Report on the 2016 Excavations at the John Howland Homesite: Looking for Strickland's Barn

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Thought was first given to excavating the walls and cellar of the presumed John Howland house at Rocky Nook when Sidney Strickland was preparing for the Pilgrim John Howland Society Meeting on August 28, 1937. The idea was to excavate the site to gain insight into the life and household effects of John and Elizabeth Howland. Strickland discussed the matter with the society president, Mr. William Howland, and General Charles R. Howland. The matter was well received and General Howland agreed to cover the expenses to excavate the house site. On August 28th, Strickland visited the site with General Howland and they located what they presumed was the house site and traced the general boundaries as indicated by the ancient stone wall present. Strickland's excavations at the Howland site were carried out between September 20th and October 16th in 1937.

Sidney Strickland identified foundation walls for what he thought was a barn, south of the house foundation in 1937 and 1938. The first traces of walls were found on October 9, 1937 at 6'6" south and 5' west of the southeast corner of the house. Strickland found a scythe 9′ south and 6'6″ west of the southeast corner between 4 and 6″ below the ground surface and lying across the stones found earlier. Work continued on the newly discovered stonework on October 11th and in his notes for the 15th of the same month, Strickland identified it as a possible barn. The next day, which was the last recorded day of the excavation, he stated that "The wall of a possible shed was found 8′ south and 6′ west of the southeast corner (of the barn)... three more piles of stones were encountered. One was directly in the center of the possible shed wall and was about 5′ square. The stone at the edge seemed to have been placed on edge." He also identified other traces of walls further to the south (these seem to be associated with the cellar hole excavated by Derek Wheeler). He eventually traced the possible barn wall approximately 17' to the south. A concentration of stones is present 30' to the east of this possible corner, perhaps marking the southeast corner of this building **(Figure 1)**. This would make the potential building 17' north to south by 30' east to west, a good size for a 17th century English style barn **(Figure 2)**. These are the classic through-and-through barn, the ones with doors in the center of the long walls so that a wagon could drive in through one door, park in the middle and unload the hay or grain, and then pull through the opposite door. One door would have faced south and one faced north. The 2016 fieldwork consisted of further excavations along Strickland's possible wall lines to try and confirm if these are the actual dimensions of the building.

Field Testing

Fieldwork this year was designed to attempt to locate the four walls of the possible barn and to confirm or refute Strickland's dimensions and interpretation. A total of 16 units, ranging in size from 2 ½' to 5' square were opened along the lines where it was predicted that the building's walls would be located **(Figure 3).** Excavation was carried out in 4" (10 cm) levels until the undisturbed subsoil was encountered. It is believed that much of the western and southern portions had been previously excavated and backfilled by Strickland.

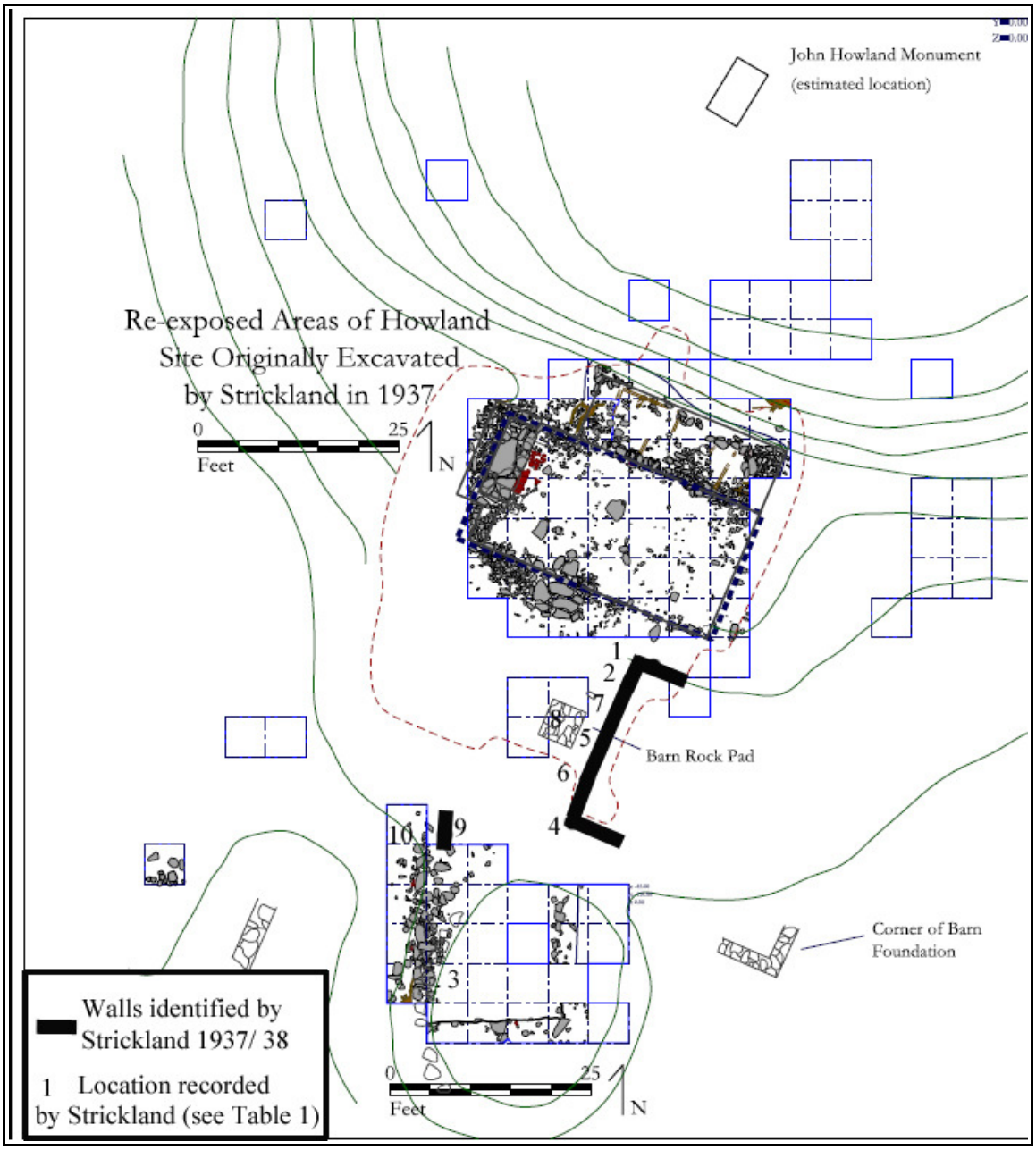

Figure 1. Walls identified by Strickland laid out on Wheeler excavation map

Walls and stone piles identified by Strickland in the south yard

Loc. #	Date	Location	Finding
1	10/9/1937	6'6"S 5'W of SE corner of house	Concentration of Stones
2	10/11/1937	6'6"S 5'W of SE corner of house	Concentration of Pottery
3	10/13/1937	45'S of SE corner of house	More stone and artifacts
4	10/15/1937	26'S of SE corner of house and along N-S wall	SE corner of barn
5	10/16/1937	8'S 6'W of SE corner of house running for 17' Wall	3 more stone piles
6	09/05/1938	22-24'S 6-8'W of SE corner of house	In front of barn wall
7	09/14/1937	10'W of SE corner along W wall of barn	West wall of barn
8	09/18/1938	24'S 7'E of centerline 3'W of W side of barn	1694 coin
9	09/26/1938	29-36'S of centerline	7' of a new wall with brick
10	09/26/1938	34'S and just E of centerline	Conc. of very smooth stones

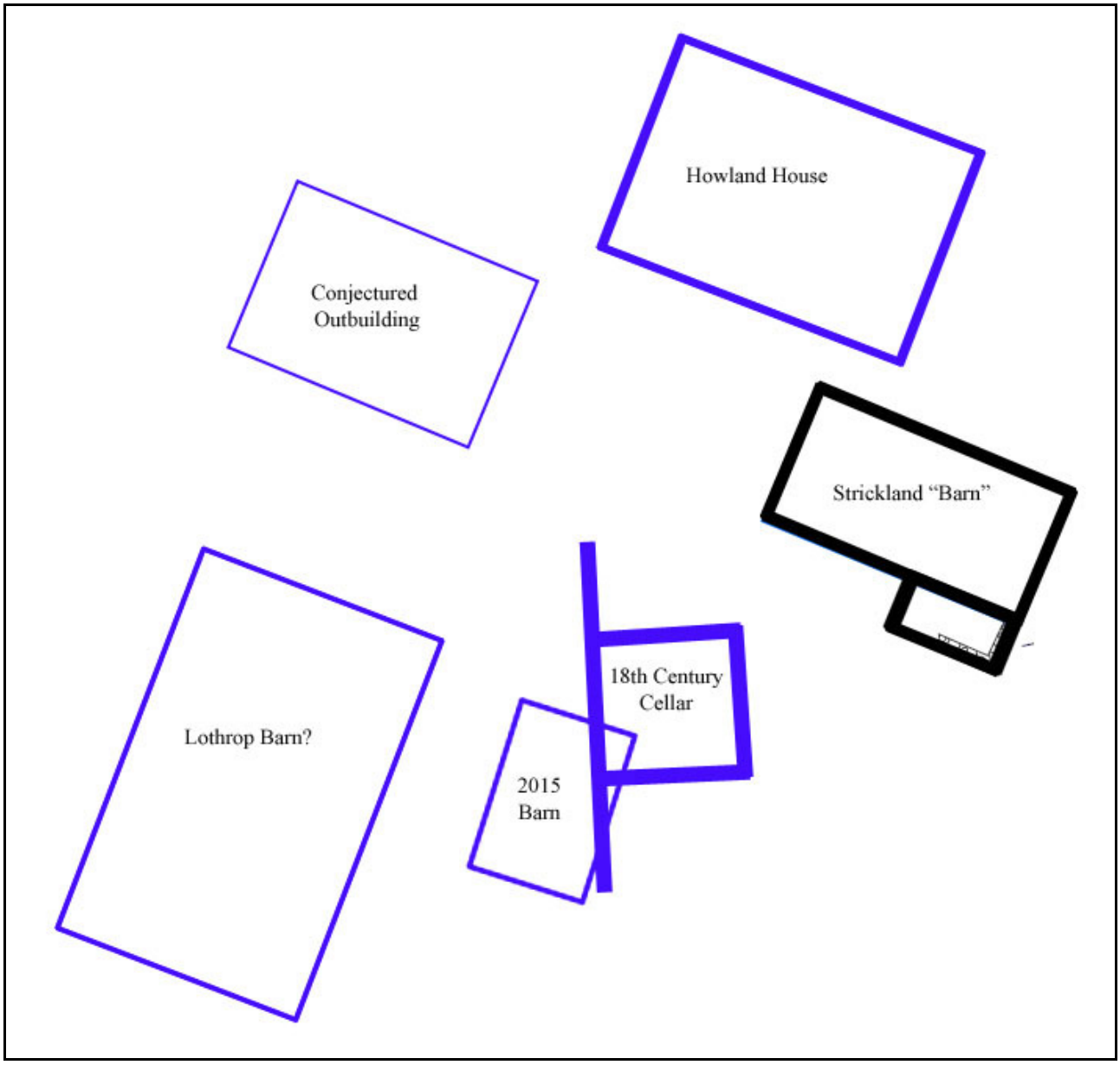

Figure 2. The author's interpretation of the layout of all buildings at the Howland Homesite

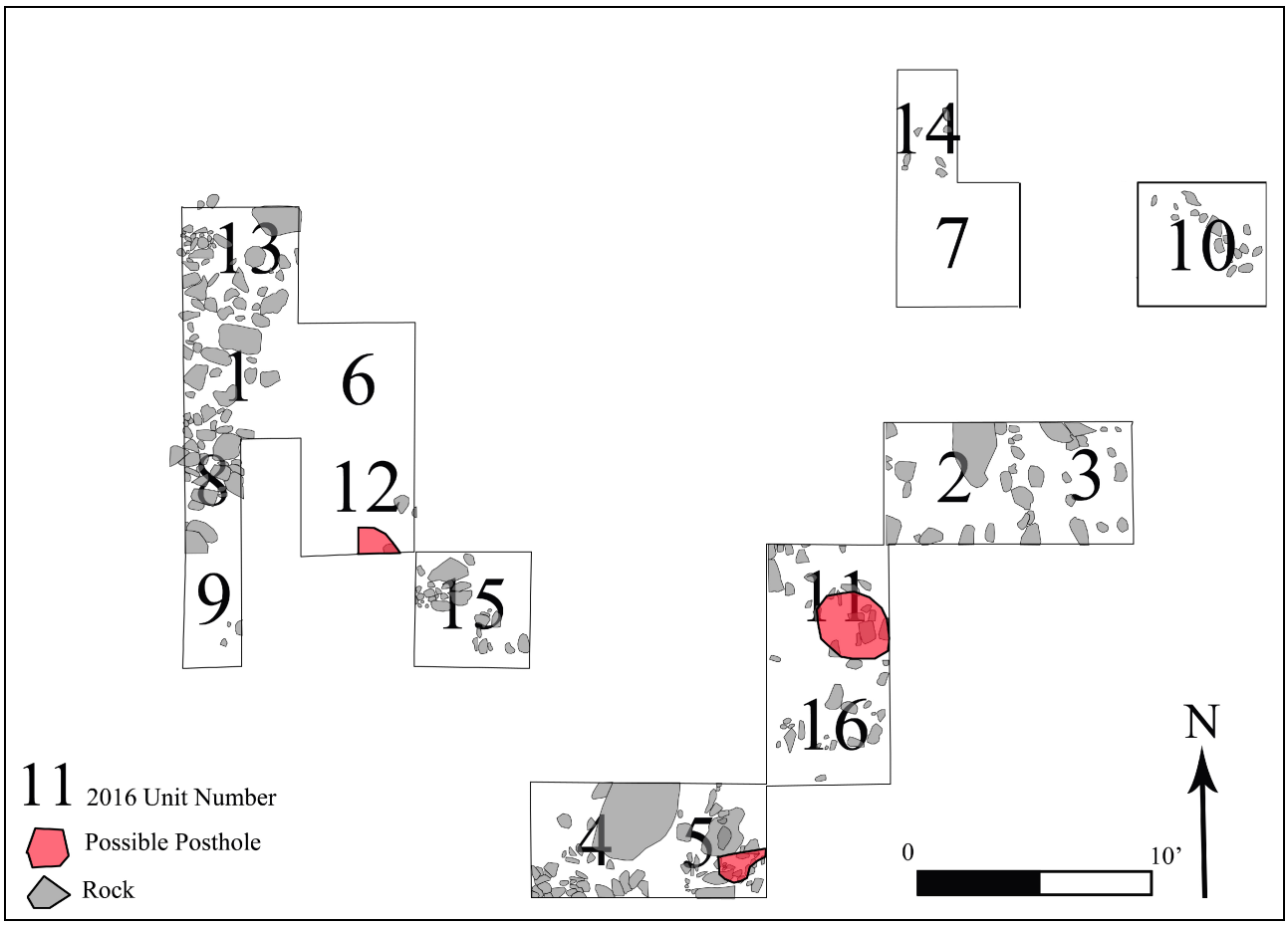

Figure 3. Location of the 2016 testing

Excavation began with the removal of a large pile of brick, cobbles, and stones that had been inconveniently placed on the area where the western wall of the structure was believed to lay. The pile was removed and used to form a walkway along the western edge of the cellarhole previously excavated by Wheeler to the south of the possible barn **(Figure 4).** Excavations succeeded in identifying the western and souther foundation walls. These were found to measure approximately 2' wide and were set into the present ground surface approximately 6" **(Figure 5).** Excavators also successfully located the southwest corner of the building in Unit 8 **(Figure 6).** The area further to the south of the foundation was marked by a distinct lack of stones, which offered further support for Strickland's findings.

The biggest surprise of the excavation was the identification of at least two, and possibly three, postholes along the southern and eastern sides of the building **(Figure 3)**. Strickland did not identify any postholes, which was most probably due to the fact that A) he did not know that 17th century buildings were commonly constructed using post-in-ground technology and B) he had found a stone wall foundation on the western side, so he expected the remaining sides to have the same type of foundation. I have found that what often happened during the life of post-in-ground buildings in Plymouth Colony was that while the original building was constructed in this manner, eventually the portions of the posts buried in the ground rotted and the posts were often sawed off above ground level and stones were inserted to provide the support that the rotted post could not. At the same time that these post repairs occurred, a cobble or slightly dressed stone foundation was often added beneath the sill to remove the wood from direct contact with the soil. This may have been what happened with this building as well- it was initially built as a post-in-ground structure and

Figure 4. Cobble walkway created in 2016 along the western edge of the 18th century cellarhole

Figure 5. Plan view of the west wall of the barn (left) and profile view of test unit along the west wall (right) (this unit can be seen in the upper right corner of the left photo).

Figure 6. Southwest corner of the barn looking north

later, possibly even after John's death in 1672/73, the building was renovated or repaired with the shoring up of the rotting posts and the addition of a stone foundation.

The postholes had the following measurements: 58 cmbs and at least 48 cm in diameter at the midpoint (Unit 5); 50 cmbs and 50 cm in diameter at the midpoint (Unit 12); and 70 cmbs and 40 cm in diameter at the midpoint (Unit 11) **(Figures 7-9)**. The possible postholes appear to underlay the foundation on the south side and may have formed the east wall. The fact that they are of varying depths and are fairly circular versus oval in plan may indicate that, if they are in fact postholes, the building was erected one post at a time versus being erected as joined sections. The later technique results in larger, oval postholes of a fairly uniform depth due to the need to let the heavier paired post sections slid into the postholes **(Figure 10)**.

Further evidence of modification to the building in the last quarter of the 17th century came in the form of a layer of clay that was encountered within the western portion of the building. This clay floor was identified as soon as the thin topsoil layer was removed. Testing through the clay layer indicated that the layer itself was approximately 6" (14 cm) thick and was devoid of any artifacts **(Figure 11)**. Below this layer, in a 2 1/2' square test unit excavated in the southeastern quadrant of Unit 6, a dense layer of gravel was found, upon which were several sherds of a Staffordshire Slipware cup with a brown dot decoration, a type of ceramic produced in England after 1675 and imported to the colonies until ca. 1775. The presence of this ceramic beneath the clay floor indicates that it had to have been laid some time after 1675.

The shed-like addition that Strickland identified at the southeastern corner of the possible barn was also identified. A layer of flat schist pieces were found running east to west at the south western side of Unit 4. These appeared directly below the leaf mold and may have been placed there either by Strickland or by someone at a later time. The actual outline of the addition was harder to discern,

Figure 7. Unit 5 possible posthole

Figure 8. Unit 11 possible posthole

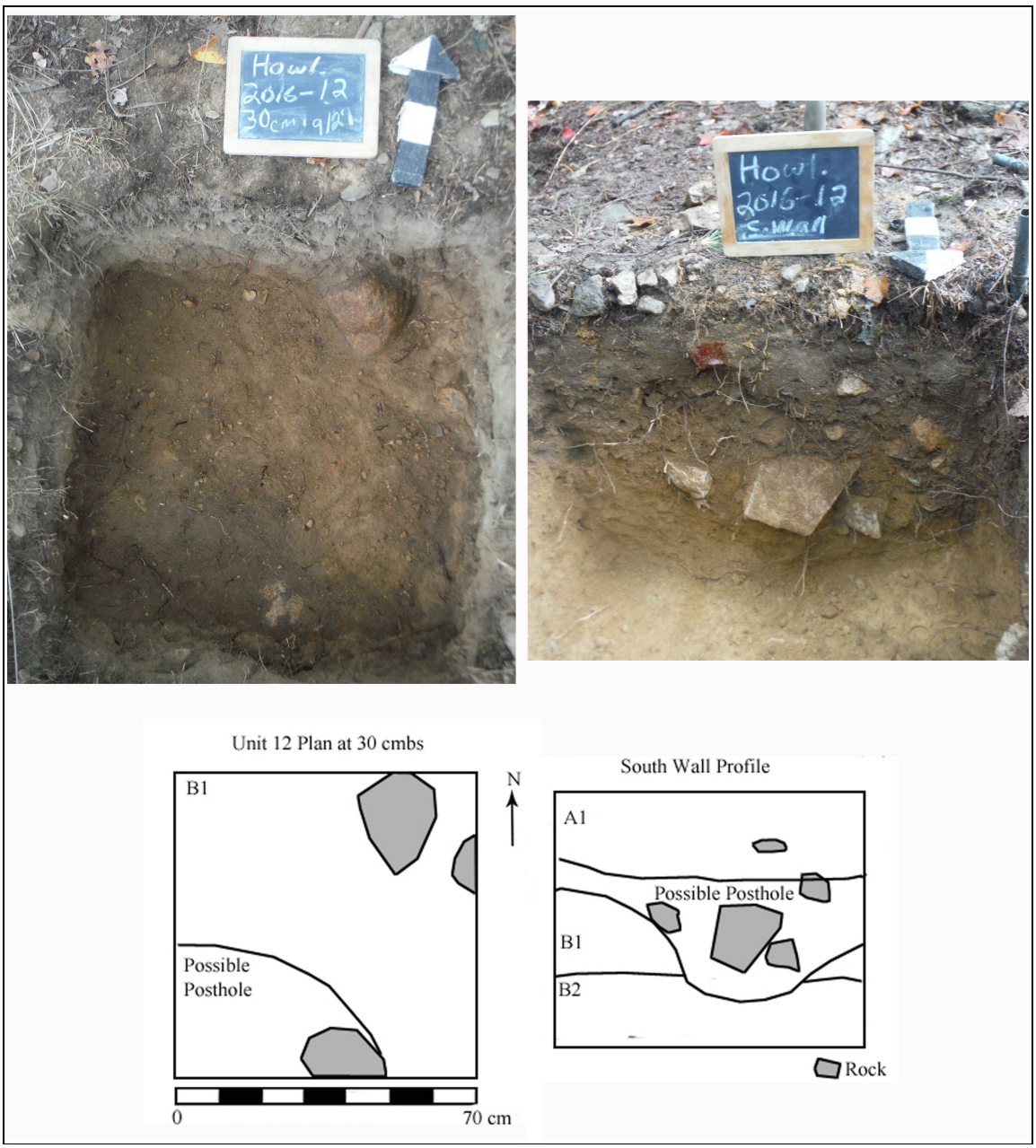

Figure 9. Unit 12 possible posthole

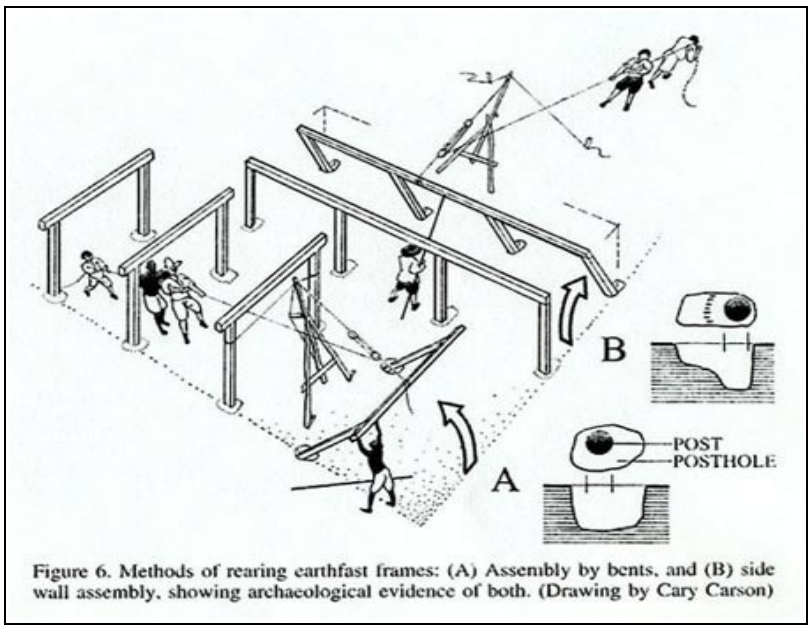

Figure 6. Methods of rearing earthfast frames: (A) Assembly by bents, and (B) side wall assembly, showing archaeological evidence of both. (Drawing by Cary Carson)

Figure 10. Bent set post construction (Carson et al 2008)

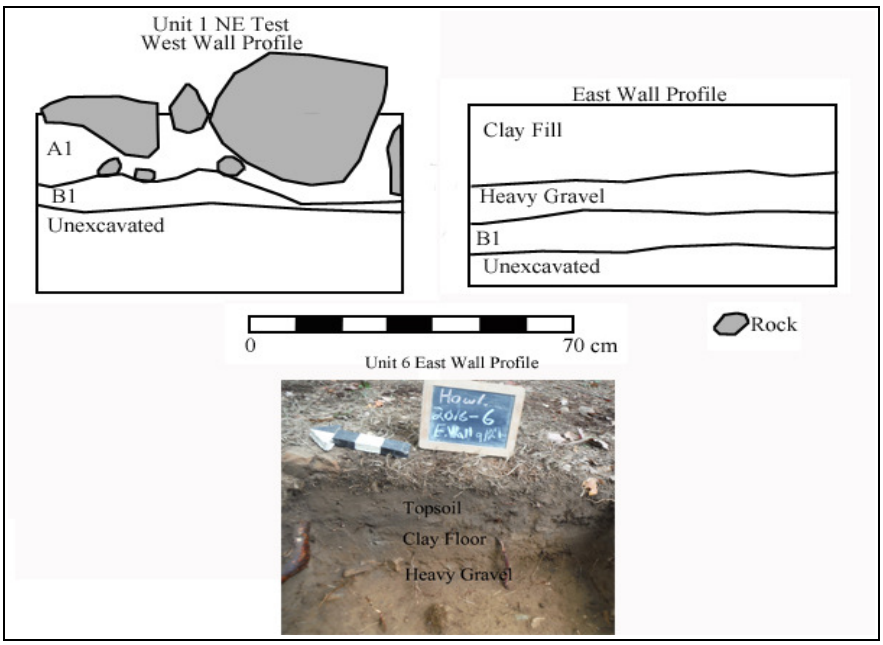

Figure 11. Clay floor as represented in Units 1 and 6

but a larger erratic that was deeply embedded in the natural subsoil may have formed part of it. The erratic did not show any evidence of having been moved here and may have merely been a conveniently located stone. The southeast corner of the addition appears to have been represented by one of the postholes that was identified, this one in Unit 5 **(Figures 3 and 12)**.

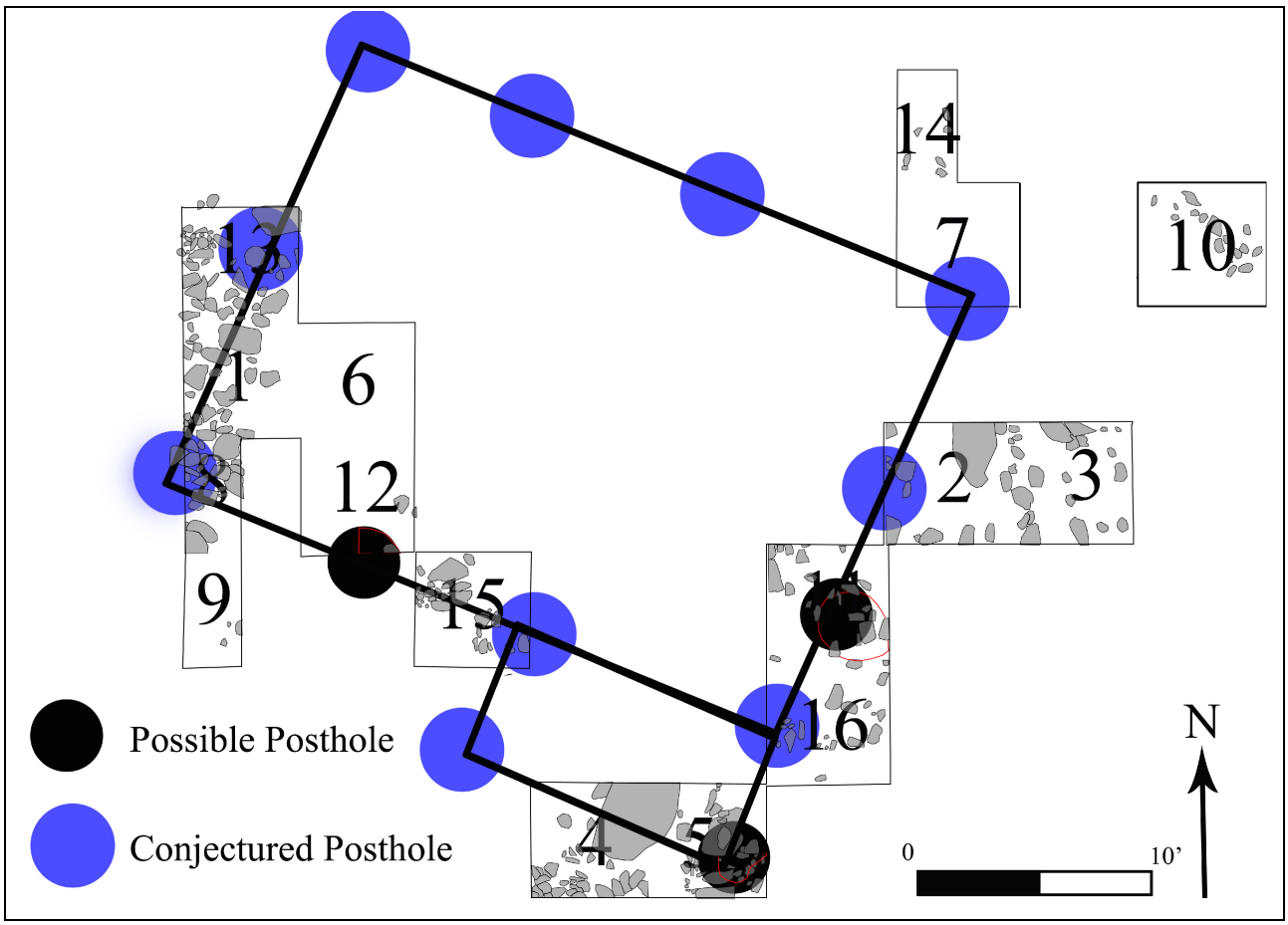

Figure 12. Possible posthole locations and conjectured barn outline

Artifacts

A total of 1493 artifacts were recovered this year, of which, 516 were pieces of modern bottle glass and 558 were fragments of brick **(Table 1)**.

Table 1. Artifacts recovered from the barn area 2016

Class	**Artifact**	**Count**
Prehistoric		**119**
	Quartz Point Tip	1
	Quartz Small Stemmed Point	1
	Quartz Core	2
	Quartz Shatter	63
	Quartz Flake Fragments	20
	Rhyolite Brewerton Point	1
	Rhyolite Flakes and Flake Fragments	23
	Rhyolite Shatter	3
	Argillite Flake Fragment	1
	Pennsylvania Jasper Chipping Debris	2

Table 1. (Cont.)

Class	Artifact	Count
	Quartzite Chipping Debris	1
	Shell-Tempered Pottery	1
Architectural		**666**
	Brick	558
	Mortar	2
	Hand-Wrought Nails	85
	Window Glass	21
Foodways		**135**
	Bone	15
	Shell	6
	Ceramics	64
	Glassware	4
	Iron	3
	Charcoal	43
Weaponry		**7**
	Flint Chips	5
	Gunflint- Spall Type	2
Personal		**31**
	Tobacco Pipes	28
	Bead	1
	Scissors	1
	Honestone	1
Modern		**535**
Total		**1493**

The analysis focused on five classes of material: Prehistoric; Architectural; Foodways; Weapons: and Modern.

Class: Prehistoric

The 2016 fieldwork resulted in the recovery of 119 prehistoric artifacts, further highlighting how Rocky Nook must have been fairly regularly and extensively used by Native people, probably right up until just before the arrival of the Pilgrims. Artifacts included debris from reducing stones to make tools like scraper and arrow and spear points (i.e. cores [the raw material that flakes were struck off], flakes, and shatter [irregularly shaped pieces of sharp-edged debris]), one quartz point fragment (probably a Late Archaic ca. 6000-3000 years before present [YBP]), pieces of Late Woodland to Contact period (1000-400 YBP) pottery, and two projectile points (one quartz Small Stemmed point [6000-3000 YBP] and one rhyolite Brewerton point [5000-6000 YBP]) (**Figure 13)**.

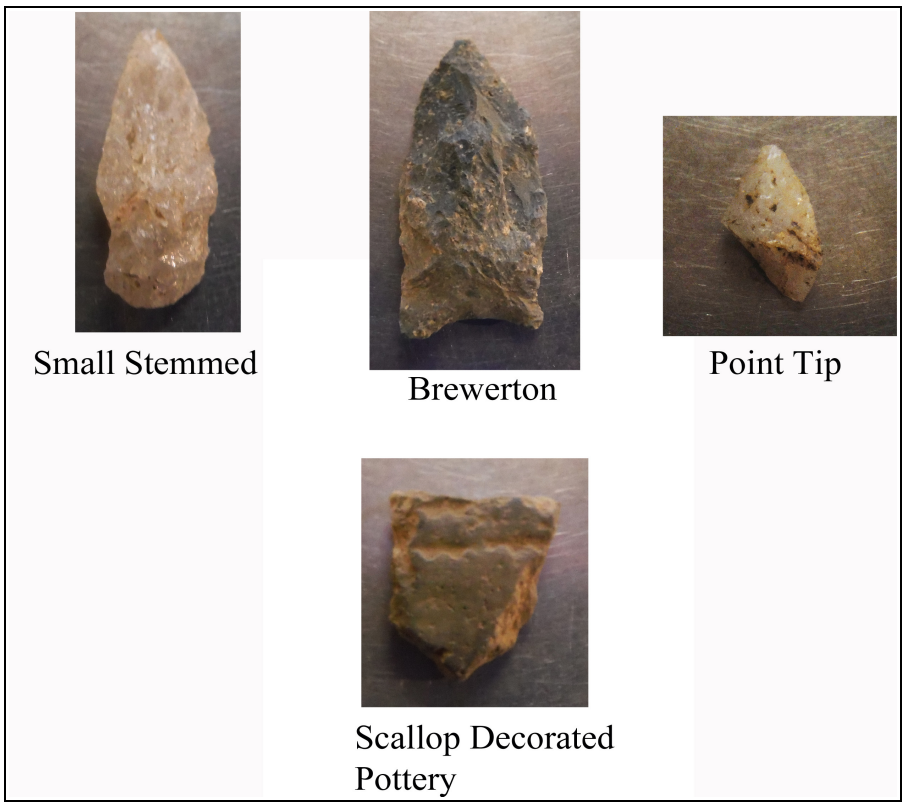

Figure 13. Prehistoric diagnostics from 2016

The prehistoric artifacts again show that the Natives who were living here used a relatively wide variety of stones to make their tools, which were probably found on the beaches of Rocky Nook, Kingston, and Plymouth. These included quartz (which was the most common material), rhyolite (the second most common), Saugus Jasper, and quartzite. The size of the pieces that were being chipped off gives us an idea of how permanently the site was being used by the Natives. Archaeologists have found that when people are moving around a lot, they tend to stop at a quarry site or on the beach and fashion roughed out stone tools from the available material, that way they are not carrying big chunks of stone with them, but tools that are in the process of being finished. We call these roughed out tools blanks or preforms. When people are more settled, they tend to bring raw materials back to their more permanent camps and do a lot of the reduction work there. As a result of these two trends, we tend to find mostly smaller flakes that have been struck at shallower angles (flakes that show that they were being removed from a tool that was already roughly shaped) at camp sites associated with people who are just passing through and replacing tools that broke while out hunting or fishing and a wider variety of flakes sizes, striking angles, and amount of knapping debris at site more permanently settled. We would expect to find this latter scenario at a Late Woodland to Contact period site inhabited by people planting and tending crops along the coast during the later spring to early fall.

Prehistoric material was found scattered across the excavation area, but two concentrations were identified, one in the western portion of the excavation area and a larger one in the east **(Figure 14).** Both areas yielded material dating to the Late Archaic Period (6000-3000 YBP) with the eastern area having a higher concentration of quartz debitage. They indicate that people were gathering local quartz cobbles and making them into tools (a process that produces a lot of waste) as well as finishing rhyolite tools that had been roughed out elsewhere.

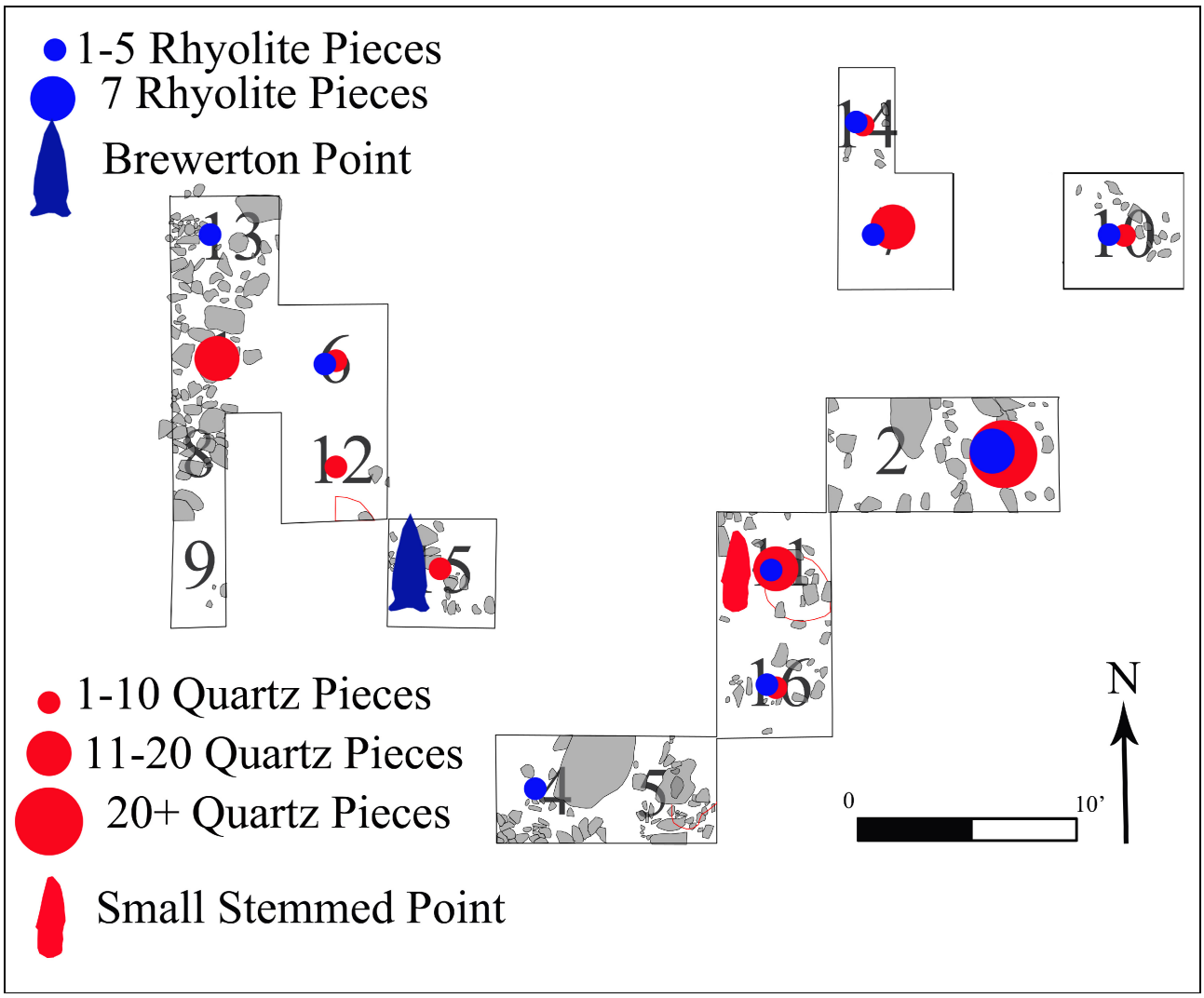

Figure 14. 2016 Prehistoric material distribution

Two flake measurements, the striking platform angle and the flake length, from the rhyolite were used to look at whether the Natives were living at the site for extended periods of time or were just passing through. The angles of the striking platforms showed an overwhelming bias towards later stage finishing of roughed out tools (under 65º) (87.5%) versus earlier stage roughing out (over 66º) (12.5%). The lack of any Native features being encountered at the site (storage pits, hearths, burials, cache pits, or house forms) supports a temporary versus permanent occupation as well. What this shows is the possibility that Rocky Nook was never a semi-permanent base camp occupied for extended periods of time. Much more probably, it was a fishing point into Plymouth Harbor, a place to stretch nets across the Jones River during the spring herring run, and a place to go shellfishing. None of these activities would have resulted in occupations that extended for weeks or even months and may have even been carried out on a daily basis with people traveling from a base camp on the mainland (probably at Bay Farm in Kingston).

Along with the lithic artifacts, one piece of Native pottery was recovered from Unit 7. The piece is thin and the shape and surface characteristics are consistent with a Late Woodland date. This fragment was decorated using the edge of a bay scallop shell (**Figure 13**).

Class: Architectural

Architectural artifacts, the ones that are associated with the construction and finishing of the buildings at the site, made up the largest class, numbering 666 pieces and making up 44.6% of all the artifacts found. An abundance of architectural material is not surprising when you consider the investment in materials and time put into houses and outbuildings. Seventeenth century house and farm buildings were made using a combination of wooden pegs and nails: the pegs (also called trunnels or treenails) were used to hold the major pieces of the frame together from sill to rafter; the nails were used for floor boards, sheathing (wall boards), and the outer wall covering (shingles and clapboards), and roof (shingles or boards). Added to this were bricks and shell and clay mortar for chimneys and fireplaces; glass, leads, and iron casements for windows; hinges for doors, windows and cupboards; and sometimes daub for walls. When something is meant to house you, your family, your food, all your possessions, your animals and all their food safely and securely through a New England winter, you can see why such an investment of material went into your buildings, and as a result, how a lot of evidence of those buildings gets left behind.

Hand-Wrought Nails

Nails have been used to join and fasten parts of buildings for thousands of years and they come in a variety of sizes from 2 to 60d. It follows, that different size nails were used for nailing pieces of wood of different thicknesses, with the general rule of thumb being that you use a nail that is three times as long as what you are nailing into. Four sizes of hand-wrought nails were found in 2016 **(Table 2**).

Table 2. Nails recovered in the south yard

Size	Length	Count
Shingle/ Clapboard		**1**
3d	1 1/4"	1
Sheathing/ Floor/ Roof Boards		7
6d	2"	1
7d	2 1/4"	6
Framing		**1**
9d	2 3/4'	1

Because the building were framed mainly using trunnels, very few larger, framing nails were found. The exteriors, and possibly the floors, of the buildings were probably covered with sawn planks, thus the abundance of medium-size nails, and over these planks, clapboards and/ or shingles were probably nailed, thus the nails of the smallest size.

The nails and nail fragments were unevenly distributed across the site with 23 being found in the units placed along the western wall (Units 1 and 13) of the structure and 25 found in the units along the eastern side (Units 11 and 16). Units 12 and 15, along the south and near the west side, also had higher nail fragment counts (n=9 and 6 respectively) **(Figure 15)**. The distribution of the nails supports the idea that a building stood in the area tested in 2016 and that the walls were located where the eastern and westernmost units were located.

Bricks

A total of 558 brick fragments were recovered in 2016, principally from Units 13 (at the western side and in the area of the cobble and brick pile) and Units 11 and 16 on the eastern side **(Figure**

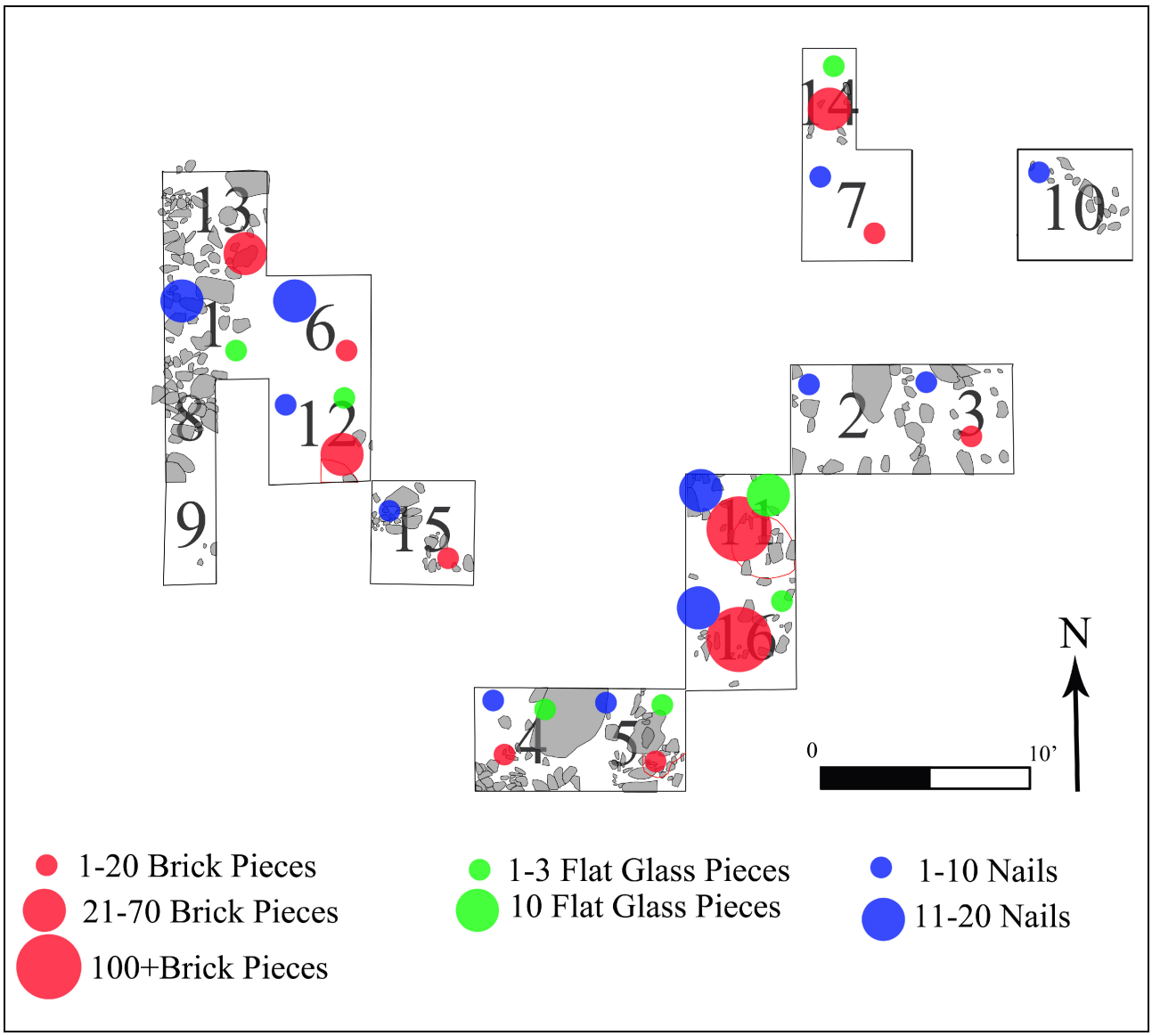

Figure 15. Distribution of architecturally related artifacts

15). The presence of the bricks on the eastern side is seen as evidence that this area was not extensively excavated by Strickland, thus leaving the artifact deposits intact here. One recovered brick bore finger impressions from the brickmaker who had lifted the brick before it had fully dried hundreds of years ago **(Figure 16).**

Other Architectural Material

Other architecturally related artifacts found included window glass that may have come from the original house. Window glass was generally rare, but what little was found was concentrated in the eastern half of the excavation area in Units 11 and 16 (n=13/ 61.9%) **(Figure 15)**.

Class: Foodways

The foodways class, which represents all the things relating to preparing and consuming food (including the remains of the food itself) is the third largest class of artifacts recovered, numbering 135 pieces after the architectural and modern material classes. This is not surprising since eating is one of the most important things needed to keep someone alive, and people liked variety in what they ate and how they prepared and served it.

Figure 16. Brick fragment with finger impressions (colored gray in this image for clarity)

Bone

The common method of disposing of trash in the 17th and 18th centuries, especially in rural areas like Rocky Nook, was just to throw it out into the yard areas around the house in what archaeologists refer to as a yard midden or sheet scatter. Vegetable, animal, and human waste was often piled on a muck heap (what we would refer to as a compost pile today) to be later used in garden beds and fields. Ceramics, glass, hearth ash, and bones were generally just thrown out to later be trampled by people, scattered by chicken and generally reduced to much smaller pieces than they originally started as. A total of 15 pieces of animal bone was found in 2016. All but one had been burned to the point of being calcined, basically cremated, probably from being thrown into the hearth fire during cooking or consumption. The calcined bone probably ended up in the yard as a result of the cleaning out of the hearth and the subsequent disposal of the hearth waste across the yard. The calcined bones could not be identified beyond the level of "medium sized mammal" (probably sheep or swine). The one unburned bone was identified as an adult horse molar. Other horse teeth and one lower limb bone were found across Howland Lane at the Joseph Howland homesite. They may represent animals that were consumed or possibly attached to green/ fresh skins that were purchased by the inhabitants to be sold to someone else to be made into leather. Green skins would often be sold with the heads and lower portions of the legs attached.

The majority of the faunal remains were found on the western side of the excavation area in Units 1 and 6. These probably came from the cleaning of the John and Elizabeth Howland hearth.

Shellfish

Living on Rocky Nook, a peninsula extending into Plymouth Harbor with a river on the west side, was an ideal location to go shellfishing and it appears that the inhabitants of the site often did so, although less evidence of it was recovered in 2016. Previous fieldwork determined that soft-shell clams were the most common species collected, making up 90% of the shells recovered with quahogs being the next most common shellfish consumed. The 2016 fieldwork yielded only 6 fragments, three soft shell clam and three quahog, a finding that supports the previously established trends.

Ceramics

Ceramics were sometimes used for cooking, but more generally they were the vessels from which people drank, where foods and liquids were stored, and where wastes were deposited prior to their disposal on the muck heap. Ten ceramic vessels have been identified from the 2016 excavation and these were probably all represented by vessels previously identified **(Table 3)**.

Table 3. Ceramic vessels identified in the south yard

Vessel Use	Ceramic Type	Vessel Form	Vessel Count	% of Total
Dairy			**1**	**10.0%**
	Redware	Milk Pan	1	
Liquid Service			**7**	**70.0%**
	Staffordshire Slipware	Cup	1	
	Stoneware- Fulham	Mug	1	
	Redware	Bottle	1	
	Stoneware- Pseudo Westerwald	Bottle	1	
	Redware	Cup	1	
	Redware	Pitcher	1	
	Redware	Mug	1	
Storage			**2**	**20.0%**
	Redware	Pot	2	
Total			**10**	

The redware vessels may date to the 17th or 18th century, but the Staffordshire Slipware, Fulham, and Pseudo-Westerwald, all date to the late 17th to early 18th century, after John's death. Ceramic sherds were concentrated in Unit 11 and 6, each at opposite sides of the testing area. The presence of rim fragments of a Staffordshire Slipware (1675-1775) **(Figure 17)** cup beneath the clay floor in Unit 6 indicates that the floor was an improvement or repair made to the original barn at some point after John's death in 1672/73.

Bottle Glass

Fragments of hand blown wine and case bottles were found in 2016.

Other Foodways Items

The only other foodways related artifacts found were fragments of at least one cast iron kettle, a fragment of hearth chain **(Figure 18)**, and a fragment of forged bolster knife. The knife would have had a bone handle **(Figure 19)**.

Class: Weaponry

One 17th to early 18th century spall type gunflint was found **(Figure 20)**. This was a larger gunflint, probably from a musket. One other spall gunflint fragment was also found. Both were made of English flint, of which several other pieces were found. Fragments came from across the excavation area.

Figure 17. Staffordshire Slipware cup found beneath the clay floor in Unit 6

Figure 18. Hearth chain link and complete chain (not from the site, shown as a representative example)

Figure 19. Iron knife blade and bolster fragment and a representative example of a complete knife

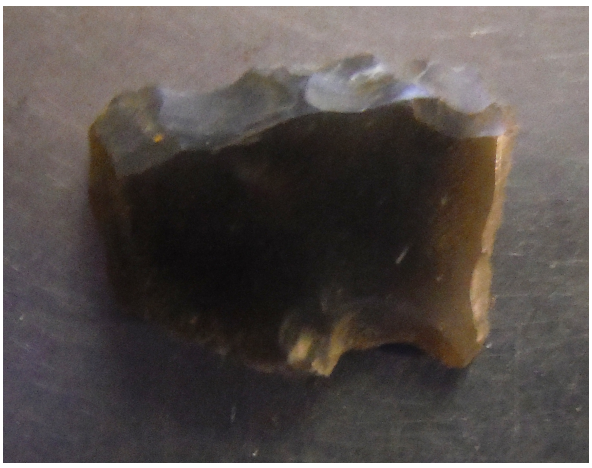

Figure 20. Spall type gunflint

Class: Personal

Tobacco Pipes

The most common personal items found were fragments of white clay tobacco pipes. These pipes are ubiquitous on 17th to early 19th century historic sites and offer various avenues of dating to archaeologists due to changing bowls shapes, decreasing pipe stem bore diameters, and maker's marks. Pipes were smoked by both sexes, and children often are depicted in 17th century Dutch genre paintings using them as bubble pipes.

Pipes dating roughly from 1710-1750 dominated the assemblage, showing that this period- the first half of the 18th century- was the one that saw the heaviest utilization of the site. This corresponds to when I believe that James Howland occupied the property, after having built the house to which the cellarhole to the south of the 2016 excavation area, belongs to. The older pipe stems (8-6/64") are fairly evenly distributed, meaning relatively the same level of tobacco pipe use from the first years of settlement to the late 17th century (Table 4).

Table 4. Pipe stem bore seration

Bore Size	**Date Range**	**Count**	**% of Occurrence**
8/64"	1620-1650	3	12.0%
7/64"	1650-1680	4	16.0%
6/64"	1680-1710	3	12.0%
5/64"	1710-1750	12	48.0%
4/64"	1750-1800	3	12.0%
Total		**25**	

Fragments of two heelless funnel type pipe bowls, which date to the late 17th to 18th century, were recovered, as was one early, small belly bowl type dating from 1620-1660 **(Figure 21).**

Clothing Items

One item relating to clothing and personal adornment was found- a single, small, pale blue glass bead.

Figure 21. Complete tobacco pipe bowl found in Unit 6

Tools

The only tool found was a fragment of a well used honestone **(Figure 22)**. This would have been used to sharpen any of the various bladed tools present on the farm, such as knives, scissors, scythes, sickles, or shears.

Class: Modern

Fragments of modern machine-made bottle glass, tin cans, plastic, and pulltabs and crown bottle caps were found. These items all testify to the use of the site in the last half of the 20th century. Included among the artifacts are liquor bottles, a soda or beer can pulltab, a 1961 Eisenhower dime, and a Magicube camera flashcube (produced after 1970). These items indicate the site was occasionally visited by people for historical reasons, but more commonly for recreational activities.

Summary

The Plymouth colonists would have brought with them a traditional English knowledge of outbuilding design, use and palcement. The core outbuilding was the barn, a building that traditionally was used for the storage of only grains with livestock being kept outside in cow or oxen houses or, in the case of horses, stables. The colonists eventually did begin keeping some of their livestck in one of the bays of the barn due to the colder weather in New England versus Old.

The traditional barn form is what we now call the "English Barn". This building was longer than it was wide, with measurements of 30 x 40' being common, with the interior divided into three bays: a central bay or "drive" sometimes accessed by two doors and used for threshing grain, with doors located on either of the eves (the long sides) of the barn, and was the place into which carts loaded with hay or grains were driven into to be unloaded **(Figure 23)**. If the barn was not the "drive-thru" type, the main door was usually located on the north side, with only a smaller personal door being on the south eve. This would have made sense at the Howland Homesite due to the fact that the

planting fields were most probably lcoated to the north of the house. At harvest time, it would be easier to bring the grains to a door that faced that side as well. The width of the barn varied little as the only prerequisite was so that a wagon and oxen could fit within it (if it was that type), but the length varied as to the needs of the farm with extensions easily added to the gable ends. The bays on the right and left, called mows, were used for storing the grains, straw or hay, and possibly livestock. A second story was sometimes later added for the storage of additional grain or hay. Leantos were often added onto the eve sides on either side of the doorways. These could be used for storage or for livestock. This barn form continued in use to the late eighteenth to early nineteenth century. It was eventually replaced with the "New England Barn". In a New England Barn the drive ran from gable to gable instead of eve to eve with stanchions on one side and storage on the other. This form was much more adaptable to increases in production than an English Barn was, as it could be made larger while maintaining ease of accesability by just adding on to one of the gable ends. Another later, 19th century, form of barn was the "bank barn" which was built in to a hillside and thus semi-subteranean.

At harvest time, what the English refered to as corn (wheat, oats, barley, rye) was cut with a sickle or scythe in the fiels and then tied in sheaves and stooked in the field. The sheaves were then transported in an ox driven wagon or cart to the barn. If the farmer was well off, the barn would often have doors on both eves so that the oxen and wagon could be driven into the barn, unloaded, and driven out again without turning around. If the farmer was more of a middling sort, they may have only had a single winnowing door on the north side. In either case, the main door may have had a porch, called a midstay, over the door to keep rain out when grain was being threshed or winnowed. The threshing took place in the winter in the central bay of the barn, which was often equipped with a wood, clay, packed chalk, stone, or brick floor, whicle the other bays would have had earthen floors. Threshing is the action of removing the husks from the grain by means of beating it with a flail. The straw was gathered up and used as winter bedding for animals and the grain was collected and subsequently winnowed to seperate the chaff from the grain. This was done using a winnowing basket and took place either in the yard outside the barn or in the center bay. The barn was situated with the eve, where the main door was, facing the prevailing wind. This allowed the grain in the barn to remain dry and the breeze helped with winnowing. The grain was then stored either in the barn or in the chamber of the house. John Howland's probate indicates that he stored all his grains in his house chamber, so he probably used the barn for hay and straw. It was also common in the north and west country for the barns to be smaller with smaller doors. Crops to be threshed were forked into the barn through doors and small winnowing windows were often present. Generally though, barns did not have windows until after 1800.

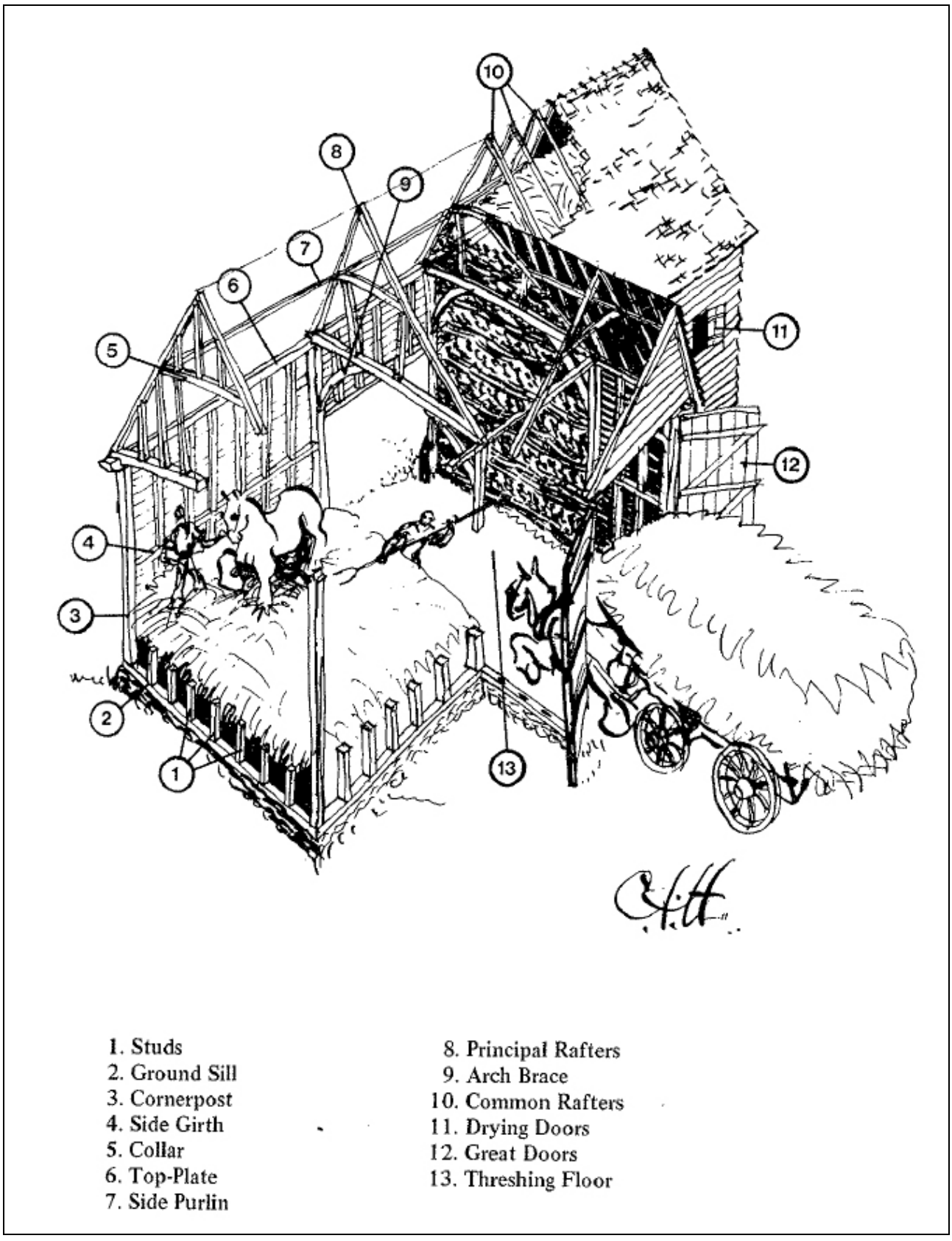

Figure 23. Typical Englsih Barn (From *The Essex Countryside Historic Barn: A Planning Appraisal*, County Planner, 1979)

In Plymouth Colony, there is considerable evidence in the deed and probabte records for the commonality of cowhouses that were seperate from the barn, making it most likely that the barn continued its traditional use as a grain processing and hay and straw storage facility. Cowhouses appear in deeds and probates in the 1640s to 1660s:

Table 5. Cowhouses in Plymouth Colony Records

Name	Date	Town	Record Type
Andrew Hallet to Daniel Wing	July 28, 1640	Sandwich	Deed
William Kemp	Sept. 23, 1641	Plymouth	Probate
John Roe to William Brown	Dec. 27, 1642	Duxbury	Deed
Samuel Fuller to Peter Collymore	March 25, 1650	Scituate	Deed
Robert Stetson to Humphrey Johnson	Oct. 13, 1651	Scituate	Deed
William Bassett to John Sprague	Nov. 8, 1666	Bridgewater	Deed

William Kemps's 1641 inventory even lists the contents of the cowhouse: 5 goat skins and a seine net. Evidence is also present for the storage and processing of grains in the barn. When Richard Church Sr. Sold his house and farm situated on the Eel River in Plymouth to Robert Bartlett in April of 1649, Church stipulated that he be allowed to harvest his corn from the field and to thresh it in the barn. Evidence for the storage of grains in the barn comes from a 1650 court case where Thomas Sherves is presented to the Plymouth Court for pilfering corn from Richard Sparrow's barn. The corn was probably not Sparrow's as he was also presented for covering up the crime. By far the best evidence for the storage or grains in the barn, as well as a nice list of what else was stored in the barn, comes from William Kemp's 1641 inventory. In this document, it is recorded that the inventory takers found the following non-edible items in the barn: a steel mill, samp mortar, bushel [basket], sack cloth and 2 sacks, copper with a wooden curb, 2 hogsheads, 2 barrels, 4 pitchforks, 2 rakes, and glass lead as well as rye, summer wheat, peas, and Indian corn.

When Sidney Strickland attempted to reconstruct what John and Elizabeth Howland's houselot would have looked like, he based his knowledge on a limited number of reference works on 17th century agriculture and architecture that were available at the time and, most importantly, on what he saw archaeologically. He envisioned a houselot composed of a series of outbuildings that provided support for the main house, with the house, barn and garden all surrounded by a stout fence that would keep out unwanted wild and domestic animals **(Figures 24 and 25).** While some of his interpretations (John and Elizabeth's House) have stood the test of time, others (the "dew pond") have been reinterpreted as a result of more extensive excavation. Strickland interpreted the building that he had found to the southeast of the house as a barn, but, because of the limited amount of comparative and historical research available at the time, he reconstructed it as more of a typical "New England" barn with an entrance on the gable end versus the eve **(Figure 24).** He also justified this by interpreting what he felt was a paved area to the immediate west of the building as a paved entrance area leading into the barn, meaning, in his mind, that the entrance had to have been on the west side.

In reality, the building probably looked more like the traditional 17th century English Barn that all the colonists would have been familiar with **(Figure 26).** The building probably had its main door on the north side, the side facing the fields, and a smaller access door on the south side. The central bay would have been used for threshing grain and probably had a wooden floor while the east and west bays may have had earth or gravel floors. The building Strickland found and which we

conducted our limited investigation on in 2016, may have been the same one built by Jenney and sold to the Howlands in 1638, a fact that may be supported by the possible postholes that were identified this year. The building must have been important to all the Howlands living in the area as it appears to have been upgraded in the late 17th century following John's death, probably by Joseph, who may have begun using it only as a threshing building, possibly converting the west bay into a threshing floor by adding the packed clay we found.

One of Strickland's interpretations that has not changed is that John Howland created an ordered farm lot with multiple support buildings. The 2015 excavations resulted in the identification of one rectangular outbuilding in the south yard, oriented with the original Howland House. The 28 x 15' structure appears to have a doorway on the west side, opening into the farmyard.

The arrangement of the service buildings at the Howland Homestead would be expected to follow the same traditions seen in England, being linked to function, farm size, land use, terrain, weather, and location. More importantly than any artifacts that we found in 2015, the identification of a second outbuilding south of the one found by Strickland, shows us that John Howland was arranging his farmyard in what may have been a typical pattern in the Huntingdonshire region where he came from. This region is well known for its mixed economy of sheep and corn, with barley forming an important crop. Farmers in this region commonly arranged their farms in what is called a loose courtyard plan. The Loose Courtyard plan has all of the buildings focused on one or all sides of a yard sometimes with a scattering of other buildings nearby. This is commonly the result of incremental development of the farmyard with the addition of new buildings as needed. It can also be purposefully designed from the start in areas of intensive livestock farming. Examples of farm buildings on one or two sides of the yard are commonly found in pastoral areas across England.

If further excavations on the west side of the yard identify more 17th century buildings, we may have to revise this farmyard plan to a regular or full courtyard with the implication being that he was a higher status farmer who was very interested in organizing his yard to the best and most economical use of the space he had.

It is recommended that further work should be carried out to identify the complete extent of the possible barn and to investigate the possibility that the building was of earthfast construction.

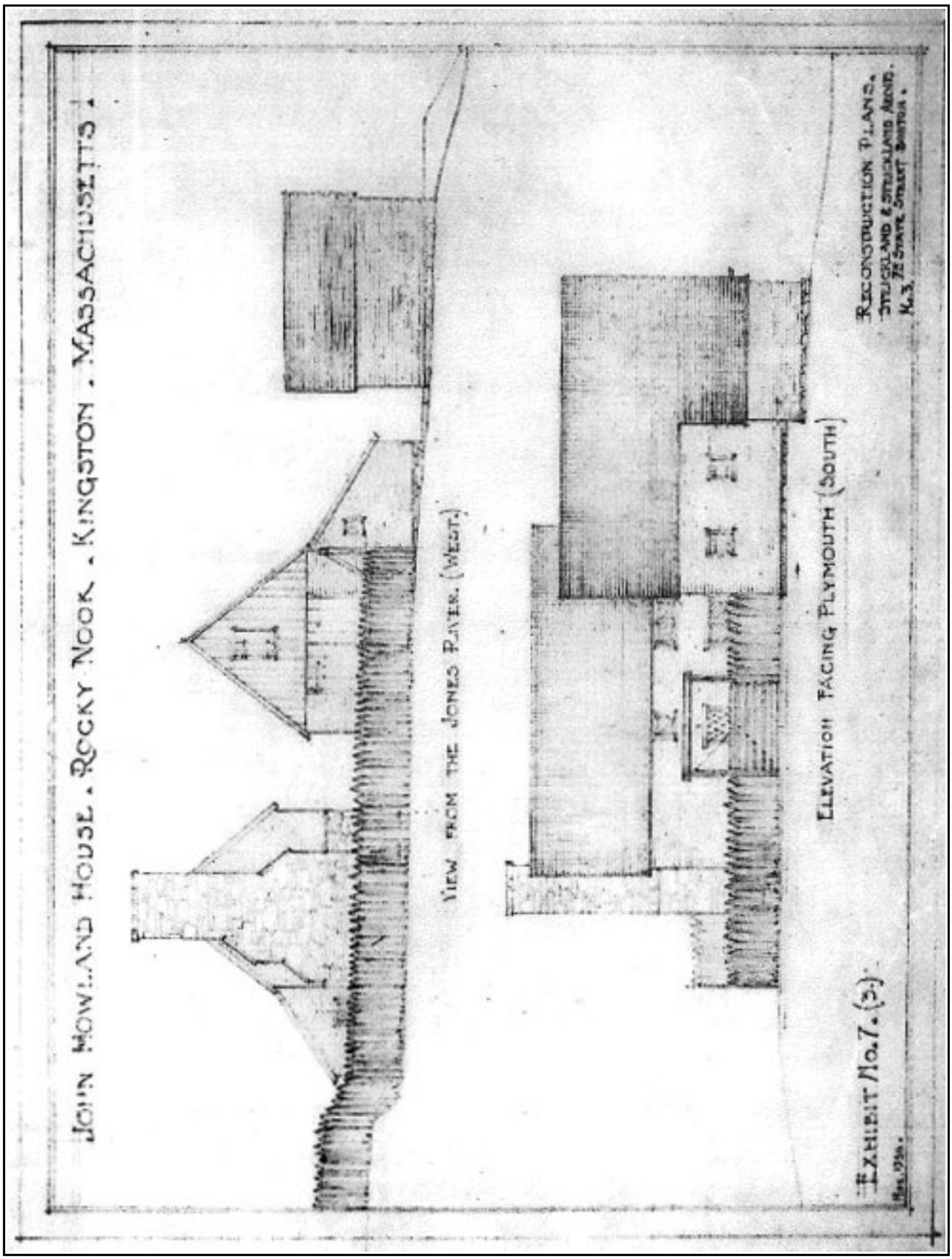

Figure 24. Strickland drawing of Howland House and outbuildings

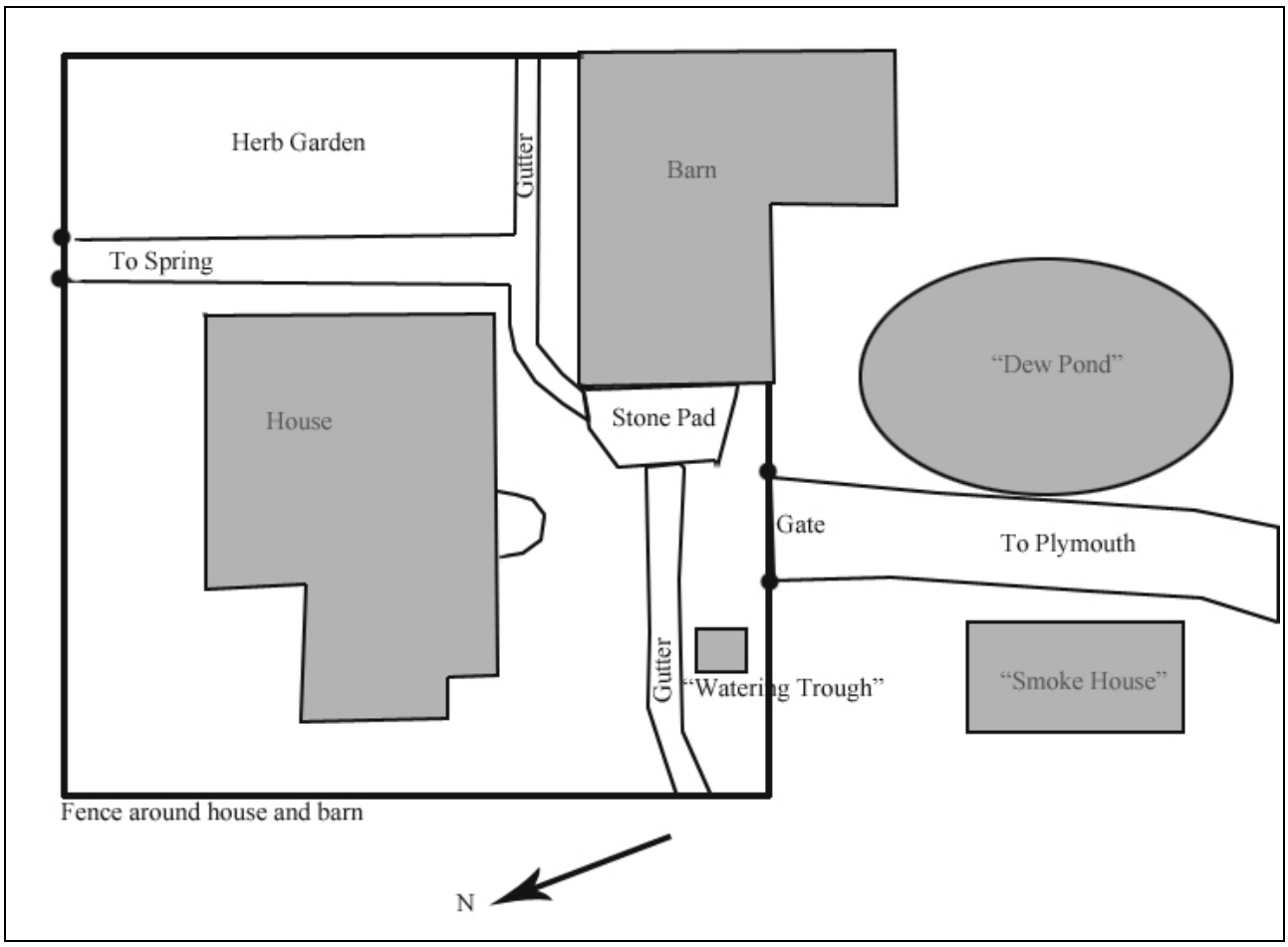

Figure 25. Stylized layout of Strickland vision of the Howland Homesite lot

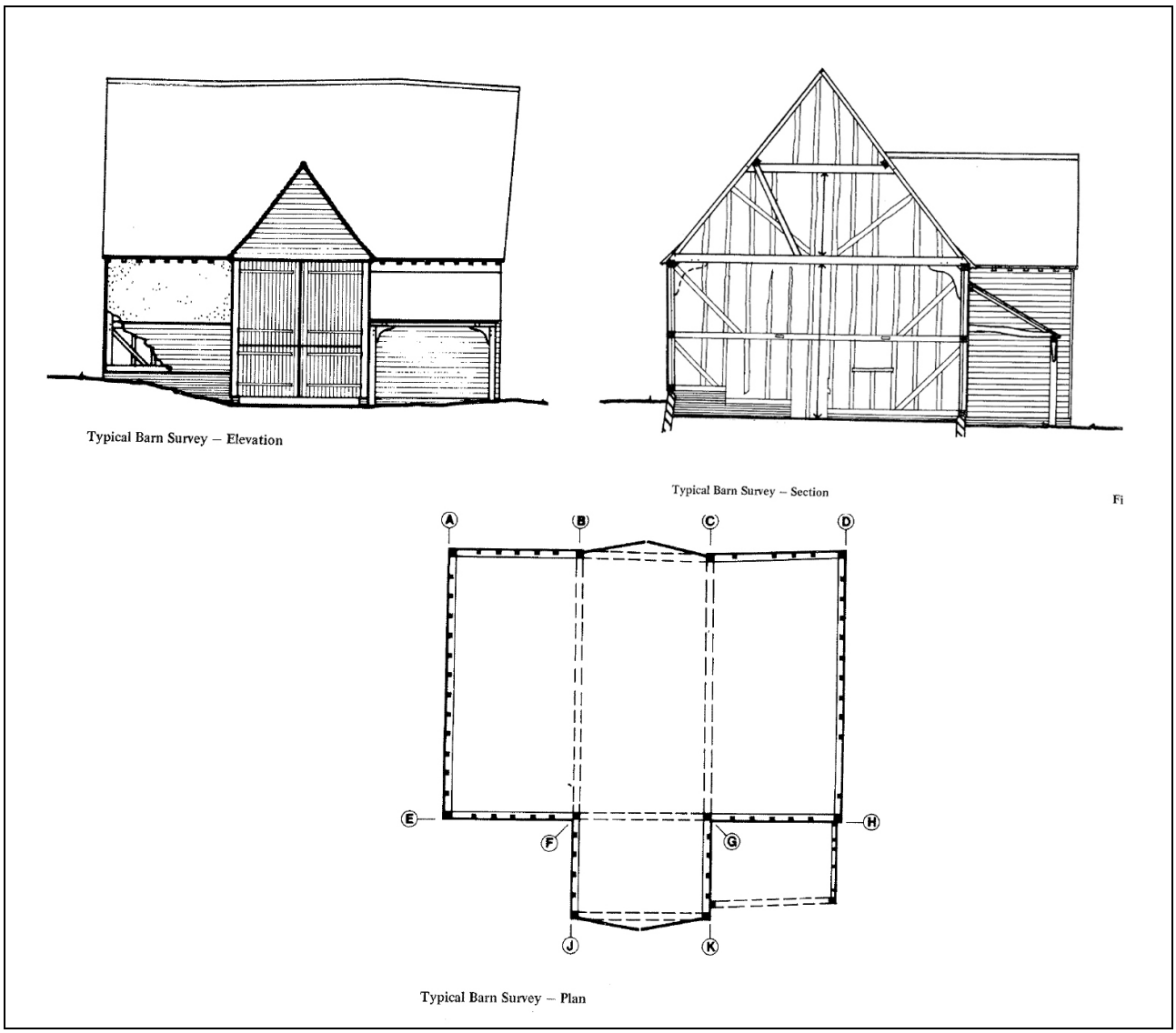

Figure 26. 17th century English barn eve and gable profiles and floor plan (From *The Essex Countryside Historic Barn: A Planning Appraisal*, County Planner, 1979)

APPENDIX A
Artifact Catalog