ARCHITECTURAL DEBRIS AND CONSTRUCTION SEQUENCING AT AN 18TH-CENTURY RURAL NATIVE AMERICAN HOUSEHOLD IN CONNECTICUT

A Thesis Presented

by

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Submitted to the Office of Graduate Studies,
University of Massachusetts Boston,
in Partial fulfillment of the requirements for the degree of

MASTER OF ARTS

June 2013

Historical Archaeology Program

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ABSTRACT

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This thesis details the archaeological investigation of a rural Native American household site on the Eastern Pequot reservation in southeastern Connecticut. Spatial and architectural artifact analyses are used to determine the sequence of construction and nature of structures built a late 18th-century occupation in order to place the site in a context of Native Americans living through colonialism via the construction of a built environment and place-making. The data set used to conduct the analysis includes both architectural material, particularly nails and window glass, and non-architectural material such as ceramics and vessel glass. Unique to sites so far investigated on the reservation, Site 102-123 shows multiple structures and construction phases. The structures are

relatively small houses with dry-laid fieldstone chimneys. Each structure is associated with a different type of storage, a root cellar for one and a subfloor cellar for the other. The architectural materials suggest not just collapse but likely directed demolition. In addition, the filling in of subfloor storage areas and the large number of broken nails in the assemblage imply that recycling of architectural materials was part of the deliberate demolition of the site. The most likely interpretation of the site is the sequential construction of two structures which remained in use concurrently, and these provide a unique view of conceptual and physical "residence" on the reservation as residents shifted their uses of space, buildings, and storage in the latter decade or two of the 18th century.

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CHAPTER 1

INTRODUCTION

Archaeologists have long studied houses – both extant and long gone – as a way of understanding the lived experiences of their inhabitants. Houses, and other built structures, are products of the people who build and inhabit them, and therefore a reflection of both the decision making processes and the resources available to them. In the case of Native Americans in 18th-century New England, those structures reflect both the physical environment as well as the social, political, and economic environment of the time.

Architectural materials, and their relation to other artifact classes, are utilized here as indicators of the sequence of the construction and demolition of structures which are no longer standing. These structures are reflections of the physical and social environment and are part of a larger process of living through colonialism, making them part of the physical and practical acts of "residence" (Silliman 2001; Silliman 2012) as further defined below. This thesis intends to present two ideas: a method for using fine-grained spatial data across a single site and multiple artifact classes to determine the

nature of structures constructed there, and an interpretation of those structures as artifacts of a specific social, political, and economic environment through the lens of residence. From a methodological perspective, this study intends to apply spatial analysis of artifacts aggregated at the level of the excavation unit to reconstruct the presence of structures at the site in both time and space. From a more theoretical standpoint, this study links the process of construction to the lived experience of the builders through a process of place-making.

This thesis examines an archaeological site, site 102-123 in State of Connecticut nomenclature, on the Eastern Pequot reservation in North Stonington, Connecticut, where excavation indicated a sequence of houses constructed in the 18th century, and argues that the site is an example of the builders and inhabitants engagement with the social and physical environment. In a colonial context, houses built by indigenous people are an example of "residence" – literally and conceptually – in colonialism (Silliman 2009:3). The primary methods for understanding the structures described here involve construction materials, their relationship to other artifact categories and their spatial organization. Essential to the understanding of this site is the determination of the sequence of construction, modification, and eventual abandonment of the site. This site occupies an interpretive position that is different from both the Late Woodland villages that were common throughout southern New England prior to contact with Europeans and the New England villages of European settlers, which were the antecedents of today's New England towns and cities.

Site 102-123 is within the current boundaries of the Eastern Pequot reservation, a 225-acre wooded area that would have been variably cleared in the 18th and 19th centuries for cultivation.[1] Unique for sites on the reservation is the presence of two chimney falls at this site, implying multiple structures, and the possibility for different construction episodes at this site. No other sites yet examined on the reservation offer the opportunity to study the modification of a habitation site with multiple distinct phases. The materials of particular importance for the study of architecture are nails and window glass because their form and distribution offer evidence of the ways in which the two structures were utilized and demolished. Compared to the distributions of ceramic and vessel glass artifacts, these data help to build a spatial model that distinguish between architectural and non-architectural artifacts. Site 102-123 was excavated in 2005 and 2006 by students from the University of Massachusetts Boston and members of the Eastern Pequot Tribal Nation. The site's above ground features include two large chimney collapses and two other stone piles, one of which was revealed to be a midden largely consisting of rock and shell (Hunter 2012). The site is near a large enclosure that contains artifacts that are roughly contemporaneous, and near site 102-104, an earlier 18th century site that may be the location of a wigwam-style dwelling (Hayden 2012:48). Hayden's work describes several structures across the reservation that were also utilized in the 18th and 19th centuries. That work concentrates more on the identification of different features across multiple sites over a period, where this work is focused on a single sites transition

1In consideration of the Eastern Pequot Tribal Nation's policies for archaeological resource protection, no specific site location is given, but that placement is not critical to the interpretation provided herein.

over a period of time. She further suggests that the construction of residential structures was “neither formalized nor a strictly governed process.” (Hayden 2012:113)

Theoretical concerns about residence, time scale, and the colonial environment have been present throughout the course of the archeological investigations on the reservation. Several sites have been studied ranging from the early 18th century to the 20th. Artifacts recovered from site 102-123, as detailed in chapters three and four, indicate a habitation date in the late 18th or early 19th century. Other sites on the reservation indicate earlier habitation, and several others indicate habitation during the 19th century. Relatively few artifacts have been recovered that are pre-colonial in nature. There are no known sites that date to the Woodland period known on the reservation at the time of this writing.

The interplay of the built environment and the lived experience of the people within it is an important theoretical element of this research. The reservation can be conceptualized simultaneously as both a colonial landscape and a Native landscape. This reservation and neighboring ones were at the center of many legal and extra-legal struggles between Native people and settlers (Den Ouden 2005). Johnson notes that landscapes associated with indigenous people are “full of meaning, with complex narratives linking the natural world to the world of humans, or to put it another way, writing human concerns into the landscape itself.” (Johnson 2005:189) The same processes of linking and “writing” persist throughout the changing power relations of colonialism. The landscape, whether considered as colonial, Native, agricultural, or in

some other interpretive category, only has historical import in that it was lived, experienced, and conceptualized by people in the past and in the present.

Foremost in the intersection of colonialism and the built environment is the idea of "residing" within a colonial environment. The theoretical ideas of residence and the built environment are applied here to understand the relevance of household space to Native people in the 18th century. Residence is an engagement with colonialism through lived experience (Silliman 2001:195) in ways of "living through" that disrupts the "domination/resistance dichotomy" (Silliman 2012:6). The construction of English-style buildings and adoption of English-style landscape modifications could be seen as a form of residence (Silliman 2009). The adoption of houses on the Mashantucket reservation, for example, "reflected the availability of certain kinds of technologies, but did not necessarily reflect changes in social and domestic patterns or site structure" (McBride 1990:116). This form of persistence is a type of interaction with colonial power structures that is less visible than what is traditionally considered resistance, but residence is a form of preserving cultural traditions, including community and a particular, but not static, relationship to a particular landscape – in this case, the reservation itself.

Residence is particularly well suited for analysis of sites such as 102-123, which is a locus of habitation. Residence is a manner of living through, not constant resistance to, colonialism, but also is a theoretical construct that rejects acculturation as an interpretive model for cultural continuity and change. Categorizing the structures at site 102-123 as artifacts of resistance or as simple acquiescence to colonialism is inadequate for recognizing the daily presence of colonialism in the lives of the inhabitants of the site.

The residence approach to colonialism here is one that acknowledges people's engagement with colonial power structures, but neither romanticizes the struggle with colonialism nor relegates indigenous people to a spiral of acculturation and disappearance. Residence, instead, is about how people live in the colonial environment, and how colonialism pervades the lives of the colonized.

Colonialism is a process that transforms both parties involved (Gosden 2004b:1), and is dependent on relational networks between people and objects, which can be positive or malign (Gosden 2004a:169). The more subtle ways of engaging with the colonized population are relevant for the purposes of this study. However, when one considers the relationship of people to the built environment, residence raises the most salient points as to how the people living on the reservation (and Pequot people not living on the reservation, to a lesser extent) challenged and engaged with colonialism.

The Built and Socially Constructed Environment

How a society is organized is reflected in how it organizes space (Scarry and McEwan 1995:483). The placement and use of buildings and other structures, and the shape and form of landscape modification are not haphazard, or dictated only by the surrounding physical environment. Rather, societal and individual forces influence the decision-making process of agents engaged in the process of building or dismantling a structure or making a landscape. The experiences which influence decision making are varied, including experiences of other landscapes, community knowledge, and skills or resources available. Specific to the experience of Native people, reservations are and

were communal spaces within which communal values are enacted (Silverman 2005:184).

The act of building can be considered to be a form of cultural construction, as people enact cultural practices through the act of physical construction, including landscape modification (Pauketat and Alt 2005:214). Considering buildings, as well as the materials used to construct them, as artifacts allows for a consideration of the built environment as the product of human activity. The relationship between artifacts and human behavior is a process that defines artifacts as "entities [that] do not have their own properties, but take on varying characteristics depending on how they are linked with other entities" (Gosden 2004:169). I wish to emphasize the fluid nature of people's responses to colonialism through the creation of hybrid forms that synthesize both Native and European forms of material culture (Gosden 2004b:22,24), specifically applied to architecture and the organization of those structures. The enactment of cultural practices is the mechanism by which these relationships are reproduced in the physical world. Pauketat and Alt describe the act of construction in the context of Cahokian mound building as

> people forming and experiencing identities, making and inscribing memories, and re-interpreting practices and traditions materially, spatially, temporally, and corporeally. In other words, people make or contest cultures continuously, and they do this through their bodies, in space, and through matter in ways that draw on the past, define the present, and constrain the future. Cultures may seem to

reside in the head, but they are made in the physical world. (Pauketat and Alt 2005:214)

Pauketat and Alt discuss the construction of monumental architecture and the effects of that construction of the public sphere, but the principle remains largely unaltered in smaller-scale phenomena. How buildings are constructed is an important material element that demonstrates a multi-layered, culturally-informed decision-making process. The action of building or creating reinforces and reproduces the elements of the network connecting people and material culture, while simultaneously adding new elements to the network. The act of demolishing a structure is not subtractive from the network of human interaction, but rather reformative – a dismantled house exists in the memories of people, and creates a place where a house used to be. Similarly, the dismantling of a house does not destroy the links between people, but rather changes the region of formation for those links. While the construction of monumental structures such as the Cahokian mound reflect the expenditures of vast amounts of labor and an enormously complex network of people and things, the construction of one or two small structures by a relatively small group of people is also encoded with meaning, and the influence of those structures of the lived experience of people is still present, despite their humble nature of these structures.

Buildings have an important effect on the experience of their occupants (Blier 2006:246). The form of any building is dictated by its owner (Candee 1969b:60), or, at least, the owner at the time of construction, and in the case of small scale construction the owner and builder are likely the same individuals. Construction of buildings also

incorporates an element of tradition, especially in the realm of folk or vernacular architecture, where builders draw from multi-generational templates (Adams and McMurry 1997:xix-xx). Houses permeate the lives of people who live there (and, in some cases, the lives of people who do not live there). A house is a physical marker of one's residence in a particular place, and the relationship between one and that place.

The landscape, in this case, the built landscape, is an experienced and subjective space which sets up resistances and constraints (Bender 2006:303), and the buildings a form of living with the local environment (Graham et al. 2007:453). The built environment exists at an intersection where the "physical environment, societal structures […] and individual experience exist in a recursive web." (Pauls 2006:66) This experiential aspect can be considered through the lens of socialization through the material world (Gosden 2004a:170). The constraints of the landscape are defined by physical characteristics, limiting where structures can be built, where fields can be plowed, and where people can move or extend their gaze. The environment and the physical geography of any area influence the architectural forms and options for the community's development (Blier 2006:238).

Social agents both create and respond to the landscape (Johnson 2006:143-144). This includes both the creation of physical alterations to the landscape – the building of structures, but also plowing and clearing – and the construction of the experience of the landscape. Both of these processes create a landscape that is fundamentally mutable; that is, it can be changed by people, and durable. In addition to being both seen and experienced, landscapes are also capable of communicating ideas (Rotman and Nassaney

1997:42). Landscape "embodies history, structure, and contexts of human behavior" (Hood 1996:121). Ideas are embedded in the physical construction of the landscape, all of which are laden with practical and ideological concerns. This engagement with the landscape is an active one (Johnson 2006:143) that depended heavily on the labor and creativity of the people who undertook the modifications (or lack thereof) to the landscape. The construction and maintenance of a human-dictated environment, structures in this case, required meaningful activities that affected both the landscape and the people through the act of construction.

Buildings embody the use of labor both in the act of building and produce a form of material culture (Blier 2006:233). This use of labor represents a number of important decisions – what sort of structures should be constructed to serve what particular purposes. Architecture is a product of materials, technologies, and knowledge (Glassie in Blier 2006:237). All of these elements are important in considering what sort of structures can be constructed. While the availability of materials, technologies, or knowledge imposes limits, the selection of which elements to utilize also provides an arena for agency. In the case of homes constructed by their ultimate residents, the structure is an expression of what they have available and the decisions they made to construct that structure, decisions made about how they want to structure the landscape around them.

Time Scales

The assessment of the changes of Eastern Pequot lifeways and uses of the landscape can be considered from multiple points (Silliman 2009:12). Many people have engaged with the landscape, over many lifetimes. In the case of farmsteads, the lifetime

of a household is different, and may be substantially longer than the lifetime of any one member of that household. This presents an opportunity to consider the landscape from multiple time scales – personal (of which there are many), familial, and generational, all of which contribute to the construction of social meaning (Silliman 2009:12). As such, there are multiple points to consider when attempting to reconstruct the meaning of people's engagement with a landscape. This is not an argument to invalidate longer period connections (Silliman 2009:30), but rather to note that people's relationship with the past is one that is multifaceted. A landscape can have different meanings for different people, but those meanings are mutable throughout time as well, as the landscape and the agent change. The process is recursive, as the landscape (and other physical objects) influences the experiences and position of the agent.

Familial time scales are particularly important for small farms, as the farm family is an important unit of labor and social unit when considering the impact of humans on the landscape. This is true even on reservations when "farms" may have differed in concepts of ownership and use compared to neighboring Euro-American settlers. The family is not necessarily the only people engaging with a landscape, but is likely to be the people most often engaging with a particular plot. Individual relationships with the landscape will vary, although older members will likely transmit information about the landscape to younger members. At the same time, all members of the family will actively create the history of the landscape through their daily activities. The construction of a history of a landscape is also part of the process of remembering, where the past of the landscape is constructed within a person and transmitted to other persons. All of these

activities contribute to the familial scale of landscape history by creating a collective history that encompasses and synthesizes personal histories, but does not totally replace or consume them.

These communal, familial, and personal histories all represent smaller time scales than are usually considered when addressing questions archaeologically. The portions of personal histories of a place that are constructed from personal memories cover a period of a single human lifetime, and are combined with other personal memories. This human lifespan timescale is a much smaller time frame than the period stretching from the end of the Woodland period to the 19th century. Within that period, many generations of Pequot people lived, perhaps not on that particular plot, and constructed histories of landscape engagement. While four centuries appears to be a brief period in archaeological time scales, it is many human lifetimes. All of these levels of memory should be considered not as distinct types of history but rather as different aspects of shared history. The different scales of history do not borrow from each other, but rather constitute each other.

Conclusion

The following chapters attempt to describe the architectural variability of the site in a colonial context. The following chapter includes a brief history of the Eastern Pequot and a discussion of the role of agriculture and farmhouses in 18th- and 19th-century New England. Chapter 3 covers the specific methodology used to address architectural artifacts, especially nails and glass, and to relate those to identification of structures that existed in the past. Chapter 4 describes the assemblage of architectural debris, the spatial distribution of that debris, and the relationship between the artifacts and other artifact

classes, while chapter 5 provides an interpretive description of the site based on that data. Chapter 6 will offer some conclusions regarding house forms, the sequence of construction at the site, colonialism, and the archaeology of the built environment.

CHAPTER 2

BACKGROUND

This research pertains to Native people living in a colonial environment and their interaction with their built environment. As such, it must draw together information about the historical context of the Eastern Pequot Tribal Nation, the history of colonialism in southern New England, theoretical ideas about the relationship of people with the built environment, and actual physical structures present in rural New England in the 18th century. These engagements can then be applied to archaeological data pertaining to both architecture and the use of space, but need to be placed first in the context of the colonial and capitalist environment which existed in the late 18th century, in addition to the changes in Pequot lifeways that preceded that period. This chapter presents a summary of Pequot history from the pre-colonial period, a brief discussion of the theoretical issues involved in the study of colonialism as applies to architecture and living on a reservation, and a discussion of the nature of rural agriculture in southern new England in the 18th century.

Social and Cultural History of the Pequot

The Eastern Pequot Reservation is located in southeastern Connecticut in the town of North Stonington, across Long Pond from the Mashantucket Pequot Reservation. It is now a wooded landscape used by the tribe for community purposes and as a residential area for some tribal members. The history of the Eastern Pequot is long and complex, and has been thoroughly entangled with first European and then Euro-American colonialism since the arrival of Europeans in northeastern North America. Before being split into the Eastern and Mashantucket Pequot tribes, the Pequot lived along the coast of Connecticut, but following violent conflict with European settlers, were removed to the interior, eventually to where the reservations are now (McBride 1991:65-66). The reservations were both established in the late 17th century, and since then have been used extensively, especially for residential life and farming in the 18th and 19th centuries (McBride 2005:42; Silliman and Witt, 2009).The persistence of Native peoples in a region increasingly inhabited by Euro-Americans meant greater and greater integration with an economic, political, and ecological Atlantic World (Baron et al. 1996:562; Cronon 1983:161).

As a physical space, the reservation is a complex landscape. The poor quality of the reservation's soil for agriculture was mentioned in petitions to the General Court, and the Eastern Pequots attempted to make maximum use of the land available to them for agricultural purposes (Den Ouden 2005:25-26). Long Pond and its earlier undammed riverine corridor of smaller lakes bordering the reservation on the western edge provided a source of freshwater and fish in addition to the terrestrial resources available on the

reservation. Immediately across Long Pond is the Mashantucket Pequot reservation, established in 1666, and has been extensively studied historically and archaeologically (Campisi 1990; McBride 1991, 2005). The physical proximity of the two reservations implies that communication and movement between the two reservations would have been relatively easy and such interaction would have been beneficial to the preservation of cultural traditions. Multiple habitation areas have been identified that date roughly between the mid-18th century to the mid-19th century, a period when the reservation had been inhabited for between 70 to 200 years. The decisions made in these particular historical circumstances reflect the colonial environment. Habitation and agricultural practice on the reservation with techniques and structures similar to the Pequot's Euro-American neighbors has a decades-long history during a time of economic growth and integration (Hayden 2012; Silliman 2009; Silliman and Witt 2010:46,63-65).

Turning to the social world of the people who have lived on the reservation, the practices of pre-colonial Native Americans are relevant when addressing Native lifeways in later periods. While the Woodland period should not be considered the only cultural baseline for Native American behavior, it is a useful starting point to trace the changes in land use following the arrival of Europeans and during the construction of the Euro-American colonial edifice (Silliman 2009). The people who would have built, used, and eventually abandoned the structures on the reservation were separated from their ancestors' Woodland traditions by centuries of change and living within the colonial environment. This separation is not an impassable divide over the gulf of history or abandonment and renunciation of tradition, but the result of historical processes where

the world of southern New England has changed along with the people (see Mitchell and Scheiber 2010). They had collectively experienced radical changes in their political power, their subsistence strategies, and their access to land and other resources. This does not undermine their claims to connection with Woodland traditions, but rather is meant to take into account the period during which Native lifeways were being actively disrupted and changing to a rapidly altering environment (Silliman 2012). The extremely long view is a strength of archaeology, but should not be the sole time frame to consider the engagement of people with the material culture (Silliman 2012).

Pequot subsistence patterns of the Late Woodland period (1000-1500 CE) revolved around marine and estuarine environments, forming a mixed maritime and horticultural base for subsistence (McBride 1991:65). This landscape management involved horticulture and hunting and gathering, along with a great deal of reliance on marine resources. Villages dating to the Late Woodland period that have been studied archaeologically indicate a less intensive land use pattern than European models of farming (Cronon 1983:38).

Europeans – first Dutch, then English – began to arrive in southern New England in the beginning of the 17th century, leading to the establishment of Connecticut Colony in 1636. Prior to the establishment of the Connecticut colony, during the initial stages of interaction between Native people and Europeans in New England, the Pequot began to supply wampum to European traders (Cronon 1983:97). They also established fortified villages, most notably the large palisaded village at Mystic. McBride suggests these changes are tied to European contact and involvement with the fur trade and the Atlantic

economy (McBride 1994:12). The combination of economic and demographic changes made for a fluid social environment.

A detailed history of the Pequot War (1636-1637) is not necessary for this thesis, but any history of the Peqout and their relationship with Europeans should at least cover the conflict briefly. The war provides important context for understanding the relationship between the Pequot and the colonial government. It illustrates the changing relationship to the world economy of Native peoples in the 17th and 18th centuries and a turning point in Pequot history. The war was brief and devastating, leading to the enslavement and attempted dissolution of the Pequot in New England, and eventually to the establishment of the reservations in the later part of the seventeenth century. The eventual establishment of the Eastern Pequot and Mashantucket reservations happened in locations distant from the sites of the large coastal Pequot settlements which existed prior to the Pequot War, although the presence of marine shellfish at site 102-123, and elsewhere, indicates that Pequot people in the 18th century maintained links to coastal areas (Hunter 2012:38-39). The reservations were established well inland of the areas used by the Pequot for their maritime subsistence activities. A third reservation at Noank, on the Atlantic coast, was later disestablished by the Connecticut government in 1721 (McBride 1991:67).

The reservation's location well inland makes it a location distinct from the coastal environment associated with large Pequot settlements but not alien to Pequot people in the Woodland period or prior to the Pequot War. For example, it is not so distant that coastal resources would have been inaccessible (Hunter 2012). The unfamiliarity of the environment should not be overstated, as by the time of the establishment of the

reservation, the Pequots would have developed a community memory over decades. An entire generation of Pequots would have grown up in the period between the war and establishment of the two reservations. To a certain extent, while both the Eastern (and Mashantucket) reservations were inhabited and the Noank reservation was in use, there is a potential to create "links between places they have known and new places", building upon their knowledge of known landscapes to develop and make a home out of new landscapes (Bender 2006:309). The nearby Mashantucket reservation was only used intermittently until the disestablishment of the Noank reservation in 1721 (McBride 1991:67). There is no evidence, at this time in the trajectory of archaeological research on the reservation, of year-round habitation at the Eastern Pequot reservation during the first half of the 18th century, so it may have been used intermittently or had long-term habitations that are not easily identified by surface features, similar to land use practices observed at the Mashantucket reservation in the early reservation period (McBride 1991:66). Seasonal or permanent habitation in structures not easily detectable are still forms of residing on the reservation. Given the size of the reservation and the low archaeological visibility of ephemeral structures, the lack of detection should not be considered as proof of absence in this period.

By the 18th century, Native people were able to consider, analyze, and participate in Euro-American landscape management practices as hired laborers or as farmers. McBride believes that subsistence patterns in the early reservation period (ca. 1666-1720) were "generally similar to those documented prior to the Pequot War. Maize horticulture and seasonal hunting and gathering still made up a substantial portion of subsistence"

(McBride 1990:66). This implies that the traditions of the Late Woodland or early colonial period, having been modified for a more inland environment, would be similar to the practices early in the occupation of the reservation. With a lack of sites on the Eastern Pequot reservation that date to the 17th or early 18th centuries, the understanding of subsistence on the reservation early in its occupation is largely conjectural. McBride notes elsewhere that, among other changes "construction of Euro-American style framed houses and meeting houses, increased use of European domestic animals" and other improvements at the Mashantucket reservation "began within a decade or two of the Great Awakening of 1742-1743, when hundreds of Native people throughout southern New England converted to Christianity" (McBride 2005:42). This transitional period is important as it shows the Pequot actively modifying cultural practices on the reservation and in relation to the world outside of the reservation. There is a distinct possibility that similar processes were in play at the two reservations, considering the close proximity and similar cultural background of the Eastern and Mashantucket Pequots.

The first generation of Euro-American style buildings on the Eastern Pequot reservation may be those from the 18th century. McBride (1991:75) argues that the neighboring Euro-American farmsteads are not the best analog for the contemporary Pequot farmsteads at Mashantucket, but rather "the earlier 17th-century and prehistoric sites on the reservation. The similarity of prehistoric and 17th-century sites to 18th- and 19th-century sites, which are permanent or semi-permanent, suggests that many of the older prehistoric and early historic sites formerly defined as temporary may actually be long-term occupations." This seems to be at odds with the absences of prehistoric and

17th century occupations near the 18th century farmsteads detected on the Eastern Pequot reservation, although the number of archaeological field seasons numbers less than one-third of those on the Mashantucket reservation. Several Eastern Pequot residential are described in Hayden, demonstrating common features as sub-floor storage (at two sites) and interior hearths (at three) from several sites which range from the early 18th century to the mid-19th century (Hayden 2012:107-109). These sites do not appear to have been extensively remodeled over the period of their occupation, which I later take up as a point of contrast.

The reservation was occupied well after the 18th century. Several 19th century residential sites have been detected and examined, some very thoroughly (e.g., Cipolla et al. 2007; Hayden 2012). These structures appear to use fieldstone partial foundations and chimneys, with very little or no use of brick. The 19th century houses largely appear to be grouped closer together, although whether this an indicator of multiple households or multiple occupations is not clear at the moment.

The Colonial Environment

The Eastern Pequot lived in a colonial environment of unequal power relations during the 18th and 19th centuries. This colonial environment is part of a larger Atlantic system that includes the encroaching capitalism that altered Native lifeways, especially through the socially shaping influence of material culture (Gosden 2004a:170; 2004b:153). The use of material culture identified as Euro-American is an expression of the pervasiveness of colonialism. The societies and relational networks that influence the construction and use of buildings are not static or monolithic entities. Notions of

hybridity are often invoked to study how people deal with conflicting values and ways of engaging with the world, including in the realm of the relationship between people and vernacular architecture (Blier 2006:244). The process of adopting European practices and material culture was a strategy that allowed Native communities to persist in various forms (Den Ouden 2005). The use of hybrid forms allows for fluidity of meaning through the adoption, modification, and creation of cultural practices in an arena where "the meaning of objects could not and did not remain unchanged." (van Dommelen 2006:119) Theoretical constructions such as "entanglement" (Martindale 2009: 61) build on the intersection of hybridity and colonial studies construct ways of understanding the past that undermine dichotomous conceptualizations such as conquered/conqueror or Native/European. Connecting the interplay of material culture, identity, and social relationships with approaches that emphasize hybridity makes colonial power relations part of the constructed identities that include the adoption of goods or practices that originate, in terms of manufacture or conception, in Europe or European America.

Hybrid forms can be considered in architectural forms as well. Edwards, when arguing for colonial architecture as a product of creolization, notes that colonial architecture was "not European architecture transplanted" (Edwards 2001:86). Rather, it was the result of the process of cultural exchange in an environment of unequal power relations, where environments were in flux and available resources were shifting, and distinct from the development of Creole populations . In his discussion of creole architecture, Edwards limits himself to discussing the architecture of the tropical regions (Edwards 2001:90), emphasizing the European empires in Africa, the Caribbean, and

South America. However, his arguments that creole architecture is “nativized [and] non-indigenous” (Edwards 2001:90) can be applied in New England as well. There are obvious issues with claiming that any structure on the reservation is non-indigenous. The terminology is flawed, but the flaw does not extend to a conceptualization that reflects the process of hybridization as one that integrates European concepts of architecture and space ('non-indigenous') with Native concepts (leading to 'nativized'). This integration is essential in the cultural transformative process. Architectural creolization is not meant to say that Native culture is somehow destroyed and replaced by a hybridized form, but rather that the process of cultural change is complicated by the introduction of new elements in the form of new architectural styles, which form the basis of a new class of architectural forms. The differences in the availability of certain resources or environmental variability can also alter architectural forms or the implementation of those forms. While the construction of domestic structures on the reservation represents Native architecture in the sense that they are constructed by Native people, they are also closely related in origins and styles to the buildings constructed by Euro-Americans at the same time. These structures were markedly different from those of the Late Woodland period. These buildings and the agricultural practices associated with them were part of a set of skills, ideas, and material culture that was part of being Pequot in the 18th century. Some of these architectural and agricultural practices were adopted or appropriated in a colonial environment, and they are in turn products of colonialism. While imperial architecture is more widely associated with large government buildings meant in part to glorify or monumentalize the state (Blier 2006:244), the spread of these small, everyday

houses is a reminder of the widespread transformation of a landscape within projects of colonialism.

The apparent use of material culture that could be identified as European or Euro-American should not be seen as an argument for the "disappearance" of Native peoples by their adoption of new forms of material culture. The narrative surrounding the "disappearance" of Native peoples in New England is an element of the creation of Euro-American hegemony (O'Brien 2006:415). Disappearance, in the eyes of Euro-Americans, could be in the form of the adoption of Euro-American material culture, which had been constructed as supplanting Native material markers of identity, and therefore Native identity (i.e. "Indian-ness") (Baron et al. 1996:415).

The entanglement of Native Americans and the reservation with the colonial government and power structure is a long-term one (Silliman 2005:56). The landscape of the reservation "is a product of the activities that constitute domination and resistance" (Hood 1996:124). All of the activities that took place on the reservation after its establishment are embedded in colonial power relations. These power relations can vary in from highly local to broader power issues that relate to colonialism. Silverman, in his discussion of Native people on Nantucket, notes that "it was essential for people who wanted to persist in a colonial-dominated region to learn how to run an English-style farm and speak English" (Silverman 2005:221).

Reservation spaces existed as "the locus of community life for Native peoples, as well as sites of ancestral and ongoing struggles. In a very real sense, they were homelands" (Den Ouden 2005:15). An important corollary to the idea of a reservation as

a homeland is an awareness of the pervasiveness of the colonial power relations for people living on the reservation, meaning that reservations were not “sanctuaries, insulating Native communities from an 'outside' colonial world” (Den Ouden 2005:16), but that they occupy a position that both separates and connects the community living on the reservation to the colonial world.. The decision to live on the reservation was a political one, an enactment of residence within the Native world and one the placed the people on the reservation in a position to construct the reservation as a Native space through their residence.

Residing on the reservation was an active decision to locate in an area where the community of Native people will be present, even if there are relatively few Native people actually living on the reservation itself, as the population of the reservation varied substantially over time. Locating oneself (and one's family) on the reservation is an endorsement of communal values (Henretta 1978:4) by choosing to reside in an identified Pequot space, even if the house form may have been indistinguishable from those on land owned by Euro-American neighbors. The similarity between a house on the reservation and houses owned by Anglo-Americans could be considered as a suggestion of “social or cultural affiliation with their Anglo-American neighbors or at least an effort at outward conformity” (Baron et al. 1997:581).

Throughout the entire reservation period, Native people were constantly engaging with the colonial economy (Baron et al. 1996:573; Silliman and Witt 2010). The integration of Native people into the Atlantic system took many forms. Elements of capitalism were starting to take shape at this time – “a flexible currency, banking,

corporations, transportation systems, industrialization, and pervasive consumerism" (Gilje 1996:162). The 19th century was a period of increasing integration of the transportation systems linking local, regional, national, and international markets (Kulikoff 1989:136). Labor integration differs from the appearance of material culture from other parts of the world in that the labor of the Pequots here was used to perpetuate and actively construct the Atlantic system, an important part of the colonial world. The labor of Native peoples was not merely either a component of capitalist production or mean survival. Agricultural labor was a practice that "sustained a sense of historical continuity – a direct, tangible connection with the past and with one's ancestors" (Den Ouden 2005:25-26).

This increased integration, however, did not undermine the subsistence nature of farming in the 18th and 19th centuries. Although surpluses of farmstead production in the Northeast and elsewhere in the United States may have been sold in markets, these goods were farm products that were 'surplus' to the subsistence needs of farmers until the second half of the 19th century (Henretta 1978:12). Subsistence dominated agriculture in New England partially due to the environmental characteristics of the thin, rocky soil of New England (Schwartz 1995:455). Subsistence farmers were never truly divorced from the market economy – the myth of the self-sufficient farmer is just that (Kulikoff 1989:127). The significance of agriculture is visible when situated in the broader economic system. The late 18th century was a period where capitalism was "in its adolescence" (Gilje 1996:162) and as a transition between forms of capitalism "from a rudimentary form of capitalist exploitation, with many petty capitalists, to a more mature

system" (Kulikoff 1989:133). These elements would influence the decision making of people across the Atlantic world, including on the Eastern Pequot reservation.

Eighteenth-Century Domestic Architecture, Farmsteads, and Agriculture

Farmsteads are rural, agricultural, and domestic spaces in the eyes of archaeologists (Baugher and Klien 2001-2002:10). They are relatively isolated and low density forms of settlements, whether occupied by settlers on private plots of land or indigenous people on reservations. The organization of space on a farmstead is a layout for "the use, convenience, and efficiency of the farmer" (Mascia 1996:155). Farmstead buildings combine domestic space and work space into a single area, creating, in archaeological contexts, "an idiosyncratic glimpse into the totality of the human conditions" (Scharfenberger and Viet 2001-2002:68). Layout is an enactment of relationship that defines what the farmer should be doing and how, not simply a reflection of the most efficient way to produce particular goods. The labor of farmers and the labor products of farm work cover a broad spectrum of activities and products. Agricultural labor is one that is a routine, daily practice, towards generating both the means of survival and, possibly, a surplus (or cash crop) for the wider economy.

Farmstead houses, despite their ubiquity, have never been considered to be particularly important in archaeological and historical research. Houses that are preserved and studied tended to be the larger homes of prosperous families, so the sample of still standing buildings from the 18th century neglects many of the smaller buildings that would have been demolished. This bias towards large, significant architecture is nothing new – in the early part of the 19th century, contempt was reserved for earlier architectural

forms (Maynard 2000:338). The two-story, center chimney houses that have been preserved into the 21st century are among the largest houses constructed in New England during the 18th century (Stachiw et al. 1997:IV-14). Rather than a New England landscape filled with these large homes, the 18th century rural landscape would have been dominated, at least in terms of architectural features, by small, somewhat impermanent dwellings (Steinitz 1989:17). These buildings, whether the larger, "significant" buildings or the more common smaller buildings, reflect the attitudes of their builders through the act of construction, and are thus artifacts that stamp a particular attitude into the landscape, but also are reinterpreted over time (Adams 1990:95). Understanding that attitude can be complicated, as a house may mean to deliver a number of messages depending on who is seeing and experiencing that house.

The residential structure form that dominated in the Woodland period in southern New England was the wigwam, a rounded structure, framed by bent poles driven into the ground and covered with woven mats. Wigwams of this or similar forms have been studied archaeologically on the Eastern Pequot reservation (Hayden 2012:64-66), elsewhere in Connecticut (Handsman and Richmond 1995:100), and elsewhere in New England (e.g. Largy and Rainey 2006:64). Wigwams are detected by the arrangement of post-holes and should be clearly distinguishable from framed houses, although they are relatively difficult to detect. This house form was constructed prior to the colonial period with no metal tools or nails, but out of local material. They were relatively easy to maintain given access to sufficient quantities of wood and matting material. The wigwams present at Niantic were oval in plan, between 4.2 and 5.3 meters in length, with

a central hearth and one or two doors (Sturtevant 1975:441). Metal artifacts, including nails, may be associated with wigwams constructed after the arrival of iron metallurgy with Europeans in the 17th century. Wigwams were in wide use during the 17th century at the Mashantucket reservation, and have been described by Europeans in the 17th and 18th centuries (Willoughby 1906:118). Even in the 18th century, wigwams were a viable alternative to framed houses (Dwight 1822: 82), although the shift to framed houses appears to be underway in the 18th century. The changing availability of resources as the reservation became smaller and the land was cleared meant that the materials for the construction of wigwams became more scarce (Stachiw et al 1997:8). Only one wigwam has been detected archaeologically on the Eastern Pequot reservation (Hayden 2012:97-98), but textual sources indicate that their presence on both the Mashantucket (McBride 1990:107) and Eastern Pequot reservations (Dwight 1822: 82; Silliman 2008:19) through to the 19th century.

Some wigwams in the 17th and 18th centuries would have been excellent examples of architectural hybridity. Little notes that the relative treelessness of Nantucket may have encouraged Native people to construct hybrid board and wigwam huts with sapling poles and purchased sawed boards (Little 1981: 28). Research conducted for the construction of a replica framed house at the Mashantucket Pequot Museum and Research Center cites 18th-century reports by Ezra Styles of houses that included flooring, hinged doors, and a window sash (Stachiw et al. 1997:II-4; Hayden 2012:39). Furthermore, archaeological excavations at the Mashantucket Pequot reservation have detected structures that may be a hybrid form of European and Native construction styles

(McBride 1990:113). These structures appear "to be built into south-facing hillsides with a fieldstone retaining wall constructed against the hillside. A low stone wall two or three feet wide was then built in a U or D shape" (McBride 1990:14). It is unclear whether they supported mat coverings or boards, frames, and shingles. The evidence for these structures is limited, but they do seem to be clear examples of a hybrid form. Hayden has examined the household remains of several sites on the Eastern Pequot reservation, and notes that at least one site dating to the early to mid-18th century is consistent with a wigwam-type structure (Hayden 2012: 64), while those roughly contemporaneous with site 102-123 and post-dating the site are framed houses which do no appear to have distinct phases of construction as at this site.

The framed plank house form was one of the most common house forms in New England in the 18th century, a structure with exterior planks arranged outside of the building over an internal frame. The small cottages which were the likely antecedents to the framed farmhouses of the 18th century in turn were descended from English cottages of the countryside (Candee 1969a:110). Lean-to additions were popular in the early settlement of Massachusetts Bay, but had largely been abandoned by the late 18th century (Candee 1969a:105; Small 1997:40). Most New England houses would have been small with two or three rooms (Stachiw et al 1997:11). A study of the Direct Tax in New England indicated that the most common houses would have been about 600 square feet, with one or two rooms and a single story (Stienitz 1989:15,20-21). A small house, such as an 11' by 17' by 6' house common on Nantucket, would have required about 500 board feet of lumber (Little 1981:4), which could have been purchased or acquired from

clearing or recycled from other structures. Additionally, small houses or pioneer houses may have been constructed first as a semi-permanent structure while the permanent house was being constructed (Scharfenberger and Viet 2001-2002:58-60). Structures such as these are likely to be similar to the small houses present at farmsteads on the Eastern Pequot reservation, as opposed to the large structures, representing a substantial investment of wealth which are preserved to the present day. Mashantucket Pequots were living in European style framed houses by the 19th century (McBride 1990:113). However, the reason for the shift to this house style is unclear (McBride 1991:73).

Summary

The landscape of the 18th century was one where many practices intersected. The building of structures on that landscape was an active decision made by Native people living in a colonial environment that restricted the options that were available to them, but did not determine their actions. By examining how they chose to organize the space around them, we examine how they chose to live with colonialism, sometimes resisting it outright and other times maneuvering within it. The construction of buildings on the reservation is also in important intersection between the work of individuals and families, the resources available to households, and the political and economic system that governs the availability of those resources. As the colonial landscape changed the physical landscape, it also altered the ways in which people could interact with and modify the landscape. The next chapter considers these issues more deeply in the context of an 18th-century site on the Eastern Pequot reservation.

CHAPTER 3

PROJECT SITE AND RESEARCH METHODOLOGY

Examining architectural remains offers a chance to consider issues of the use of the built environment. Connecting larger issues of colonialism and residence to archaeological data is a process which can be applied to certain sites more readily than others. Identifying the nature of the structure present at the site, and the sequence of its construction, use, and eventual abandonment provide an opportunity to examine a household in a colonial environment which experienced a distinct series of modifications and new construction over a substantial period of time. Site 102-123 is an important site on the Eastern Pequot reservation for understanding the architecture for several reasons. Foremost is the presence of two chimney collapses at the site. These particular features, along with other structural features present at the site, indicate a more complex series of modifications to the site than the construction and abandonment of a structure seen elsewhere on the reservation (see Hayden 2012). This site, therefore, offers a unique opportunity to examine the relationship between people living on the reservation and the built environment in the 18th century. No written documents describe the process of

construction and demolition at the site, so the forms of the structures and the sequence of their construction must be reconstructed entirely from archaeological data.

Other sites at the reservation show the sequence of structures that are constructed, used, rarely modified, and then abandoned or dismantled (Hayden 2012:55, 66, 69-70). Several of these sites utilize subfloor storage and internal hearths and pose differing models in disposal of materials, either by diffusing scattering debris across a relatively wide area, or by the use of disposal pits. In all cases, these habitation areas are separated from one another by one hundred meters or more. The presence of a sequence of multiple constructions in close proximity at this site offers a different view of Native people's use of buildings and space, one of reuse and modification. The two chimney collapses pose a variety of possible interpretations. They could represent two sequentially occupied houses. Conversely, they could also represent two contemporaneous houses, either constructed simultaneously or sequentially. A single large house with two chimneys is also possible, but unlikely given the presence of both a root cellar south of both chimneys and a cellar associated with the south chimney and given the fact that no one has ever seen a Native American reservation house of that size.

Understanding how and when these modifications were made, and what the form of those structures were at various points during the occupation of the site can help to explicate the relationship between the people living at the site and the material culture in the form of the built environment.

The methodology employed here, a spatial analysis where data at both the excavation unit level and aggregated to larger levels, combines multiple artifact classes to

utilize relations between these different artifact classes. The use of multiple artifact classes both makes the data set more robust and helps to illustrate the interconnected nature of the artifacts, structures, and people at the site. Identifying the distribution and types of nails and other artifacts present at and around each chimney provides insight into the construction and demolition of those structures or structure. While nails and window glass are often considered to be artifacts of limited interpretive value, here they are anchored to specific features and compared to the distribution of other artifact types across the site to define areas of differing disposal. Additionally, both nails and ceramics provide some temporal information which can be combined with the distribution of those artifacts to establish a relative chronology. The data at site 102-123, however, do not lend themselves to absolute dates beyond a degree of certainty associated with the excavation of European ceramics, but the use of mean ceramic dates and knowledge of the introduction of cut nails allows for the construction of a relative chronology between various features at the site.

The site examined here (Site 102-123) was detected by pedestrian survey in 2003 and excavated during the 2005 and 2006 field seasons (Figure 1). Several large stone piles are present at the site, two of which were determined to be chimney collapses (Figure 2 and Figure 3), but there are no standing buildings. The southern chimney fall is associated with a deep cellar feature, filled with rock, on the north (interior) side. The northern chimney collapse does not associate with an adjacent cellar. Several fieldstone fences are present, most notably one that runs north-south directly west of the chimney collapses, as well as a small stone pile, which is not a chimney fall, to the south of the

house and a stone pile to the east that overlays and intermixes with a midden with a very high density of shell, rock, and glass artifacts. Near the small stone pile is a depression, which when examined on the surface and then excavated, was revealed to be a root cellar or similar feature. Although the architecture has not yet been examined in depth, studies of the site thus far have addressed ceramics (Witt 2007; Silliman and Witt 2010), subsistence (Fedore 2007; Hunter 2012), and dating (Hunter 2012; Silliman and Witt 2010).

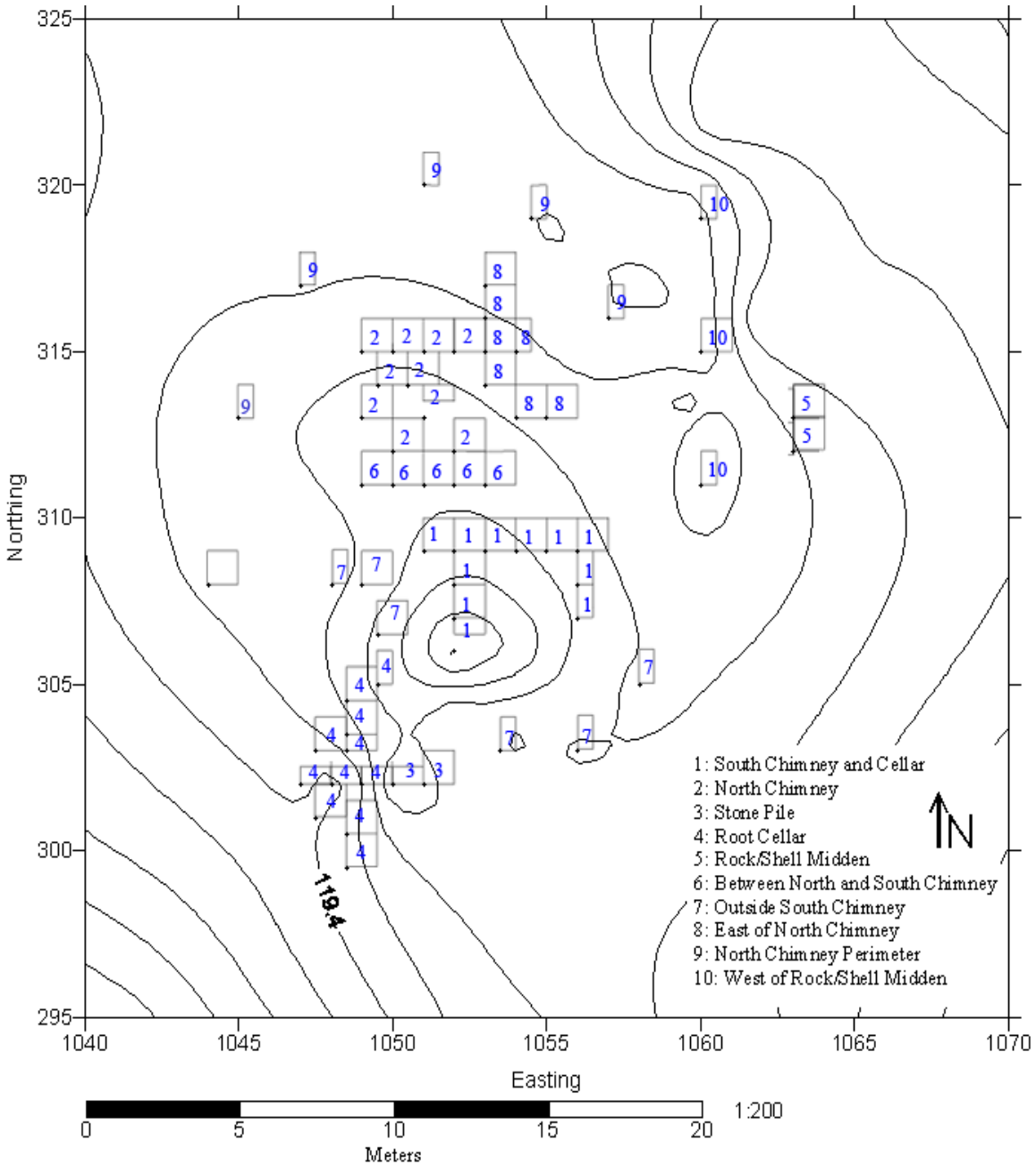

Figure 1: Site Topography and Unit Locations

Figure 2: South Chimney Collapse at Site 102-123, Facing West

Figure 3: South Chimney Collapse from Above

The site was excavated during the 2005 and 2006 field seasons, followed by a brief return in Fall 2009 for select sampling, by undergraduate and graduate students from the University of Massachusetts Boston and several interns from the Eastern Pequot Tribal Nation. The site was mapped using an electronic total station to record the position of surface features and the location of individual test units. The units were hand excavated, first through a reconnaissance subsurface survey of shovel test pits to identify artifact concentrations and features, and then by the hand-troweled excavation of 41 1-m-

x-1-m and 22 1.0-m-x-0.5m excavation units near surface features, locations indicated in Figure 4 below. These were designed to sample the hearth areas of both chimneys; sample the spaces between the two chimneys; cross-section the cellar associated with the southern house; chase some artifact distribution east from the northern chimney and associated hearth; test the small and large rock piles to the south and east of the houses, respectively, which revealed them to be midden areas; sample and cross-section the depression revealed to be a root cellar; examine the space between that root cellar and the house area; and to ring the house with units designed to test for spatial patterns and other exterior features. Hand-troweled units were excavated in 5 cm arbitrary levels, although exceptions were made when natural stratigraphy was encountered. In those cases, levels would be terminated early, and a new set of 5 cm levels began within larger stratigraphic levels. The extremely rocky soil and presence of rock used for architectural purposes complicated the use of 5 cm arbitrary levels. Many of the excavation units, particularly those in the chimney falls, cellar units, and rock and shell midden were courses of rock which could not be excavated in precise levels. As such, levels which were primarily rock are treated more as a course of rock, rather than 5 centimeters of easily troweled matrix. Shovel test pit units were screened using a ¼-inch screen, while the test units were screened with 1/8-inch hardware cloth. The units are the basic element of analysis for the spatial analysis, while the shovel test pit data was not used in the site core, as none of those units fell in the core area. The data from both the units and the shovel test pits was used to generate the isopleth maps. They are used as the most discrete locational data, and are subsequently aggregated into the groups that are described below (Figure 4).

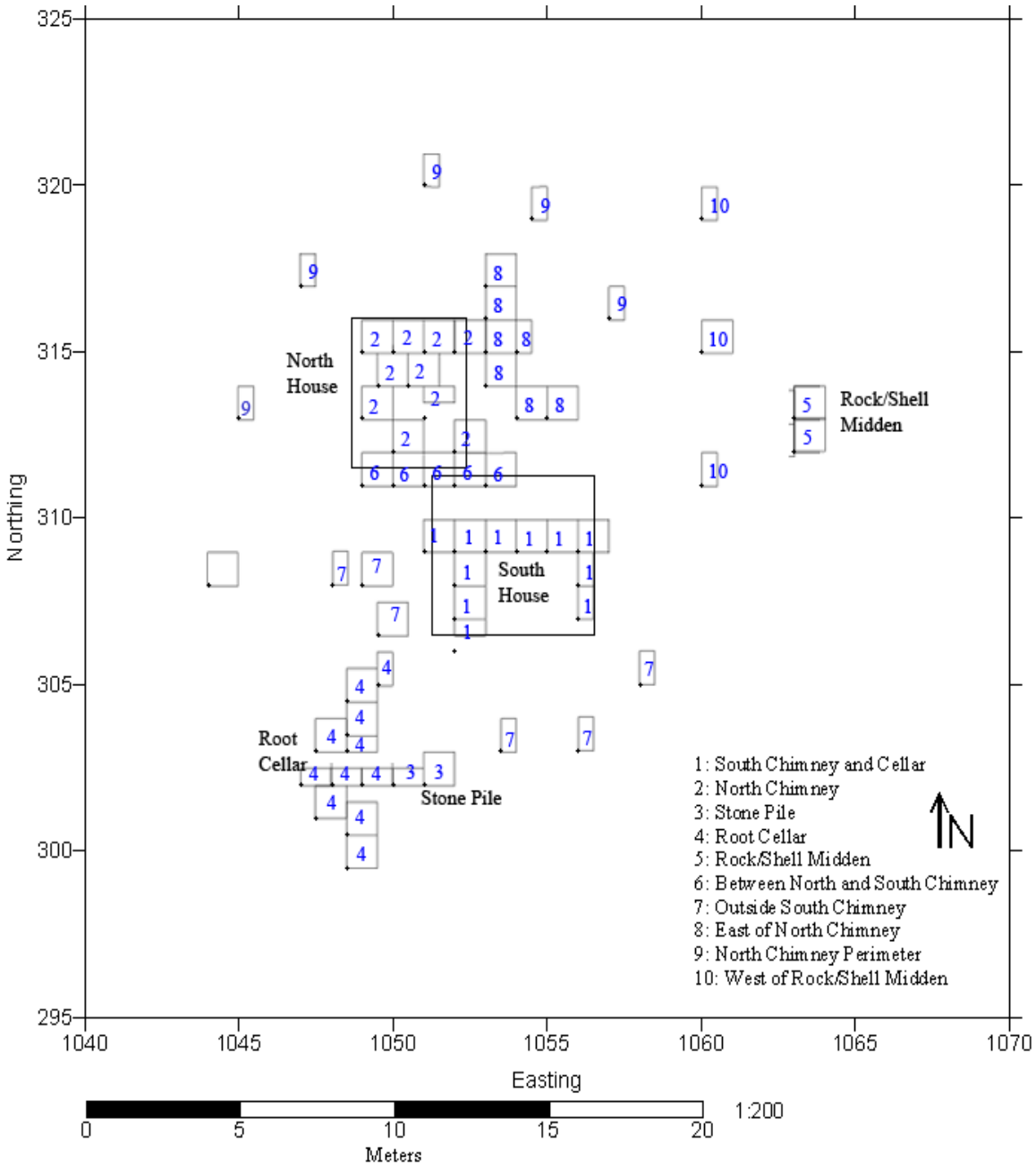

Figure 4: Unit Locations and Surface Features

While individual nails and window glass artifacts reveal little of the past, in aggregate they form a useful data set for questions regarding the construction and

demolition of structures. Here, nails and window glass are used to address the sequence of construction and utilization of structures at a domestic site, through analysis of their particular features and the spatial distribution of the materials in relation to both archaeological features and the spatial distribution of other artifact classes (in this case, ceramics and vessel glass). The use of multiple artifact classes in concert and as an aggregate tied to spatial orientation is an attempt to clarify a data set which is highly ambiguous when the various components are considered in isolation.

Nails

Since the buildings at Site 102-123 no are longer extant, construction materials provide evidence of the building and characteristics of structures. Nails used in the construction and maintenance of the houses and window glass are the elements most likely to have survived, along with any fieldstone used as construction material. Nail type is determined based on the characteristics of the particular nail. In particular, the shape of nails can indicate the type of manufacture (Wells 1998: 91), and the length of nails often indicates function. As the late 18th century was a period of transition between wrought and cut nails, identifying the characteristics of those nails is of particular importance to this site.

Wrought nails were the only form of nails available until the invention of nail-cutting machines, and as such are the most common nails prior to the mid-18th century (Adams 2002:67). The nails were either manufactured by blacksmiths working independently or at naileries, and "by virtue of being made individually by hand, wrought nails show considerable morphological and metric variability" (Adams 2002:67). In

addition to nails made by blacksmiths, wrought nails were simple enough in manufacture that they could be made at home with the proper equipment (Benson 1983:136). Nails were also commonly imported from Europe until the second decade of the 19th century (Adams 2002:71), indicating that the manufacture of nails in the United States was unable to provide enough nails for the demands of builders. Adams (2002:71) attributes the decline of imported nails to growing production in the early 19th century as well as international events that may have affected the cost or availability of imported nails.

The manufacture of cut nails was a process still in development in the late 18th century. While wrought nails are largely considered to be nonstandardized due to the idiosyncratic nature of their manufacture, cut nails were also nonstandardized well into the 19th century (Benson 1983:137). The manufacture of cut nails developed rapidly in the 18th and 19th centuries, with multiple changes occurring to the process during the period before and after the American War of Independence (Phillips 1996:47). Hand-operated nails machines were operated south of Boston in the 1780s (Phillips 1993:5). Analysis of nail samples indicates that cut nails were in wide use by 1795 (Phillips 1993:13), and standardization of nails increased through 1810, as nails became more regular and less eccentric. By 1809, machine cut nails also had heads made by machine (Adams 2002:80). The belief that cut nails are weaker and break along the grain of the metal more readily than wrought nails is mistaken (Phillips 1993:13), although this belief may have slowed the adoption of cut nails. While cut nails were eventually considered to be "a superior nail for building purposes, depending on the wood being used" (Adams 2002:69), when compared to wire nails, early cut nails were ranked unfavorably to

wrought nails, and perceived as a “cheap, inferior, substitute for handwrought nails” (Leach 2000:39). Larger cut nails were slower to be adopted because the machines used to manufacture large cut nails needed to be more powerful than the earliest nail-cutting machine, although beliefs about the weakness of cut nails compared to wrought nails may have also been a factor in the reluctance of some people to adopt their use (Phillips 1993:13). In summary, the nails in use in the 18th and early 19th centuries would have been limited to cut or handwrought nails. Wire nails came to dominate the nail market largely because of their cheapness and not because of any superior quality (Adams 2002:69). However, wire nails were not produced until 1883, and did not come to dominate the market until 1897 (Adams 2002:71), long after the period under study here.

Nails have been made for millennia, and for most of that time, they were constructed out of wrought iron. Wrought iron is relatively easy to work and can be fashioned into nails or nail plates more readily than cast iron. Cast iron nails are known but relatively rare (Lenik 1977:45). Cast iron has superior corrosion resistance to wrought iron, but never overtook the manufacture of wrought iron nails. Nails could also be made from other materials, including copper (Inashima 1994:47), although the expense of copper would have limited its use in nails for large scale projects, such as construction. In some cases, zinc or lead was used as a coating on nails to improve corrosion resistance (Leach 2000:43). Steel nails are not likely to be found in an archaeological assemblage until after 1882 (Adams 2002:69), and did not become commonplace until the 1890s (Wells 1998:87).

The materials and manufacturing technique for particular nails can be useful in determining the date when a building may have been constructed or modified, but provide relatively few clues as to the function of the nails. Wells, when discussing usefulness of nails as a material for dating, notes that “the actual use of any particular nail cannot be known out of its original context. Functional types may be of limited use in describing some nails, in the same manner and with the same skepticism as 'arrow head' or 'adz' are used to describe prehistoric stone artifacts” (Wells 1998:87). Schuyler and Mills divided the nails from the Content Brook Supply Mill in Massachusetts into six types, recognizing that “difference in specific use are not clear” based solely on the shape and size of the nails (Schuyler and Mills 1976:75). The nails at Arryl House in Clermont, New York, were divided into groups based on their presumed pennyweight sizes, with two broad groups. The smaller group, between 2.25 and 3 inches in length, corresponded to 7d, 8d, 9d, and 10d nails, “commonly used in construction for flooring, boarding, and interior fittings” (Wentworth 1979:34). The larger group, between 3.25 and 4 inches in length, corresponding to 12d, 16d, 18d, and 20d nails, “were often used for wood studding and heavy framing” (Wentworth 1979:34). From both of these studies, the most common method of determining nail use is to estimate the original size of the nail. With few exceptions for the head type, this should give an indication as to the possible original function, keeping in mind that nails were not standardized, nor were carpenters compelled to use particular nails for particular purposes. Moreover, even though large nails can be used for small projects in some cases, small nails cannot be used for larger

attachments. As nail size is closely correlated with function, no size adjustment for the artifacts counts were applied to the nail data, as described in the section on window glass.

Pennyweight	Application
2d & 3d	Fastening metal roofing and flashing to roof sheathing. Nailing lath for plaster to furring strips. Fastening wooden shingles to roof sheathing
4d	Fastening wooden shingles to roof sheathing For cabinet work, moulding and other interior finish
5d	For moulding, finished work, and ornamentation
6d	For light framing and clapboard
7d	For bevel siding and wood grounds
8d	For flooring, furring strips and wood grounds. For interior fittings
9d	For boarding, flooring and interior fittings.
10d	For furring strips, flooring, boarding, and interior fittings.
12d	For wooden studding.
16d	For wooden studding, rafters, and heavy framing.
20d+	For very heavy framing.

Table 1: General Application of Square Cut Nails by Pennyweight (Inashima, 1994)

Nail functions vary greatly. In particular, roofing nails may have depended on the type of roofing. While cedar shingles were very popular in southern New England (Cronon 1983:112), and cedar is not uncommon in the area near the reservation, a house using planks or clapboards for the roof of the structure would have required fewer, larger nails (Stachiw et al 1997:II-2). Additionally, small nails may have been used in the construction of furniture, although some furniture would have been constructed through joinery without the use of nails. Medium-size nails could be used for attaching planks to the exterior of the house, or for attaching lath to the interior. The presence of nails for lath would have to be considered along with the presence or absence of plaster to determine if lath was likely component of the house. Nails for flooring are likely to have been "L-headed" nails (Stachiw et al 1997:II-2). Larger nails would have been used for the

framing and sheathing of the house. The largest nails would have been used for joining planks to frames, especially 20d or larger nails. The absence of large, 20d nails would imply that wood studding was not the primary method of supporting weight in the structure (Inashima 1994:47).

Corrosion eventually attacks iron nails, leaving many nails covered in a deep, reddish-brown oxidation layer. Corrosion obscures some features that might shed light on the original form and, therefore, probable function of a nail, but corrosion can also sometime assist in identifying some features that may not be visible on an uncorroded nail, such as grain direction (Leach 2000:35). The difference between wrought and cast iron can also be easily detected, given cast iron's greater resistance to corrosion. Corrosion can also strongly affect the composition of an archaeological assemblage due to differential rates of corrosion (and thus differential rates of artifact retrieval) especially on smaller nails (Inashima 1994:46).

The use of nails in houses is usually considered to be associated first and foremost with the construction, but nails are reusable to a certain extent. Recycling and salvage can have a major effect on the nails in archaeological assemblages (Inashima 1994:46). Inhabitants of a building would have been more likely to salvage nails depending of the relative value of the nails and value of the labor expended to salvage them – a difficult and demanding job. In particular, the effort expended would have also depended on the type of nail, as smaller nails may not have been worth that effort. For example, while researching framed houses on the Mashantucket Pequot reservation, Stachiw, Dempsey, and Paske determined that “the majority of nails and other architectural hardware were

salvaged from the sites. Many of the nails were broken or twisted – probably discarded because they broke during removal" (Stachiw et al. 1997:II-1). If nail recycling was widespread, then most relatively large nails would have been recovered, while those that were not of any use would have been discarded. If true, then frugality would tend to tilt the assemblage of nails recovered archaeologically towards a high proportion of bent or twisted nails, from an original assemblage including both larger nails that would have been salvaged, and smaller nails that would have succumbed to corrosion.

Adams (2002:66) lists five possible areas in which nails can be of analytical use: the use of nails in a structure, as determined from the size and style of a nail; the history of structural renovations; the technology of manufacture; technological and marketing lag; and the chronology of a structure. Size and style have already been touched upon, in that the form of a nail is largely determined by its function. Renovation of structures is an area of consideration since structures are artifacts that are physically modified throughout their use. Renovation can also complicate the use of nails to determine a building's construction date, as renovations will likely use newer nails than those employed in the original construction of the structure (Adams 2002:73). A renovated building will possess a mix of nails, including some that date from the original construction and some from renovations and repairs. The possible use of recycled nails in renovations further complicates the dating of buildings.

Available technologies and the acquisition of these technologies provide an avenue for insight into the penetration of industrial techniques and products into rural areas. The use of cut nails as opposed to handwrought would be demonstration of the

increasing availability of mass produced over artisanal goods, though handwrought nails could also be produced in extremely large quantities. The shipment of nails adds to the time between the production of the nail and its use in a structure, thus requiring archaeologists to consider the addition of more time to the minimum dates from nails. Adams believes that nails would take longer to go from manufacture to use than the 4.5 years estimated for glass bottles in the Pacific Northwest (Adams 2002:72). Although the Eastern Pequot reservation is unlikely to be as isolated as a fort in the northwestern United States, nails can loiter on store shelves, and, when combined with recycling behavior, do not have to be consumed often. The eventual dismantling or collapse of a building would lead to a collection of nails that would include nails from the construction of that building as well as nails from any renovation episodes, implying that a date based solely on the types of nails included in a collection must take into account modifications of that building.

Despite the lag in acquisition of nails, and the fact that recycled nails may be used in multiple structures if husbanded carefully, a simple chronology can be determined from the types of nails used in a structure. Handwrought nails are of such great antiquity as to be useless for determining a terminus post quem. Inashima suggest that machine cut nails should suggest a date of approximately 1800 or later, particularly for headless or L-headed nails. Stamped nails should date to 1825, becoming more regular around 1840. By 1840, nails should be highly regular (Inashima 1994:46). Phillips' chronology is more detailed, but largely agrees. She places handwrought nails in the 17th century through early 19th century, although handwrought nails date back to antiquity. Early machine cut

nails range from 1790 to circa 1820, including hand headed, rose headed, and T-headed, as well as early machine headed nails. “Transitional Machine Cut-Nails” date from circa 1810 to circa 1840 and are very similar to early machine cut nails, but with slight differences in the positioning of burrs and bevels. Modern machine cut nails date from circa 1835 to 1890 in her typology, despite the fact that machine cut nails are available for purchase in the 21st century; however, by 1890 steel had largely replaced iron. They possess a squared end, different grain direction, and slight differences in the head shape (Phillips 1993:9).

With these issues in mind, I turn to the nail assemblage from the site. Before any analysis took place, the artifacts were cleaned and conserved – not simply brushed, but having corrosion products removed from nails and having those nails treated with soaking in distilled water and multiple tannic acid treatments. Preliminary analysis of the nails consisted of two complementary steps. Nails were analyzed both quantitatively, particularly through the measurement of length, the primary indicator of original function, and qualitatively, cataloging head shape and nail cross section. Nails were categorized by modification as either unmodified, bent, or clinched, where bent nails were bent at angles less than 90 degrees, while clinched nails were bent at greater angles. Analysis of the nails for manufacture looked for diagnostic features associated with the use of either handforging techniques or mechanical manufacture, primarily in the differences in the shape of the nail shank and head. An assessment of the role of nails and window glass in the construction of a structure was not limited to the whole nails. As many nails are likely to have broken in either the processes of house collapse or removal

during salvaging, the assessment also considered nail fragments, even though they only provide a lower bound for the length of nail and many diagnostic features are likely to be absent or damaged. However, nail fragments provide useful data by indicating the presence or absence of nail in a particular excavation unit or shovel test pit. Finally, temporal data were extracted by identifying the manufacturing characteristics of nails and comparing these to their association with particular features.

Window Glass

In addition to nails, window glass provides insight into buildings represented in the archaeological record. Glass was heavily taxed and recognized as both a "luxury and necessity" (Scharfenberger 2004:60, 62), although glass manufactured in North America did not become commonplace until after the War of Independence (Scharfenberger 2004:60). Window glass in the late 18th and early 19th centuries was an important architectural element, but also an important component of the "developing social and economic structure" (Scharfenburger 2004:69). Window glass can provide insight into the social class of the builders and occupants of a building, as different grades of window glass were used by different social classes. The dark green or opaque glass tended to be less expensive in the 18th century, while clearer and thinner glass was preferred by wealthier persons. While opaque glasses were less expensive to produce, the color of the glass is not a reliable indicator of the method of manufacture for any particular glass fragment (Schafenberger 2004:63, 64).

Three broad categories of glass, based on their method of manufacture, are used by archaeologists. Crown glass is manufactured by spinning a bubble of hot glass into a

disc, and then cutting away the needed panes. Cylinder glass is manufactured from a hot cylinder of glass which is cut and allowed to lay flat, creating glass with small waves in the material from stretching of the glass. Plate glass is manufactured by pouring molten glass into a table and allowing it to cool flat, avoiding the distortions caused by the manufacture of cylinder or crown glass. Both the crown and cylinder methods were in use at the same time in the 18th century (Lorrian 1968:37), so both may be expected at the same site, particularly if the long-standing building may have had replacement windows installed. Crown glass was the preferred form of window glass in the 18th century, owing to its superior clarity (Scharfenburger 2004:62, 63).

Window glass was treated in the analysis in a similar manner to nails, although the qualitative data from window glass are likely to be very limited. When considering window glass, all pieces were measured to estimate the surface area. Individual pieces of window glass are less important than the total surface area of glass indicated by the assemblage. Rather than measure each individual artifact to calculate the surface area, the artifacts were assigned to size categories. In this case, pre-existing size categories have been in use since the beginning of archaeological investigations on the Eastern Pequot reservation. These size categories were then given numerical values (see Table 2), the counts were multiplied by the size category value, and totaled. This total represents the size of the artifacts, in terms of surface area within a given context, but avoids the labor expenditure of calculating the total surface area of each artifact. Thus, a small (e.g. smaller than 1 square centimeter) window glass artifact receives a value of 1, while a large artifact (e.g. greater than 5 square centimeters) would receive a value of 5, and the

total of the “size-adjusted” count would reflect both the number of artifacts and their size. A small difference between the size-adjusted value and the raw artifact count would imply a highly fragmented assemblage, while larger difference between the two values would imply the presence of larger artifacts.

Size Category	Rank Value
<1 cm	1
1-2 cm	2
2-3 cm	3
3-5 cm	4
>5 cm	5

Table 2: Comparison of Artifact Size and Rank Value

These values are of no interpretive use when used in isolation. The abstracted values only become useful when used to compare the concentration of glass surface area or the degree of fragmentation between units. When calculated across artifact classes, the degree of fragmentation can be compared both between artifact classes within a deposit and between deposits. Comparisons of the degree of fragmentation offer an opportunity to examine disposal patterns through an index of the fragmentation values across a site. In addition to the fragmentation indices, the locations of large artifacts were plotted within each unit grouping to determine if large artifacts could also be found in any of the unit groups. Large artifacts are unlikely to be found under floorboards unless a house site was converted into a trash disposal area, and thus they can indicate the edges of buildings. However, artifacts of larger size may have been tucked under the edges of buildings, potentially providing a marker for the edges of those buildings. Additionally, the fragmentation indices and analysis of large artifact location can be applied to other artifact classes, such as vessel glass and ceramics to create a comparative data set.

Other Artifact Classes

Other artifact classes, such as ceramics, provide further insight into the built environment. A highly fragmented assemblage of ceramics, in an area where other data indicate that a structure may have stood, may represent material that has fallen between floorboards. The presence of larger pieces – that is, a less fragmented assemblage – may indicate materials that were disposed of outside of a structure, especially those that might get tucked under building edges or in a designated disposal area. A simple way to quantify the degree of fragmentation in an assemblage (on the scale of excavation units for these purposes) is to generate a measure of the average size of the artifact in a particular subassemblage. Dividing the aggregated size value by the total number of artifacts within a given context generates a value that can represent the degree of fragmentation within an assemblage, with lower values indicating more highly fragmented assemblages. This mean value was correlated to the size categories used to generate the aggregated size values, in effect providing a mean size for artifacts within a group. Additionally, mean ceramic dates can be used to estimate the period of occupation for different structures.

Architectural Debris Deposits

Beyond specific artifact classes, the thesis also considers the above artifacts in their spatial contexts and their co-occurrences. The types of deposits generated from architectural debris can fall into a variety of categories. In particular, "extremely dense concentrations of nails can indicate the presence of a structure," although a cluster of nails does not necessarily indicate the location of a building (Young 1994a:2). The

characteristics of nails must be used carefully to categorize the formation processes that lead to the deposit in the archaeological record. Care must be taken to distinguish between the sites of actual structures and the sites that are the result of the disposal of discarded material from the demolition of a structure, which can also be characterized by extremely high concentrations of nails (Young 1994a:2). During research at the Mashantucket Pequot reservation, McBride has used the presence of concentrations of window glass and nails to identify the presence of framed houses (McBride 1991:73). These physical components would have been present in framed houses, but were not unknown in wigwam-type structures that included elements such as window glass or door hardware. The inclusion of material culture types, such as window glass and door hardware, indicates that nails may have been used in the construction of wigwams with European-derived material culture, or, at the very least, furniture that may have contained some small nails.

Nails can enter the archaeological record at several stages of house construction. Young (1994b:56) identified four stages at which nails may enter the archaeological record: construction, structural decay, razing, and decay of lumber in a disposal area. To these four activities, renovation should also be considered, either as a subset of construction or as a separate activity. Nails lost during construction are most likely to be completely unaltered (Young 1994b:56). Having never been driven, they are unlikely to be modified either by the process of removing the nail from wood, or from the process of clinching the nail to form a hook or staple. Nails from decay or razing are likely to be at least somewhat altered, however.

The collapse of a house presents a different type of deposit. While all structures are likely to have at least some debris associated with their construction, the manner of the building's end will result in slightly different deposits. Doroszenko notes that wooden buildings collapse in three ways – "a 90 degree angle collapse, lean-over collapse, and collapse in an inward/outward configuration" (Doroszenko 2000-2001:42). While each of these would seem to leave a distinct pattern, any post-collapse clean up would alter the distribution of materials left from the collapse of the house. As such, the nature of building collapse could not necessarily be determined simply from the distribution of materials let on the ground.

As part of the cleanup of a collapsed or dismantled house, a lumber pile would likely accumulate, with boards that were unlikely to be salvaged. The nails that accumulate in an area such as this are likely to be those that would be discarded and not salvaged (Young 1994b:56). Given the relatively high cost of nails in the 18th century compared to the cost of nails in the 19th and 20th centuries, more nails are likely to have been salvaged from the discarded lumber. The process of razing a building would have produced a discarded lumber pile, while a structure abandoned in place to decay would not have an associated woodpile from razing, with the nails concentrated in the location where the house had collapsed. A deliberate razing may have fewer nails, as a more concerted effort to salvage nails is undertaken as part of the razing procedure, and the nails exposed to the elements for less time. The disposal site is likely to have a high proportion of clinched nails and a low proportion of unaltered nails, with the unaltered nails having been salvaged during the razing process, while the clinched nails are

abandoned, as if not worth the effort of straightening back into their original shape. The process of retrieving nails from boards will likely bend many of the softer wrought iron nails (Faulkner 2004:58). Young (1994a) found that disposal sites would have a high proportion of clinched nails and a low proportion of unaltered nails. In observing carpenters in modern Tennessee dismantling a small house, Young observed that "a building, intentionally torn down by hand, exhibits frequencies of three unaltered nails and three pulled nails to every one clinched nail (a 3:3:1 ratio). Refuse disposal sites show a 1:3:1 ratio (one unaltered, three pulled, one clinched)" (Young 1994a:58).

An additional type of deposit related to the use of a structure includes deposits related to the moving of a particular structure. Given the possibility of two structures occupying nearby spaces in a relatively close period of time, the possibility should be considered. Two important characteristics stand out here. The foundation of a building that was moved with the assistance of a lizard (a large wooden sled) might have disturbances in the structure from the insertion of gluts, which were large wooden wedges used to raise the building and move it onto the lizard (Faulkner 2004:57). A team of horses or oxen would then pull the building to a new location, although sufficient amounts of human laborers could probably move a small house as well. Faulkner argues that large gaps in the foundation should be considered as possible locations where gluts and a lizard were inserted into the foundation and then used to move the structure. If a building were moved, the disposal patterns of nails around the structure are likely to be different, and more biased towards nails lost in construction, rather than in razing or

decay of a structure. As such, moved building should have a high ratio of unmodified nails to clinched or bent nails (Faulkner 2004:58).

Organizing Data on Nails, Window Glass, and Non-Architectural Artifacts

Analysis of these materials in a small area such as site 102-123 was aided by dividing the site into several regions with unique features. These regions are groups of units believed to represent distinct areas during the habitation of the site. For site 102-123, several of these regions can be inferred from the surface remains and initial analysis of the data (see Figure 4 above). Two large stone piles sit in close proximity and represent the chimney collapses. Each large stone pile was identified as a group, and are the most likely places for structures to have been standing during the habitation period. A group between these two chimneys largely clear of surface rock was split from the two chimney groups to improve resolution between the two chimney groups. Additionally, spatial groups surrounding the chimneys were evaluated to examine differences between the structures and the areas immediately outside of those structures. The root cellar feature was examined separately, as was the stone pile adjacent to the root cellar, and the rock/shell midden and units between the midden and chimneys were analyzed separately. The units near the north chimney collapse are divided into two groups, group 8 being adjacent to group 2 and group 7, while group 9 is separated from group 2 by two to three meters. The table below summarizes the locations of the groups, and the units included in each group. No group contains units that are also contained in another group, and all units in the core of site 102-123 are included in these units.

Group	Description	No. of	Square Meters	Units

Number		Units	Excavated	
1	South Chimney and Cellar	11	10	N306/E1052, N307/E1052, N307/E1056, N308/E1052, N308/E1056, N309/E1051, N309/E1052, N309/E1053, N309/E1054, N309/E1055, N309/E1056
2	North Chimney	10	10	N312/E1050, N312/E1052, N313/E1049, N313/E1051, N314/E1049.5, N314/E1050.5, N315/E1049, N315/E1050, N315/E1051, N315/E1052
3	Stone Pile, South of South House	2	1.5	N302/E1050, N302/E1051
4	Root Cellar	10	8	N299.5/E1048.5, N300.5/E1049.5, N301/E1047.5, N302/E1047, N302/E1048, N302/E1049, N303/E1047.5, N303/E1048.5, N303.5/E1048.5, N304.5/E1048.5
5	Rock/Shell Midden	2	2	N312/E1063, N313/E1063
6	Units between North and	5	5	N311/E1049, N311/E1050, N311/E1051, N311/E1052, N311/E1053

	South Chimneys			
7	Units outside of South Chimney	6	4.5	N303/E1053.5, N303/E1056, N304.5/E1058, N306.5/E1049.5, N308/E1048, N308/1049
8	Units east of North Chimney	7	6.5	N313/E1054, N313/E1055, N314/E1053, N315/E1053, N315/E1054, N316/E1053, N317/E1053
9	North Chimney Perimeter	5	2.5	N316/E1057, N317/E1047, N319/E1054.5, N320/E1051
10	Units west of Rock/Shell Midden	3	1.5	N311/E1060, N315/E1060, N319/E1060

Table 3: Organization of Units at Site 102-123

The data were mapped along with the location of potential structural features such as chimney falls and cellars. As the data are a sample of the materials that entered the archaeological record, the data should also be considered as a sample from each unit. As smaller units sample a smaller volume of space, the data for the number of nails and nail fragments and total surface area of window glass were normalized to be representative of a 1-m-x-1-m unit for the isopleth maps. This was accomplished by doubling the count of nail fragments or glass surface area from a 1.0-m-x-0.5-m unit, and by quadrupling the count for 25-cm-x-25-cm shovel test pits. The use of these corrections prevents the larger units from distorting the distribution maps. While relatively unsophisticated, the

corrections could be applied uniformly. Applying the corrections is separate from the correction for artifact size, which was meant to capture both rough total surface area of window glass and to prevent highly fragmented sub-assemblages from appearing more prominent than assemblages that contained a large number of larger artifacts.

Integrating the data from the distribution of nails and window glass and the degree of fragmentation of window glass and other artifact classes offers an opportunity to determine how and when any structures at a site were constructed. The distribution of artifacts in relation to other structural remains, in this case chimney falls, but also features such as cellars or foundations, can identify the locations where materials were disposed. Without a discrete site chronology, identifying the sequence of construction or habitation can be complicated. There is no obvious disposal feature within the presumed bounds of a building, and without such a feature, disposal patterns will not be enough to determine the sequence of habitation or construction. However, a clear indicator of sequential, rather than simultaneous, occupation is highly fragmented debris that may be deposited within the bounds of a building if that building has been dismantled or abandoned. Locating such a deposit would indicate changing patterns of behavior regarding habitation and work spaces. Using the unit groupings to identify the characteristics of the units associated with particular surface features aids in identifying the particular characteristics of the buildings that would have been standing in those areas in the past. Some data were further disaggregated to level of excavation unit, to identify the filling or excavation of certain features. The object of a fine grained spatial analysis across multiple artifact classes is to provide multiple points of comparison in an attempt to

understand both the sequence of construction at the site and the broader use of space with regards to the structures present there.

CHAPTER 4

RESULTS

This section reports the results of the analysis of the various artifacts using the procedures described in the previous chapter. Comparisons between these various groupings show substantial variation in the assemblages associated with the features, with construction debris concentrated around the chimney collapses, and highly fragmented ceramic and vessel glass distributed across the site. The various data classes are organized by type below, and synthesized in the following chapter. The data support an interpretation of two houses constructed sequentially, but likely without full replacement, in the 18th century, one associated with a root cellar and one with a cellar under the floor, both filled at different times, with several episodes of construction. The following chapter will apply the data included here to possible interpretations for the sequence and nature of construction and demolition at site 102-123.

The data set consists of multiple material classes, divided into architectural and non-architectural artifacts. Nails and window glass comprise the architectural materials, with 387 nails or nail fragments, and 486 individual window glass artifacts. When the

adjustment for the size of the artifacts is applied to the window glass, in an attempt to capture the total surface areas of window glass examined, the value becomes 823. Non-architectural artifacts include ceramic and vessel glass artifacts. Ceramics total 4496 artifacts, size value of 7372, and vessel glass artifacts total 613, size value of 1297. Nails include both hand- and machine-made nails, but none that are machine-headed. Window glass covers a wide variety of colors and thicknesses, and method of manufacture could not be reliably determined. The most common ceramic types are creamware, pearlware, and redware, but a variety of types are common to 18th-century British North America are represented. The vessel glass also comprises a variety of colors, thicknesses, and forms, and is largely included here as a comparison to the quantity and distribution of window glass.

Nail Data

Nails are spread across the site, but concentrate in a few areas (Table 4, Figure 5). They are particularly concentrated in the areas around the two chimneys, including the space between those two chimneys. While these five groups constitute a large number of units (44 out of 61), they also constitute the majority of nails recovered during excavation (91%). The large proportion of nails recovered from these units should be considered in context with the chimney collapses in this area, creating a noticeably higher concentration of nails than in other parts of the site.

Group Number	Group	Square Meters Excavated	Nails	Nail Density per sq m
Group 1	South Chimney	10	48	4.8
Group 2	North Chimney	10	106	10.6
Group 3	Stone Pile	1.5	6	4.0

Group 4	Root Cellar	8	9	1.1
Group 5	Rock/Shell Midden	2	6	3.0
Group 6	Zone Between Chimneys	5	42	8.4
Group 7	Near South Chimney	4.5	58	12.9
Group 8	East of North Chimney	6.5	101	15.5
Group 9	North Chimney Perimeter	2.5	9	3.6
Group 10	West of Rock/Shell Midden	1.5	2	1.3
Site		51.5	387	7.6

Table 4: Quantity of Nails (includes fragments)

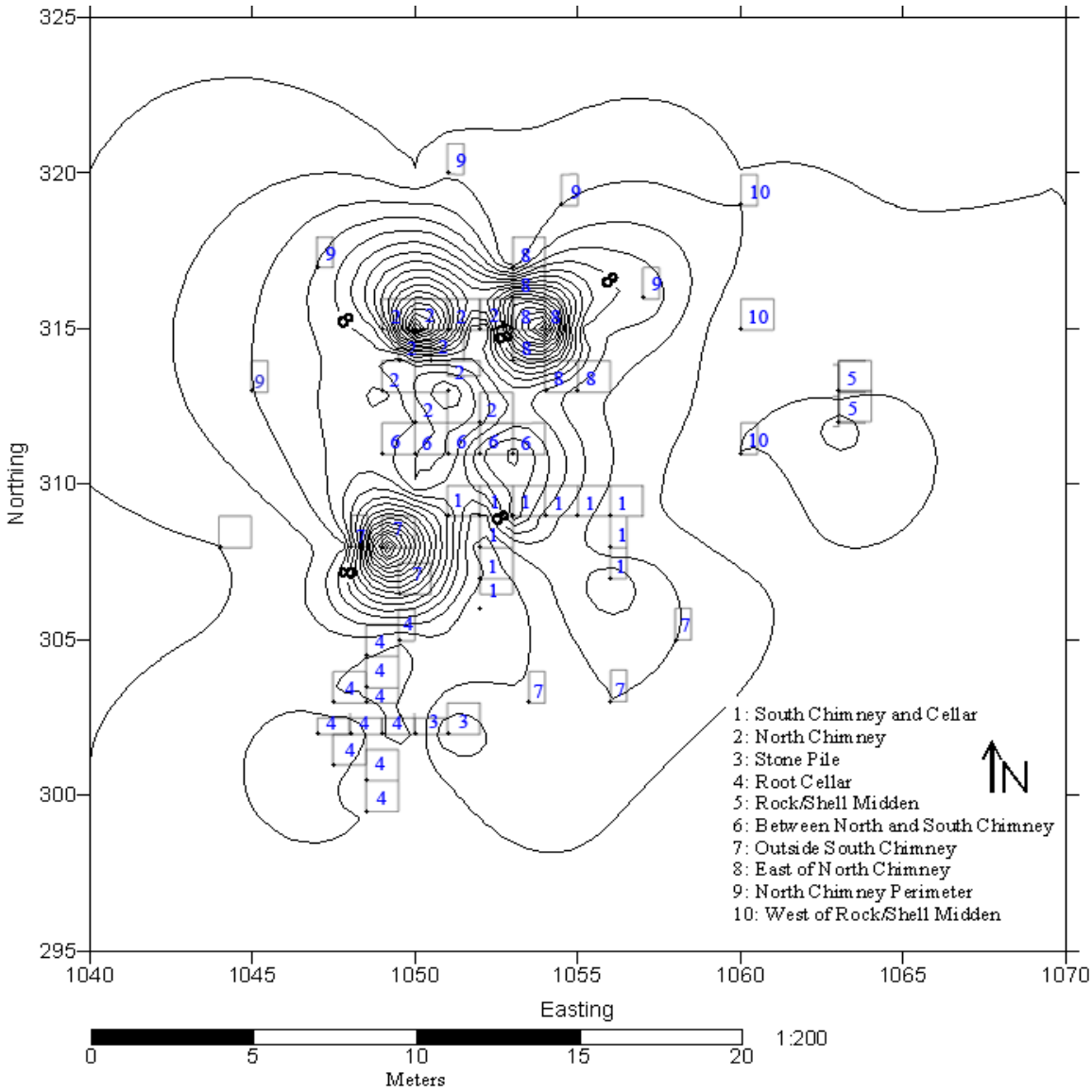

Figure 5: Distribution of Nails at Site 102-123

Many of the nails in the collection are fragments, with only 98 nails either categorized as complete or nearly complete. The ratio of complete nails to fragments is approximately 1:2.9. Figure 5 shows the location distribution of the nails across the site. For the purposes of these maps, 1-x-0.5 meter units and shovel test pits were normalized to 1-x-1 meter units, so that smaller units did not under count the volume of nails.

Fragmentation is not the only change to the form of the nails. Nails were also categorized as to their modification as either unmodified, bent, or clinched (Table 5). The nails were sorted in groups that included all nails and fragments as well as a set that included only the whole nails. Unmodified nails are the primary component of the assemblage. Bent nails appear in almost every unit grouping, but clinched nails appear only in association with the north chimney collapse, or between the two chimneys. Clinched nails are present in present in groups 2 and 8, but not group 7. A single clinched nail is present in group 6, and none are found in group 1. Groups 2 and 8 have the greatest number and density of nails recorded in the site, but group 7 also has a high density of nails, but no clinched nails are present. Group 6's density is more moderate, but a clinched nail is found there. Bent nails compose approximately 9% of the collection, clenched nails 1.8%, and unmodified nails approximately 88%.

Group Number	Group	Bent	Clinched	Unmodified
Group 1	South Chimney	4	0	44
Group 2	North Chimney	7	2	97
Group 3	Stone Pile	0	0	6
Group 4	Root Cellar	1	0	8
Group 5	Rock/Shell Midden	1	0	5
Group 6	Zone Between Chimneys	6	1	35
Group 7	Near South Chimney	5	0	53
Group 8	East of North Chimney	10	4	87
Group 9	North Chimney Perimeter	1	0	8
Group 10	West of Rock/Shell Midden	1	0	1
Site		36	7	344

Table 5: Nails by Modification, including fragments

As many of the nails are fragments, examining the modified nails using only the set of whole nails may give a better idea of the use of those nails. With fragmentary nails it is difficult to determine if the fragmentation occurred while the nails were being bent or from some other process. Again, clinched nails appear to be associated with the north chimney area, and the composition of the assemblage is 18% bent nails, 4% clinched nails, and 77% unmodified nails (Table 6).

Group Number	Group	Bent	Clinched	Unmodified
Group 1	South Chimney	4	0	10
Group 2	North Chimney	5	2	20
Group 3	Stone Pile	0	0	1
Group 4	Root Cellar	0	0	1
Group 5	Rock/Shell Midden	0	0	1
Group 6	Zone Between Chimneys	3	0	7
Group 7	Near South Chimney	1	0	9
Group 8	East of North Chimney	3	2	24
Group 9	North Chimney Perimeter	1	0	3
Group 10	West of Rock/Shell Midden	1	0	0
Site		18	4	76

Table 6: Whole Nails by Modification

The primary indicator of the function of nails is their overall size. Sorting the nails according to size was again conducted for both the entire nail assemblage and the assemblage of whole nails. Nails were placed into categories corresponding to pennyweight values and then totaled for each group and the site as a whole. Rather than present a table showing the categories for each group, the information is presented graphically below. Table 7 shows the number of nails in each size category for the site.

As this table includes the fragmentary nails, the size categories are effectively nails of that size or larger.

Size	Total Count (includes fragments)	Proportion of Total	Whole Nails	Proportion of Whole Nails
2d	200	51.6%	20	20.2%
3d	89	22.9%	34	34.3%
4d	33	8.5%	9	9.1%
5d	17	4.3%	3	3.0%
6d	13	3.3%	7	7.1%
7d	12	3.1%	6	6.6%
8d	13	3.3%	11	11.1%
9d	3	0.7%	3	3.0%
10d	4	1.0%	4	4.0%
12d	1	0.2%	0	0
16d	2	0.5%	2	2.0%
All Sizes	387	100.0%	99	100.0%

Table 7: Nails by Size

Figure 6 shows the distribution of nails by group, using the proportion of the nails of each size. This figure is based on the total count of nails in each group, including fragments. Nails received no adjustment for artifact size, as the pennyweight values are more precise, and little interpretive value would be gained from knowing the overall size adjusted value for nails, compared to the interpretive value of that value for other artifact classes. Very small nails are extremely common in the assemblage, although such nails are the most likely to be misplaced during construction or demolition. While the small nails appear to be distributed rather evenly throughout the site, the larger 5d-9d nails are concentrated in the south chimney and areas around the south chimney, and east of the north chimney, with the lone 12d nail found in the rock/shell midden. These nails are of

particular interest given their utility in joining planks to frames. Additionally, the very large 16d nails are also found in association with the chimney collapses.

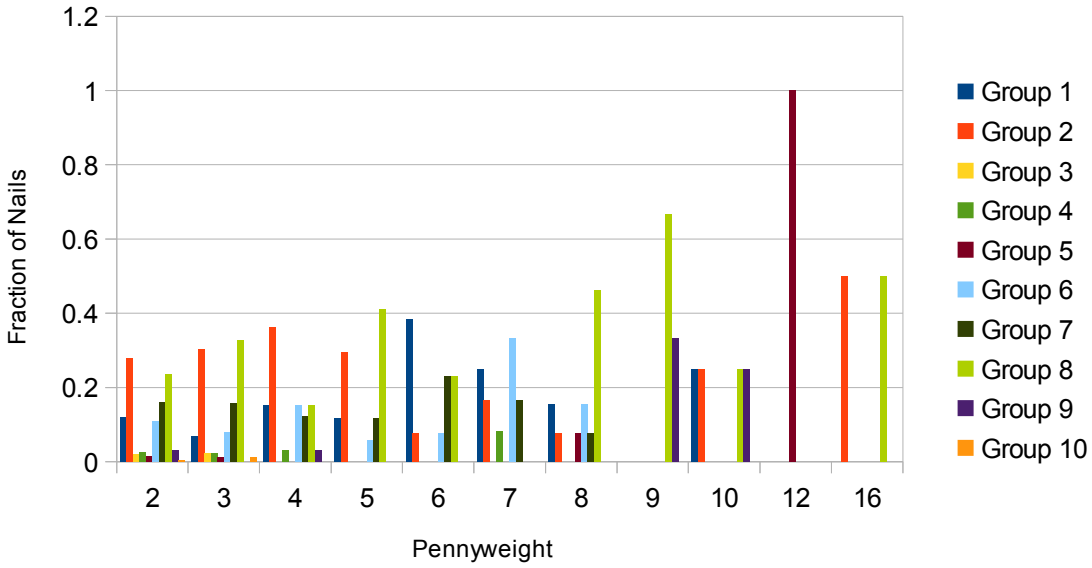

Figure 6: Nails by Group and Size

Fragments dominate the assemblage, so limiting analysis to the whole nails eliminates the preponderance of fragments, which in small form could have originally been large or small nails. While small nails are still common, they are less prominent than in the fragmentary collection (Figure 7). Eight-penny nails are one of the most common sizes for whole nails, and found in the south chimney, north chimney, between the chimneys, and east of the north chimney areas. Eight-penny nails are a common size for flooring, and would have also been useful in connecting planks to the structural members of a house to form the exterior fabric.

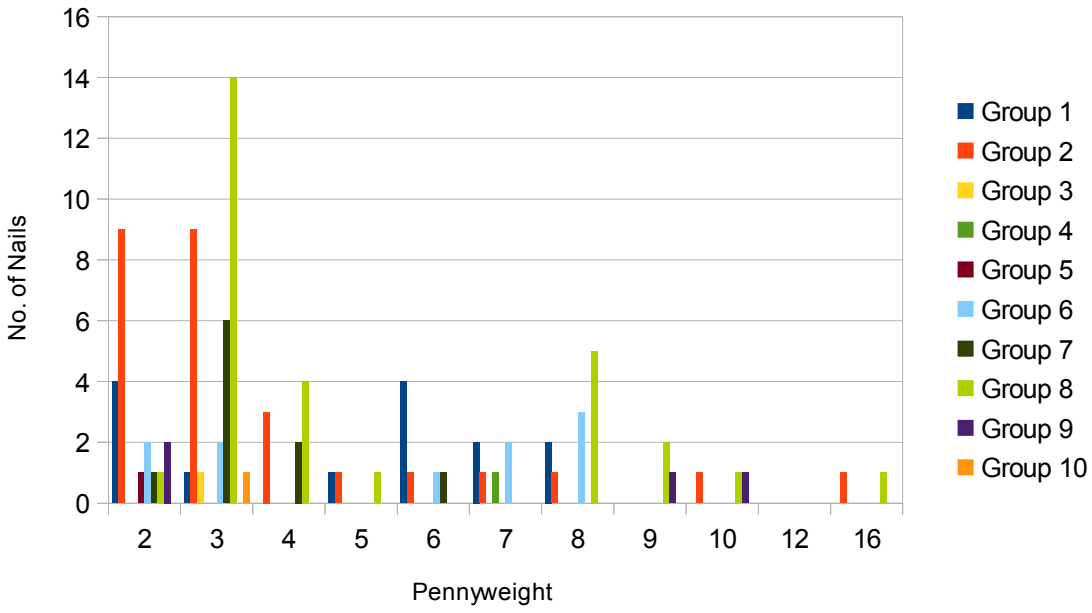

Figure 7: Number of Whole Nails by Group and Size

To set the nails from site 102-123 in a comparative reservation perspective, the nails from 102-125, excavated on the reservation in 2008, were measured and compared for both the fragmentary and whole nail assemblages. Site 102-125 also represents a late 18th-century structure, but there is only a single chimney fall, and the site overall does not seem to have modifications as extensive or a use as intensive as 102-123 (Hayden 2012:68, 98). The goal in comparing the two sites is to identify differences in roughly contemporaneous assemblages, especially with respect to the proportion of nails in each assemblage. Identifying and comparing the relative frequency of nail types, primarily derived from the length of the nails, help to identify the potential differences in behavior at two sites with similar structures. The 102-125 assemblage consisted of 82 total nail artifacts, including 41 whole nails, as analyzed by Anna Hayden. When compared to the

nails from site 102-123, the 102-125 nails have a greater proportion of 7d and 8d nails, and lower proportion of 2d and 3d nails. Figure 8 illustrates the relatively frequency of each nails size in the two different assemblages. This pattern is found both with the overall assemblage and within the whole nails, although both sites contain roughly the same number of large nails, when considering the whole nails, as illustrated in Figure 9. For both sites, 8d or greater nails comprised 19% of the assemblage of whole nails. The higher proportion of 7d and 8d nails in the smaller assemblage, and the higher proportion of 2d and 3d nails at site 102-123, indicates that a different process is governing the introduction of nails into the archaeological record. The higher proportion of small nails may indicate that the structures at site 102-123 used small wooden shingles in preference to large boards for roof coverings, while the presence of 7d and 8d nails at the 102-125 site may indicate the use of boards for roofing or a difference in salvaging behavior between the two sites.

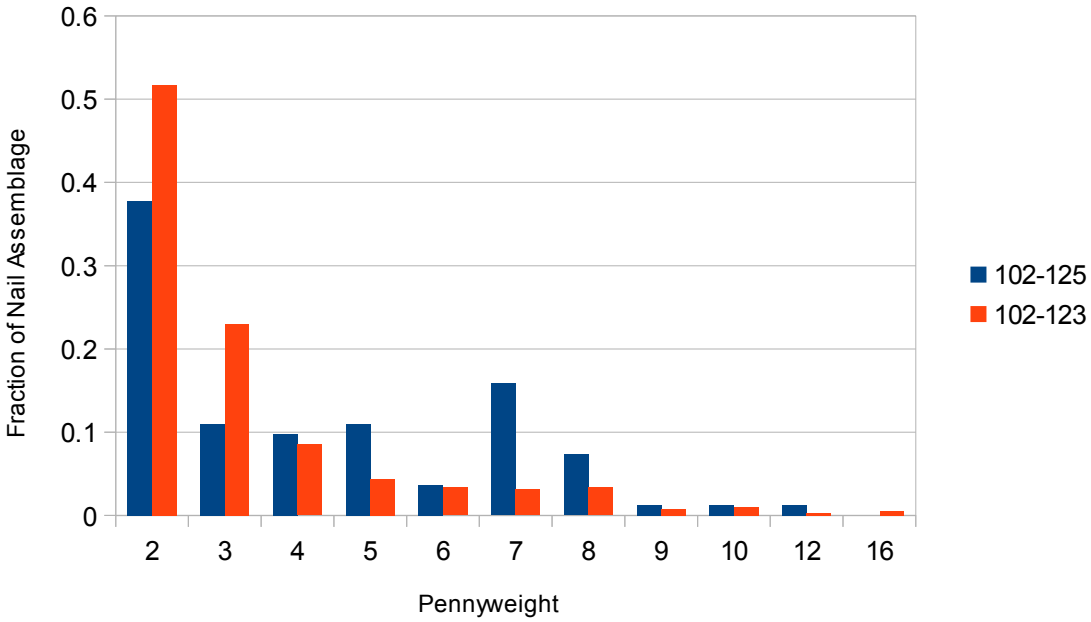

Figure 8: Comparison of Nail Assemblage at Sites 102-123 and 102-125

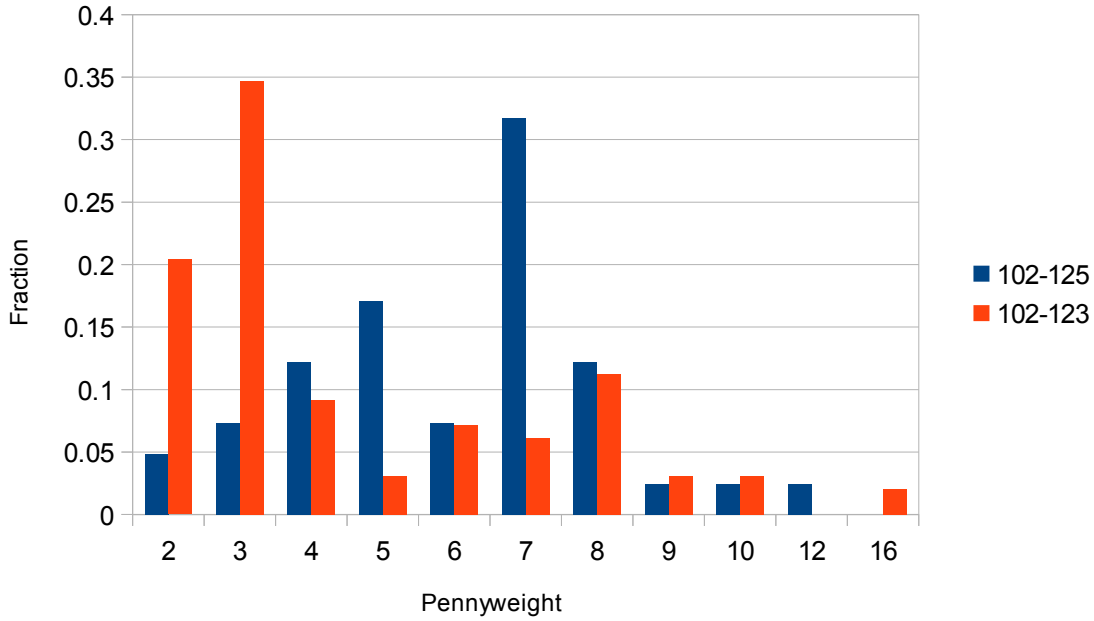

Figure 9: Comparison of Whole Nail Assemblage at Sites 102-123 and 102-125

In addition to grouping the units into zones associated with particular features at Site 102-123, nails were quantified according to the excavation level within each group. Each excavation level represents a 5-cm level, with some exceptions as noted in earlier chapter. For most of the excavation area, levels 4 to 5 represent the ground surface around 1790-1810. With the rock/shell midden area, the levels are different, and explained in much greater detail in Hunter (2012). Counting the number of nails per level was intended to determine if nails concentrated in particular levels, marking particular events. Nails tended to be distributed throughout the units evenly, with only a few excavation groups offering a different pattern.

Examining the distribution of nails in the cellar areas was hoped to provide insight into the utilization and infilling of those features. Nails were found in level 15 of the root

cellar and level 15 of the south chimney area's full cellar. In both cases, nails do not concentrate in any particular level to the exclusion of others, unlike nails found in the areas of the chimney collapses. In the areas surrounding the chimney falls, nails peak in level 5, with a high concentration in level 4, and a noticeable decline in the following levels. In general, nails usually appear throughout all levels of a group of units, with the majority falling between levels 2 and 5, although the nails in the rock/shell midden only appear in levels 8 and 9. This overlaps with the greatest concentration of shell in the midden (levels 6-9), although shell is found in both shallower and deeper levels. Additionally, faunal remains and ceramics are concentrated in levels 4-9 and 5-8, respectively (Hunter 2012:44-45). In the cellar three units of the south chimney group, nails are present throughout the cellar, and of 26 nails, only 5 appear concentrated in a particular level. They are found from the first level down through the fifteenth, implying there is not an accumulation of material at the lowest levels of the cellar. As there is also rock distributed throughout the cellar fill, this may be indicative of a single filling event, where discarded construction material was used to fill the cellar. The root cellar, by contrast, also has nails distributed throughout, but of the 9 nails, 5 are found in the lowest levels (12-15). These represent a different depositional pattern, especially in light of the relative paucity of rock in the root cellar. These nails may represent items stored in the root cellar and then lost, rather than construction debris disposed in an event like the filling of the cellar. Alternatively, they could have been evidence of intentional disposal, but in a different fashion than the cellar.

Temporal data can also be derived from nails. Late 18th- and early 19th-century nails are in a period of transition, and identifying the manufacture of the nails can give clues to the sequence of construction for any structures. Nails were analyzed for diagnostic characteristics of hand-forged or machine-cut nails, and summarized in Table 8. No nails showed evidence of being machine-headed, a technology that dates to 1809. Cut nails, dating later than 1790, are found in the north chimney area, the area between the two collapses, and near the south chimney area. However, cut nails make up less than 2% of the total assemblage.

Group Number	Group	Hand-Forged	Cut	Indeterminate
Group 1	South Chimney	35	0	13
Group 2	North Chimney	81	1	24
Group 3	Stone Pile	5	0	1
Group 4	Root Cellar	3	0	1
Group 5	Rock/Shell Midden	5	0	1
Group 6	Zone Between Chimneys	33	2	7
Group 7	Near South Chimney	45	3	10
Group 8	East of North Chimney	83	0	18
Group 9	North Chimney Perimeter	8	0	1
Group 10	West of Rock/Shell Midden	2	0	0
Site		300	6	81

Table 8: Nails by Manufacture

Window Glass and Other Artifact Classes

The distribution of window glass varies in a similar manner to the distribution of the nails. Figure 9 illustrates the concentration of window glass artifacts, both with a raw count and a count adjusted for the size of the artifacts. As with the nails, the window glass is distributed largely around the chimney collapses (groups 1, 2, 7, and 8) with relatively little window glass in the area between the chimneys. The rock/shell midden also has a very high concentration of window glass adjusted for artifact size, especially as

that group contains only two units and does not represent obviously structural debris. Table 9 presents both the raw counts of artifacts and the size adjusted count, while Figure 11 graphically represents the distribution of both raw glass counts and size-adjusted counts. Figure 10 shows the size-adjusted count as a series of isopleths layered with the excavated units. The size-adjusted count reflects, very roughly, the total surface area of window glass recovered during excavation. By weighting larger artifacts more, a clearer picture is generated about the amount of glass recovered. Surface area is preferable to weight here as for windows the amount of surface area is a better measurement of the functional attributes of windows than their overall mass. Window glass is highly fragmented, as shown by the average size category, indicating for the whole site, the average size category window glass 1.69, where a value of 1 represents artifacts smaller than 1 square centimeter, while a value of 2 indicates an artifact between 1 and 2 centimeters square. Window glass is relatively scarce in the root cellar, stone pile adjacent to the root cellar, and area between the chimneys. As a root cellar, little window glass would be expected in the root cellar and adjoining stone pile, unless the filling for the root cellar made use of construction material, and the paucity of glass in the zone between the chimneys may indicate the use of the area as an interior, regularly cleaned space or an exterior space with fewer windows present. The relative absence of window glass from the area between the chimneys may reflect the absence of windows in this space, or relate to the purposeful dismantling of the structures.

Group	Group	Square Meters Excavated	Window Glass Count	Count Adjusted for Artifact Size	Average Size Category	Density (Artifacts Adjusted for size per square meter)
1	South Chimney	10	58	81	1.39	8.1
2	North Chimney	10	67	115	1.71	11.5
3	Stone Pile	1.5	13	16	1.23	10.6
4	Root Cellar	8	22	29	1.31	3.6
5	Rock/Shell Midden	2	41	97	2.36	48.5
6	Zone Between Chimneys	5	25	38	1.52	7.6
7	Near South Chimney	4.5	126	226	1.79	50.2
8	East of North Chimney	6.5	93	162	1.74	24.9
9	North Chimney Perimeter	2.5	29	39	1.34	15.6
10	West of Rock/Shell Midden	1.5	12	20	1.66	13.3
Site		51.5	486	823	1.69	16

Table 9: Window Glass by Group

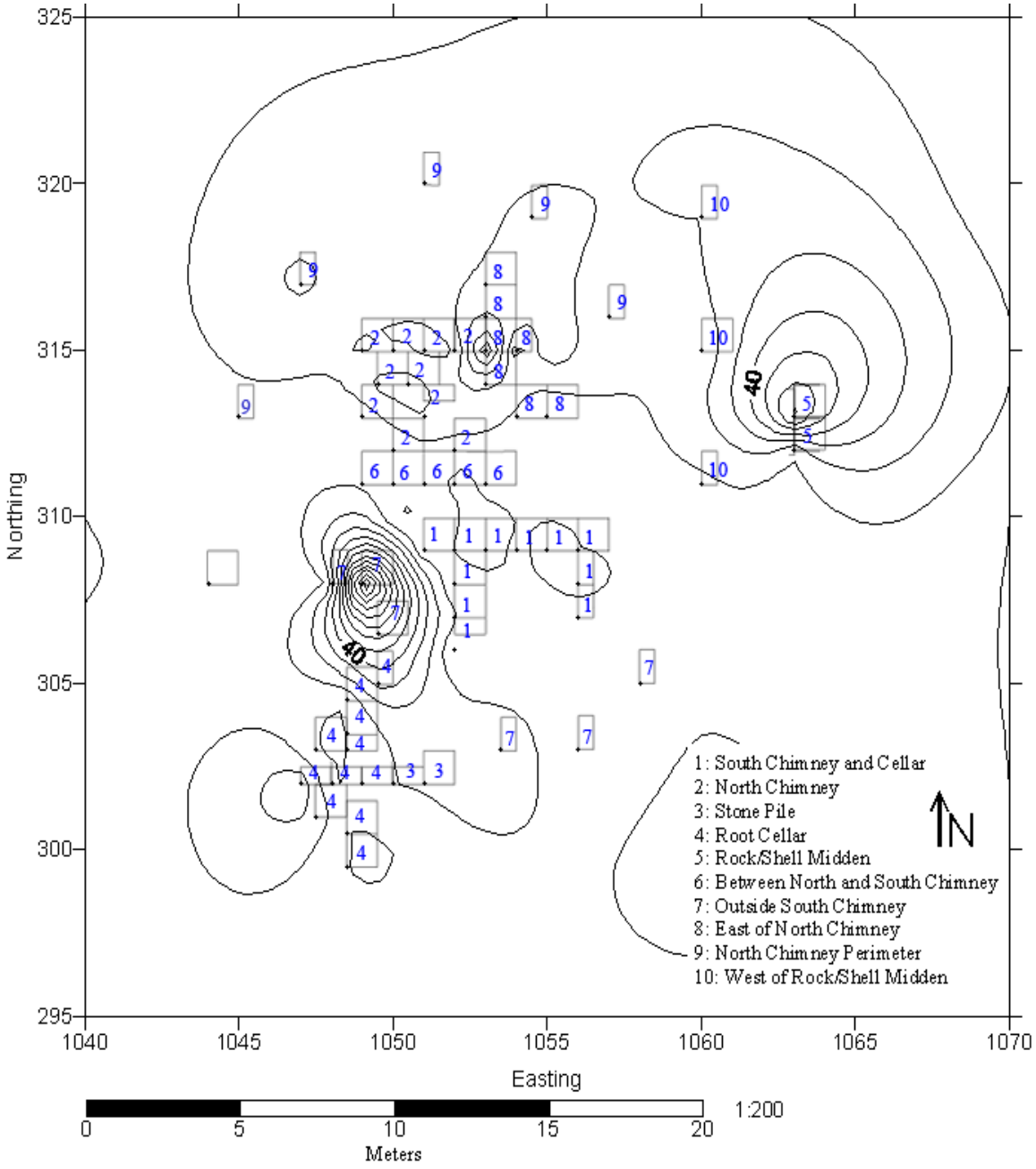

Figure 10: Distribution of Window Glass at Site 102-123

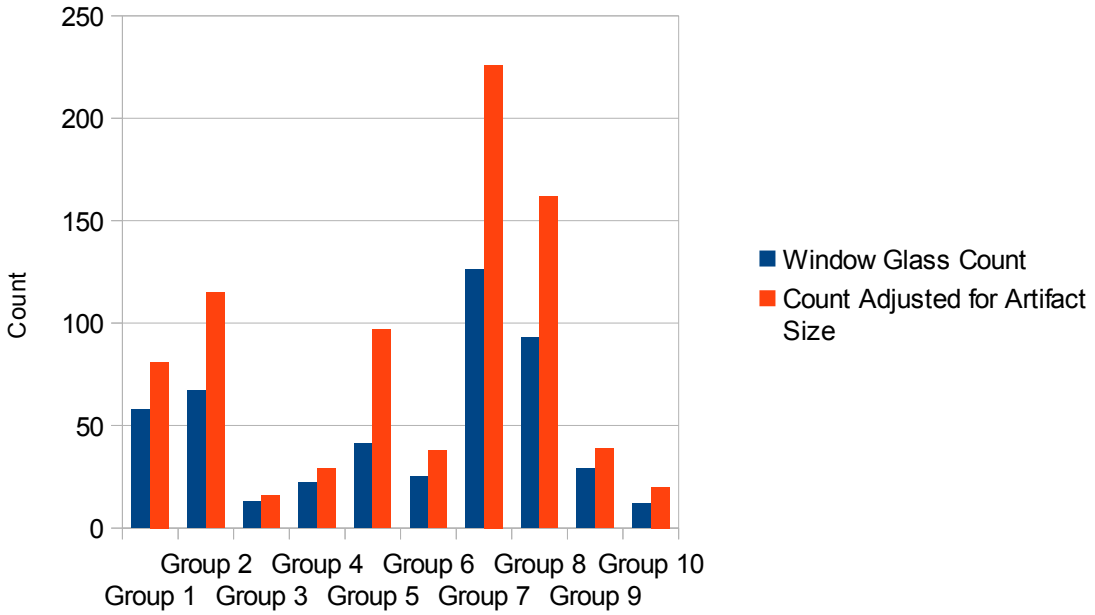

Figure 11: Window Glass by Group

Comparison to other artifact classes shows that the window glass is relatively concentrated around the chimneys, while vessel glass (in Table 10 and Figure 14) is highly concentrated in the rock/shell midden and ceramics are concentrated at both of the chimney areas and the rock/shell midden. Notably, the rock/shell midden also has very high average artifact size, along with the units near the north chimney, although the latter represents a much smaller assemblage. The higher artifact size in the rock/shell midden indicates a different disposal behavior – removal of debris from the core trafficked area of the house – than the more highly fragmented materials found in the other groups. Ceramics are also concentrated in the rock/shell midden, with 793 individual artifacts in only two units, as opposed to the south chimney, which has the most artifacts (1165), but

spread between 11 units. The units around the chimney collapses also demonstrate variability in the distribution of ceramics. The units east of the north chimney have a greater density of ceramics, while those around the south and to the west of the north chimney have a much more limited total. The distribution of vessel glass and ceramics compared to the location of excavation units can be seen in Figures 12 and 13, respectively.

Group	Description	Square Meters Excavated	Vessel Glass Count	Count Adjusted for Artifact Size	Average Size Category
Group 1	South Chimney	10	91	157	1.72
Group 2	North Chimney	10	22	42	1.9
Group 3	Stone Pile	1.5	31	55	1.77
Group 4	Root Cellar	8	24	34	1.41
Group 5	Rock/Shell Midden	2	318	757	2.38
Group 6	Zone Between Chimneys	5	47	88	1.87
Group 7	Near South Chimney	4.5	46	97	2.1
Group 8	East of North Chimney	6.5	12	31	2.58
Group 9	North Chimney Perimeter	2.5	14	21	1.5
Group 10	West of Rock/Shell Midden	1.5	8	15	1.87
Site		51.5	613	1297	2.11

Table 10: Vessel Glass by Group

Group	Group	Square Meters Excavated	Ceramic Count	Count Adjusted for Artifact Size	Average Size Category
Group 1	South Chimney	10	1165	1938	1.66
Group 2	North Chimney	10	460	774	1.68
Group 3	Stone Pile	1.5	112	213	1.9
Group 4	Root Cellar	8	219	363	1.65
Group 5	Rock/Shell Midden	2	793	1372	1.73
Group 6	Zone Between Chimneys	5	92	138	1.5
Group 7	Near South Chimney	4.5	50	780	1.55
Group 8	East of North Chimney	6.5	934	1471	1.57
Group 9	North Chimney Perimeter	2.5	120	177	1.48
Group 10	West of Rock/Shell Midden	1.5	100	146	1.46
Site		51.5	4496	7372	1.64

Table 11: Ceramic Artifacts by Group

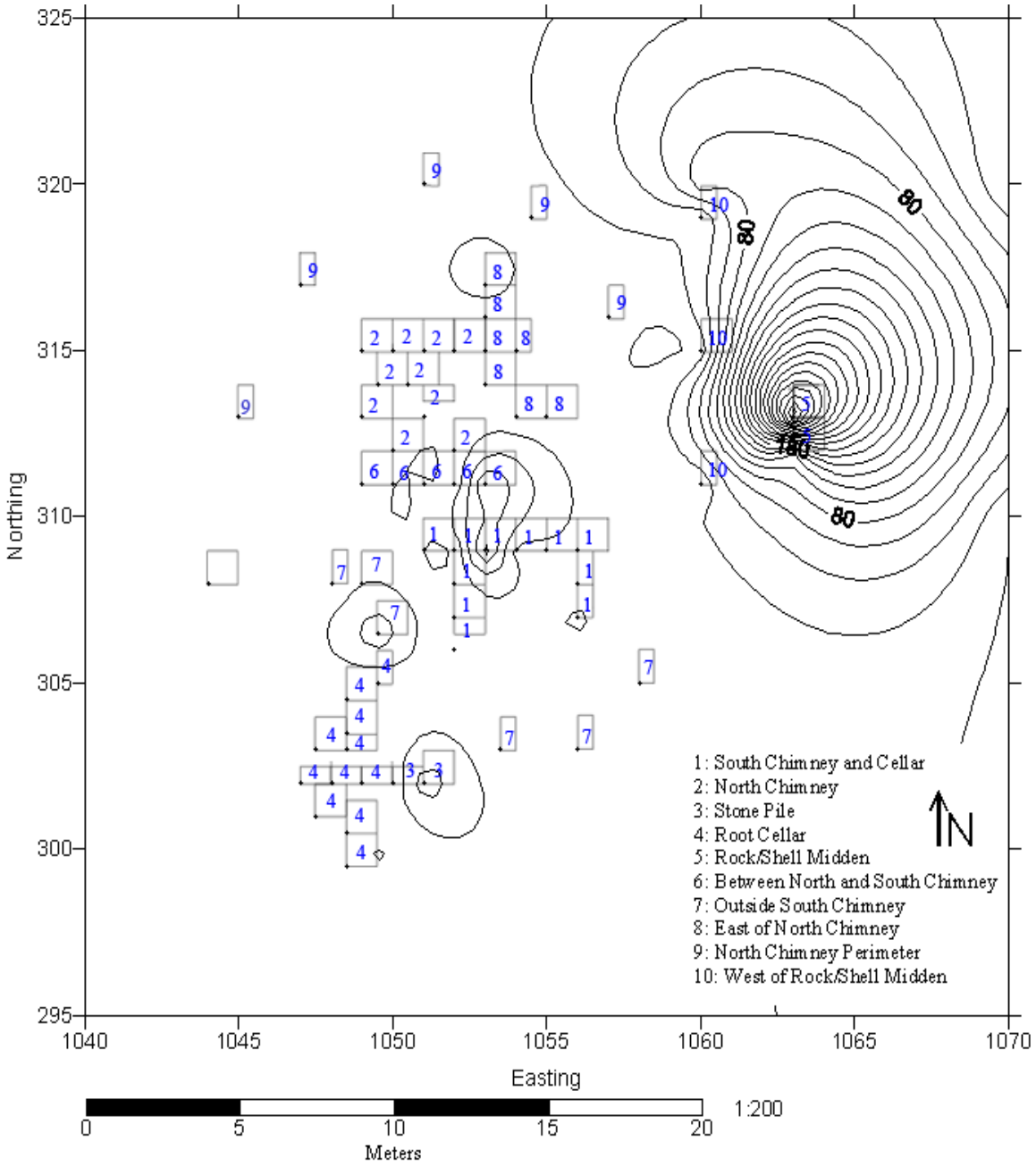

Figure 12: Vessel Glass Distribution at Site 102-123

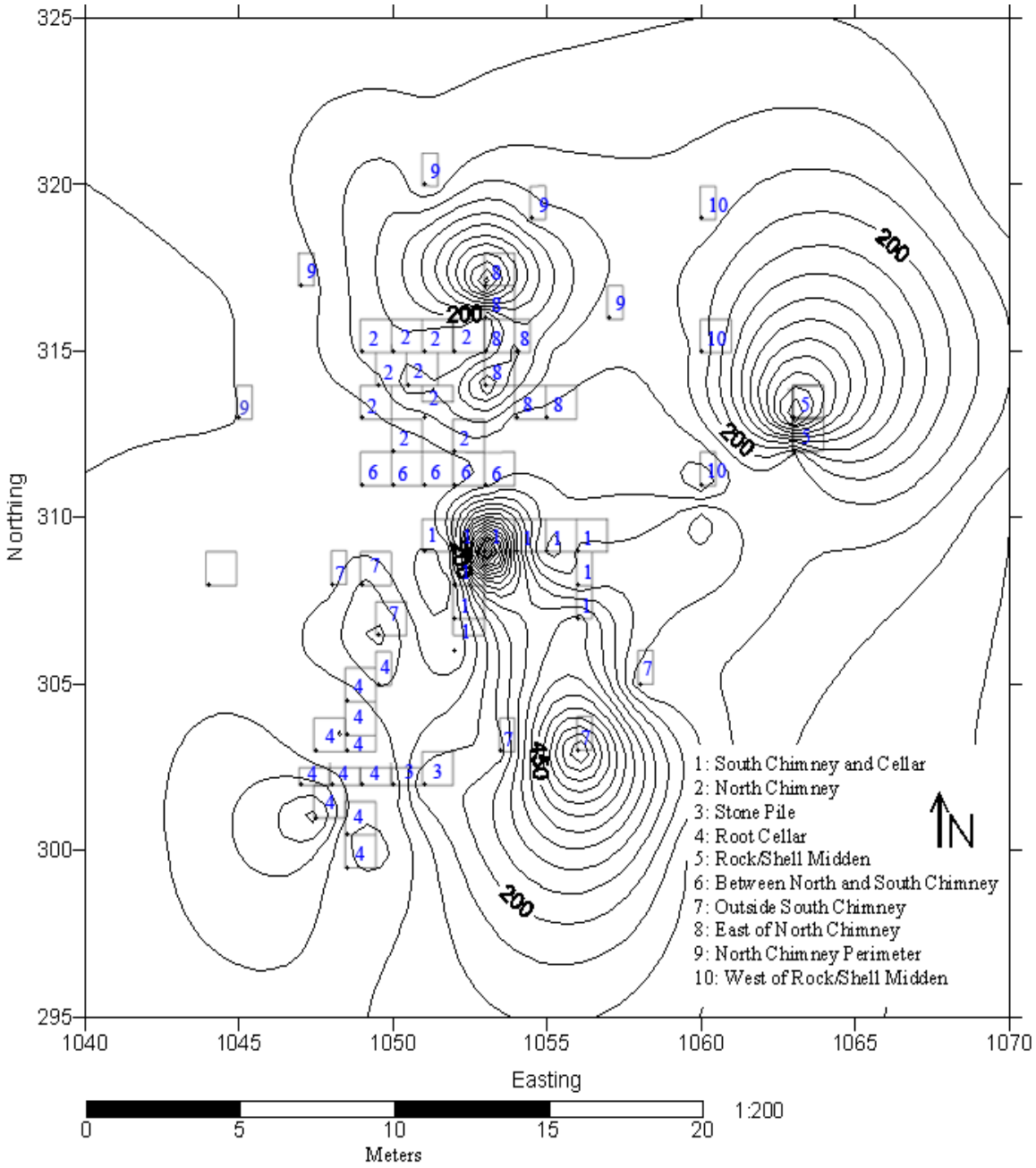

Figure 13: Distribution of Ceramic Artifacts at Site 102-123

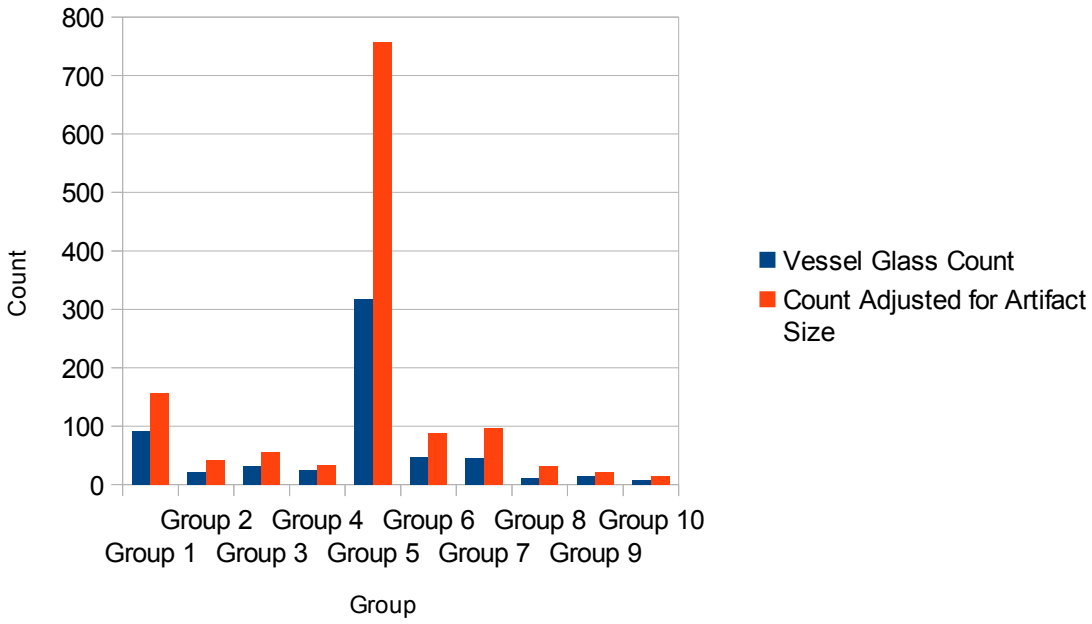

Figure 14: Vessel Glass Distribution at Site 102-123

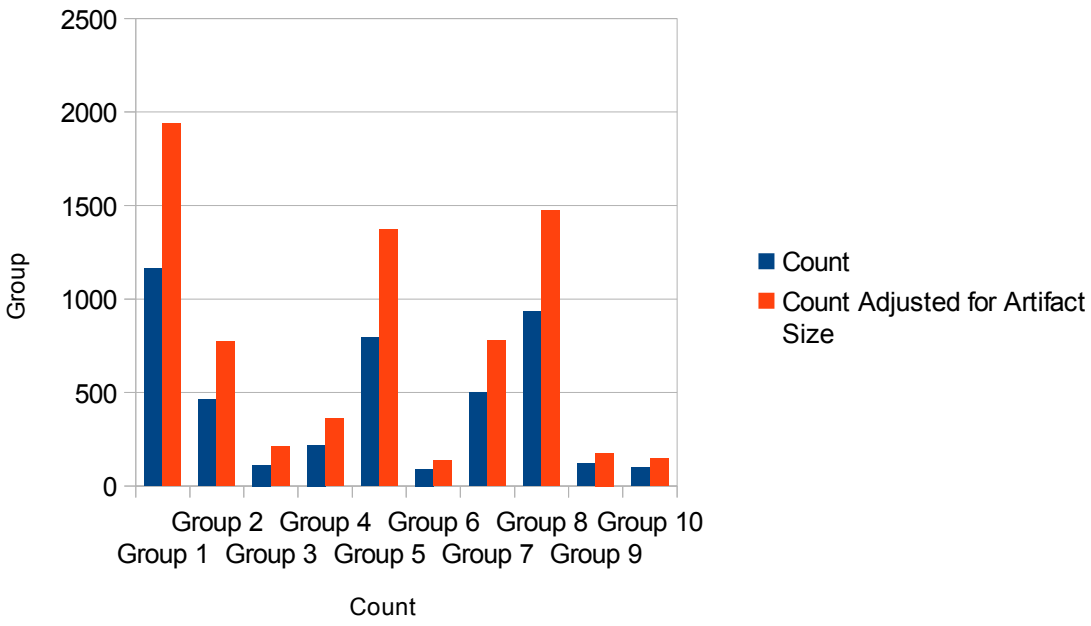

Figure 15: Ceramic Artifact Distribution at Site 102-123

The presence of large artifacts was tested for the ceramic, window glass, and vessel glass categories, all of which had some artifacts that were of the largest size categories, but relatively few compared to the total assemblage (Table 12). Unsurprisingly, given the high concentration of vessel glass artifacts in the rock/shell midden, the largest concentration of large vessel glass artifacts is found there, while additional large vessel glass fragments are found in the south chimney area and between the chimneys. Relatively little large window glass was recovered, and mostly from the rock/shell midden. The majority of the large ceramic artifacts were recovered from the south chimney area and the rock/shell midden. Of those recovered from the south chimney area, the majority (49) are from the units outside of the cellar area, while only 15 are from within the cellar. Within the cellar, the large ceramics occurred primarily

between levels 4 and 13, with a single large Jackfield base sherd present in level 20. The south house and rock/shell midden are also the areas with the greatest amount of ceramic artifacts.

Group		Size Cat 4 Window Glass	Size Cat 5 Window Glass	Size Cat 4 Ceramics	Size Cat 5 Ceramics	Size Cat 4 Vessel Glass	Size Cat 5 Vessel Glass
Group 1	South House	0	0	15	49	7	0
Group 2	North House	2	0	2	11	2	0
Group 3	Stone Pile	0	0	0	5	0	0
Group 4	Root Cellar	0	0	0	1	0	0
Group 5	Rock/Shell Midden	6	0	6	31	39	12
Group 6	Zone Between Chimneys	0	0	1	1	6	0
Group 7	Near South Chimney	0	0	3	5	1	0
Group 8	East of North Chimney	2	1	0	5	1	1
Group 9	North Chimney Perimeter	0	0	0	0	0	0
Group 10	West of Rock/Shell Midden	0	0	0	1	1	0
Site		10	1	27	109	57	13

Table 12: Large Artifacts by Group

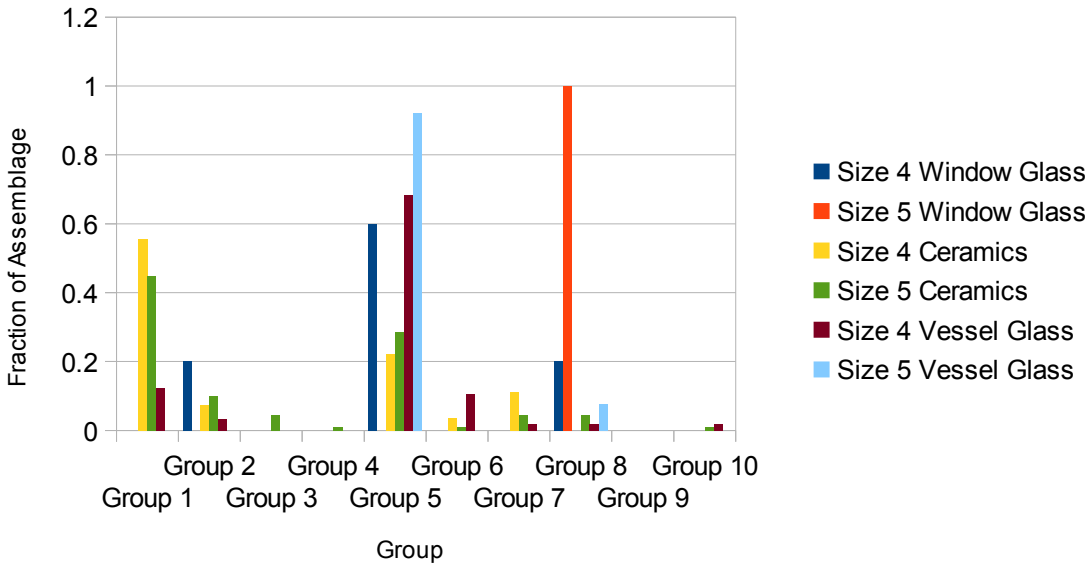

Figure 16: Large Artifacts by Group and Fraction of Assemblage

Mean ceramic dates were also calculated based on sherd counts for the unit groups at 102-123 (Table 13). The types used for the mean ceramic dating are tabulated in Appendix A. The dates range within the 18th century, and should be considered with the same caveats that accompany any mean ceramic date, especially ones calculated for sherds. The overall site MCD is 1785, and the dates for the chimney areas and rock/shell midden all cluster around the mid-to-late 1780s. The only exceptions are the root cellar and the stone pile, both of which date to the 1760s, and the units west of the north chimney, which date to the 1770s. The rock/shell midden includes a variety of ceramic artifacts, dating from the 1760s to the 1780s (Hunter 2012:63). These dates largely conform to those presented in Siliman and Witt (2010:60), which sampled areas differently, but largely showed mean ceramic dates in the 1780s, with the exception of the root cellar, there identified more broadly as a depression, and as dating to 1768.

Group Number	Group	MCD	N
Group 1	South Chimney	1789	867
Group 2	North Chimney	1783	388
Group 3	Stone Pile	1769	72
Group 4	Root Cellar	1761	209
Group 5	Rock/Shell Midden	1784	163
Group 6	Zone Between Chimneys	1788	148
Group 7	Near South Chimney	1786	618
Group 8	East of North Chimney	1789	766
Group 9	North Chimney Perimeter	1776	58
Group 10	West of Rock/Shell Midden	1784	96
	Site	1785	3520

Table 13: Mean Ceramic Dates

Notably, Group 3 and Group 4 date significantly earlier than the other units. The only other group which does not date to the 1780s is Group 9, near the north chimney. Comparing to the dates of manufacture for the nails, no cut nails were found in Groups 3 or 4, either, implying that those groups were either constructed earlier or fell out of use earlier than the rest of the site.

Spatial Data Summary

The site overall demonstrates substantial variability in the distribution of artifacts across the excavated areas. The two chimney areas appear largely similar, but some differences are apparent. The southern chimney has a relatively high concentration of window glass, ceramics, and vessel glass. The northern chimney is similar, but with a substantially higher concentration of nails, while a lesser concentration of the other materials, particularly ceramics, and a very low concentration of vessel glass. The southernmost stone pile not identified as a chimney had a relatively low count of all artifact types. The root cellar also has a low density of artifacts spread throughout the excavation units. The rock/shell midden is the most distinctive group which also contains

a high quantity of ceramics and more than half of the assemblage of vessel glass. Importantly, the average size of the artifacts in the rock/shell midden was above the value for the site, indicating that the deposition process occurring in those two units was likely substantially different than the process elsewhere on the site. The five units between the two chimneys contain almost as many nails as the 11 units in the southern chimney area, but relatively little window glass or ceramics. Vessel glass is found between the chimney collapses, and relatively large pieces, as well. Near the south and north chimney is a very high concentration of nails, as well as ceramics, as well as the highest concentration of window glass. Like the region between the chimneys, vessel glass artifacts tend to be relatively large in this area, although very few artifacts were recovered from east of the north chimney. The areas west of the north chimney and west of the rock/shell midden have the lowest density of artifacts, and those that are present are highly fragmented. Those groups are furthest from the chimney collapses and middens, indicating that the concentration of artifacts, especially small, highly fragmented artifacts declines from habitation areas within the landscape of the site.

CHAPTER 5

INTERPRETATIONS

The data presented in the previous chapter summarize the results of an analysis of multiple artifact types tied to a spatial framework to identify structural remains and behavioral patterns across site 102-123. The intersection of a fine-grained spatial analysis and a site that contains complexities amenable to such an analysis is unique on the Eastern Pequot reservation at this time, and provides insights into the use of domestic space on the reservation in the late 18th century. The central question for this analysis remains the organization of space at site 102-123, specifically the nature and sequence of construction of the various structures now only marked by their collapsed chimneys. This chapter applies the results of the previous chapter to resolve issues regarding the construction of these buildings and their ultimate fate. Unlike other sites on the reservation before, during, and after the occupation of these structures (e.g., Hayden 2012), extensive modifications are present at site 102-123, indicating a greater degree of investment of labor into the structures at site 102-123 and temporal transition over a potentially longer occupation span. Identifying the sequence of construction at this site

can illuminate the decision making process regarding residential structures on this particular site, and how the built environment was constructed and eventually demolished. It will also offer direct implications for acts of residence, the physical and the metaphorical, outlined at the outset of the thesis.

As noted in chapter 3, several basic variations for the arrangement of structures at site 102-123 were proposed. First, two separate structures could have been occupied sequentially. This implies that one structure was constructed, occupied, and then demolished purposefully or accidentally, and a second structure was constructed and eventually demolished or collapsed. Second, two separate structures could have been occupied concurrently. This scenario envisions both structures being occupied at the same time, although not necessarily constructed or demolished at the same time. Third, the two chimneys may have represented a single large structure with a chimney at each end. A fourth option, a single moved structure, can be discounted by the presence of two separate chimneys and deserves no further attention. Finally, the possibility of an additional structure that left no easily detectable surface remains, such as a wigwam-type building should be considered, even though it would have been succeeded by obviously more permanent framed structures. Each of these scenarios offers sub-variations, but the basic questions is one or two structures, and if two, in what order were they built?

The scenario of sequentially occupied houses implies that one house would have been demolished, and its materials possibly recycled into the construction of the new house. As the majority of nails are fragments or intentional discards, it is possible that either chimney collapse indicates a demolished house salvaged for construction material.

However, if nails and wood were salvaged for a new construction project, the fieldstone used to construct the chimney was left on the ground, both creating a space which would have been surrendered to any productive activity and discarding construction material already close to the construction site for the new house. With few machine-cut nails present in the north chimney area and the proximal south chimney area, neither can be established to have been an earlier construction based on those materials alone. Additionally, the mean ceramic dates for both the south and north chimney areas are relatively close (1789 and 1783, respectively), as are the dates for the proximate chimney areas (1786 and 1789, respectively). These are not statistically significant in any meaningful way, especially with the technique based on sherd counts. The relatively early mean ceramic date associated with the group to the north and west of the north house (1776) may also speak to the north house being earlier, especially if the areas closer to the south house are used more intensively for the disposal of small artifacts after that house's construction. The relatively early mean ceramic dates support the interpretation that the area west of the north chimney would be less intensively utilized, as newer ceramics would not enter that area after the southern house was complete.

If the two houses are sequential, then the most likely association is between the root cellar on the southern edge of the site and the northern house. The southern house was constructed over a cellar, which would have been excavated before ever building a house over it, but the northern house had no underfloor cellar for cool food storage. The root cellar is also filled with mixed A/B horizon soil, likely from the excavation of the full cellar nearby given that excavations between the two revealed an older A soil horizon

buried beneath some mottled fill containing C-horizon sediments, sprayed toward the root cellar from the house cellar. In addition, the full cellar is filled with rock, likely from one of the chimney collapses. However, the rock in the south chimney cellar appears to be placed there intentionally, in an attempt to fill the cellar, given that the cellar is almost filled with rock to its rim. This would be an unusually filled hole if it only received debris from a toppling chimney.

The presence of the full cellar, combined with the filling of the root cellar, speaks strongly to the construction of the southern chimney and attendant structure second behind the northern house, and the presence of the chimney implies that this particular structure was used for residential activities, rather than a storage or utility area. The relatively close ceramic dating and presence of machine-cut nails at both chimney areas imply that both were in use at roughly the same time, although the slightly earlier ceramic date at the northern chimney might be explained by an earlier construction and initial habitation date. The absence of construction debris, particularly rock, but also very few nails and window glass, in the nearby root cellar, an optimal location for the disposal of such debris since it was being partially filled by cellar excavation, also implies that there was no demolition or collapse prior to the filling of the root cellar. Sediments from the excavation of the house cellar appear to have been used to fill the root cellar, while rock from the same excavation could have been applied to the construction of the southern chimney. That said, though, the northern chimney pile does not appear to be substantially reduced compared to the potentially later southern chimney, which one might expect if the stones had been salvaged for another construction episode. This also militates against

thinking that the southern house was constructed when the northern one had an unexpected structural failure with a chimney collapse. The southern chimney collapse does contain more material, as the cellar is full of rock which appears to be associated with the surface chimney collapse, although the full cellar may have originally contained a substantial amount of rock to support a more substantial chimney. The slightly smaller northern pile may be a result of utilizing the collapsed northern chimney for other constructions, but the fact that the northern chimney collapse was not fully re-utilized argues against the use of the material for the construction of the southern chimney. Possibly the northern house was demolished or collapsed before the southern house, and thus was a source of salvaged stone for a longer period than the southern chimney collapse. Filling the root cellar would eliminate a substantial storage area, which would be mitigated by the construction of the full cellar under the (forthcoming) southern house. Had the root cellar been filled with construction debris, a large proportion of nails, window glass, and rock would be anticipated in the root cellar, but only a few nails are present (9, opposed to 106 at the north chimney area), and only in the lower-most levels, which most likely represent the floor of the cellar during its period of use. Similarly, a lower count of nails would be anticipated at the north chimney area, unless all of the nails are associated with the south chimney. The presence of cut nails at both north and south chimneys, as well as the relatively low difference in mean ceramic dates between those areas, when contrasted with the mean ceramic date of the root cellar, implies that similar activities were being conducted in both areas throughout the occupation of the site. The very low overall quantity of machine-cut nails at the site may be an indicator of the use of

such nails for repairs, while the construction of the structures took place when only hand-made nails were present in any quantity. The storage space lost with filling the root cellar may have been replaced by converting the northern house from a residential structure to a storage area, if no longer actually occupied.

A two-house variation implies that small artifacts would be found between the two houses due to trampling, in addition to large artifacts that may have been disposed of out of sight and out of trafficked areas. If the houses are of the approximately 15-ft-x-17-ft or 16-ft-x-22-ft size commonly attributed to the time and region (Stienitz 1989:15, 20-21; also Stachiw et al 1997) and seen elsewhere on the Eastern Pequot (Hayden 2012; Silliman personal communication, 2012) and Mashantucket (McBride 1991:74) reservations, the space between the two houses would have to have been less than two meters. This could permit discard and some traffic. The artifacts in the between-house set are small, and several large pieces of vessel glass are present, but no large pieces of window glass are recorded in that area. However, if the two houses were occupied at the same time, there may have been no windows between the two houses. A window set into the wall of a house separated from another wall by only a small space, possibly less than a meter, would have provided little additional light or ventilation, and little to look at (especially if a collapsed northern house, in one scenario, offered the only real view), while providing another space for heat to escape during the winter. Windows or doors built into the southern exposure of the north house – a prediction based on the value of southern exposures during New England winters – may have been boarded, or left in place if the northern house was still standing and used for storage. Overall, the area

between the two chimneys lacks large artifacts of all categories, especially ceramics, while the large ceramics found in the units associated with the two chimney collapses are largely absent from the pattern of units between the two chimney collapses. The presence of large vessel glass in what would have been a narrow area between the two houses, if that is what the space represents, indicates that this space may have been an expedient disposal area. The large vessel glass artifacts are unlikely to have been the types of material that would slip between the floorboards of a house, and there is no cellar feature between the two chimneys that would have made for an expedient interior disposal area.

If the volume of artifacts reflects the length of occupation, which is tentative at best, the southern house would seem to have been occupied longer, or been subject to more intensive activity. Both chimneys show a distinct peak in the amount of artifacts compared to the area between the chimneys, although units outside the chimney areas are also relatively rich in artifacts. The similar mean ceramic date for both chimney areas speaks to the likelihood that both structures were in use at the same general time, although the lower mean ceramic date to the west of the north structure may indicate a reduced use of that area after the construction of the southern house, and the slightly older date associated with the north chimney may be related to an earlier construction date. The noticeably lower mean ceramic dates in the root cellar and southern stone pile indicate that those areas were used significantly less intensively for disposal and certainly not as storage areas following the construction of the southern structure.

The third option, a single large house, would mean that the two chimneys would appear very similar in the spread and content of artifacts, and the area between the two

houses would further bear substantial similarity to the area around the chimneys. Similarity and variation both exist, as discussed above, so this offers little discrimination about his scenario. Little to no window glass would be anticipated in the area between the two houses since windows would not be in an interior wall of the house. While window glass is found in a low frequency, it is present. The paucity of artifacts in the region between the two chimneys may represent an area covered by floorboards. The presence of large artifacts in the area, particularly large vessel glass shards, argues against the presence of a floor which would have prevented these artifacts from slipping into the dirt below, especially when considering that the units between the two chimneys are unlikely to represent an even one-meter space between the two houses, but more likely an area where the edges of the two houses were close, and thus partially covered by the floorboards of the two structures. In a two house interpretation, the trench does not represent a one-meter wide alleyway between the two proposed structures, but rather an area that would include some interior space from each structure, and a narrow strip of exterior space between the two structures. A single house would also imply that there would be minimal difference between the mean ceramic dates between the two houses, and admittedly, a difference of only approximately 6 mean ceramic years is observed. Had the northern house been abandoned after the southern house was constructed, and work areas had shifted towards the area of the southern house, a mean ceramic date more like the root cellar or west of the northern house would be expected. A more substantial shift in mean ceramic date is noted west of the north structure, relative to the chimney collapses. If the areas west of the north chimney represents an area of disposal while the

north house was the primary locus of activity, the mean ceramic date for the north house and south house being relatively close could be explained by the continued use of the north house area, but discontinuation of use of the northwest area as activities shifted towards the south house.

The construction of a single large house requires a consideration of why such a structure would be built, especially with two chimneys. A structure that would encompass both chimneys would be at least 7 meters in length, and if the proportions of such a structure were the same as a smaller house, would imply a width of almost 7 meters with fireplaces at opposite ends facing each other. The slightly raised terrace on which the houses sat, however, limits the plausibility of a structure much larger than this footprint. Heating a house with two end chimneys would be less efficient in terms of firewood consumption than a single, center chimney house, a structure common in New England. In addition, a large two-chimney house would be an unprecedented house size and structure on the Eastern Pequot reservation, given all archaeological studies to date, or even on the nearby Mashantucket Pequot reservation (McBride, personal communication, 2006).

Given the evidence discussed thus far, the preponderance of evidence seems to point toward a northern structure with attendant root cellar constructed first. The root cellar was then filled during the excavation of the cellar for the southern structure, which was then constructed over the cellar. The northern structure likely remained in use at the same time as the newly constructed southern structure until the site was abandoned and both houses fell into disuse or were demolished. Family expansion may have led to

pressures to construct a second dwelling. The convenience of an in-house cellar may have encouraged the inhabitants to build the southern structure and possibly convert the northern structure to a storage structure or continue to use it a residential structure, although none of the artifact or spatial data conclusively indicates a change in function after the construction of the south house. Besides, it would be significantly harder to excavate a cellar beneath a standing house. Beyond purely functional considerations, psychological factors may have played a role in the decision-making process as well, particularly the connections felt to a place, specifically a home, that the inhabitants saw as more than a collection of resources.

Analysis of the material at the two houses also speaks to the nature of their construction, occupation, and eventual dismantling. Of particular importance is the possibility for the recycling of construction materials. The high number of small nails in the assemblage and the high ratio of fragmentary to whole nails indicate that the salvage of materials may have been an important element in the demolition process. The number of bent and clinched nails may not represent accurately the process of removing nails from boards during the process of recycling. Of the whole nails, more than half (54 of 98) are 2d and 3d nails, very small artifacts that would have been easily lost at any stage of construction. The large number of fragments may result from nails that were broken during the extraction process and disposed of on site. Additionally, the proportion of fragmentary nails to whole nails would only be increased by the removal of whole nails from the site during the demolition process as the recycling process continued. The comparison of the relative frequency of whole nails between site 102-123 and 102-125

illustrates that despite the presence of two chimneys and a much larger assemblage of nails at 102-123, the nails most useful for flooring and attaching planks to frames are a much lower proportion of the assemblage at 102-123. Large nails, such as the 16d and 12d framing nails, of which only a few examples are present at the site, could have been salvaged when demolishing the structures. The lack of large nails may also be explained by the use of joinery and treenails in preference to large nails, but the presence of a few large nails does speak to the likelihood that they were used for joining structural members. Removing a relatively few large nails would have taken far less time than possibly hundreds of small nails, although many of the medium-sized nails also were likely salvaged, at a substantial investment of time and effort.

Window glass artifacts are also highly fragmented. If panes had fallen into a building during an unintentional collapse, larger fragments would have been expected. The relatively high degree of fragmentation in the window glass assemblage may also be an indicator of a thorough salvage effort at the site. Architectural glass is present in relatively large quantities at both the north and south chimneys, implying that the structures associated with those chimneys possessed a roughly similar quantity of framed glass. Window glass in the rock/shell midden area does tend to be larger than elsewhere on the site, but this deposit has more than merely architectural debris.

Compared to the nails and window glass, for which salvage seems plausible, the fieldstone used for the chimneys was largely left in place or used to fill in the cellar of the southern house. While filling the cellar can be seen as a form of recycling construction material, that same material does not seem to be reused at other construction sites

elsewhere on the reservation (or possibly off the reservation). Instead, it seems that someone – either departing residents or later arrivals – found it worthwhile to fill the gaping hole that would have been the cellar, an act that could have only been done effectively if the superstructure had already been removed or heavily disintegrated. The presence of two chimneys also seems to argue for the presence of two contemporaneous structures, once the principle of recycling is applied to fieldstone as well as smaller architectural material. If the north structure had been dismantled prior to the construction of the south structure, why leave a large amount of fieldstone lying on the surface? The stone pile renders the area useless for productive work and represents a source of stone already selected for inclusion in a chimney immediately next to the construction site. The overall amount of stone in the north chimney fall is less than in the south chimney collapse, when considering the vast amount of rock in the cellar as well. Also, the rock pile south of the southern house may represent a disposal area for rock, albeit in smaller quantities, and having two such areas in close proximity to the house consumes a substantial amount of useful space. Rock may have been preferentially scavenged from the north chimney collapse to construct the stone walls near the site, or the cellar fill may include stone from both chimney collapses.

Figure 17: Large Granite Stone Refit at Site 102-123

Additionally, two very large fragments of a large shaped granite stone – the only two necessary to complete the original stone – were recovered in the north chimney area relatively close to the surface (Figure 17). The two large stones were identified as refitting after a substantial effort to move them together in the field, which may also speak to the effort that would have been involved in moving the two pieces apart from each other in the first place. A substantial force must have been applied to the complete stone to break it, possibly a large tree or the sudden collapse of the structure. This

original stone may have been used as fire back or hearth stone at some point, and would have been architecturally useful in a complete form. However, its two fragments were found more than 2 meters apart, which is not a distance possible with a general chimney collapse. Even broken, the stone segments could have been put to use in the foundational levels of a new chimney, although they do not seem to have been. Recycling this material would not only reduce the amount of labor necessary for bringing fieldstone to the new chimney, but also would clear an area adjacent to the structure. Instead it was left on the surface. While this speaks to the likelihood that the northern house was standing while the southern house was constructed, the large stone may also be further evidence of recycling. A large, distinctive stone such as this may have been of greater value or importance than other stones in the northern chimney, and as a result it may have been broken in an attempt to salvage and use it elsewhere. The enormous effort of moving the stone probably doomed any attempt to salvage it, but that may not have been apparent at the outset of recycling activities. However, as noted above, it is difficult to believe that the broken pieces would not have been incorporated into further construction activities at the sites. If it was a recycling effort gone wrong, then it most likely happened after both houses were no longer inhabited.

The general pattern of disposal at the site implies a great deal of expedient disposal around the two structures. Artifacts near the chimneys are highly fragmented, with the exception of the large vessel glass artifacts found between the two structures. The exception to this pattern is the rock/shell midden, which shows a much lower degree of fragmentation, as well as a very high concentration of artifacts on all types except for

nails. This feature is described in great detail in Hunter (2012). This seems to indicate a difference in disposal patterns – the rock/shell midden is an area specifically allocated to disposal, while the areas around the houses are not necessarily identified as only disposal areas.

The data set used to conduct this analysis does not offer unambiguous answers, but the weight of evidential lines does point toward reasonable conclusions. The most likely interpretation of the structures that were in use at 102-123 remains a two-structure, sequential construction with intentional salvage and at least one major episode of modification over the lifetime of the site. The construction and use of multiple buildings implies a substantial investment in both labor and commitment to a specific place on the reservation, and it also indicates a changing focus on the role and location of domestic storage with the decommissioning of a root cellar and the construction of a house cellar. Unfortunately, the dating of the site does not offer a clear indication of the duration of the occupation, only that it appears to be during the latter half of the 18th century. Site 102-123 may represent a multi-generational modified landscape, but is clearly a complex intersection of many behaviors and practices.

CHAPTER 6

CONCLUSION

Site 102-123 provides more than just information on the sequence of construction and types of structures found on an 18th -century reservation. It also provides an opportunity to examine the decisions that were made by Native people living in a colonial environment in a reservation space. The construction, use, and demolition of these houses were important modifications to a landscape set within larger colonial power relations. These structures were Native not because they possessed diagnostic features that distinguish them from "Euro-American" structures, but because they were built and used by Native peoples. They are Native in that they are linked to the people who built and lived there, and they are colonial in the origins of the materials and architectural designs at the broadest level and in the social relations surrounding construction, demolition, and the economic choices pertaining to them. By how they built and demolished the structures at the reservation, residents of the Eastern Pequot reservation were actively making the landscape, within the strictures and with the materials that existed in that colonial context.

The construction of plank houses with boards, nails, and paned window glass is a form of residence as discussed earlier. The materials used are similar to those found at European or Euro-American farmsteads throughout New England, but here appear on a Native American reservation. A simplistic approach would consider this an example of acculturation, but the deployment of these materials can also be viewed as the utilization of resources that are connected to the colonial environment to facilitate community persistence (Silliman 2009). The decisions to utilize certain types of building material and house forms reflects both the availability of those materials and the knowledge of those house forms and the agency of the builders who chose to construct, modify, and eventually demolish these structures. While artifacts as commonplace as nails and window glass are not often thought to encode political meaning, the difference between a structure constructed with such materials and a wigwam, such as those historically known to be on the reservation, would be a striking contrast to people living on the reservation, or connected to different house forms through the memories of others.

Modifications to the site would have been meaningful. The act of building these houses would be the product of the labor of these residents and possibly others, and the buildings would have been artifacts that shaped their everyday lives, serving as an important point of focus for their lived experiences. Individual or familial investment in the construction of these structures may explain the preservation of the north house when the south house was constructed. While the filled root cellar was unlikely to have as much meaning as a home, the north house may have been used a residence for part of a family or as a storage area. A familial attachment to that structure and the memories

associated with it may have encouraged the residents of site 102-123 to preserve the north house even when the south house fulfilled the same needs. The north house may not have even been the first structure constructed at site 102-123, but is much more likely to be a locus of meaningful memory than a more utilitarian structure, like the root cellar, and a reminder of residence at the site, possibly across generations. The potential for attachment to particular structures or memories attached to the area of site 102-123 seems greater, given that no other sites on the reservation show a similar pattern of multiple construction episodes.

Similarly, the purposeful infilling of the cellar indicates meaningful decisions on the part of the residents or persons who utilized the site for other purposes after its abandonment. The collapse and distribution of the few artifacts in the cellar indicate an intentional filling, as opposed to an unintentional collapse. The artifacts that are present in the cellar are distributed throughout the levels with rock, and no temporal variation is detectable within the various levels. There does not seem to be a clear accumulation of artifacts at the cellar floor. Filling the cellar in anticipation of reusing the site may have been possible, but there would still have been a large amount of rock left on the surface. Filling the cellar may have had more to do with a process of demolition that would be meaningful in the context of their lived experience at the site. Hasho (2012: 80) notes that the stone walls at site 102-123 were likely constructed after 1800. Even with the possibility for time-lag in the acquisition of ceramics and other materials, the construction of these walls may represent a third utilization of the site, of a very different

character, although the filling of the large cellar may have been in anticipation of reusing the site for a different purpose.

The probable interpretation that the north house was left intact offers interesting implications for the understanding the experience of the people living at site 102-123. The north house would have been a noticeable element of the built environment. It would also have been a substantial investment of labor. Without precise chronology, it is difficult to determine the time scale of occupation at the site, but at least two possibilities present themselves. The construction of the south house may have been intra-generational, by the same people who constructed the north house. In this case, the north house represents a meaningful investment of personal labor. Alternatively, the south house may be an inter-generational construction project, where the north house represents the labor of the preceding generation, and more of an indirect link to that generation's lived experience. By investment of labor, I do not mean merely time spent in construction, but a change to the landscape effected by human agents, specifically, the household residing at the site. These structures were part of the process of making culture by constructing artifacts, including a landscape of human activity.

The construction of these houses would also be an expansion of the network of people, ideas, and material culture that makes up the relational network within the lives of the residents of site 102-123. All of the nails and window glass that went into the construction of the house, as well as the wooden planks and other perishable materials are part of this network, but only provide an indirect picture of the most important material culture element of that network, the structure itself. The disposal patterns described in

chapter 4 are also an indirect way to access the relational network by considering how space in and around the structures was utilized. The construction of the north house was an important modification to the landscape, and the accompanying root cellar also created a space for storage that was distinct from the habitation area of the house and work areas of the surrounding area. Compared to the three residential site examined by Hayden (2012: 114) and the south house, the north house is unique in that the underground storage is not a subfloor storage space. The construction of the southern house and subsequent filling of the root cellar was a substantial alteration to the area, changing the root cellar from a storage area to a place where a storage area once was, and possibly changing the role of the northern house in the relational network as well. The change in the role of the northern house may have been utilitarian (to a storage area, for example), but also likely contained a component of the house as a place that was a former residence, or a residence utilized earlier in the households lifespan. The demolition of the houses and filling of the cellar likewise changed those structures into places where structures once were and allowed the people salvaging those buildings to take part of the structure with them and incorporate it into new structures. The filling of the root cellar and construction of the southern house and cellar also were a distinct reconfiguration of the built environment at the site, which may have been in response to any number of environmental, social, or political factors, but allowed the people living at the site to remain there and maintain the relationships they had constructed with that particular environment.

The construction of these houses in the form that they took – framed plank houses – also speaks to the increasing integration of the colonial world into the lives of people on the reservation. The use of nails and window glass in the structures should not be considered remarkable, as such materials are found in sites which were likely to be the location of wigwam-style structures of earlier date (Hayden 2012:64-65), but the construction style and widespread adoption of these materials reflects decisions made in a changing physical and economic environment. The use of local materials in the form of fieldstone, and the decisions to construct additional buildings at site 102-123 are consistent with Hayden's conclusions that the construction of residential structures was highly variable (Hayden 2012:114). The decision to reside on the reservation is an important one, as is the decision to construct houses in a manner which would be indistinguishable from the houses of many non-Native residents of New England. Houses are powerful symbols of and metaphors for political authority (Johnson 2005:157), and their presence is a political statement. Constructing a home on the reservation utilizes a Native space, and reaffirms the nature of that space as one utilized by Native people, but the form of the structures also indicates the adoption of techniques, forms, and materials associated with the broader colonial world in which they lived. The structures are part of a world that includes the entire English-speaking Atlantic, but also part of the microcosm of the Eastern Pequot Reservation.

Given the likely time-lag in the acquisition of these objects, it is likely that the site was occupied into the early nineteenth century, but not likely more than a few years into it. The mean ceramic dates cluster around the mid-to-late eighteenth century, a period of

considerable political and economic turmoil. McBride observed that the shift from wigwam-style architecture to framed houses occurred around the period of the First Great Awakening of the 1730s-1740s (McBride 2005:38), and this seems to post-date that by several decades. The Brothertown Indian movement, an organization of Christian Natives who left New England in the early 19th century and eventually settled in Wisconsin, was also active at this time, and the political, social and religious upheaval may have had an influence on the importance of remaining in a particular place, in contrast to the goals of the Brothertown movement, and other influences. Rather than find a new home in the western part of the county, the residents at site 102-123 constructed and renovated a place for themselves on land politically tied to the Eastern Pequot nation in a time of political and social turmoil. Choosing to remain on the reservation shows a way of living through colonialism through residence, by placing one's home in a location which has a particular cultural association, despite also being situated in pervasive colonial structure of governance and economic integration. The decision to site one's home on the reservation makes the construction and renovation of the structures an example of place-making, and particularly the process of associating one's self with the politically important parcel of land, and imparting personal meaning to that parcel. The fact that these modifications took place at a site where it would have been possible, as later reservations inhabitants did, to move on to a different place, either on or off that reservation, during a time of significant political and social turmoil speaks to the attachment the inhabitants held of this particular place. Silliman and Witt (2010:64) suggest that differences in the ceramic assemblage throughout the lifecycle of site 102-123 may reflect a substantial degree of

mobility for the residents and greater access to European ceramics later in the site's occupation. Even with a relatively high degree of mobility, the use and modification of site 102-123 indicates this space held a particular importance to at least a small group of people. Similarly, increasing usage of European ceramics parallels the increasing economic integration of the eighteenth century, and their adoption into Pequot lifeways is an illustration of the growing presence of colonial material culture.

These changes to the relational network all occur within the context of the colonial power structure permeating the lives of people on the Eastern Pequot reservation. While plank houses like those at site 102-123 were constructed from materials commonly available in the 18th century, and thus part of the 18th century political economy. The availability of nails and glass, as well as European ceramics and vessel glass, were part of this broader economic system. There is no direct link between the political, economic, and social changes of the late 18th century and the forms of houses on the reservation, but those systemic changes created an environment in which the people who built the houses at site 102-123 made decisions about where and how to build, when to stay, and when to leave. The realities of colonialism, especially the limited resources on the reservation, combined with the types of material culture that were available at the time of the construction of the structures. The use of these materials, however, should be thought of as Pequot people applying the resources, both physical, such as nails and window glass, and more abstract, such as the construction skills and house forms that developed in the Atlantic world.

APPENDIX A

TABLES OF CERAMIC TYPES USED IN MEAN CERAMIC DATING

Type	**Count**	**Median Date**
Clouded Creamware	2	1767
Handpainted Creamware	8	1788
Creamware (Indeterminate Decoration/Undecorated)	663	1791
Delft (Handpainted)	2	1750
Delft (Indeterminate Decoration)	14	1767
Grey Saltglazed Stoneware	2	1738
Grey Saltglazed Stoneware (Rhenish)	6	1738
Jackfield	2	1760
Pearlware (Handpainted)	38	1800
Pearlware (Indeterminate Decoration/Undecorated)	92	1800
Slipware	4	1760
White Salt-Glazed Stoneware (Indeterminate Decoration)	28	1763
Scratch Blue White Salt-Glazed Stoneware	4	1760
Undecorated White Salt-Glazed Stoneware	4	1763
Total	867	1789

Table 14: Group 1 Ceramic Types Used for Mean Ceramic Dating

Type	Count	Median Date
Agateware	2	1757
Brown Salt-Glazed Stoneware	2	1733
Creamware (Indeterminate Decoration/Undecorated)	175	1791
Delft (Handpainted)	38	1750
Delft (Undecorated/Indeterminate Decoration)	8	1767

Grey Salt-Glazed Stoneware	2	1738
Jackfield-Type Earthenware	2	1760
Pearlware (Indeterminate Decoration/Undecorated)	103	1800
Scratch Blue White Salt-Glazed Stoneware	4	1760
White Salt-Glazed Stoneware (Undecorated/Indeterminate Decoration)	52	1763
Total	388	1783

Table 15: Group 2 Ceramic Types Used for Mean Ceramic Dating

Type	Count	Median Date
Creamware (Indeterminate Decoration/Undecorated)	32	1791
Delft (Handpainted)	6	1750
Delft (Undecorated/Indeterminate Decoration)	2	1767
Grey Saltglazed Stoneware (Rhenish)	2	1738
Slipware	10	1733
Scratch Blue White Salt-Glazed Stoneware	2	1760
White Salt-Glazed Stoneware (Undecorated/Indeterminate Decoration)	18	1763
Total	72	1769

Table 16: Group 3 Ceramic Types Used for Mean Ceramic Dating

Type	Count	Median Date
Agateware	2	1757
Brown Salt-Glazed Stoneware	6	1733
Brown Reserve Chinese Porcelain	4	1760
Creamware (Indeterminate Decoration/Undecorated)	23	1791
Creamware (Cauliflower Ware)	2	1767
Delft (Handpainted)	22	1750
Delft (Undecorated/Indeterminate Decoration)	39	1767
Rhenish Stoneware	8	1738

Pearlware (Indeterminate Decoration/Undecorated)	8	1800
Slipware	24	1733
White Salt-Glazed Stoneware (Handpainted)	4	1760
Scratch Blue White Salt-Glazed Stoneware	10	1760
White Salt-Glazed Stoneware (Undecorated/Indeterminate Decoration)	57	1763
Total	209	1761

Table 17: Group 4 Ceramic Types Used for Mean Ceramic Dating

Type	Count	Median Date
Creamware (Indeterminate Decoration/Undecorated)	85	1791
Delft (Undecorated/Indeterminate Decoration)	2	1767
Jackfield-Type Earthenware	39	1760
Pearlware (Indeterminate Decoration/Undecorated)	34	1800
White Salt-Glazed Stoneware (Undecorated/Indeterminate Decoration)	3	1763
Total	163	1784

Table 18: Group 5 Ceramic Types Used for Mean Ceramic Dating

Type	Count	Median Date
Brown Salt-Glazed Stoneware	2	1733
Creamware (Indeterminate Decoration/Undecorated)	106	1791
Creamware (Cauliflower Ware)	2	1767
Delft (Undecorated/Indeterminate Decoration)	2	1767
Pearlware (Indeterminate Decoration/Undecorated)	8	1800
Pearlware (Annular Ware)	14	1805
White Salt-Glazed Stoneware (Undecorated/Indeterminate Decoration)	14	1763
Total	148	1788

Table 19: Group 6 Ceramic Types Used for Mean Ceramic Dating

Type	Count	Median Date
Brown Salt-Glazed Stoneware	2	1733
Creamware (Indeterminate Decoration/Undecorated)	502	1791
Delft (Handpainted)	7	1750
Delft (Undecorated/Indeterminate Decoration)	9	1767
Grey Salt-Glazed Stoneware	3	1738
Jackfield-type Earthenware	3	1760
Pearlware (Indeterminate Decoration/Undecorated)	33	1800
Manganese Mottled	2	1730
Slipware	8	1733
Scratch-Blue White Salt-Glazed Stoneware	4	1760
White Salt-Glazed Stoneware (Undecorated/Indeterminate Decoration)	45	1763
Total	618	1786

Table 20: Group 7 Ceramic Types Used for Mean Ceramic Dating

Type	Count	Median Date
Creamware (Indeterminate Decoration/Undecorated)	615	1791
Delft (Handpainted)	13	1750
Delft (Undecorated/Indeterminate Decoration)	3	1767
Jackfield-type Eartenware	8	1760
Pearlware (Indeterminate Decoration/Undecorated)	89	1800
Scratch-Blue White Salt-Glazed Stoned	3	1760
White Salt-Glazed Stoneware (Handpainted)	2	1760
White Salt-Glazed Stoneware (Undecorated/Indeterminate Decoration)	33	1763
Total	766	1789

Table 21: Group 8 Ceramic Types Used for Mean Ceramic Dating

Type	Count	Median Date
Agateware	2	1757
Creamware (Indeterminate Decoration/Undecorated)	32	1791
Grey Salt-Glazed Stoneware (Rhenish)	2	1738
Slipware	2	1733
White Salt-Glazed Stoneware (Undecorated/Indeterminate Decoration)	20	1763
Total	58	1776

Table 22: Group 9 Ceramic Types Used for Mean Ceramic Dating

Type	Count	Median Date
Creamware (Indeterminate Decoration/Undecorated)	70	1791
Creamware (Feather-Edge)	2	1777
Delft (Undecorated/Indeterminate Decocration)	6	1767
Grey Salt-Glazed Stoneware (Rhenish)	2	1738
Pearlware (Indeterminate Decoration/Undecorated)	2	1800
Scratch-Blue White Salt-Glazed Stoneware	2	1760
White Salt-Glazed Stoneware (Undecorated/Indeterminate Decoration)	12	1763
Total	96	1784

Table 23: Group 10 Ceramic Types Used for Mean Ceramic Dating

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