

DATA RECOVERY FIELDWORK

Rarely in New England is a minimally impacted site found that covers as large of an area and has as wide a variety of features and artifacts as the Muttock-Pauwating site. This site appears to have seen occupation from at least 7,500 years BP possibly into the Contact period. The recovered artifacts represent lithic reduction, riverine resource procurement, food processing and consumption and possibly food storage and raw material processing activities. Middle Archaic projectile points recovered from Lots 4 and 6 represent the earliest evidence of habitation at the site. Late Archaic occupation appears to have occurred in Lots 4, 6 and 7 while Early Woodland projectile points were found in Lots 5 and 7. Identified Late Woodland artifacts consisted of large triangle/ Levanna style projectile points from Lots 1, 4 and 6. Recovered pottery from all the lots except for 1 with decorative styles indicated Middle and Late Woodland occupation.

The Muttock-Pauwating site has a high potential for producing new information on Native settlement along the river, the Town of Middleborough and southeastern Massachusetts. It is eligible for inclusion on both the State and national Registers of Historical Places under Criterion D of the National Register (36 CFR 60) and under Criterion A for its association with the Woodland Period in southeastern New England and for its generally undisturbed condition, its archaeological potential and its multiple components spanning at least 7,500 years of human occupation.

Lots Lot 1 and 2

An area measuring 23 x 12 meters (276 square meters) in each lots represents the proposed location of a four bedroom house, garage and 14 x 11 meters (154 square meters) for the septic system leaching fields. Plans call for driveways in both lots and a waterline placed across the low density north central part of the lots. Previous testing testing consisted of a total of seven test pits (N304 E180, N304 E188, N312 E172, N312 E188, N312 E180, STP 7, 8) in the area of the proposed house on Lot 1 and four test pits (STP 5,6, N304 E191, N304 E190.5) in the proposed site of the septic system in this lot. Earlier testing placed three test pits (STP 2, 3, 4) in the proposed site of the house envelope in Lot 2 and none in the proposed septic system. The proposed construction will impact all the features identified during the Intensive Survey and Site Examination, Feature 2 (large pit), 3 and 10 (both postmolds) in Lot 1 and Feature 1 (large pit) in Lot 2.

Intensive Survey and Site Examination testing recovered a total of 168 artifacts from the proposed house envelopes in lots 1 and 2 and the proposed site of the septic system in Lot 1 (Table 1). The proposed site of the septic system in Lot 2 was not tested, but testing was proposed for the Data Recovery.

Table 1. Artifacts recovered from Lot 1 and 2 Intensive Survey and Site Examination testing

Artifact	Lot 1 House	Lot 1 Septic	Lot 2House
Quartz CD	7	47	3
Quartz shatter	2	22	6
Quartz core		3	
Quartz biface	1		
Rhyolite CD		14	4
Rhyolite point	1		
Chert CD		3	1
Basalt CD		1	
Quartzite CD		5	
Quartzite Shatter			1
Quartzite Point		1	
FCR	1	1	8
Pottery			36
Total	12	97	59

Lot 4

The impact areas in Lot 4 measured 26 x 12 meters (312 square meters) at the where the proposed location of the four bedroom house and garage and 21 x 12 meters (252 square meters) for the septic system leaching fields.

Earlier testing excavated a total of four test pits (STP 26, N152 E122, N152 E130, N144E130) in the area of the proposed house on Lot 4 and three test pits (N144 E146, N144 E154, N136 E146) in the proposed location of the septic system in this lot. Just outside the southeastern edge of the proposed house envelope, two test pits (STP 24 and 25) and excavation unit 1 (EU 1), at the feature complex at grid coordinates N136 E129, encountered Features 9, 18, 27, 28, 30, 31 (a hearth with associated postmolds). material associated with this feature complex had the potential of being encountered in the southeastern part of the house envelope (Table 2). Construction of the septic system will impact Feature 33 (pit). Intensive Survey and Site Examination testing recovered a total of 274 artifacts from the proposed house envelopes and septic system locations in Lot 4 (Table 3).

Table 2. Artifacts recovered from Feature complex N136 E129

Artifact	Count
Quartz CD/ Shatter	132/ 69
Quartz blank	1
Quartz preform	1
Quartz Squib	1
Rhyolite CD	27
Rhyolite Levanna	1
Rhyolite Squib.	1
Chert CD	5
Quartzite CD	1
Basalt CD	2
FCR	82
Pottery	407
Total	730

Table 3. Artifacts recovered from Lot 4 Intensive Survey and Site Examination testing

Artifact	House	Septic
Quartz CD	41	65
Quartz shatter	16	37
Quartz blank		
Quartz point tip	1	
Quartz Squib		
Rhyolite CD	5	17
Rhyolite Levanna		
Rhyolite Squib.		
Rhyolite biface		1
Chert CD	1	1
Quartzite CD		1
Basalt CD	2	4
Mudstone CD		1
Unknown CD		1
Unknown cobble	1	
Unknown shatter		4
FCR	19	23
Pottery	14	19
Total	100	174

Lot 5

The impact areas in Lot 5 measured 26 x 12 meters (312 square meters) where the proposed location of the four bedroom house and garage and 21 x 12 meters (252 square meters) for the septic system leaching fields. Previous testing testing placed three test pits (N136 E178, N136 E177, N128 E178) in the area of the proposed house on Lot 5 and two test pits (N126 E216, N134 E 216) in the proposed septic system area. The proposed construction will impact Feature 38 (pit) within the proposed house envelope and Feature 42 (postmold) in the septic system. Intensive Survey and Site Examination testing recovered a total of 237 artifacts from the proposed house envelopes and septic system locations in Lot 5 (Table 4).

Table 4. Artifacts recovered from Lot 5 Intensive Survey and Site Examination testing

Artifact	House	Septic
Quartz CD	66	15
Quartz shatter	20	9
Rhyolite CD	63	1
Rhyolite biface	1	
Chert CD	2	1
Basalt CD	1	
Unknown CD	1	
FCR	48	4
Pottery	3	2
Total	205	32

Lot 6

The impact areas in Lot 6 measured 26 x 12 meters (312 square meters) for the proposed four bedroom house and garage and 21 x 12 meters (252 square meters) for the septic system leaching fields.

Earlier testing placed six test pits (N102 E232, N102 E224, N102 E 239.5, N110 E224, N110 E232, N110 E240) in the area of the proposed house and three (N126 E240, N126 E248, N118 E248) in the septic location. The proposed construction will not impact any previously identified features located within the proposed house envelope or septic system.

Intensive Survey and Site Examination testing recovered a total of 122 artifacts from the proposed house envelopes and septic system locations in Lot 6 (Table 5).

Table 5. Artifacts recovered from Lot 6 Intensive Survey and Site Examination testing

Artifact	House	Septic
Quartz CD	45	13
Quartz shatter	31	
Quartz chopper	1	
Quartz core		1
Quartz scraper		4
Rhyolite CD	4	
Rhyolite point tip		1
Chert CD	1	
Basalt CD	2	
Basalt biface	1	
Unknown shatter	1	
FCR	15	1
Pottery	1	
Total	102	20

Lot 7

The impact areas in Lot 7 measured 26 x 12 meters (312 square meters) for the proposed four bedroom house and garage and 21 x 12 meters (252 square meters) for the septic system leaching fields.

Previous testing placed five test pits (N70 E256, N70 E264, N70 E272, N62 E272, N78 E256) in the area of the proposed house and three (N86 E248, N78 E248, N86 E256) in the proposed septic system. The construction will impact Feature 54 (pit) located within the proposed house envelope. Construction of the septic system will not impact any previously identified features.

Intensive Survey and Site Examination testing recovered a total of 265 artifacts from the proposed house envelopes and proposed septic system locations in Lot 7 (Table 6).

Table 6. Artifacts recovered from Lot 7 Intensive Survey and Site Examination testing

Artifact	House	Septic
Quartz CD	110	8
Quartz shatter	87	3
Quartz chopper	1	
Quartz core	1	1
Rhyolite CD	20	
Rhyolite Rossville	1	
Chert CD	2	
Chert scraper	1	
Quartzite CD	1	
Basalt CD	1	
Basalt perforator	1	
Argillite CD	2	
Unknown CD	2	
FCR	17	
Pottery	4	2
Total	251	14

Lot 8

The impact areas in Lot 8 measured 26 x 12 meters (312 square meters) for the proposed four bedroom house and garage and 21 x 12 meters (252 square meters) for the septic system leaching fields.

Previous testing placed four test pits (N78 E304, N79 E312, N86 E312, N88 E 320) in the proposed house and one (N102 E312) in the septic system. The proposed construction will not impact any previously identified features in either the proposed house envelope or septic system locations.

Intensive Survey and Site Examination testing recovered a total of 53 artifacts from the proposed house envelopes and septic system locations in Lot 8 (Table 7).

Table 7. Artifacts recovered from Lot 8 Intensive Survey and Site Examination testing

Artifact	House	Septic
Quartz CD	13	23
Quartz shatter	9	1
Rhyolite CD	2	1
FCR	4	
Total	28	25

Artifact densities in the impact areas, house envelopes and septic system areas (Table 8),

Table 8. House and septic impact areas artifact counts, testing sample areas and densities by lot

Lot	Artifact counts		Testing Sample		Artifact Density	
	House	Septic	House	Septic	House	Septic
1	12	97	1.75m	1m	6.9/ m	97/ m
2	59	0	.75m	?	78/ m	?
4	100	174	1m	.5m	100/ m	232/ m
5	205	32	.75m	.5m	154/ m	64/ m
6	102	22	1.5m	.75m	68/ m	29/ m
7	251	14	1.25m	.75m	314/ m	19/ m
8	28	25	1m	.25m	28/ m	100/ m

ranged from as low as 6.9 artifacts per meter in Lot 1's house envelope to as high as 314 in the Lot 7 house envelope. The overall average density was 107 artifacts per meter for the house envelopes and 90 artifacts per meter in the areas of the proposed septic systems. The high density in the Lot 7 house envelope is due to Feature 54, a stratified pit at N78 E256 and 256.5. Test pits that yielded higher artifact densities that lie within the impact areas in the other lots included N144 E146 (n=84) and N144 E154 (n=51) in Lot 4, N136 E177 (n=140) in Lot 5, N110 E224 (n=53) and N102 E224 (n=24) in Lot 6, N70 E256 (n=61) in Lot 7 and N102 E312 (n=25) in Lot 8. The proposed testing of each house envelope and septic system area by staggered transects of test pits spaced two meters apart during the first phase will help to determine the sections of each area with higher artifact densities.

Plowzone testing yielded most of the artifacts in the impact areas of the seven lots (Table 9). The

Table 9. Artifact occurrence in plowzone soils

Lot	House	Septic
1	100.0%	45.0%
2	29.0%	0.0%
4	100.0%	98.0%
5	67.0%	91.0%
6	95.0%	95.0%
7	76.0%	100.0%
8	75.0%	100.0%

proposed locations of the house in Lot 2 and the septic system in Lot 1 were the areas where most the recovered artifacts were found in features or in the subsoil. Within the southern lots, the proposed location of the house envelope in Lot 5 had the highest occurrence of artifacts outside of the plowzone (33%). Systematic testing of the plowzone with staggered transects and cruciform testing was the best way to find and investigate any concentrations present because most of the material recovered came from the plowzone, .

Fieldwork Methodology: Subsurface Testing Techniques

Field crews carried out the proposed Data Recovery program in six steps. Following the Previous testing grid reestablishment, the building envelope and septic footprint staking out by the archaeologists and the project engineers occurred. Archaeologists excavated within the staked out areas beginning with systematic plowzone sampling. The plowzone extended from the surface to about 30 cm below it.

Because most of the impact areas have only been minimally tested with earlier testing ranging from 0 to seven test pits per impact area, and most of the recovered material came from the plowzone, the use of distribution transect testing provided a better understanding of the distributions of artifacts within each impact area and allowed for finer focusing of later excavation. The result of distribution transect testing, was that high density areas received more comprehensive testing, resulting in a better understanding of the Native use of activity areas. Distribution transect testing used transects of 50 x 50 cm shovel excavated test pits spaced two meters apart and excavated and screened as one soil level to the top of the B1 subsoil horizon, an expected average depth of 30 cmbs, within each transect and two meters apart between transects. These transects will be placed within the footprint of the house, septic system and utility lines. The use of distribution transect test pit sampling will yield a sample of 2.9% of the plowzone in Lots 1 and 2 and 2.7% in the five remaining lots.

Following the transect testing of the plowzone, high density areas were cruciform tested. Archaeologists carried out cruciform testing by placing 50 x 50 cm shovel test pits placed next to a test pit that had yielded a high density, over 100 artifacts per meter, of material during transect testing. The cruciform testing pits were next to the north, south, east and west sides of the transect test pit. Additional 50 x 50 cm shovel test pits could be added to these as a way of determining the horizontal extent of the concentration (Figure). Timelines archaeologists working at the Wareham High School site in Wareham, Massachusetts used cruciform testing (Decima 1993). The result was that individual high density areas were more completely examined with a combination of Intensive Survey, Site Examination, distribution transect and cruciform testing providing a total sample of up to 10% of the plowzone, with sample size being dependent on the number of high density areas encountered during distribution transect test pit. Plowzone sampling completely investigated more than could be done with excavation unit testing (Decima 1993). A footprint, and may involve more testing that what was initially budgeted. Following the excavation be followed by the machine stripping of the plowzone to just above the B1 horizon using heavy equipment supplied by the Proponent. Archaeologists stripped the topsoil only from the impact area in each lot staked out as the final locations of the building envelope and septic systems. The resulting stripped area will be shovel and trowel scraped to expose features such as hearths, storage pits, lithic concentrations, postmolds or potential grave shafts.

Archaeologists mapped each feature on an overall lot map, excavating each feature using 1-x-1 meter squares. Following testing completion in each lot, back filling of each by heavy machinery supplied by the Proponent occurred. Field crews screened all soils through quarter-inch mesh screens and examined the residue for cultural material. They documented all recovered material and bagged it for later processing and analysis with all locational information being recorded on the bags. Archaeologists recorded all trench locations, stratigraphy, and contents on field forms and maps and recorded all soil colors using the Munsell Soil Color Chart.

The Muttock-Pauwating site yielded evidence of a great number and variety of features. Post molds, hearths, large pits, small pits, living surfaces, one pit hearth, at least one pot drop and one rock cluster make up the litany of features thus identified. Data Recovery testing identified the relationships between the various features and the artifacts recovered nearby within each lot. Post-excavation analysis examined patterns of postmolds and determined if they represented portions of houses, drying or roasting racks or some other type ancillary structures. Analysis compared the large pits to determine if they represent trash or storage pits. Archaeologists examined the potential living surfaces identified in Lots 6-8 to determine if they represent midden accumulations from habitation or if they were the result of other activities.

Once exposed, the field crew mapped the features to a large master plan for each lot. They then individually planned, photographed, and then bisected them. Archaeologists excavated each anomaly in 5 cm levels within each feature with suitable soil samples being collected at each level from one side of the feature. Laboratory analysis collected a small bag of soil from the features and matrices for archival purposes and as a reference for descriptive purposes. Screening of anomalies was through eight-inch hardware screen to get a larger sample of smaller material that would easily pass through 1/4" mesh hardware cloth. Upon complete excavation of one half of the feature, Archaeologists drew and photographed the exposed profile, and then excavated that half of the anomaly in 5 cm levels.

Photography included black and white 35 mm and digital photographs. Laboratory personnel placed recovered artifacts recovered in labeled acid-free plastic bags within acid-free boxes. At the request of the Middleborough Historical Commission, the final destination of all recovered materials and field notes was the Robbins Museum of Archaeology in Middleborough, Massachusetts for long-term curation.

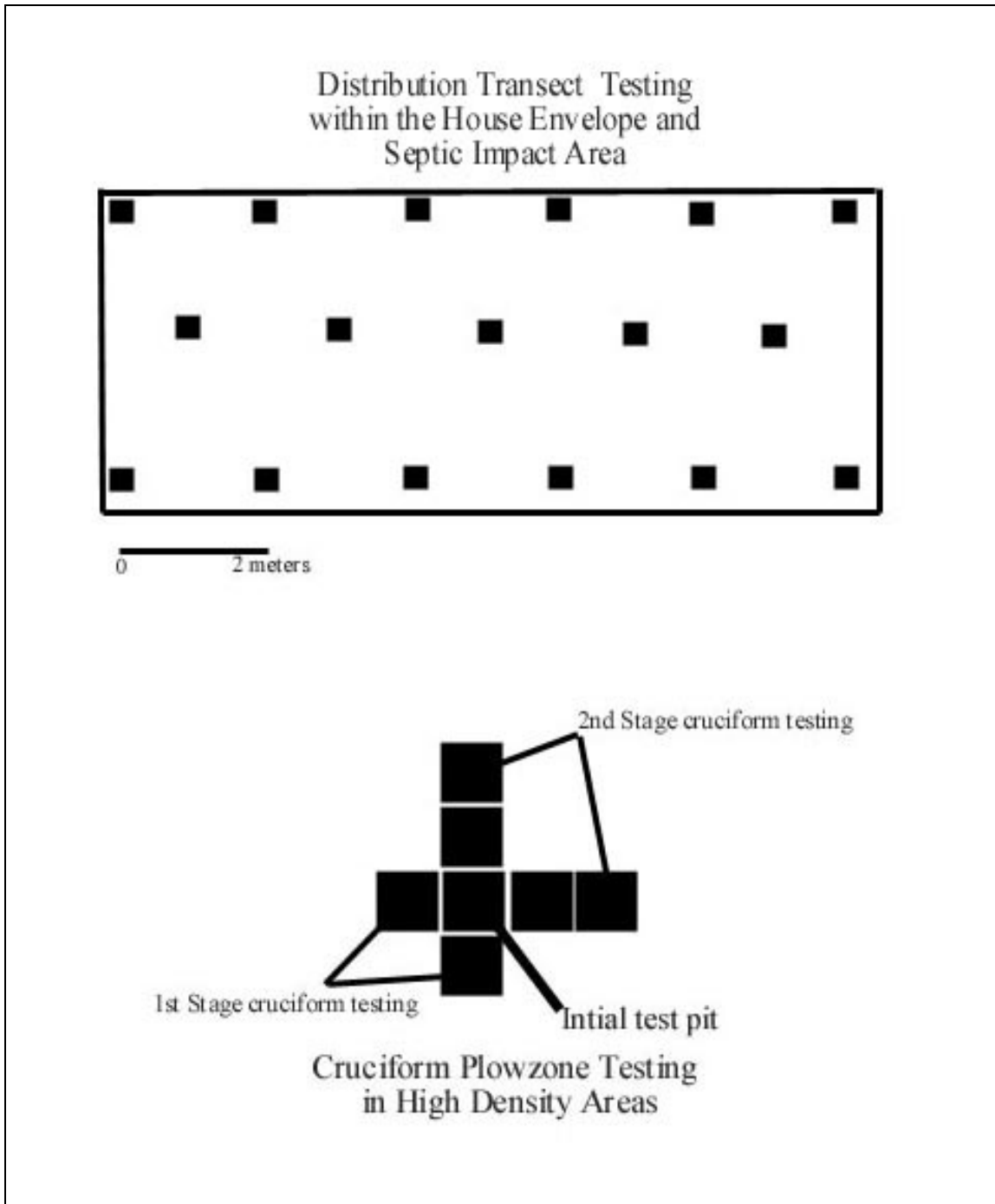


Figure 13. Shovel test pit testing strategy