

**REPORT ON
SITE EXAMINATION
FIELDWORK AT THE
SECOND MEETING HOUSE SITE.
IN DUXBURY, MASSACHUSETTS**

Prepared for

Duxbury Rural and Historical Society
and the
First Parish Church, Duxbury, Massachusetts

By

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I. GENERAL INFORMATION.....	1
III. RESEARCH DESIGN.....	3
A. Statement of Purpose.....	3
B. Proposed Field Methods and Expected Results.....	4
1. Environmental Context.....	4
2. Prehistoric Context.....	5
Paleo Period 13,000-10,000 BP.....	6
Early Archaic 10,000-8000 BP.....	7
Middle Archaic 8000-6000 BP.....	8
Late Archaic 6000-3000 BP.....	8
Early Woodland 3000-2000 BP.....	17
Middle Woodland 2000-1200 BP.	18
Late Woodland 1200-500 BP.....	18
Contact.....	19
a. Known Prehistoric Sites.....	20
b. Prehistoric Archaeological Potential.....	21
3. Historic Context.....	22
a. Known Historic Sites.....	24
b. Historic Archaeological Potential.	24
4. Documentary Research.....	25
a. First and Second Meeting House.....	25
b. Archaeological Excavations of Meeting Houses in Massachusetts.....	28
5. Field Methods.....	29
a. Theory.....	29
b. Method.....	30
c. Mapping.....	30
d. Testing Strategy.....	30
C. Laboratory Processing and Analysis.....	32
D. Report	32
E. Justification for Field Investigations.....	33
III. RESULTS OF THE SITE EXAMINATION.....	34
A. GPR Survey.....	34
B. Testing Summary.....	34
Artifacts.....	37
Prehistoric Evidence.	40
Lithic Materials Recovered.....	42
Argillite.....	42
Cryptocrystalline Silicates (Chert).....	42
Felsites/ Rhyolites.....	43
Volcanics (Jaspers).....	43
Crystalline Silicates (Quartz and Quartzite).	44
Historic Artifacts.....	47
Eighteenth Century Ceramics	47
Nineteenth Century Ceramics	51
Eighteenth Century Non-Ceramics.....	53

Nineteenth Century Non-Ceramics.....	54
Twentieth Century Non-Ceramics.....	55
Second Meeting House Architectural Evidence.....	56
Artifacts.....	57
Bricks.....	57
Mortar and Shell.	58
Architectural Granite.....	59
Hand-Wrought Nails.....	60
Flat Glass and Window Leads.....	61
Other Architectural Artifacts.....	61
Architectural Anomalies.....	61
Post Holes	62
Foundation Trenches.....	64
Research Questions.....	65
IV. CONCLUSIONS AND RECOMMENDATIONS.....	67
REFERENCES CITED.....	70
APPENDICES	78-138
ARTIFACT CATALOG.....	139-163

LIST OF APPENDICES

Appendix A Project Maps and Figures.....	78
Project Map 1: Topographic map showing project location (Duxbury Quadrant).....	79
Project Map 2: Plan showing areas that were excavated during 2008 Site Examination.....	80
Project Map 3: Project plan showing numbered excavation areas.....	81
Project Map 4: Project plan showing numbered testing sections.....	82
Project Map 5: Major feature locations.....	83
Project Figure 6. Plymouth Second Meeting House 1683-1744.....	84
Project Figure 7. Top Old Ship Meeting House Hingham; Bottom Chestnut Hill Meeting House, Millville, Ma.....	85
Appendix B Historic Maps Showing Project Area.....	86
Map 1: Second meeting House Site shown 1795 map of Duxbury.....	87
Map 2: Second meeting House Site shown 1833 map of Duxbury (North to top).....	88
Map 3: Second meeting House Site shown 1877 map of Duxbury (North to top).....	89
Map 4: Second meeting House Site shown 1879 map of Duxbury (North to top).....	90
Map 5: Second meeting House Site shown 1893 map of Duxbury (North to left).....	91
Map 6: Second meeting House Site shown 1941 map of Duxbury (North to top).....	92
Appendix C Ground Penetrating Radar Survey.....	93
GPR 1: Ground penetrating radar machine.....	94
GPR 2: Scan results at 6 inches below surface (Red dis high resistance, black is lower resistance).....	95
GPR 3: Scan results 12-18 inches below surface (Red and black areas of lower resistance, everything else higher resistance).....	96
Appendix D Artifact Distribution Maps.....	97
Distribution Map 1: Quartz Distribution.....	98
Distribution Map 2: Rhyolite distribution.....	99
Distribution Map 3: Clay tobacco pipe distribution.....	100
Distribution Map 4: Brick distribution.....	101
Distribution Map 5: Hand-wrought nail distribution.....	102
Distribution Map 6: Aqua to dark aqua (old) glass distribution.....	103
Distribution Map 7: Clear to light aqua (recent) flat glass distribution.....	104
Appendix E Artifact Photographs.....	105
Artifacts 1: Prehistoric bifaces (top), core (bottom left) and possible scrapers (Bottom right). 106	
Artifacts 2: Saugus Jasper uniface (Top), Projectile point tips (Bottom).....	107
Artifacts 3: Projectile points.....	108
Artifacts 4: Top eighteenth century ceramics (Top Creamware; Bottom Left to Right-Westerwald, Slipware, White Salt-Glazed Stoneware, Redware); Bottom Left Yellowware, Right Transferprinted Whiteware.....	109
Artifacts 5. Clay tobacco pipes (Top pipe fragments recovered from Site Examination testing; Bottom pipe style identified.....	110
Artifacts 6: Eighteenth century vessel glass (Top left lead glass base, Right possible case bottle); Cuprous artifacts (Bottom left to right: Shoe buckle, strait pin, stamped button, flat punched fragment).....	111

Artifacts 7: Eighteenth century munitions related artifacts. Top: lead musket ball, lead waste; Bottom: English flint fragment.....	112
Artifacts 8: Top blue glass bead, Bottom Iron punch.....	113
Artifacts 9: Top Dr. Gorham's Gray Hair Restorer; Bottom 1900 Indian Head cent.....	114
Artifacts 10: Representative brick. Top sand struck side, bottom organic impressions.....	115
Artifacts 11: Top Shell-tempered mortar; Bottom Window glass, lead kames (Curved glass on left and second from right).....	116

Appendix F Excavation Plans and profiles.....117

Field Work Plan/ Profile 1: S18.5 W04 Roadway Section.....	118
Field Work Plan/ Profile 2: S33.5 W02 Roadway Section.....	119
Field Work Plan/ Profile 3: S17.5 E5.5 19th-20th century post hole/ trash pit.....	120
Field Work Plan/ Profile 4: S26 E02 Plan at 30 cmbs and East Wall profile.....	121
Field Work Plan/ Profile 5: S20 E00 Plan at 20 cmbs.....	122
Field Work Plan/ Profile 6: S20 E00 Plan at 30 cmbs.....	123
Field Work Plan/ Profile 7: S21 E01 Plan at 35 cmbs and East Wall Profile.....	124
Field Work Plan/ Profile 8: S23.5 E04 plan at 30 cmbs and North Wall profile.....	125
Field Work Plan/ Profile 9: S26.5 E05 plans at 23 and 35 cmbs East Wall profile.....	126
Field Work Plan/ Profile 10: S20 W02 plan at 20 cmbs.....	127
Field Work Plan/ Profile 11: S20 W05 plan at 20 cmbs.....	128
Field Work Plan/ Profile 12: S25 W05 plan at 15 cmbs.....	129
Field Work Plan/ Profile 13: S30 W05 plan 20 cmbs.....	130

Appendix G Excavation Photographs.....131

Field Photograph 1: S17.5 E5.5 19th-20th century post hole/ trash pit.....	132
Field Photograph 2: Possible 19th-20th century roadway sections Upper left S18.5 W04 plan at 21 cm; Upper right S18.5 W04 Plan and profile 26 cm; Bottom S33.5 W02 plan at 20 cm.....	133
Field Photograph 3: S20 E00 plan at 23 cm.....	134
Field Photograph 4: S20 E00 post holes Upper S20 E00 post hole West wall profile; Lower S21 E01 east wall profile.....	135
Field Photograph 5: S26.5 foundation trench and post hole Upper Left S26.5 E05 foundation trench plan at 25 cmbs; Upper Right S26.5 E05 post hole plan at 35 cmbs; Bottom S26.5 E05 east wall profile.....	136
Field Photograph 6: S26 E02 post hole North wall profile.....	137
Field Photograph 7: Possible foundation trench sections Upper S25 W05 plan at 20 cmbs; Lower S30 W05 plan at 20 cmbs.....	138

I. GENERAL INFORMATION

The Duxbury Rural and Historical Society (DRHS), a private non-profit organization in Duxbury, Massachusetts, owns and maintains several pieces of property within the Town of Duxbury. One of these parcels is the presumed location of the Second Meeting House built in the town (1708-1785) (Appendix A-1 and 2). The site is located adjacent to the east of the Myles Standish Burying Grounds (America's oldest maintained cemetery), which is also the site where it is believed that the first meeting house (1638-1708) stood. The DRHS is a non-profit organization seeking to foster a better understanding of the heritage and rural environment of Duxbury, Massachusetts. The Society's goals are to provide access to its buildings and lands, to provide educational programs for the community, to collect, preserve and exhibit artifacts relating to Duxbury's history, to provide a library and archives for the encouragement of scholarly research and to publish documents of historical interest. To these ends, the DRHS, in partnership with the First Parish Church, hired the Plymouth Archaeological Rediscovery project to conduct Site Examination testing at the presumed location of the Second Meeting House. The excavations were carried out from October 6 to 18, 2008 and involved extensive public and volunteer participation in carrying out the fieldwork portion of the project. Over 300 individuals from ages 6 to 80 participated in the excavation, screening and processing of the finds from the field work.

The purpose of the Site Examination was to obtain a preliminary assessment of the site's integrity, research potential, and significance, to make an opinion of the potential eligibility for inclusion in the National Register (950 CMR 70.04:17). The DRHS wanted to know what they are maintaining and whether it was eligible for inclusion on the National Register. Dorothy Wentworth, noted Duxbury historian, stated in her seminal 1973 work *Settlement and Growth of Duxbury 1628-1870*, that "There has always been a great deal of speculation and disagreement as to the exact spots where the first two Meeting Houses were, but the sites now marked are near enough for all general purposes." (Wentworth 1973: 21). As a result of the 2008 fieldwork at the Second Meetinghouse site, we can now say with certainty where the second meeting house was located.

Many of the 17th and 18th century records of land transferances etc. use the meeting house or the path to the meeting house as one of their reference points. In order to better ascertain the locations of the potentially significant 17th and 18th century historic sites in Duxbury, a confirmed reference point is critical. By being able to determine that the site contains evidence of at least one of the meeting houses, the Town of Duxbury is now better able to predict where other significant sites are in the town and then, in the face of increasing developmental pressures, is better prepared to moderate development, potentially being able to better preserve and conserve those potentially significant sites. Background research was conducted to place the project area within a context of the history of the Town of Duxbury as well as within the context of the history of the property.

The Second Meeting House Site is also located directly across Chestnut street from the Howland Orchard prehistoric site, and is within the bounds of another potentially significant Early Archaic to Woodland period site (19-PL-399). Both of these sites were identified, collected at and, at least in the case of the Howland Orchard Site, excavated by avocational archaeologists and the artifacts are in private individuals hands. In the case of the Howland Orchard site, a Middle Archaic to Late Woodland site containing significant subsoil features and a shell midden, the artifacts were kept by individual excavators and the only field report on the site was an abbreviated article in the Bulletin of the Massachusetts Archaeological Society. Site Examination testing also provided a better understanding of the prehistoric occupations of this area and provides a fuller contextual understanding

for the materials excavated from the two previously identified sites.

Archaeological Site Examination testing sought:

- to determine the presence or absence of potentially significant prehistoric or historic archaeological resources, including those possibly associated with either the first or second meeting house(s)
- to determine site boundaries based on archaeological testing, topographic features and historic records
- to provide a better understanding of the context of the prehistoric occupation and utilization of this portion of Duxbury
- to provide a preliminary assessment of the site's integrity, research potential, and significance
- to make an opinion of the potential eligibility for inclusion in the National Register

As a result of the Site Examination testing, all of these goals were met and a significant historical archaeological site was identified by the community of Duxbury and the all the volunteers who worked to make this project the success that it was. The individual volunteers were the ones who made the discoveries at the site and they are the ones who should be credited with the excellent archaeology that came out of this project. The following is the report on the Site Examination testing at the Second Meeting House site in Duxbury, Massachusetts.

II. RESEARCH DESIGN

A. Statement of Purpose

The Duxbury Rural and Historical Society (DRHS) owns the location of the Second Meeting House built in the town (1708-1785) which is located adjacent to the east of the Myles Standish Burying Ground. Before the separation of Church and state in 1833, the meeting house was the church and the state. It was the location of the Sabbath meetings and the annual court sessions “This one building dominate and focused the entire life of the community....It was an edifice neither sacred nor purely secular, but appropriate for any honorable service.” (Sinnott 1963: 5). Meeting houses were usually situated near the center of the community, within easy reach of all inhabitants during all seasons. They were often placed upon what would become a “meeting house hill”, a higher elevation which, in the earliest periods offered a commanding view and strategically defensible location, and which later allowed the town's people to show their pride in the work of the construction and to offer the delight of lifting up ones eyes to the simple design of the meeting house, the focal point of the community's existence (Sinnott 1963:9). Edmund Sinnott, in his *Meetinghouse and Church in Early New England* (1963), concisely described the role of the meeting house in New England as “...a fortified place of refuge against Indian attack, and in quieter times it served as a storehouse for the common supply of the munitions of war. It was the center of public intelligence, where notices were posted and proclamations were read, and in its shadow stood the implements of New England retribution, the whipping post and the stocks.” (Sinnott 1963:6). What traces archaeologically would left from the use of such a structure? That was one of the research questions of this project.

Meeting house construction in New England went through four stages of design evolution. The changes in meeting house design appears to mirror changes that were occurring in the larger American culture and mirrored the changes in social and religious life (Sinnott 1963:15). The first stage was the initial construction period of the seventeenth century into the early eighteenth century (1620-1720). Meeting houses constructed during this period were the ones initially built when a town was settled. These framed and boarded structure varied considerably in plan an dimensions. By the middle of the 17th century a clear pattern had evolved, one which consisted of square or nearly square structure with entrances on three sides and a height sufficient to accommodate a gallery on three sides. The building was surmounted by four steeply sloping roof sides and was often surmounted with a centrally placed turret or cupola. Generally, two rows of windows illuminated the unheated interior, one row for the ground floor and one for the gallery. A single pulpit window, usually differing in size, shape and position from the other windows, was located directly behind the pulpit. The pulpit was located directly opposite the main door of the meeting house and was connected with the door by a wide aisle or “broad alley” (Sinnott 1963:16). The pulpit was raised high enough so that the minister could peer directly into the faces of those in the upper gallery. The buildings frame was usually oak, mortised, tenoned, and pegged. This frame was covered with planked walls, that were clapboarded without and either roughly plastered or clapboarded within. Backless benches occupied the floor space and a rigid seating arrangement was enforced. The minister's family received the best seats located directly at the foot of the pulpit stairs, while the foreseats were assigned to the “best people” because it was believed that just as some seats were better, so were some people (Sinnott 1963:7). Men were generally seated on one side and women on the other, single young men and women and possibly persons of color were seated in the galleries. This older more medieval form of meeting house went out of style in England after the Great Fire of London in 1666. An example of this type of meeting house in America is the Old Ship meeting house in Hingham, built in 1681.

The history of the Old Ship meeting house closely parallels that of the Second Meeting House in Duxbury and so the Old Ship Meeting House deserves further discussion. The Old Ship meeting house is the best example of a first period meeting house in New England. The existing building was constructed in 1681 and replaced an earlier meeting house built in 1645. The dimensions are 55 x 45' and it is 21' high at the eaves. The longer dimension is on the east and west sides, the entrance is on the south side and the pulpit is on the north side. Two other entrances are located on the east and west sides. The windows are diamond shaped panes set in lead kames and there is no plaster on the interior, only clapboards. When it was built, there were 350 people in the congregation. Seating was arranged in order of age, wealth and dignity with men on the west side and women on the east, young men and maids were in the gallery (Sinnott 1963: 33). Below, in front of the pulpit, at the end of the broad alley, were two seats for elders and immediately in front of these seats were the seats for the deacons. The front benches were assigned to the esteemed members of the congregation, esteem here meaning highest tax payers and people of prominence such as ship captains (Sinnott 1963: 33). The Old Ship was not a static structure, it grew and changed as its congregation did. In 1730 the north wall was pushed out 14' and in 1734 it was plastered for the first time. In 1755 the south wall was pushed out 14' making the structure 73' x 55' with the longest dimension now north to south. Eventually permission was granted to replace the original benches with box pews and two rows or pews were built on four sides. These were sold at public auction. They were described as having smoothly paneled sides and gracefully turned spindles supporting the rail. Benches remained in the central body of the meeting house (Sinnott 1963: 33).

By the early 18th century a new form of meeting house was becoming popular. The rise and spread of this form has been attributed partially at least to the Great Awakening which tended to increase church membership and attendance. As a result of the increasing town populations and service attendees, a elongated rectangular structure was developed with a two sided steep-pitched roof (Sinnott 1963:18). A bell tower could be added onto one of the shorter ends and the main door was in the middle of the long side, often entering through a porch, doors were also often located on each of the two narrow ends (Sinnott 1963:18). Interiors remained simple with the pulpit now being located opposite the main door with a sounding board often being located above it. These meeting houses were almost barn-like in their appearance and had little external ornamentation. An example of this type of meeting house is the Old South Meeting House in Boston, built in 1729.

The third type of meeting house design emerged after the American Revolution. This design made the steeple an integral part of the building, the entrance was moved to one narrow end and the pulpit was on the other. This design has been identified variously as Late Georgian, Post-Colonial, Renaissance, and or Federal style (Sinnott 1963:23). The fourth style of meeting house emerged after 1840 and can be termed neo-Gothic (Sinnott 1963:26).

B. Proposed Field Methods and Expected Results

1. Environmental Context

The Town of Duxbury is located in Plymouth County. It is 33 miles south of Boston and is bordered by Marshfield to the north, the Atlantic Ocean to the east, Kingston to the south, and Pembroke to the west. The topography of Duxbury is divided between more rugged upland terrain with gravelly and rocky soils in the western part of the town and lowlands in the east.

The underlying bedrock geology of the town consists of granitic schist and gneiss of Proterozoic Era (2500-542 million years ago) origin. Outcrops of granite occur in the western part of the town especially at the intersection of Franklin and Temple Streets. Two principle classes of Wisconsinian Stage glacial deposits overlay the bedrock. The first are poorly sorted till deposits composed of relatively packed silt and clay. These occur in locations such as Powder Point, Standish Shores and the Phillips Brook lowlands. Stratified drift deposits are the second type. These soils form the aquifer for the town and occur in the central, southeastern and eastern portions of the town. One other isolated deposit is a fossil lake bottom at Bay Farm. This lake bottom deposit is composed of clay and compressed material, making it of no residential use but providing a reliable source for clay.

Soils in the town are primarily of the Scituate-Essex-Merrimac variety or Hinckley-Merimac-Muck type. Only 3% of the soils are Hinckley-Carver associated. Generally these soils are well-drained to excessively well-drained and occur on level to very steeply sloped areas. Carver soils are present in the project area. Soils at the project area are all Carver coarse sand on 3-8% slopes. Carver soils consist of very deep extremely drained sandy soils that are ill suited for agricultural use, due to their permeability. Rocks found in this series range from fine gravel size to stones and generally average less than 10% of the composition of the soil.

The project area is located at the head of Morton's Hole, a salt water bay. A small unnamed fresh water stream is located approximately 500 feet to the south of the project area and Island Creek is located within one half of a kilometer to the west.

2.Prehistoric Context

New England's prehistory is poorly understood relative to that of other regions in North America. For most of the prehistory in the region, river drainages such as the Jones River in kingston, defined physiographic units within which human communities operated. This pattern follows from the longitudinal diversity of habitats that occur along drainages, forming ecologically unique wetland habitats, together with the transportation routes afforded by their watercourses. In the clearest examples, rivers provide access to maritime and upland resources at each end of the drainage, and to the diverse habitats in between. The exploitation of those habitats can be integrated into a seasonal round that differs at various historical moments.

The prehistory of southern New England is divided into seven periods, each identified by characteristic styles of projectile points, pottery and other artifacts. These periods are the Paleoindian (10,500-9000 BP), Early Archaic (9000-8000 BP), Middle Archaic (8000-6000 BP), Late Archaic (6000-3000 BP), Early Woodland (3000-2000 BP), Middle Woodland (2000-1000 BP) and Late Woodland (1000-350 BP). In addition to their artifacts, the periods are characterized by changing patterns of site location, activities and size. The final report for this project will contain a more detailed discussion of the prehistory of Massachusetts and how any prehistoric archaeology uncovered in the project area or immediately around it, relates to larger trends that have been observed regarding the Ancient native American settlement of New England.

New England has a rich and extremely interesting Pre-Contact period. Archaeology has contributed a great deal to our understanding of the Native history of New England, without it our picture of the past would, unfortunately be only a sketch. Unfortunately, archaeology can only give us only a bare bones look at the lives of the people who have lived in New England in the Pre-Contact past. We can never

answer questions like what was a man thinking when he made a certain projectile point style, or what did a woman think about when she made a pot. We can only theorize and guess at these sort of details. But through archaeology, we have been able to learn when people first arrived in Southeastern Massachusetts and how they made a living.

Because archaeology relies on the material that is recovered from the soil, we are limited to how much we can ever really know about the most ancient people. So we must try to say something archaeologically meaningful from the scant bits of evidence that have survived. Unfortunately, the farther back in time we travel, the more scarce our evidence becomes. This is due to the fact that there were less people in the area in the past and some sites have been flooded by rising sea levels. Bearing this in mind, the following is a sketch of what happened in the past, always being added to and never complete.

Paleo Period 13,000-10,000 BP

Although there is new research being conducted all the time, the present theory is that the people who first settled in New England arrived in the New World during the end of the Wisconsin ice age, approximately 13,000 years ago. Before this time, New England and much of the northern half of the United States was covered by a mile and a half thick sheets of ice called glaciers. Ice ages are part of the Earth's natural warming and cooling cycle. Approximately 60,000 years ago for some unknown reason, the temperature dropped on Earth just a few degrees, just enough to cause the glaciers and ice caps located at the north and south poles to begin removing water from the oceans and growing. By approximately 20,000 years ago the edges of the northern ice sheet had reached its maximum extent, present day Martha's Vineyard and Nantucket, and began to recede. As the glaciers melted, they dropped millions of tons of sand, gravel and boulders that had accumulated during their journey southward. All this material, the moraine and outwash soils, became the sandy hills, the drumlins, eskers and kames, and basically all the lower layers of soil that make up our landscape today. Mixed in with the moraine and outwash were glacial erratics, these are the large boulders, like Plymouth Rock, that dot our landscape today.

Following the retreat of the glaciers, the climate in southern New England was a southern tundra. It was cold, windy and barren and covered with large areas of wetlands. Scattered intermittently across the landscape were patches of grasses, shrubs such as sedge, alder and willow, and small stunted trees including spruce followed by birch and pine. There was also a lot more landscape than there is today because the oceans were approximately 300-400' feet lower than they are today. In New England, this meant that the coastline was up to 50 miles to the east of its present position. This left exposed large portions of land, like George's Banks, that are today underwater. The islands that we see today in many coastal harbors, were at this time hills on a barren landscape and many of the rivers that we know today were nothing more than springs or small streams.

The types of animals that were present at this time included some of the smaller species such as foxes and rabbits, but megafauna were also present. Megafauna is a term that describes the large breeds of animals that were present in New England after the last ice age. These included the mammoth, which existed on the tundra, the mastodon, which lived in the early forests, the horse, which later became extinct and was reintroduced by the Spanish in the 1500s, bears like the large Kodiak variety, beavers up to 6' long, bison, elk, caribou and musk ox, which disappeared fairly early.

In southeastern Massachusetts, sites that date to this period have been encountered in Plymouth on the Eel River and on the coast in Marshfield.. At these sites, the evidence of people living here after the last ice age has consisted predominantly of stone projectile points of a variety called the Paleo or fluted point. These points were generally made from exotic materials that were carried in by the inhabitants as they traveled from the west. These materials predominantly very fine grained stones including cherts from New York and Maine and jaspers from Pennsylvania. Population densities have been estimated at approximately 5-12 people per 100 square kilometers. These people made their living by hunting and possibly scavenging the carcasses of the megafauna. They also hunted smaller game such as rabbits and they may have fished on the coast. The populations in New England at this time may have numbered no more than a few hundred. These people lived in small groups and traveled seasonally. They probably were not nomadic, but were following seasonally migrating herds. Paleo sites are often located on hilltops overlooking plains or were high on the shores of glacial lakes.

By the end of the Paleo Period the environment in New England was stabilizing and life ways were becoming fairly distinct. The megafauna were extinct by 10,000 years ago, probably due to a combination of hunting by the first settlers and climactic change. the forests were beginning to change to more pine and nut bearing hardwoods which created new habitats for animals and new food sources for people. While the Paleo Period can be seen as a time of initial colonization, the next period, the Early Archaic, can be viewed as a time of settling in and accommodation to life in New England.

Early Archaic 10,000-8,000 BP

The extinction of the megafauna and the changing climate led to a revamping of the Paleo-Native way of life around 10,000 years ago. The environment in the Early Archaic had warmed slightly and as a result, trees such as oaks, pitch pines, beeches and hazel began to flourish. It was during this time that the major rivers that are around today began to form as well and into these rivers anadromous fish species like salmon and herring began to run. This would have provided another food source for the inhabitants of New England. As New England began to become more forested, new mammalian species also would have moved into the area. These species would have included black bear, deer and moose.

The Early Archaic is one of the little understood periods of New England prehistory. Early Archaic sites tend to occur on a wide range of settings including hillsides with slopes over 15 degrees and hill tops. Some sites are situated on the same locations as Paleo sites while others appear alone in the landscape. Homes at this time have been theorized as being either of a longhouse shaped, as have been identified in Taunton, Massachusetts at the Titicut site, or as small pits dug into the sides of hills as have been identified in Connecticut and northern Massachusetts. It is unknown if the two forms of houses occurred simultaneously, were seasonally determined or represent different building traditions by different populations.

Evidence of the Early Archaic peoples' process of "settling in" is evidenced in their use of local volcanic materials such as rhyolite and felsite for tools and projectile points and their possible use of quartz for quick, expendable tools. Hunting during this period may have taken the form of spear throwing with the use of the atl-atl, a weighted stick that was held in the hand onto which a long spear was placed and launched from. The atl-atl was basically an extension of the thrower's arm and it effectively increased the distance, force and accuracy of the throw.

Middle Archaic 8,000-6,000 BP

While the Early Archaic was a time of transition from the paleoindian nomadic way of life to a more sedentary and permanent situation, the Middle Archaic can be seen as a time of more normality and permanency. It still was a time of many changes though. Oceans remained approximately 29 feet lower than they are today but the rate of rise had slowed enough for estuaries to begin forming. the formation of estuaries led to the establishment and proliferation of shellfish beds. Shellfish first settled in the warmer southern waters and eventually moved northward as the sea level rise slowed and waters warmed.

By 7000 years ago, forests with the same basic composition as today began to be established. The use of heavy stone woodworking tools such as axes, adzes and gouges increased during this period, possibly indicating the construction of log canoes or at least an increase in woodworking. Evidence for hunting using atl-atls first appears at this time as well. In fact, the oldest burial in New England, 7500 years ago, was located in Carver, Massachusetts and contained two atl-atl weights of the whale-tail variety. Sites from this period are fairly common, indicating that people had begun to spread out over larger areas. It also indicates that there may have been more people in Massachusetts than before.

Late Archaic 6,000-3000 BP

The Late Archaic represents the period with the most identified and recorded archaeological sites in Massachusetts. This has been interpreted by many as indicating a very large number of people living in our area during this period, although archaeologists are not sure why this happened. The case may also be made that this proliferation of stone tools and sites may be more related to a wider variety of stone tools being manufactures for specific purposes and a wide variety of habitats being exploited as opposed to a population boom. The Late Archaic is also a time of greater diversification and specialization than was evident in the earlier periods. The tool kits of the people living on the south coast and its coastal forests differed from that of the people in Maine and further north. this in turn was similar but distinct from the inhabitants of the strictly boreal forests such as those in New York and inland Massachusetts.

Along coastal Massachusetts, the combination of stabilizing sea levels and estuary formation led to significant runs of anadromous fish by the Late Archaic. As a way of taking maximum advantage of these fish runs, Native people began using weirs in the rivers, streams and bays. In fact, one of the largest weirs found anywhere in the world was encountered in what was once Boston harbor. The Boylston Street fish weir was encountered when the foundation for an office building in Boston. It is believed that the weir was constructed approximately 5000 years ago and covered several acres. Weirs of a smaller scale were undoubtedly employed in most of the bays, rivers and larger streams in southeastern Massachusetts.

Another significant development in the Late Archaic was the use of bowls carved out of soapstone (steatite). The actual carving of the bowls was probably not a significant development in itself, but what these bowls represented is. The raw material for the bowls, soapstone, is found only in certain deposits Rhode Island and Massachusetts. As a result, the recovery of soapstone fragments on the east coast indicates either that these items were being traded for, or that people were traveling fairly significant distances to quarry this stone. From the east coast, the quarries could have been reached in approximately 2-3 days. The stone would then have to be quarried, worked into shape and carried back

to the homesite. these bowls are not small affairs by any means, some weigh up to 60 pounds. It is believed that the effort expended to acquire these bowls as well as their weightiness must mean that they were fairly important to the people. Before these bowls were used, food was probably either roasted or boiled in skin lined pits in the ground through the used of hot stones. The soapstone bowls allowed for cooking directly on the fire, an change in cooking technology which eventually led to the use of pottery in southern New England. These appear to have been used only in the Late Archaic and do not appear in more recent periods. These bowls were also special enough to have often been buried with people after being ceremonially killed with a hole in the base.

Small Stemmed and Squibnocket Triangle points have often been considered to be temporally diagnostic of the Late Archaic period in New England prehistory. The earliest dates for the presence of Small Stemmed points have been pushed back into the second or third millennium before present by work in the 1980s (PAL 1982 a, 1982b, 1983). Small Stemmed points have been characterized by four varieties (Small Stemmed I-IV) which can be lumped together into two categories- squared to rectangular stems and rounded stems. The first category includes Small Stemmed I and II. These are characterized by narrow isosceles triangular blades, a steeply angled cross section with hard hammer percussion flaking, a short roughly rectangular to square stem that is wide in relation to the maximum blade width (1:1.5) and length to width ratios of 1.5:1 to 3:1 (MHC 1984: 86-91). These generally date from 6000-3000 B.P. The second category includes Small Stemmed III and IV. These are characterized by narrow isosceles triangular blades, a steeply angled cross section with hard hammer percussion flaking, a bluntly pointed to rounded base that may be thinned, ground or rubbed and length to width ratios of 2.5:1 to 4:1 (MHC 1984: 92-95). These have been roughly dated from 5000-3000 years B.P. The predominant raw material used to produce these points is locally available quartz gathered in cobble form from the coast, river edges and glacial drift. The second most common material is argillite either originating in the Taunton River drainage or from glacial drift cobbles. A wider variety of materials was utilized to the north and west of the Boston Basin where rhyolite and argillites were the predominate local materials.

Some researchers see Small Stemmed points as a backwards extension of the Orient and Susquehanna Broad spear traditions into early 5th millennium essentially making them an early intrusive element of this tradition (Hoffman 1985: 59; Ritchie 1969:214; Snow 1980:228). Ritchie sees this as "unquestionably happening" as he believed this quartz pebble-based technology move into New England from somewhere to the south, probably the Mid-Atlantic, along coastal plains and via large river valleys. Snow states that this tradition may have been intrusive from the lower Susquehanna into southern and eastern New York, New Jersey and New England. Dincauze feels that this may have happened but favors an indigenous development in southern New England that evolved out of the Neville/ Stark/ Merrimack sequence (Dincauze 1975, 1976). The later may be likely as the Small Stemmed of the points appear to generally resemble these antecedent forms.

The earliest dates for Small Stemmed Points are from the Bear Swamp 1 site (4600-4500 BP) located on the Taunton River estuary and the Kirby Brook site (4400-4000 BP) located in middle Shepaug (Hoffman 1985:59). Many sites in southeastern Massachusetts have a higher number of these points than anywhere else in the state which has lead Dincauze to speculate that the Narragansett drainage basin was an important focus for this tradition (Dincauze 1975). These points remained very popular and widespread in the Late Archaic, eventually declining in occurrence from 3800 BP forward. The most recent most recent dates for them are 955 +/- 155 BP from the Black Bear site (PAL 1982b) and 850 +/-205 BP from the G. B. Crane site Taunton (PAL 1983). Current research indicates that these

points continued in use after the Late Archaic and well into the Early Woodland and possibly Middle Woodland (Mahlstedt 1986:9; Moffet 1957; McBride 1983; PAL 1982a, 1982b, 1983 (American Antiquity Current Research 1981: 696).

Also occurring with Small Stemmed points are small cordiform triangular points generally called Small Triangles or more commonly Squibnocket Triangles. Squibnocket Triangles have bases that are usually concave but occasionally straight with and equilateral to isosceles triangle blade. Width ranges from 1.3-2.5 centimeters and length ranges from 2-4 centimeters with a length to width ratio of 1:1 to 2.5:1 (MHC 1984: 98-99). The temporal range for these points is generally the same as the second category of Small Stemmed points, 5000-3000 years B.P. The most common materials for these points is the same as for Small Stemmed, quartz and argillite with some quartzite and volcanics being used.

Other tools utilized by this culture were rough and ground stone choppers, plummets, unpitted hammerstones, plano-convex adzes, shallow-groove adzes, polished splinter awls, barbed antler harpoon heads and graphite and hematite paint stones but apparently not many scrapers, drills or knives (Ritchie 1969:215). Pestles and weirs also appear in the tool kits for the first time. These tools indicate that the Small Stemmed (or Mast Forest tradition as Snow (1980) identified them) utilized a wide variety of resources. In fact, sites associated with the Small Stemmed Tradition occur in micro-environments that show great diversity in their hunting and gathering strategies. Coastal shell middens, estuarine fish weirs, estuarine shore sites, and sites on lakes, ponds, springs, streams, brooks, river shores and quarries all show how wide their procurement strategies reached. Fishing was accomplished by hand with hooks, lines and stone plummets as well as weirs such as the Boylston Street Fish weir(s) which has been directly associated with the Small Stemmed Tradition (Dincauze 1974: 48). It has been found that the inhabitants of southern New England at this time utilized more of the lower links on the food chain at this time as well such as shellfish, seeds, nuts, and small game, all resources that were not used to the same extent by their predecessors (Dincauze 1974: 48). This may have been a response to an increased population in the area at this time. As a way of coping with a higher population, a wider variety of more marginal resources had to be exploited to feed the greater number of people. This led to a well-balanced adaptation by a people who were very familiar with their surroundings.

Possibly, at this time, people were living in small open communities of only a few families on or near the sea coast in the spring to fall, moving to more permanent lakeside communities which formed the core of their territorial identity in the fall and winter (Ritchie 1969:219; Dincauze 1974: 48.) They may have had a river basin territoriality with a focus that thus would have constrained their communication and trade networks by being so watershed focused. This interpretation is similar to Snow's and Pagoulatos' who see the Small Stemmed traditions resource utilization system as a central based wandering one with winter camps in the back country or uplands and summer camps on the coast. Sites in this sort of system would not be large but they would be numerous and occurring in a wide variety of settings with a broad range of fish, mammals, birds, plants and mast producing trees being exploited (Snow 1980:230; Pagoulatos 1988). Pagoulatos sees the Small Stemmed Tradition, called the Tinkam Phase in Connecticut, as having a resource systems like the Micmac that was essentially mobile. He sees them as always moving to specific resource zones at specific times of year. This results in a high number of residential camps and locations and few task camps. Residential camps are found away from the Connecticut River in areas of high wetland potential such as the interior swamps, marshes and lakes (Pagoulatos 1988: 85). This interpretation appears somewhat different than that for southeastern Massachusetts where Small Stemmed populations appear to have exploited the coast and inlands. It is also interesting to note that it was at this time that shellfish were first exploited in much of

the northeast. Ritchie viewed the initial exploitation of quahog and oysters over soft shell clams in the Late Archaic as evidence of immigrants moving into an area, being unfamiliar with shellfishing and basically collecting what they could see, the oysters and quahogs, and not what lay below the mud, the clams (Snow 1980:229).

It appears that by 3700 B.P. the cultural system of the people who were using Small Stemmed points in southern New England had begun to change. This period, from 3700-2700 B.P, has variously been called the Terminal or Transitional Archaic. During this time there appears to have been an immigration into southern New England of people using tools of the Broad spear or Susquehanna tradition. Projectile points of the Susquehanna style characterize the early part of this period while those of the Orient Fishtail style, a possible merging of indigenous Small Stemmed and Susquehanna styles, dominate the latter half (Snow 1980:237; Dincauze 1975: 27). The Orient point tradition appears to have remained in New England and eventually evolved into the Rossville and Lagoon points of the Early Woodland Period.

Points of the Susquehanna/ Broad spear style include the Susquehanna Broad, Wayland Notched and Atlantic points. Susquehanna Broad points are a corner notched point what has diamond-shaped blade and shoulders with obtuse shoulder angles and generally strait or concave bases with a basal width less than the maximum blade width. The bases often show basal grinding or rubbing and the cross section is flat with soft hammer percussion flaking evident. These points can range from 2.5 to 20 centimeters long, making them a generally large point with a length to width ration of 2:1 to 3:1 (MHC 1984:108-109). These points were produced from 4000-3500 years B.P. Unlike the Small Stemmed points, these are often made of exotic cherts and local volcanics with quartz, quartzite and argillite rarely used.

Atlantic points are triangular bladed stemmed points with strait-bottomed parallel-sided squared bases whose basal width is greater than or equal to 1.5 cm. The shoulders are well defined and approach a 90-degree angle with the stem the junction of which is formed by indirect percussion with a punch. These points can range from 5 to 15 centimeters long, making them another large point with a length to width ration of 1.5:1 to 2:1 (MHC 1984:106-107). These points were produced from 4100-3600 years B.P. Local volcanics are common as raw materials with quartzites, argillites and cherts also used. Quartz is a raw material for Atlantic points, again, like the Susquehanna Broad, showing a sharp break in technology from the Small Stemmed Tradition.

Wayland Notched points are a side-notched point that has a triangular shaped blade with a strait to slightly concave base that is often less than the maximum blade width. The bases often show basal grinding or rubbing and the cross section is flat with soft hammer percussion flaking evident. These points can range from 3.5 to 11 centimeters long, making them a medium-sized point with a length to width ration of 2:1 to 3:1 (MHC 1984:110-111). These points were produced from 3600-3000 years B.P. Local volcanics are common with chert and argillite also used.

Orient Fishtail points are a side-notched point with a narrow lanceolate blade shape reminiscent of Small Stemmed points. The stem is expanding and the base is usually strait to concave and occasionally angled with a basal width less than or equal to the maximum blade width. The shoulders are rounded and often poorly defined with an obtuse shoulder angle. In cross-section these points range from flat to steeply angled and evidence of soft to hard hammer percussion is present. These points range from 2.5 to 10 centimeters long with a length to width ratio of 2.5:1 to 4:1 (MHC 1984: 112-113). These points were produced from 3000-2000 years B.P. Common raw materials include

local volcanics quartz and quartzite. The blade shape, poorly defined shoulders and raw material choice hints that these points are a blending of Susquehanna and Small Stemmed traditions.

The Susquehanna Tradition created a sharp change in the archaeological continuity of the Small Stemmed Tradition as far north as Maine (Dincauze 1975:27). This is probably the result of an infiltration or migration of peoples from the southwest. There appears to be a distinct difference in cultural and industrial traditions from the indigenous populations but no evidence of assimilation of populations. Various researchers have attempted to determine if there was a large migration of people associated with the Susquehanna Tradition or if it was merely a small influx with a new specialized tool, the Broad spear, that was adapted as an adaptation by local populations to exploit marine fish resources (Turnbaugh 1975: 57).

David Sanger used six criteria to examine the Susquehanna Tradition and determine if it met these criteria for migration. The criteria were 1) identify the migrating people as an intrusive unit in the region it has penetrated, 2) trace this unit back to a homeland, 3) determine that all occurrences of this unit are contemporaneous, 4) establish the existence of favorable conditions for migration, 5) demonstrate that some other hypothesis, such as independent invention or diffusion of traits, does not better fit the facts of the situation, 6) establish the presence of all cultural subsystems and not an isolated one such as the mortuary subsystem (Snow 1980:245). Sanger concluded that all of these criteria were met in Northern New England, thus lending support to an immigration hypothesis. Work by Pagoulatos (1988) reached much the same conclusion about the Susquehanna in the Connecticut River Valley. He looked at the chronological setting, site types and settlement patterns and determined that the users of the Susquehanna tools represented a complete cultural system focused on the riverine areas that displaced the local Small Stemmed populations (Pagoulatos 1988: 85). Small Stemmed populations practiced different subsistence and procurement strategies than the Susquehanna users and thus allowed two different cultural systems to coexist.

Susquehanna populations in the Connecticut River Valley had relatively stable residences that allowed the exploitation of specific resource zones throughout much of the year. Organized task groups left a central base camp to establish temporary fishing and hunting camps, thus they moved less frequently, had a lower number of large residential camps and a high number of field camps (Pagoulatos 1988:86-89). Susquehanna populations appear to have practiced a resource procurement strategy similar to what Binford found for stable hunter-gatherer groups. In Binford's work he found that communities were situated along the river courses for much of the year with the organized task groups leaving the camp to procure and process mammal resources by setting up temporary field camps. In this case aggregation would be expected on the riverine and terrace locations with smaller field camps in the uplands. The few larger residential camps found within a territory would show high intra-site and low inter-site variability (Binford 1980:18). Basically many of the tasks, stone knapping, skin processing, cooking, plant processing, etc., would be done at this central residential base camp and the structure and evidence of activities would not vary much between different residential camps.

The later half of the Terminal Archaic was dominated by people who used the Orient Fishtail Point Tradition. This appears to have been a time of great change in New England with new technologies appearing and by 3000 years B.P. an interrelated series of climatic, environmental, cultural and social changes that is seen as dismantling the "finely balanced Archaic adaptive systems" (Dincauze 1974). Environmental changes included climate cooling with a possible regression of marine shorelines, a cessation of marine transgression, a change in the forest composition from oak and hickory to chestnut

and by 2000 years B.P. a breakdown of reliable trade networks (Ritchie 1969:164; Dincauze 1974: 49). Work on the I-495 corridor in the by the Public Archaeology Laboratory, Inc. in the 1980s suggests that favorable habitats were reduced at this time due to a lower availability of open water. As a result, the margins of the largest and deepest wetlands were extensively used as well as an intensification of the use of riparian locations (PAL 1982, 1982a). Orient Tradition sites are thus often found near the seashore or on major rivers, an occurrence that Dincauze attributes partially at least to the dissolution of trade networks, usually in locations that are protected from the prevailing winds possibly with a move to interior camps in the winter, although again, Dincauze sees year round coastal settlement by Orient Tradition peoples (Dincauze 1974:49). Interior sites along major wetland margins, such as those identified by the I-495 work may represent these winter quarters or were the locations of special purpose resource procurement locations. Funk (1976) proposed that camps located on bluffs were occupied in the winter while riverside sites probably represent spring to fall fishing sites where anadromous species such as alewife, herring and shad were collected through the use of weirs. There appears to be a clear separation of activities by season and site location, possibly a result of a change in settlement and procurement strategies similar to what Pagoulatos (1988) found in the Connecticut River Valley. By the end of the Orient phase, the elaborate burial ceremonialism that characterized the Susquehanna phase also appears to have come to an end (Dincauze 1974:49). The ultimate cause of all these changes and the general terminal Archaic cultural re-adaptation are unknown or unrecognized but it may be related to the climatic deterioration and the changing forest composition that could have led to a lessening of the reliance on inland sites (Dincauze 1974: 49).

The Orient Tradition is characterized by resurgence in the acquisition and use of non-local cherts and jaspers from New York and Pennsylvania (Ritchie and Leveilee 1982) as well as the use of steatite for bowls. The pattern of long-distance exchange suggests a reestablishment of expanded exchange system that contrasts with the earlier Late Archaic system (MHC 1982: 25). The Orient Tradition was first identified by Ritchie on Long Island close to Orient New York and was initially characterized by the burial of dead upon high knolls. This led some to speculate that the Orient Tradition was nothing but a mortuary cult for from New England (Ritchie 1963: 196). This was later proved not be the case as habitation sites were identified.

Foods used by Orient Tradition users appear to possibly include an appreciable amount of shellfish and fish as well as deer, turtle, turkey and duck species, and small mammals such as woodchuck, gray fox, and mink. Features associated with the processing of these resources include earth ovens where foods were baked, stone platforms for roasting and the use of boiling stones. The tool kit of the Orient Tradition is characterized by the Orient Fishtail point, which make up about 88% of the point type used, and many of the same tools used earlier in the period such as atl-atl weights, full-grooved axes, rectangular celts, plano-convex and grooved back adzes, small gouges, ovate and triangular knives, strait, stemmed and fishtail point drills of quartz and chert with few scrapers and anvil stones (Ritchie 1969:170). Also included in this inventory are ellipsoidal and rectanguloid stone gorgets, lots of graphite and hematite paint stones and steatite bowls and some of the earliest occurrences of locally made pottery.

Steatite (a.k.a. soapstone) vessels have come to be one of the hallmarks of the later half of the Terminal Archaic in New England. These vessels are oval, rectangular or nearly circular or trough-like, generally with rounded corners, rims and bases with slightly out sloping to vertical walls and squarish lobate lugs on the exterior. The range in size from 14 to 46 centimeters long and 5 to 8 centimeters high and are sometimes found smoke stained and soot encrusted, possibly indicating direct use on fires for cooking.

Their general shape suggests that they were originally modeled on wooden bowl prototypes. This technology does not seem to represent an independent invention in New England, but appears to have spread north from the as far south as the Virginia to North Carolina Piedmont area, eventually splitting with one northern production center being in Pennsylvania (possibly associated with the Broadpoint/Susquehanna Tradition) and another in New England (possibly associated with the Small Stemmed Tradition)(Ritchie 1963: 170). Few sources appear to have been exploited for soapstone bowls in New England with the known ones being in Rhode Island, Connecticut and central Massachusetts. Soapstone bowls are generally found at camp sites along major streams and not in remote inland sites where the lack of canoe transport made moving the heavy objects more difficult (Snow 1980:240). Alternately, Funk (1976) sees the presence of steatite more often on the coast as a result of seasonality.

Steatite vessels represent the first imperishable vessel form in the northeast. It does not appear in New England before 4000 years B.P. with earliest date reported by Hoffman being 3655 +/- 85 years B.P. (Hoffman 1998:48). Steatite may have been found at the Wapanucket 6 site in association with Squibnocket Triangles and radiocarbon dated at 4355 +/- 185 years B.P. possibly making this the earliest occurrence in New England (Fiedel 2001:104). Steatite achieved its chief popularity between 3000-2500 years B.P. and disappeared after 2500 years B.P. There does not seem to have been a clear transgression from steatite to clay pottery and their occurrences appear to overlap at some sites. This may indicate separate but complimentary uses for these vessels.

The original reason why any sort of imperishable vessel was made or used in New England may lay in the social changes occurring in the Terminal Archaic. These reasons include an indigenous response to the increasing population densities in floodplain environs with durable vessels being a way to process resources more efficiently (Pagoulatos 1988: 85-91). These resources may have included chenopodium and wetland grass seeds. The environmental changes that were occurring at the time that may have changed the available resources and led to an increase in reliance on anadromous fish (Turnbaugh 1975). Finally a diffusion or migration of peoples or ideas from the southeast (Snow 1980: 242; Tuck 1978).

Steatite may have had a more ceremonial place in Terminal Archaic culture as well. The makers of the steatite vessels are assumed to have been men, possibly ones who were engaged in ceremonial exchange with the steatite being the exchanged item (Snow 1980: 250). This may account for more centralized distribution of steatite and the mortuary associations of it. Sites where steatite occur may be central ceremonial sites where males gathered for inter and intra regional trade or to participate in mortuary ceremonies (Hoffman 1998: 52). This may be related to the use recorded ethnographically from the southeast of large vessels by males for the consumption of ritual "black drink" (Sassaman 1993:170, Stewart 1997; Klein 1997: 146). This ceremony may have been similar to that recorded in southeastern Massachusetts where young men undergoing ritual purification in preparation to become *pneiseuk* consumed a drink of white hellabore. Edward Winslow, prominent Plymouth Colony settler, described the *pneiseuk* as

"men of great courage and wisdom, and to these also the Devil appeareth more familiarly then to others, and as we conceive maketh covenant with them to preserve them from death, by wounds, with arrows, knives, hatchets, etc. or at least both themselves and especially the people think themselves to be freed from the same. And though against their batters all of them by painting disfigure themselves, yet they are known by their cottage and boldness, by reason whereof one of them will chase almost an hundred men, for they account it death for whomsoever stand in their way. These are highly esteemed

of all sorts of people, and are of the Sachems Council, without whom they will not war or undertake any weighty business. In war their Sachems for their more safety go in the midst of them. They are commonly men of the greatest stature and strength, and such as will endure most hardness, and yet are more discreet, courteous, and humane in their carriages than any amongst them scorning theft, lying, and the like base dealings, and stand as much upon their reputation as any men.

And to the end they may have store of these, they train up the most forward and likeliest boys from their childhood in great hardness, and make them abstain from dainty meat, observing divers orders prescribed, to the end that when they are of age the Devil may appear to them, causing to drink the juice of Sentry and other bitter herbs till they cast, which they must disgorge into the platter, and drink again, and again, till at length through extraordinary oppressing of nature it will seem to be all blood, and this the boys will do with eagerness at the first, and so continue till by reason of faintness they can scarce stand on their legs, and then must go forth into the cold: also they beat their shins with sticks, and cause them to run through bushes, stumps, and brambles, to make them hardy and acceptable to the Devil, that in time he may appear unto them. " (*Italics mine*) (Young 1974: 340)

This ceremony that helped to create the *pniese* may be descended from an earlier one in the Terminal Archaic that utilized the *steatite* vessels. The rise of the elite fighting class of the *pniese* may have been a response to increased population pressure in the area and a need to defend resources. If *steatite* bowls were associated with males and male ceremonies, one would expect to find them in male graves as opposed to female ones. Unfortunately, the majority of the graves of the Terminal Archaic consist of cremation burials that have produced bone that was in such a fragmented and calcined state that assignment of sex was impossible. One Terminal Archaic burial and two possible burial caches from Jamestown, Rhode Island again could not be assigned to sex, but the items included may point towards male having been interred in the grave that contained *steatite* bowls and the other internments being assignable to male tool kits. In the single grave that contained calcined bone as well as *steatite*, other objects interred with the individual included a small grooved axe blade, a perforated black pebble, a clutch of graphite pebbles, a slate drill blade, a chert flake, six projectile points including one of Pennsylvania Jasper, lumps of red ocher a red pigment stone and a 35.5 cm long pestle, a perforated and incised *steatite* pendant, a flat incised stone "tablet" and an incised quahog shell fragment (Simmons 1970: 17-27). The caches containing *steatite* also had graphite pebbles, a rhyolite drill, two side-notched points of slate, a chert Orient Fishtail point, two "crude" pebble choppers a side-notched rhyolite point and two small quartz pebbles (Simmons 1970:27-32). Unfortunately it is difficult to assign sex of a burial based on grave goods alone due to the fact that grave contents may not reflect items actually used by the person interred there. They may be items placed in the grave by friends and relatives of either sex as gifts to them and thus a mixture of male items may be in a female grave or female items in a male grave. This could be a topic that needs to be researched more in the future.

After *steatite* bowls ceased to be present in the archaeological record, other vessels such as wood may have taken the place of the stone vessels. The use of a wooden vessel as opposed to a pottery one may have continued the association of a male created vessel used for a strictly male ceremony. *Steatite* bowls exclusively used by males may also have been replaced by chlorite and later *steatite* and pottery smoking pipes and pipe ceremony that went along with them. This too seemed to have been an almost exclusively male pursuit with some ritual significance. Pipes first make their appearance after *steatite* bowls ceased to be found archaeologically in New England. Like the association of *steatite* with male graves, the decline of the *steatite* bowl industry and rise of the smoking pipe and smoking ceremony is another avenue of future research.

Other research questions related to steatite were proposed by Sassaman (1999). These include the following: Did soapstone vessel production and exchange in southern New England emerge in the context of the expanding broadpoint cultural front as one of several means of alliance building with central New York groups? Did successful ties with such groups efficiently preclude or thwart assimilation between indigenous and immigrant populations in southern New England? Was the burial ceremonialism of southern New England a context of mediating ethnic distinctions between indigenous and immigrant populations as suggested by Dincauze (1975b:31)? Did the growing technological contrasts in the third millennium B.P.-notably the exclusive use of Vinette I by Meadowood groups of New York and the coexistence of both soapstone and pottery in Orient contexts of southern New England and Long Island-signify an end to traditional alliances?

Most researchers see the use of steatite as being antecedent to the use of clay pottery, although Hoffman has attempted to make the case for pottery having been used prior to the introduction of steatite (Hoffman 1998). The shift from steatite to pottery probably occurred gradually over time with both technologies being in use for at the same time. Funk (1976) sees the coeval existence of pottery and steatite and their relative occurrence in inland and coastal sites as being a result of seasonality. In this situation, steatite was used on the coast in the spring to early fall and pottery was used at inland winter sites. Pottery dates as far back as 3600 years B.P. in southeastern New England and 3300 to 3100 years B.P. in southern New Hampshire (Sassaman 1999: 75). The eventual usurping of pottery over steatite may be related to a decreasing need in the Terminal Archaic for far-flung alliances (Fiedel 2001:106). Early pottery has been termed Vinette I and it is generally believed that at least the gross technological ideas of pottery production spread to the north from the south, possibly from the same general areas as steatite bowl production. This pottery type has been recovered in Connecticut in association with Susquehanna points (Levin 1984:15; McBride 1984:123; Pfeiffer 1984:79). The earliest pots were straight sided with pointed, concoidal bases and some archaeologists believe that these resemble basket styles common in these earlier periods (Braun 1994:63). This type was first identified in New York State but it is not confined to there. Vinette I pottery has been recovered from all of New England, New York and New Jersey. This type of pottery can be identified by its thick, straight wall and the use of abundant grit and grit as a tempering medium. Walls of Vinette I pottery range from .6-1.1 cm (Luedtke 240). The exterior and interior of Transitional Archaic to Early Woodland ceramics were commonly cord marked, a possible decorative technique resulting from the patting of the vessel with a cord wrapped paddle to help bond the coils together. Some smooth surfaces may also occur in some vessels either intentionally or accidentally.

Vinette I pottery has been found to be heavily tempered with grit composed of coarse, poorly-sorted crushed-rock and sands with a general decrease in the size of the grit over time (Bunker 208; Luedtke 229). Native pottery may also be shell tempered and although this is generally believed to be a temper used in the Middle Woodland to Contact periods, Lavin, in her work on Cape Cod ceramics postulates that the type of temper may not be temporally related but may be more closely linked to where the vessel was made. Temper type on coastal sites may more often be shell tempered while those on inland sites may be more often grit tempered. This has to do with the temper resources available to Native potters. Rim shapes for Vinette I ceramics are round, with some decoration consisting of incised lines possibly being present (Luedtke 244). Decoration of the vessel itself takes the form of the cord marking, which was applied in a horizontal direction on interior and multiple directions on exterior and some incised lines (Bunker 208). The similarity of Vinette I pottery throughout the Northeast suggests a local center of invention or adoption from which the technology spread out. Ozker sees this similarity in form and structure as reflecting a similarity in function. He sees these vessels as only being used in

a fall context and were not in daily use (Ozker 1982: 210).

Early Woodland 3000-2000 BP

Following the Terminal Archaic is an ill-defined time labeled the Early Woodland by New England archaeologists. In the face of the date for the start of pottery production being back into the Late to Terminal Archaic and the absence of horticulture possibly until after 1000 A.D, some archaeologists, like Snow, do not view the designation of Early Woodland as a valid one (1980). They see no real change occurring that could be used to differentiate the Terminal Archaic and the next 1000 years. They merely see a continuation of tumultuous times that began after 3000 to 4000 years ago. In the words of Filios "... the chronological picture (for the Early Woodland) is more murky than previously suspected. ...the horizon markers (of this period) need to be reevaluated." (Filios 1989:87). Traditional horizon markers for the Early Woodland have included Vinette I pottery, which has been shown to have been produced before the Early Woodland, an absence of Small Stemmed points, which have been shown to have continued in use into the Early Woodland, and increased sedentism, which appears to have begun before the Early Woodland, and horticulture, which in New England was not intensively practiced until after 1000 A.D.

Some of the trends identified above, the decreased population and fragmentation, are based on the small number of Early Woodland sites that have been identified. This may be more a product of the criteria used to identify the sites, such as the presence of pottery and absence of Small Stemmed points, and number of Early Woodland sites may not be as small as thought. If one includes sites yielding Small Stemmed points but no pottery, as these may represent special purpose floral or faunal resource procurement task camps and not residential locations, the number of sites possibly attributable to the Early Woodland increases. Due to the increasingly long temporal use range for Small Stemmed points, their presence or absence can no longer be used as valid "datable" criteria to assign the site to one period or another. What is needed is more radiocarbon dates associated with specific materials. Until this occurs the Early Woodland will remain obscure and ill defined.

A dramatic population collapse has traditionally been one of the defining characteristics of the Early Woodland and while Hoffman (1985) does not see evidence of any break. Filios (1989) came to a similar conclusion although her data shows a break in radiocarbon dates from 2700-2400 years B.P. possibly showing a population decline after 3800 years B.P. and a greater decline after 2800 years B.P. (Fiedel 2001: 117). If there was in fact a population collapse, reasons for it have included climatic and environmental change, epidemics, the effects of plant and animal die-offs and socio-cultural factors (Fiedel 2001: 118). One of the main causes may have been if nut bearing trees, already in decline in the Terminal Archaic, were hit hard by plant disease or environmental change, then this may have caused a population reliant on this resource to die off. This would account for the drop in inland sites in the period. Alternately the populations living on the coast that focused their procurement strategies on river valley, estuarine and inshore resources may have remained relatively unscathed. These would be the Rossville and Lagoon point users, point styles that show a high concentration in coastal areas especially Cape Cod.

Middle Woodland 2000-1200 BP

This period is marked by a decrease in the number of exotic finished goods indicative of long-distance trade, and by changes in mortuary practice (increase in secondary interments, less use of ocher, fewer

grave goods, more variation in preparation of the dead). While the roots of ceramic and lithic variability are found in the preceding periods, more rapid variation in sequence through time and more regional variation characterize this period. Ceramics vary more in decoration and form. Lithic projectile points are less important in the tool kit, and bone and antler tools are preserved at some sites where matrix conditions are appropriate (Shaw 1996b:84-87). By the end of the period there is evidence of maize horticulture (Thorbahn 1982).

Fox Creek and Steubenville bifaces characterize this part of the period (Moore 1997). There is some overlap in time between the Fox Creek and Jack's Reef points during this part of the Middle Woodland. Jack's Reef points continue to be used into the Late Woodland. Exotic lithic materials increase in the Middle Woodland, except in the Champlain drainage. Jack's Reef points are often made of non-local chert (Shaw 1996b:92-93). Some lithic tool types, such as Rossville (Shaw 1996b:90) and Small Stemmed (Hasenstab et al. 1990) continue into the Middle Woodland.

Late Woodland Period 1200-500 BP

This is the period just prior to European contact and as a result, many of the historical reports written by the early explorers to New England (Verrazanno, Gosnold, Pring, Smith) present one way of understanding the late Late Woodland period. Some of their observations may be able to be extrapolated back into the Pre-Contact past through the use of ethnographic analogy. These analogies can be created with more confidence as pertaining to the culture of the Late Woodland period than any earlier one.

The ceramics of the Late Woodland period are often shell-tempered or made with fine grit temper and have thinner bodies and a more globular form than the earlier ceramics. The diagnostic projectile point of the Late woodland period is the triangular Levanna points and occasionally the Madison. This period is marked by an increasing importance in food production (maize, beans, squash, sunflower and other vegetables) in coastal or riverine zones, which begins by ca. 1100 BP on Martha's Vineyard (Ritchie 1969).

These decrease in projectile point styles and the increase in the reliance on horticultural crops, may be attributed to increasing numbers and densities of population at larger sites. While the occurrence of the "village" in southeastern Massachusetts continues to be debated, the affect of an increased reliance on corn, beans, squash and to a lesser degree gourds, sunflowers and tobacco, definitely led to a degree of sedentism not seen prior to this time (Hasenstab 1999; Kerber 1988).

Ceramics are often shell-tempered or made with fine grit temper and thinner bodied; there is a shift to globular forms, and the addition of collars, sometimes decorated with human faces. Elaborate collars similar to those of Iroquois ceramics are found in the Merrimack and Champlain drainages. Triangular projectile points (smaller Madison points or larger Levanna points) are diagnostic for this period. This period is marked by an increasing importance in food production (maize, beans, squash, sunflower and other vegetables) in coastal or riverine zones, which begins by ca. 1100 BP on Martha's Vineyard (Ritchie 1969).

These changes in assemblage, and by implication, adaptation, are attributed to increasing numbers and densities of population at larger sites. Research issues include the extent of permanency in Late Woodland settlements, the nature of such settlements (i.e., whether such settlements were villages; see

Hasenstab 1999; Kerber 1988), the identification of horticulture with non-native plants and definition of the effects on humans. In addition, researchers might ask about the use of different ecozones, the reality of population growth, and whether or not climate change (e.g., the Little Ice Age), affected settlement and subsistence. There is some evidence of the development of long-distance exchange again, and some workers have suggested that a native beaver trade was developed before Contact. Regional differences are visible. In Vermont, there are fewer late Late Woodland sites than early Late Woodland. This may be a response to Iroquois settlement changes. In southern New England, horticulture did not replace existing gathering and hunting strategies, and large settlements did not replace small seasonal sites. Differential dependence on horticulture is likely to have affected society and politics. Cultural differentiation of the Iroquois from the Algonquin also presents research opportunities (Shaw 1996c).

Contact Period

The Contact period was a time a dramatic social, political and personal upheaval for southeastern Massachusetts Native populations. This period began with amiable trade relations with European explorers such as Verrazanno (1524) and Gosnold (1602), followed by a growing distrust of Europeans and an increase in hostility between the two, especially on Cape Cod (Pring 1603, Champlain 1605). This hostility was due primarily to the kidnapping of Native men by Europeans desirous of returning home with informants or curiosities from the New World (Weymouth 1607, Hunt under Smith 1614). By the time of the settling of the English at Plymouth, 1620, Natives in southeastern Massachusetts had been decimated by a European epidemic, 1616-1619, with mortality rates possibly reaching 100% in some communities.

The first recorded trading encounter in New England occurred in 1524 and involved the Florentine sailor Giovanni da Verrazano who was sailing for France. Verrazanno arrived in Narragansett Bay in April of 1524 and traded with the natives (Parker1968f:14). He stated that the people were apparently unfamiliar with Europeans and were very willing to trade and host the visitors. The natives were first enticed to trade by tossing "some little bells, and glasses and many toys" (Parker1968f:14) to them as they came to Verrazano's ship in their own boats. The Europeans remained in the harbor until early May and Verrazanno stated that of all of the goods they traded to the natives "...they prized most highly the bells, azure (blue) crystals, and other toys to hang in their ears and about their necks; they do not value or care to have silk or gold stuffs, or other kinds of cloth, nor implements of steel or iron." (Parker 1968f: 16). It was also noted that the natives here possessed ornaments of wrought copper which they prized greater than gold. The copper may have come indirectly through trade with natives to the north who traded them from European fishermen or it may have been native copper from the Great Lakes or Bay of Fundy regions.

The next explorer known to have visited southeastern Massachusetts was Bartholomew Gosnold who arrived at the Elizabeth Islands off Martha's Vineyard in May of 1602. There he traded with the first natives he encountered, giving them "certain trifles, as knives, points, and such like, which they much esteemed." (Parker1968b:38). Gosnold's crew, in return for the "trifles" received many different types of fur from animals such as beavers, luzernes, martens, otters, wild-cats, black foxes, conie (rabbit) skins, deer and seals as well as cedar and sassafras, the later which was prized as a cure-all in Europe. Of particular note is his description of the great store of copper artifacts which he saw people wearing and using. He said that all of them had

" chaines, earrings or collars of this metall; they head some of their arrows here with (it), much like our broad arrowheads, very workmanly made. Their chaines are many hollow pieces semented together, ech piece of the bignesse of one of our reeds, a finger in length, ten or twelve of them together on a string, which they wear about their necks; their collars they weare about their bodies like bandoliers a handful broad, all hollow pieces, like the other but shorter, foure hundred pieces in a collar, very fine and evenly set together. Besides these they have large drinking cups, made like sculles, and other thinne plates of copper, made much like our boar head speares, all of which they little esteem, as they offered their fairest collars or chjaines for a knife or trifle....I was desirous to understand where they had such store of this metall, and made signes to one of them....who taking a piece of copper in his hand, made a hole with his finger in the ground, and withall, pointed to the maine from whence they came." (Parker1968b:44).

The native informant asked by Gosnold as to where they received the copper from was probably either signing that it came from the mainland, possibly he meant through trade with natives or Europeans or he may have been referring to a native historical tale as to the origin of the copper. What is interesting is the great store of copper possessed by the natives and the desire that was present to trade for metal knives. It would appear that between 1524 and 1602 they had begun to see a value in steel knives and they had expanded their use of copper to create beads and arrowheads, whereas in 1524 they were noted as having only breastplates of copper.

The presence of so much copper and the desire by the Natives to trade with the Europeans highlights the early relations. Natives saw European goods as being different, special, in some ways technologically superior and spiritually empowering. Unfortunately, the power that the Natives felt could help them cope with the sometimes disturbing new relationship with these strangers could not preserve them from their diseases. Sometime around 1616, an epidemic swept south from Maine among the Native people. Various authors since the seventeenth century have sought to identify what this disease was with the most likely candidate being infectious hepatitis.

a. Known Prehistoric Sites

A total of six previously identified prehistoric Native American sites exist within two kilometers of the project area. The majority of these sites were identified from records of collector activity maintained by the Massachusetts Archaeological Society and as a result, little information is provided for most sites beyond the location of unknown finds. Two sites are located within or adjacent to the project area. These sites are the Howland Orchard Site and a findspot of a bifucate base point and Woodland period pottery. It is possible that portions of these sites may extend into the project area. The Howland Orchard Site was excavated by MAS member in 1979-1980. The eastern edge of this site had been tested by a Professor Moehler of Bridgewater State College two years before the MAS dig (Holmes and Otto 1995:2). The 1979-1980 excavations were briefly summarized in a 1995 article in the Bulletin of the Massachusetts Archaeological Society (Holmes and Otto 1995). Excavations revealed evidence of Middle Archaic to Woodland period activity with the greatest amount of data being recovered from a large Woodland period shell midden. The authors also theorized that the site may continue to the north, towards the Second Meeting House Site project area.

b. Prehistoric Archaeological Potential

Archaeological sites are found in a wide variety of environmental settings with new settings and

locations of sites in areas not usually tested by cultural resource management surveys coming to light each year. The majority of sites though are to be found in particular environmental contexts (Funk 1972; Root 1978; Thorbahn et al 1980; McManamon 1984; Mulholland 1984; Thorbahn 1984; Nicholas 1990). By using the contexts of known sites, archaeological potential models can be developed to predict the potential locations of archaeological sites.

Sites in southern New England appear to be linked to three variables, topography, soil characteristics and proximity to water resulting in the general predictive model of a predominance of sites on flat to low slopes on well-drained soils near fresh or salt water. These factors can be combined with the proximity to natural resources (clay, lithic raw materials, and seasonal foods) and the use of transportation routes via waterways or land trails.

Prehistoric Archaeological potential can be stratified as follows:

High potential: <200 m. from a water source on a <8% slope with excessively well drained soils and minimal site disturbance.

Medium potential: 200-400 m. from a water source on an 8%-15% slope with well-drained soils and moderate site disturbance.

Low Potential: >400 m. from a water source, >15% slope on poorly drained soil and heavily disturbed

Decima's study of the regional settlement pattern for Buzzard's Bay found that most of the coastal sites that had chronological information associated with them generally dated from the Late Archaic through Contact Periods (Decima 1993: 99). The majority of these sites were located near inlets, which was probably a response to the basic need for shelter from prevailing wind and rough water. Sites located on the Weweantic and Agawam drainages were most frequently located at inlets or outlets of ponds that were adjacent to other bodies of water such as bogs or at confluence of streams. They were also found to be more frequent at headwaters than in lower reaches. Large multi-period sites were identified along lower reaches while major sites were located at headwaters and appear to be Middle Archaic through Late Woodland. Sites in the lower reaches tended to be Late Archaic through Contact periods with an emphasis on the Woodland period. It was determined that this pattern probably reflected seasonal and functional integration of regions within a larger settlement system (Decima 1993:100).

The project area is felt to have a high potential for containing prehistoric archaeological resources due to the following points:

- the presence of well-drained Craver soils
- the situation of the site on the top of a small hill
- the proximity of a secondary embayment, Morton's Hole, within the larger Kingston Bay
- the proximity of a freshwater brook to the south
- the presence of two known sites within and adjacent to the project area.

These previously identified sites span the Early Archaic through Woodland periods, corresponding to Decima's findings for settlement patterns in Buzzard's Bay. The site is located near and inlet, has known Late Archaic through Woodland associations, and while not located on a major river drainage, is located near one (Island Brook). The Howland Orchard site appears to represent part of a large multi-period habitation site on the lower reach of the drainage. Prehistoric sites predicted for the project area are expected to range from small extractive resource camps to larger base camps. The small sites are

expected to relate to resource procurement activity such as the harvesting of faunal resources such as deer, fish, shellfish, and small mammals or the collection of floral resources such as medicinal plants or raw materials from the surrounding area. The site may represent a continuation of one of the previously identified sites or it may represent the habitation area associated with the midden present at the Howland Orchard Site. Occupation evidence was expected to take the form of hearths and activity areas related to all phases of lithic reduction as well as food processing and domestic activities. Post hole patterns forming portions of houses may also be present.

3. Historic Context

It is not known what the degree of Native settlement and use was in the area that would become Duxbury during the **Contact Period (1500-1620)**. Duxbury is believed to have been called Mattakeesett, meaning “the place of no high water” possibly describing the dramatic change in tides that exposes large mud flats in Duxbury Bay. It is believed that the road that would later become one of the main connectors between Plymouth and Massachusetts Bay, present day Route 53, originated as a Native trail. Other trails are believed to have run along the route of present day Tobey Garden Street, Old Meetinghouse Road and Cross-Vine-Mayflower streets with Bow-Tremont Street being the original north to south coastal route (MHC 1981: 1). The presence of abundant freshwater, 1,149 acres in the late 20th century, extensive mudflats in Duxbury bay and over 3000 acres of wetlands, made this an ideal location for seasonal or year round settlement.

Duxbury was settled by Europeans expanding out from the plantation at Plymouth during the **Plantation Period (1620-1675)**. Settlement began in Duxbury sometime between 1627 and 1632. Originally, the land farmed by the settlers at Plymouth was held in common to be commonly worked and the profits commonly used to repay the backers in London. In 1627 the joint stock company of the colony was reorganized as a result of a renegotiation of terms with the London backers. Some of the chief men of the colony agreed to repay the debt and land outside the walls of the Plantation was granted to individual families (Deane 1856: 227). Lands were granted as far away as Duxbury, which at that time was called “across the bay”. Settlement at this time was only for the warmer weather with families moving back to Plimoth in the winter. This would assure that people did not miss the Sabbath meeting. In 1632, due to increased trade (especially in cattle) with the Massachusetts Bay Colony, many people had moved outside the Plantation, especially to the north towards Massachusetts Bay and “For now as their stocks increased, and ye increase vendible, there was no longer any holding them together” (Deane 1856:302). Eventually, people no longer wanted to return to Plymouth for Sabbath services and they desired to have their own meeting house :

“By which means they were scattered all over ye bay, quickly, and ye towne, in which they lived compactly till now, was left very thine, and in a short time almost desolate....ye church must also be divided, and those who had lived so long together in Christian & comfortable fellowship must now part and suffer many divisions. First, those that lived on their lots on ye other side of ye bay (called Duxberie) they could no longer bring their wives & children to ye publick worship & church meetings here, but with such burthen, as, growing to some competent number, they sued to be dismissed and become a body of themselves ; and so they were dismissed (about this time), though very unwillingly.” (Deane 1856: 303)

Thus was formed Duxbury and Native trails became town roads and highways. A meetinghouse is believed to have been built by 1638 (see discussion below) and by 1643 the European population

numbered approximately 400 persons (MHC 1981: 4). Native Americans remained in town, eventually becoming Christianized and moving to the Pembroke Ponds area.

The **Colonial Period (1675-1775)** saw a continued decrease in the Native population and an increase in the non-Native one. By 1710 the town's population numbered 1100 people (MHC 1981: 4) and the town continued to expand beyond its original Nook and Morton's hole foci. Secondary settlement nodes appeared at Millbrook, North and West Duxbury, Ashod, an Tinkertown. The population had expanded to such a size that the meeting house was too small and in 1707 it was agreed that a new one should be constructed (see below). The economic focus of the town consisted on agriculture and fishing while shipbuilding, possibly practiced on a very small scale originally, began to expand and be a larger part of the economy.

The shipbuilding that had its inception close to the end of the Colonial Period, saw a period of rapid expansion during the **Federal Period (1775-1830)**. The town center was relocated closer to the geographic center of the town and a new meeting house was constructed in 1785 (Appendix B Map 1). The period between 1800-1830 was one of the largest for population growth and by 1830 large shipyards and a definite maritime focus began to dominate the economy (MHC 1981: 6).

Duxbury actively participated in the American Revolution with a large majority of the men able to fight, actually joining the town militia and subsequently the Continental Army. During the Stamp Act Crisis in 1765, crowds are reported to have met on the top of Captain's Hill at the Nook and effigies of British officials were burned (Browne n.d 2). Duxbury, like many New England towns, was occupied by the British prior to the Revolution. For the most part the occupation appears to have occurred without incident. The one exception was when citizens meeting within the second meeting house were alarmed by British soldiers peering in through the windows (Browne n.d 2). Following the Battles of Lexington and Concord, the Plymouth militia, consisting of soldiers from Duxbury, Plymouth, and Kingston, led by Colonel Theophilus Cotton , met for a council of war at the house of Lt. Col. Briggs Alden in Duxbury, and prepared to march to Marshfield to engage the British (Browne n.d. 2). While no fighting occurred as a result of this call to arms, the local militia continued to drill and mobilize when needed, eventually a number of residents served in the Continental Army. In total, approximately 270 men from Duxbury served in the militia or Continental Army (Browne n.d. 2). Duxbury fishermen served on board privateers with one local ship being captured by the British off Duxbury Beach (Browne n.d. 1) and in 1776 a fort was constructed at the Gurnet. Those who served in the Continental Army served with the 14th Massachusetts Regiment commanded by Duxbury Colonel Gamaliel Bradford. They served from 1777-1780, spending the long winter at Valley Forge and engaging the British at Monmouth and Germantown (Browne n.d. 2).

Captain Samuel Bradford led the largest company of militia, nearly 100 men. He and his company served in Marshfield, then Plymouth, before eventually being sent to Roxbury to assist with the fortification of Dorchester Heights, eventually leading to the retreat of the British from Boston (Browne n.d. 2).

The **Early Industrial Period (1830-1870)** was the peak of the shipbuilding industry in the town. The railroad had not entered the town yet and as a result, shipping and export of goods remained focused on the wind and water. Between 1832 and 1837, a total of 71 ships were launched and over 900 people were engaged in shipbuilding (MHC 1981: 7). Ezra Weston ("King Caesar") opened the "10-acre yard" in 1834 and his yard, as well as the Samuel Hall Yard (1837) were the largest shipbuilding yards in the

town. The importance of the shipbuilding industry also led to the chartering of the Duxbury Bank by several prominent shipbuilders. Fishing was another important element of the economy with 46 ships making up the town's fishing fleet. The shipbuilding boom could not last forever, and with the rise of steam boats and the railroad, Duxbury's shipyards shut down as quickly as they began. By 1865 only 2 ships were launched a year and in 1869 the last fully-rigged ship was launched (MHC 1981:7) (Appendix B Map 2).

The loss of shipbuilding as a mainstay of the economy led to a large population drop during the **Late Industrial Period (1870-1915)**. The railroad finally arrived in Duxbury in 1871 and the town's economy saw a shift to tourists and cranberries as its mainstays. These two elements of the economy established the summer character of the town which has endured to this day (Appendix B Maps 3-5).

Tourism and eventually poultry production came to dominate the economy during the **Early Modern period (1915-1940)** (Appendix B Map 6).

a. Known Historic Sites

Three historical archaeological sites are on record at the Massachusetts Historical Commission site files for the town of Duxbury. The foundation of the original John Alden House, located adjacent to the Alden School property, was the site of an archaeological dig in the 1950's. The Myles Standish cellar hole property on Standish Shore was tested in the 1890s. Other sites include the Tide Grist Mill site located off Washington St. at the Bluefish River and the Howland's mill site. The Myles Standish (a.k.a. the ancient burial ground) is located adjacent to the project area. Additionally, Dorothy Wentworth has identified 18 additional sites in her book *Settlement and Growth of Duxbury 1628-1870*. These sites will be field evaluated as part of this Site Examination and will have historic site forms submitted for them. Of these sites, six are located within two kilometers of the project area. Three of these sites are previously identified 17th century settlers homes while the others are the locations of early shipyards and a 17th century palisade gate.

b. Historic Archaeological Potential

General historic settlement patterns have been developed for historical resources in New England and these can be used to help predict where historic archaeological sites may be found (Handsman 1981; Paynter 1982; Walbauer 1986; Wood 1978). Economic geographers have also formulated models on historic settlement that take into account variables such as proximity to bodies of water, arable soils, granite outcrops, and gravel and clay beds (Haggett et al. 1977). Proximity to settlement concentrations, freshwater springs, streams and sources of waterpower also effect where people will settle.

Historic Archaeological potential can be stratified as follows:

High/ Moderate potential: Within 100 m. of a major transportation network, with 100 m. of fresh water and with 1000 m. of a settlement concentration
Low Potential: >100 m. of a major transportation network, >100 m. of fresh water and >1000 m. of a settlement concentration

The project area is expected to have a high archaeological potential to yield evidence of historic use of this area of Duxbury. The project area is given a high potential for containing historic archaeological

resources:

- it is located on a Plantation Period (and possibly Contact Period) road
- it is located adjacent to a historic period burial ground dating back to the early 17th century
- it is the postulated site of the Second Meeting House built in Duxbury (1707-1785)
- it is known that this was common land since the initial settlement of Duxbury
- it is located in one of the earliest settlement concentrations, Morton' Hole, in the town and likely formed the focus of the settlement core

As the exact location of neither the first nor the second meeting houses are known exactly, and since early burials were often marked only with fieldstones or wooden markers, there was the potential that the site could contain 17th century human burials or remains of the first meeting house. The artifact assemblage was expected to be relatively low but it was hoped that the presence of temporally diagnostic artifacts in association with any possible structural evidence (post holes or molds, foundation or sill trenches) would help to establish what structures if any ever stood on this site. Subsoil anomalies were excavated with sections cleared to provide a broader horizontal plan of any anomalies encountered, with the hope being that their original function will be able to be postulated (grave versus foundation trench or post mold). As there is an ancient burial ground located adjacent to the project area, the potential did exist for scattered fragmentary human remains may be encountered.

4. Documentary Research

Preliminary examination of the historic site files, historic maps, and the Duxbury Town Report (MHC 1984) was conducted at the Massachusetts Historical Commission in order to assess the prehistoric and historic potential of the project area and develop an initial historic context. Further research was conducted at the Duxbury Town Hall, the Duxbury Historical Society, the Duxbury Rural and Historical Society Drew center, and the Duxbury Public Library as needed.

a. First and Second Meeting House History

Background research has been conducted to investigate the establishment, constriction and use of meetinghouses in Duxbury. Eugene Joseph Vincent Huiginn wrote *The Graves of Myles Standish and Other Pilgrims* in 1892. Before this work, no one had seriously examined where the first and second meeting house may have been situated. Huiginn was attempting to identify the location of the graves of Myles Standish, John Alden and Elder William Brewster. He hypothesized that early settlers would be buried near the meeting house, as was common practice at the time. In order to locate the burial ground, which was never directly referred to in the town or county records, he determined he would need to identify the location of the meeting houses first. Huiginn examined various theories regarding the possible location of the meeting houses and then, through the use of cartographic and documentary evidence, deduced that the earliest burial ground and the earliest meeting house, must lie between Hall and Bayleys corners along Chestnut Street.

The first reference to the meeting house was in 1638 when A. Sampson was presented before the court for striking and abusing John Washburn the younger in the meeting house, on the Lord's Day (Huiginn 1892:39). It is known that the minister's houses were located near the meeting house and it is interesting to note that when the first minister's land was laid out in 1637, no mention was made of its association with the meeting house, possibly indicating that the meeting house was constructed after the minister was hired in 1637 (Huiginn 1892: 45). Other references occurred in 1641 when Duxbury

was listed as one of eight towns with churches, in 1651 when Nathaniel Bassett and John Prior were fined 20 shillings for a disturbance in the church, in 1684 when Joseph Prior Jr. was paid for mending the pulpit door, in 1692 when Mr. Southworth was paid for glassing the meeting house, in 1698 when it was voted that the gutters of the meeting houses would need to be repaired and in 1706 when Benjamin Prior was allowed to remove the fence between his land and the meeting house's (Huiginn 1982: 39, 40, 41). Regarding the disturbance caused by Nathaniel Bassett and John Prior, it was ordered that at the next town meeting or training day, they each be bound to a post for two hours in some public place with a paper on their heads on which their crime was to be written (Huiginn 1892:40). It is interesting that they were not ordered to be bound to a post at the meeting house, possibly indicating that the Duxbury meeting house lacked a pillory or stocks which many people associate with 17th century meetinghouses.

It appears that Duxbury may have been lax in their institution of corporal punishment in the form of whipping posts and stocks all together. In 1637 Plymouth ordered that Duxbury furnish itself with a livestock pound and a whipping post and that if they failed to do so that they would be fined by the courts (Winsor 1849: 84). By 1640 Duxbury still was without stocks at least, because in this year, Francis West was ordered set in the stocks in Plymouth and was also ordered to make a set of stocks for Duxbury (Winsor 1849: 84). The town appears to have never got around to building the pound as well. In 1641 they were presented for not having one, and in 1642, and in 1650, and 1653, and 1655 when they were also presented for not having a whipping post or stocks (Winsor 1849:84). It is not known if they ever had stocks in the town, but we do know that in 1753 Joseph Freeman was paid 10 shillings for the task of making a set of stocks for the town (Winsor 1849:84).

Using the historic references one can surmise the following about the first meeting house:

- it was built between 1632 when those living at Duxbury were allowed to gather their own church and 1638 when the first reference to it appears in the historical record
- it either initially did not have glass in the windows, but was glassed by 1692, or the glass had fallen into disrepair and was re glassed in that year
- it had gutters
- it had a pulpit with a door
- it had a fence separating its yard from that of its neighbor Benjamin Prior

Regarding the location of the first meeting house, the best evidence locating it at the ancient burial ground comes from a 1670 Duxbury record that describes a path to the mill that runs past the meeting house. This appears to be the same path described in 1637 as running from Morton's Hole to Duxbury town (Huiginn 1892: 50). This road, the Duxburrough Path, follows the route of today's south half of Tremont and a portion of South Station Street (Wentworth 1973: 17).

It was determined in 1706 that the original meeting house needed to be replaced and that the new meeting house should be 40' long (east to west) 30' wide (north to south), 17' high in the walls to the roof line, and that it should be built within 3-4 rods (50-66') of the old one (Etheridge 1893:202). Common lands were then sold to pay for it, with 180 pounds eventually being raised for the project (Etheridge 1893:202, 205). Captain Arnold and Mr. John Partridge were selected to hire workmen to build the new meeting house (Etheridge 1893: 202). In 1713 several town members were allowed to build a seat in the meeting house (Etheridge 1893:236). In the same year, the town exchanged land with Thomas Prince for a training field near the meeting house (Winsor 1849: 115). The seat was to adjoin

the front gallery and stretch the whole length of the gallery from girt to girt. At the same time, liberty was granted to pen (fence or enclose) the meeting house. By 1732 the meeting house appears to have been in disrepair as 9 pounds 2 pence were allotted for repairs to it (Etheridge 1893:243) and in 1742 Joshua Delanoe was hired to shingle the backside of the meeting house (Etheridge 1893:271). Discussions were begun in 1745 about the possibility of building a new meeting house. Lumber was purchased but it was eventually decided to enlarge by 14-17' and repair the existing meeting house (Etheridge 1893:274, 303, 311, 312). It appears that cost was the dominant factor in this decision because even as the discussions began in 1745, the town wanted to entertain the option of trying to find some town member who would pay for the whole construction out of their own pocket (Etheridge 1893:303) and when it was decided that the town would pay for it, the selectmen wanted to make sure that the repairs and enlargement were done at the "cheapest rate" (Etheridge 1893: 312). In 1752 someone was hired to supply the pulpit for the meeting house as well, implying either that it had no pulpit before this time or that the pulpit was replaced (Etheridge 1893: 313).

As another way to raise funds, it was decided to pull down "the two hind seats in the meeting house and to make pews there" (Etheridge 1893: 316). The pews would then subsequently be auctioned off to the highest bidder. This auction occurred on June 10, 1754:

"At a public Veadue held at the meeting house in Duxborough on June 10th 1754. And the Vendue was to sell the new pews in the said meeting house, and said pews were sold to the highest bidder.

The Pew by the Pulpit stairs sold to Joshua Stanford	19- 9-4
The Pew on the right hand of the broad aisle John Samsou Jr	14- 0- 0
The Pew on left hand of broad aisle Israel Selvester	15- 6-8
The Pew on left of front door Nathan Brewster	20-13-4
The Pew on Right front door Joshua Loring	19-9-4
The Pew on next to this Joseph Freeman	13-6-8
Next to the Samsons Gamaliel Bradford	17-9-4
The Pew Corner opposite Womans side John Hunt	12-2-8
The Pew In Galery over broad aisle John Hunt	6-5-4
The Pew In Galery middle Saml Seabury	5-9-4"
Corner Pew middle Thomas Southworth	5-12-0
Both hind pews in galleiy Peres Loring	6-16- 0
Middle Pew on Mens Side John Hunt	11-12-0
Corner Pew on Mens side Nathaniel Simmons	12-0-0 "

(Etheridge 1893: 326).

The final mention of the second meeting house in the records was in 1767 when the selectmen decided that there should be a place made in the meeting house, in the "south end aloft" to keep the town's powder (Etheridge 1893:338). This was two years after the very open opposition to the Stamp Act and obviously, was in anticipation of possible stronger events to come. The third meeting house was constructed in 1787 on Tremont street farther to the north and west of the first two and closer to the geographic and economic center of the town.

Using the historical records, what can be surmised regarding the second meeting house is this:

- it was built in 1707
- it initially measured 30 x 40 ' x 17' high and eventually enlarged 14-17' in length
- eventually was plastered

- it was shingled, at least on the back side
- it had a gallery
- it had a pulpit
- it had a broad alley
- it eventually had box pews installed
- it had a fence on the outside at least on one side
- after 1767 it was used to store the town's powder
- it lasted until 1787 and was likely sold off

Like the Old Ship Meeting House in Hingham, the Second Meeting House in Duxbury appears to be a First Period structure which replaced an earlier First Period meeting house. Both the Old Ship and the Second Meeting House began as structures slightly larger than squares (Old Ship 55 x 45', Second Meeting house 30 x 40') which were enlarged by 14-17'. Both were unplastered originally with plaster being added later (possibly indicating that the Second Meeting House was clapboarded on the interior like the Old Ship) and both had box pews added in the middle 18th century. Interestingly, in both cases the box pews were auctioned off to the highest bidders.

b. Archaeological Examinations of Meeting Houses in Massachusetts

The Massachusetts Historical Commission's index of site reports lists 19 archaeological projects that either directly or indirectly relate to the investigation of 17th to 19th century meeting houses in Massachusetts. The majority of these reports (N=8) document testing and analysis of archaeological deposits and cultural material from the African Meeting House site in Boston. Of the remaining 11 reports, five explore potential 17th to 18th century Native American Meeting Houses associated with John Eliot's "Praying Indian" towns, two explore 18th to 19th century Quaker meeting houses, two document testing at 19th century meeting houses, one explores testing at the African Meeting House on Nantucket, and only one reports testing around an 18th century town meeting house, the Chestnut Hill Meeting House in Millville, like the Second Meeting House site in Duxbury (Griswold and Cooney 2002).

The Chestnut Hill Meeting house was built in 1769 and test excavations were conducted prior to the installation of a concrete pier under the northwest corner of the extant building. Testing consisted of three one-by-one meter and four 50 cm wide by one meter long units (totaling five square meters).

Archaeological excavations uncovered parts of the building foundation, the stone fill for a retaining wall along the street, and a posthole and postmold possibly related to a hitching post. Very little in the way of artifactual material was recovered, primarily nails and window glass fragments. No human remains were discovered. This assemblage contrasts markedly with that recovered around the African Meeting House in Boston where a large artifact assemblage allowed the role of the African Meeting House as a community building, especially as the site of large public events that included preparation, serving, and consumption of food, to be explored both through the archaeological and documentary records (Bower and Charles 1982).

The archaeological assemblage from the Chestnut Hill Meeting House and to a lesser degree the assemblage from the African Meeting House Site, was compared with what is recovered from the Site Examination at the Second Meeting House Site. The assemblage from the Chestnut Hill Meeting House was described by the excavators as meager, consisting mostly of nails and glass while that at the African Meeting House was very rich and showed the community use of the site as a social gathering

location as well as a meeting house. The two sites appear to represent the two extremes of meeting house types. This may be more of a result of the use of the Chestnut Hill Meeting House as a religious and governmental structure as opposed to the use of the African Meeting House as more of a religious and secular structure without the larger government functions. The African Meeting House likely was created to be a gathering and social location. Meeting Houses in 17th and 18th century were religious and civil structures where services occurred as well as annual government meetings. The types and amounts of artifacts recovered should help to examine in more depth how this meeting house functioned in 17th or 18th century Duxbury. Was it just a structure where people went for Sabbath services and for court and was vacant when not in use for those purposes, resulting in a limited assemblage of mostly architectural materials, or was it more of a social location even when not being used for Sabbath services or government functions, which would result in a wider range and variety of material culture being present.

5. Field Methods

a. Theory

Archaeological findings that can address some of the topics relating to community organization in the seventeenth and eighteenth centuries, the communal use of space around a community structure during pre-Revolutionary, Revolutionary and early federal periods, and the development and evolution of the meeting house throughout the nineteenth century.

Features that were looked for during the Site Examination that have the potential to add to our understanding of these topics include the builder's trench or postmolds associated with the structure, deposits or anomalies in the yard outside of the structure possibly related to the position of fence lines or posts, artifacts relating to the temporal period of use and the patterns of use outside and inside any possible structures, artifacts and anomalies relating to potential Native American occupation of the site prior to the arrival of the settlers in the 1630s. These findings will be combined with the background research that is designed to identify the history of the property.

One of the purposes of the site examination is to help determine National Register eligibility by identifying what categories sites would fall under in the Register. This site may be eligible for nomination under Criteria D as a **historic or prehistoric**. For the purpose of this site examination characteristics of the area within and surrounding any structures identified will be examined include two areas of research. The first are the processes or relationships that have been instrumental in shaping the environment such as spatial organization, land uses and activities, responses to natural features, and cultural traditions. The second are the physical components or features that make up the environment such as circulation networks, boundaries, vegetation related to land use, structural types, cluster arrangements, archaeological sites, small scale elements and perceptual qualities (McClelland et al 1990: 4-8).

Research questions for this project included the following:

- are there prehistoric archaeological deposits present within the project area
- how does any of the prehistoric material recovered relate to the two known prehistoric sites located within and adjacent to the project area
- can the prehistoric assemblage be used to provide a better understanding of the assemblages and archaeology identified at the two previously identified archaeological sites
- are their architecturally related anomalies and deposits present within the Second Meeting House Site

project area

- if deposits are present, can they be determined to be related to the 17th or 18th century meeting houses believed to stand on or near the project area
- can the historic archaeological artifact assemblage be used to provide a better understanding of the nature of the use of the meeting house and its surrounding yard
- are their potential 17th century human burials present within the project area

b. Method

Site examination testing is conducted for two main goals: the determination of the boundaries of the site and gaining a better understanding of the site's age, contents, integrity and function so that the significance of the site can be assessed. Site Examination testing was limited to the area owned and maintained by the Duxbury Rural and Historical Society. The purpose of the Site Examination was to give a preliminary definition of the size, data contents and spatial arrangement of artifacts and features, especially any structural elements such as building trench, floor deposits and material within the foundation, for the purpose of assessing the site's integrity, research potential, and significance, and in order to make an opinion of the potential eligibility of the site for inclusion in the National and State Register of Historic Places. Site Examination testing also sought to identify any elements relating to native American occupation, with the goal being to help provide a better understanding of the two sites located within and adjacent to the project area.

c. Mapping

As testing was conducted, a detailed map of the project area was created (Appendix A Map 2). This map was used as a means of recording the location of testing and features revealed during the course of excavation (Appendix A Maps 3-5).

d. Testing Strategy

The project area was expected to have a high archaeological potential to yield evidence of prehistoric and historic use of this area of Duxbury. The site contains one known prehistoric site dating to the early Archaic and Woodland periods, and is adjacent to another significant prehistoric site, the Howland Orchard site. The topography, soil characteristics, distance to water and distance to a suspected Native trail, indicates that even without the presence of two other previously identified sites, the project area would maintain a high sensitivity for prehistoric resources. The project area also has a high sensitivity for containing potential historic resources. It is located adjacent to the ancient burial ground in Duxbury, the oldest maintained burial ground in America, it is adjacent to a known historic road, and it is the suspected location of the second meeting house in the town. Geographically it is located at the center of a community core, Morton's Hole, dating from the town's initial settlement and occupies a prominent rise within the town, making it an elevated and visible location, predictably the type of location that meeting houses were often situated on.

Archaeological testing took three forms. The first was a ground penetrating radar survey performed by Russ Kempton, Principal of New England Geophysical. Mr. Kempton was responsible for designing and conducting the GPR survey. Mr. Kempton has had over 27 years of experience in geophysical field surveys and has worked with law enforcement agencies, among others, in identifying single and mass burials.

The GPR survey was conducted to locate anomalies that may be associated with the meeting house, grave shafts, or other features associated with the property's historical development. A scan focusing on depths from 4 to 12" will be used for this purpose. The full extent (such as grid size) and potential of the GPR survey was determined in the field by Mr. Kempton. This type of survey provided a noninvasive snapshot of subsurface conditions that cannot otherwise be accomplished.

As GPR can only show that an anomaly exists below the surface and it is not possible to determine exactly what that anomaly is, as a result, field testing or ground truthing of the anomalies identified by the GPR survey was important to state with any degree of certainty what is or is not present in the Project Area. After the data was collected in the field component of the survey, all scans were analyzed in a computer program. The results of the computer analysis coupled with the beginning and ending depths of the identified mass and Mr. Kempton's years of experience with this type of survey was the identification of potential anomalies, if they exist, within the Project Area. These locations were ground-truthed. Excavation was conducted through the use of appropriately sized excavation units, as determined by the Project Archaeologist and Mr. Kempton, and placed so that they expose the anomaly. Ground truthing was also carried out in areas where GPR surveys revealed the presence of no anomalies. This was done in order to test if the GPR survey correctly identified areas anomaly sterile areas as well as locations of potential anomalies.

Following the GPR survey, sampling of the plowzone was carried out through the use of 50 cm square test pits that will be excavated at the 5 meter grid intersection points in order to gather a sample of the plowzone/ A1 horizon and to help delimit the site boundaries and investigate the integrity of the site. Test pit excavation was carried out in 5 cm levels with the natural soil horizon and was limited to the excavation of the A1/ plowzone. Upon reaching the subsoil, the subsoil surface will be scraped clean, and recorded photographically and through the use of hand drawings and written descriptions. 50 cm wide by one to three meter long trenches, one by one meter and two by two meter excavation units were also used to investigate suspected areas of the foundation trench associated with the meeting house.

The project area measures 34.7 m on the south (Chestnut St.) side, 47.6 m on the east side, 38 m on the west side and 31 m. on the north side. Employing a five-meter grid, it was expected that a total of 63 test pits will need to be excavated.

All soil was screened through archaeological screens fitted with 1/4 inch hardware cloth. All artifacts recovered were placed into separate bags by unit and level for cleaning and cataloging following fieldwork. Detailed notes were kept for each of the excavation units, test trenches and test pits. These notes included descriptions of soil colors and textures as well as scale drawing of all test units, trenches and pits.

The Duxbury Rural and Historical Society was the final curatorial repository for all the artifacts, soil samples, field notes, photographs, and video documentation . These materials will be deposited and curated at the Duxbury Rural and Historical Society's Drew Archival Library, located within the Wright Building at 147 St. George Street, Duxbury, Ma. The Wright Building was the home of the Duxbury Free Library until 1997 when the Library relocated to a much larger, newly renovated space. In 2005, the Town of Duxbury voted to appropriate Community Preservation Funds to restore and adapt the Wright Building for new uses. The original 1909 wing of the library has been restored to it's early 20th century appearance. The Duxbury Rural and Historical Society utilizes the fully climate-

controlled facility to preserve their large collection of historic documents and make them available to the public. The DRHS also hired an archivist, Kerry Durkin, to manage the facility.

C. Laboratory Processing and Analysis

Artifacts collected during the intensive survey were cleaned, identified, described and cataloged for analysis. The artifacts were then placed in labeled acid-free plastic bags that were then placed within acid-free boxes. The artifacts and field notes are curated at the Drew Archival Library, a modern, professional, fully climate controlled, secure facility maintained with a full time archivist by the DRHS. The Massachusetts Archaeological Professionals retains copies of all this documentary material in our project files.

Materials recovered during the course of fieldwork were brought back to the laboratory processing facility located in New Bedford, Massachusetts. Materials was washed and processed, then cataloged for analysis. Analysis focused on identifying the nature, period of manufacture, possible use and interpretation of recovered materials. This analysis, along with the findings from the site examination and background research, were used to determine if the site was eligible for the National Register of Historic places.

D. Report

Principal Investigator Craig S. Chartier assumed full responsibility for preparing a report in accordance with the MHC's regulations (950 CMR 70.14 (2)) for site examinations. This report contains the background context for the Town of Duxbury (a summary of the environment and history) and a compiled history of the project area. The report describes the research, details the survey strategies and methods used, and gives the results of the site examination. The report analyzes and assesses the potential significance of the results and makes recommendations for additional archaeological work, if warranted. The information is complete enough to allow decision making by the Duxbury Rural and Historical Society.

This report was prepared in accordance with the MHC's regulations (950 CMR 70) for site examinations and includes:

- a summary of the general historic background context of Duxbury
- a narrative summary of the individual property history
- a copy of the GPR report submitted by Russ Kempton of New England Geophysical
- a detailed plan of the prehistoric and historic features
- a description of the testing strategy and methods used in the site examination, the results of field testing, the definition of the site boundaries, the analysis and potential significance of the site based on the established significance criteria and the recommendation as to the significance of the site and its eligibility to the National Register
- recommendations based on the nature of the potential impacts to the site for additional archaeological work
- enough information to allow decision-making by the Duxbury Rural and Historical Society

A draft report was submitted to the Duxbury Rural and Historical Society and upon acceptance a copy was forwarded to the MHC for their project files. The principal investigator responded to comments as necessary and prepared one hard copy of the final report for the Duxbury Rural and Historical Society,

one for the Duxbury Historical Commission, one for the Duxbury Public Library, as well as pdf versions of the report on disc for archiving and further distribution at the DRHS's discretion. The final report includes the prehistoric and historic archaeological sites forms as well.

E. Justification for Field Investigations

The project area of the Second Meeting House Site had a high potential for containing both prehistoric and historic archaeological resources. Two previously recorded prehistoric archaeological sites were located within or adjacent to the project area. Both sites were collected at or excavated by the members of the Massachusetts Archaeological Society and full field reports on the nature of the archaeology at these sites is lacking. The collections from the sites are also not curated in any single location but are maintained by the individual excavators. Both of these factors limit the amount of knowledge that can be gained from their excavation, making it difficult to fully understand the nature and significance of the occupations represented by them. Site examination testing at the Second Meeting House Site had the potential to provide a more detailed and professional examination of this area of Duxbury and to allow for a better understanding of the avocational collections and findings. The site also had a high historic archaeological potential. The project area existed within the center of one of the first settlement nodes formed following the initial settlement at Plymouth. It had the potential for revealing information relating to the construction and utilization of both the first and second meeting houses and also generally of the 17th century occupation in the town of Duxbury itself. The project area is owned and maintained by the Duxbury Rural and Historical Society, an independent non-profit organization which is fully funding the project, and thus the project is not under and local, state, or federal review. The DRHS believes that the site examination would allow them to gain a better understanding of this piece of property that they maintain, it allowed them the opportunity to promote both their goals of education and preservation of historic and cultural resources, and to help promote the need for conservation and preservation of cultural and historical resources within the town as a whole. A site examination was justified to investigate the project area to gather sufficient information to determine whether the archaeological deposits associated with property were eligible for listing in the National and State Register of Historic Places by determining the limits of the deposits, and to assess their integrity, significance and research potential of the site.

III. RESULTS OF THE SITE EXAMINATION

A. GPR Survey

Russ Kempton of New England Geophysical, conducted the ground penetrating radar survey on August 27, 2008 (Appendix C Maps 1). His survey began with a series of transect lines across the ancient cemetery in order to create a baseline of known geophysical anomaly signatures. Basically, by surveying across known, marked graves, he was able to obtain examples of what a typical profile of a grave shaft and the overall stratigraphy of the project area soils would look like. He was then able to take these typical profiles and compare them with what he subsequently saw in the SMH project area. After surveying three transects across the ancient burial ground and identifying many potential unmarked graves, he moved his equipment to the SMH project area. Russ made three initial passes through the SMH project area, each spaced 25 feet apart. Following the initial scan, Russ conducted a closer scan using a two foot grid over the entire SMH project area. In-field conclusions of the SMH scan were that, with a high degree of confidence, no grave shafts were present in the area and that overall, the SMH area had only seen a limited degree of disturbance. The entire area seemed very clean with no anomalies visible at that time.

While the ancient cemetery was not the focus of this year's fieldwork, Russ did identify a very interesting anomaly in that area. On the top of a rise located to the south of the Myles Standish burial memorial, GPR surveying determined that no individual burials were present, but a 20 foot square, strait-sided anomaly was visible as a result of the survey. While GPR was not able to determine the exact origin of this anomaly, possibilities include a large pit (like a cellar hole or mass grave) or even just a large rock or upwelling of bedrock. GPR surveying does well to identify anomalies, but obviously, the GPR survey has its limits when it comes to determining the origin and nature of the identified anomalies.

Russ provided MAP with composite images of the SMH project area (Appendix C Maps 2-3). the images show several anomalies on the north, east and west sides. Russ' recommendation was that these anomalies may represent postholes related to the meetinghouse. The anomalies were widely spread out but did appear to be oriented along strait lines. These areas were tested at the start of the fieldwork with a series of trenches oriented north to south, in the case of the possible northern line of the possible foundation line, and east to west in the case of the eastern line. When neither of these trenches revealed any evidence of foundation lines, Russ provided MAP with shallower scans (Appendix C Map 2) which did not reveal any evidence of possible anomalies. It was eventually determined that the anomalies that Russ initially saw were in fact artifacts of the scan resulting from the presence of trees and the empty spaces left in the scan when the trees were circumscribed during the scan. In conclusion, due to the shallow, focused and low visibility nature of the remains of the second meeting house, the GPR scan was not successful in predicting likely locations for the walls of the structure. The GPR scan did reveal that no graves would be encountered in the entire project area and that the soils across the entire area consisted on sandy, undisturbed soil.

B. Testing Summary

A total of 64.25 square meters were excavated using a combination of test pits, test trenches and excavation units during the course of the two week excavation in 2008 (Appendix A Maps 2-5). Table 1 gives a summary of the excavation units and gross findings from Site Examination testing. In order to facilitate comparisons, contiguous testing was identified by a section number, visible in the first column in Table 1. Appendix A-Map 4 shows the locations of the testing sections discussed in the text.

The most extensive and informative testing sections were numbers 2, 4, 6/8, 11, 12, 14 and 16.

Table 1. Testing summary, 2008 Site Examination testing

Section	Unit	Size	Orientation
1	S08 E06	50 x 1	N-S
1	S09 E06	50 x 1	N-S
2	S28 E05	50 x 1	N-S
2	S27 E05	50 x 1	N-S
2	S28 E5.5	50 x 1	E-W
2	S28 E06	1 x 150 cm	N-S
3	S15 E09	50 x 1	E-W
3	S15 E10	50 x 1	E-W
3	S15 E11	50 x 1	E-W
4	S18 E5.5	1x1 m	
4	S19 E05	50 cm x 1 m	N-S
4	S19 E05	1x1 m	
4	S20 E05	50 cm x 1 m	E-W
5	S24 W04	50 cm x 1 m	E-W
6	S18.5 W03	50 cm x 1 m	E-W
6	S18.5 W04	1x1 m	
6	S18 W05	50 cm x 2 m	N-S
7	S20 W02	50 cm x 1 m	E-W
8	S20 W05	50 cm x 1 m	E-W
9	S25 W05	50 cm x 1 m	E-W
10	S30 W.5-1.5	50 cm x 1.5 m	E-W
10	S29 E00	50 x 1 m	N-S
11	S27 W07	50 cm x 1 m	E-W
11	S27 W06	50 cm x 1 m	E-W
11	S27.5 W06	50 cm x 2 m	E-W
11	S29 W06	1.5 x 1 m	N-S
11	S30 W05	1x1 m	
12	S31.5 W04	1x1 m	
12	S32.5 W02	1x1 m	
12	S33.5 W02	1x1 m	

Section	Unit	Size	Orientation
12	S32.5 W03	1x1 m	
12	S33.5 W03	1x1 m	
12	S33.5 W04	1x1 m	
12	S34.5 W1.5	1x1 m	
12	S35 E00	50 cm x 1 m	N-S
12	S35 W1.5	1x3 m	
13	S20 E08	50 cm x 1 m	E-W
13	S20 E09	50 cm x 1 m	E-W
14	S20 E00	1x1 m	
14	S20 W.5	50x50 cm	
14	S18.5 W.5	1x1 m	
14	S19.5 E00	50 cm x 1 m	E-W
14	S19 E00	1x1 m	
14	S20.5 W00	50 cm x 1 m	E-W
14	S21 E00	50 cm x 1 m	N-S
14	S21 E01	1x1m	
14	S21.5 E00	1x1m	
14	S21 W00	50 cm x 1 m	E-W
14	S21 W.5	50 cm x 1 m	E-W
14	S22 E01	1x1 m	
15	S23.5 E04	1x1 m	
15	S24 E03	1x1 m	
15	S24.5 E04	1x1 m	
16	S24 E00	50 cm x 1 m	E-W
16	S24 E01	1x1 m	
16	S24.5 E00	1x1 m	
16	S26.5 E00	1x1 m	
17	S25.5 E04	1x 1 m	
17	S25 E05	50 cm x 3 m	N-S
18	S29 E6.5	50 cm x 1 m	E-W
18	S30 E07	1x1 m	
18	S31 E6.5	50 cm x 1 m	N-S

Section	Unit	Size	Orientation
19	S36.5 E01	50 cm x 1 m	E-W
19	S36.5 E02	50 cm x 1 m	E-W
19	S36.5 E03	50 cm x 1 m	E-W
19	S38 E01	50 cm x 1 m	N-S
19	S38 E03	1.5 x 1.5 m	E-W
20	S31 E05	50 cm x 1 m	N-S
20	S32 E05	50 cm x 1 m	N-S
20	S33.5 E03	1x1 m	
21	S33.5 E8.5	1x1 m	
22	S31 E3.5	1x1 m	
23	S26 E02	1x1 m	

Artifacts

A total of 6856 artifacts were recovered from Site Examination testing (Table 2) with the majority of these (n=5339/ 77.9%) being architecturally related items (hand-wrought nails, flat glass, window leads, brick, mortar, a door pintle, architectural granite). Items relating to the prehistoric occupation of the site accounted for only 2.5% (n=172) of the total artifact assemblage, paralleling non-architectural artifacts that date to the same period as the second meeting house (n=150/ 2.2%). Finally, artifacts dating to the nineteenth and twentieth centuries, obviously post second meeting house, accounted for 18.6% (n=1278) of the total assemblage.

Table 2. Recovered artifact counts

Artifact	Subtotal	Total
Prehistoric		172
Quartz	34	
Flake	6	
Flake Fragment	7	
Shatter	16	
Small triangle	1	
Small Stemmed	1	
Scraper	2	
Orient Fishtail	1	
Rhyolite	122	
Flake	37	
Flake Fragment	69	

Artifact	Subtotal	Total
Shatter	6	
Biface	3	
Core	1	
Fox Creek lanceolate	1	
Point Tip	4	
Split Cobble	1	
Argillite	2	
Biface	1	
Flake	1	
Chert	5	
Flake	3	
Flake Fragment	2	
Quartzite	3	
Flake	2	
Flake Fragment	1	
Saugus jasper	4	
Flake Fragment	3	
Shatter	1	
Attleboro red felsite	2	
Flake	2	
Architectural		5339
Brick	3002	
Nails	504	
Flat Glass	1366	
Mortar	428	
Window lead	3	
Pintle	1	
Granite	33	
Punch	2	
Domestic		150
Ceramics	62	
Clay Pipes	37	

Artifact	Subtotal	Total
Redware	10	
Creamware	10	
Slipware	2	
Westerwald	1	
White salt-glazed Stoneware	2	
Bone	19	
Shell	53	
Bead	1	
Button	2	
Pin	1	
Glass bottle	7	
Flint	3	
Buckle	1	
Melted lead	1	
19th-20th century Artifacts		1278
Ceramics		
Ironstone	3	
Pearlware	7	
Porcelain	1	
Whiteware	15	
Yellowware	4	
Charcoal	998	
Glass Button	1	
Curved Glass	70	
Coal	8	
Slate	1	
1900 Penny	1	
Cuprous Band	1	
Cuprous wire	2	
Bottle cap	2	
Iron Bucket handle	2	

Artifact	Subtotal	Total
Can fragments	84	
Iron fragments	14	
Possible nails	5	
Lipstick Tube	1	
Machine-cut nail	32	
Cast iron fence cap	1	
Razor Blade	1	
Iron wire	2	
Wire nails	7	
Asphalt roof shingle	1	
Plastic button	1	
Plastic comb	1	
Plastic cup	4	
Melted glass	8	
Total	6856	6856

Prehistoric artifacts are grossly similar to those recovered from the Howland Orchard site to the south. temporally diagnostic artifacts are believed to date to the Late Archaic (6000-3000 years before present), and the Middle Woodland (1500-1000 years before present) periods. They reflect low density occupation of the site with activities such as lithic tool production and hunting equipment repair. The recovered assemblage supports the identification of the site as the second meeting house. The abundance of architecturally related artifacts corresponds with finding from the Chestnut Hill meeting house and reflect the site's use as a meeting versus habitation location. The presence of domestic artifacts are likely the result of materials lost during construction, use, and removal of the meeting house structure following the construction of the third meeting house. The recovery of post-second meeting house artifacts indicates sporadic, short term use of the area with the refuse present being the result of accidental loss by visitors to the site, refuse material deposited in the empty lot by neighbors to the north and east, and material associated with the possible nineteenth century pathway that was identified.

Prehistoric Evidence

The majority of the 172 prehistoric artifacts consisted of waste material that resulted from the reduction of larger pieces of material to create smaller, finer tools. This waste material represented all stages of the manufacture of tools such as knives or projectile points, tools called bifaces for the fact that they have two faces that have been sharpened. Waste types present included flakes and flake fragments, shatter, one split cobble and one core. Flakes are thin, sharp-edged pieces of stone that exhibit evidence that identified them as having been intentionally removed from a larger stone through the use of force. the force can be applied by means of another stone, called by archaeologists a hammerstone, or an antler hammer, called a billet, forcefully striking the target stone, or through the use of applied

pressure by the tip of an antler. The production of a tool such as an arrowhead proceeds in several stages with each stage resulting in waste material bearing different types of evidence. By examining even the smallest piece of waste material, archaeologists can discover what stages of lithic production occurred at a site. This is important because this sort of evidence helps us to understand the use of a site and the types of activities that occurred there.

Lithic reduction, the process of changing a common rock into a tool like an arrowhead, begins with the acquisition of a raw material. Raw materials can come from three main sources: quarries, cobbles, and trade blanks. Quarried stones result from a person traveling to a location where large outcrops of a good raw material occurs and then spending time removing a smaller piece from the larger outcrop. This smaller piece can either be removed from that quarry site in its raw form, but more often it was reduced to a roughed out shape, called a blank, prior to leaving the quarry site. Reducing a quarried piece at the quarry results in a raw material that is lighter and which has had some of its potentially fatal flaws (cracks or mineral inclusions- imperfections that make stone tools break during production or use) discovered and removed prior to spending much time on the final product. There is nothing more heartbreaking for a knapper than discovering a fatal flaw when you are close to finishing a piece, and then having the almost finished break so close to the end. At an archaeological site, evidence of quarried pieces can take the form of large roughly shaped pieces of raw material or large lithic flakes that lack any evidence of having come from any other source. Quarries that were often used by Native people in the Eastern Massachusetts have been identified in and around the Blue Hills and to the north of Boston and in the Mount Hope Bay area of southeastern Massachusetts and Rhode Island. . Lithic types that are commonly quarried at these sites include hornfels and rhyolite from around Boston and the Boston Basin, and argillite from Mount Hope Bay.

Another source of raw materials are pieces of rhyolite, quartz or quartzite that have been removed from their original parent location by the glaciers and were subsequently tumbled and rolled into rounded cobbles. Cobbles can be found on beaches, in river and stream beds and banks and in the subsoil of the glacial drift that underlays much of eastern Massachusetts. The first step in reducing a cobble is to create a flat plane, or platform, from the edges of which more pieces can be removed. This is usually accomplished using a hammerstone to remove one edge along the periphery of the cobble or by splitting the cobble in half. Following the creation of this plane, the outer rind of the stone, the weathered and often friable cortex, is removed. When pieces of this cortex is recovered from an archaeological site, it is strong evidence that cobbles were used as a raw material at least in some cases.

Following the acquisition of the raw material and the initial reduction, smaller pieces are removed. These pieces are called flakes. A flake has very specific characteristics and shapes that allows them to be identified as flakes and not just thin, sharp, natural rocks. When flakes are created the object, the hammerstone, billet, or antler tine, that strikes the target material, imparts energy into the stone. If that energy is strong enough and is applied at the right angle, a flake will be struck off. The flake is essentially a fossil of the force that was applied to the stone. The point where the hammerstone, billet, or tine struck the raw material, creates a striking platform that reflects the point of impact where the target was struck. This platform is usually fairly flat and may have a crushed appearance. As the force begins to travel into the raw material, it leaves a thicker bulb-shaped area just inward of the striking platform. This is termed the “bulb of percussion” and is a hallmark of a flake versus a natural rock. As the energy from the strike dissipates into the raw material, it spreads out like a wave and creates ripples through the stone that spread outward towards the edges before the force runs out and the terminal edge of the flake is reached and the flake pops free from the raw material. All of this happens in a

fraction of a second when the raw material is struck. The angle of attack on the raw material, the type of striker and the amount of force used results in flakes with different characteristics of platform angles, thickness, width and length. All of these characteristics are recorded by archaeologists and are used to help examine what people were doing with the raw materials at a site. Many times the flake breaks during the transference of energy and one finds flake fragments versus flakes. The raw material from which the flakes are being struck is called the core, or if it is in the process of being reduced to a pointed tool it is called a preform. Other times the initial strike is less controlled or fractures and imperfections are present in the stone and chunks versus flakes are struck from the raw material. These are termed shatter versus flakes. Shatter can be thick and angular and/or blocky, or thin and flat depending on the material and the imperfections.

When a lithic assemblage is analyzed, the following pieces of data are collected and compared:

- the identification of the material types
- the identification of the waste or tool type
- the lengths, widths and thicknesses of artifacts
- the angle of the striking platform
- the width of the striking platform
- the recording of the presence of cortex

By looking at angle of the striking platform and the size of the flakes, the stage during the reduction process will be identified. By doing this, it can be determined if the entire reduction process occurred at the site or if just portions happened. If small flakes with sharp striking platform angles are present, it is more likely that either preforms were brought to the site and finished there or that tool maintenance (sharpening, reworking) occurred versus tool manufacture. If shatter, cores and larger flakes with cortex more acute angles are present then it is more likely that less finished raw materials were brought to the site and that tool manufacture but not final reduction took place. If there is a mixture of larger and smaller flakes and acute and obtuse platform angles, then it is likely that all stages of reduction occurred.

Lithic Materials Recovered

A limited number of material types were recovered from the Site Examination testing with quartz and rhyolite being the most common. Below, brief descriptions of the common types of materials that were identified

Argillite

Argillites are fine grained sedimentary rocks (like mudstone and slate) that have been metamorphosed to varying degrees. As a result, these stones are harder than their original sedimentary rock and thus suitable for limited stone knapping to produce tools. Unfortunately, argillites still maintain a degree of sedimentary platyness and have a tendency to flake in layers, making them somewhat difficult to work. Types of argillite include Black (originating in the Delaware River Valley of New Jersey and Pennsylvania), Maroon (originating from the Chicopee shales in western Massachusetts), Blue-Grey, Tan, Grey (all originating from either the Cambridge slates in the Boston basin or Barrington, Rhode Island), Green Platy (originating in Barrington, Rhode Island and also occurring in glacial drift deposits in the Taunton River Basin), Banded (originating in the Cambridge slates in the Boston basin) and Coarse grained green (Originating in Hull, Massachusetts). Argillites are common in glacial drift deposits in many locals in eastern Massachusetts and occur predominantly in the Late Archaic, although they were also used to a lesser degree in other time periods.

Cryptocrystalline Silicates (Chert)

These sedimentary rocks are extremely fine-grained and as a result, are the perfect type of stone for flint knapping. There are few fractures running through them and due to their tight molecular crystalline structure, the flake with sharp straight edges. None of the cryptocrystalline silicates found archaeologically are known to occur as outcrops in Massachusetts and when recovered from a site are generally believed to have arrived through trade or were carried there by the past inhabitants. This class of lithic includes chalcedonies and cherts. Chalcedonies include Grey, such as Ramah chalcedony (originating in northern Labrador) and White (originating from Flint Ridge, Ohio). Cherts include Green, such as Cocksackie and Deepkill, (outcropping in the Hudson Valley), Grey (outcropping in the Western Onondaga formation, New York), Grey and Brown Mottled, commonly associated with Meadowood points (outcropping in the Western Onondaga formation, New York), Scoracious or pitted (outcropping at Fort Ann, New York), Banded, commonly associated with Paleoindian sites, Black (outcropping at Normanskill, Fort Ann, Helderberg and Munsungen Lake, New York), Dark Brown (occurring in the Normanskill and Central Onondaga formations, New York), White, a weathered variety of black or brown chert, and Fossiliferous, or those containing fossils.

Felsites/ Rhyolite

The term felsite and rhyolite are used interchangeably by archaeologists, leading to heated discussions about which is the correct one. Both terms can be used to describe the same lithic type, basically intrusive volcanics formed by the rapid cooling of granite magma. Felsite/ rhyolites are fine grained with dark or light crystals (phenocrysts), essentially bits of volcanic crystals, embedded within the matrix. They can have no visible phenocrysts (aphenitic felsite/ rhyolite) or have large, prominent ones (porphyritic felsite/ rhyolite). The phenocrysts may be large or small and banding may also be present. Felsite/ rhyolites commonly occur in glacial drift deposits and are often encountered as rounded cobbles on beaches. The original parent source of these stones appears to have been in the northeastern quarter of Massachusetts.

Felsite/ Rhyolites include Black with white phenocrysts (originating in the Newbury Volcanic Complex), Green Fine-Grained, a dark green felsite lacking visible phenocrysts (originating in the Lynn Volcanic Complex in Melrose, Massachusetts), Maroon/ Purple/ Red (originating in the Lynn Volcanic Complex in Marblehead, Massachusetts), Grey with dark small phenocrysts (originating in the many volcanic complexes), Blue-Grey with dark phenocrysts (originating in the Blue Hills Complex in Braintree, Massachusetts), Cream and Rust Stained coarse grained grey green to tan with pyrite crystals (originating in the Mattapan Volcanic Complex in the Sally Rock Quarry in Hyde Park), Red Banded with dark red to pink fine banding or swirls on a light red, tan or cream matrix, also called Mattapan Red Felsite (originating in the Mattapan Volcanic Complex on the Neponset River), Red to Maroon Porphyritic with dark red or white phenocrysts (outcropping in Hingham, Massachusetts), Green porphyritic visible dark glassy and white phenocrysts (outcropping at Mount Kineo on Moosehead lake in Maine), Red light red to pink with a coarse texture phenocrysts may or may not be visible but are pink or tan feldspar or translucent silica glass, banding may occur in same composition as phenocrysts, also known as Attleboro Red Felsite (outcropping in Attleboro, Massachusetts), Banded and Other Porphyritic.

Volcanics (Jaspers)

Volcanics is a sort of catch all classification encompassing several classes of material. Hornfels are dark grey to black metamorphosed lithics formed by the baking of sedimentary deposits by cooling bodies of magma and are found in quarries in the Blue Hills outside of Boston. Rhyolitic Tuff is

orange to tan with a coarse sandy texture and no phenocrysts (originating in the Newbury Volcanic Complex). Brown Jasper is a brown to yellow fine grained cryptocrystalline silicate also known as Pennsylvania Jasper. It originates in Pennsylvania but may also be found in Conklin, Rhode Island. Red to Maroon Jasper is also called Saugus Jasper and is an igneous rock (originating in the Lynn Volcanic Complex). It is a fine grained, glassy and aphyritic varying in color from maroon to light pink with yellow to tan banding. Igneous is a term used to identify any lithic types that do not fall within the other classifications.

Crystalline Silicates (Quartz and Quartzites)

This class includes quartz and quartzites. Quartz may include Crystalline, Milky or smoky. Quartz is a vein forming mineral that was deposited in the fissures in other rocks. Quartzite, a metamorphosed sedimentary rock that originated as ancient beaches with a coarse grained texture and no phenocrysts of banding, commonly occurs in glacial drift deposits. Sources for quartzite have been identified in Westboro in the Sudbury and Assabet Drainages and Worcester at the South Bay quarry. Quartzite that has been highly metamorphosed is called metaquartz or mylonite. These are extremely fine grained occasionally with a glassy texture ranging from green to light green to white. These have been identified from the Concord/ Sudbury and Ware/ Quaboag drainages and may outcrop in Central Massachusetts.

Stones like the chert and the Saugus Jasper likely arrived at the site through trade, as they are not locally available. The Attleboro red felsite and the argillite may have been locally available, but they too were either traded for or were quarried at a distant site. Rhyolite and quartz made up the majority of the assemblage (Table 3) and they also had the widest variety of artifacts present. The majority of the

Table 3. Prehistoric artifact counts

Artifact	Rhyolite	Quartz	Chert	Argillite	Quartzite	Saugus Jasper	Attleboro Red Felsite
Flake	37	6	3	1	2		2
Flake Fragment	69	7	2		1	4	
Shatter	6	16				1	
Core	1						
Split Coble	1						
Point	1	3					
Point Tip	4						
Scraper		2					
Biface	3			1			
Total	122	33	5	2	3	5	2

Tools present were also made of these two materials (Appendix E 1-3). The variety of quartz and rhyolite lithic refuse present shows that all stages of reduction occurred at the site. The higher occurrence of quartz shatter is the result of the crystalline nature of the quartz and the fact that it has a tendency to shatter into unusable pieces. Cortex was found on one piece of quartz and on five pieces of rhyolite debitage. The striking platform angles also support the complete reduction of raw materials,

especially for rhyolite (Table 4). The presence of four projectile point tips, all made out of

Table 4. Platform angles

Platform Angle	Rhyolite	Quartz	Chert	Argillite	Quartzite	Saugus Jasper	Attleboro Red Felsite
30-45	8	2	0	0	1	0	0
50-65	38	2	2	0	0	0	0
70-85	18	2	2	1	1	0	1

rhyolite, also indicates production of projectile points versus the repair of tools. This deduction is due to the fact that tip are most likely to break off during production or use as projectile points. If the tip had broken off during use, like when an arrow or spear misses a target and strikes the ground or a tree, the broken tip is not retrieved and only the shaft, with the intact base and midsections returned to camp for replacement. The presence of a base and midsection from a rhyolite Fox Creek projectile point and a quartz Orient Fishtail point at the site are likely the result of this sort of action. The presence of a broken Small Stemmed point, in which case the entire projectile was recovered, may be the result of a “in production” break and discard of a projectile point. Quartz also appears to have been used to produce scrapers, as two of these were recovered. Saugus Jasper, an exotic material coming from north of Boston, was used for one unifacially knapped possible scraper. A uniface is a tool that has been worked on only one side, usually for use as a scraper.

Rhyolite debitage was recovered in 15 distinct colors, indicating the likelihood that a variety of individual raw materials were brought to the site in various stages of reduction. Materials that occurred in a limited quantity may have been initially reduced on site and finished elsewhere, as these tended to have shallower platform angles, indicative of earlier stage reduction (Table 5). For the most part the

Table 5. Rhyolite colors

Color	Count	Tool *	PA 30-45 **	PA 50-65	PA 70-85
Banded	2			2	
Dark Grey	11	PT		4	2
Dark Purple Grey	2	FC			
Green Grey	15	BFC (2)	1	3	1
Grey	47	PT	4	15	11
Light Grey	2		1	1	
Light grey purple	1				
Light Tan Grey	1				
Maroon Purple	4			1	
Maroon tan	5			2	1
Maroon	1				
Mottled tan and Dark grey	1			1	
Purple Grey	16	BFC, PT (2), C	1	6	1

Color	Count	Tool *	PA 30-45 **	PA 50-65	PA 70-85
Tan Grey	5			1	2
Very dark purple grey	2		1		

*BFC- Biface; C- Core; FC- Fox Creek Point; PT- Point Tip

**PA- Platform Angle

tools that were identifiable, tended to be made out of the most common colored rhyolites, indicating more intensive utilization and reduction of these varieties. The most common colors that were present, the grays, green grey and dark grays, likely originated in Lynn volcanic complex sources, or generally throughout the Boston Basin. The presence of cortex on several rhyolite pieces indicates that at some of the material was derived from glacially transported cobbles. The distribution of quartz and rhyolite debitage and tools shows that quartz was more concentrated in the center and in the eastern portion of the project area (Appendix D Map 1). Rhyolite was more widely distributed (Appendix D Map 2) but the highest concentrations and the distribution of the tool fragments indicates that the center and the southern portions of the project area. These difference in the distributions between the quartz and rhyolite may be the result of temporal differences related to separate occupations between the Late Archaic and the Middle Woodland periods. The overlapping distributions of both materials may indicate that the areas where the materials were recovered are geographically or topographically significant areas, areas that for whatever reason, such as proximity to raw materials, water, trails or the situation on a flat and slightly elevated area, make them conducive to temporally separate occupation and use of the area.

A limited variety of lithic tools were recovered. Two quartz scrapers indicate that quartz was used to produce utilitarian scrapers which could have been used to process a variety of faunal or floral resources. Quartz was also used for three Late to Transitional Archaic projectile points- one Squibnocket (Small) Triangle, one Small Stemmed, and one Orient Fishtail point. The presence of only the Orient Fishtail base and the broken Small Stemmed point indicate that the site likely served as a short term camp where hunting tools were refurbished and repointed. The rhyolite and argillite bifaces and the rhyolite projectile point tips, indicate that rhyolite was used for points and also either for preforms to later make other points or for cutting tools. The presence of one Middle Woodland Fox Creek lanceolate point indicates utilization of rhyolite during this period.

Fox Creek points are relatively rare in Eastern Massachusetts with few known outside of a collection from Kingston, the outer Cape (Truro and Wellfleet) and Martha's Vineyard. These points are diagnostic of the Middle Woodland Period, occurring from AD 400-700, and they are often found on multi-component sites (sites with multiple time periods represented) and area associated with the growing of corn and decorated ceramics. On Martha's Vineyard, they have been found in association with postmolds outlining an oval-shaped house measuring 16' in diameter (Towle 1986: 30). Other projectile point styles such as Greene points are considered as being used contemporaneously with Fox Creek points in the earlier period of their use while Jack's Reef points and Levannas (the triangular points that are the hallmark of, and only point style occurring in, the Late Woodland period). The people who used the Fox Creek points are believed to have been seasonally migrational, spending the summers on the coast and the winters further inland, and they show many of the cultural characteristics evident with southeastern Massachusetts' Native people at the time of Contact. Other types of artifacts commonly found associated with Fox Creek points include exotic lithics like New York state cherts and Pennsylvania jaspers, Saugus jasper, Blue Hills hornfels and Great lakes' copper. While no Fox Creek

points were found at the Howland Orchard dig, one Greens style biface and one Jack's reef pentagonal point were recovered, both diagnostic to the Middle Woodland period (Holmes and Otto 1995: 8)

In summary, the prehistoric cultural material recovered indicates that this site was used as a camp where a variety of lithic materials were reduced to produce projectile points and scrapers. The most intensively reduced materials consisted of quartz and rhyolites, with other materials making up a much smaller percentage of the total. The artifact assemblage indicates that occupation occurred during the Late Archaic and Middle Woodland periods, which is similar to the occupation at the Howland Orchard site. The lack of a wide variety of tools and the fact that no features were encountered indicates that this was not a permanent base camp location but appears to have been more of a short term stop over camp. This site may have been peripherally related to the larger Howland Orchard site to the south.

Historic Artifacts

Eighteenth Century Ceramics

Artifacts dating from the eighteenth century made up the majority of all the material recovered during the Site Examination. Most of this material consisted of architecturally-related materials (brick, flat glass, mortar, nails) but there was a small assemblage of non-architectural artifacts dating to both the second meeting house and post-meeting house periods.

Most of the non-architectural related second meeting house period artifacts were ceramics consisting of fragments of redware, slipware, creamware, pearlware, white salt-glazed and German Westerwald stonewares, and clay tobacco pipes (Appendix E 4-5).

Redware is the broadest variety within the ceramic class of earthenwares. Earthenwares can be characterized as being a ceramic class composed of glacial or alluvial clays that have been fired in a kiln at temperatures not exceeding 1100° Celsius. Before the firing, the body may be, but was not always, covered with a powdered or later, a liquid lead oxide glaze. This glaze fused to the body and created a waterproof, glass like surface. Different paste textures, decorative techniques, and glazes produced different types of earthenware identified by the distinctions: redware; tin-enameled; slipware; North Devon gravel tempered and gravel free wares; and refined earthenwares. Some of these varieties have distinct temporal ranges, while others continued in production virtually unchanged for centuries. Redware is the largest and most commonly occurring type of earthenware encountered on European Colonial sites.

Redware itself has not received a great deal of careful and scholarly work to tightly date them. Apart from Laura Watkins' paramount work and Sarah Turnbaugh's 1985 treatise on the subject, there has not been much follow up work done to continue the scholarship. As a result, while redware makes up the greatest percentage of the assemblages looked at, they can not be closely dated, and must be given limited weight to the amount they can contribute to the identification of an early seventeenth century site. What can be said about them relates primarily to their glaze colors.

Studying the English ceramic traditions which formed the precedent for colonial potters work, Turnbaugh identified 12 redware traditions in England which she felt were perpetuated by New England potters (Turnbaugh 1985:216-217). Her date ranges for wares made in England date from ca. 1200 to 1795 and those in New England from ca. 1650 to 1815. Unfortunately Turnbaugh's work suffers from several serious drawbacks. English and Colonial wares are virtually indistinguishable from each other, unless one performs complex trace mineral tests to determine the source location of

the clays used. As a result, unless one knows that the redwares present at a site are definitely of colonial manufacture, they can not be used to reliably date a site. Turnbaugh also sets beginning date of manufacture for the colonial potters much too late. She herself notes that potters were established in Charleston Massachusetts by 1635 and it is known that potters were at work in Virginia by 1622 at the latest (Turnbaugh 1985:209).

Another type of earthenware commonly found are Bristol and Staffordshire slipwares. These wares are buff to yellow-bodied and decorated with combed lines or dots of iron oxide beneath a clear to pale-yellow glaze. By the eighteenth century these were made only in Staffordshire. Slipwares were often produced in forms such as mugs, pitchers, posset cups, chamber pots and candlesticks. These wares were imported into the American colonies until approximately 1776.

While English folk and Colonial settlers were content to use redwares for their utilitarian needs, there was always re for “white wares”, beginning with the importation of Oriental porcelain. But porcelain was expensive and the availability was limited, which lead to the development of tin-glazed soft-bodied delft wares which copies the motifs and forms of the more expensive porcelains. By the middle eighteenth centuries, the English’s quest for a less expensive light glazed ware similar to Chinese porcelain was brought one step closer by Josiah Wedgewood’s perfection of Creamware in 1762 (Hume 1970:125). This ceramic type was not pure white, but had a light to deep yellow tint to the glaze and pools green in the crevices of the vessels. Creamware lasted until 1820, but was generally replaced by a whiter “pearlware” in the late 18th century. Early Creamware had a deep yellow tint which, by 1775, was refined to a lighter yellow by the use of kaolin clays in the manufacturing process.

Pearlware is said to be the most common type of ceramic encountered on early 19th century sites (Hume 1970:130). Whereas when the glaze of creamware pooled green in the crevices of the foot ring on the bottoms of vessels, because of the addition of cobalt to the glaze mixture (in an attempt to make whiter wares) pearlware pooled blue. Pearlware is also attributed to Josiah Wedgewood in the 1770s and went on to become the dominant ware in 1810, eventually fading with the refinement of whiteware after 1820. A terminal date for pearlware has been suggested as being as late as 1865 (Price 1979). Pearlware was used on a wide variety of forms from chamberpots to eggcups but it is most frequently encountered in the form of plates and saucers decorated with blue or green shell edging around their interior rims. Decoration on Pearlware also took the form of cup and mugs decorated with annular bands on the exterior. These “annular wares” were produced from approximately 1795-1815 (Hume 1970; 131).

Decorative techniques used on Pearlware, and eventually Whiteware, are more temporally sensitive than the wares themselves. Blue or green shell edge-decorated wares first appear in Wedgewood's 1775 and Leeds' 1983 pattern books and became one of the standard products of the Staffordshire potteries in the nineteenth century. This is believed to be due to the fact that they are the least expensive table ware available with decoration (Miller and Hunter 1990). Initially both green and blue were used on the edges but by 1840 green-edged had become rare and blue shell-edged remained in production until the 1860s. By the later part of the nineteenth century shell-edging had ceased but blue-edging continued until the 1890s.

Stonewares are a class of ceramics which, while being made of the same raw material and using the same techniques as the earthenwares differ significantly in their firing. Unlike earthenwares,

stonewares were fired in a kiln reaching temperatures of between 1200 and 140° Celsius. This high firing results in a harder “stone-like” body, making it impermeable to water. Stonewares were often glazed by throwing handfuls of salt into the kiln at a critical point in the firing, thus imparting an orange peel textured salt-glaze to the exterior of the vessels being fired. Stonewares were produced in numerous countries including Germany, England, France, and America.

One of the most popular eighteenth century stonewares was an English white salt-glazed stoneware produced by Staffordshire potters. White salt-glazed stoneware was first produced in 1720 and was developed as a way to supply the English and American markets with a less expensive Oriental-like ceramic product. This ceramic type has been described as the first ware that epitomizes the shift from hand-made objects to industrialized, factory made wares (Turnbaugh 1985:18). By the 1760s white salt-glazed stonewares commonly took the form of saucers and tea bowls which were decorated with scratch blue designs like flowers and leaves. White salt-glazed stoneware was produced until 1770 when consumers turned to the refined earthenwares like creamware, versus these white stonewares.

The second type stoneware common in the eighteenth century were German ceramics produced in the Westerwald region. These were most commonly made in the form of jugs that were decorated with cobalt blue and a salt glaze on a gray stoneware body. Over time the finely executed decorations and lines on Westerwald vessels became degraded. By the late seventeenth and especially the eighteenth century, they were distinctly debased. After approximately 1660 manganese was also used in conjunction with cobalt in the decoration of these vessels (Hume 1969:281). German stoneware is found on American sites dating to the eighteenth century before the American Revolution.

A total of 10 creamware fragments were recovered from the site Examination testing. All of these fragments were recovered from contexts in the southeastern half of the area that was tested, approximately corresponding to the southeastern half of the conjectured meetinghouse outline (n=8) and to a lesser degree to the north and to the southeast (n=1 in each case) of the conjectured walls. Ten fragments of redware were also recovered. The distribution of the redware fragments was slightly different from the creamwares. Redwares were concentrated in the extreme northern half and to the north and northwest of the conjectured walls (n=8) and to a lesser degree to the far east and south of the meeting house. Slipware also only occurred in tow locations, in the northwestern corner of the meeting house and in the north center of it. Pearlware was recovered from one context (number 16) where seven sherds of a transfer-printed plate were recovered. This location is beneath the approximate center of the conjectured meeting house outline. White salt-glazed stoneware occurred in only two contexts, both in the northeastern corner of the meeting house. One sherd of German Westerwald stoneware was recovered from the western side of the conjectured west wall of the meeting house.

Clay tobacco pipes are, to the archaeologist, two things, one of the most commonly occurring objects on colonial sites and easily dated by their makers’ marks and bowl styles. The stem bores of tobacco pipes gradually became smaller over the centuries since they were first produced in England. The stems of the pipes were slowly lengthened over time and as a result the bore of the stems became smaller with those from the 1580-1620 period are predominantly of a 9/64” bore while those of 1650-1680 are predominantly of a 7/64” bore. J.C. Harrington discovered this reduction sequence when he worked with clay pipes from Jamestown in the 1950s and it has been refined over the years.

9/64” 1580-1620

8/64” 1620-1650

7/64" 1650-1680
 6/64" 1680-1710
 5/64" 1710-1750
 4/64" 1750-1800

This dating by stem bores was initially believed to be the answer to the problem of dating sites. Of course, dating artifacts is never as easy as Harrington and Binford felt that it could be. In reality, the dates for the different pipe stem bores represent the specific periods of greatest popularity for those sizes, so there is a degree of over lap with all of these sizes. When the 7/64" were in their greatest popularity, there were still 8/64" being made, and later in their period of popularity there were 6/64" being made. For example, Hume shows a chart on which he estimates the percentages of production at different time periods for different bore diameters:

Date range	9/64"	8/64"	7/64"	6/64"	5/64"	4/64"
1620-1650	20%	59%	21%			
1650-1680		25%	57%	18%		
1680-1710			16%	72%	12%	
1710-1750				15%	72%	13%
1750-1800				3%	20%	74%

These percentages all represent the popularity of the sizes at the median date of production. In the early years of the different size's production there would have been a greater percentage of the earlier sizes bores. As one moves through the production period the earlier sizes would be phased out and the next smaller size would begin towards the middle to end of the period, moving into the next period. But one can assume that there was never any regularity to the production outputs by various producers in the different times for the different bores.

Bearing in mind the imprecision of stem bores as an absolute dating tool, what can be accomplished using these stem bores is to see when the range of activity at the site occurred. Sites with small percentages of 9/64" stems, large percentages of 8/64" stems and a small percentage of 7/64" stems can be assumed to have their maximum period of occupation between the 1620 to 1650 period.

Stem bore diameters for clay tobacco pipes ranged from 6/64" (n=4) (1680-1710) to 5/64" (n=6) (1710-1750) to 4/64" (n=6) (1750-1800), corresponding well to the known period of use for the meeting house (1707-1785). Stems were scattered across the project area, principally within the conjectured outline of the meeting house. A total of 12 clay pipe bowl fragments were recovered. All the fragments appeared to be consistent with heelless funnel style bowls, 1720-1820. Their distribution closely matched that of the stem fragments.

The paucity of ceramic and clay tobacco pipe fragments was not unexpected at the site. Because the site was not a domestic domicile or public house where food was served, such an inn, ordinary, or tavern, it was expected that little if any domestic debris would be recovered. That which was found may have been deposited at the site during the construction or destruction of the structure, representing meals consumed, ceramics used and pipes smoked during breaks while the labor was underway. The concentration of the material within the conjectured outline of the meeting house supports the theory that it was deposited not while the structure was in sue, but before or after it had served its intended purpose.

While it is unknown how true the following story is, and how unlikely it would be to actually find fragments of tobacco pipes that were lost in the meeting house during its period of use versus during its construction or destruction, Justin Winsor relates a story regarding Pastor Robinson and his quarrels with a certain neighbor named Josiah Wormall. Winsor states that Josiah Wormall was a "Christian of the Old School usually went to church in a leathern apron, smoking his pipe until he reached the meeting-house door. On one occasion, having deposited his pipe in the pocket of his coat, before he had extinguished the fire within, he walked deliberately up the broad aisle with becoming solemnity, and leaning on a gigantic staff, and having taken a seat directly before the pastor in the 'old men's long seats,' he fixed through his shaggy eyebrows his searching gaze upon the preacher. It was however but for a moment, for springing suddenly from his seat with a stare of consternation, and seizing the skirt of his coat all on fire, he rushed from the house. 'There,' cried Mr. Robinson with imperturbable gravity, 'there, brethren, neighbor Wormall comes smoking into the house, and he goes smoking out! ' (Winsor 1849: 190). Wouldn't it be interesting, if unlikely, if these fragments that were found in approximately the right location (Appendix D Map 3), in front of the area where the pulpit is believed to have been!

While nineteenth and twentieth century period features and deposits will be discussed below in their appropriate sections, second meeting house related features are discussed in a separate section following the discussion of twentieth century artifacts and evidence.

Nineteenth Century Ceramics

Nineteenth century artifacts from the Site Examination are believed to have arrived at the site from the sources: deliberate rubbish deposition, accidental refuse scatter, refuse deposition resulting from visitation to the site. The nineteenth century was a period of awakening of people's interest in the Pilgrims and sites associated with them. It was during this period that historical sites associated with them were identified, numerous influential histories were written and monuments to them were erected. In Duxbury, it was during the later nineteenth century that Myles Standish's possible grave site was identified (Huiginn 1892), the Myles Standish Monument was erected, and the Myles Standish site was excavated by James Hall (1853). It is likely that after Huiginn's identification of the project area as being the likely location of the second meeting house, people began to picnic at and make pilgrimages to the site as a way of remembering and celebrating the Pilgrim past. These visits could have resulted in some of the ceramic and glass artifacts that were deposited at the site during this period. It is also believed that a house to the north of the project area, that the existing house to the east of the project area, and that a roadway that cut across the center of the project area were all created at this time. All these actions appear to have left artifactual evidence at the site.

Ceramics were the easiest artifact to attribute to this period with four types being recovered: the earthenwares whiteware and yellowware (Appendix E 4), the semi-vitreous ceramic ironstone, and the high fired porcelain. Pearlware was replaced in approximately 1820 by very white refined earthenware commonly called whiteware. Whiteware continues to be produced today. Plain, undecorated whiteware was produced throughout the century, starting after 1820 and was considered the cheapest decorative technique. Blue and black florals covering most of the decorated surface predominated on hand-painted whitewares in the first quarter of the nineteenth century. Slightly latter, a finer sprig pattern in either monochromatic or polychromatic forms was produced until around 1890 with polychromes more popular, but less common, from 1830 to 1850 (Miller 1987). Blue edging, similar in execution and design to that used on pearlware, continued on whitewares most commonly with unscalloped unmolded or impressed rims, overall much simpler than the earlier pearlware versions.

Yellowware is earthenware produced to replace the, by the late nineteenth century, unfashionable redware, as a new kitchen utility ware. It has a hard, pale yellow body that is covered with a yellow or a clear glaze, blue, black or brown and white bands, with or without blue, green, or black dendritic mocha decoration, or else with a dark mottled brown glaze. The annular decoration with or without the mocha was produced from 1840-1900. The later form of decoration is commonly called Rockingham or Bennington-glaze. This type of yellowware has a thick brown, mottled glaze and a molded body and was most popular from 1840 to 1900. It was first produced by English potters in the Swinton District after 1788 with teapots being the most common form (Spargo 1926:170). By 1830, English potters had immigrated to America and began producing a larger variety of these wares. The center of production was Bennington, Vermont. Between 1847 through 1865 the most common technique for applying the glaze was by spattering it on with a paddle, the result being that no two pieces are decorated the same.

Clear-glazed yellowware was produced in many utilitarian forms including bowls, plates, jugs, and bottles. Yellowware was introduced to America from England in the latter 1820s and eventually was produced by various firms in New Jersey, Pennsylvania, Ohio, Vermont, New York, and Maryland by the 1840s to 1850s (Leibowitz 1985). The maximum popularity of yellowware was in the 1860-1870 period, with its popularity almost gone by 1900, but it was continually produced into the 1930s. English-made yellowware has a yellow glaze, while American yellowware has a clear alkaline glaze. Four temporal trends have been identified for yellowwares (Leibowitz 1985):

1830	plain no decoration, no foot formation, no lips, hand thrown
1840	annular banded and dendritic (mocha) decoration
1850-1870	coarse, heavy yellowware predominantly in the Midwest, cream and buff color to rich canary yellow
1860-1900	Pressed or molded yellowware, scenes and floral decoration

Ironstone is a high-fired earthenware that approaches, but never quite reaches the hardness of stonewares. Ironstone was developed to compete with the whiteware market. With the final development of thin whiteware, the thicker ironstone was relegated to products such as plates, pitchers and bowls, chamber pots and other heavy utilitarian wares. Ironstone was first introduced by Charles Mason of Staffordshire, England in 1813, which by 1842 was shipped to American markets. Ironstone was decorated in the same ways as Whiteware. Additionally it was often left plain or molded with leaves, ribs, or flowers. Plain wares were produced for the entire time span of Ironstone production, whereas molded ironstone with sharp angles, and hexagonal or octagonal body forms were popular from the 1840s through the 1880s. After 1860 embossed plant elements became popular and in the 1860s and 70s, luster decorated “tea leaf” patterns were popular (Kovel 1973).

Porcelain is the highest fired ceramic type available. It is fired at 1400 degrees Celsius which creates an almost glass-like body and surface. Porcelain was once considered one of the most expensive ceramic types, but by the late nineteenth century, with the rise of industrialized ceramic production and mass production, porcelain was only slightly more expensive than the average ceramic.

Whiteware was recovered from a wide variety of contexts across the project area and was in fact the most widely distributed post meeting house ceramic type. Vessels recovered included both undecorated and black and blue transfer printed vessels. Yellowware was recovered from two contexts, both of which were within the identified nineteenth century roadway (sections 6 and 12). The fragments

appeared to have come from the same molded bowl or from two identical molded bowls, which date to the second half of the nineteenth century. Ironstone was recovered from sections 4 and 21, the former associated with a late nineteenth to early twentieth century trash pit and the latter close to the house located to the east of the project area. One piece of porcelain was recovered from section 16 in the center of the conjectured meeting house. This piece appears to be relatively recent in date, dating to the nineteenth century at the earliest.

Eighteenth Century Non-Ceramics

Relatively few artifacts were recovered which were not architecturally related (to be discussed later) and which could be definitely dated to the eighteenth century use of the second meeting house. Those that fit both criteria are listed below in Table 6 (Appendix E 6-8). The blue glass bead and pin may have been lost during

Table 6. Eighteenth century non-ceramic, non-architecturally related artifacts

Artifact	Section
Small Blue Glass bead	23
Lead Glass Drinking Glass Foot	5
Dark Olive Case Bottle	16
Dark Olive Bottle	12, 16
Light Olive Bottle	16
Gunflint Waste	9, 20, 12
Cuprous Pin	14
Cuprous Shoe Buckle	12
Cuprous Band	14
Cuprous Basket Weave Button	15

the use life of the building, both being artifacts small enough to have fallen between the floor boards of the meeting house. The shoe buckle was recovered from the area to the south of the conjectured southwest wall line of the meeting house and may have been lost outside of the meeting house during the use life of the building. The lead glass drinking glass foot was found in the same section as the German Westerwald fragment and may have been lost during the dismantling of the structure. The occurrence of the bottle glass fragments in section 16, located in the center of the conjectured meeting house, an area which also had a concentration of glass and ceramics, may indicate that this was a rubbish deposition or meeting area during the dismantling of the building. The brass band is indistinct, but its occurrence in section 14, where two of the wall postholes were located, may indicate that it also dates to the second meeting house period.

An identical basket weave button was recovered from the Mardi Gras shipwreck off of the coast of Louisiana. This shipwreck dates to the ca. 1780-1820

(<http://www.flpublicarchaeology.org/mardigras/daily/20070530/>).

One piece of lead shot was recovered from Section 14. It measured 5/8", making it likely that it was a piece of musket versus pistol shot and making it close to .75 caliber, the caliber of a Brown Bess musket. It was recorded in 1767 that the town's store of gunpowder was to be stored in the meeting house. It is possible that the town store of shot was also stored here as well. It is also possible that it fell from someone's pocket when they were dismantling the meeting house.

Nineteenth Century Non-Ceramics

Nineteenth century and probable nineteenth century non-ceramics took the form of miscellaneous iron fragments, machine-cut nails, and mold blown bottles (Table 7) with most of the material occurring at the edges of the project area- north testing, extreme south testing- corresponding to actions taking place on Chestnut Street and the house adjacent to the north side of the project area (Appendix E 9).

Table 7. Nineteenth and nineteenth to twentieth century non-ceramic,
non-architecturally related artifacts

Artifact	Section
Machine-Cut Nails	1 (2), 4 (2), 6 (2), 12 (2), 14 (5), 15, 16 (2), 18, 19 (9)
Machine-Cut Spike	1
Light Aqua Bottle	7, 10 (3), 12, 19
Black Glass Button	16
Aqua Bottle	14, 16 (2)
Dark Aqua Bottle	4, 7, 12
Olive Bottle	9
Coal	4, 10, 12, 14, 18, 23
Pail Handle	12, 17
Iron Wire	6 (2)
Iron Fragments	4 (7), 6, 14 (3), 15 (3), 19 (5)
T-shaped Iron Piece	4
Dark Green Bottle	20

The most obvious nineteenth century feature at the site was a roadway which cut through just east of the center of the project area (Appendix A 5; Appendix F 1-2; Appendix G 2). This road is believed to extend from Chestnut Street to the eastern edge of the Myles Standish Burial ground. The road was initially encountered in the western half of Section 12 where it covered half of the two-meter wide unit and extended further to the west. It was also encountered in Sections 6 and 8, where the western edges were found, making the road approximately 2.5 meters wide. It may have also been present in sections 5 and 11, where areas of compact soil were encountered in the eastern halves. This roadway is visible on the 1941 and modern topographic maps (Appendix A 1; Appendix B 6).

Twentieth Century Non-Ceramics

Twentieth century artifacts and features consisted of a concentration of burned wood in section 8 within which pieces of wire and two relatively recent dairy bottle caps were recovered, a trash pit in Section 4 (Appendix F 3: Appendix G 1), and a scattering of plastic, one red lipstick tube and plastic comb (both found together), one Indian head penny dated 1900 (Appendix E-9), and fragments of clear and brown alcohol bottle fragments (Table 8).

Table 8. Twentieth century non-ceramic, non-architecturally related artifacts

Artifact	Section
Copper Wire	2
1900 Indian Head Penny	S40 E00
Cast iron Fence Post Cap	12
Bottle Cap	6, 10
Wire Nails	4, 7, 10 (2), 16
Sanitary Can	S5 W10, 4 (36), 21 (3)
Tobacco Tin	4 (35)
Can Screw Neck	4 (3)
Lipstick Tube	25
Iron Razor Blade	19
Asphalt Roof Shingle	1
Plastic Button	16
Plastic Cup	S5 W10, 10
Plastic Comb	25
Brown Bottle	S10 E00, 3, 4 (5), 6, 11, 12, 13, 19
Brown Dr. Gorman's Bottle	4
Carnival Glass	4 (5)
Clear Bottle Glass	S15 E10, S40 E00, 3, 4 (5), 10 (16), 12 (2), 13 (3), 14 (3), 15 (2), 16, 19
Glass Marble	4

Except for the burned area, the trash pit, and the comb and lipstick deposit, it is believed that all of the twentieth century materials arrived at the site as a result of accidental deposition. In the north central to the northeast portion of the project area, various scattered patches of charcoal were encountered. It appears that a small ground fire may have occurred in this portion of the project area, possibly associated with a structure to the north. The lipstick tube and plastic comb may have been accidentally deposited at the site as a result of visitation or it may have been ritually deposited at the site by a 1950s-60s couple.

The trash pit identified in Section 4 (Appendix F 3: Appendix G 1) was found to measure 55 by 75 cm and extend to 100 cm below the ground surface. In profile the pit had the appearance of a post hole, wider at the top and tapered at the bottom, but this may be the result of it having been dug with a shovel the same way that postholes were. Alternately, the hole may have been dug for a post before the digger realized that it did not lay on his land, it may have been subsequently been seen as a convenient location to deposit trash, and this was added before it was backfilled.. The feature existed close to the present location of the memorial marker and also could mark the location of an earlier marker which was removed, the hole filled with trash and earth, and the new marker erected. Artifacts recovered from within it included carnival glass, first produced after 1908, a brown machine-made Dr. Gorhaman's Gray hair Restorer bottle (Appendix e 9), and numerous tobacco tins, as well as miscellaneous faunal material and bottle glass. It is believed that the trash came from a house located to the north of the project area, possibly one existing before the extant home on the lot to the north.

Second Meeting House Architectural Evidence

Architectural evidence of the second meeting house took three forms: artifacts, postholes, and foundation trench segments. By combining these three sources of information, a fairly accurate sketch of the second meeting house can be created. Based on the artifacts recovered, the historic record, and comparison with other meeting houses, it is believed that the building was wooden with brick underpinning, diamond shaped window quarrels (small panes) set in lead kames. It was situated parallel with Chestnut Street and measured approximately 40 feet wide, northwest to southeast by 30 feet northeast to southwest with the longest side facing Chestnut Street.

The 1637 building agreement between John Pickering and the Town of Salem is illustrative of the details in construction that the architectural artifacts from the second meeting house could be evidence of:

“The agreem't betweene the towne & John Pickeringe the 4th day of the 12th moneth 1638
First hee is to build a meetinge howse of 25 foote longe, the breadth of the old buildinge w'th a gallerie answerable to the former: One Catted Chimney of 12 foote longe & 4 foote in height aboue the top of the buildinge. The back whereof is to be of brick or stone. This building is to haue six sufficient windowes, 2 on each side & at the end, & a paire of staires to ascend the galleries suteable to the former. This building is to be couered w'th inch & halfe planck & inch board vpon that to meete close: And all this to be sufficentlie finished w'th daubinge & glasse & vnderpin- ninge w'th stone or brick w'th cariage & all things necessary by the said John Pickeringe” (Dow 1922: 135).

It is interesting to note that this meeting house had a chimney and presumably a fire place, wheras most seventeenth and eighteenth century meeting houses are believed to have lacked such as feature.

Artifacts

The majority of the artifacts recovered were related to the architecture of the building (Table 9). The

Table 9. Architectural materials recovered

Architectural Class	Count
Brick	3002
Nails	504
Flat Glass	1366
Mortar	428
Window lead	3
Pintle	1
Granite	33
Punch	2
Total	5339

The distribution of architectural materials appears to closely correspond with the conjectured outline of the meeting house, indicating that the structure was reduced in place following its abandonment. No concentrations were located away from the structure, an occurrence which would have indicated that materials were grossly removed from the building to a separate distinct location, further processed and then removed from site. It appears that the structural elements were reduced in situ within or very close to the walls of the meeting house and then transported off site. The structure was probably reduced from the inside out and from the top to bottom.

Bricks

No whole bricks were recovered and the majority of what was found consisted of fragments under five grams in weight and under 3 centimeters in length (Appendix E-10). Unfortunately only one brick was recovered that had a measurable length, width and height, all the other brick fragments had no measurable components or had only one or two measurable dimensions. The dimensions of seventeenth and eighteenth century bricks were legally regulated. As early as 1625 there was a law in England stating the dimensions for bricks being 9" by 4 1/2" by 3" high, which was very similar to the 1700 dimensions for statute (a.k.a common) bricks which was 9 x 4 1/2 x 2 1/4" (Cummings 1979:118). The Massachusetts bay Colony set regulations on brick sizes in 1679, stating that the molds for bricks must be 9" long, 4 1/2" wide and 2 1/4" high, but, as William Leybourn observed in 1668, molds of such size seldom produced bricks of such size due to drying and burning (Cummings 1979:118).

The bricks used for the second meeting house were likely made locally. As early as 1629, clamps were established in Salem, Massachusetts for the manufacture bricks and roof tiles, while in the same year there is a singular, unique record of 10,000 bricks being imported into the colony (Cummings 1979:119). One of the avenues for future research would be to identify local sources of clay and brick makers working in the eighteenth century who may have provided the bricks for the second meeting house.

The measurements of the bricks from the second meeting house site are shown below in Table 10. As

Table 10. Measurable brick fragments

Section	Length	Width	Height
8			4.7 cm/ 1.85"
7		10.6 cm/ 4.2"	5.3 cm/ 2.1"
15		11 cm/ 4.3"	5 cm/ 2"
14	14 cm/ 5.5"	11 cm/ 4.3"	5.8 cm/ 2.28"
10			4.3 cm/ 1.69"
10			4.3 cm/ 1.69"
4			4.6 cm/ 1.8"
14			4.7 cm/ 1.85"
14			4.7 cm/ 1.85"
14			4.9 cm/ 1.9"
15			5.1 cm/ 2"
15			5.6 cm/ 2.2"
15			6.2 cm/ 2.4"
15		8.5 cm/ 3.3"	4.6 cm/ 1.8"
15		9 cm/ 3.5"	5 cm/ 2"
15		10.2 cm/ 4"	5.8 cm/ 2.28"

can be seen from the table, the one brick with a measurable length was nowhere near the 9" prescribed by the law and most of the other fragments did not come close to the widths and heights that were required. Appendix D Map-4 shows the distribution of the brick fragments (by weight) across the project area. The majority of the fragments were recovered from Sections 14 and 15. It is believed that the brick underpinning was added to the second meeting house at some point after it was constructed, probably in the 1740s when discussions were underway in the town as to whether to build a new meeting house or repair the old one. It appears, as will be further discussed under the section on the architectural anomalies, that the second meeting house was originally constructed by a post-in-ground or earthfast method. Once the post rotted, it appears that the rotten posts may have been removed, the holes filled with stones and a brick, and possibly architectural granite, foundation or sill replaced the posts as the load bearing members under the structure. When the structure was removed in the 1780s, the majority of the bricks were removed with only fragments being left behind.

Mortar and Shells

Associated with the brick concentrations were fragments of shell-tempered or shell-lime mortar. A total of 717.5 grams (1.58 pounds) of shell mortar was recovered with the majority of this, 709.9 grams, being recovered from Section 14 (Appendix E-11). Much smaller amounts were recovered from sections 10, 15, 16 and 17. Local sources of limestone that could be calcined to produce lime, were difficult to find in Massachusetts. Edward Johnson reported in 1650 that "the country affords no lime,

but what is burnt of Oyster-shells” (Cummings 1979: 122). As Johnson reported, people burned sea shells to produce lime which was mixed with the clay to produce mortar. Lime was necessary for the mortar to make it waterproof, as without lime, a good rainstorm would wash the mortar out of the masonry and the whole construction would soon come crashing down. The shells that were reduced to lime came from a variety of sources. In 1694 a large storm resulted in a plethora of shells on the beach. Local officials soon declared that none of the shells, nor any of the lime that was subsequently made from the shells, could be shipped out of Lynn under punishment of a fine (Jenison 1976: 22). Shells were also mined from Native American shell middens such as was done in 1667 by Thomas Batt, a Hide tanner in Boston. Batt used a Native shell midden located on the west side of Beacon Hill to create the lime pits he used for dehairing hides (Jenison 1976: 22). Another source of shells were live shellfish beds. This practice was discouraged due to the harm done to the shellfish, as such was the case in 1728 in Providence, Rhode Island where oyster beds were being raided (Jenison 1976: 22). By the early eighteenth century, local lime sources had been discovered and shell lime was less often used, as evidenced by a 1724 decree that mussels in Massachusetts Bay should no longer be used for making lime or anything else except for eating and bait (Fiske 1922: 36).

The presence of shells in mortar should not be taken as absolute proof of the use of shell lime mortar though. Shells may have been added to mortar as a filler or an aggregate, or may have accidentally been mixed into the mortar (Jenison 1976: 24). Many of the shells in the mortar from the second meeting house are burned, indicating with a high likelihood that the mortar was mixed with shell lime.

Shellfish remains were recovered from across the project area with occurrences of under one gram from most sections (7, 8, 13, 18, and 20). Higher occurrences between 1 and 4.6 grams were encountered from sections 2, 6, 14, 15, and 17, which corresponds well with the known or conjectured walls of the second meeting house. Section 4 yielded 4.5 grams in association with the twentieth century trash pit, making it likely that these shellfish were associated with consumption versus shell lime mortar. Species present in the mortar samples were limited to only soft-shell clam while overall from the site, mostly soft-shell clam was recovered with scattered pieces of oyster, quahog and surf clam. With the shell midden associated with the Howland orchard site being located just on the other side of Chestnut Street, the possibility exists that this midden could have been harvested for shells for the lime, but this is only a possibility without any basis in fact.

Architectural Granite

A total of 32 pieces of suspected architectural granite were recovered from within and around the postholes in Sections 14 and 15 with a few additional pieces found scattered in other sections. The soils in the project area are generally very sandy with little or no cobble or larger pieces of stone, making the fragments identified as possible architectural granite, unique within this context. These granite pieces are believed to have been used either as shims associated with sills, as additional supports associated with rotted wooden posts, or as fill within removed postholes. All the suspected architectural granite pieces were angular and ranged in size from 2.6 to 17 cm long. The fact that the post holes were filled with architectural granite and brick fragments may indicate either that A) the posts had rotted during the use life of the meeting house with at least the lower portions the posts being removed and the holes being filled with architectural stone or B) that the posts were removed when the meeting house was disassembled in the 1780s and the resulting holes were filled in stones and debris from the surrounding area.

Hand-Wrought Nails

A total of 467 hand-wrought nails or hand-wrought nail fragments were recovered. The overall total included 285 nail shank fragments with intact heads and 36 complete hand-wrought nails. Hand-wrought nails were made by specific craftspeople called “nailers” in the seventeenth and eighteenth centuries. Nailers took long thin rods of iron and hand formed each individual nail. The resulting nail is distinctive from later machine-made nails in that the shank of the former is square in cross-section and tapers to a sharp point. The shanks of machine-cut nails are rectangular in cross-section, which is a result of the cutting of nail blanks from a flat sheet of iron versus hand hammering each nail. The heads of hand-wrought nails are large and broad, often with four distinct blows of the headers hammer visible, giving them a distinctive “rose head” appearance. Machine cut nails initially were individually headed but later, by the 1820s, had roughly rectangular machine-stamped heads.

Nails are designated by their “penny” size, which refers to how much it costs to purchase 100 of each nail size. A two penny nail would cost two pennies to purchase 100 while a 10 penny nail, due to its larger size, would cost 10 pennies to purchase 100. The abbreviation “d” is used for penny, thus a “10 penny” nail is abbreviated “10d”. The “d” used in the abbreviation comes from the Roman word for a coin, denarius, thus the “d”.

Eight sizes of hand-wrought nails were identified at the second meeting house site (Table 11). These

Table 11. Hand-wrought nail sizes recovered (based on complete nails)

Nail Type	Size range	Count
Brad	1.4 cm/ .5”	1
2d	2.3-2.9 cm/ 1-1.1”	4
3d	3-3.5 cm/ 1.2-1.4”	14
4d	3.7-4 cm/ 1.5-1.6”	3
5d	4.2-4.3 cm/ 1.7”	2
6d	5-5.3 cm/ 2”	3
7d	5.7 cm/ 2.2”	1
8d	6.6 cm/ 2.6”	1

range in size from a single small brad ½ inch long, to a single 2 ½ long, 8d, nail. The majority of the nails were of the 3d (1 1/4” long) size. Nail sizes correspond to their uses, with smaller nails used for fastening thinner wood and larger nails used for fastening thicker wood. A modern day rule of thumb is that in fastening sheathing, shingles, clapboard, etc., the nail should be at least three times longer than the thickness of the sheet or board being fastened. This means that the 2d to 6d nails, the majority of those recovered, were being used for fastening wood that was .3 to .6” thick, which would be appropriate for clapboards or shingles. The larger nails would have been used for larger pieces of wood. The fact that no very large nails were recovered is likely related to the possibility that, following along with the post-in-ground architectural style evident by the presence of the post holes, wooden pegs called “treenails” or trunnels, versus iron spikes, were used to fasten the major timbers of the building. The distribution of hand-wrought nails (Appendix D Map 5) follows the basic outline of the second meeting house with higher concentration occurring in some sections, possibly indicative of salvage processing areas.

Flat Glass and Window Leads

A wide variety of colors of flat glass were recovered, ranging from clear to dark olive. It is believed that the darker glass (the aqua, dark aqua, light olive, and olive) was used with the meeting house while the lighter glass (the light aqua and clear) date to after the use of the meeting house and are intrusive (Appendix E-11). The higher counts of darker glass occurred in the northeast corner of the meeting house while the higher occurrence of lighter glass was generally to the southeast and east sides of the project area (Appendix D maps 6-7). The range of glass colors is likely related to windows being replaced during the life of the meeting house and to the lack of consistency in color for hand made window glass due to variations in impurities and manufacturing. All of the quarrels, the small diamond-shaped panes used to make a seventeenth to early eighteenth century window, would not have come from the same manufacturer and some were likely reused from the first meeting house. This would have led to a variety of shades of green being present even in one window. It is possible that some of the lighter aqua fragments, considered in this analysis to date to after the use of the meeting house, may have come from the windows of the meeting house, but superficially they appear to the author to be more consistent with nineteenth century window glass.

A few fragments of darker glass appeared to have been cut so that they had a curved edge (Appendix E-11). These fragments were recovered from Sections 14 and 16, along the north wall and in the center of the meeting house. It is believed that these may represent fragments of a pulpit window, a larger window often with a curved top portion that was situated behind the pulpit, which is believed to have been located in the center of the northeast wall.

Associated with the darker glass are three pieces of lead originally used to hold the diamond-shaped quarrels in place (Appendix E-11). These window kames are H-shaped in profile and are commonly found on houses dating to the seventeenth to early eighteenth century. They were eventually replaced with casement windows bearing rectangular panes similar to those found in houses today. Window leads were found in Sections 15 and 16. The window leads were likely eventually removed and the lead melted, possibly on site as lead drops were recovered from Section 12 (outside of the front of the meeting house) and reused for making lead shot, like that found in Section 14.

Other Architectural Artifacts

Only two other architecturally or potentially architecturally-related artifacts were recovered. The first is the shank from a pintle hinge. Pintle hinges are hand-wrought hinges consisting of an L-shaped pintle with a pointed spike which can be driven into wood, stone or masonry. The round pintle is located at the other end of the spike. The strap hinge rides on the pintle. Generally pintle hinges are used for doors and gates. This pintle was found in Section 12, just outside the southwestern wall of the meetinghouse. It may have been one of the hinges on the meeting house front door.

Two other artifacts which may have been used for the construction or destruction of the meeting house were iron punches. The punches were found in Sections 14 and 15 associated with the foundation trenches and post holes. It is unknown what these may have been used for in relation to the meeting house, but their location suggests they were somehow associated with it.

Architectural Anomalies

The people who dismantled the second meeting house ca. 1785, appear to have done a very thorough and fastidious job, leaving little behind to bear witness to the structure that once stood here. Aside from the artifacts discussed above, the only other evidence of the meeting house that was found consisted of

filled post holes and scant traces of the foundation or sill trench. Fortunately, the site was abandoned after the meeting house was removed from the site, the area was never plowed, thus preserving the traces that remained. It is likely that any amount of plowing would have removed all traces of the shallow foundation and severely truncated the post holes.

Post Holes

A total of five post holes were identified along the northeastern and southeastern sides of the meeting house with one possibly associated with the meeting house being present within the conjectured outline of the structure. Two post holes were encountered in Section 14, one in section 15, one in Section 2 and one in Section 23 Appendix F 4-8; Appendix G 3-6). Two of the post holes where the post that supported the northeast wall of the meeting house (Sections 14, 15) were filled with rocks and brick while the other post holes contained only soil. The characteristics of the five post holes encountered are shown below in Table 12:

Table 12. Post hole characteristics

Location	Length	Width	Depth	Distance to Next Post Hole	Profile Shape	Fill
S20 E1	40 cm	40 cm	40 cm	2 meters to SE	Round Bottomed	Soil
S21 E00	35 cm	40 cm	40 cm	5 meters to SE	Slightly Pointed Bottom	Rock
S26.5 E05	35 cm	40 cm	35 cm	3 meters to West	Slightly Pointed Bottom	Soil
S23.5 E04	40 cm	35 cm	25 cm	3 meters to SE	Rounded Bottom	Rock, brick
S26 E02	25 cm	25 cm	17 cm	3 meters to east	Round Bottom	Soil

The post holes were evidence that the second meeting house was built using a technique that was, until this discovery, believed to have no longer been used in Plymouth Colony by the eighteenth century. The posts that formed the framework of the meeting house were originally seated within these post holes. Using in the ground posts is a construction technique called “post-in-ground” or earthfast construction. The classic definition for earthfast construction was coined by Cary Carson et al in their seminal 1981 work on impermanent architecture in the southern colonies (Carson et al 1981). Carson and company stated that earthfast architecture was the construction of a building with framing members “standing or lying directly on the ground or erected in post holes” (Carson et al 1981: 136). Essentially what was done was that holes were dug where the posts were to be seated, in the case of the second meeting house, the posts were under 40 cm in size and were seated approximately 60 to 70 cm in the ground. After the holes were dug, the framework for the walls of the structure was constructed on the ground adjacent to post holes. When the walls sections were completed, they were raised up and slid into the post holes. The wall sections were secured into the adjacent wall section and the whole framework tied together to create a box like framework for the structure. The roof timbers were then raised onto the top of the walls and the roof and interior floors framed. This was an ancient technique, dating back to the prehistoric times in Europe and is believed to be the technique used for the construction of the first houses at Plymouth in 1620-1621.

Cary Carson, Norman Barka, William Kelso, Gary Wheeler Stone and Dell Upton described earthfast architecture in the southern colonies as being an impermanent form of architecture that was inferior to framed construction and which, in the early seventeenth century, was seldom used in England and was only used in extreme cases in the New World. They posited that the early settlers used earthfast architecture as a quick and expedient way to raise a structure in the first years of colonization, but that settlers who remained in a colony would have preferred, and in many cases replaced the earlier earthfast structures, with more permanent and structurally sound framed houses when means and position afforded it. Earthfast architecture was used from the start in places like Jamestown, Virginia (1607) and St. George's fort, Maine (1607), and it continued to be used in the Chesapeake due to the nature of the tobacco economy of the region. They felt that tobacco was a boom crop and the growers who came to places like Virginia to make money in tobacco and then return to England, would prefer to spend their money on labor to work the tobacco versus a more permanent house.

In reality, earthfast houses were no less permanent than framed structures. Builders who used decay resistant materials could expect a post-in-ground house to last anywhere from 30 to over 50 years (Carson et al 1981: 156-158). The colonists at Plymouth erected an earthfast structure for trading at Apatuxet on Cape Cod in 1626, and quickly abandoned the site and focused their trade on Maine. In 1635, William Bradford described a hurricane that struck the colony:

“This year, the 14 or 15 of August (being Saturday) was such a mighty storme of wind and raine, as none living in these parts, either English or Indians, ever saw. Being like (for the time it continued) to those Hurricanes and Tuffons that writers make mention of in the Indies. It began in the morning, a little before day, and grew not by degrees, but came with violence in the beginning, to the great amazement of many. It blew downe sundry houses, and uncovered others; diverse vessels were lost at sea, and many more in extreme danger. It caused the sea to swell (to the southward of this place) above 20-foote, right up and downe, and made many of the Indians to clime into trees for their safety; **it tooke of the horded rooffe of a house which belonged to this plantation at Manamet, and floted it to another place, the posts still standing in the ground;** and if it had continued long without the shifting of the wind, it is like it would have drowned some parte of the cuntry. It blew downe many hundred thousands of trees, turning up the stronger by the roots, and breaking the higher pine trees of in the middle, and the tall yonge oaks and walnut trees of good biggnes were wound like a wither, very strange and fearful to behold. It began in the southeast, and parted toward the south and east, and vered sundry ways; but the greatest force of it here was from the former quarters. It continued not (in the extremitie) above 5 or 6 houers, but the violence began to abate. The signes and marks of it will remaine this 100 years in these parts where it was sorest.” (Bradford 1912: 213-214).

So even though this storm blew down many hundreds of thousands of trees, the posts that were put in the ground nine years prior, still remained, although the rest of the structure was gone.

Work in the 1990s by Emerson Baker, Robert Bradley, Leon Cranmer and Neil DePaoli in Maine, has led to the realization that the use of earthfast construction was not limited to the seventeenth century, but continued into the second quarter of the eighteenth in Maine, which correlates with Carson et al's findings in the Chesapeake (Baker et al 1992). Baker et al see earthfast architecture in much the same way as Carson et al- a quick solution to the initial need for protection from the elements and one which would be replaced with better accommodations when time and finances allowed. They also added that the society in Maine was unsettled until the eighteenth century which correlates with presumed end of the earthfast tradition there.

As evidence of the occurrence and prevalence of earthfast architecture in Maine, several sites are used as examples. Looking at the spacing of the posts at these sites, the following distances from post center to post center were observed: 3', 5', 5 ½', 6', 7 ½', 8', 9 ½', 10', and 14' with several different distances occurring in one building (8', 9 ½', 10', 14' at the Cushnoc site; 3', 5', 7.5', and 10' at the Phipps site). These distances match well with the distances between posts at the second meeting house site—approximately 2 meters (6.56').

But why was earthfast used as the architectural style in Duxbury in 1707? The answer may have to do with the times and the expectations for the meeting house. Interpretations for the use of earthfast architecture in locations such as the Chesapeake and Maine have focused on unsettled conditions in these locations and the possibility of its use being a conscious decision based on cost versus use or permanence. In Duxbury, the use of earthfast architecture for the second meeting house may be interpreted as a response to financial constraints in the town in the early eighteenth century and possibly a plan to build a temporary meeting house that would serve the town's needs until funds could be acquired to build a more permanent one. Due to the fact that the first meeting house was located in what would eventually become the Myles Standish Burial Ground, possibly hemmed in by three quarters of a century of burials and generally in need of replacement, the first meeting house could not be expanded or rebuilt, and a site nearby was selected. Possibly in an effort to reduce cost, earthfast was selected as the method to use to build, with the idea being that it would be replaced or at least upgraded over time. This was in fact what occurred. The second meeting house was built in 1707 with 180 pounds being raised for the project. Following the original construction, resulting in a 30 x 40 foot structure, additions were continually made. In 1713, a seat was allowed to be built in it, and in the same year a fence was built around it. The possible impermanence of the second meeting house may be evident when, 25 years after it was built, it was found to need repairs, and in 1742 the rear was shingled. By 1745 the possibility of building a new meeting house was being discussed, but due to financial constraints, it was determined that instead the structure should be enlarged with the work done at “the cheapest rate”. Once it was determined that the structure would remain, a pulpit was finally erected in 1752 and in 1754 pews were constructed in it. These pews were auctioned off to raise money for the town. The history of the meeting house indicates that after the structure had gotten to the point that it needed repairs, the town would have preferred to have built a new meeting house in 1745, but financially they could not so they made due until 1785 when a new meeting house was built.

Foundation Trenches

In association with the postholes were traces of a foundation or footing trench (Appendix A Map 5; Appendix F 10-13; Appendix G 5, 7). Traces of this trench are believed to have been encountered in Sections 2, 5, 9, 14, 15, and possibly 7. In all of these sections the trench was shallow and distinguished by a concentration of lighter colored soil and brick and nail fragments. The trench did not extend below 30 cm below the ground surface. It is believed that this trench was added after the structure had been constructed and may have served to help support the walls of the meeting house after the posts had begun to deteriorate. It is not believed to have been too substantial and may have just served to lightly seat a brick and possibly granite architectural stone sill. Excavations in Section 9 revealed that the trench was 75 cm wide at 15 cm below the ground surface while in Section 2 it was 50 cm wide at 23 cm below ground surface. When a meeting house was built in Waterbury, Connecticut in 1727, it was stipulated that in laying the sills that they “...shall be laid two foot from the Ground on the highest Ground, and the stone work or under pinning to be done accordingly.” (Bronson 1858: 225). It is assumed that if a brick foundation or sill was added after the original construction, that this would have had to have been placed below the surface, as the sill timbers from the original construction would have

been on or close to the ground. A 1727 record from Waterbury, Connecticut regarding of the construction of the town's new meeting house stipulated that "in Laying the Sills of the Meeting house they shall be laid two foot from the Ground on the highest Ground, and the stone work or under pining to be done accordingly." (Bronson 1858:225). The record does not state that the footings would extend underground, indicating the ephemeral nature of the sills and the fact that little would remain once the sills and the structure were removed.

Research Questions

As part of the research design, several research questions were put forth for the Second Meeting House project. The research questions were:

- 1) Are there prehistoric archaeological deposits present within the project area?
- 2) How does any of the prehistoric material recovered relate to the two know prehistoric sites located within and adjacent to the project area?
- 3) Can the prehistoric assemblage be used to provide a better understanding of the assemblages and archaeology identified at the two previously identified archaeological sites
- 4) Are their architecturally related anomalies and deposits present within the Second Meeting House project area?
- 5) If deposits are present, can they be determined to be related to the 17th or 18th century meeting houses believed to stand on or near the project area?
- 6) Can the historic archaeological artifact assemblage be used to provide a better understanding of the nature of the use of the meeting house and its surrounding yard?
- 7) Are their potential 17th century human burials present within the project area?

These questions were answered by the Site Examination field work.

1) Are there prehistoric archaeological deposits present within the project area?

Yes there are. Prehistoric archaeological deposits, taking the form of scatters of lithic artifacts (flakes, shatter fragments, projectile points, bifaces, and a core) were recovered generally from across the project area and especially from the central to southern sections.

2) How does any of the prehistoric material recovered relate to the two know prehistoric sites located within and adjacent to the project area?

The prehistoric materials recovered appeared contemporaneous with the materials recovered from the Howland Orchard Site, dating to the Late Archaic and Middle Woodland periods. Unfortunately no evidence of an Early Archaic presence, as recorded in the MHC site files with the unsubstantiated report of the recovery of a bifurcate point within or immediately adjacent to the project area, was found.

3) Can the prehistoric assemblage be used to provide a better understanding of the assemblages and archaeology identified at the two previously identified archaeological sites?

Prehistoric archaeological materials differed significantly from the materials recovered at the Howland Orchard site. The assemblage from the Howland Orchard Site represented material deposited within a shell midden. Shell middens represent resource processing deposits, places where a resource was brought to, processed and then the processed resource was removed from the site. The assemblage from the Second Meeting House Site represents a lithic manufacture site that appears to be associated with limited camping possibly as part of hunting activities. A limited range of raw materials and tool forms

were present, indicative of a short term activity area. The presence of projectile point tips indicates that projectile points were being manufactured while the presence of a Fox Creek projectile point base indicates that broken hunting equipment was being repaired here.

4) Are there architecturally related anomalies and deposits present within the Second Meeting House project area?

Yes. They take the form of framing post holes and post molds, foundation trench sections and concentrations of architecturally related artifacts.

5) If deposits are present, can they be determined to be related to the 17th or 18th century meeting house (s) believed to stand on or near the project area?

Yes, the majority of the artifacts present are consistent with an assemblage that would be expected to occur at the site of the second meeting house. While some artifacts that could date to the seventeenth century were recovered, their paucity and overlapping use dates with the second meeting house occupation period, makes it more likely that they date to a use of the area for the second meeting house as opposed to the first.

6) Can the historic archaeological artifact assemblage be used to provide a better understanding of the nature of the use of the meeting house and its surrounding yard?

The artifacts recovered indicate that the area around the meeting house was used only for meeting house purposes with no evidence of domestic artifacts being found around the meeting house. The domestic artifacts that were found within the conjectured outline of the meeting house indicate that these artifacts were likely lost during the construction, destruction or use of the meeting house and represent accidental losses (in the case of the bead and pin) or refuse associated with meals eaten at the site during construction or destruction of the structure. It appears that the meeting house yard was not used as a social gathering place except possibly on the Sabbath or on court meeting days.

7) Are their potential 17th century human burials present within the project area?

The ground penetrating radar survey failed to identify any potential grave shafts within the project area and extensive testing did not yield any data that would suggest that there are graves anywhere within the Second Meeting house Site project area. It appears that with the construction of the second meeting house, burials continued to occur in the old burial ground associated with the first meeting house.

IV. CONCLUSIONS AND RECOMMENDATIONS

Site Examination testing revealed that extensive evidence of both the Native American and eighteenth century second meeting house remain within the project area. Native American materials span the Late Archaic to Middle Woodland Periods (4000-1400 years before present) and indicate that the site was repeatedly used as a location for short term occupation associated with stone tool production and repair. This site complements the Howland Orchard Site to the south in terms of period of occupation and evidence of activities. The site may have been occupied contemporaneously with the Howland Orchard Site but represents a location of slightly different activities. Unfortunately the archaeological excavations that were carried out at the Howland Orchard Site resulted in only a brief final report which only touches upon the larger issues of subsistence and increasing sedentism that occurred during the Late Archaic to Woodland Periods. While the assemblage from the Second Meeting House site is smaller and less diverse than that from the Howland Orchard Site, the degree of control regarding the recording of locations of artifacts, the detail of the analysis and the fact that the entire collection from the site will be curated together as opposed to being split between investigators, makes this collection more informative than that from the Howland orchard Site.

Excavations revealed that the site on which the second meeting house was built appears to have been maintained either as open space or as unused cleared land adjacent to the ancient burial ground, before construction of the second meeting house took place. No evidence of plowing, use of the site for burials or as a part of a larger homesite were evident in the ground. It is possible that the area was used as a training green prior to its use as the site for the town's second meeting house, but no hard evidence was collected from either the historical or archaeological records to support this. Suffice to say that no activities that would leave definite traces in the archaeological record took place at the site prior to the construction of the second meeting house in 1707.

Architectural evidence of the second meeting was abundant and took the form of both artifacts and features. Unexpectedly, indisputable evidence was found that the second meeting house was of earthfast (post-in-ground) construction with its walls being supported by posts sunk fairly deeply into the subsoil. This building technique, which was used for the first house constructed at and away from Plymouth, was, until this dig, believed to have all but died out for house construction. It has never been reported anywhere as having been used for the construction of public buildings such as a meeting house, especially in the eighteenth century. Earthfast construction is generally believed to represent impermanent, low cost, and quick construction which was used when a quick structure was needed, but not one that was expected to last any length of time. The current thought is that earthfast construction was not the most desirable form of construction if alternatives, such as construction on sills or stone foundations, are possible. By 1707, Duxbury had been established for at least three-quarters of a century and construction of a public building like a meeting house would be expected to take the form of a structure with a solid foundation. The use of earthfast construction begs the question of why use this versus a more "permanent" form.

The answer is likely a combination of factors, both economic and social. The second meeting house was constructed thirty years after the end of King Philip's War (1675-1677), only ten years after King William's War (1689-1697) and during Queen Anne's War (1702-1713). While the latter of these three wars was focused in Europe, they still resulted in economic and social stress on people in the American colonies. In 1707, the same year that the second meeting house was built, a force of Massachusetts, Rhode Island and New Hampshire was dispatched to attack Port Royal, Canada. The expedition

consisted of one thousand men who sailed from Nantucket in 23 ships. While their assaults resulted in the deaths of a few cattle and the burning of a few houses at Port Royal, expeditions cost money and the colonies were expected to pay their share to help protect their and England's interests at home and abroad. Further research could be conducted in the Duxbury Town Records to determine the economic state of the town during this period. It is possible that, in order to save money, the town built the much needed second meeting house as cheaply as possible with the idea being to upgrade or replace the structure as time went by. It is recorded to the town record that discussions were begun by 1745, a little over a generation from when it was originally built. It is also possible that by the early eighteenth century the town center may have begun to shift away from Morton's Hole and the area where the burial ground was located and the new meeting house built in the old style would serve as an adequate structure until a new one could be built elsewhere. Obviously by the time the third meeting house was built in 1785 the center of the town had shifted away from this location, maybe this was the end of a trend that started much earlier.

The actual structure of the meeting house was consistent with other meeting houses built around this same time. They all follow the trend of being longer in one dimension than the other, having galleries and a pulpit opposite the front door. It appears that while the town may have tried to save money on the architectural construction methods, they were in step with the latest trends. They did appear to have used old materials, possibly reused from the first meeting house, in the construction, the most obvious being the diamond-paned windows. By the early eighteenth century diamond pane windows would have definitely been old fashioned as the sash window, invented in England in the middle seventeenth century, replaced the earlier fixed or outward opening diamond-paned windows.

Whatever the reasons for the use of earthfast construction at the second meeting house, the site stands as a unique example of earthfast construction for the eighteenth century for Massachusetts and one of only a handful of earthfast houses that have been identified in the entire state. **The site is believed to be eligible for inclusion on the National Register of Historic Places due to its importance locally and nationally.**

Recommendations

Site Examination excavations answered the research questions in many ways and of course created many new questions. The evidence for the prehistoric occupation of the site indicated that people were using the site from at least 4000 years before present until at least the Middle Woodland. Further testing could provide more information on the use of the site and its relationship to other sites in the town.

Because the evidence of the earthfast construction was identified near the end of field work, it was not possible to completely investigate the extent of its use at the site. It is known that two sides of the second meeting house were constructed using posts in the ground and it is assumed that the other two sides were constructed in the same manner, but this has not yet been confirmed. Now that two sides of the structure have been definitely defined, further field work could result in an even clearer picture of the footprint of the structure and its footprint and internal layout.

It is recorded in the Duxbury town records that the meeting house was scheduled to be enlarged when it was determined that a new meeting house was not economically feasible, but the traces of any enlargement were not evident during the course of field work. The lack of identifiable evidence is likely the result either of the planned enlargement not having taken place or that we had not opened up

a large enough area to detect it. Further field work could help to identify if and where the proposed enlargements took place and if they did take place, how they affected the architecture and layout of the structure.

It is recommended that the site be maintained in its present state and that any impacts such as fence construction or tree planting be carefully coordinated with the known or potential archaeological resources at the site. The area of the second meeting house, while not exactly defined, has been roughly identified and efforts should be made to keep any impacts away from this area. It is also recommended that further excavations be carried out to completely define the bounds of the second meeting house and explore the important architectural evidence preserved at the site. The public excavation that was conducted in October of 2008 worked extremely well to both educate and explore this site and future work is recommended to take the same form.

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LIST OF APPENDICES

Appendix A Project Maps and Figures.....	78
Project Map 1: Topographic map showing project location (Duxbury Quadrant).....	79
Project Map 2: Plan showing areas that were excavated during 2008 Site Examination.....	80
Project Map 3: Project plan showing numbered excavation areas.....	81
Project Map 4: Project plan showing numbered testing sections.....	82
Project Map 5: Major feature locations.....	83
Project Figure 6. Plymouth Second Meeting House 1683-1744.....	84
Project Figure 7. Top Old Ship Meeting House Hingham; Bottom Chestnut Hill Meeting House, Millville, Ma.....	85
Appendix B Historic Maps Showing Project Area.....	86
Map 1: Second meeting House Site shown 1795 map of Duxbury.....	87
Map 2: Second meeting House Site shown 1833 map of Duxbury (North to top).....	88
Map 3: Second meeting House Site shown 1877 map of Duxbury (North to top).....	89
Map 4: Second meeting House Site shown 1879 map of Duxbury (North to top).....	90
Map 5: Second meeting House Site shown 1893 map of Duxbury (North to left).....	91
Map 6: Second meeting House Site shown 1941 map of Duxbury (North to top).....	92
Appendix C Ground Penetrating Radar Survey.....	93
GPR 1: Ground penetrating radar machine.....	94
GPR 2: Scan results at 6 inches below surface (Red dis high resistance, black is lower resistance).....	95
GPR 3: Scan results 12-18 inches below surface (Red and black areas of lower resistance, everything else higher resistance).....	96
Appendix D Artifact Distribution Maps.....	97
Distribution Map 1: Quartz Distribution.....	98
Distribution Map 2: Rhyolite distribution.....	99
Distribution Map 3: Clay tobacco pipe distribution.....	100
Distribution Map 4: Brick distribution.....	101
Distribution Map 5: Hand-wrought nail distribution.....	102
Distribution Map 6: Aqua to dark aqua (old) glass distribution.....	103
Distribution Map 7: Clear to light aqua (recent) flat glass distribution.....	104
Appendix E Artifact Photographs.....	105
Artifacts 1: Prehistoric bifaces (top), core (bottom left) and possible scrapers (Bottom right). 106	
Artifacts 2: Saugus Jasper uniface (Top), Projectile point tips (Bottom).....	107
Artifacts 3: Projectile points.....	108
Artifacts 4: Top eighteenth century ceramics (Top Creamware; Bottom Left to Right-Westerwald, Slipware, White Salt-Glazed Stoneware, Redware); Bottom Left Yellowware, Right Transferprinted Whiteware.....	109
Artifacts 5. Clay tobacco pipes (Top pipe fragments recovered from Site Examination testing; Bottom pipe style identified.....	110
Artifacts 6: Eighteenth century vessel glass (Top left lead glass base, Right possible case bottle); Cuprous artifacts (Bottom left to right: Shoe buckle, strait pin, stamped button, flat punched fragment).....	111

Artifacts 7: Eighteenth century munitions related artifacts. Top: lead musket ball, lead waste; Bottom: English flint fragment.....	112
Artifacts 8: Top blue glass bead, Bottom Iron punch.....	113
Artifacts 9: Top Dr. Gorham's Gray Hair Restorer; Bottom 1900 Indian Head cent.....	114
Artifacts 10: Representative brick. Top sand struck side, bottom organic impressions.....	115
Artifacts 11: Top Shell-tempered mortar; Bottom Window glass, lead kames (Curved glass on left and second from right).....	116

Appendix F Excavation Plans and profiles.....117

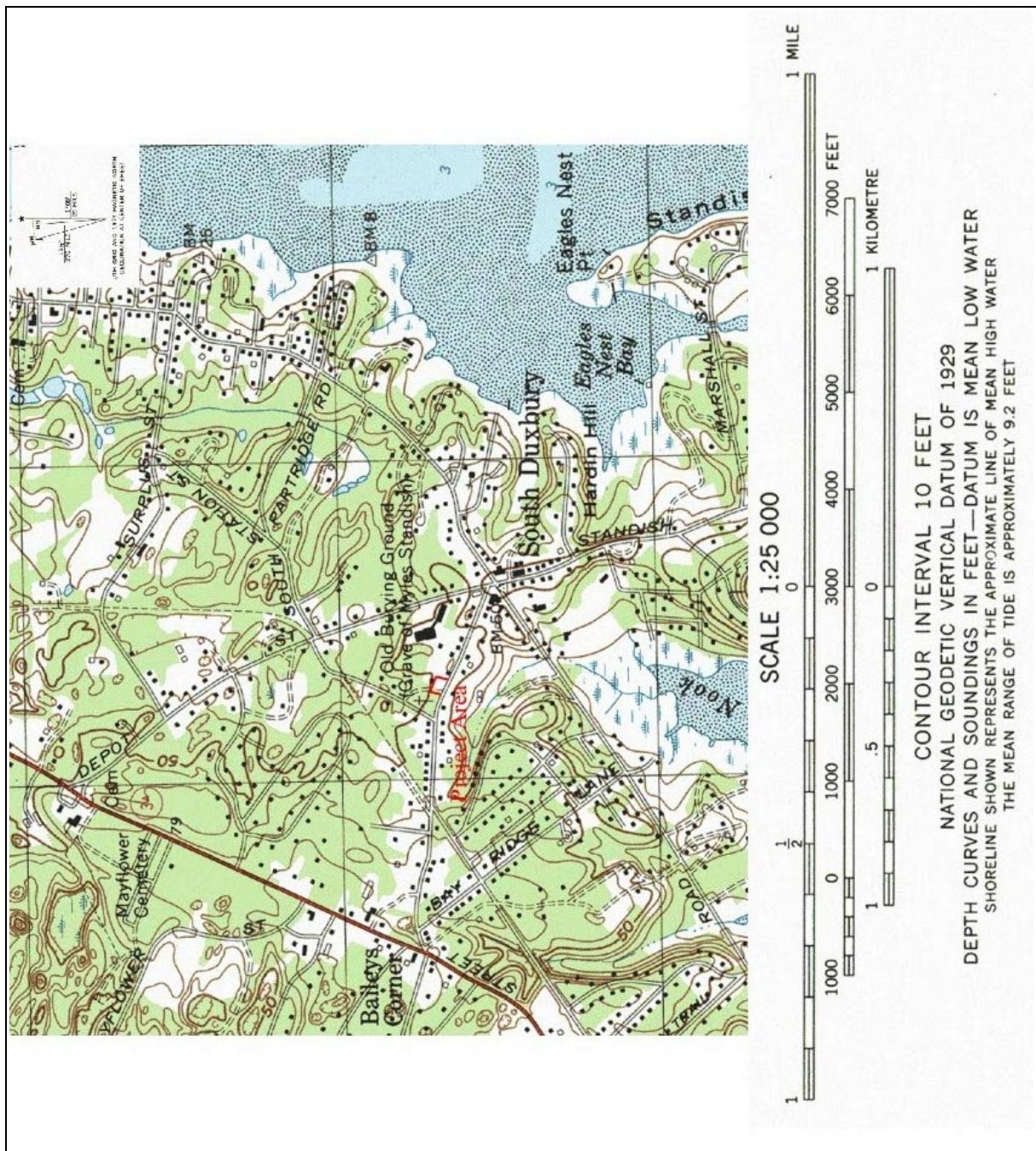
Field Work Plan/ Profile 1: S18.5 W04 Roadway Section.....	118
Field Work Plan/ Profile 2: S33.5 W02 Roadway Section.....	119
Field Work Plan/ Profile 3: S17.5 E5.5 19th-20th century post hole/ trash pit.....	120
Field Work Plan/ Profile 4: S26 E02 Plan at 30 cmbs and East Wall profile.....	121
Field Work Plan/ Profile 5: S20 E00 Plan at 20 cmbs.....	122
Field Work Plan/ Profile 6: S20 E00 Plan at 30 cmbs.....	123
Field Work Plan/ Profile 7: S21 E01 Plan at 35 cmbs and East Wall Profile.....	124
Field Work Plan/ Profile 8: S23.5 E04 plan at 30 cmbs and North Wall profile.....	125
Field Work Plan/ Profile 9: S26.5 E05 plans at 23 and 35 cmbs East Wall profile.....	126
Field Work Plan/ Profile 10: S20 W02 plan at 20 cmbs.....	127
Field Work Plan/ Profile 11: S20 W05 plan at 20 cmbs.....	128
Field Work Plan/ Profile 12: S25 W05 plan at 15 cmbs.....	129
Field Work Plan/ Profile 13: S30 W05 plan 20 cmbs.....	130

Appendix G Excavation Photographs.....131

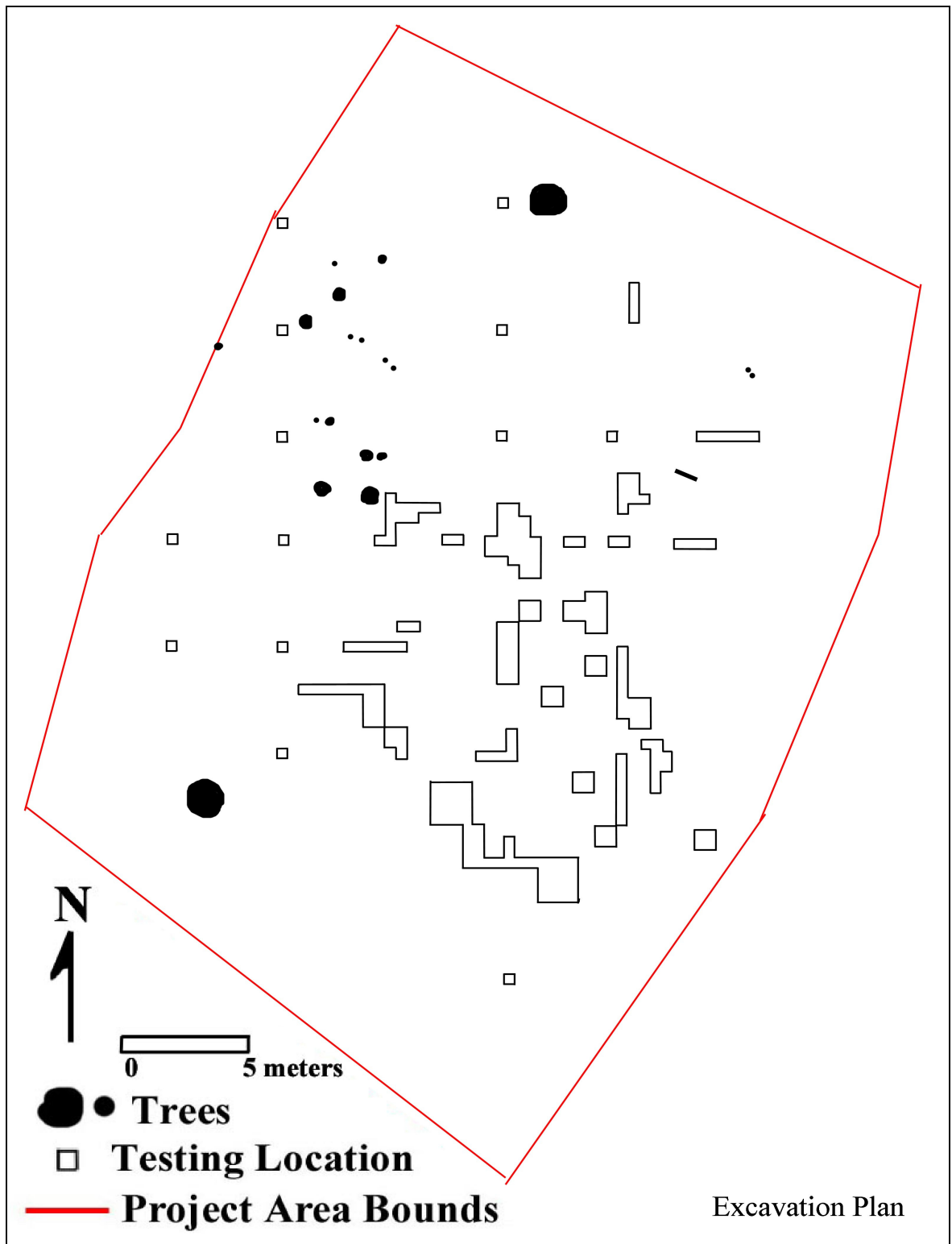
Field Photograph 1: S17.5 E5.5 19th-20th century post hole/ trash pit.....	132
Field Photograph 2: Possible 19th-20th century roadway sections Upper left S18.5 W04 plan at 21 cm; Upper right S18.5 W04 Plan and profile 26 cm; Bottom S33.5 W02 plan at 20 cm.....	133
Field Photograph 3: S20 E00 plan at 23 cm.....	134
Field Photograph 4: S20 E00 post holes Upper S20 E00 post hole West wall profile; Lower S21 E01 east wall profile.....	135
Field Photograph 5: S26.5 foundation trench and post hole Upper Left S26.5 E05 foundation trench plan at 25 cmbs; Upper Right S26.5 E05 post hole plan at 35 cmbs; Bottom S26.5 E05 east wall profile.....	136
Field Photograph 6: S26 E02 post hole North wall profile.....	137
Field Photograph 7: Possible foundation trench sections Upper S25 W05 plan at 20 cmbs; Lower S30 W05 plan at 20 cmbs.....	138

Appendix A

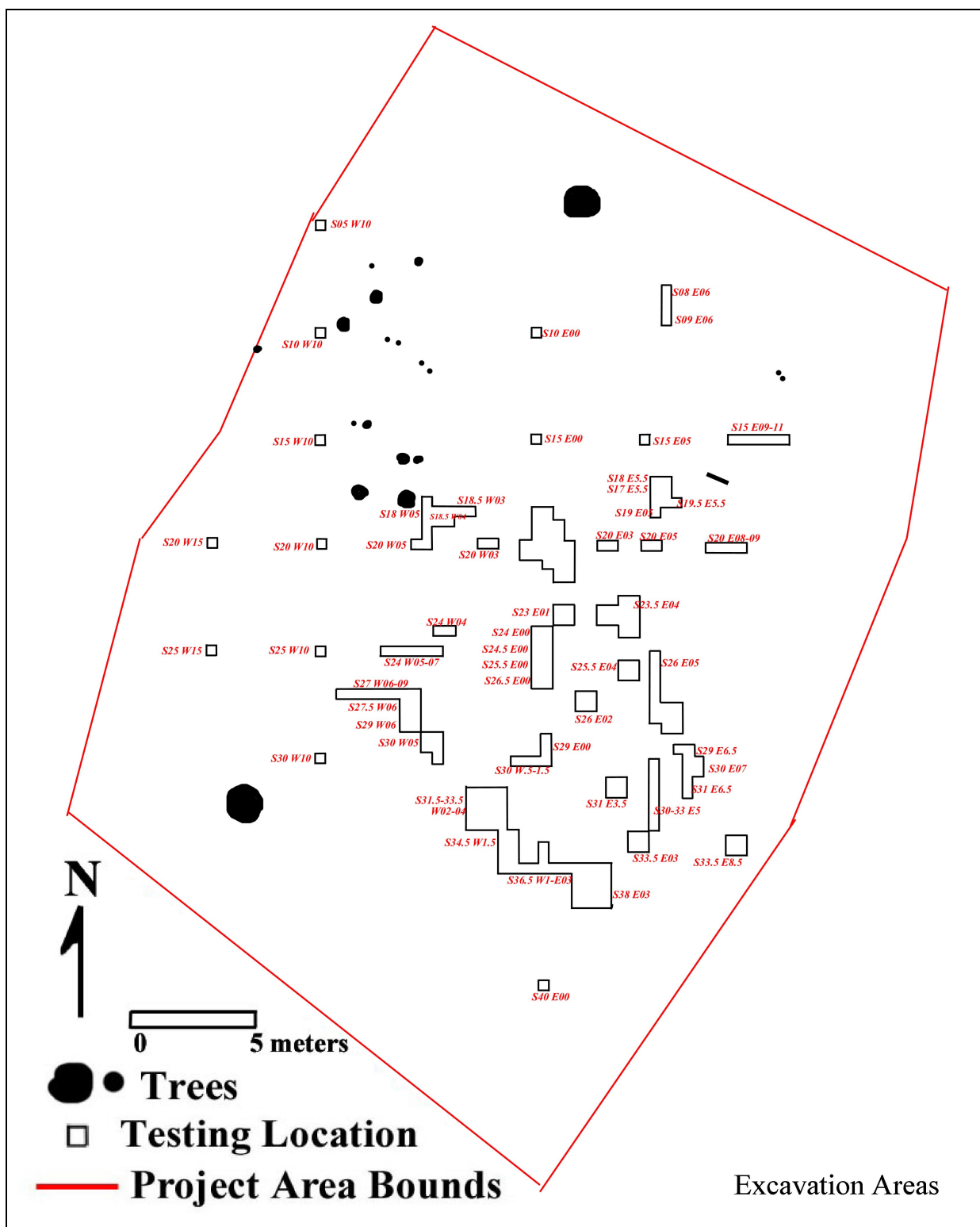
Project Maps and Figures



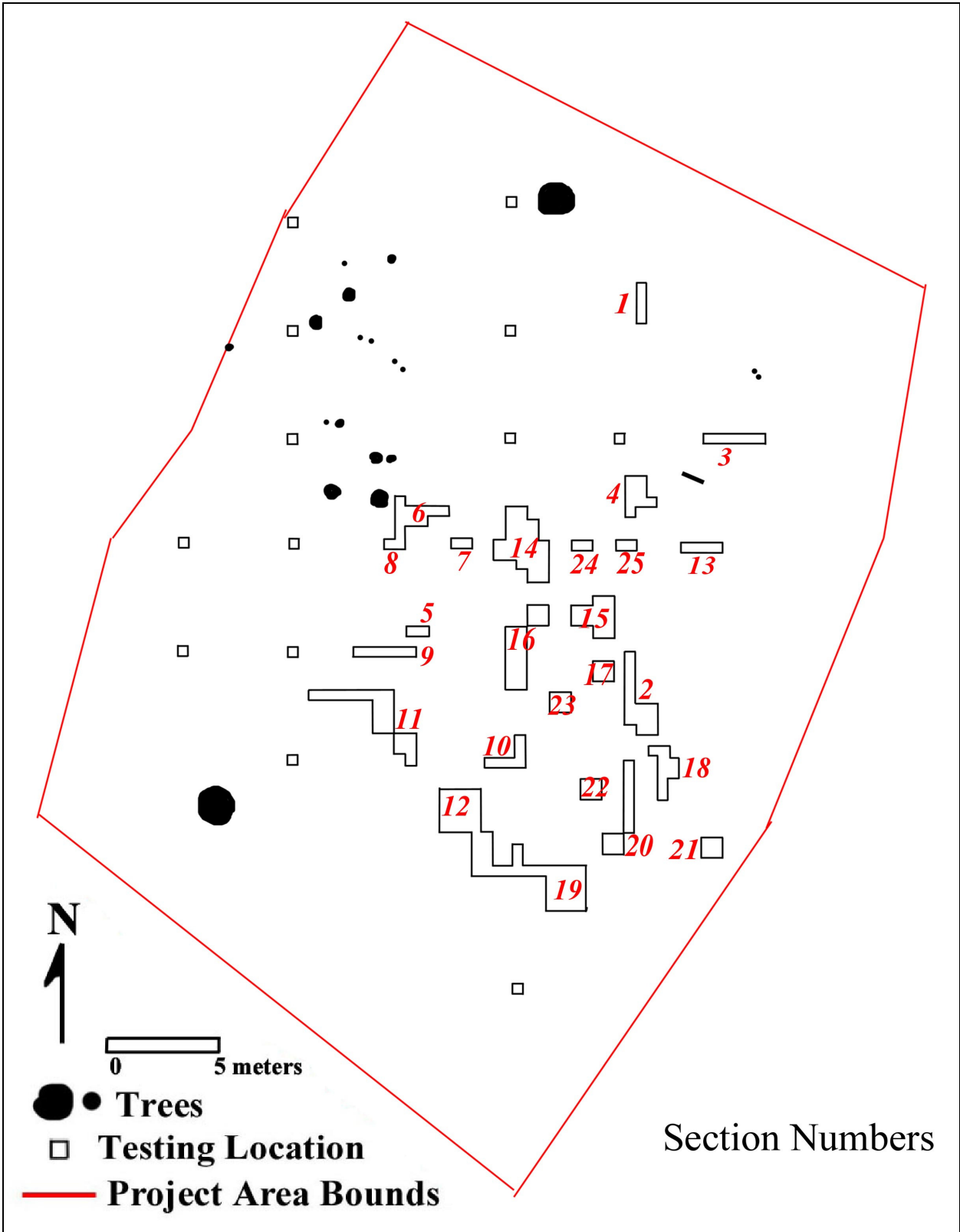
Project Map 1: Topographic map showing project location (Duxbury Quadrant)



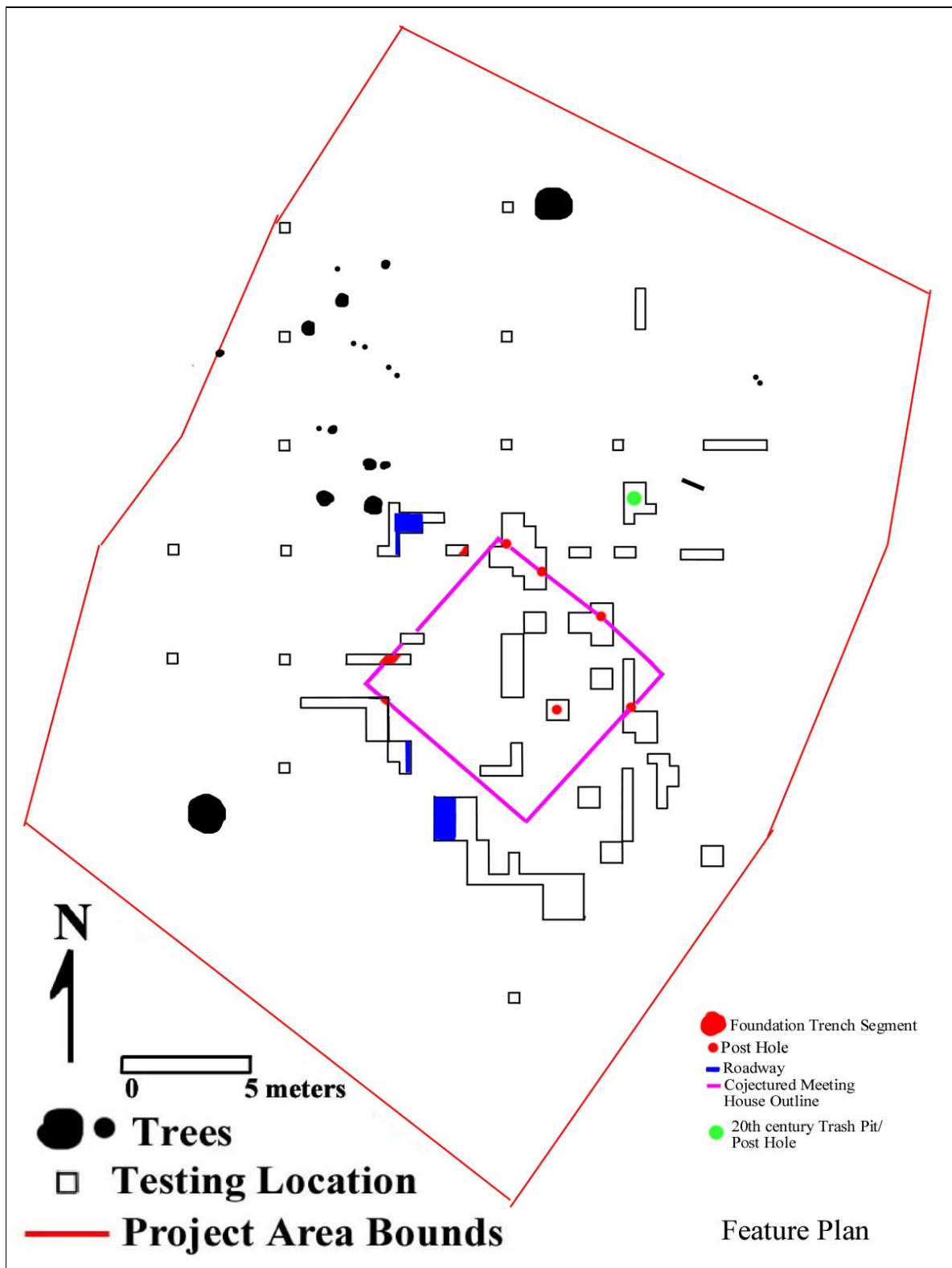
Project Map 2: Plan showing areas that were excavated during 2008 Site Examination



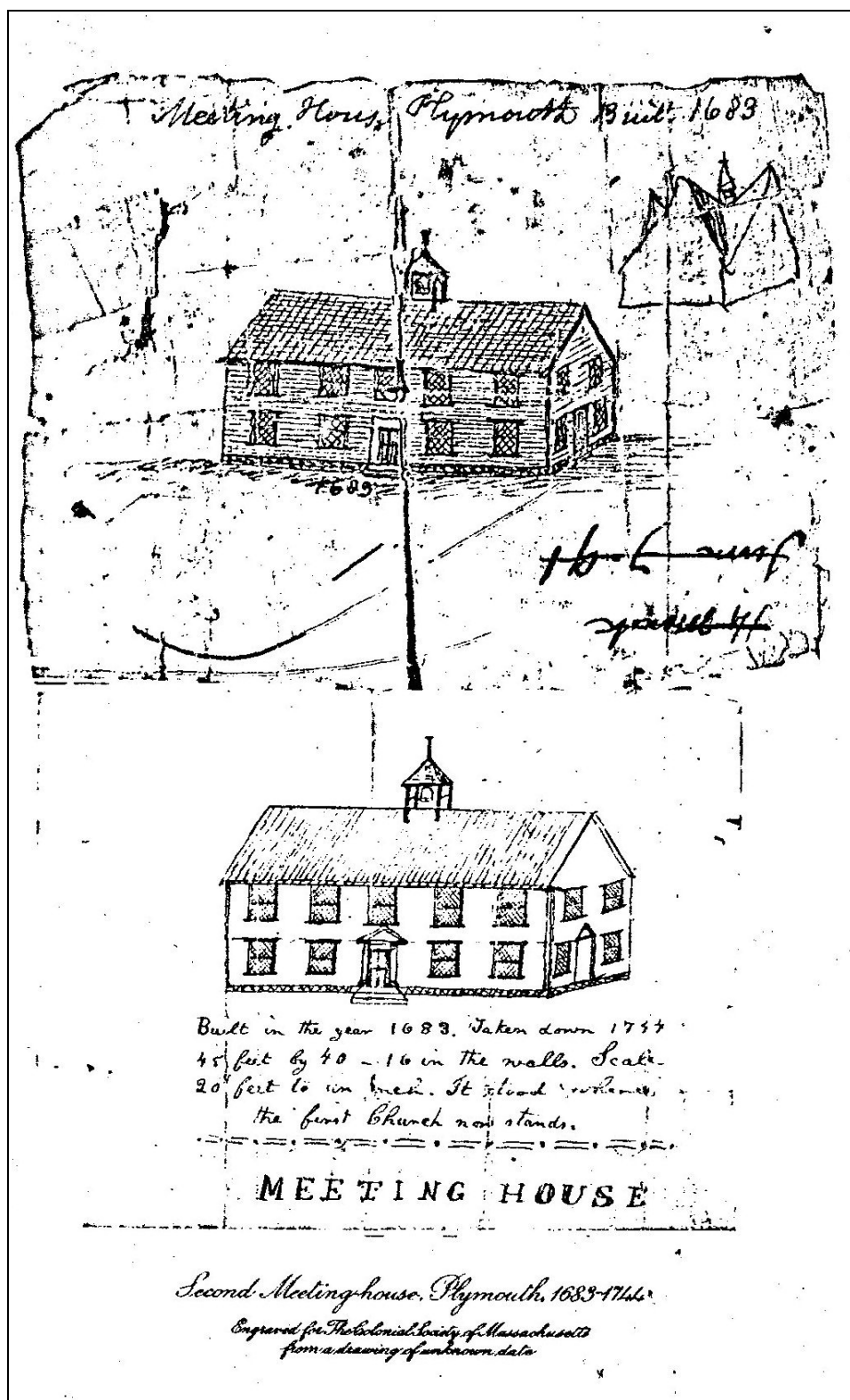
Project Map 3: Project plan showing numbered excavation areas



Project Map 4: Project plan showing numbered testing sections



Project Map 5: Major feature locations



Project Figure 6. Plymouth Second Meeting House 1683-1744



Project Figure 7. Top Old Ship Meeting House Hingham; Bottom Chestnut Hill Meeting House, Millville, Ma

Appendix B

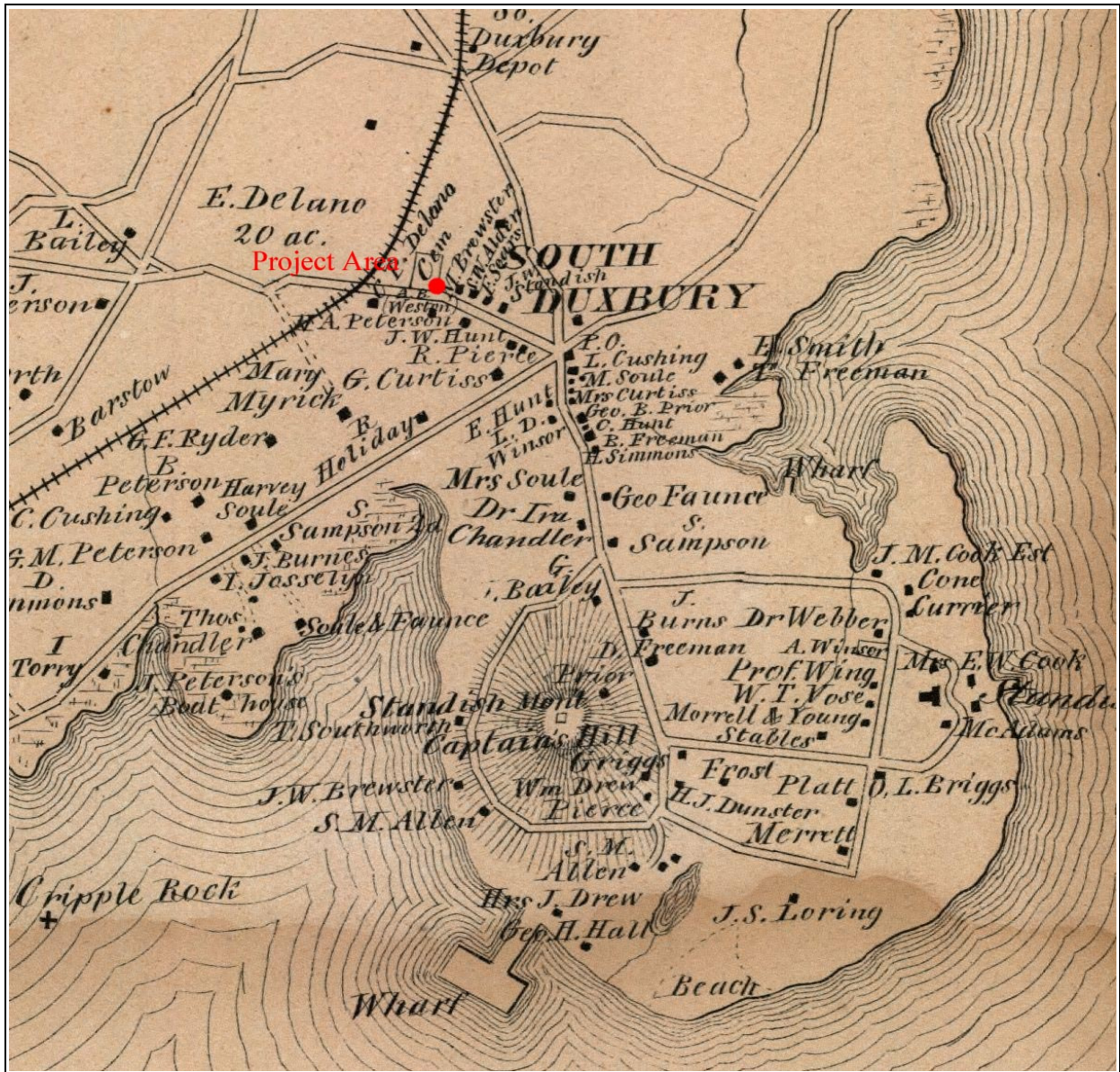
Historic Maps Showing Project Area



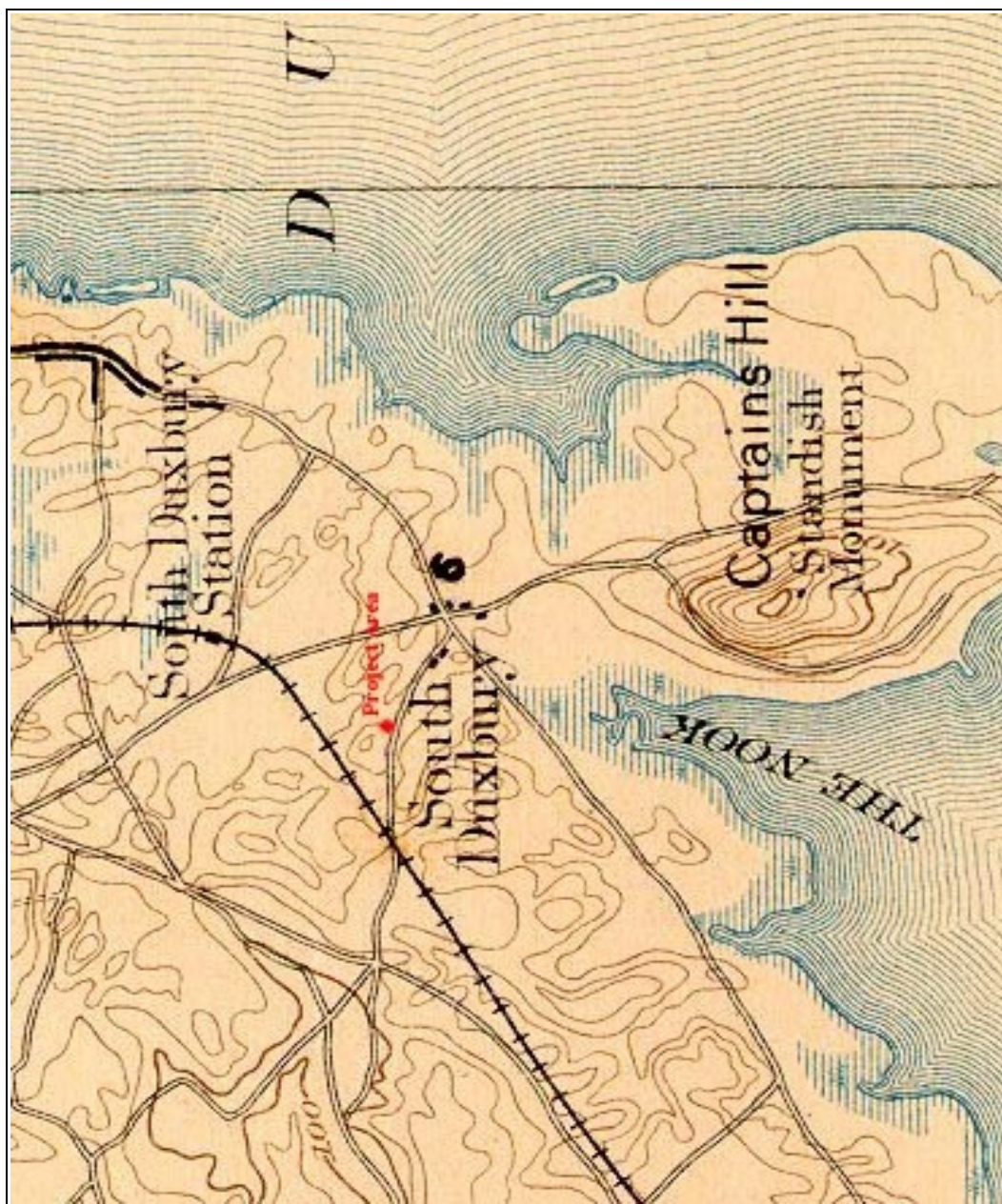
Map 2: Second meeting House Site shown 1833 map of Duxbury (North to top)



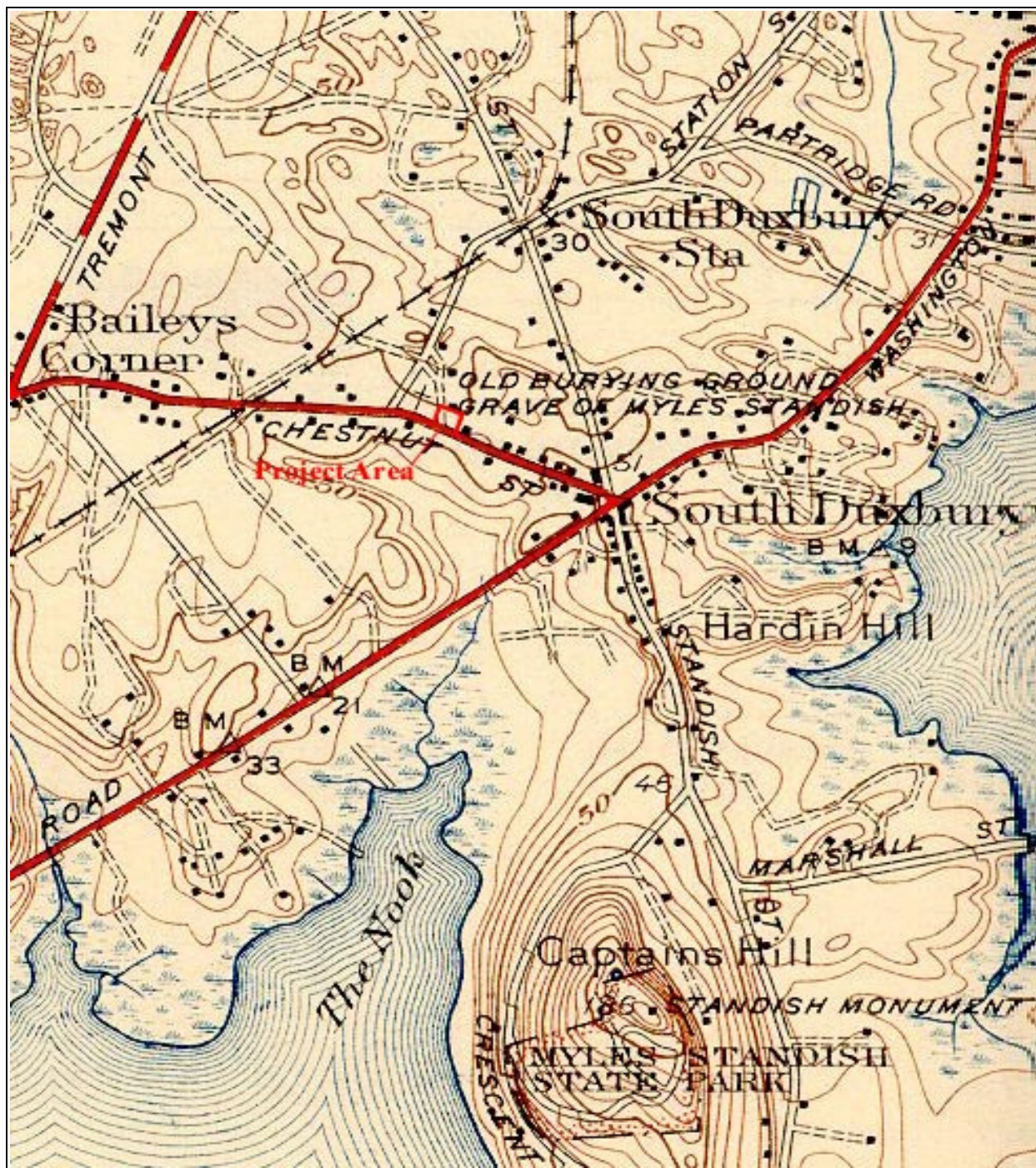
Map 3: Second meeting House Site shown 1877 map of Duxbury (North to top)



Map 4: Second meeting House Site shown 1879 map of Duxbury (North to top)



Map 5: Second meeting House Site shown 1893 map of Duxbury (North to left)



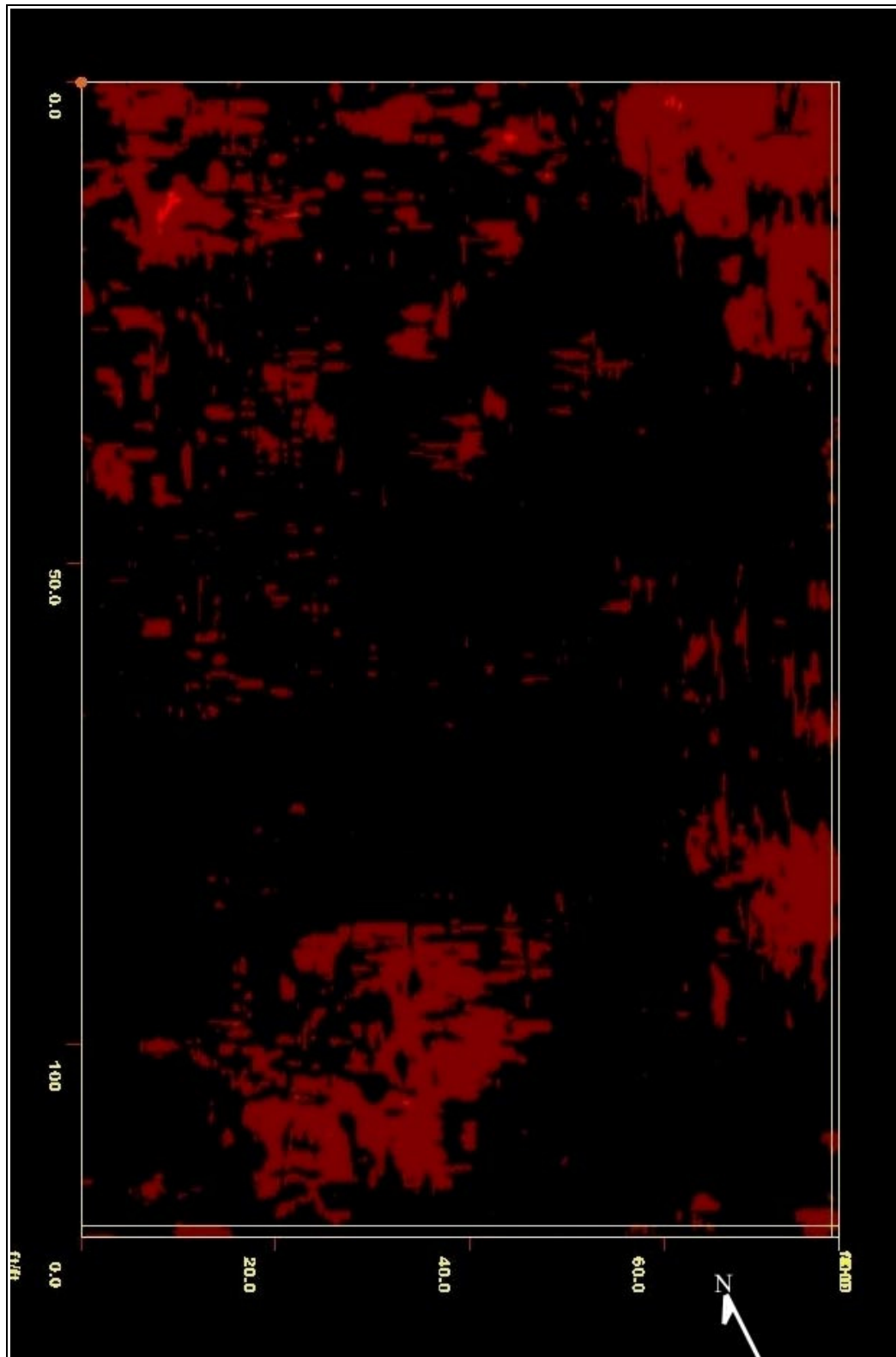
Map 6: Second meeting House Site shown 1941 map of Duxbury (North to top)

Appendix C

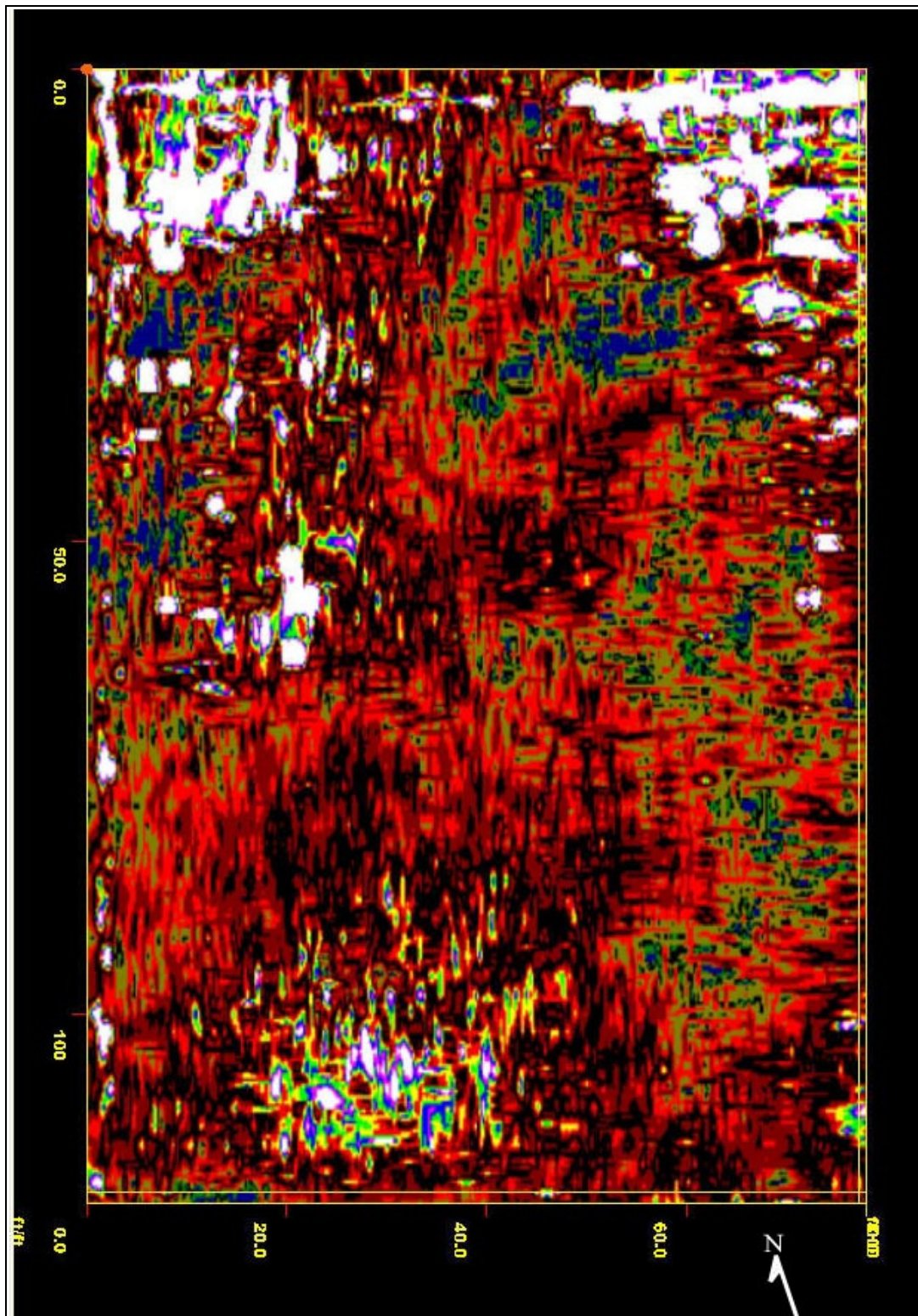
Ground Penetrating Radar Survey



GPR 1: Ground penetrating radar machine



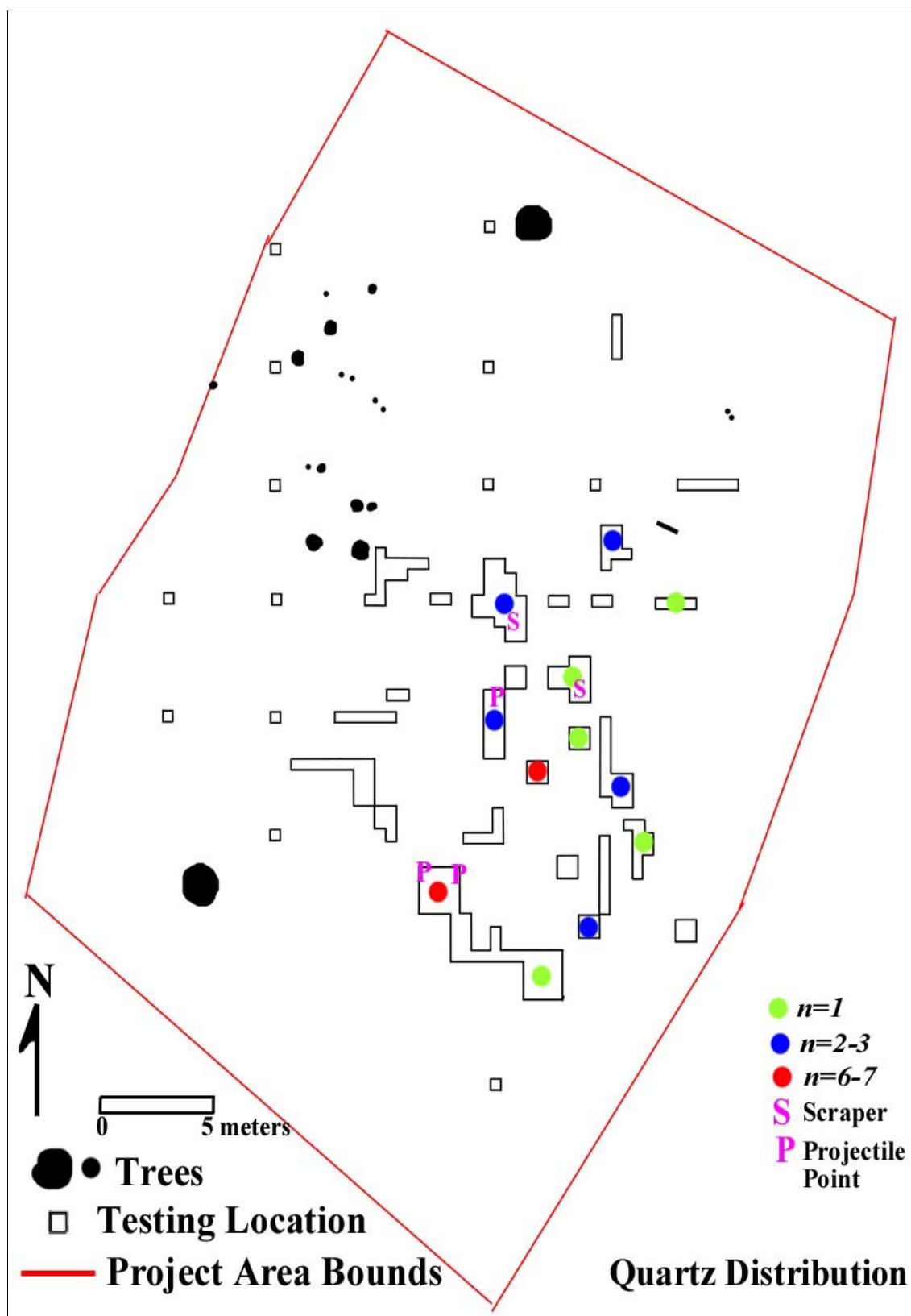
GPR 2: Scan results at 6 inches below surface (Red is high resistance, black is lower resistance)



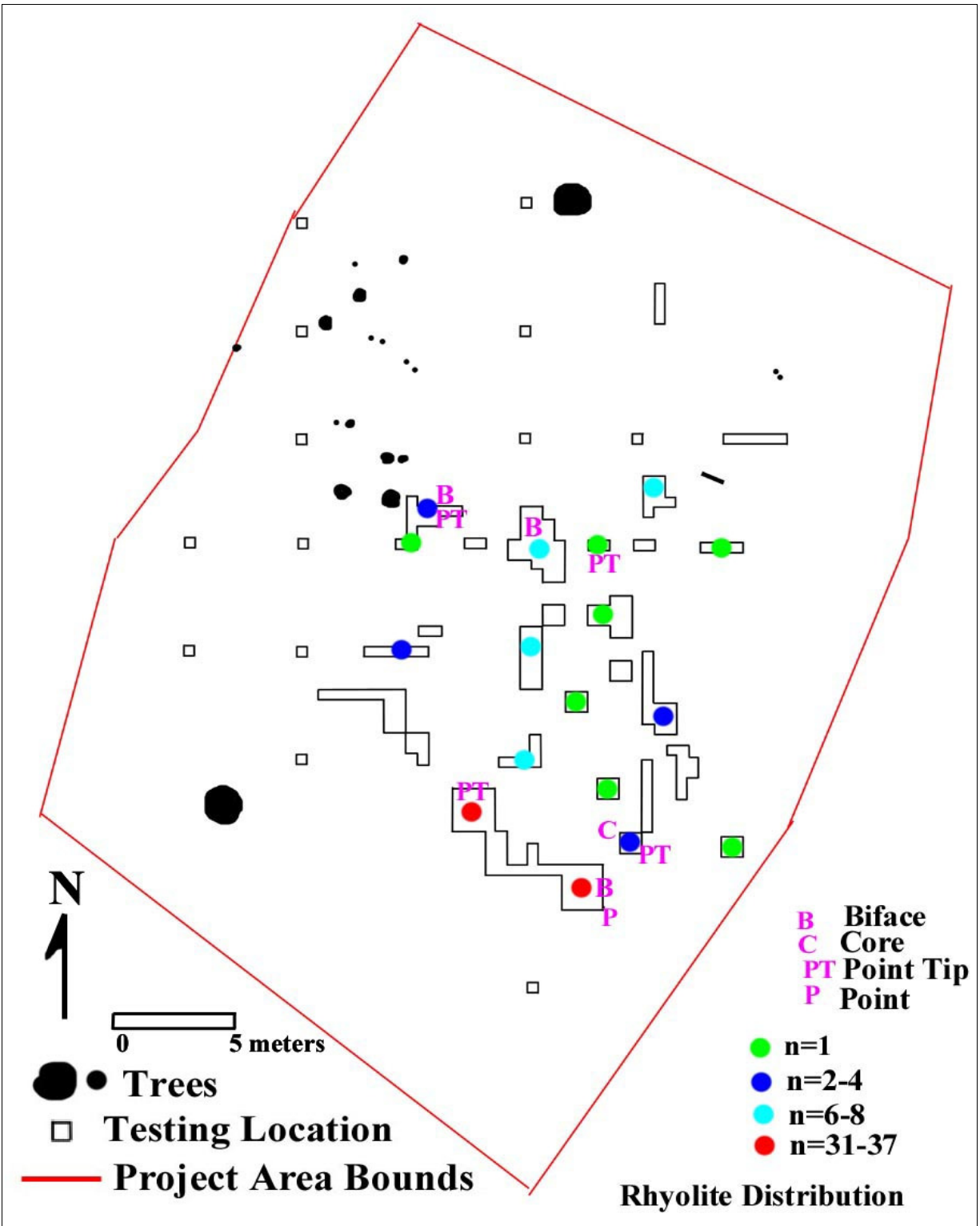
GPR 3: Scan results 12-18 inches below surface (Red and black areas of lower resistance, everything else higher resistance)

Appendix D

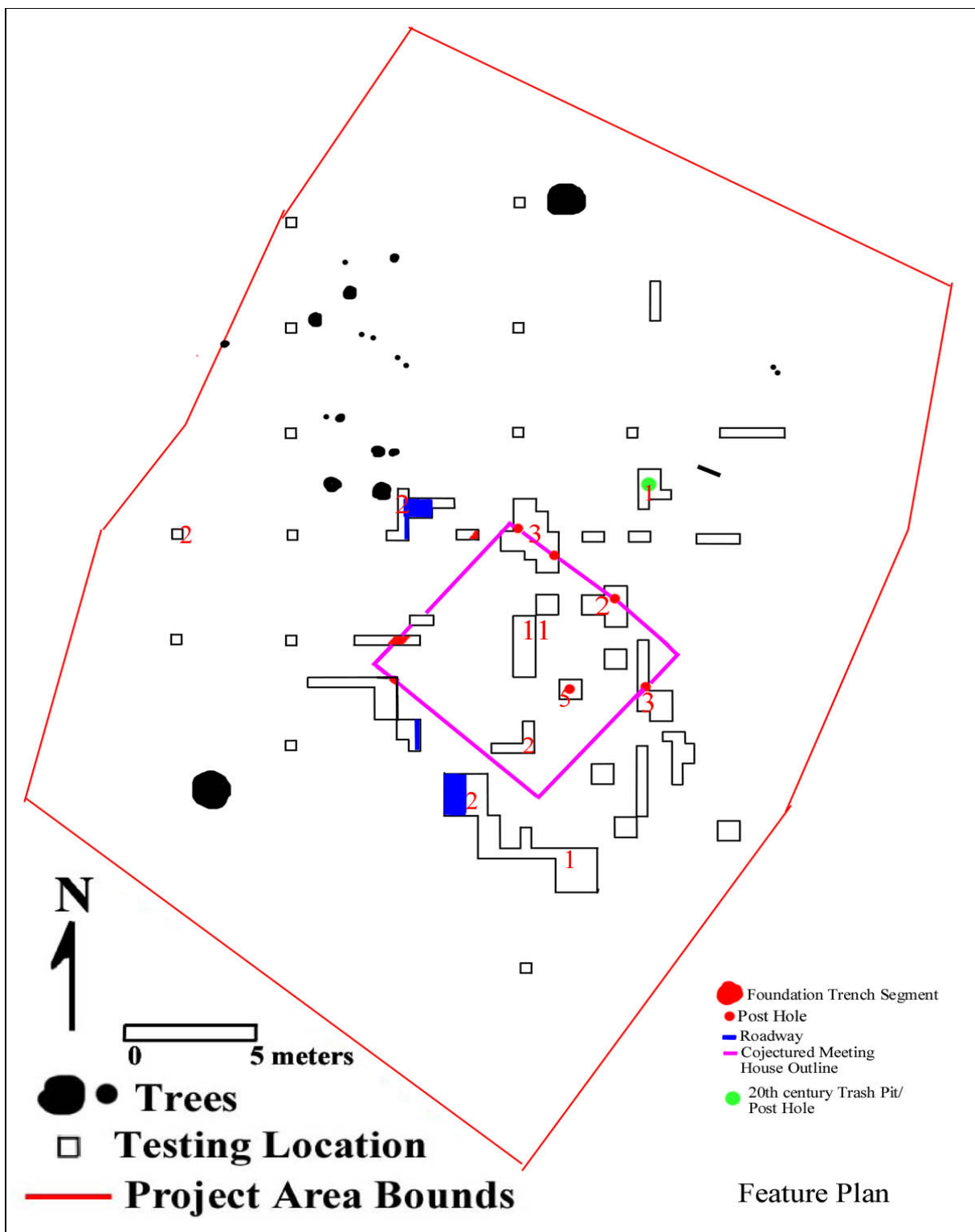
Artifact Distribution Maps



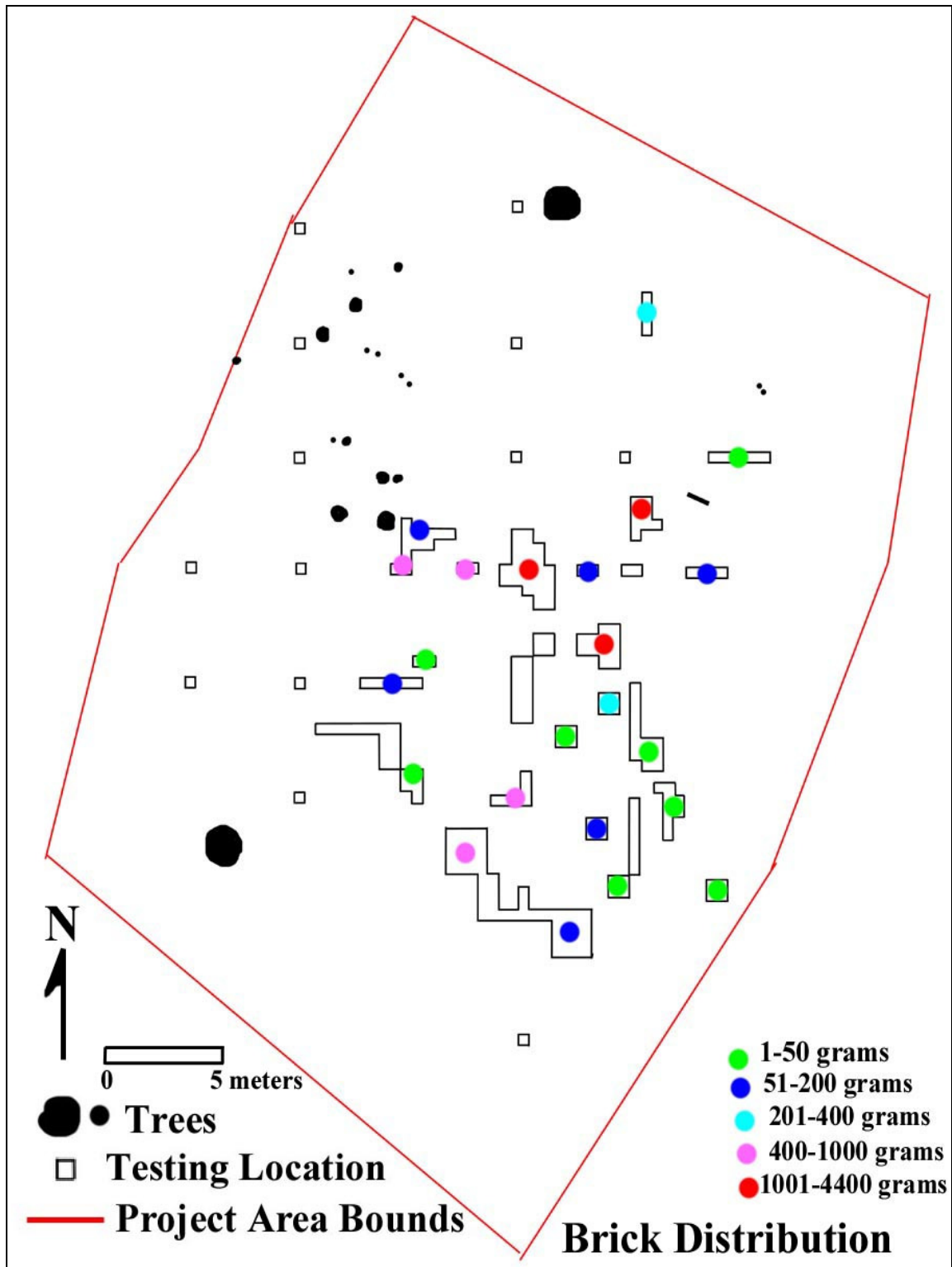
Distribution Map 1: Quartz Distribution



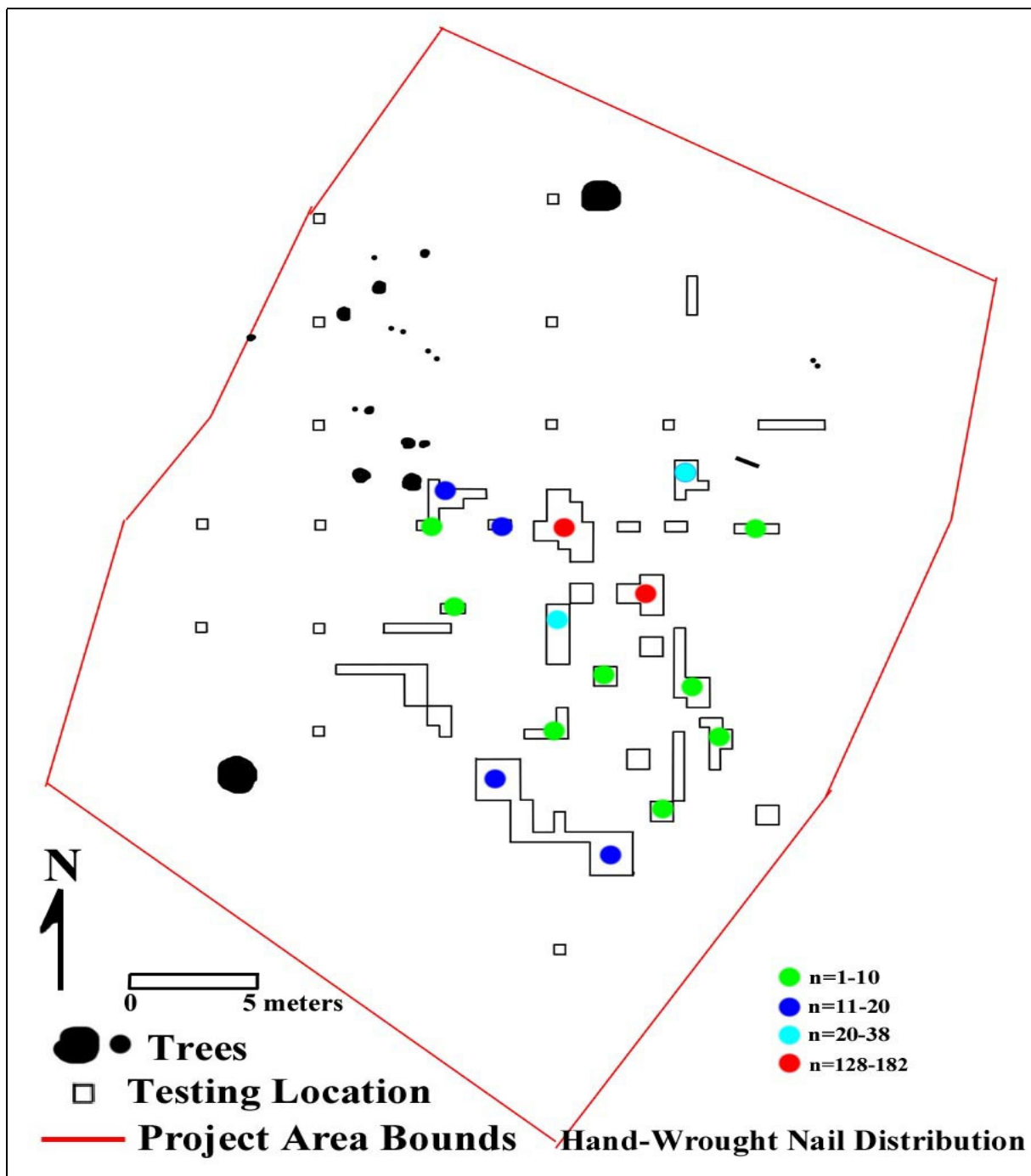
Distribution Map 2: Rhyolite distribution



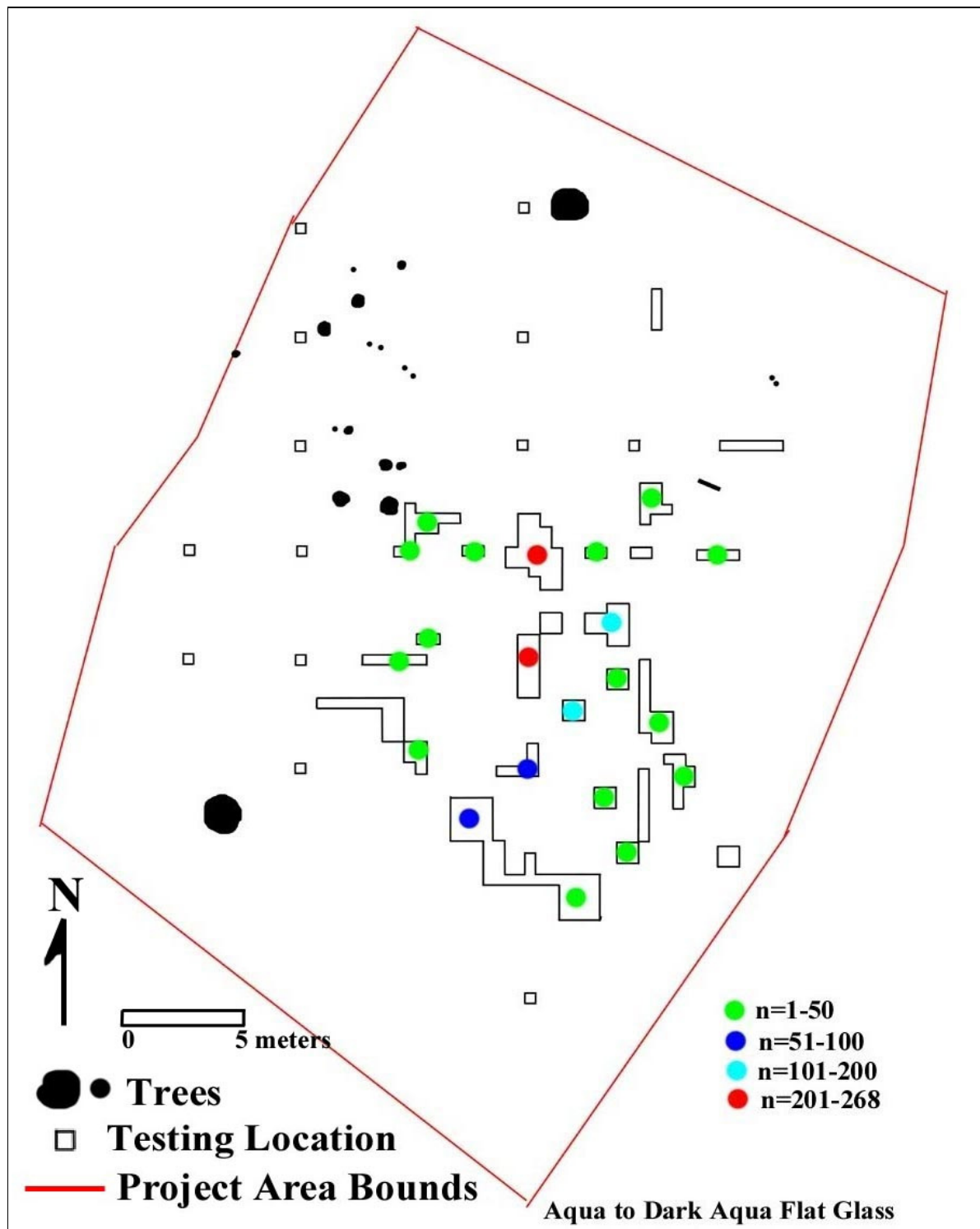
Distribution Map 3: Clay tobacco pipe distribution



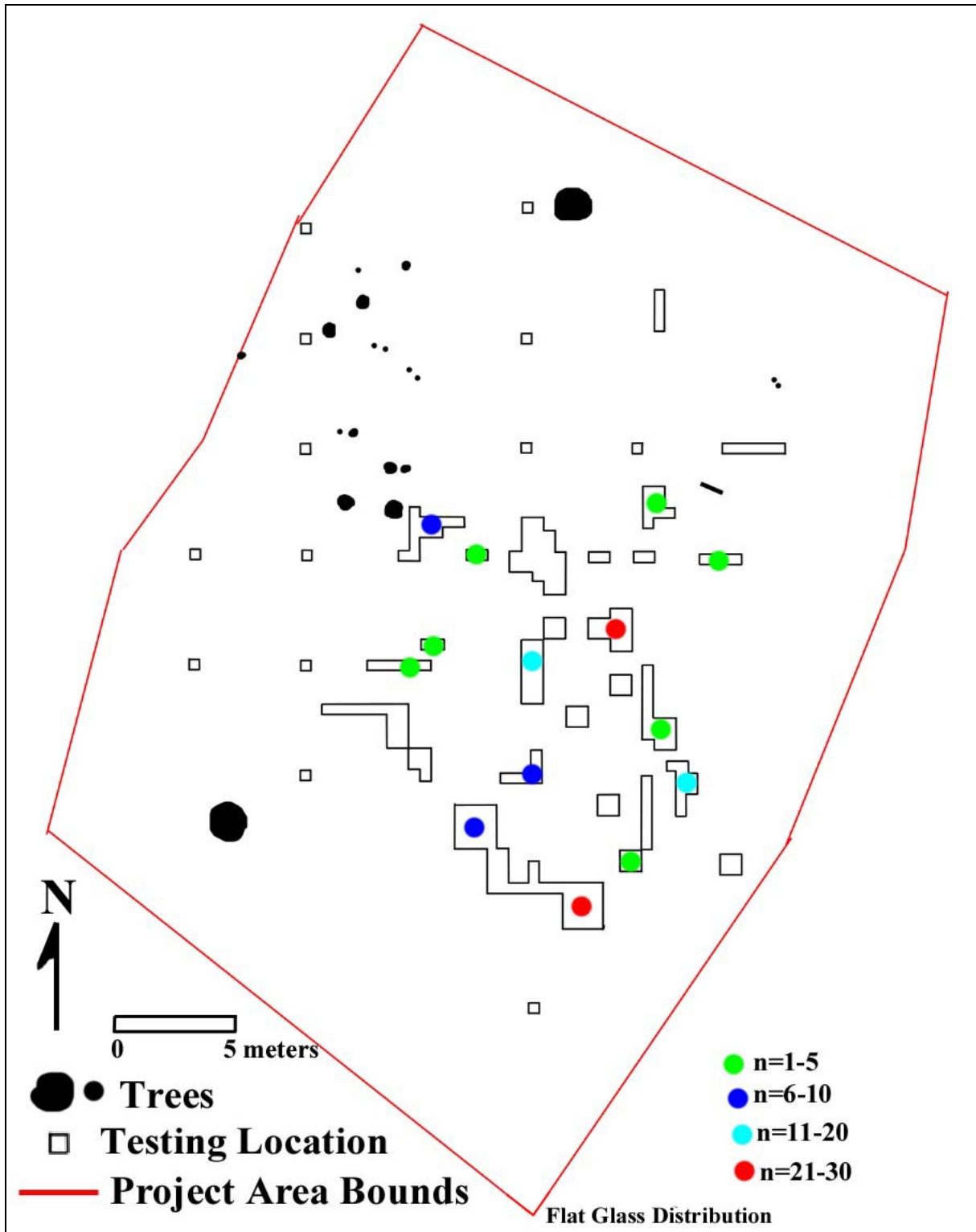
Distribution Map 4: Brick distribution



Distribution Map 5: Hand-wrought nail distribution



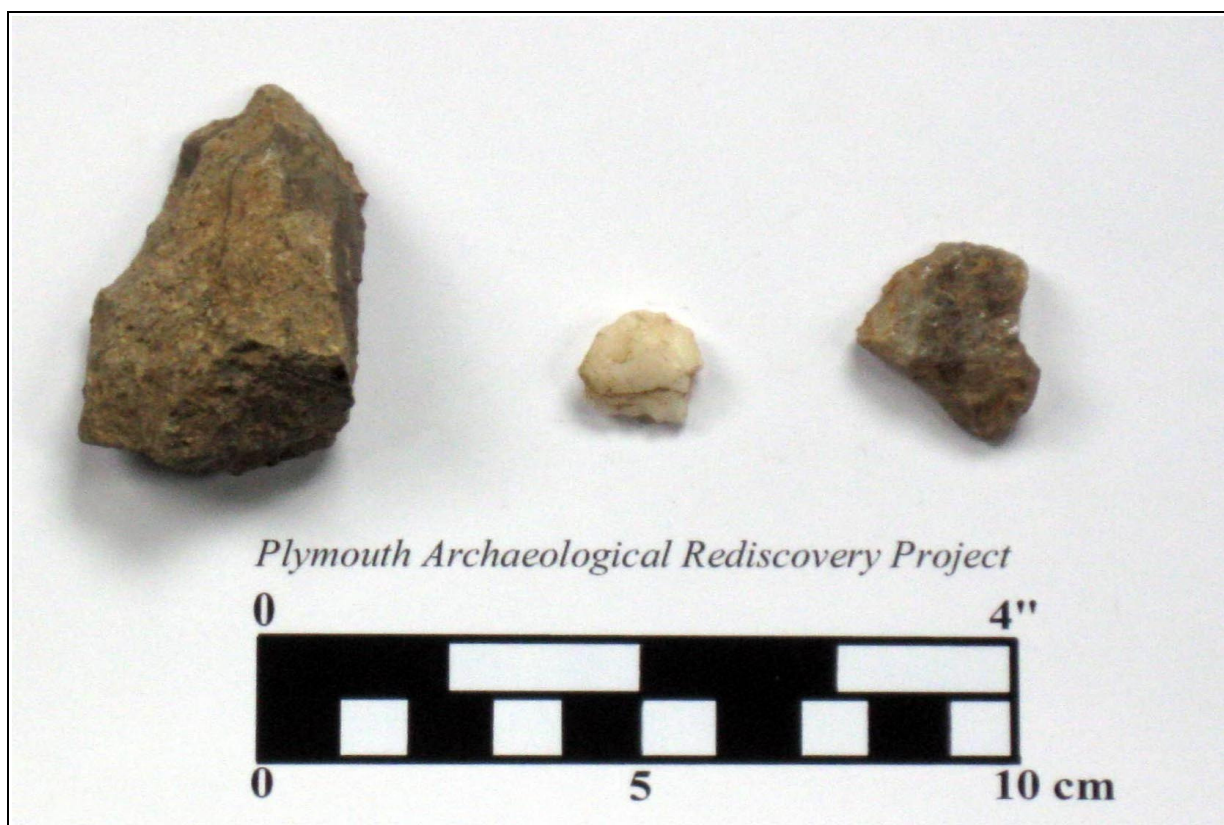
Distribution Map 6: Aqua to dark aqua (old) glass distribution



Distribution Map 7: Clear to light aqua (recent) flat glass distribution

Appendix E

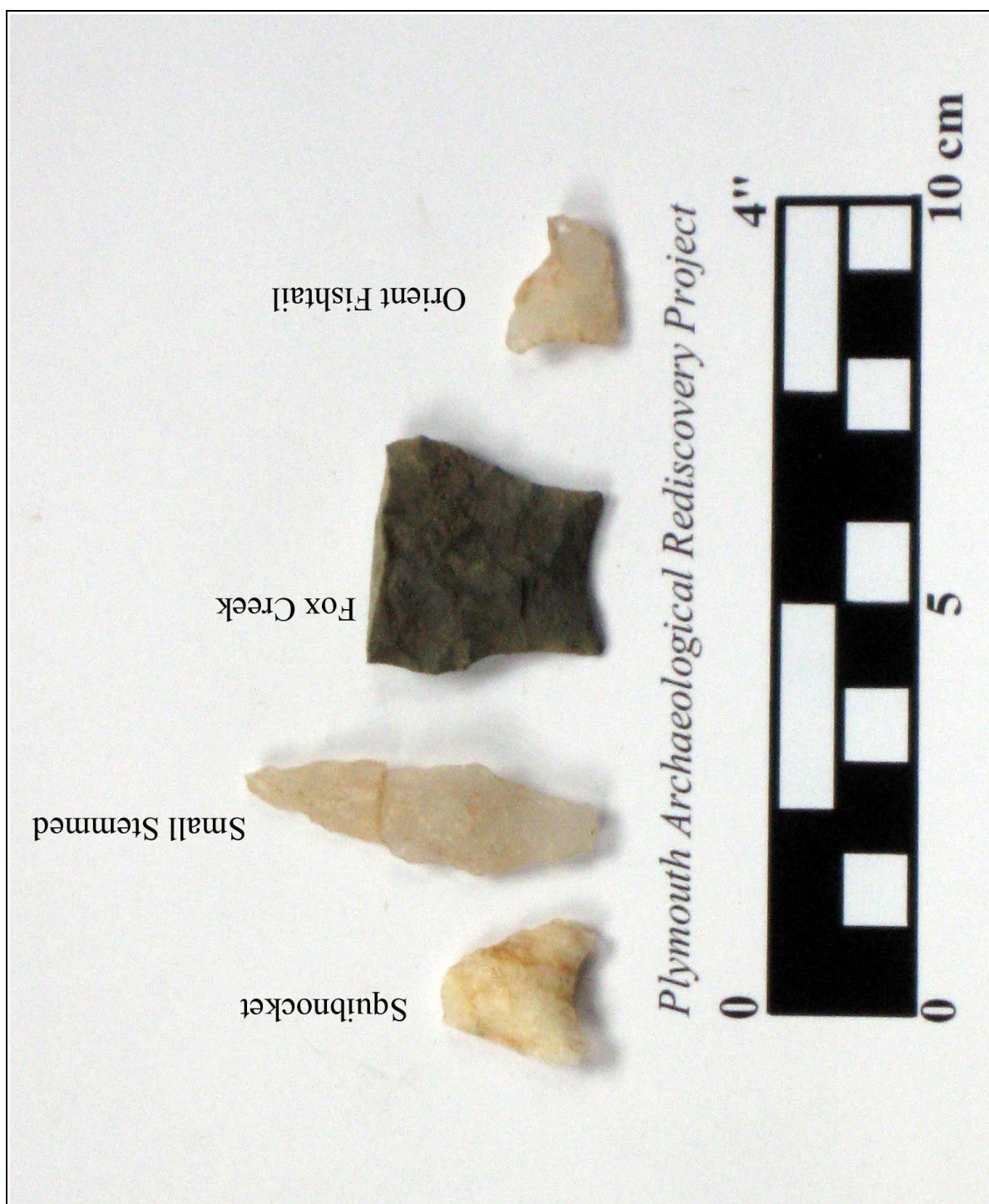
Artifact Photographs



Artifacts 1: Prehistoric bifaces (top), core (bottom left) and possible scrapers (Bottom right)



Artifacts 2: Saugus Jasper uniface (Top), Projectile point tips (Bottom)



Artifacts 3: Projectile points



Artifacts 4: Top eighteenth century ceramics (Top Creamware; Bottom Left to Right-Westerwald, Slipware, White Salt-Glazed Stoneware, Redware); Bottom Left Yellowware, Right Transferprinted Whiteware



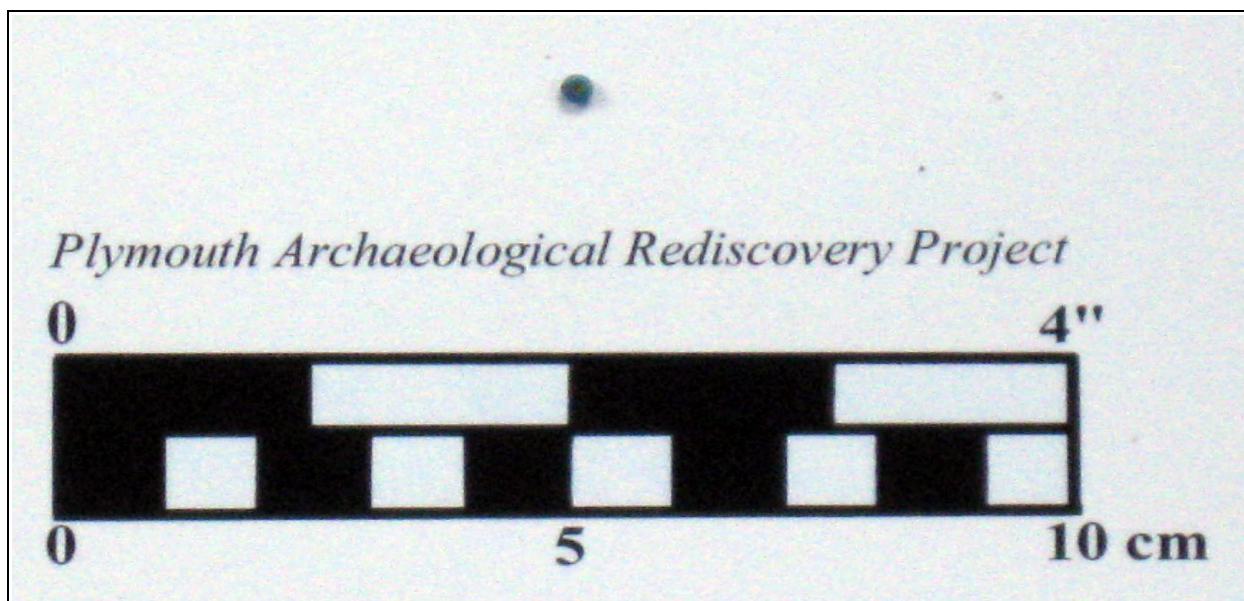
Artifacts 5. Clay tobacco pipes (Top pipe fragments recovered from Site Examination testing; Bottom pipe style identified)



Artifacts 6: Eighteenth century vessel glass (Top left lead glass base, Right possible case bottle);
Cuprous artifacts (Bottom left to right: Shoe buckle, strait pin, stamped button, flat punched fragment)



Artifacts 7: Eighteenth century munitions related artifacts. Top: lead musket ball, lead waste; Bottom: English flint fragment



Artifacts 8: Top blue glass bead, Bottom Iron punch



Artifacts 9: Top Dr. Gorham's Gray Hair Restorer; Bottom 1900 Indian Head cent



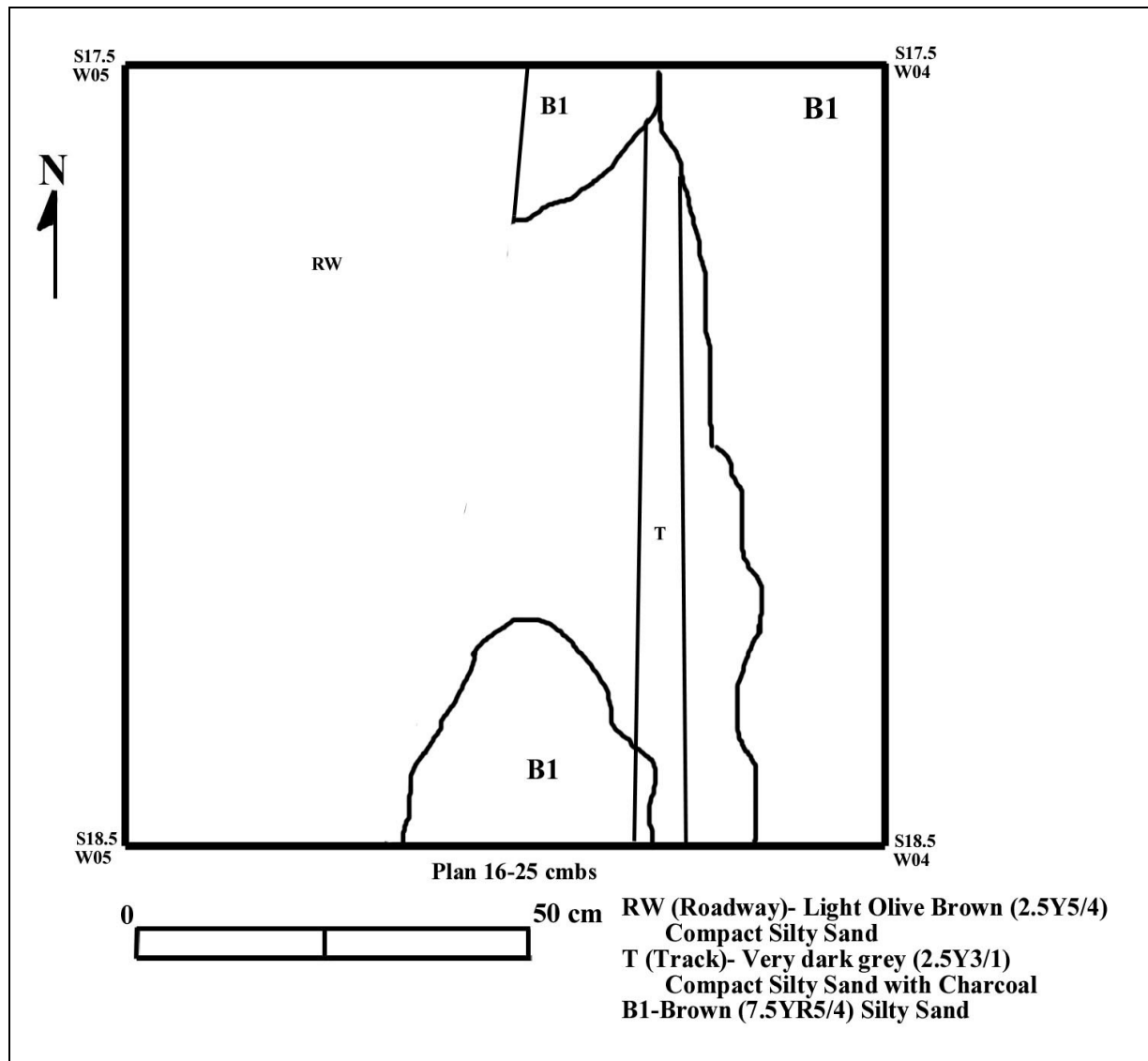
Artifacts10: Representative brick. Top sand struck side, bottom organic impressions



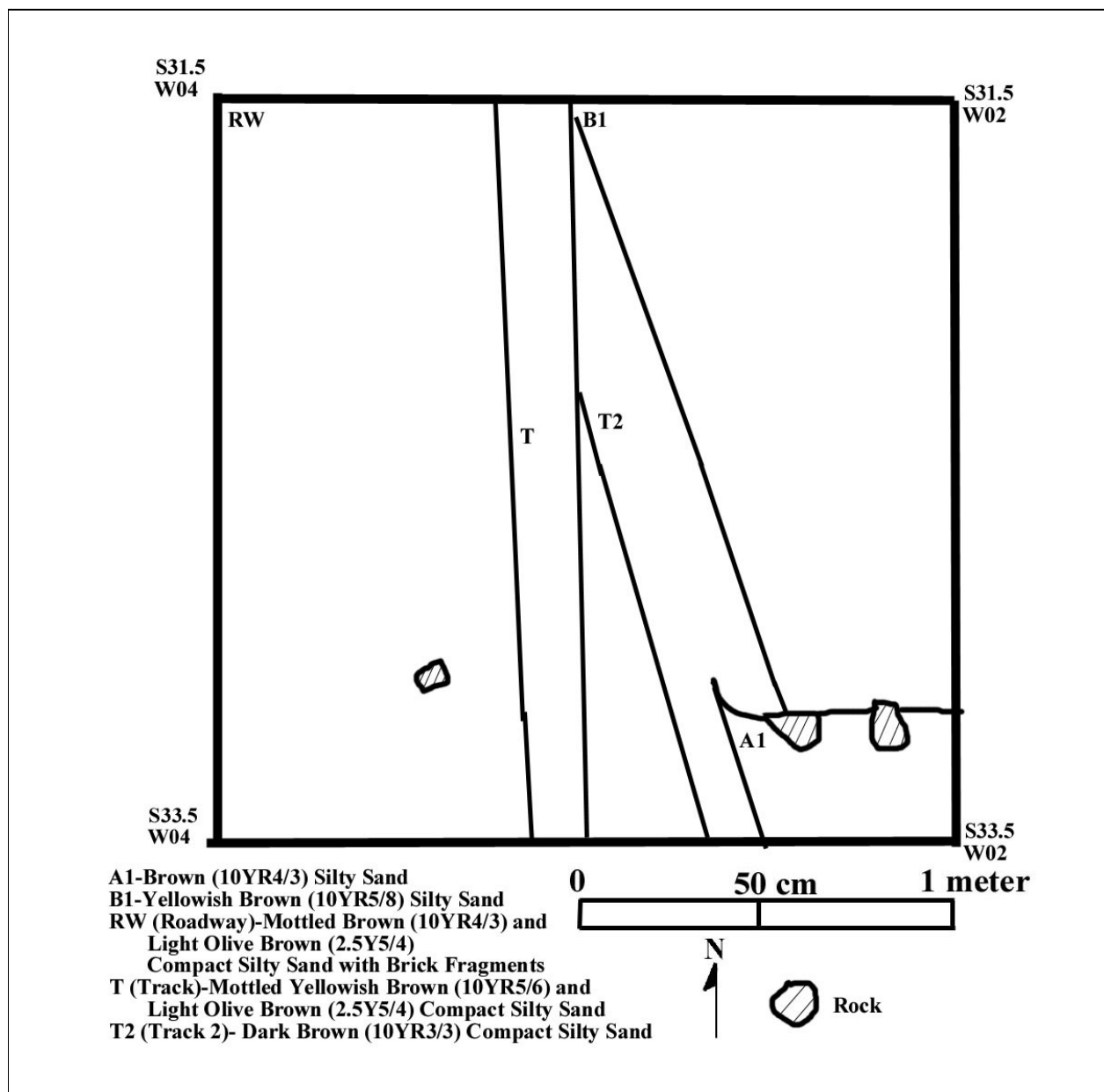
Artifacts 11: Top Shell-tempered mortar; Bottom Window glass, lead kames (Curved glass on left and second from right)

Appendix F

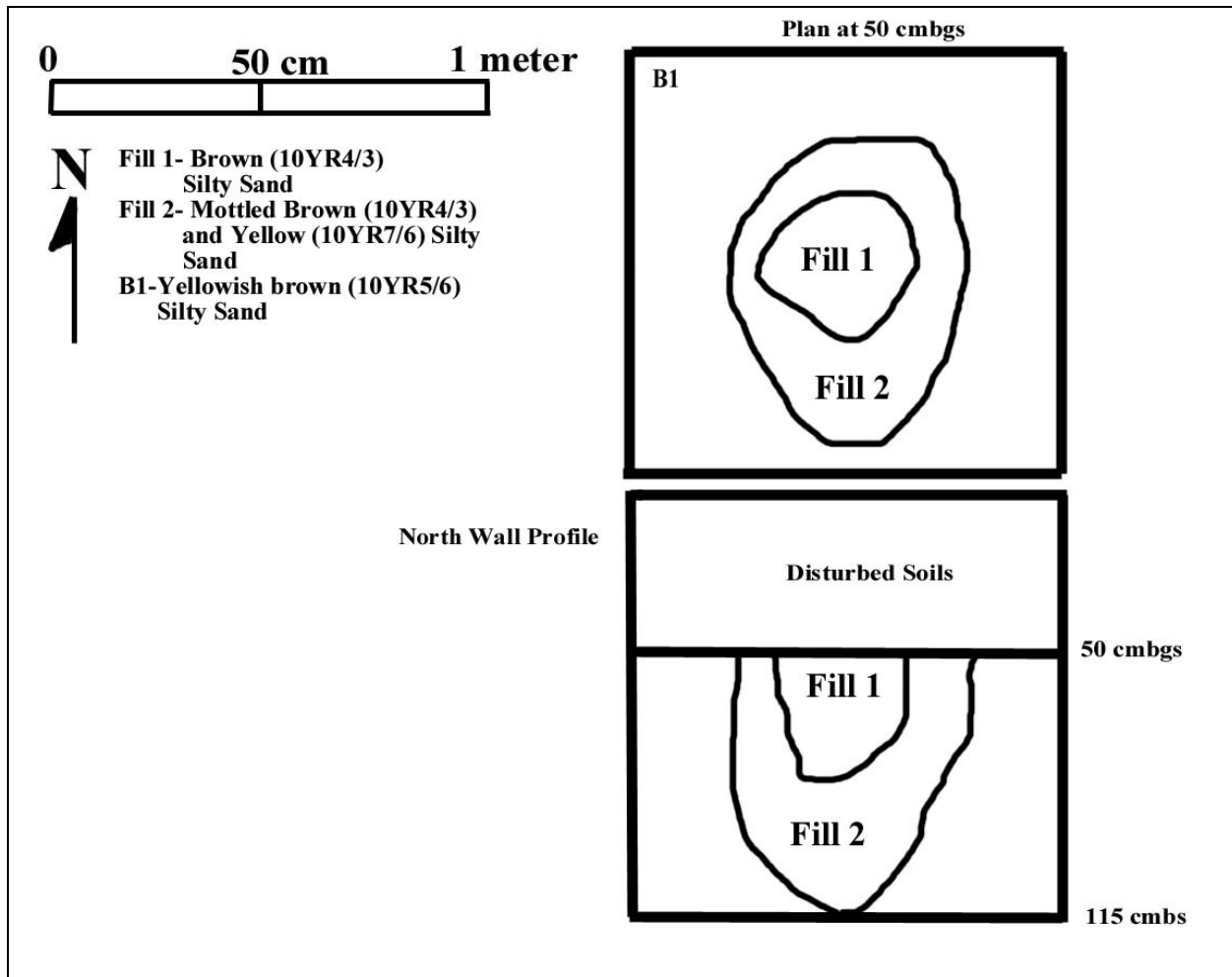
Excavation Plans and Profiles



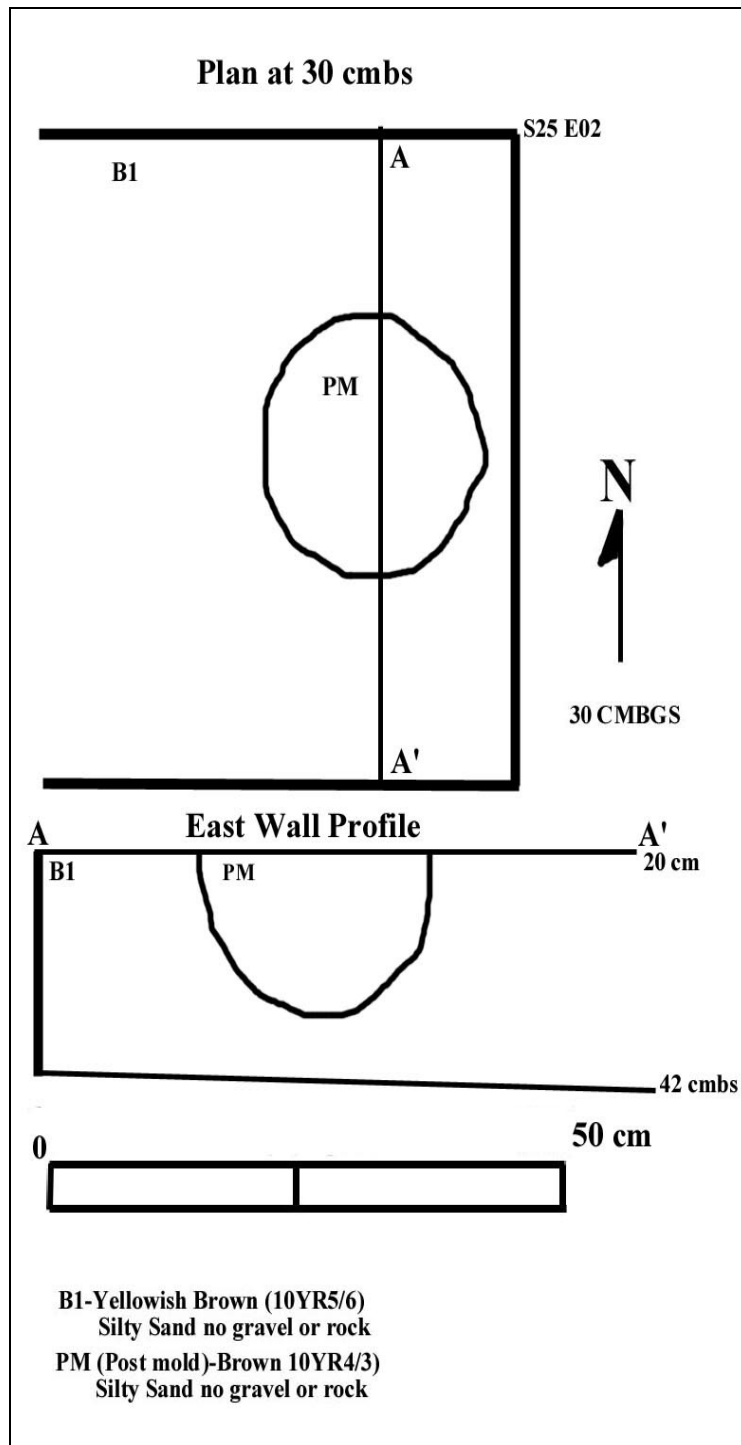
Field Work Plan/ Profile 1: S18.5 W04 Roadway Section



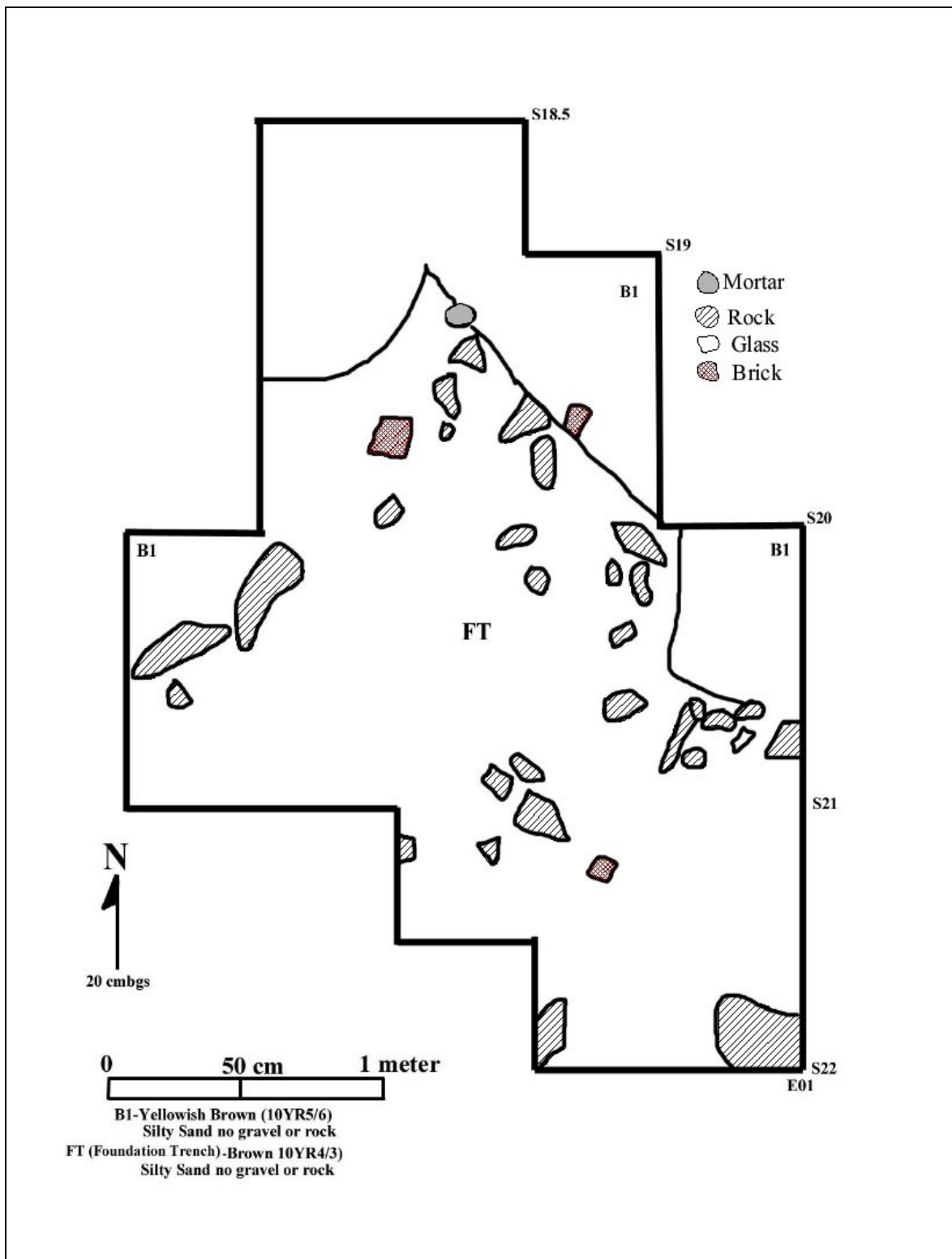
Field Work Plan/ Profile 2: S33.5 W02 Roadway Section



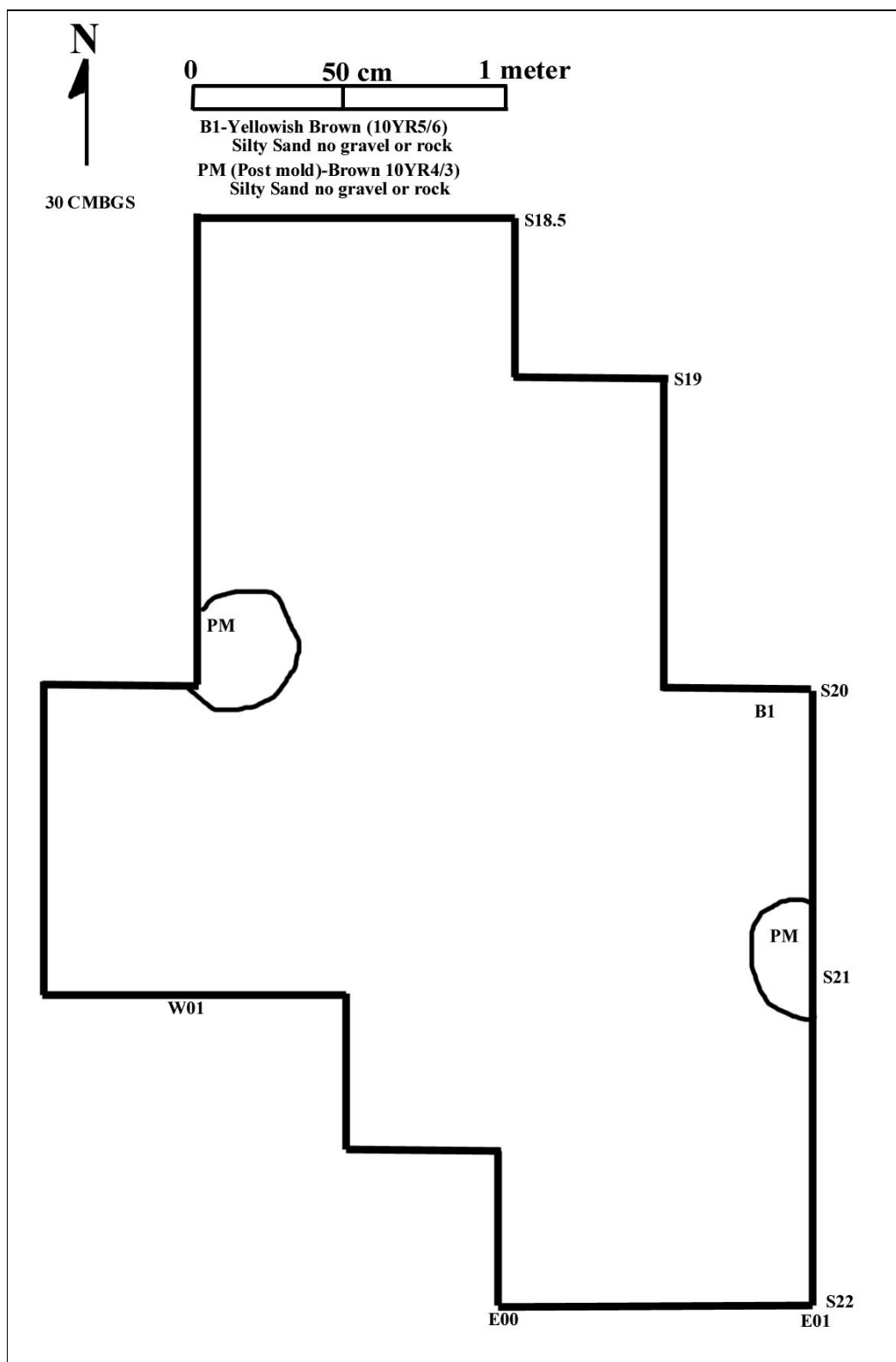
Field Work Plan/ Profile 3: S17.5 E5.5 19th-20th century post hole/ trash pit



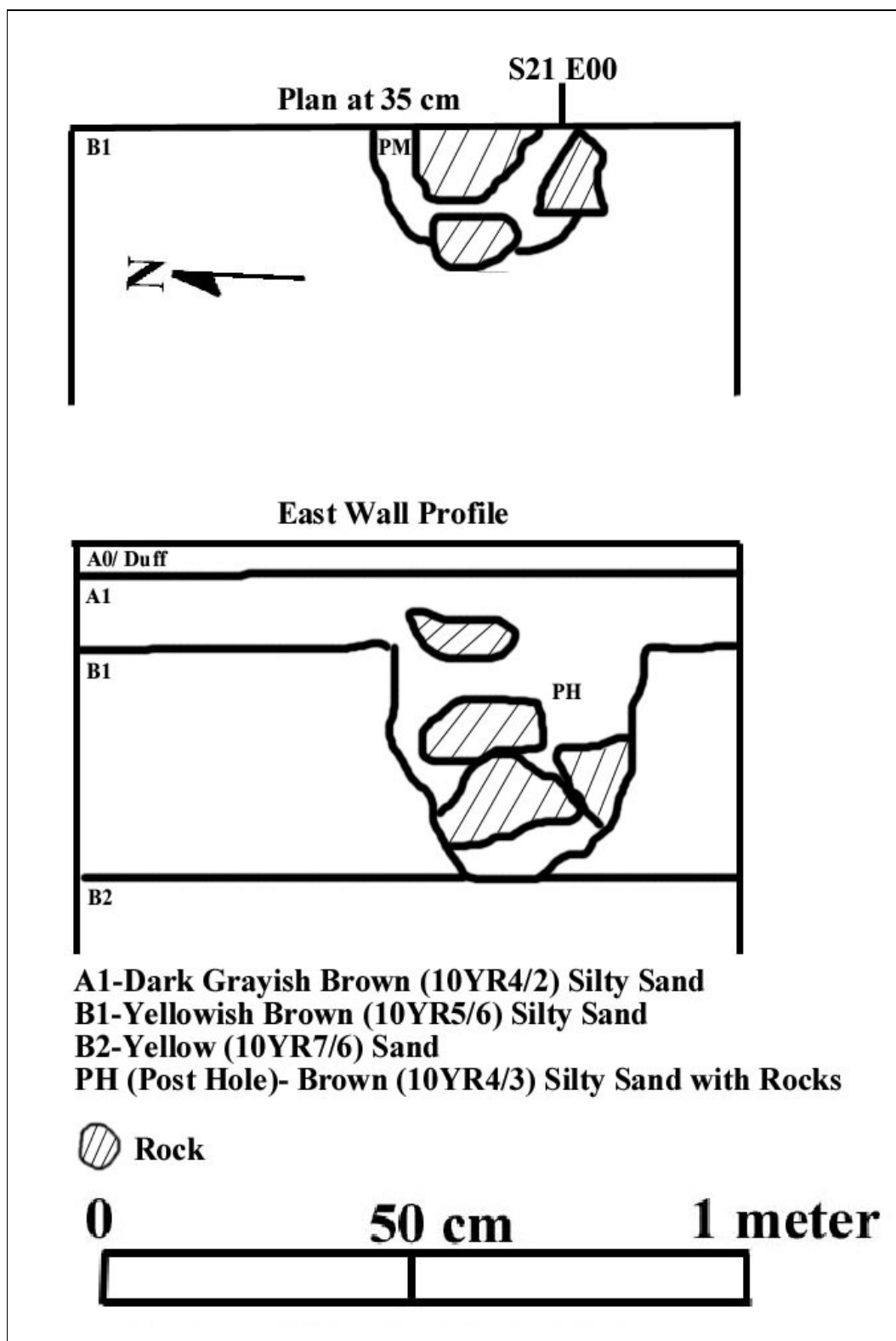
Field Work Plan/ Profile 4: S26 E02 Plan at 30 cmbs and East Wall profile



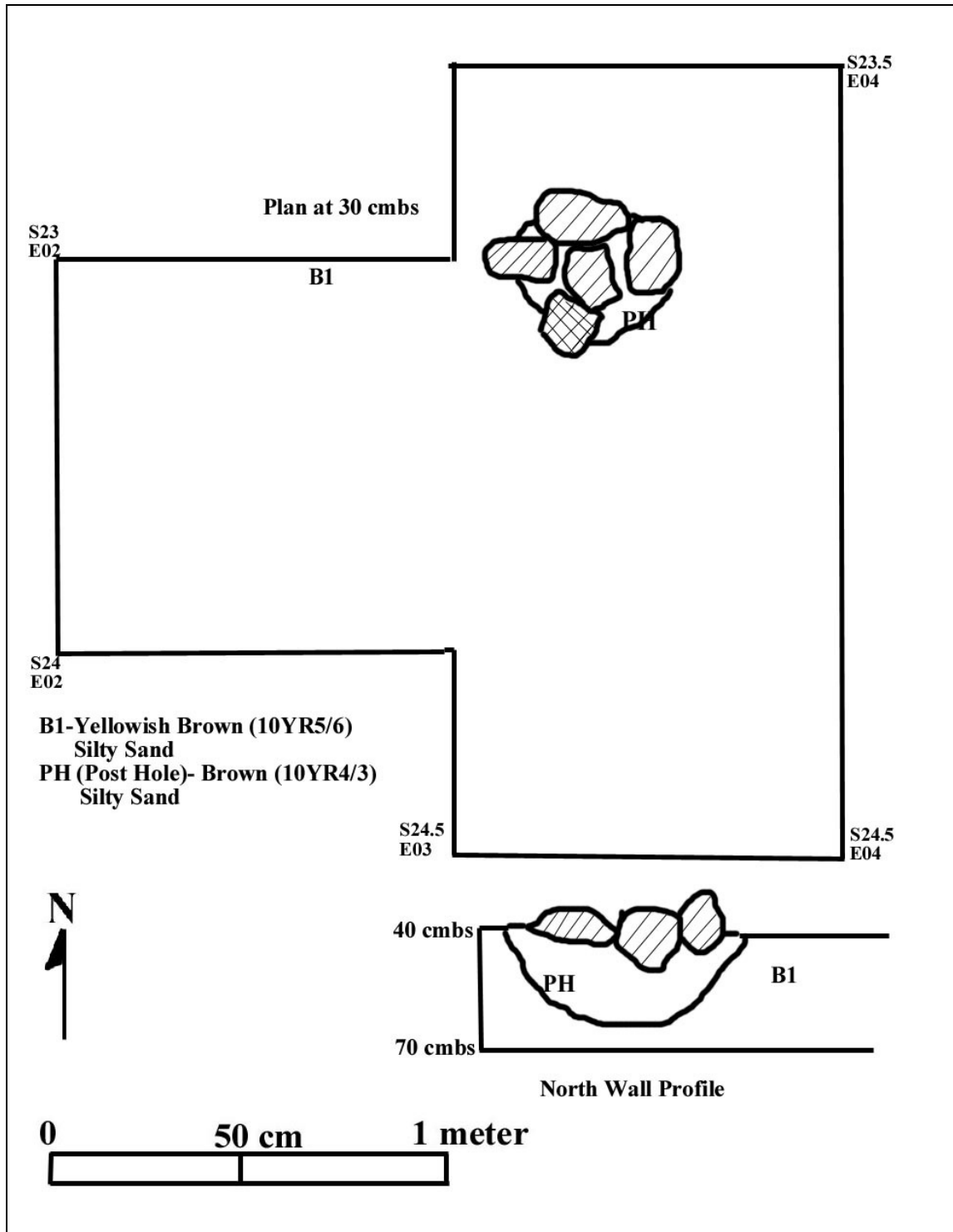
Field Work Plan/ Profile 5: S20 E00 Plan at 20 cmbs



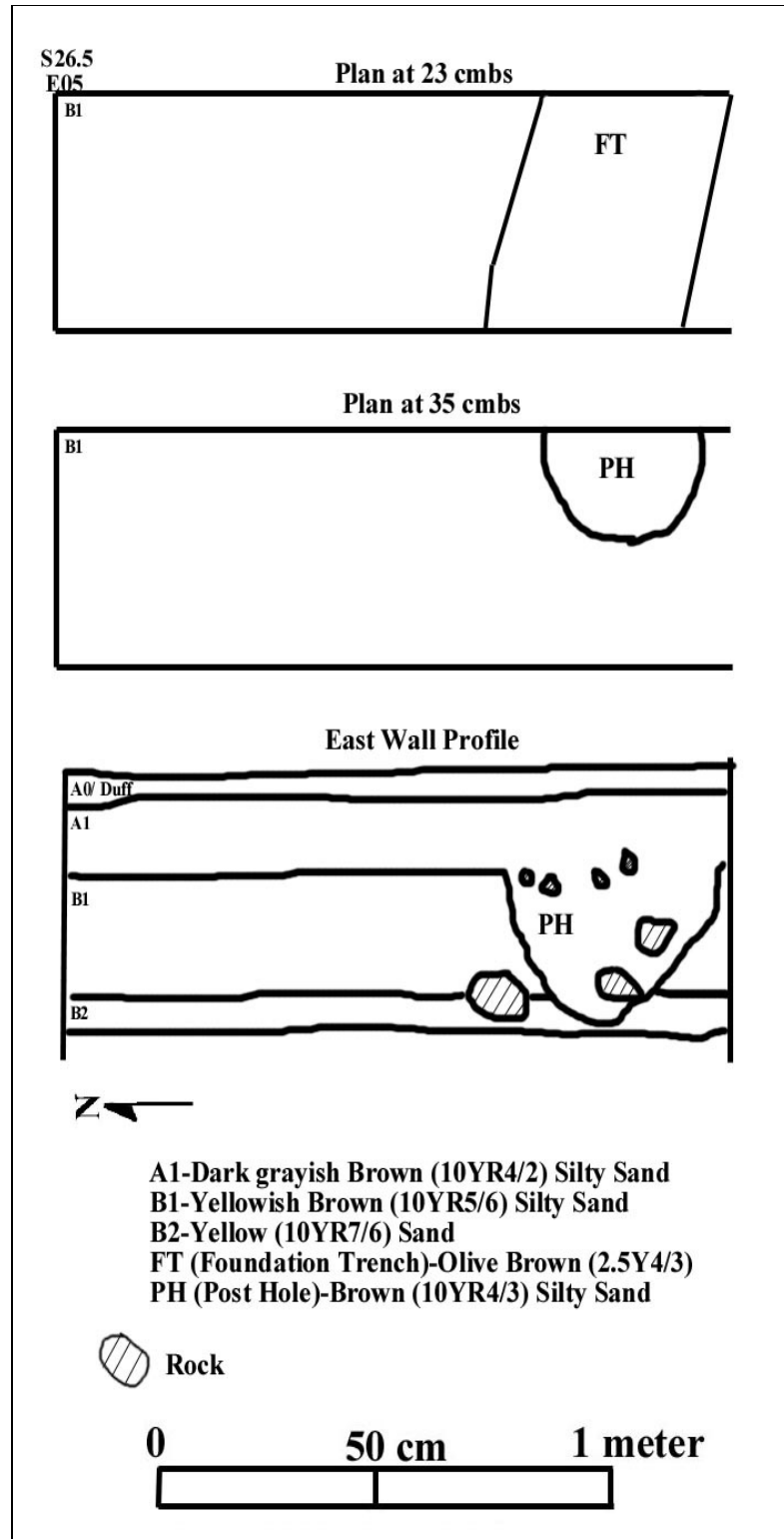
Field Work Plan/ Profile 6: S20 E00 Plan at 30 cmbs



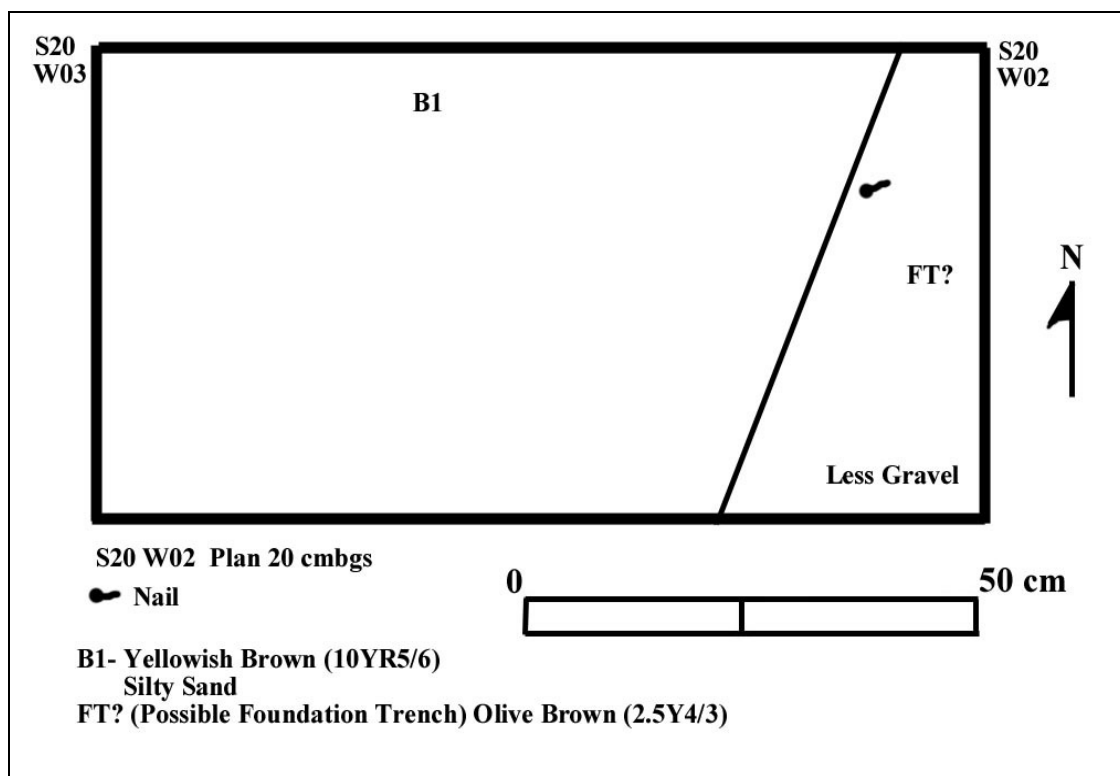
Field Work Plan/ Profile 7: S21 E01 Plan at 35 cmbs and East Wall Profile



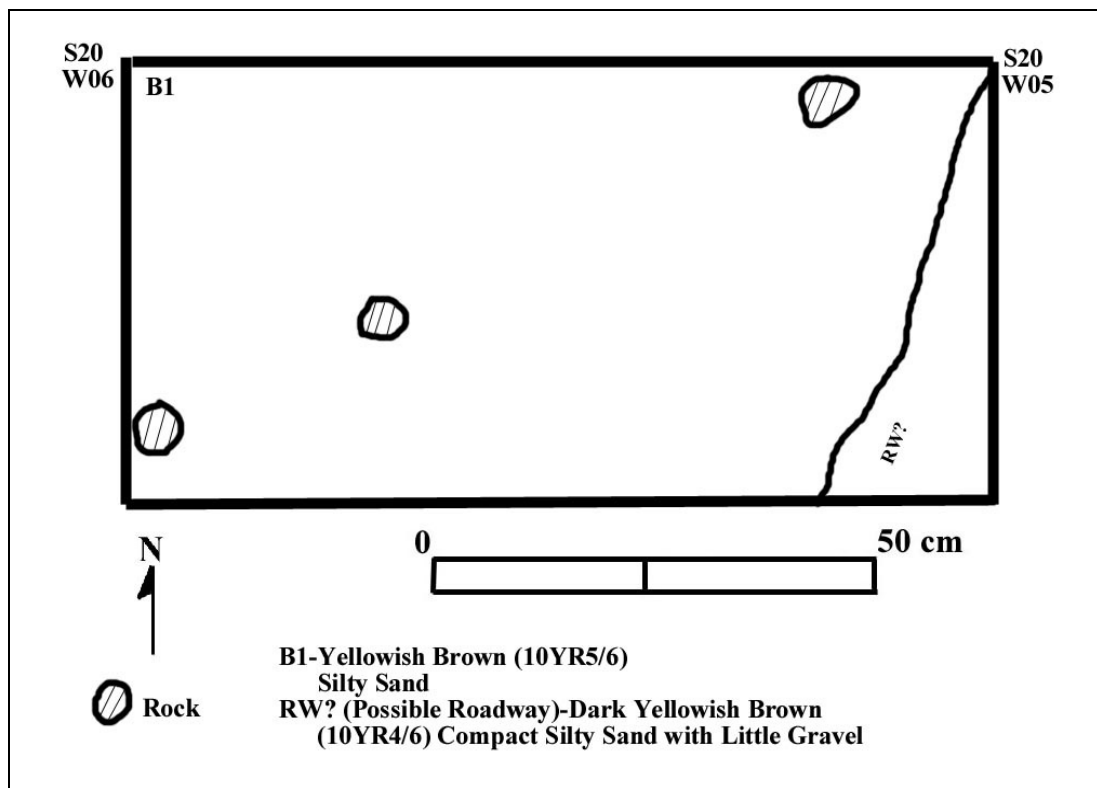
Field Work Plan/ Profile 8: S23.5 E04 plan at 30 cmbs and North Wall profile



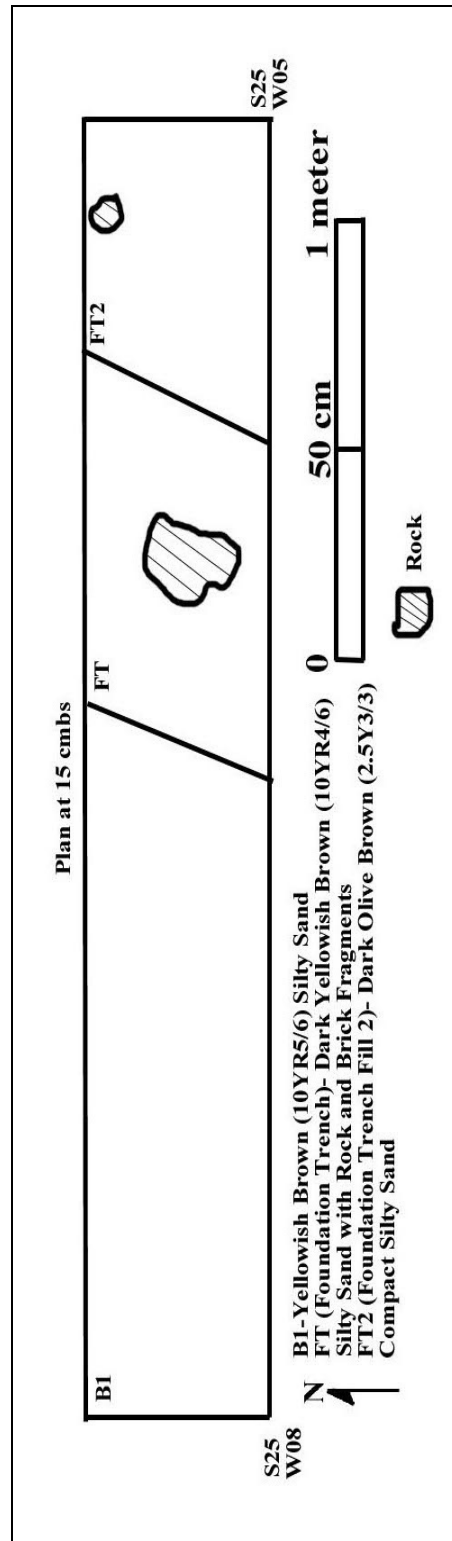
Field Work Plan/ Profile 9: S26.5 E05 plans at 23 and 35 cmbs East Wall profile



Field Work Plan/ Profile 10: S20 W02 plan at 20 cmbs



Field Work Plan/ Profile 11: S20 W05 plan at 20 cmbs



Field Work Plan/ Profile 12: S25 W05 plan at 15 cmbs



Appendix G

Excavation Photographs



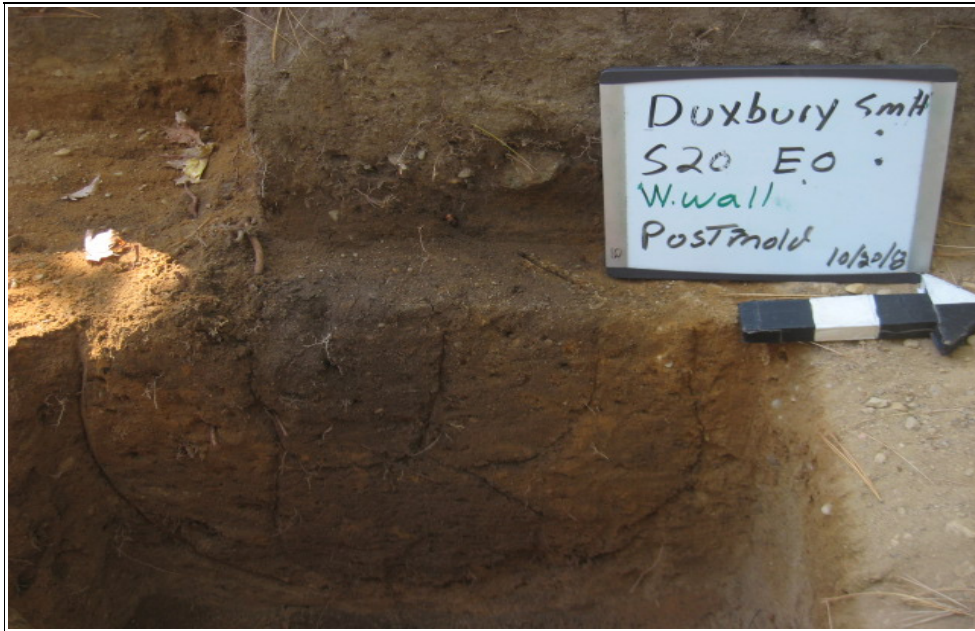
Field Photograph 1: S17.5 E5.5 19th-20th century post hole/ trash pit



Field Photograph 2: Possible 19th-20th century roadway sections Upper left S18.5 W04 plan at 21 cm; Upper right S18.5 W04 Plan and profile 26 cm; Bottom S33.5 W02 plan at 20 cm



Field Photograph 3: S20 E00 plan at 23 cm



Field Photograph 4: S20 E00 post holes Upper S20 E00 post hole West wall profile; Lower S21 E01 east wall profile



Field Photograph 5: S26.5 foundation trench and post hole Upper Left S26.5 E05 foundation trench plan at 25 cmbs; Upper Right S26.5 E05 post hole plan at 35 cmbs; Bottom S26.5 E05 east wall profile



Field Photograph 6: S26 E02 post hole North wall profile



Field Photograph 7: Possible foundation trench sections Upper S25 W05 plan at 20 cmbs; Lower S30 W05 plan at 20 cmbs