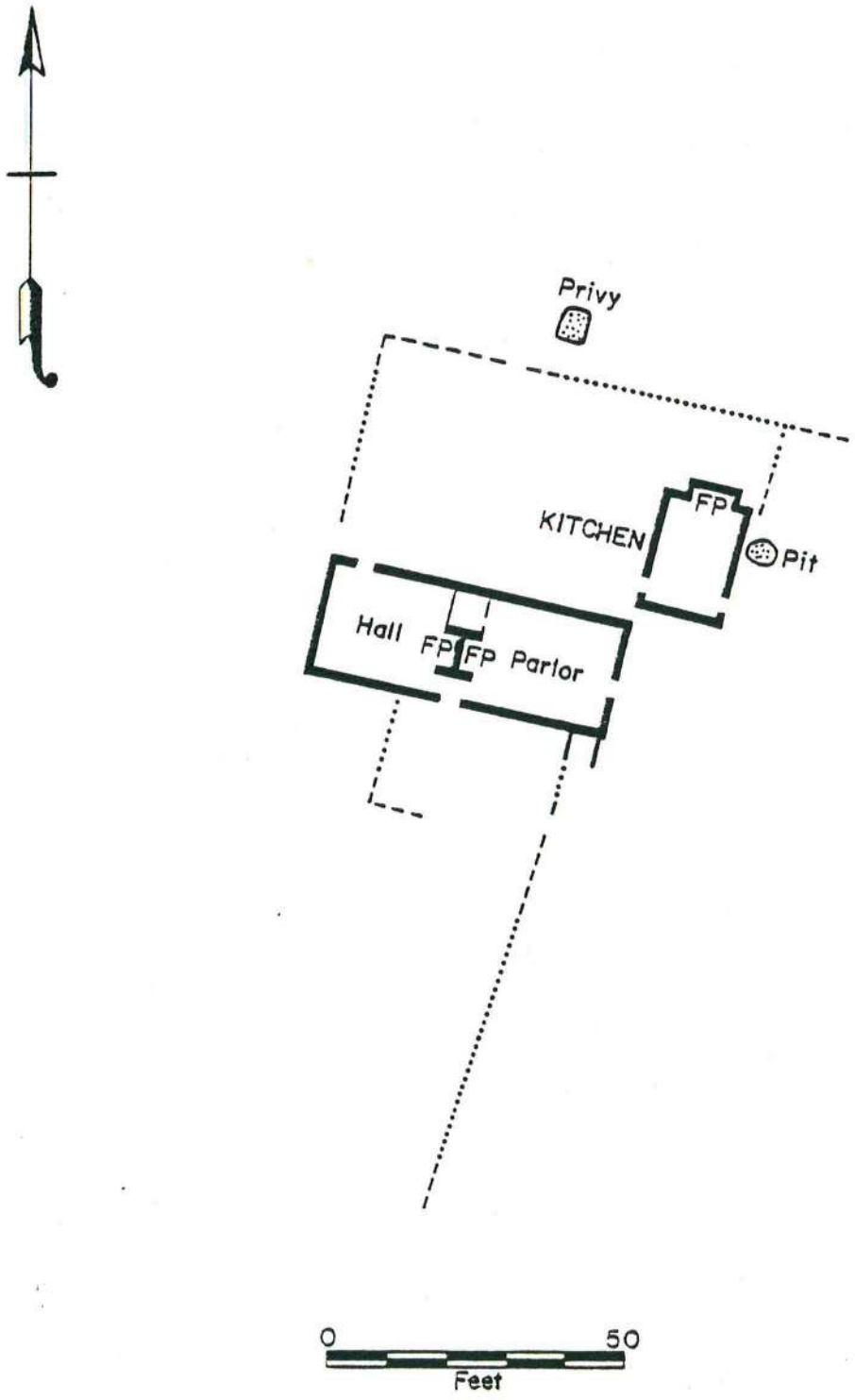


FIG. 4 ST. JOHN'S PHASE II c.1650-1660

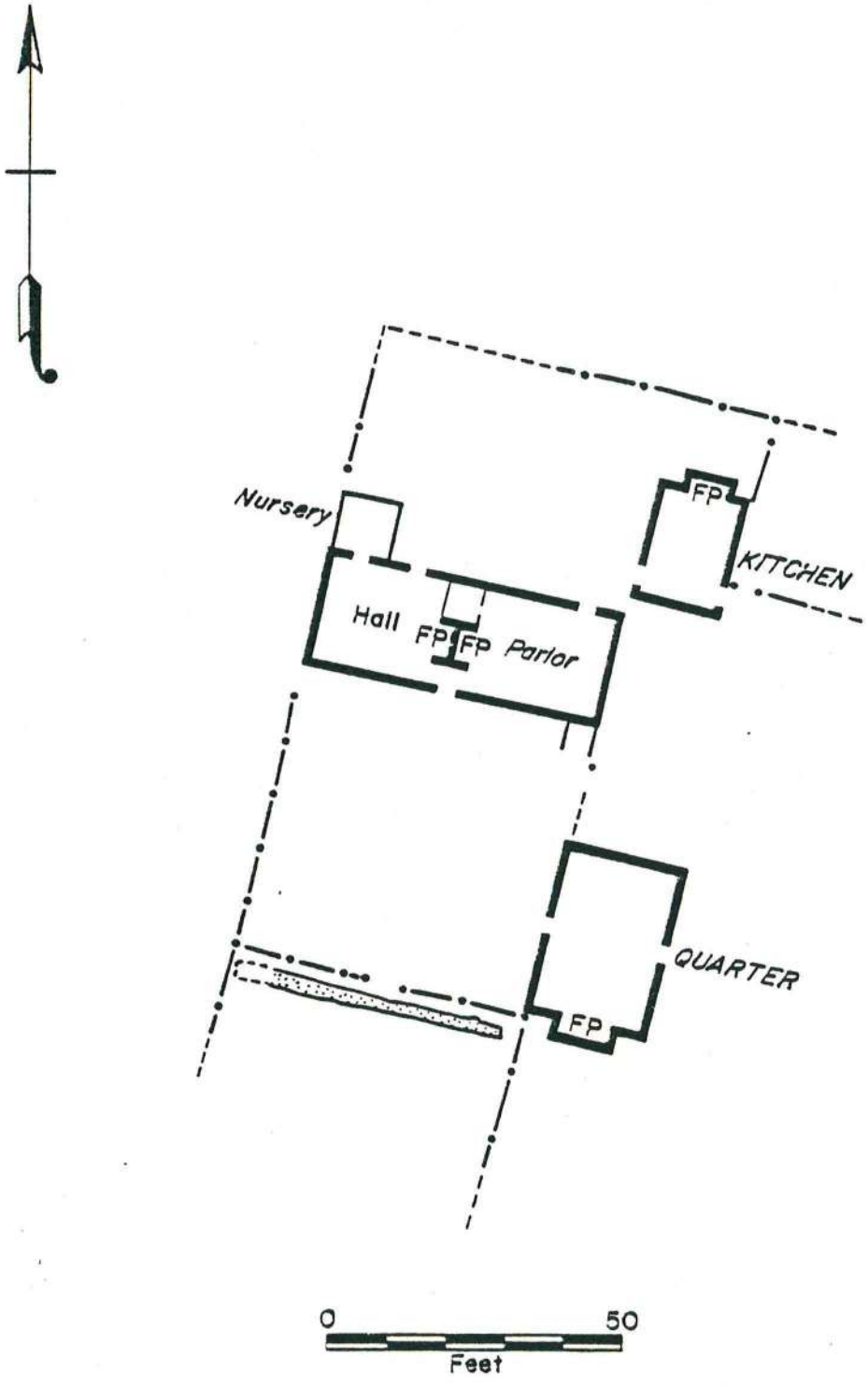


FIG. 5 ST. JOHN'S PHASE III c.1660-1675

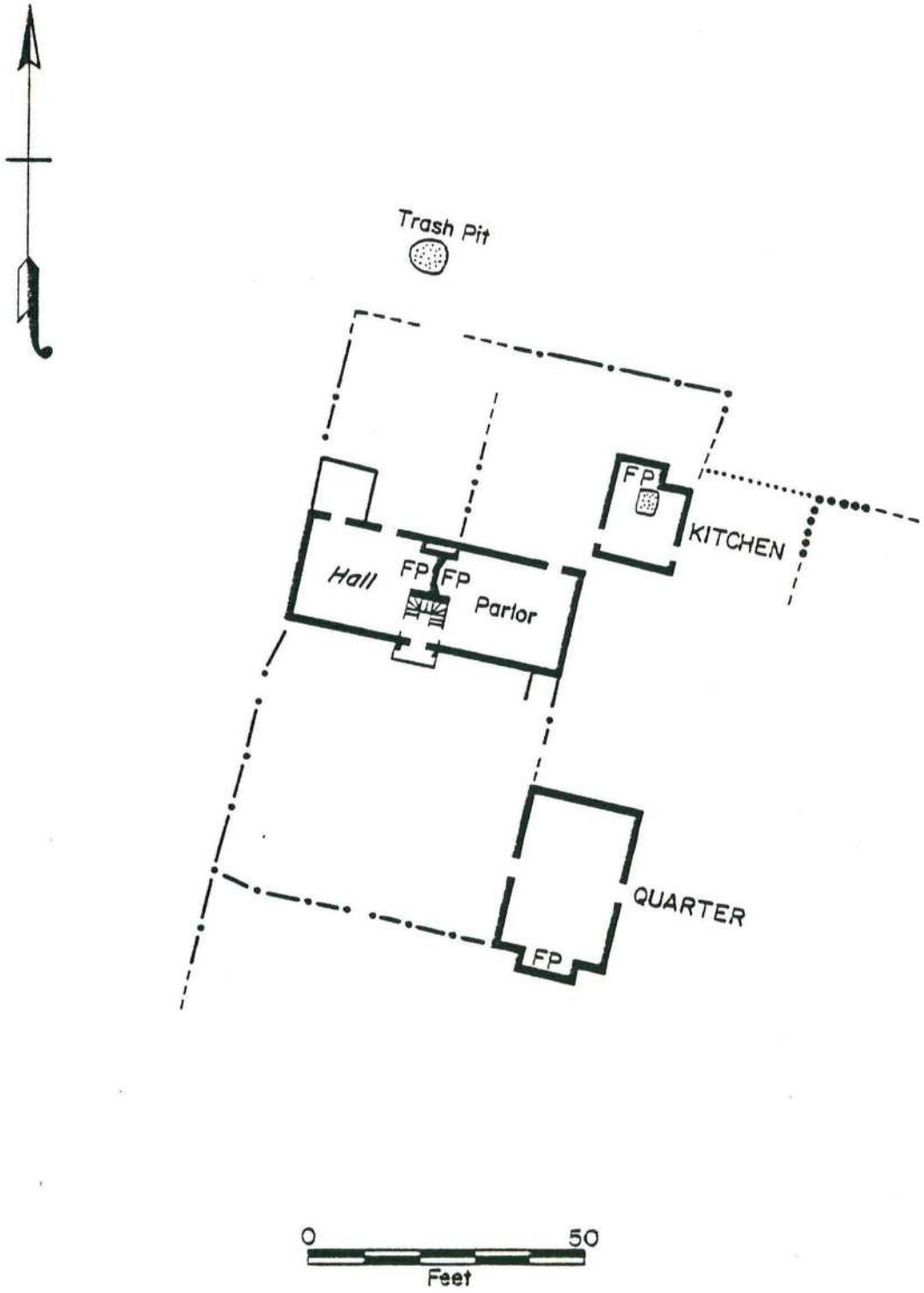


FIG. 6 ST. JOHN'S PHASE IV c.1675-1690

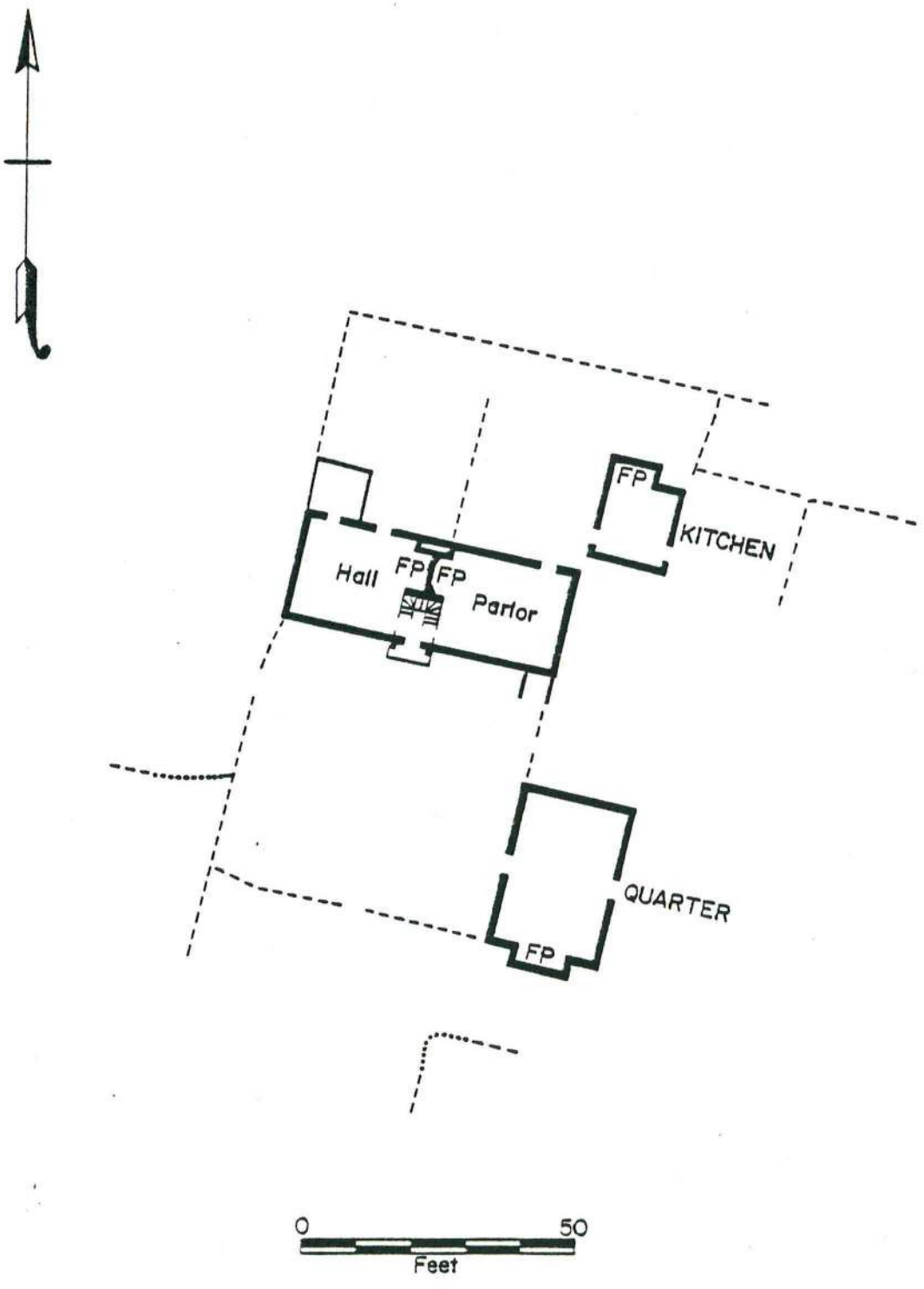
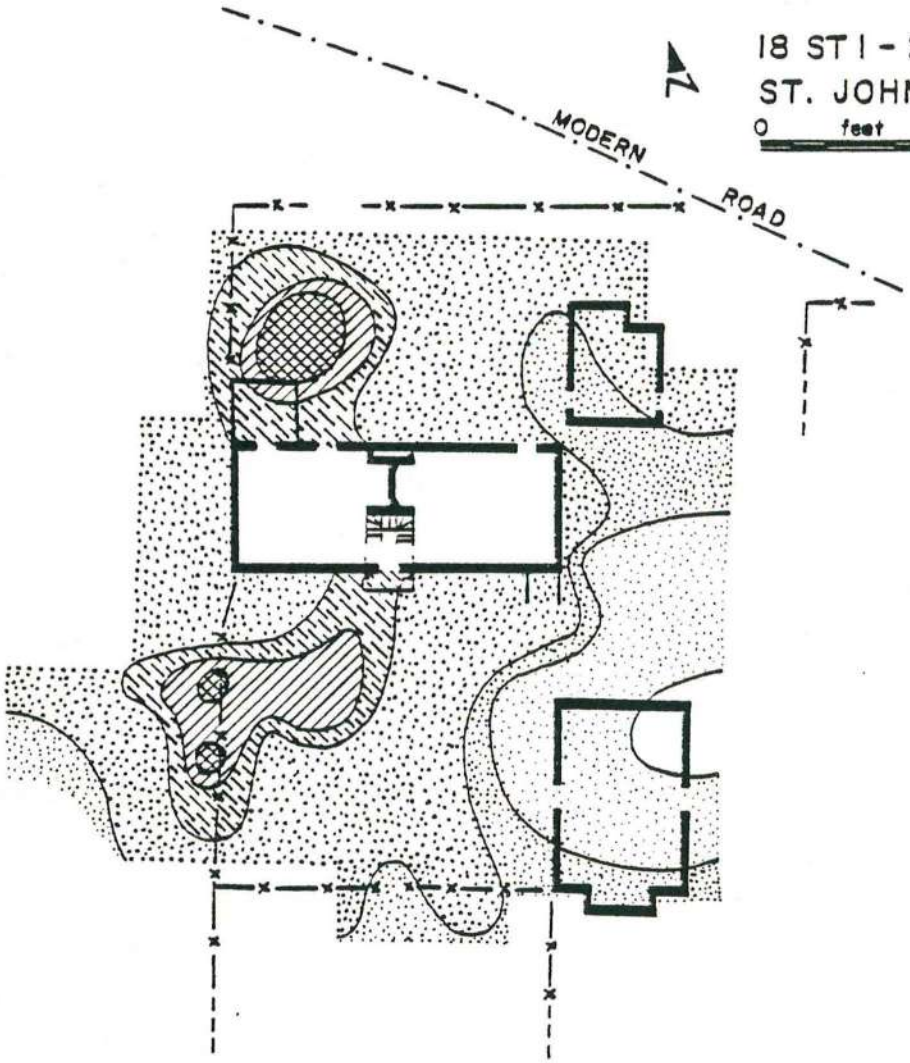


FIG. 7 ST. JOHN'S PHASE V c.1700



WHITE CLAY TOBACCO PIPES
TOTAL

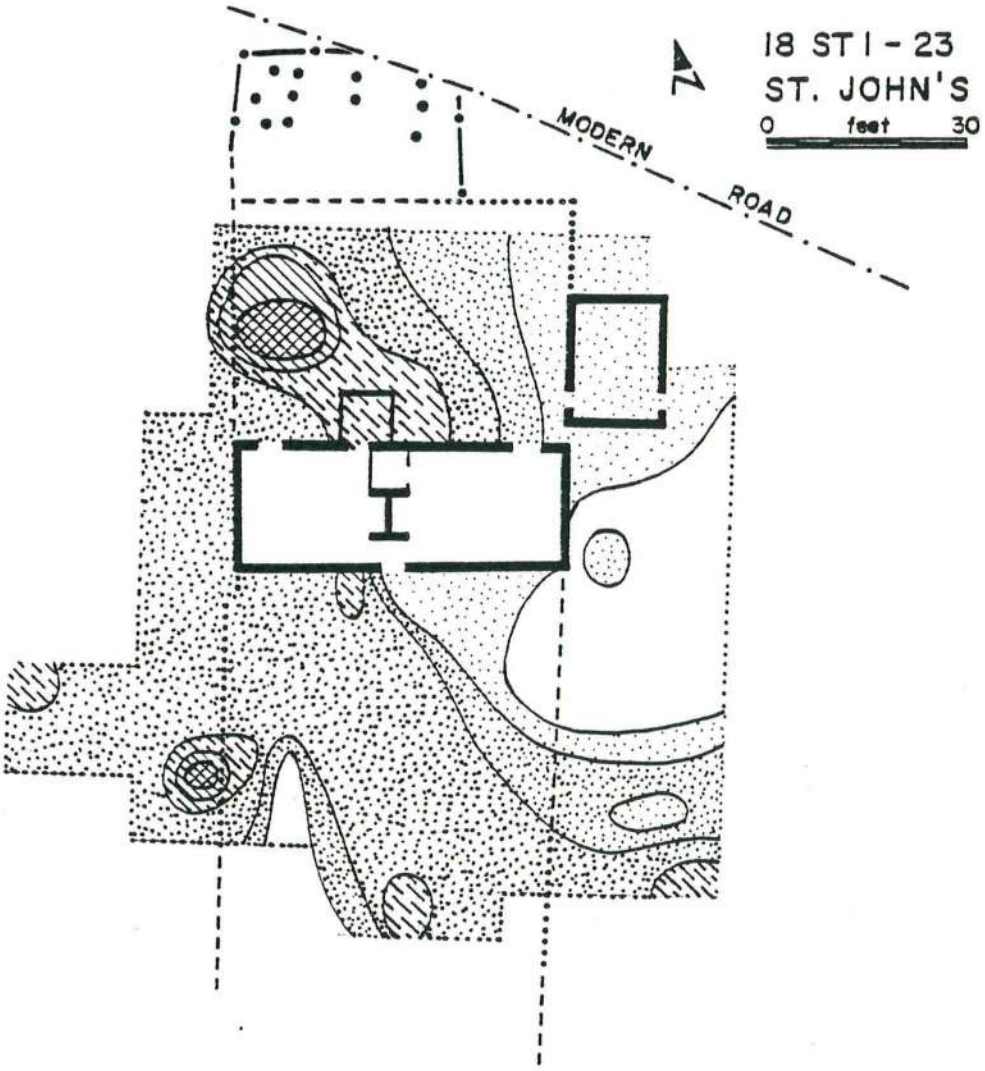
fragments per square foot
of plow zone

mean = 1.94

standard deviation = 1.01

	Distance from Mean	Value
	> 1.5s above	> 3.47
	1-1.5s above	2.96-3.47
	.5-1s above	2.45-2.95
	.5s below-.5s above	1.43-2.44
	.5-1s below	.92-1.42
	1-1.5s below	.41-.91
	< 1.5s below	<.41

FIG. 8



WHITE CLAY TOBACCO PIPES
11/64", 10/64", 9/64" stem bore diameters

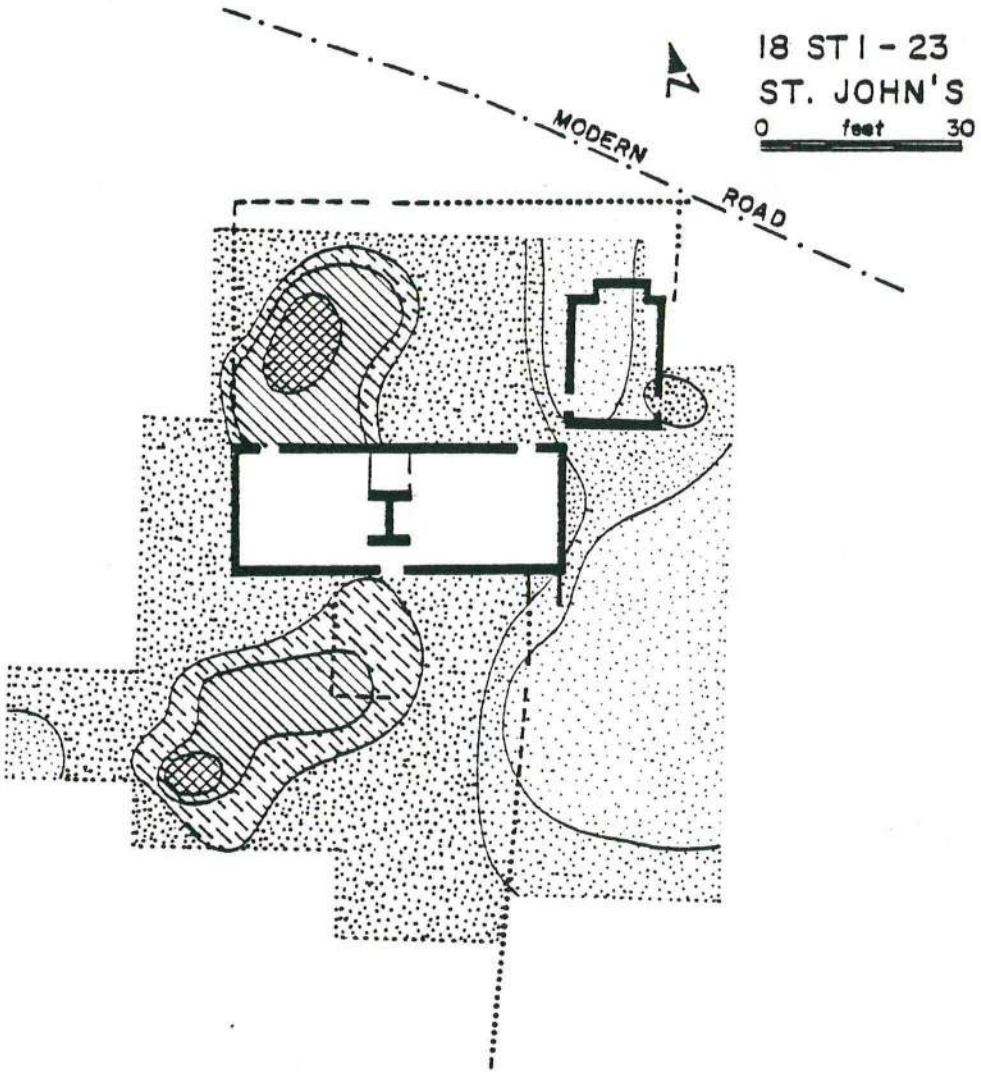
fragments per square foot
of plow zone

mean = .07

standard deviation = .07

	Distance from Mean	Value
	> 1.5s above	> .22
	1-1.5s above	.15-.22
	.5-1s above	.11-.14
	.5s below-.5s above	.06-.10
	.5-1s below	.04-.05
	1-1.5s below	.01-.03
	< 1.5s below	< .01

FIG. 9



WHITE CLAY TOBACCO PIPES
9/64", 8/64", 7/64" stem bore diameters

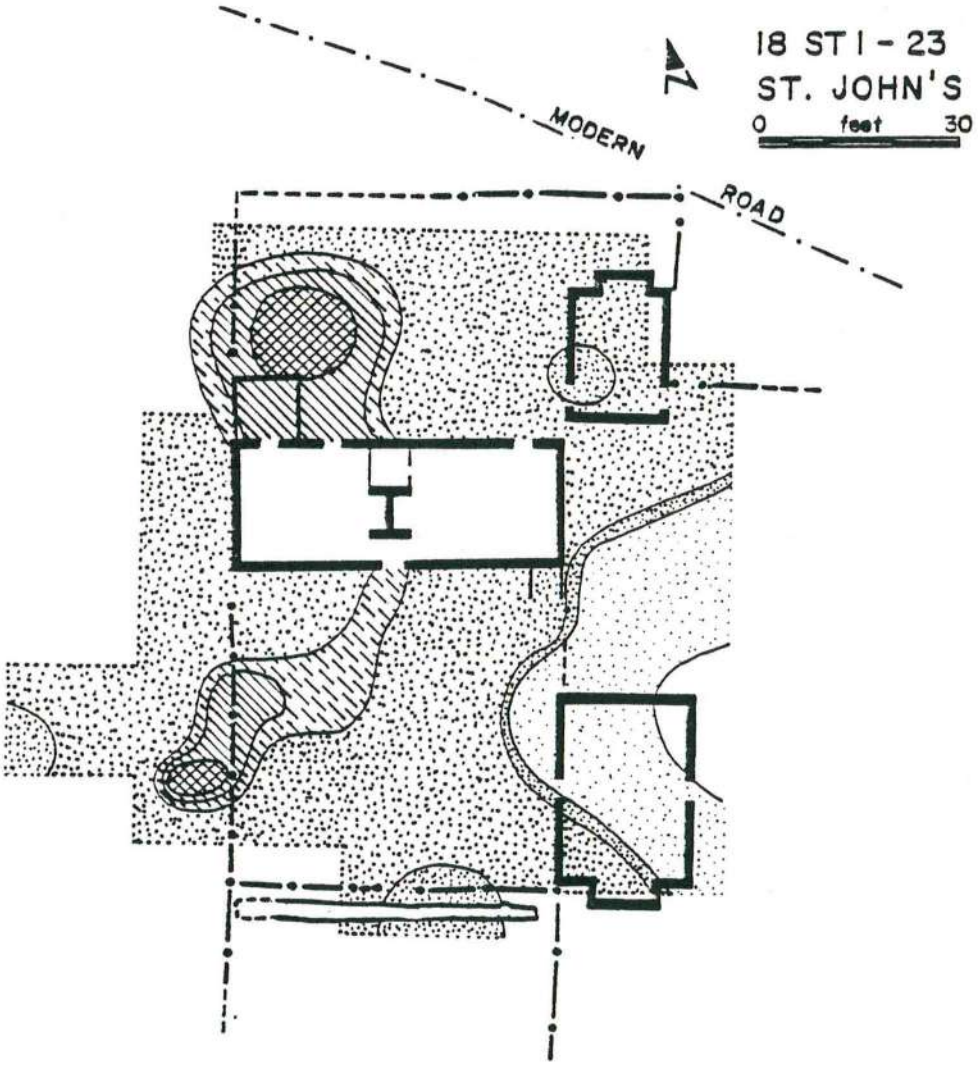
fragments per square foot
of plow zone

mean = 1.08

standard deviation = .60

	Distance from Mean	Value
	> 1.5s above	> 1.98
	1-1.5s above	1.68-1.98
	.5-1s above	1.38-1.67
	.5s below-.5s above	.78-1.37
	.5-1s below	.48-.77
	1-1.5s below	.18-.47
	< 1.5s below	< .18

FIG. 10



WHITE CLAY TOBACCO PIPES
8/64", 7/64", 6/64" stem bore diameters

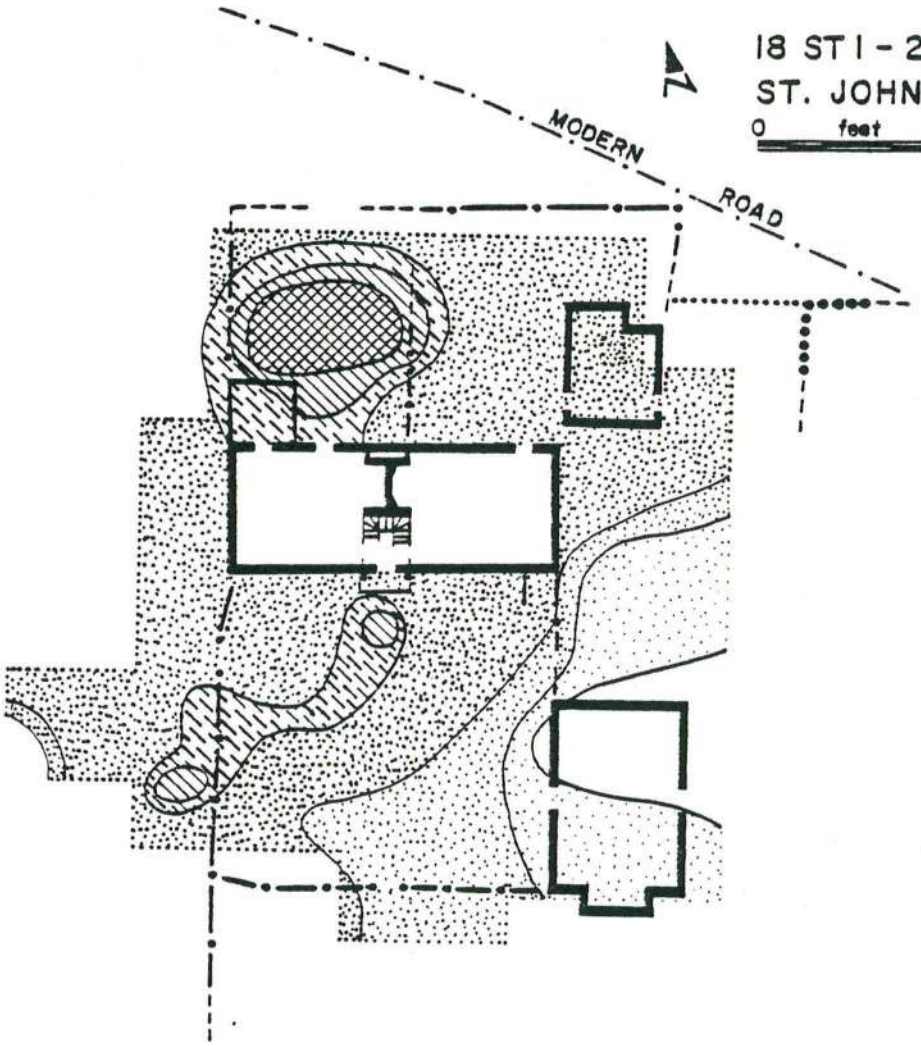
fragments per square foot
of plow zone

mean = 1.31

standard deviation = .64

	Distance from Mean	Value
	> 1.5s above	> 2.27
	1-1.5s above	1.95-2.27
	.5-1s above	1.63-1.94
	.5s below-.5s above	.99-1.62
	.5-1s below	.67-.98
	1-1.5s below	.35-.66
	< 1.5s below	< .35

FIG. 11



WHITE CLAY TOBACCO PIPES
7/64", 6/64", 5/64" stem bore diameters

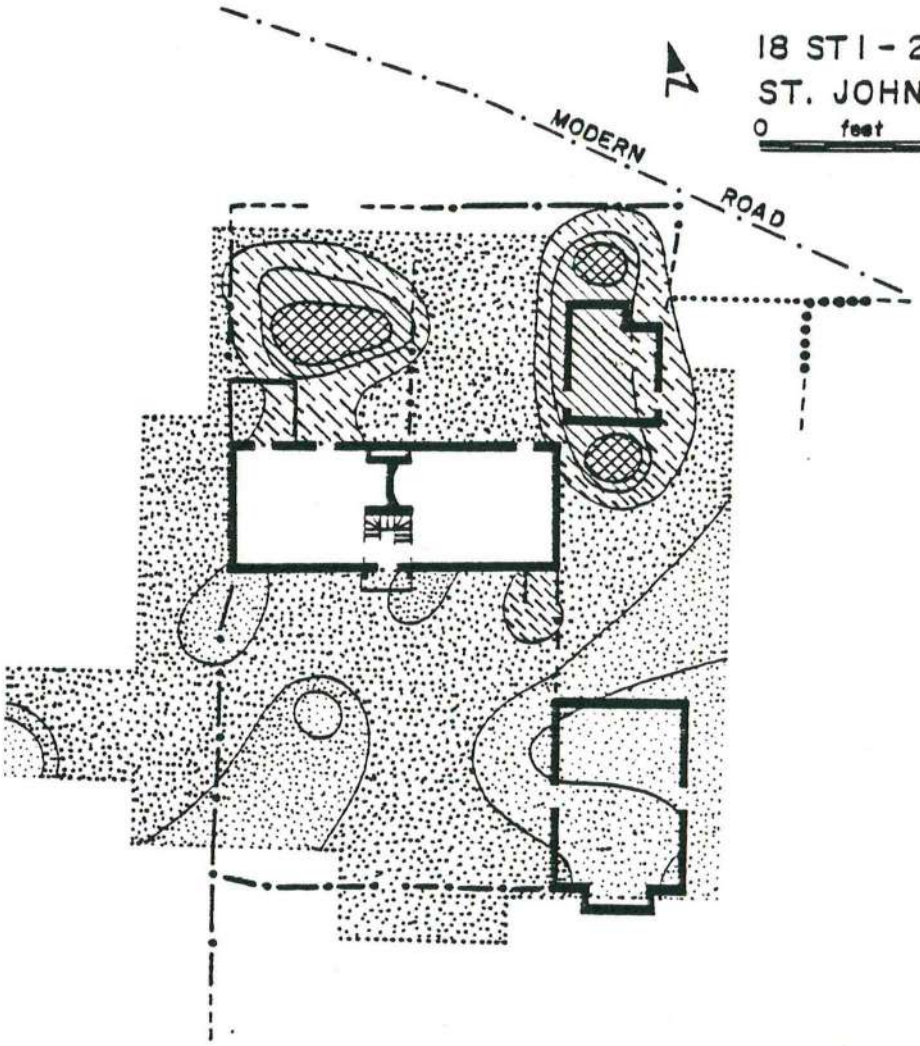
fragments per square foot
of plow zone

mean = .88

standard deviation = .40

	Distance from Mean	Value
	> 1.5s above	> 1.48
	1-1.5s above	1.28-1.48
	.5-1s above	1.08-1.27
	.5s below-.5s above	.68-1.07
	.5-1s below	.48-.67
	1-1.5s below	.28-.47
	< 1.5s below	< .28

FIG. 12



WHITE CLAY TOBACCO PIPES
6/64", 5/64", 4/64" stem bore diameters

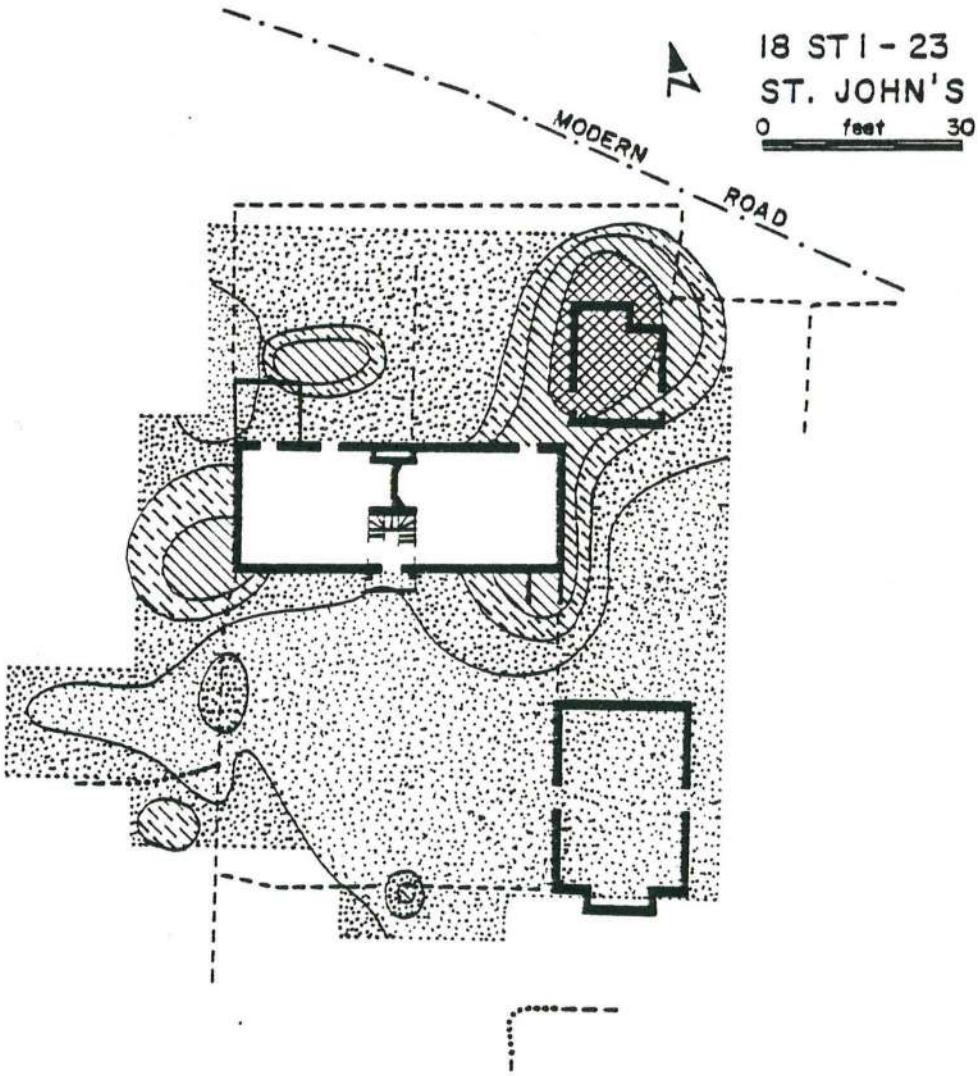
fragments per square foot
of plow zone

mean = .28

standard deviation = .17

	Distance from Mean	Value
	> 1.5s above	> .55
	1-1.5s above	.46-.55
	.5-1s above	.37-.45
	.5s below-.5s above	.20-.36
	.5-1s below	.12-.19
	1-1.5s below	.04-.11
	< 1.5s below	< .04

FIG. 13



WHITE CLAY TOBACCO PIPES
5/64" and 4/64" stem bore diameters

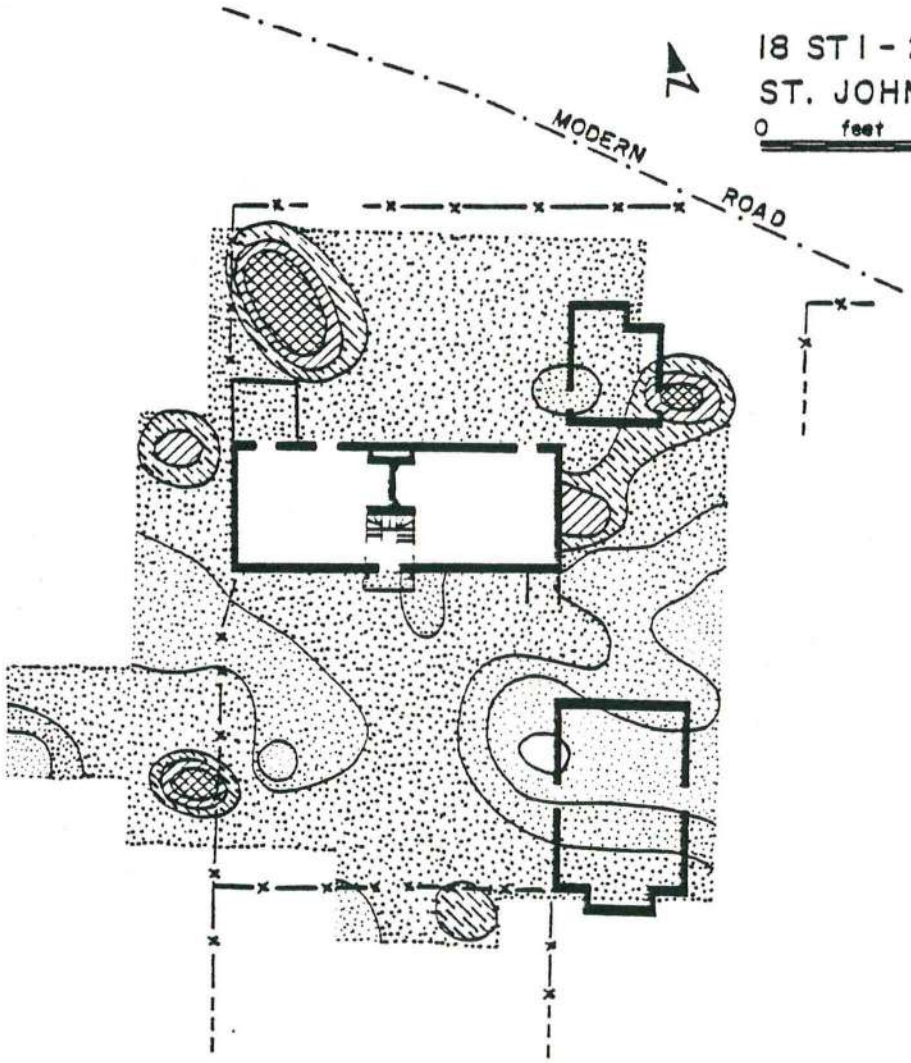
fragments per square foot
of plow zone

mean = .020

standard deviation = .020

Distance from Mean	Value
> 1.5s above	> .050
1-1.5s above	.041-.050
.5-1s above	.031-.040
.5s below-.5s above	.010-.030
< 1.5s below	< .010

FIG. 14



TOTAL CERAMICS

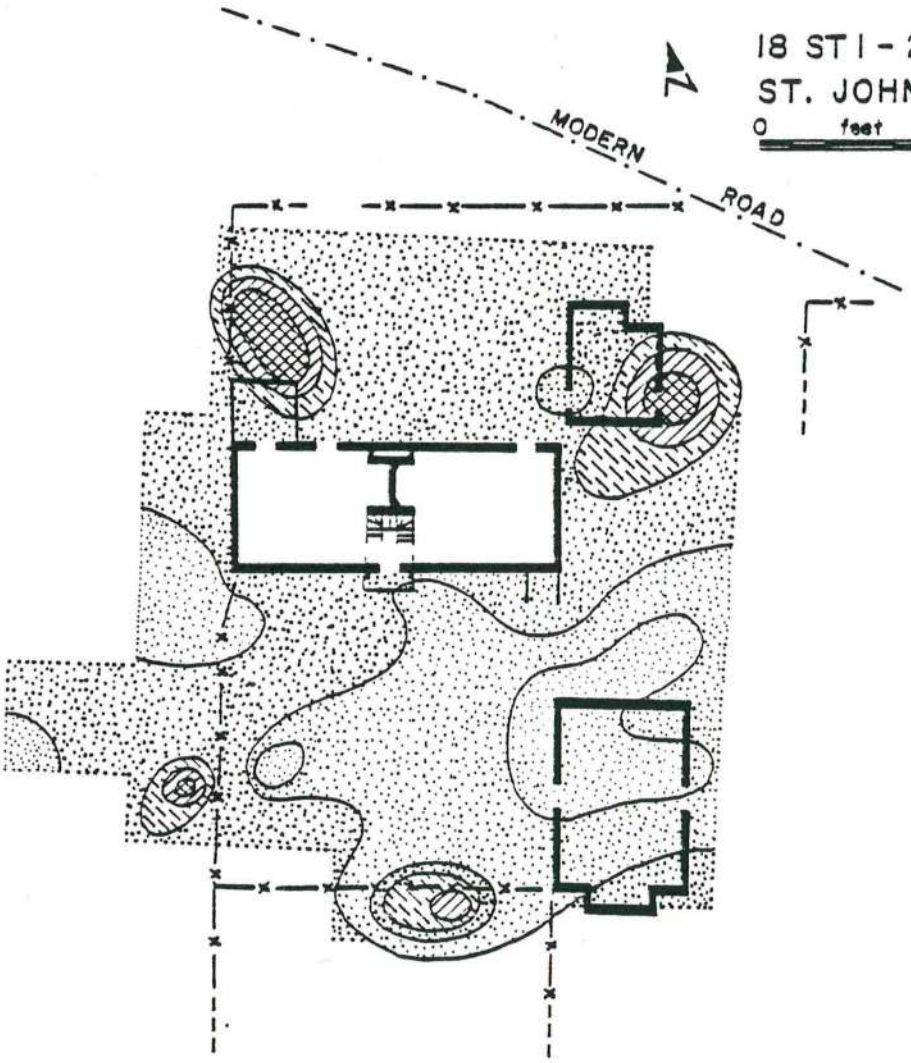
sherds per square foot
of plow zone

mean = .82

standard deviation = .47

	Distance from Mean	Value
	> 1.5s above	> 1.54
	1-1.5s above	1.30-1.54
	.5-1s above	1.06-1.29
	.5s below-.5s above	.59-1.05
	.5-1s below	.36-.58
	1-1.5s below	.13-.35
	< 1.5s below	< .13

FIG. 15



COARSE CERAMICS

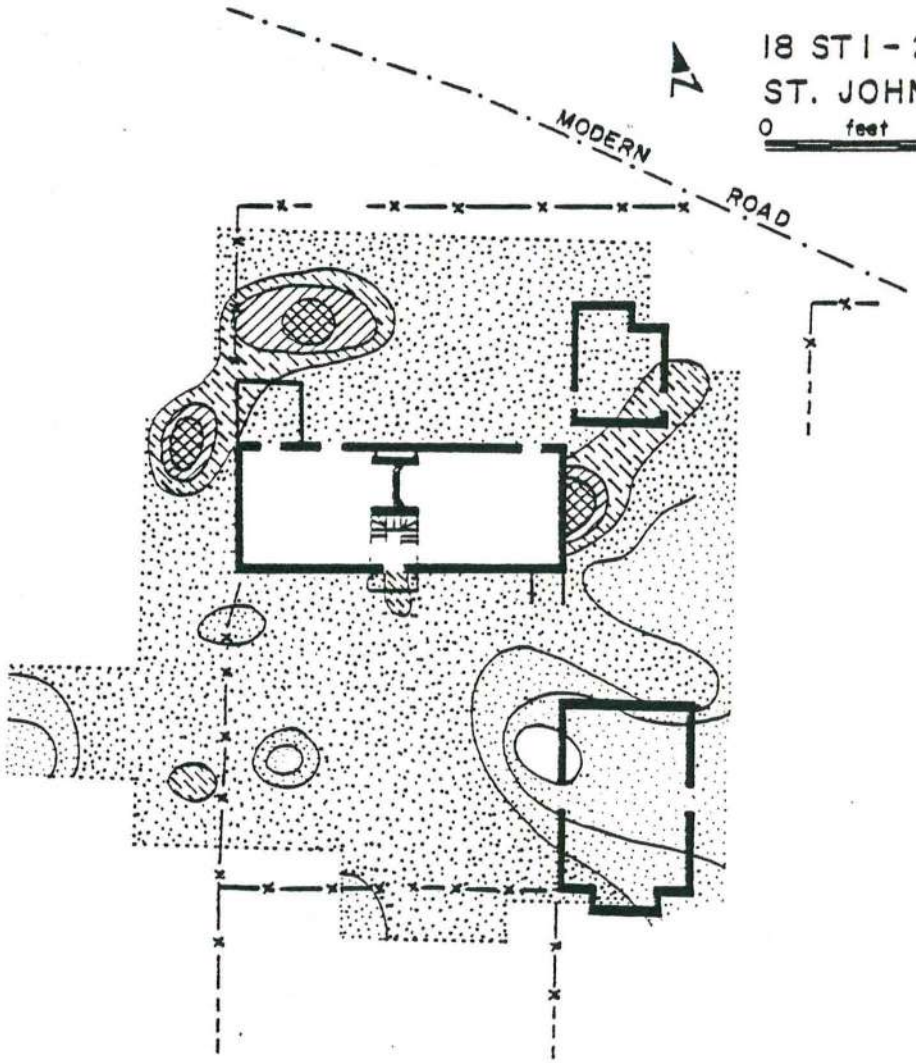
sherds per square foot
of plow zone

mean = .47

standard deviation = .31

	Distance from Mean	Value
	> 1.5s above	> .95
	1-1.5s above	.79-.95
	.5-1s above	.63-.78
	.5s below-.5s above	.31-.62
	.5-1s below	.16-.30
	< 1s below	< .16

FIG. 16



FINE CERAMICS

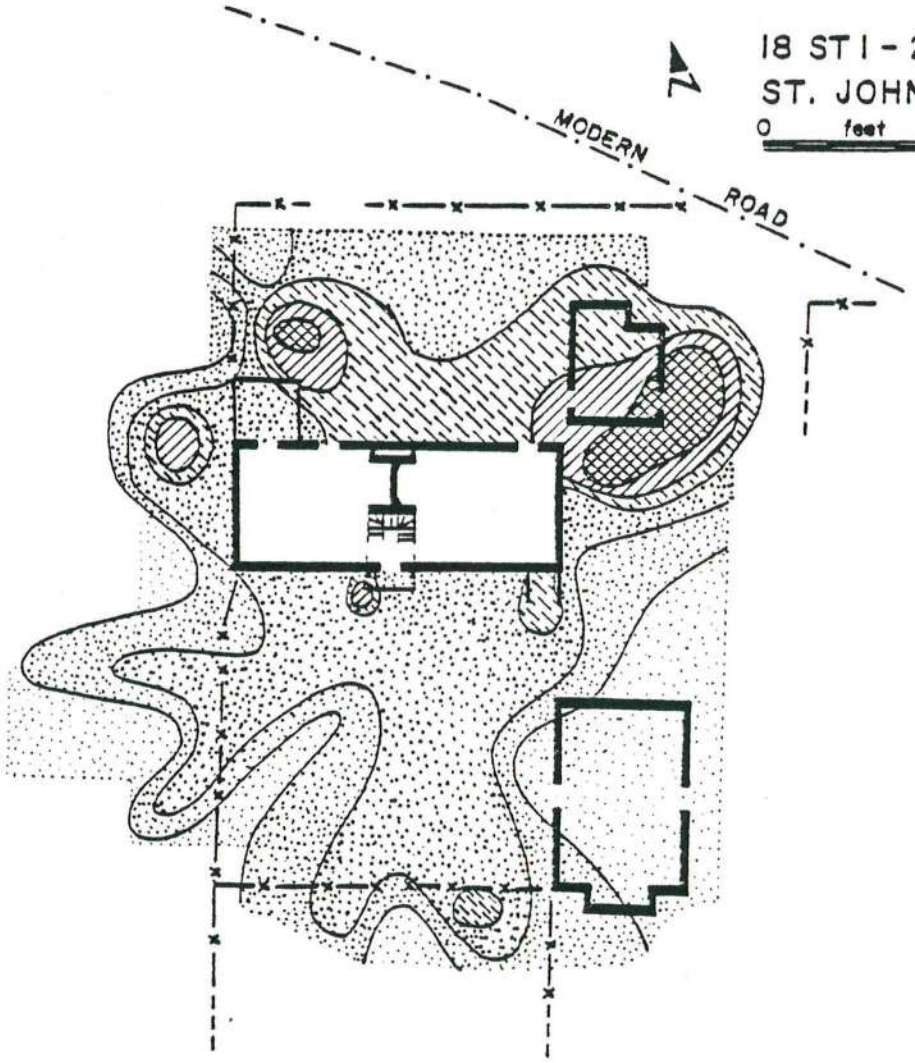
sherds per square foot
of plow zone

mean = .35

standard deviation = .20

Distance from Mean	Value
> 1.5s above	> .65
1-1.5s above	.55-.65
.5-1s above	.45-.54
.5s below-.5s above	.25-.44
.5-1s below	.15-.24
1-1.5s below	.05-.14
< 1.5s below	< .05

FIG. 17



TERRA COTTA PIPES

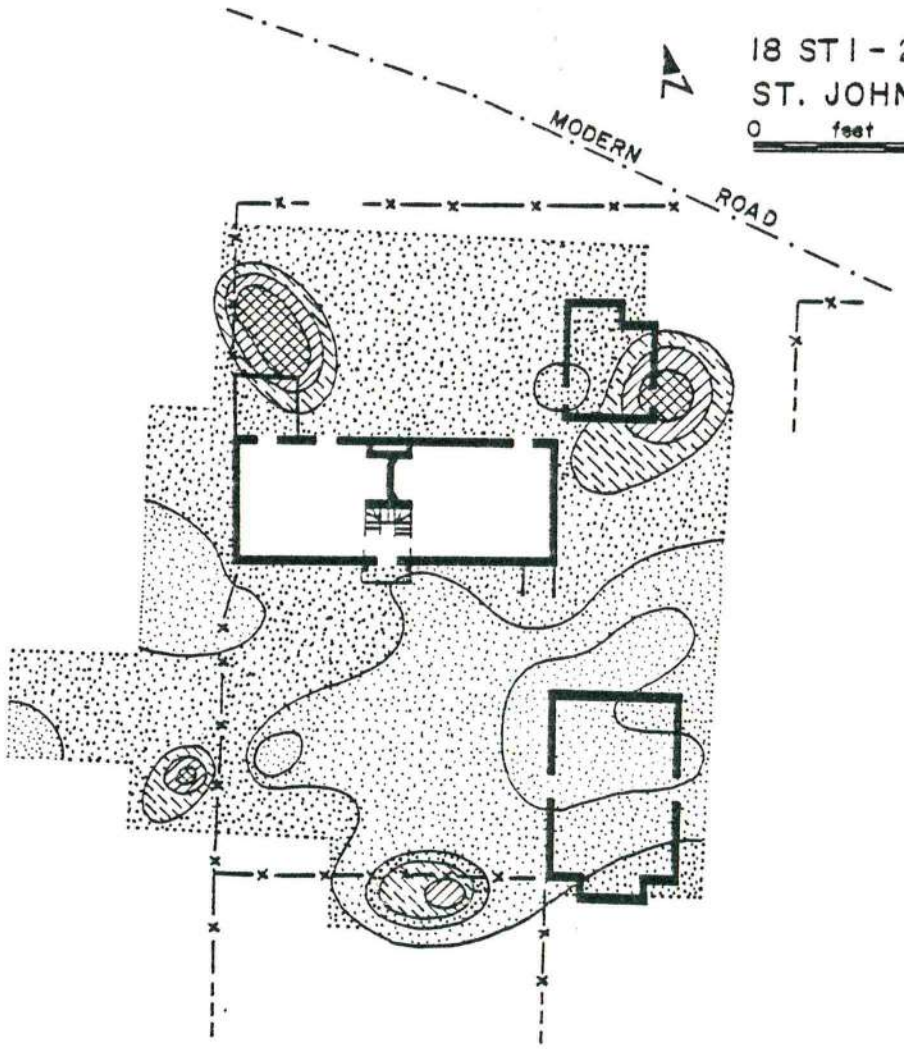
fragments per square foot of plow zone

mean = .11

standard deviation = .12

	Distance from Mean	Value
	> 1.5s above	> .22
	1-1.5s above	.17-.22
	.5-1s above	.14-.16
	.5s below-.5s above	.08-.13
	.5-1s below	.05-.07
	< 1s below	< .05

FIG. 18



COARSE CERAMICS

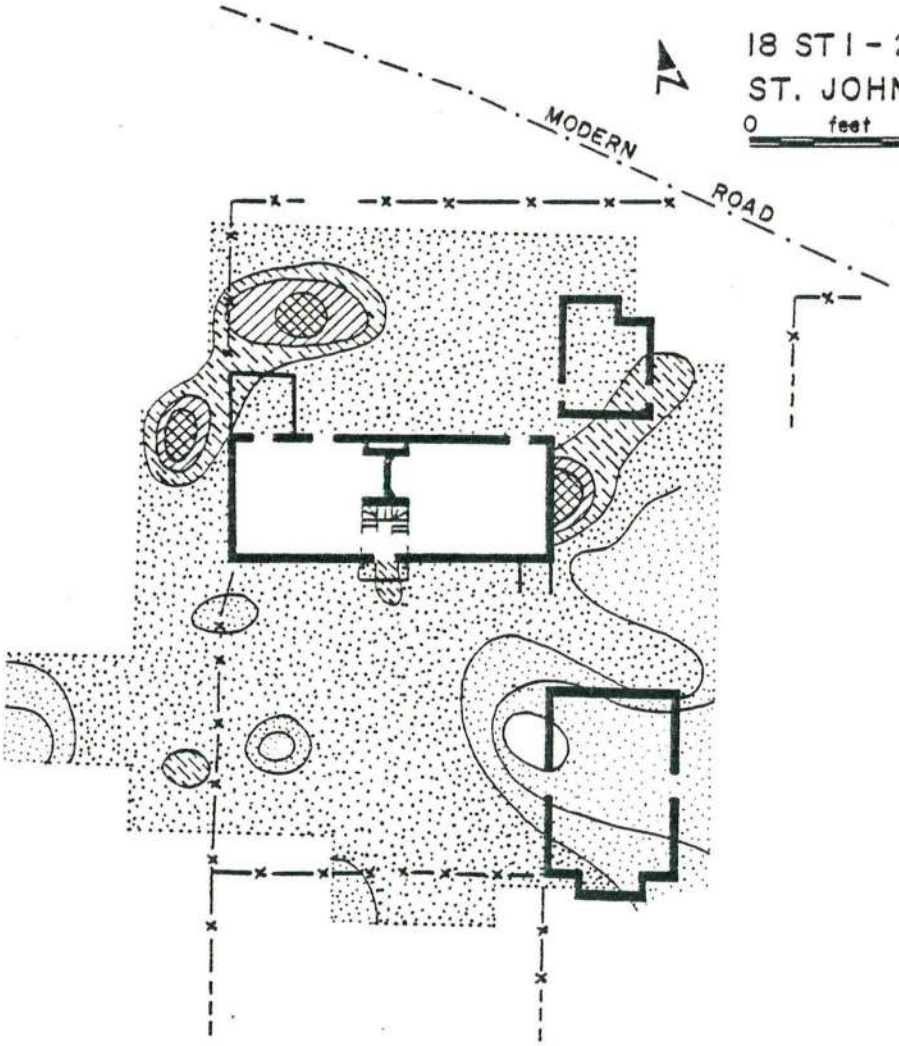
sherds per square foot
of plow zone

mean = .47

standard deviation = .31

Distance from Mean	Value
> 1.5s above	> .95
1-1.5s above	.79-.95
.5-1s above	.63-.78
.5s below-.5s above	.31-.62
.5-1s below	.16-.30
< 1s below	< .16

FIG. 16



FINE CERAMICS

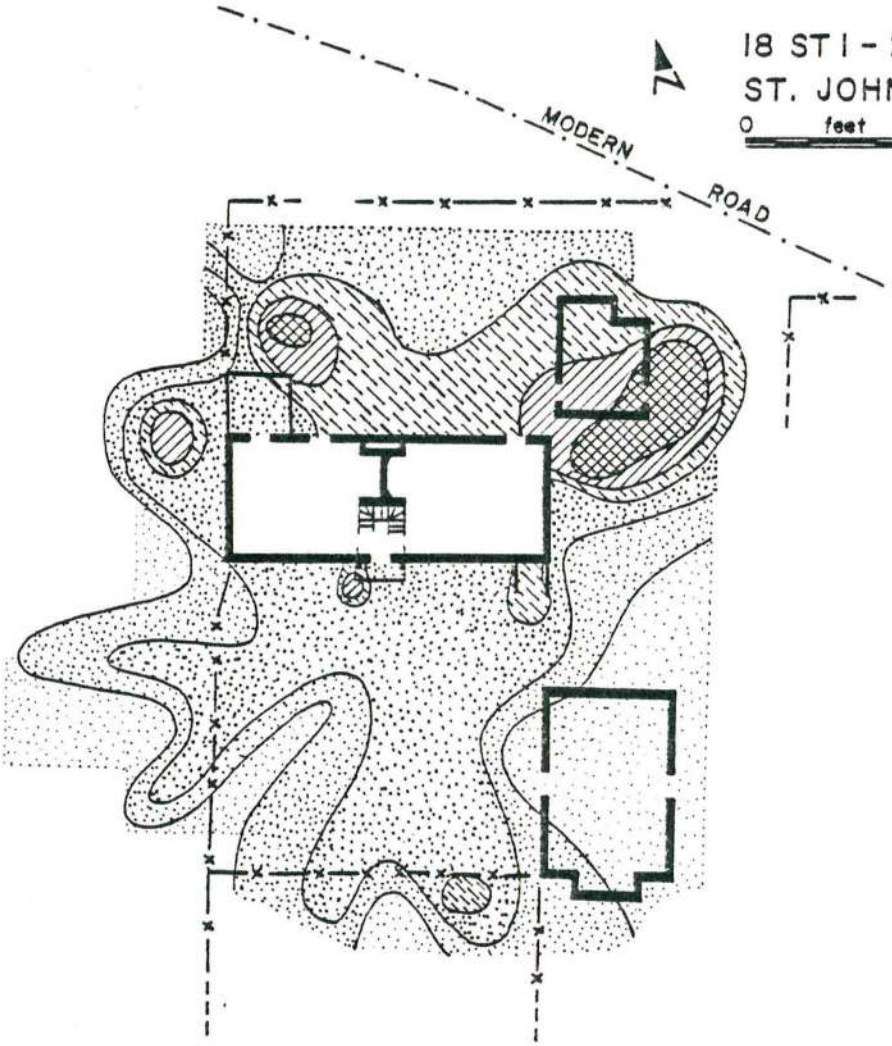
sherds per square foot of plow zone

mean = .35

standard deviation = .20

	Distance from Mean	Value
	> 1.5s above	> .65
	1-1.5s above	.55-.65
	.5-1s above	.45-.54
	.5s below-.5s above	.25-.44
	.5-1s below	.15-.24
	1-1.5s below	.05-.14
	< 1.5s below	< .05

FIG. 17



TERRA COTTA PIPES

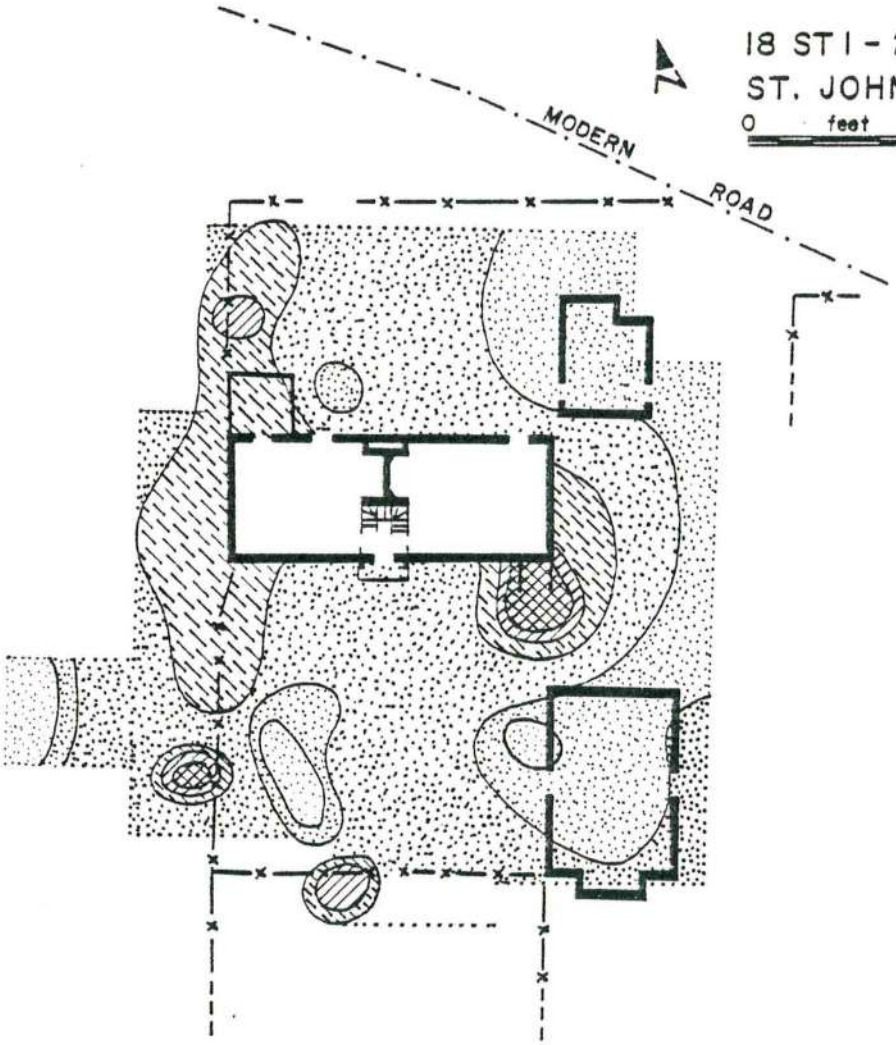
fragments per square foot of plow zone

mean = .11

standard deviation = .12

Distance from Mean	Value
> 1.5s above	> .22
1-1.5s above	.17-.22
.5-1s above	.14-.16
.5s below-.5s above	.08-.13
.5-1s below	.05-.07
< 1s below	< .05

FIG. 18



BOTTLE GLASS

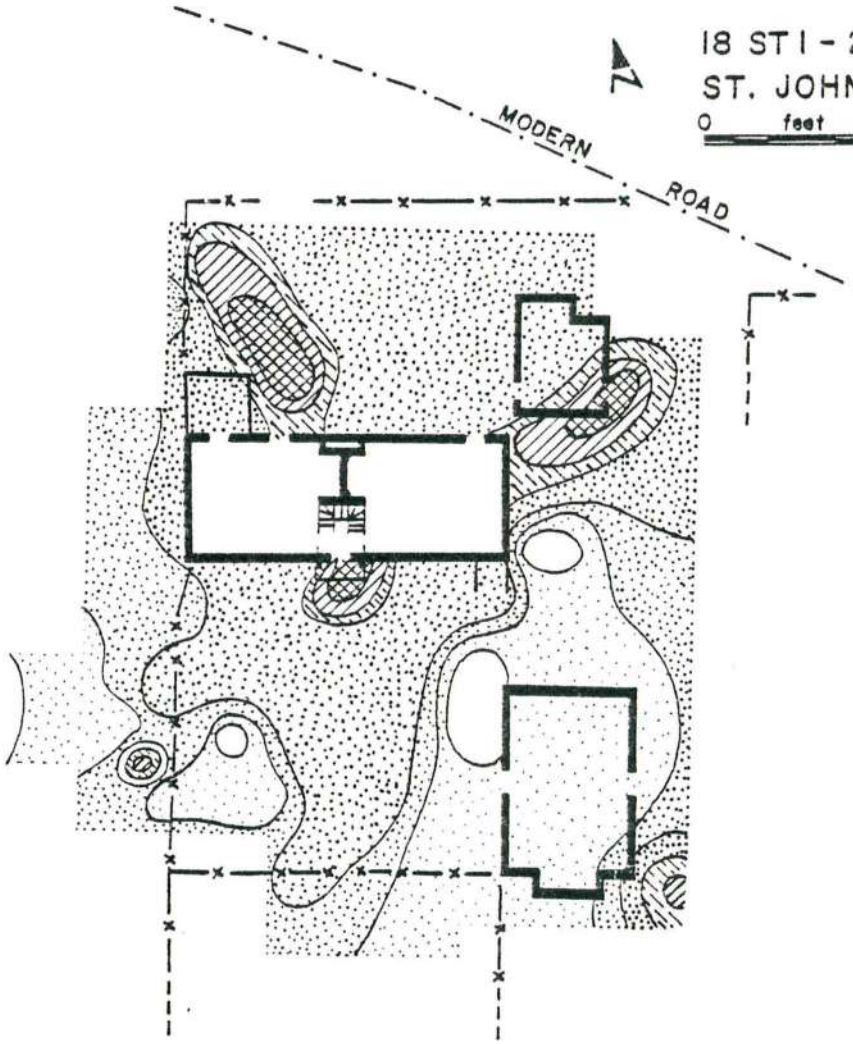
fragments per square foot of plow zone

mean = 1.15

standard deviation = .88

	Distance from Mean	Value
	> 1.5s above	> 2.43
	1-1.5s above	2.04-2.43
	.5-1s above	1.60-2.03
	.5s below-.5s above	.62-1.59
	.5-1s below	.17-.61
	< 1s below	< .17

FIG. 19



BONES

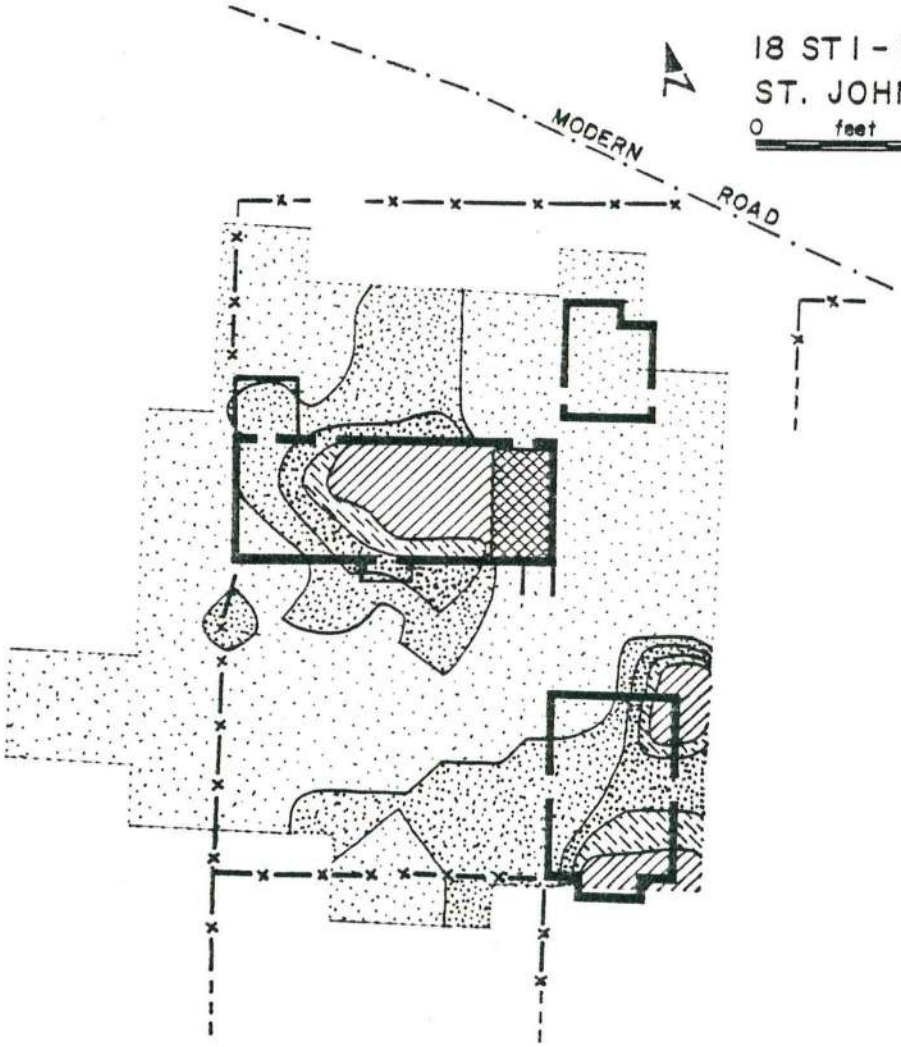
grams per square foot
of plow zone

mean = 1.14

standard deviation = 1.18

Distance from Mean	Value
> 1.5s above	> 2.04
1-1.5s above	1.74-2.03
.5-1s above	1.44-1.73
.5s below-.5s above	.85-1.43
.5-1s below	.56-.84
1-1.5s below	.27-.55
< 1.5s below	0-.26

FIG. 20



RED BRICK

cubic feet of rubble
per 100 square feet

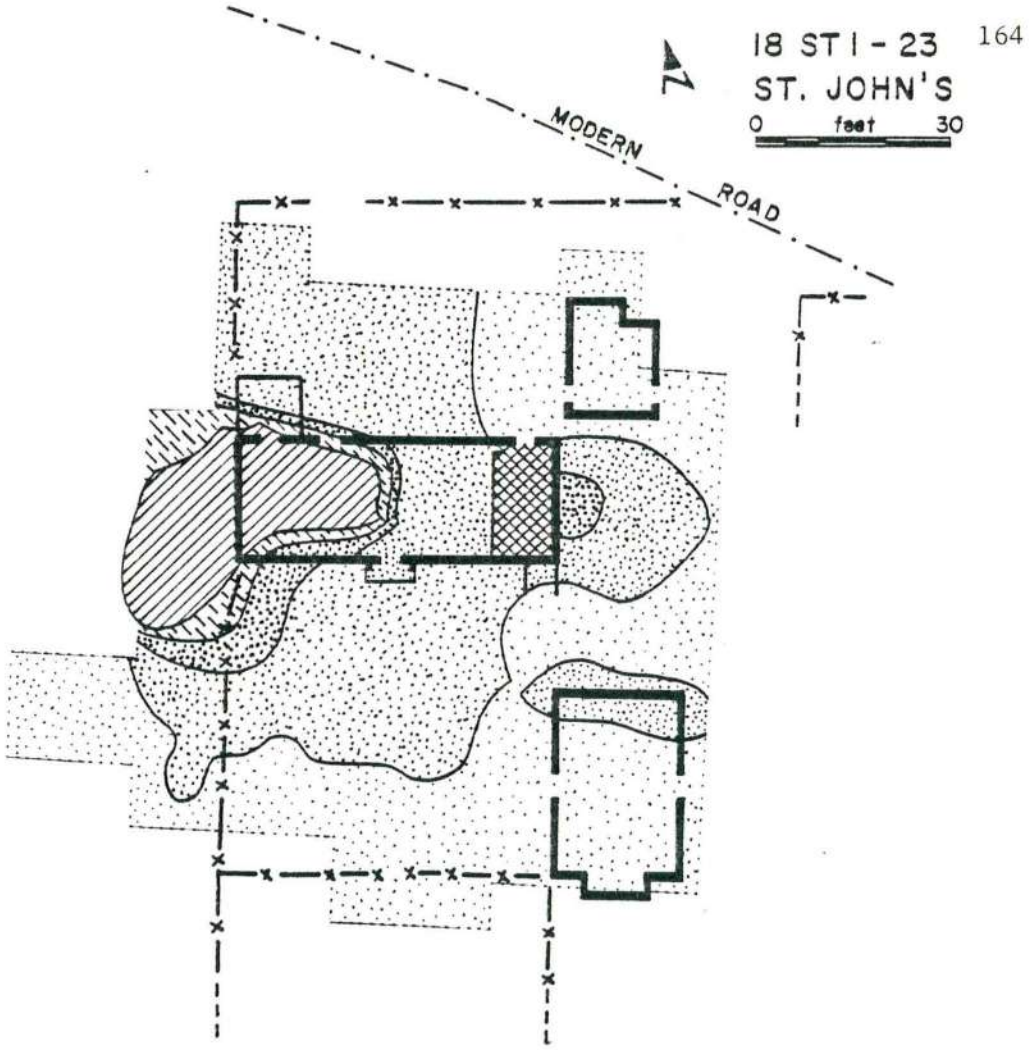
mean = .47

standard deviation = .60

(cellar values excluded)

Distance from Mean	Value
Cellar	18.14-48.71
> 1.25 above	1.23-2.42
.75-1.25 above	.93-1.22
.25-.75 above	.63-.92
.25 below-.25 above	.33-.62
< .25 below	0-.32

FIG. 22



PANTILE

cubic feet of rubble
per 100 square feet

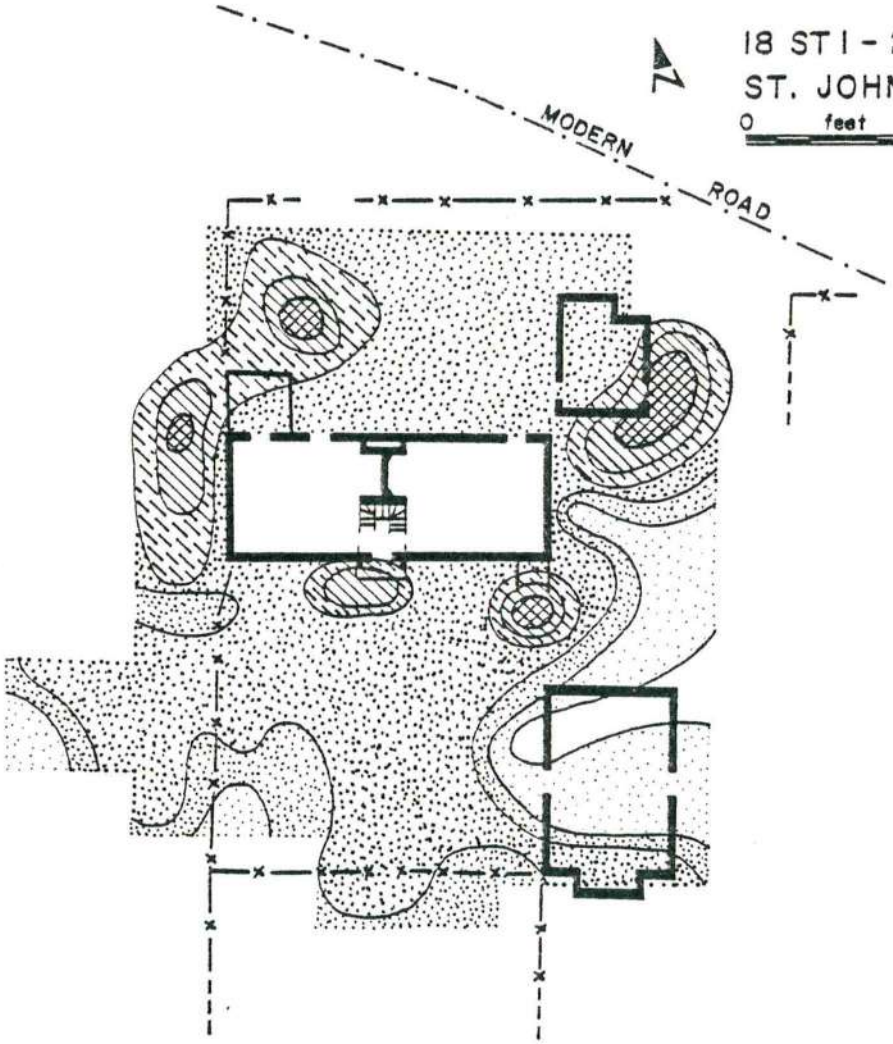
mean = .77

standard deviation = .81

(cellar values excluded)

Distance from Mean	Value
Cellar	43.79-55.57
>1.5s above	1.99-3.31
1-1.5s above	1.59-1.98
.5-1s above	1.18-1.58
.5s above - .5s below	.37-1.17
<.5s below	0-.36

FIG. 23



NAILS

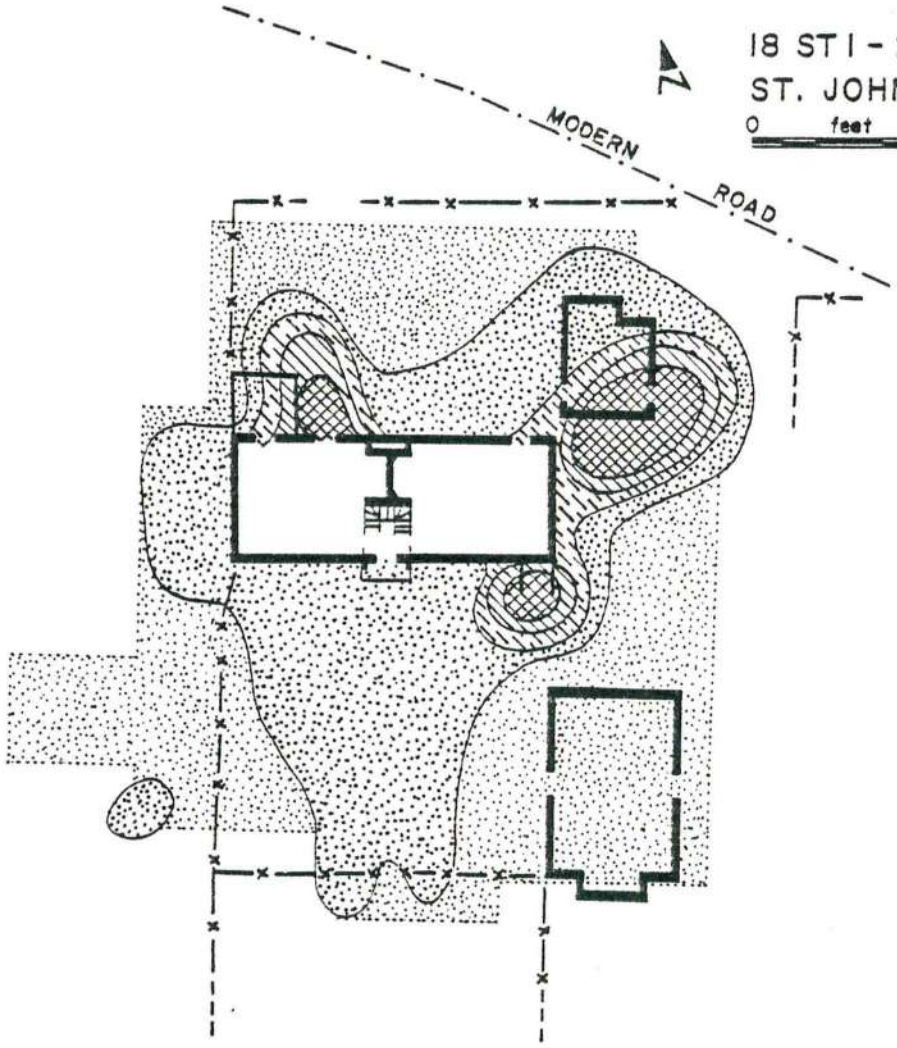
grams per square foot
of plow zone

mean = 12.18

standard deviation = 6.28

Distance from Mean	Value
> 1.5s above	> 21.60
1-1.5s above	18.46-21.60
.5-1s above	15.32-18.45
.5s below-.5s above	9.04-15.31
.5-1s below	5.90-9.03
1-1.5s below	2.76-5.89
< 1.5s below	< 2.76

FIG. 24



WINDOW GLASS

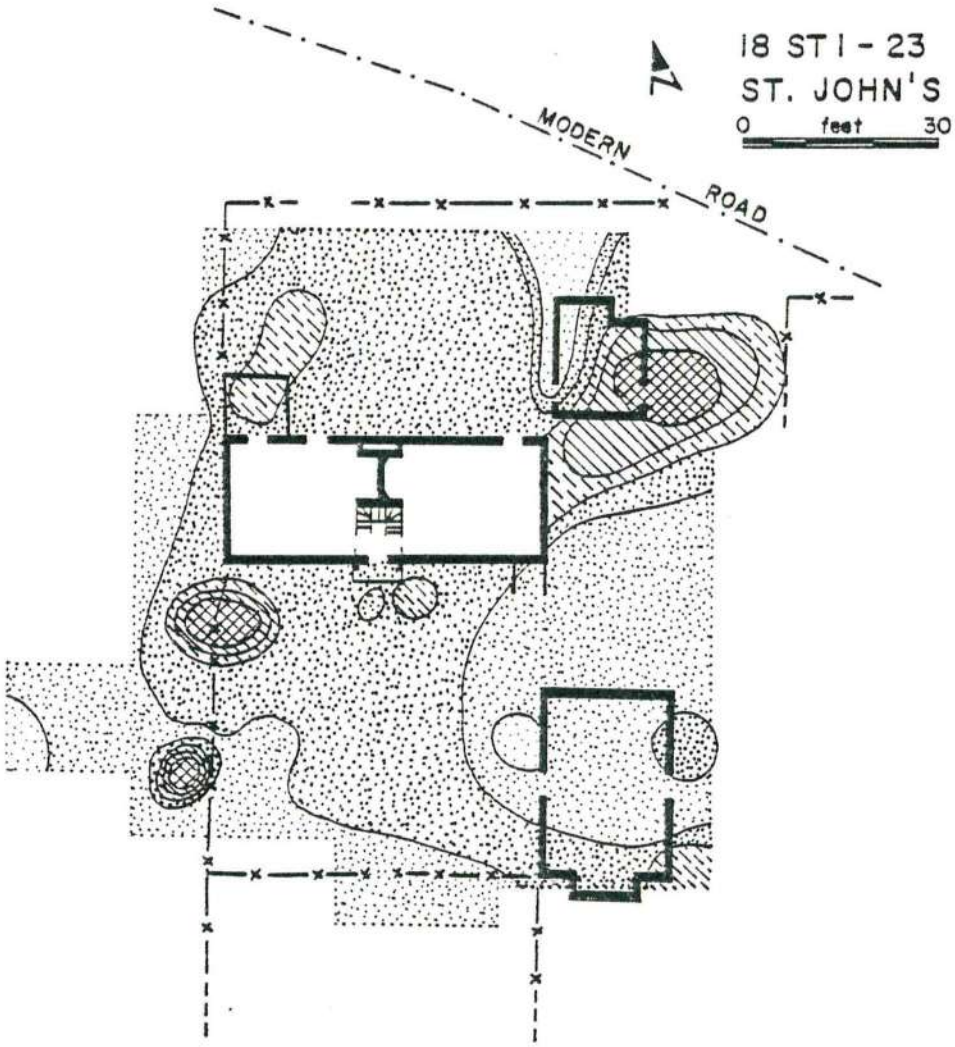
grams per square foot
of plow zone

mean = .09

standard deviation = .13

	Distance from Mean	Value
	> 1.5s above	> .30
	1-1.5s above	.23-.30
	.5-1s above	.16-.22
	.5s below-.5s above	.03-.15
	.5-1s below	< .03

FIG. 25



OYSTER SHELL

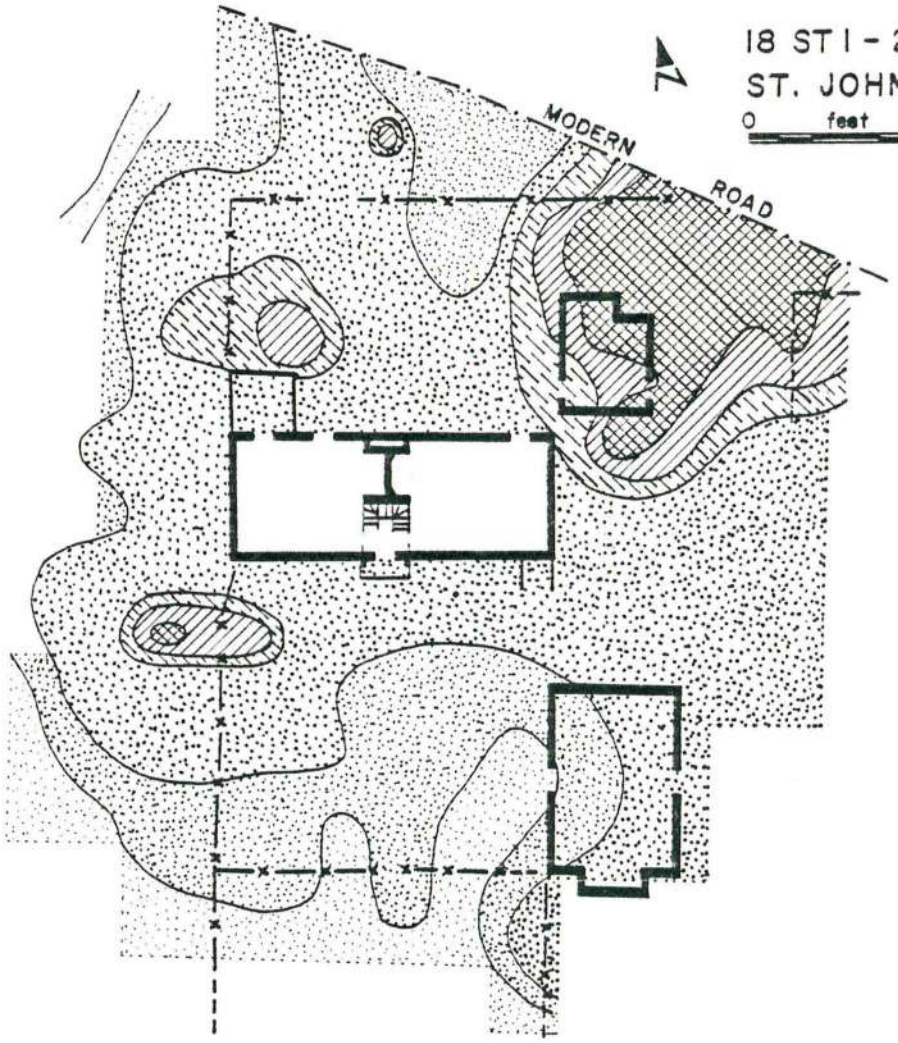
grams per square foot
of plow zone

mean = .19

standard deviation = .23

	Distance from Mean	Value
	> 1.5s above	> .48
	1-1.5s above	.37-.48
	.5-1s above	.25-.36
	.5s below-.5s above	.13-.24
	.5-1s below	.02-.12
	<1s below	<.02

FIG. 26



CALCIUM

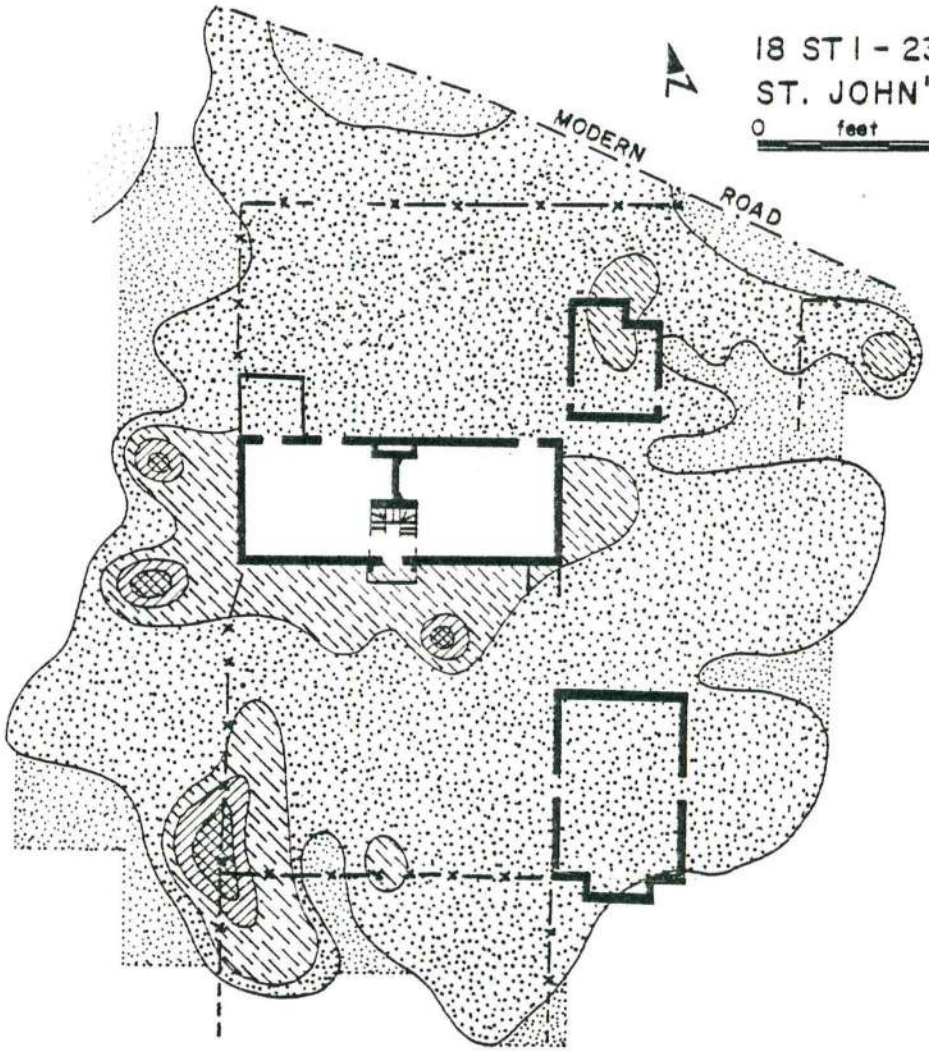
parts per two million

mean = 4900

standard deviation = 300

Distance from Mean	Value
> 1.5s above	> 9400
1-1.5s above	7900-9400
.5-1s above	6400-7899
.5s below-.5s above	3400-6399
.5-1s below	1900-3399
1-1.5s below	400-1899
< 1.5s below	< 400

FIG. 27



POTASH

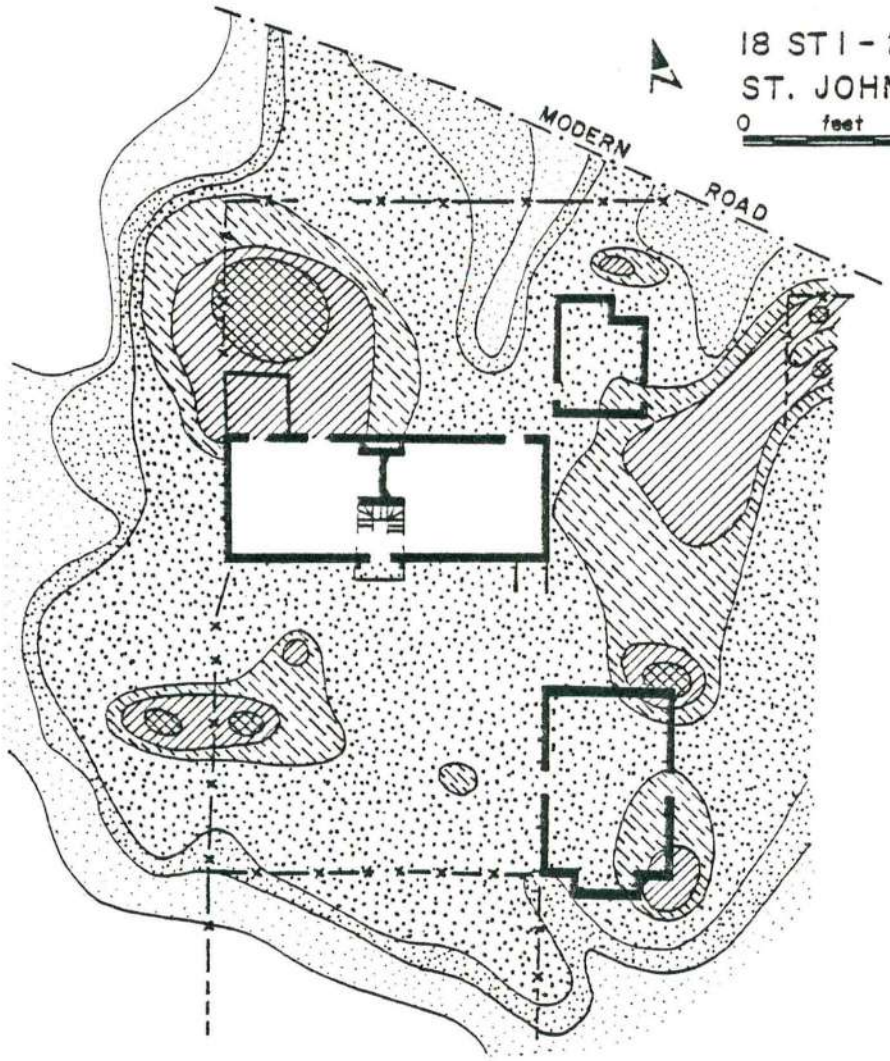
parts per two million

mean = 48

standard deviation = 37

	Distance from Mean	Value
	> 1.5s above	> 103
	1-1.5s above	84-103
	.5-1s above	66-83
	.5s below-.5s above	30-65
	.5-1s below	11-29
	< 1s below	< 11

FIG. 28



PHOSPHATES

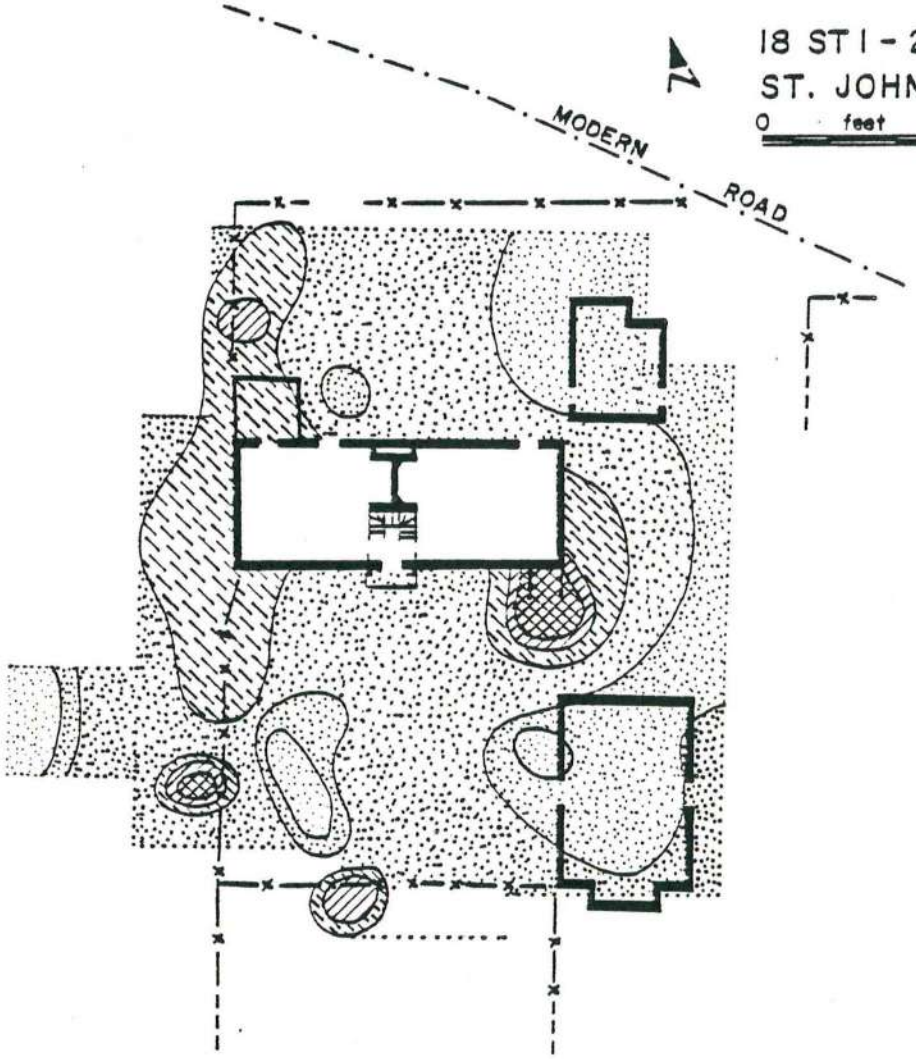
parts per two million

mean = 499

standard deviation = 251

Distance from Mean	Value
> 1.5s above	> 876
1-1.5s above	751-876
.5-1s above	626-750
.5s below-.5s above	375-625
.5-1s below	249-374
1-1.5s below	124-248
< 1.5s below	< 124

FIG. 29



BOTTLE GLASS

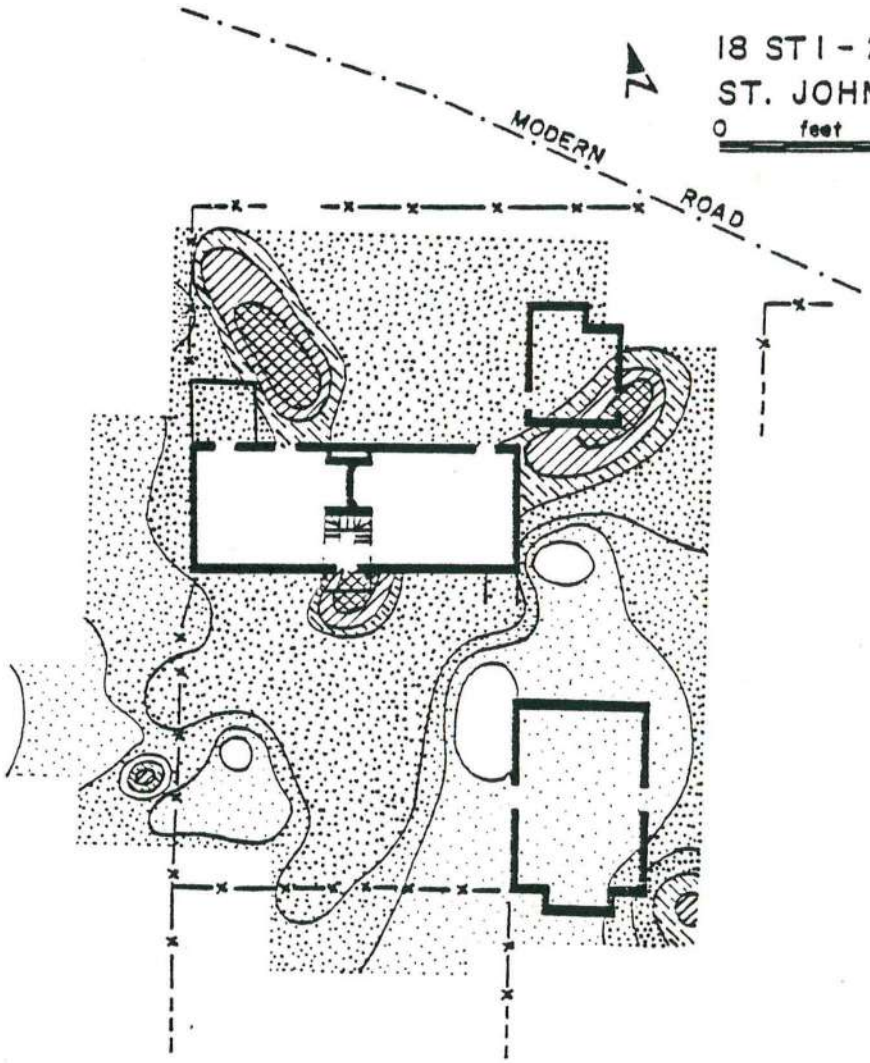
fragments per square foot of plow zone

mean = 1.15

standard deviation = .88

	Distance from Mean	Value
	> 1.5s above	> 2.43
	1-1.5s above	2.04-2.43
	.5-1s above	1.60-2.03
	.5s below-.5s above	.62-1.59
	.5-1s below	.17-.61
	< 1s below	< .17

FIG. 19



BONES

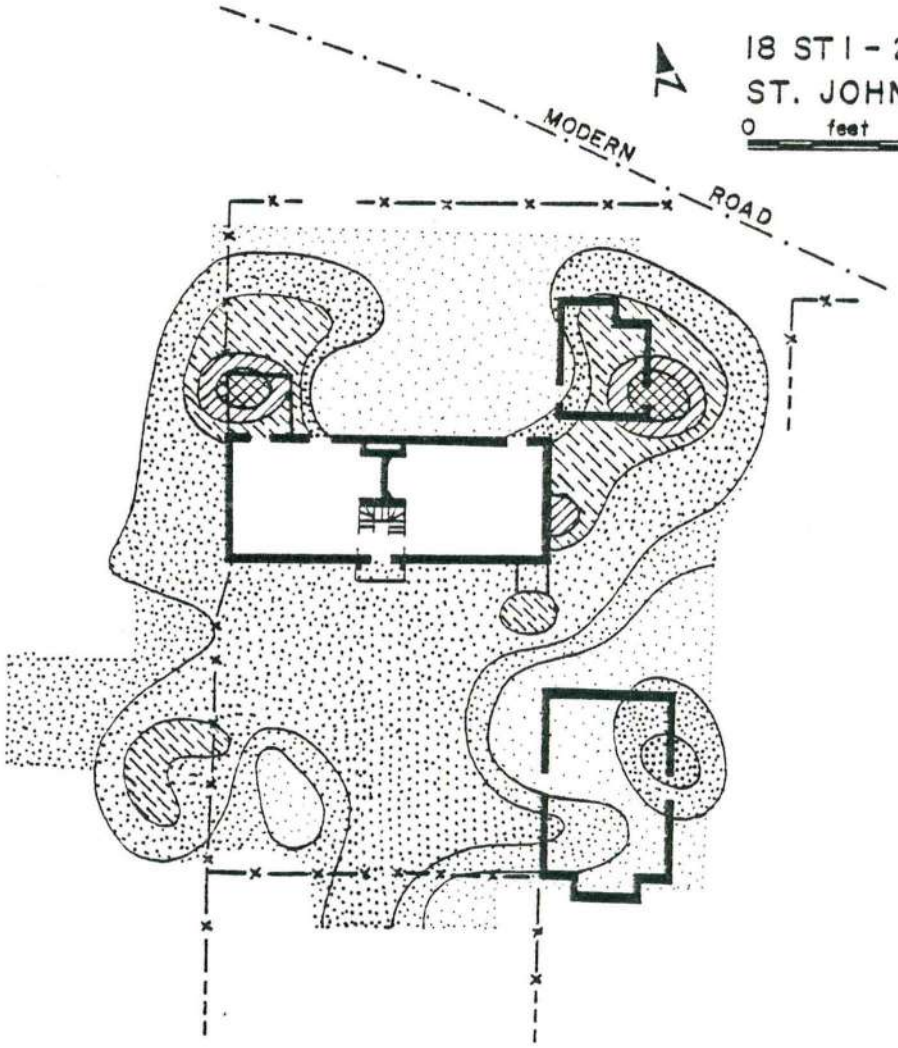
grams per square foot
of plow zone

mean = 1.14

standard deviation = 1.18

	Distance from Mean	Value
	> 1.5s above	> 2.04
	1-1.5s above	1.74-2.03
	.5-1s above	1.44-1.73
	.5s below-.5s above	.85-1.43
	.5-1s below	.56-.84
	1-1.5s below	.27-.55
	< 1.5s below	0-.26

FIG. 20



FLINT

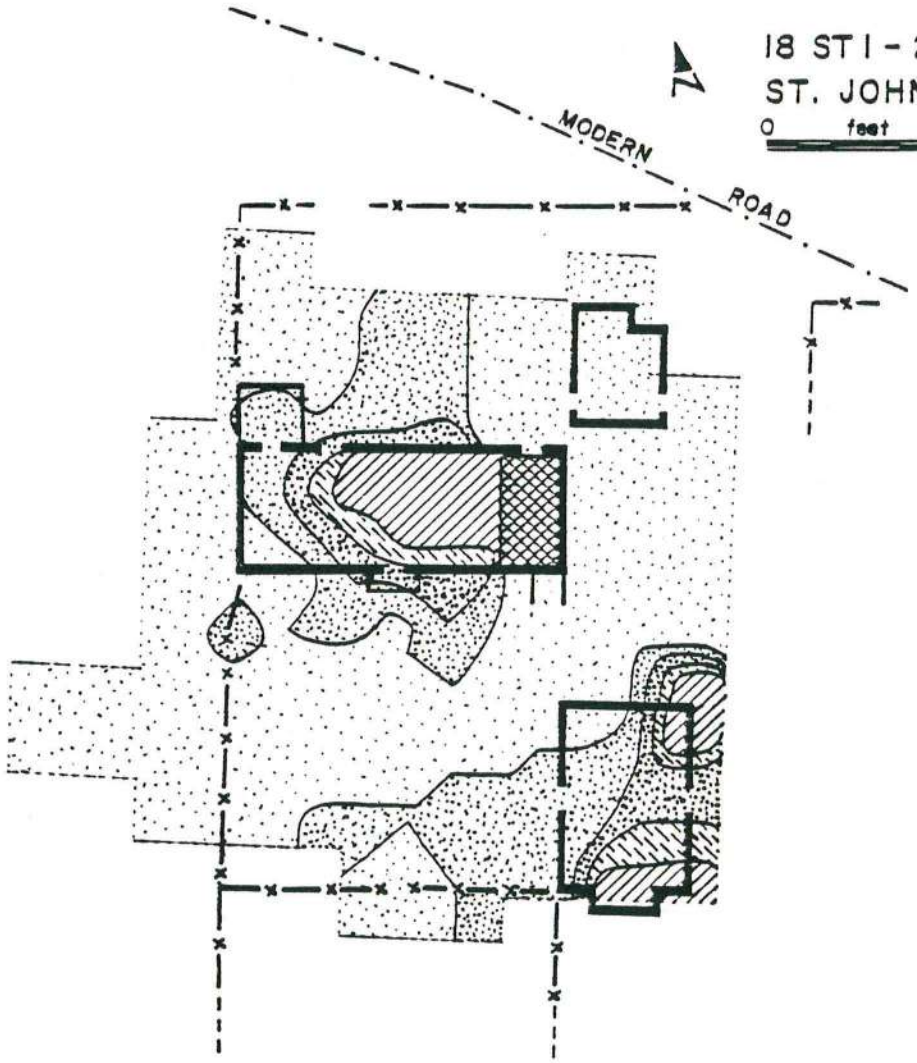
fragments per square foot of plow zone

mean = .10

standard deviation = .07

Distance from Mean	Value
> 1.5s above	> .21
1-1.5s above	.17-.21
.5-1s above	.14-.16
.5s below-.5s above	.07-.13
.5s-1s below	.03-.06
< 1s below	< .03

FIG. 21



RED BRICK

cubic feet of rubble
per 100 square feet

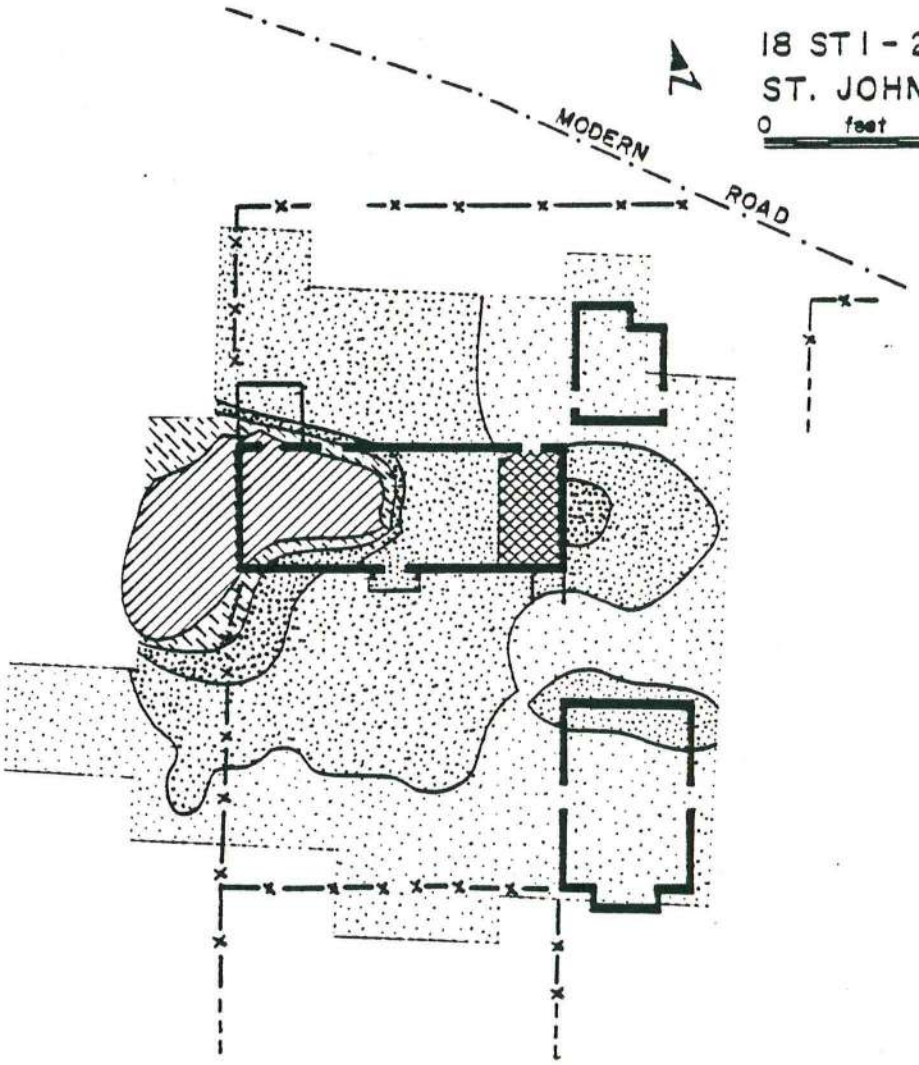
mean = .47

standard deviation = .60

(cellar values excluded)

Distance from Mean	Value
Cellar	18.14-48.71
> 1.25 above	1.23-2.42
.75-1.25 above	.93-1.22
.25-.75 above	.63-.92
.25 below-.25 above	.33-.62
< .25 below	0-.32

FIG. 22



PANTILE

cubic feet of rubble per 100 square feet

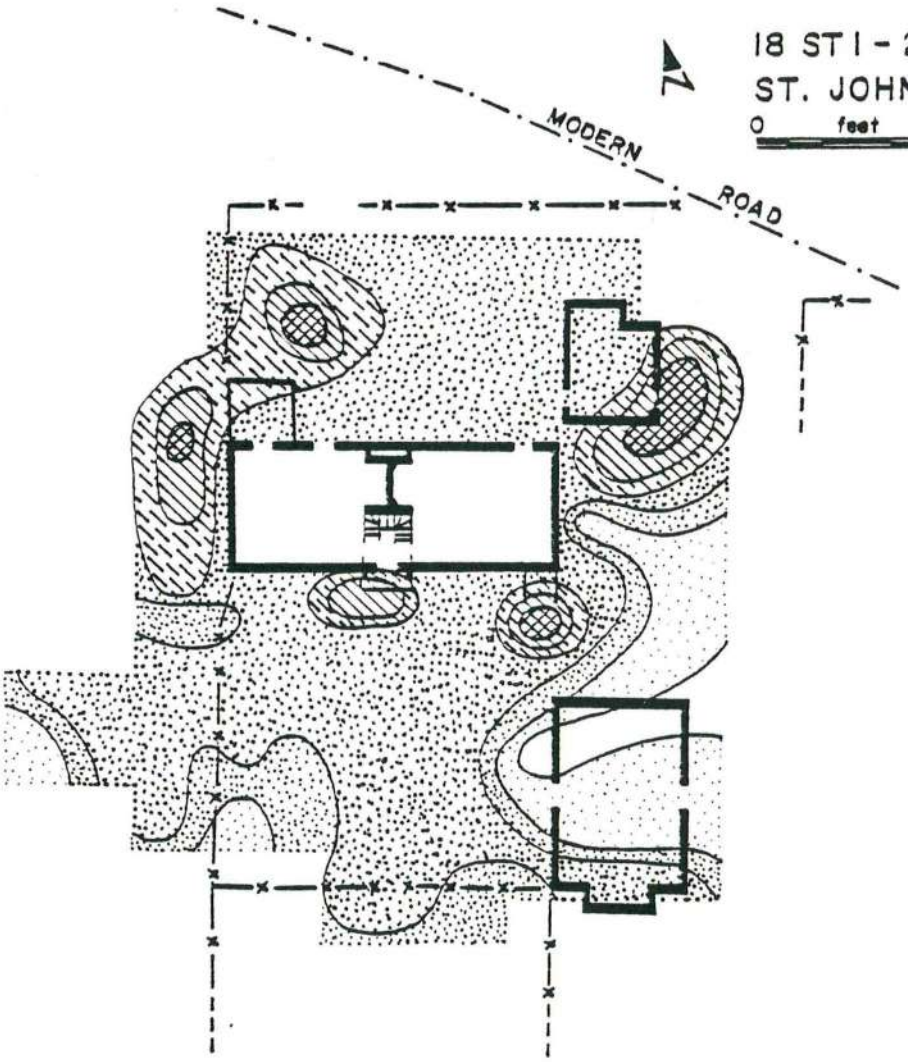
mean = .77

standard deviation = .81

(cellar values excluded)

Distance from Mean	Value
Cellar	43.79-55.57
>1.5s above	1.99-3.31
1-1.5s above	1.59-1.98
.5-1s above	1.18-1.58
.5s above - .5s below	.37-1.17
<.5s below	0-.36

FIG. 23



NAILS

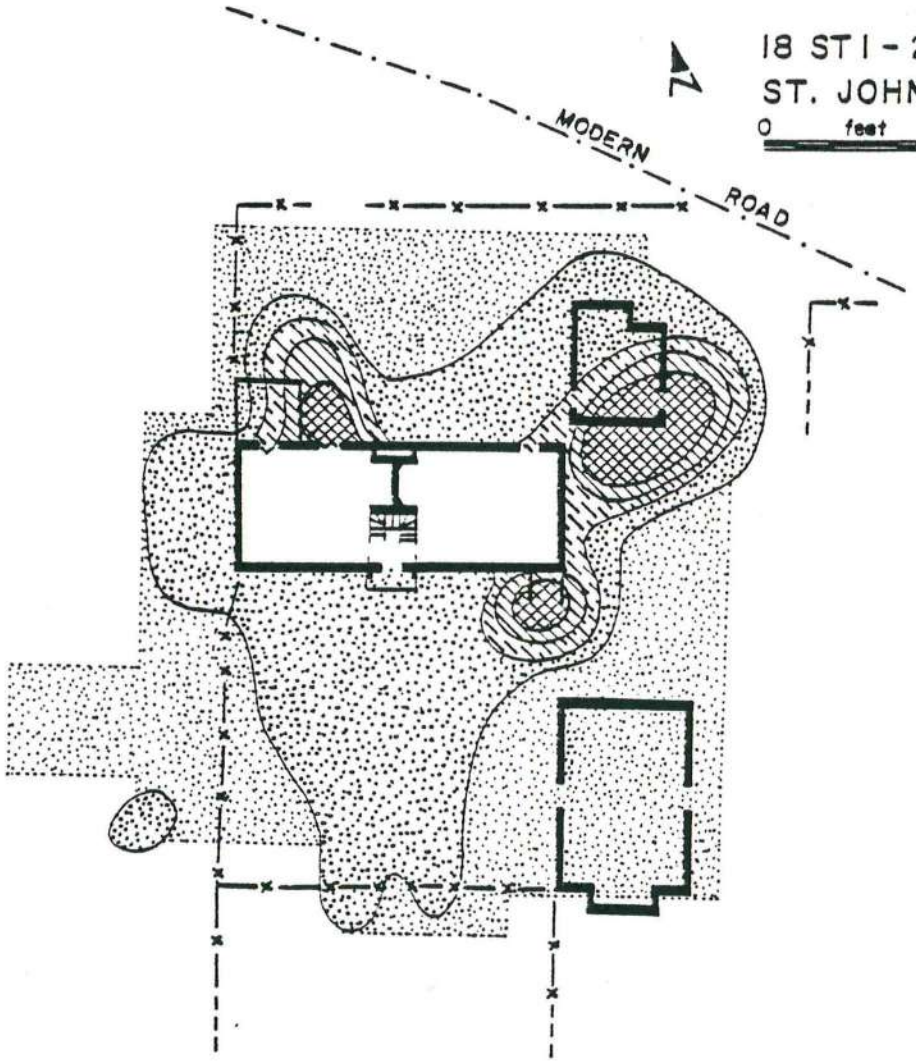
grams per square foot
of plow zone

mean = 12.18

standard deviation = 6.28

	Distance from Mean	Value
	> 1.5s above	> 21.60
	1-1.5s above	18.46-21.60
	.5-1s above	15.32-18.45
	.5s below-.5s above	9.04-15.31
	.5-1s below	5.90-9.03
	1-1.5s below	2.76-5.89
	< 1.5s below	< 2.76

FIG. 24



WINDOW GLASS

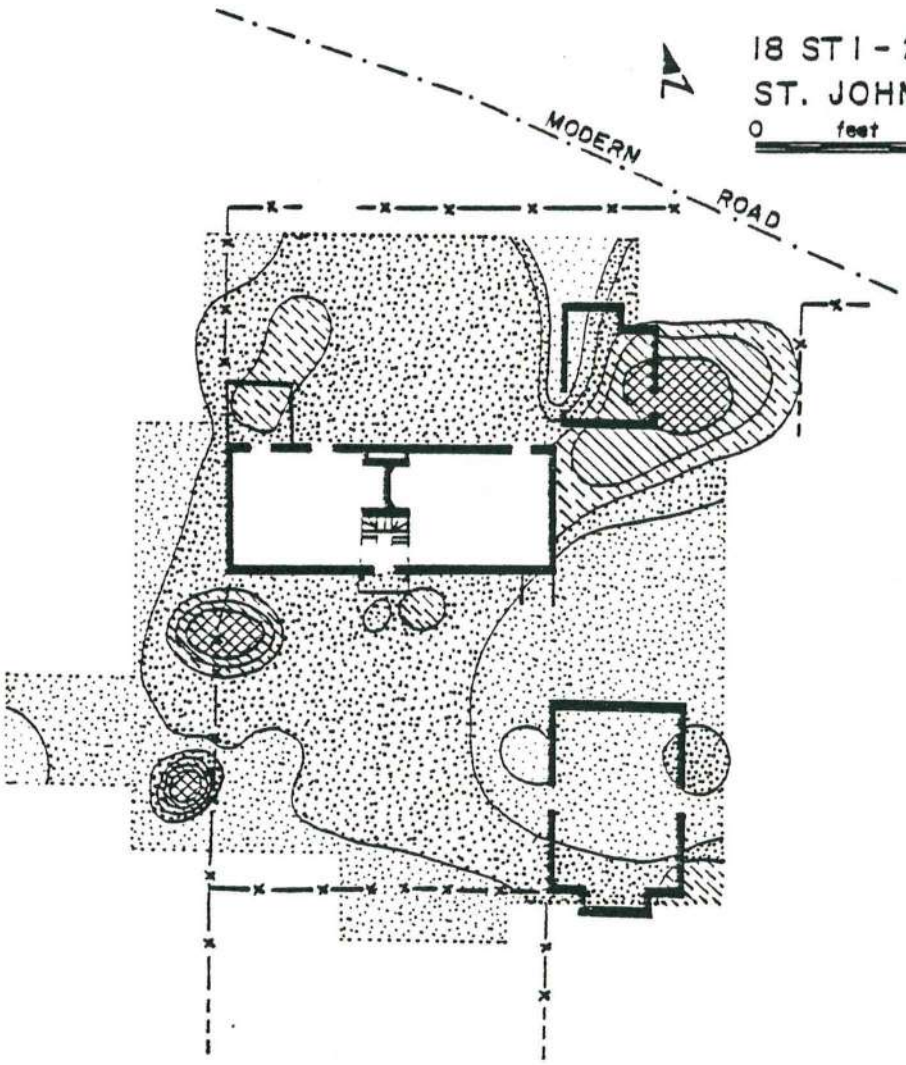
grams per square foot
of plow zone

mean = .09

standard deviation = .13

Distance from Mean	Value
> 1.5s above	> .30
1-1.5s above	.23-.30
.5-1s above	.16-.22
.5s below-.5s above	.03-.15
.5-1s below	< .03

FIG. 25



OYSTER SHELL

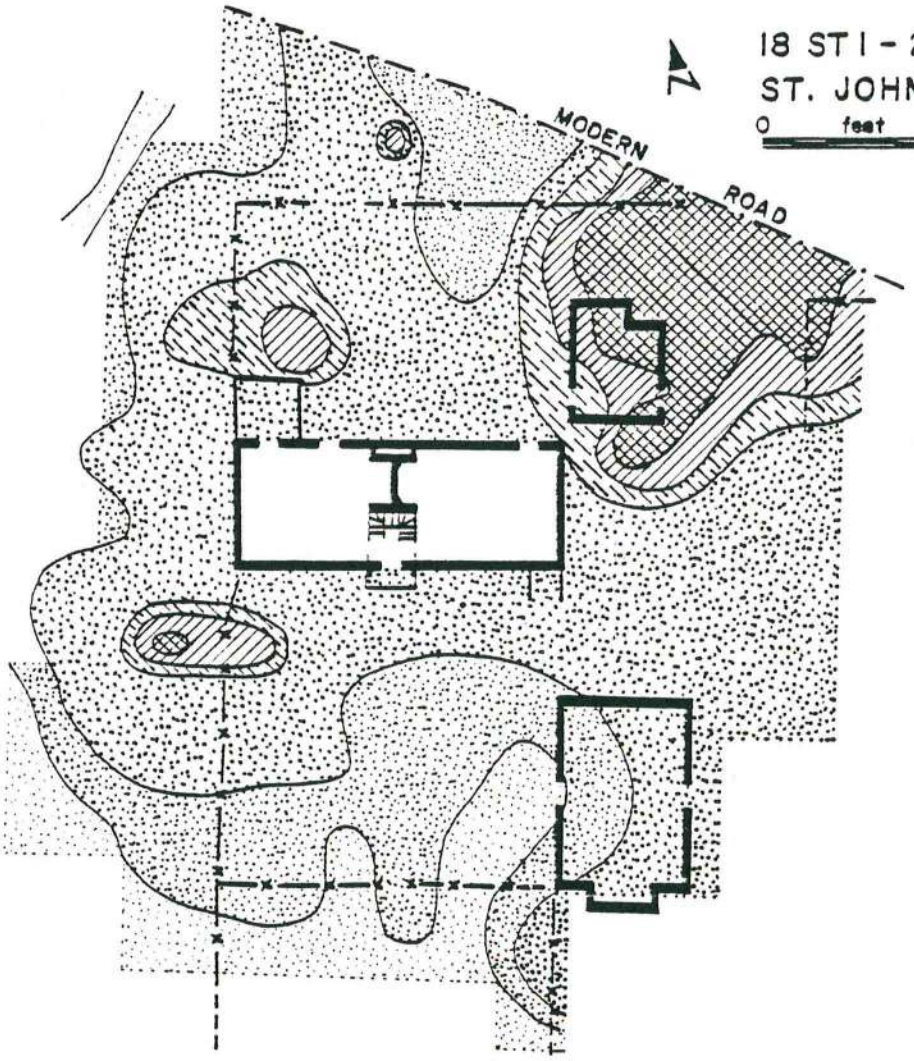
grams per square foot
of plow zone

mean = .19

standard deviation = .23

Distance from Mean	Value
> 1.5s above	> .48
1-1.5s above	.37-.48
.5-1s above	.25-.36
.5s below-.5s above	.13-.24
.5-1s below	.02-.12
<1s below	<.02

FIG. 26



CALCIUM

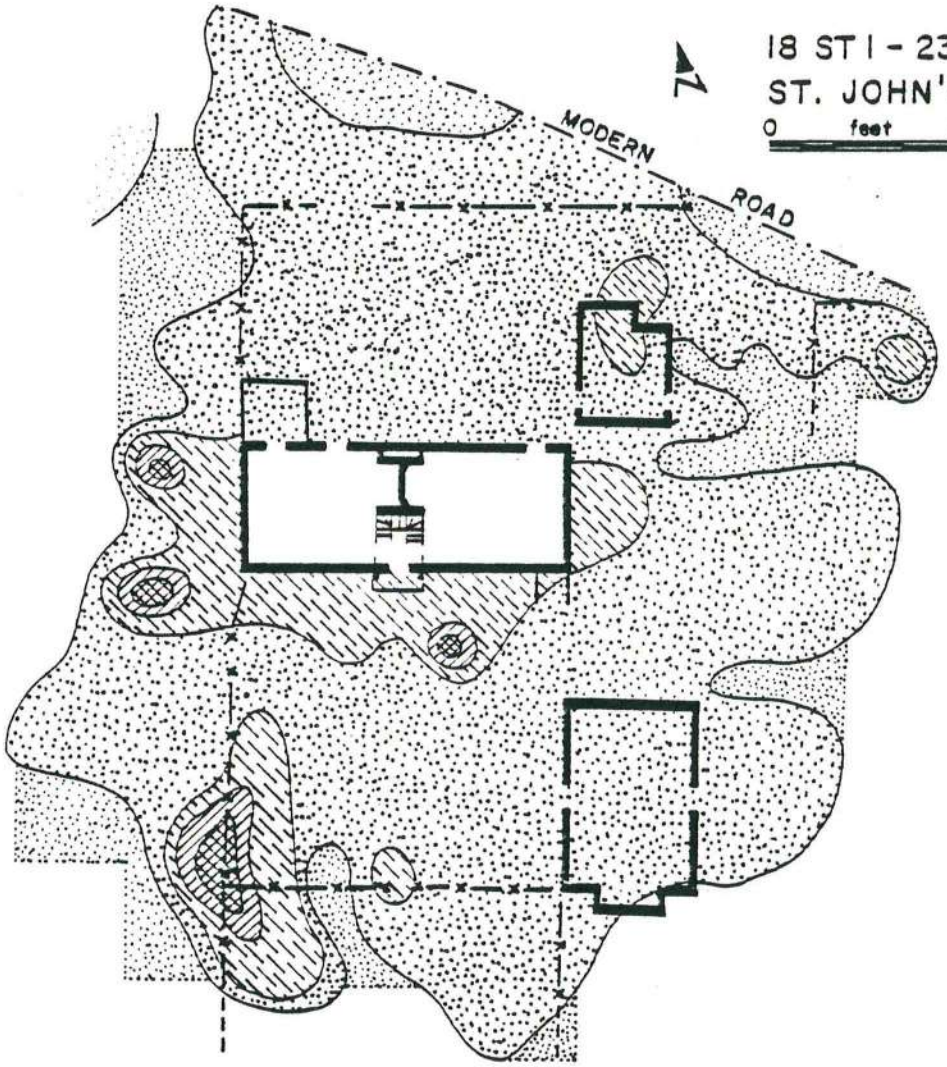
parts per two million

mean = 4900

standard deviation = 300

Distance from Mean	Value
> 1.5s above	> 9400
1-1.5s above	7900-9400
.5-1s above	6400-7899
.5s below-.5s above	3400-6399
.5-1s below	1900-3399
1-1.5s below	400-1899
< 1.5s below	< 400

FIG. 27



POTASH

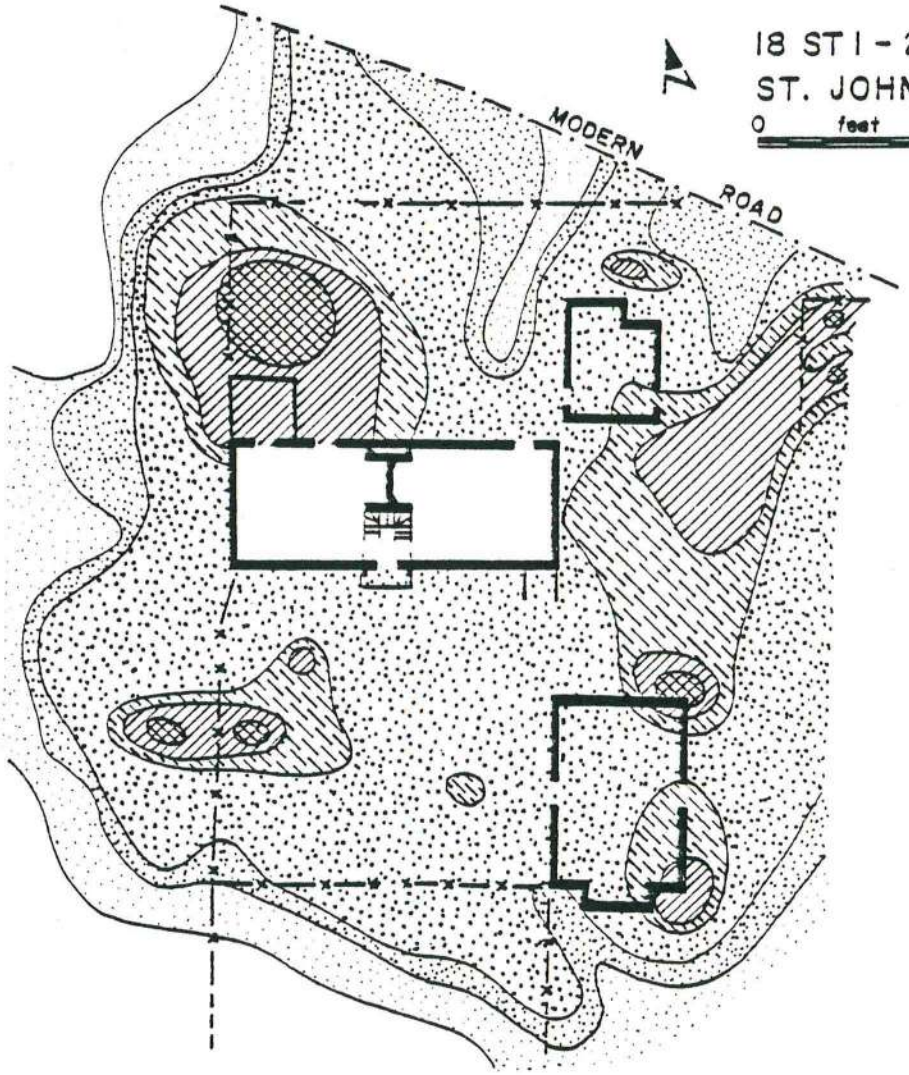
parts per two million

mean = 48

standard deviation = 37

	Distance from Mean	Value
	> 1.5s above	> 103
	1-1.5s above	84-103
	.5-1s above	66-83
	.5s below-.5s above	30-65
	.5-1s below	11-29
	< 1s below	< 11

FIG. 28



PHOSPHATES

parts per two million

mean = 499

standard deviation = 251

Distance from Mean	Value
> 1.5s above	> 876
1-1.5s above	751-876
.5-1s above	626-750
.5s below-.5s above	375-625
.5-1s below	249-374
1-1.5s below	124-248
< 1.5s below	< 124

FIG. 29

FIG. 30 OUTLINE OF REAL PROPERTY FEATURES MENTIONED IN THE ORPHAN'S COURT VALUATIONS

I. Structures

A. Dwellings

B. Kitchens

C. Quarters

D. Outbuildings

1. Still houses
2. Outdoor ovens
3. Meat houses
4. Milkhouses/dairies
5. Coolers
6. Cyder houses
7. Granaries
8. Corn houses
9. Hen and poultry houses
10. Pigeon houses
11. Sheep houses
12. Cow houses
13. Stables
14. Barns
15. Tobacco houses
16. Cellar houses
17. Store houses
18. Warehouses
19. Prize sheds or houses
20. Carriage houses
21. Cart houses
22. Necessaries
23. Garden houses
24. Nurseries

E. Mills

1. Water mills
2. Wind mills
3. Grist mills
4. Merchant mills

F. Shops

1. Blacksmith/forge shop
2. Workhouses
3. Spinning houses
4. Weaving houses
5. Shoemaker's shop
6. Tan houses
7. Machine houses

II. Fences

A. Rail or worm

B. Log

C. Stake and Rider

D. Paling, Board, or puncheon

E. Post and rail

F. Brush or wattle

G. Hedge

H. Ditch, ditch with fence or bank

I. Stone walls

III. Land Uses

A. Woodland/Timber

1. Hardwood (Oak, ash, etc.)
2. Hardwood with Chestnut
3. Pine
4. Second growth (Cedar)

B. Fields

1. Tobacco lands
2. Cornfields
3. Small grain fields
4. Hay fields
5. Tobacco beds

C. Pastures

D. Meadows

E. Cleared lands

F. Enclosed lands

G. Orchards

1. Apples
2. Peaches
3. Pears
4. Quinces
5. Plums
6. Cherries
7. English walnuts
8. Almonds
9. Figs
10. Exotic or tropical fruits

H. Gardens

I. Yards

J. Pens

K. Formal Landscape Features

1. Graveyards
2. Elaborate gardens
3. Avenues

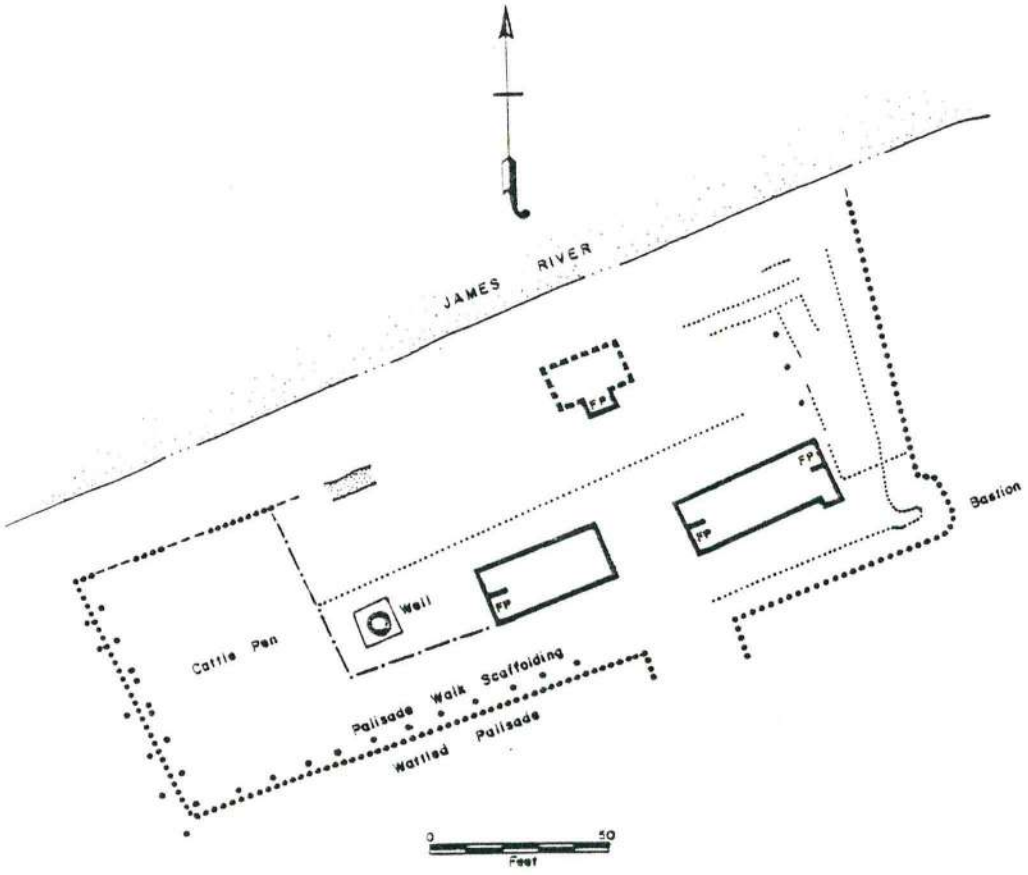


FIG. 31 FLOWERDEW ENCLOSED SETTLEMENT c.1617-1640
(redrawn from Barka 1976: personal communication)

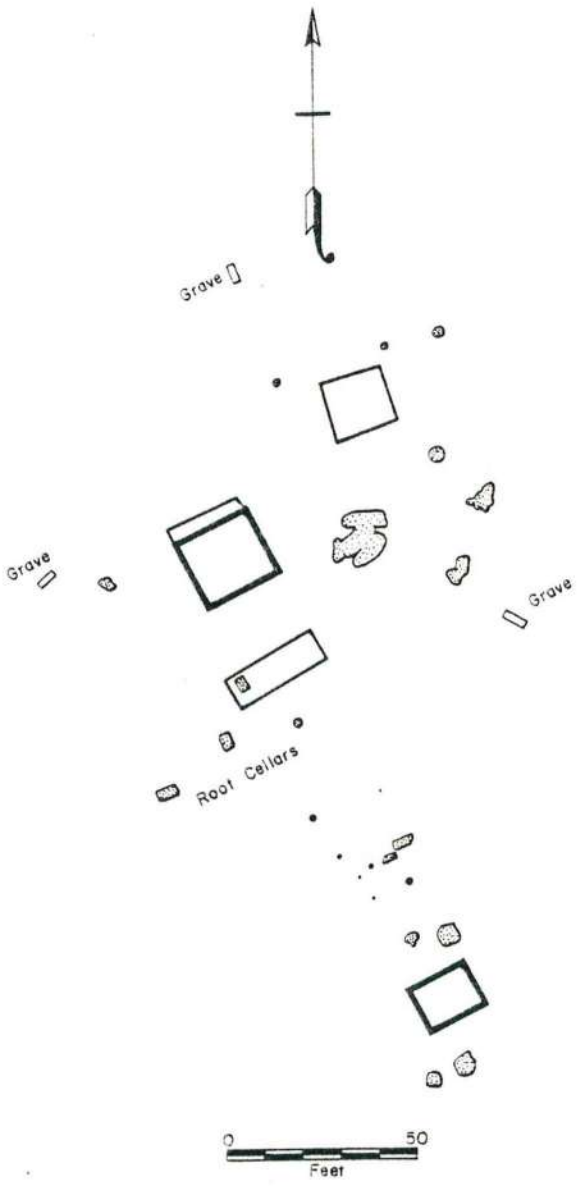


FIG. 32 MAINE SITE c.1617-1630
(redrawn from Outlaw 1977: personal communication)

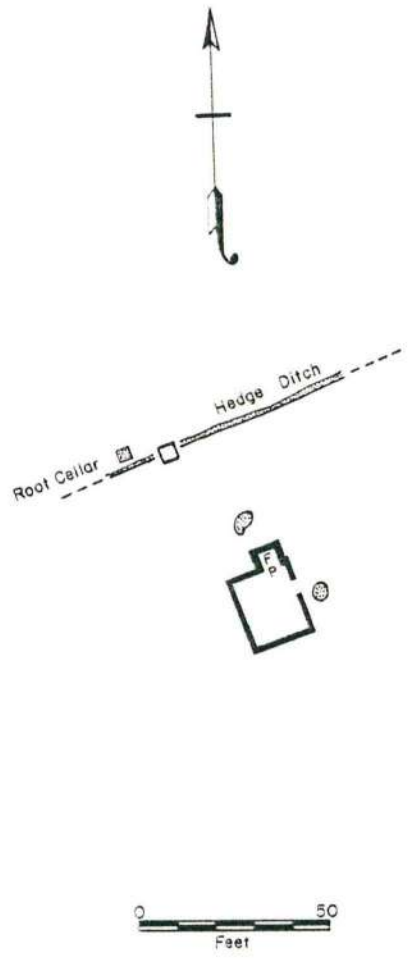


FIG. 33 PASBEHEGH TENEMENT c. 1635-1650
(redrawn from Outlaw 1977: personal communication)

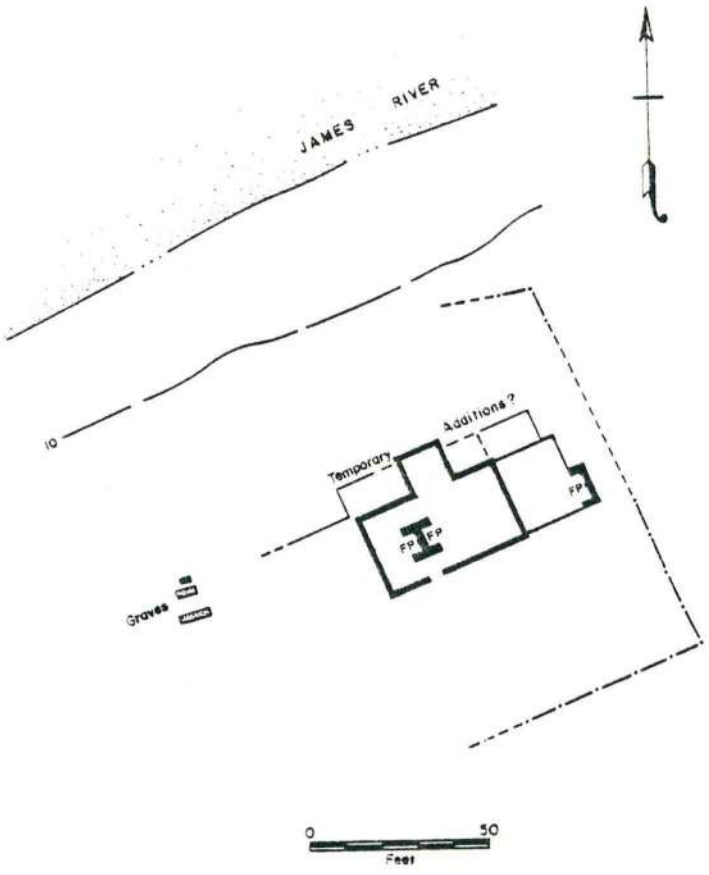


FIG. 34 STONE HOUSE FOUNDATION c.1625-1650
(redrawn from Barka 1976: Fig. 2)

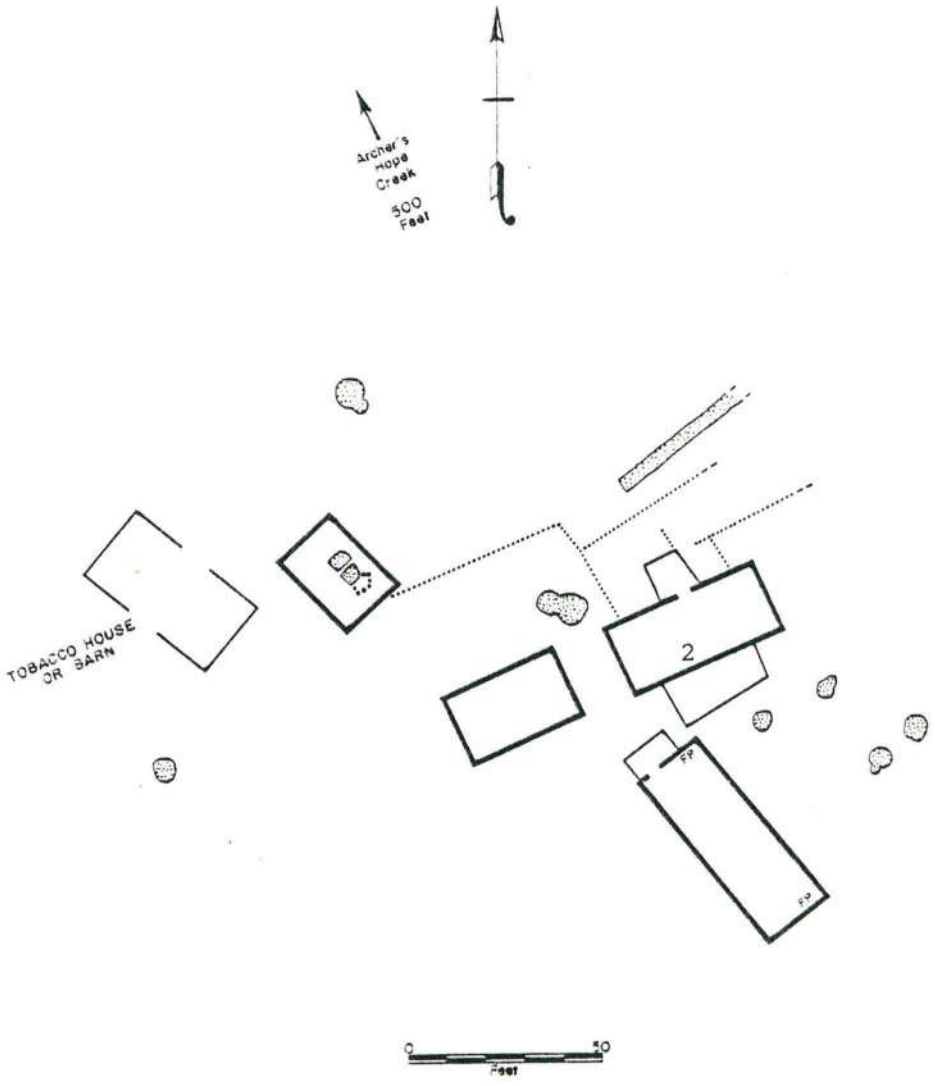


FIG. 35 KINGSMILL TENEMENT c.1620-1650
(redrawn from Kelso 1974: Fig. 2)

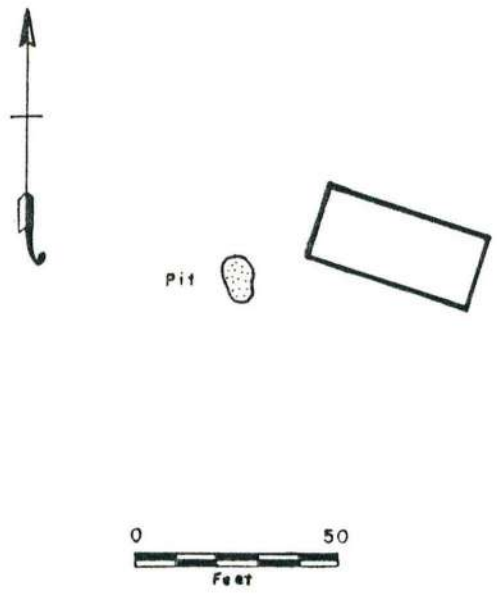


FIG. 36 LITTLETOWN QUARTER c.1625-1650
(redrawn from Kelso 1973: Fig. 2)

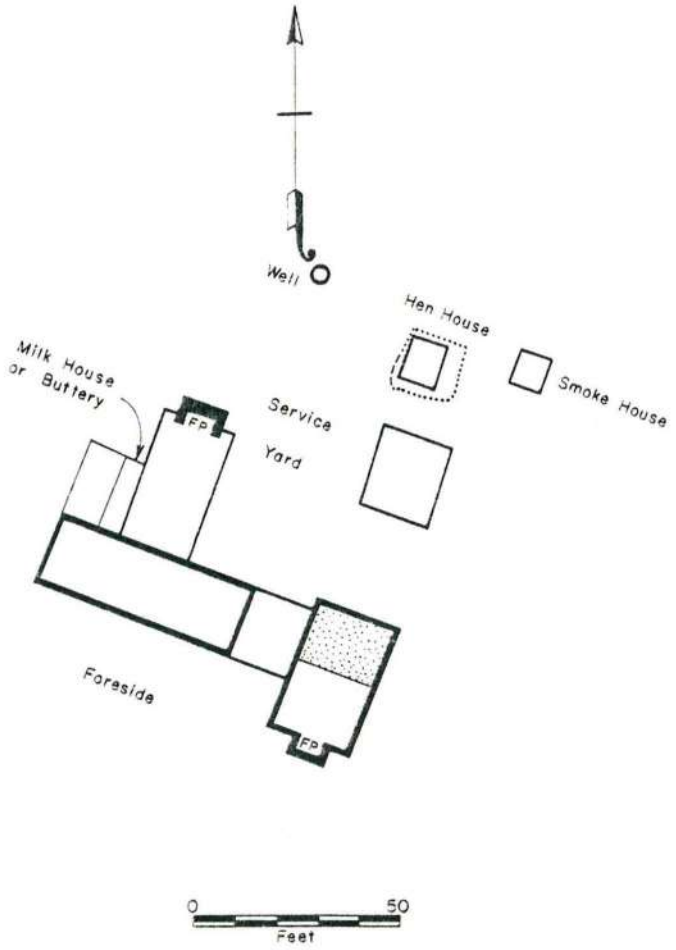


FIG. 37 PETTUS PLANTATION c.1640-1690
(redrawn from Kelso 1973: Fig. 1)

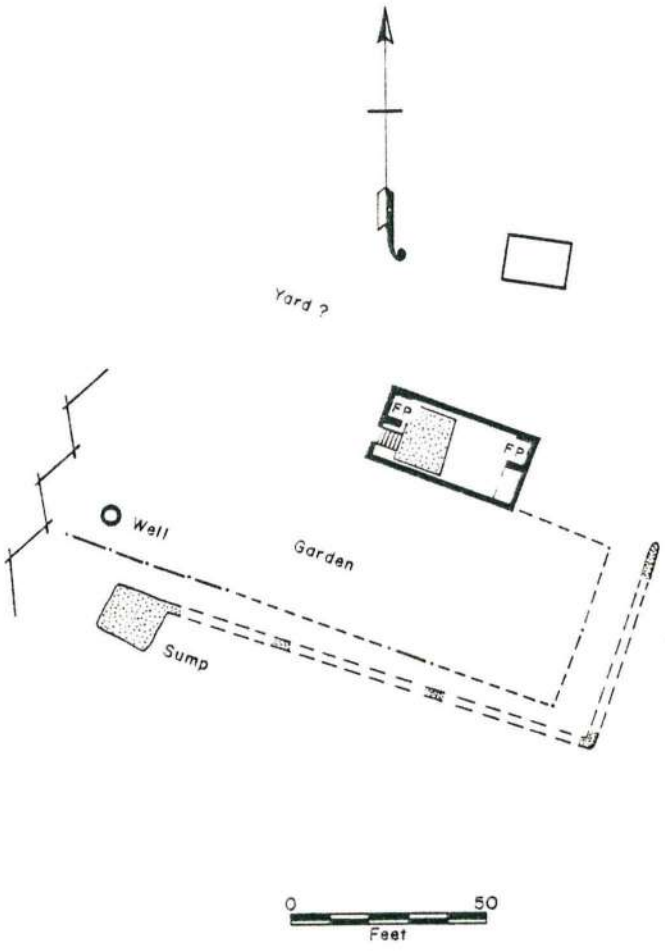


FIG. 38 UTOPIA COTTAGE c.1660-1710
(redrawn from Kelso 1974: Fig. 1)

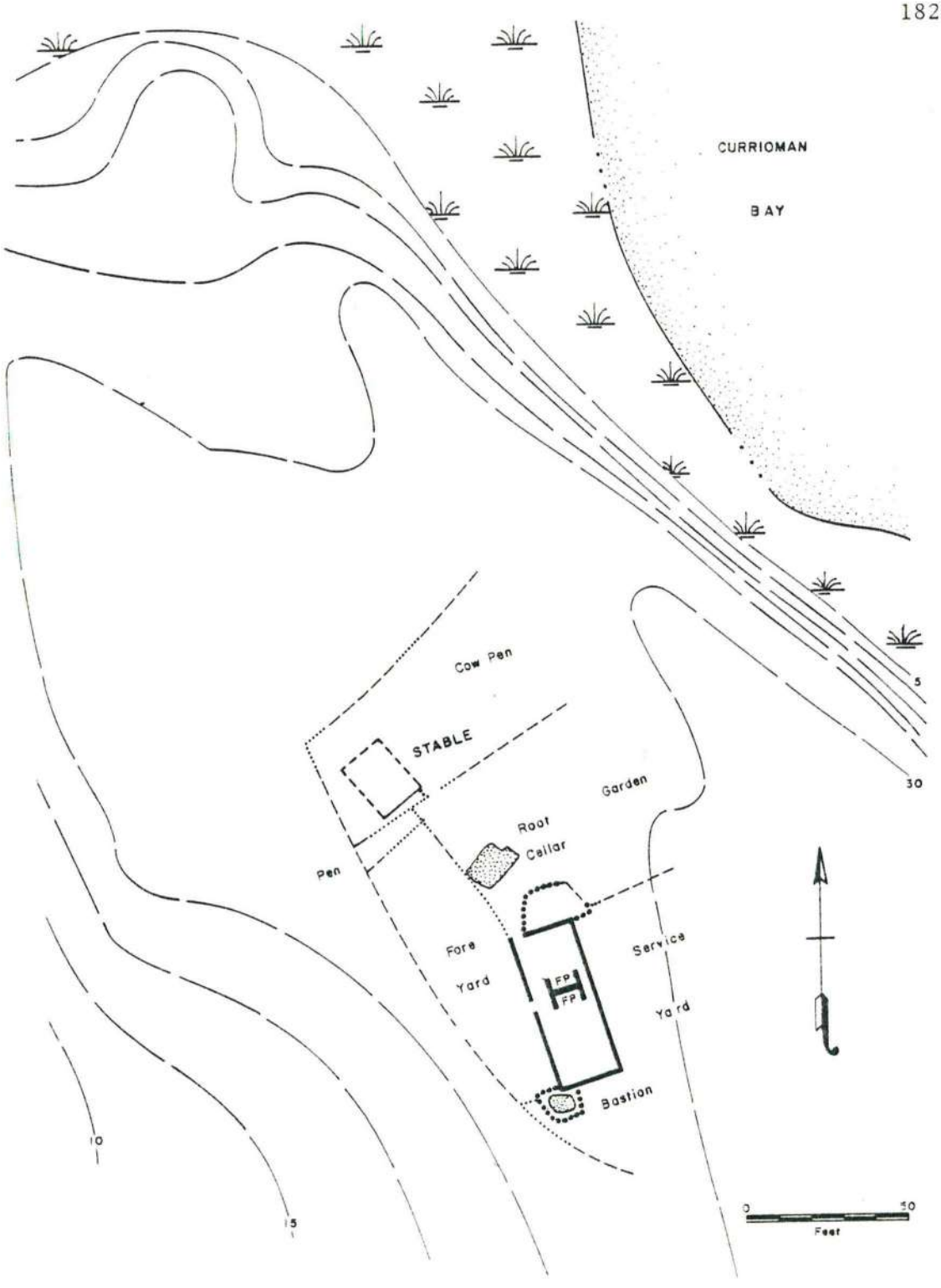


FIG. 39 HALLOWES SITE c.1675
(redrawn from Heite 1977: personal communication)

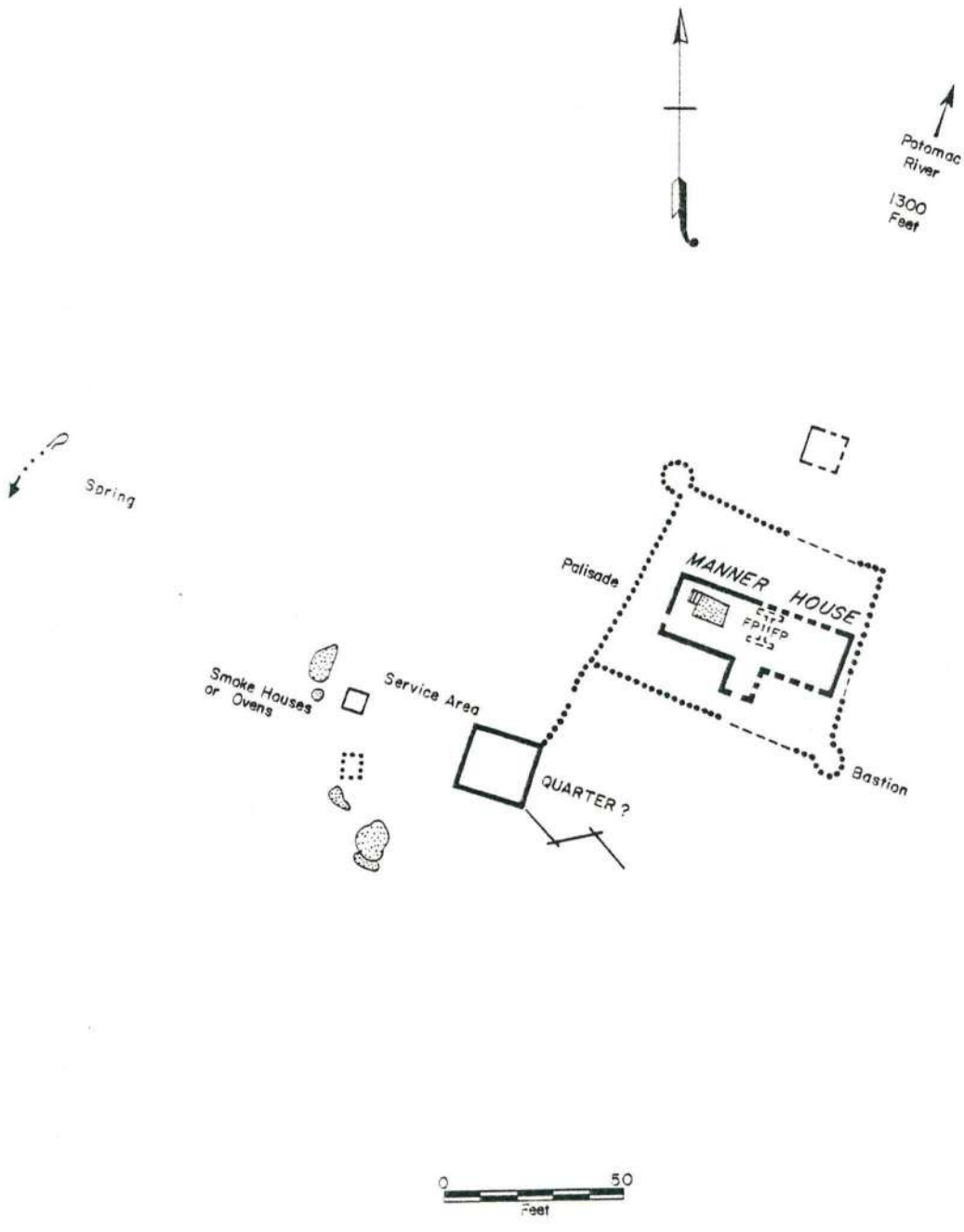


FIG. 40 CLIFTS PLANTATION PHASE I c.1670
(redrawn from Neiman 1977: personal communication)

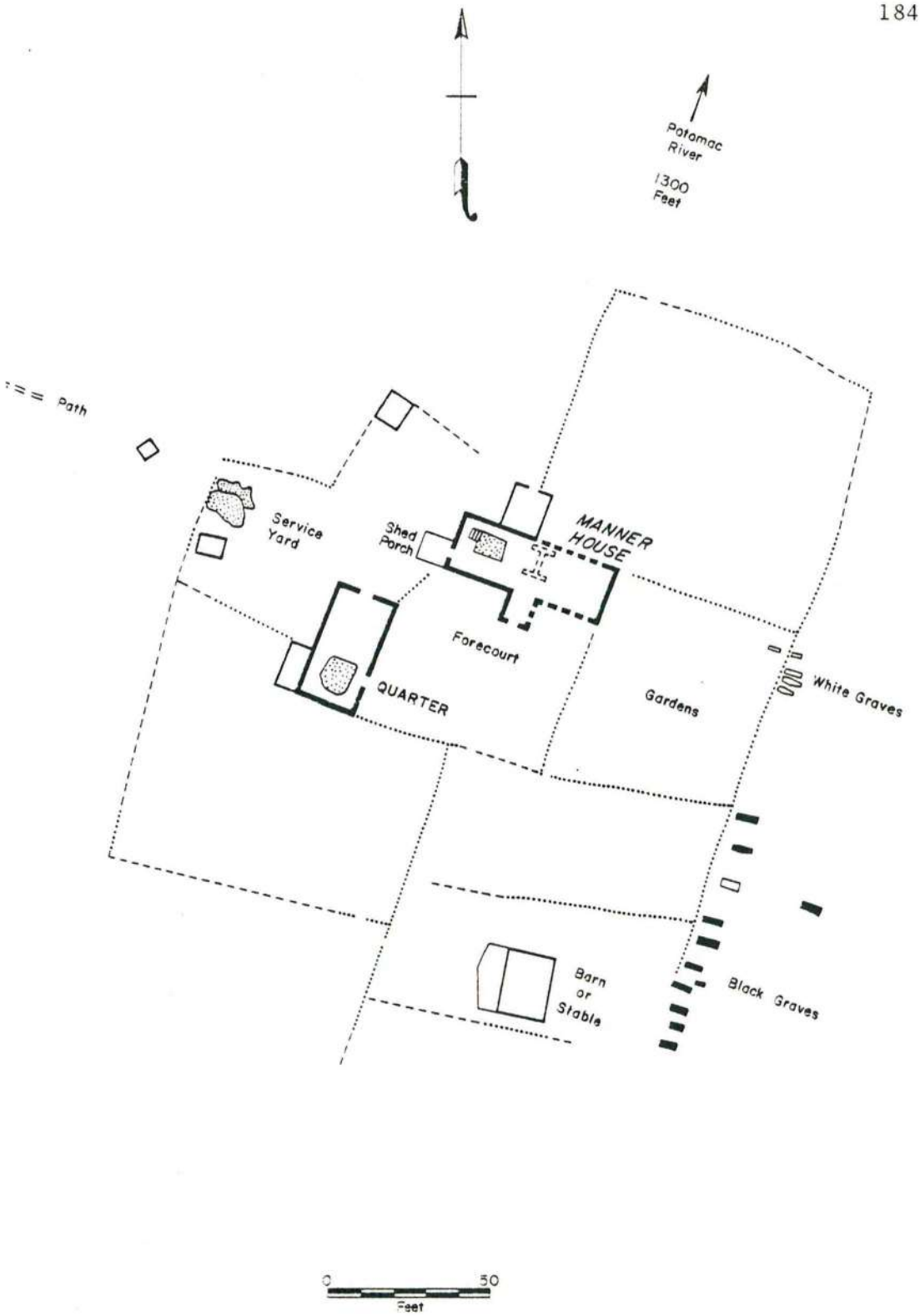


FIG. 41 CLIFTS PLANTATION PHASE II c.1690-1700
(redrawn from Neiman 1977: personal communication)

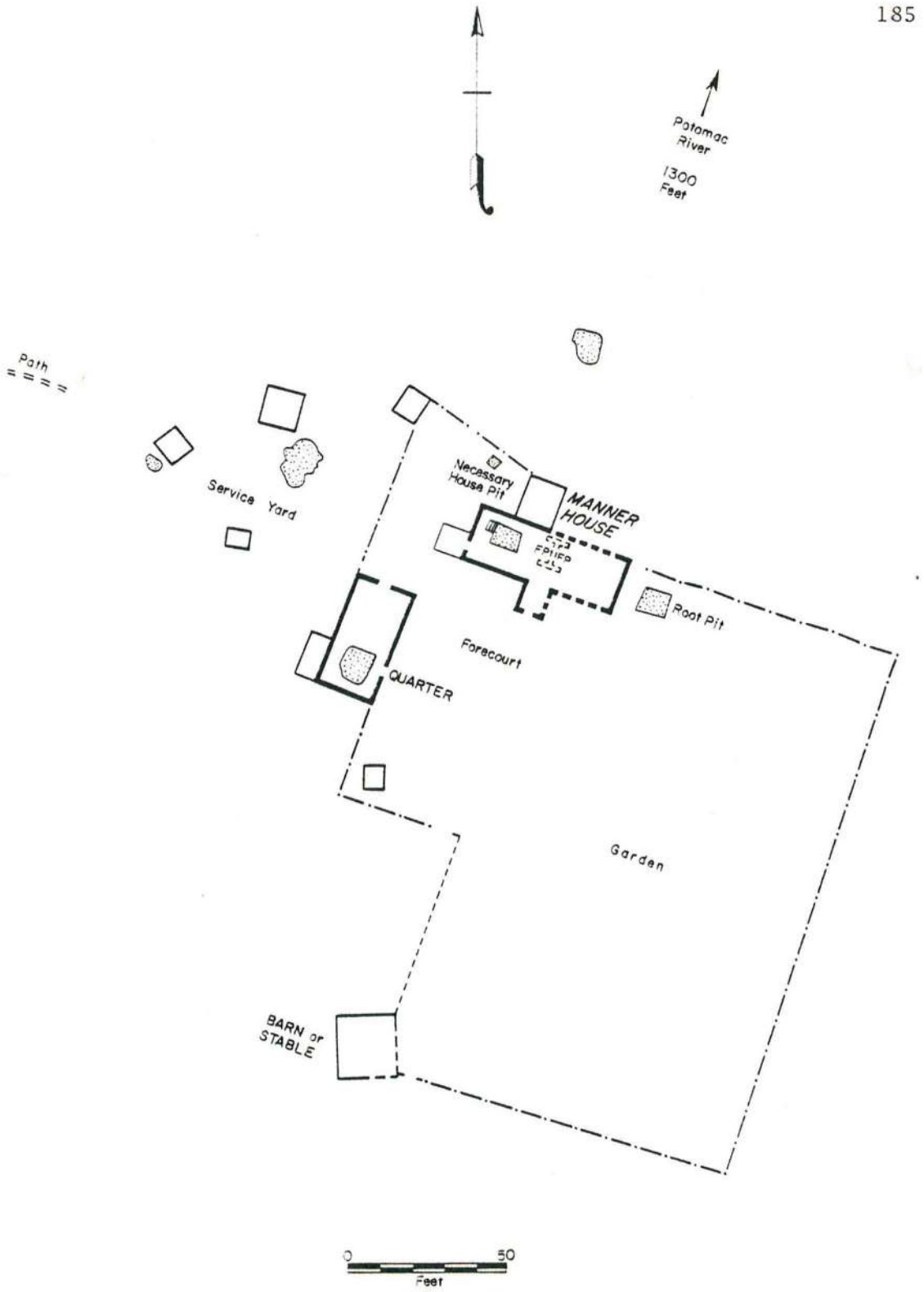


FIG. 42 CLIFTS PLANTATION PHASE III c.1720
(redrawn from Neiman 1977: personal communication)

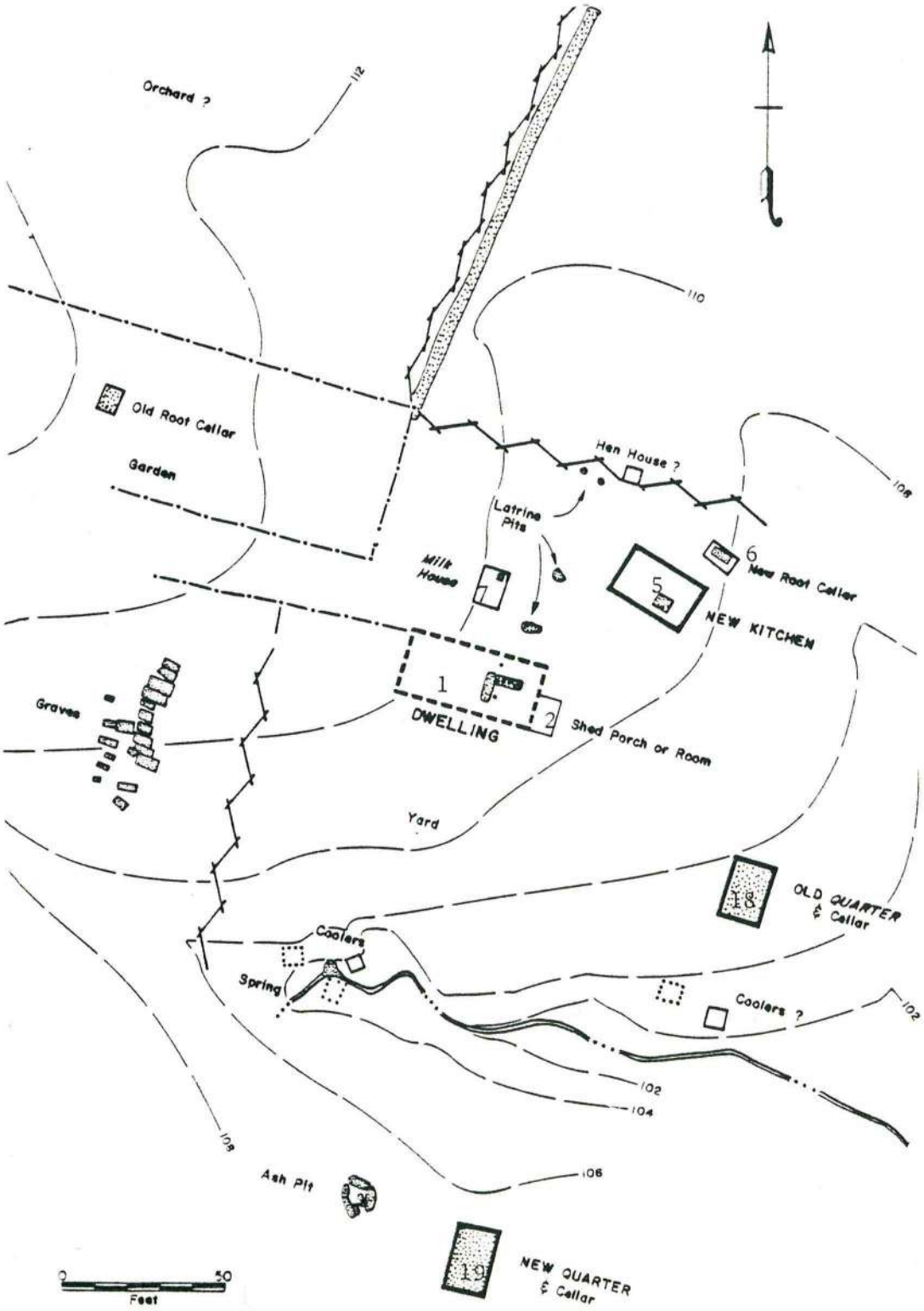


FIG. 43 MIDDLE PLANTATION PHASE I c.1695-1700
(redrawn from Doepkens 1976: personal communication)

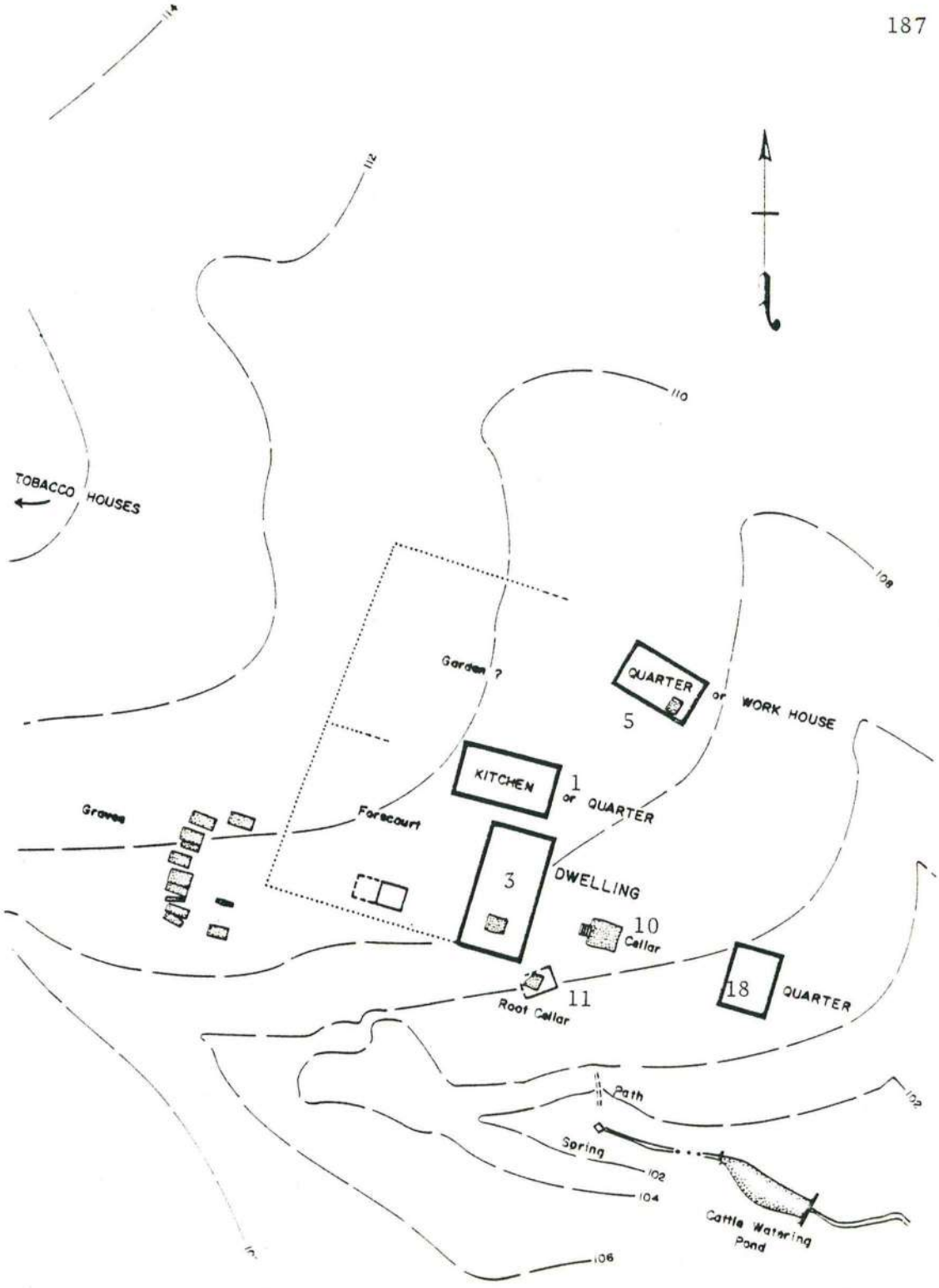


FIG. 44 MIDDLE PLANTATION PHASE II c.1730-1735
(redrawn from Doepkens 1976: personal communication)

FACTORS RELATING TO SEVENTEENTH-CENTURY CHESAPEAKE HOMELOT SITE SELECTION AND LAYOUT

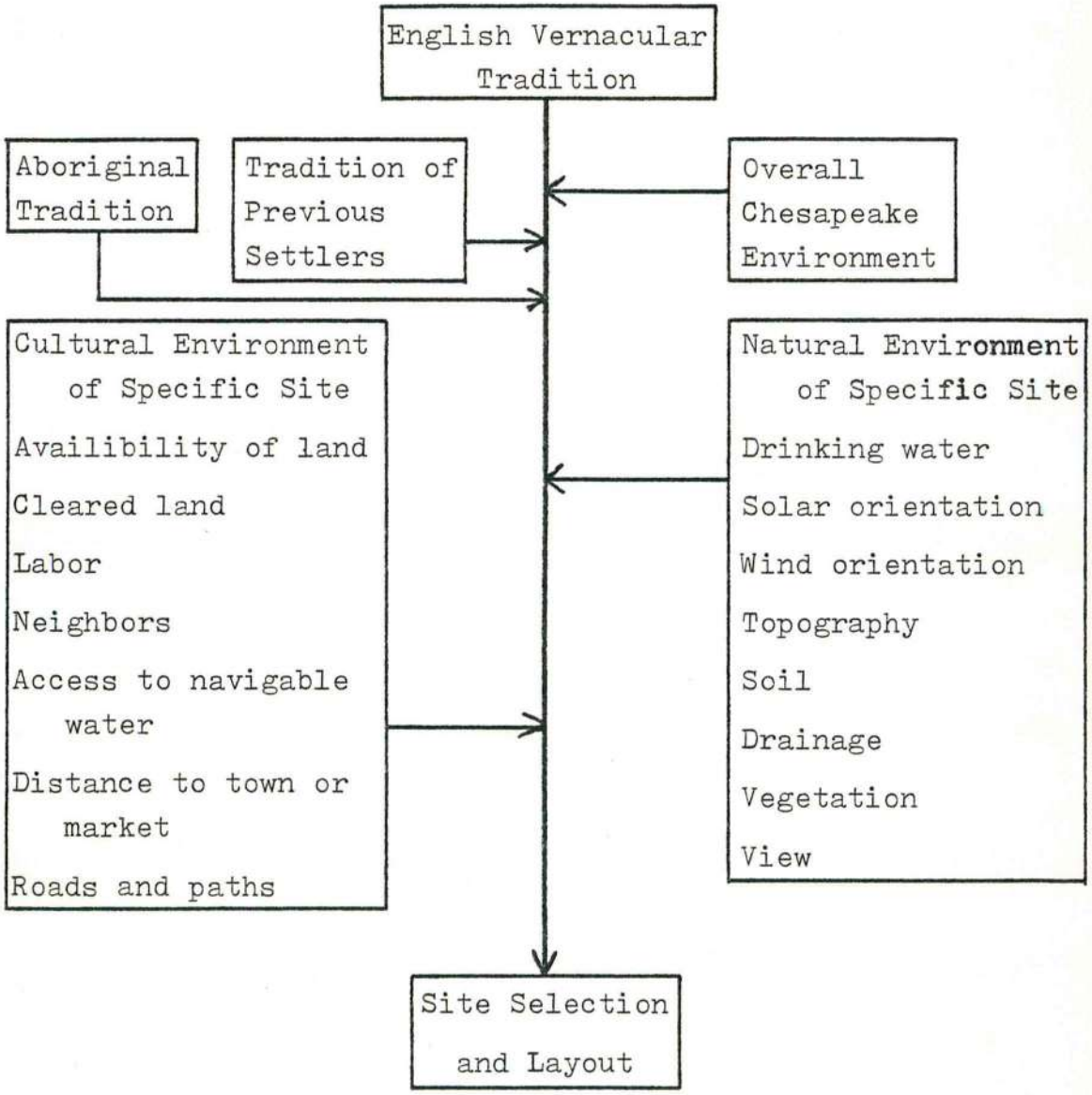


FIG. 45

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A Terrier of all the Glebe lands, houses meadowes pastures gardens orchardes backsides and porcons of Tythe belonginge to the Parsonage of Laverton. Unpublished document on file at the Somerset County Record Office, England.