

IV. Survey Results

A. Archaeological Identification Survey

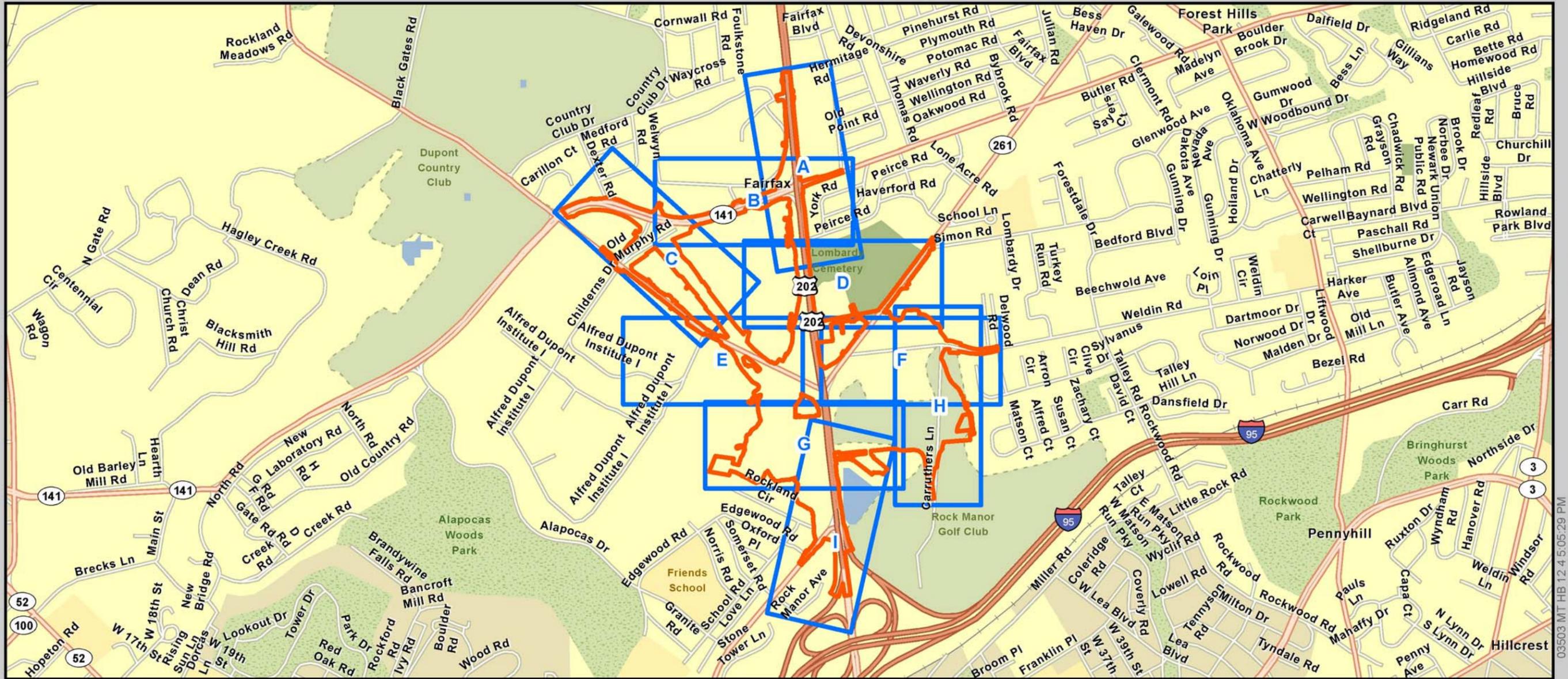
The archaeological APE included relatively large areas that were previously tested, disturbed or exhibited low potential (*Figure 12*). In order to facilitate the presentation of the field results, the portions of the project that were subjected to subsurface investigations was divided into thirteen arbitrary areas designated Areas A-M (*Figure 11*). A total of 496 STPs was excavated at a 15 meter (49.2 foot) interval during the Phase I survey.

1. Area A

Area A consists of the area to be impacted by the proposed S.R. 141 Spur east of Children's Drive. This portion of the APE begins on the west side of the existing S.R. 0202/Foulk Road intersection and veers to the northwest for a distance of approximately 3300 feet (~1006 meters), where it intersects with the proposed Children's Drive. Because the easternmost 1600 feet (~488 meters) of this section was disturbed archaeological testing was initiated in the area behind the Ronald McDonald House and proceeded to the northwest. In general, the landforms within Area A contain several low-lying wetlands that are interspersed among gently rolling woodlands. In some cases, the STP interval was adjusted due to presence of wetlands and some localized disturbances associated with the development of the Ronald McDonald House and the Nemours Health Clinic. A total of 67 STPs were excavated within Area A.

Shovel tests 1-27 were placed just north of the Ronald McDonald House and to the south of an existing wetland (*Figure 12D*). STPs 1-18 fell either within the Ronald McDonald House lawn or a denuded area adjacent to the lawn, while STPs 19-27 were inside the tree line of the woodlands. The soil profile for STP 14 is representative of the STPs excavated outside of the tree line; it consisted of two mixed fill levels over a poorly drained gray (2.5Y 5/1) and yellowish red (5YR 5/6) silty clay subsoil, suggesting that the mixed fill horizons comprising Strata I and II had been placed over a wetland (*Figure 13*). The STPs excavated inside the tree line, such as STP 26, were mostly intact and exhibited a brown (10YR 4/3) silt A/O horizon that lay overtop a light olive brown (2.5Y 5/4) silt E horizon and a yellowish brown (10YR 5/8) silt B horizon, respectively (*Figure 13*).

STPs 28-67 were excavated in the mostly wooded settings to the west of the 7NC-B-54 site boundary (*Figure 12C*). The portion of the APE northwest of STP 39 and southeast of the transect containing STPs 46-48 was not tested due to the presence standing water associated with the existing wetlands. Additionally, several shovel test pits that were excavated in proximity to the Nemours Health Clinic (*Photograph 2*), such as STP 29, revealed a disturbed profile consisting of various levels of deep fill (*Figure 13*). As a result, the remainder of the STPs on the southernmost transect were not excavated on the landforms associated with the Health Clinic. The remaining STPs excavated in Area A exhibited mostly undisturbed profiles, consisting of an initial brown (10YR 4/3) silt loam overtop a yellowish brown (10YR 5/4) silt loam and a yellow to pale yellow subsoil horizon, as seen in the profile for STP 46 (*Figure 13*). The area north of STPs 66 and 67 was heavily disturbed by recent construction activities, therefore it was not tested (*Photograph 3*).



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■ Map Sheets
■ Archaeological Area of Potential Effects

0 1,250 2,500 Feet
 0 150 300 450 600 750 Meters

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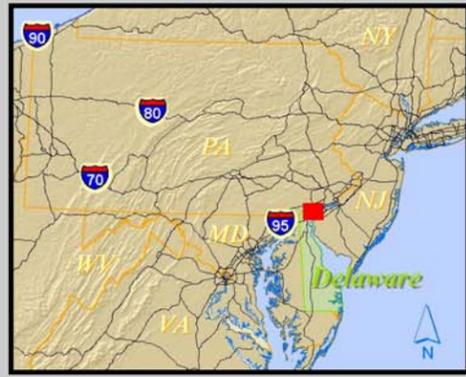
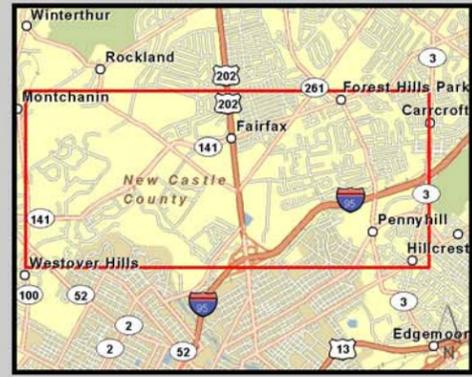


Figure 12
Index Map
Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey
Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware



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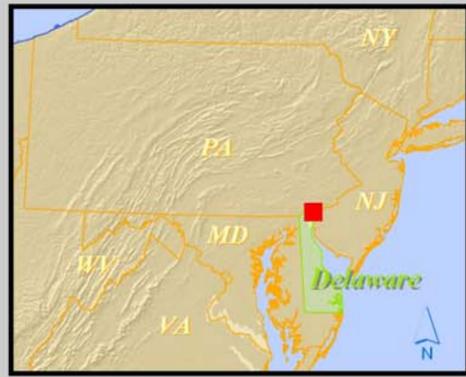
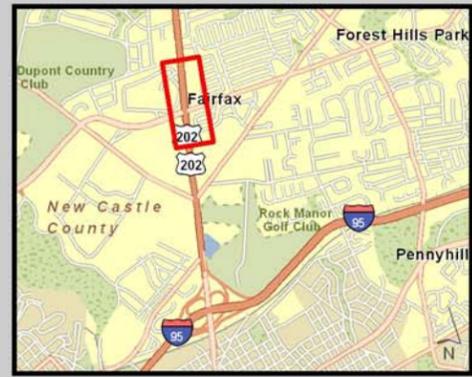
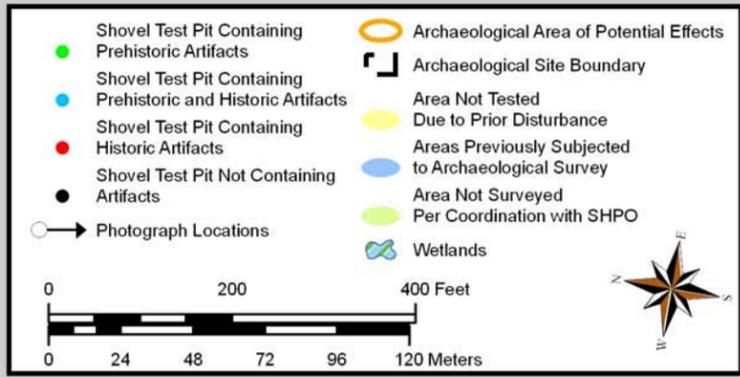
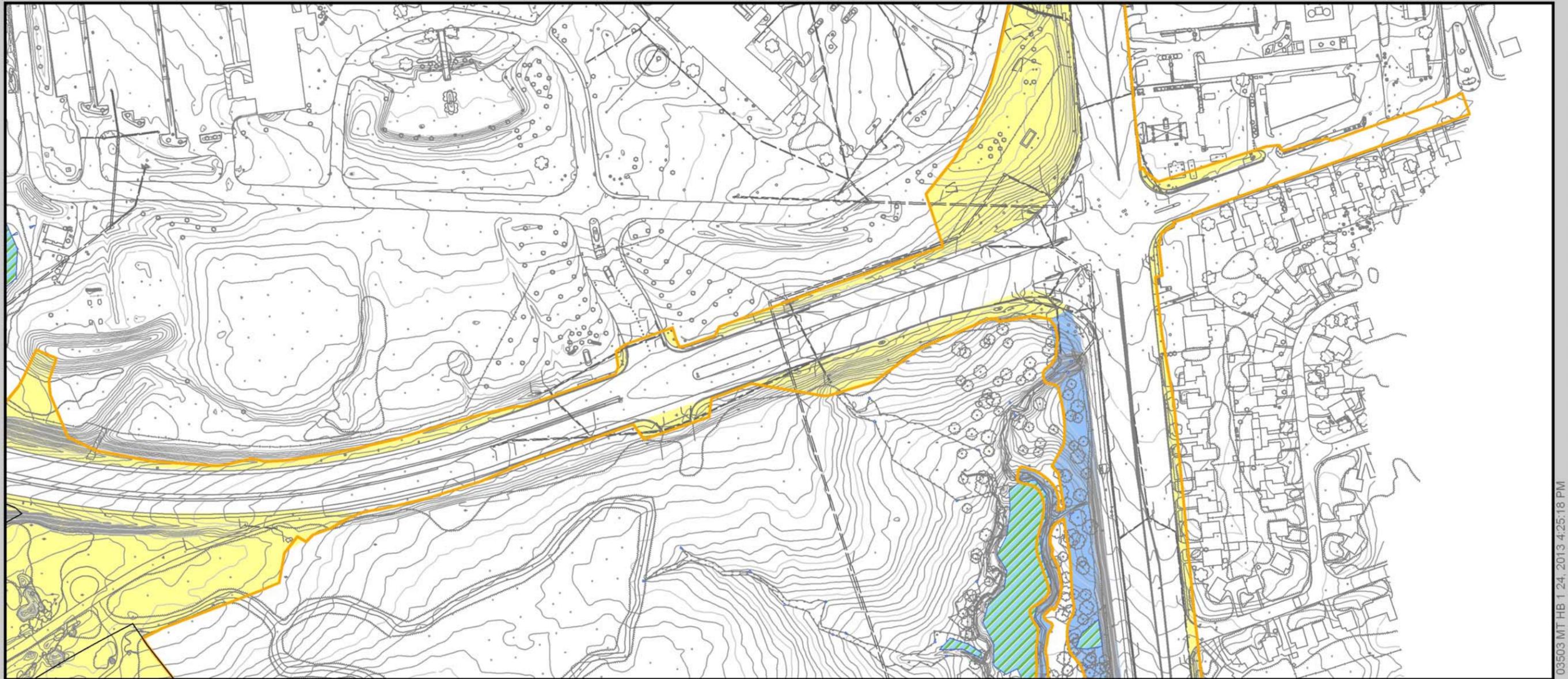


Figure 12A

**Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey**

**Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware**



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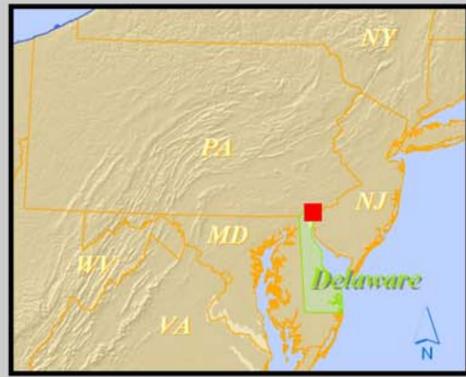
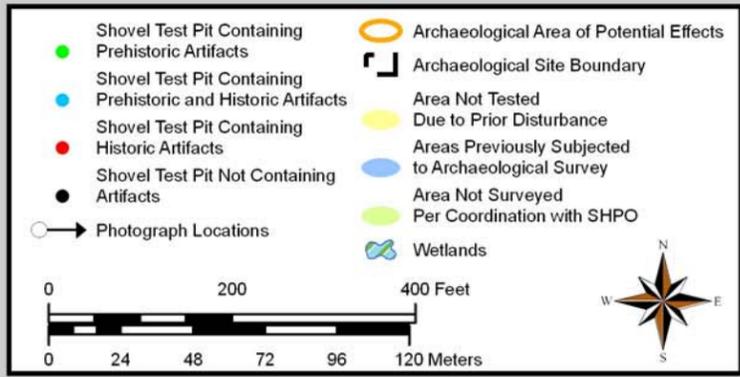
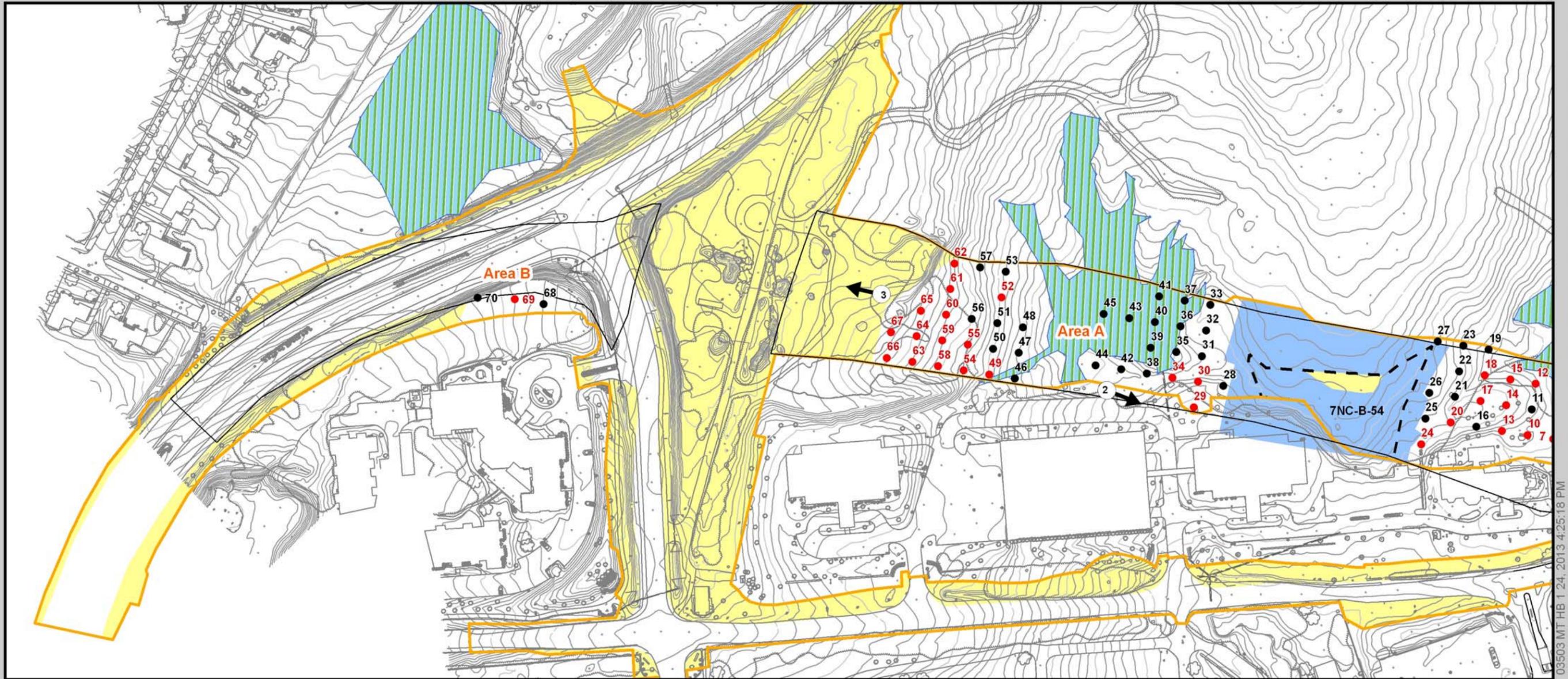


Figure 12B

**Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey**

**Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware**



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● Shovel Test Pit Containing Prehistoric Artifacts	○ Archaeological Area of Potential Effects
● Shovel Test Pit Containing Prehistoric and Historic Artifacts	□ Archaeological Site Boundary
● Shovel Test Pit Containing Historic Artifacts	■ Area Not Tested Due to Prior Disturbance
● Shovel Test Pit Not Containing Artifacts	■ Areas Previously Subjected to Archaeological Survey
○ Photograph Locations	■ Area Not Surveyed Per Coordination with SHPO
	■ Wetlands

0 200 400 Feet

0 24 48 72 96 120 Meters

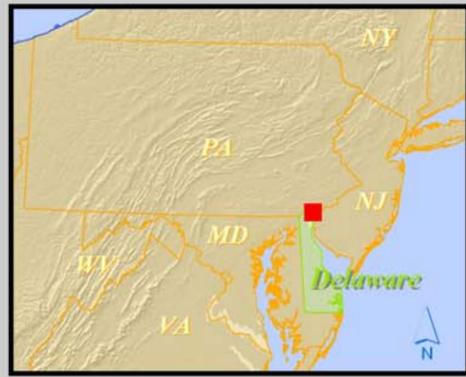


Figure 12C

**Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey**

**Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware**



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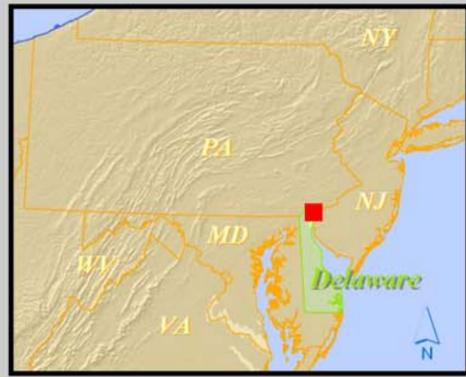
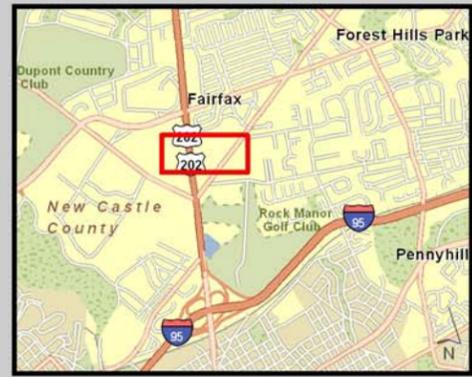
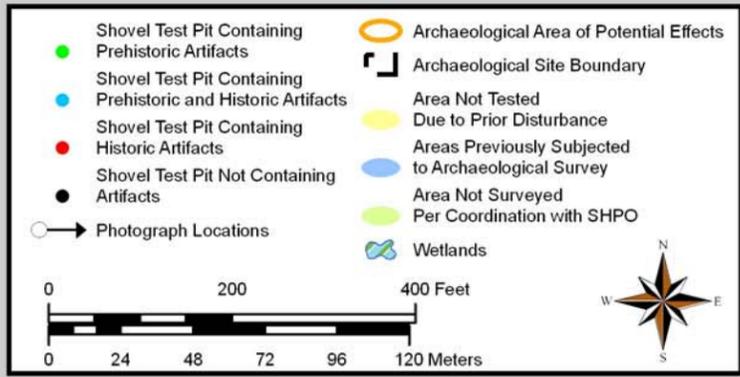
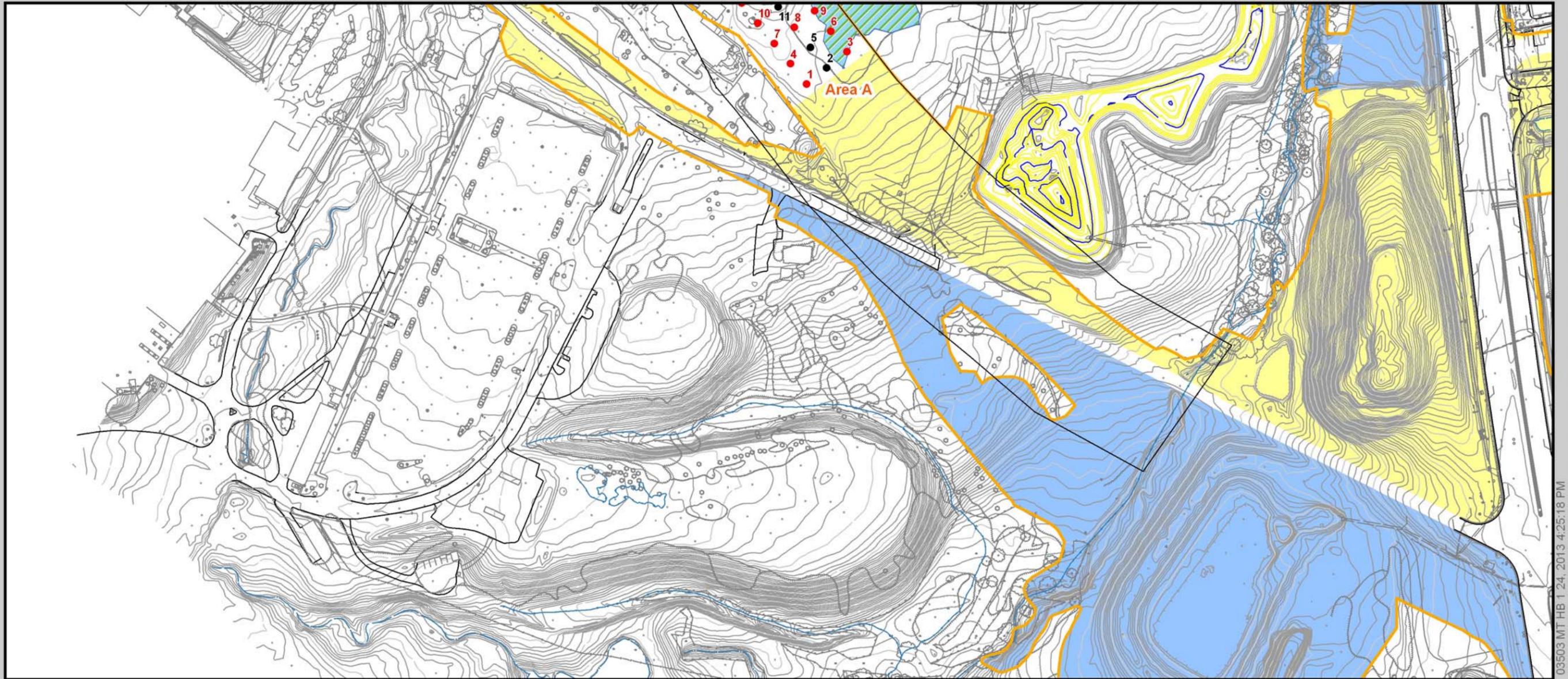


Figure 12D

**Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey**

**Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware**



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● Shovel Test Pit Containing Prehistoric Artifacts	○ Archaeological Site Boundary
● Shovel Test Pit Containing Prehistoric and Historic Artifacts	■ Area Not Tested Due to Prior Disturbance
● Shovel Test Pit Containing Historic Artifacts	■ Areas Previously Subjected to Archaeological Survey
● Shovel Test Pit Not Containing Artifacts	■ Area Not Surveyed Per Coordination with SHPO
○ Photograph Locations	■ Wetlands

0 200 400 Feet

0 24 48 72 96 120 Meters

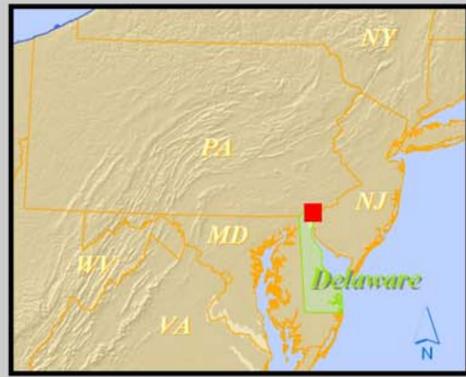
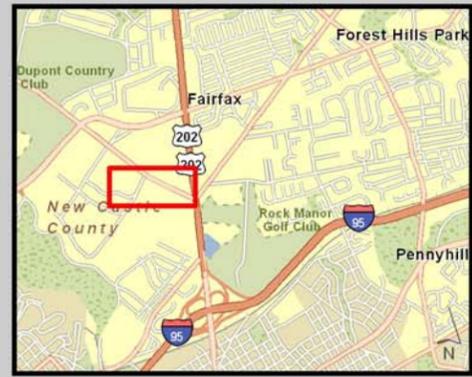
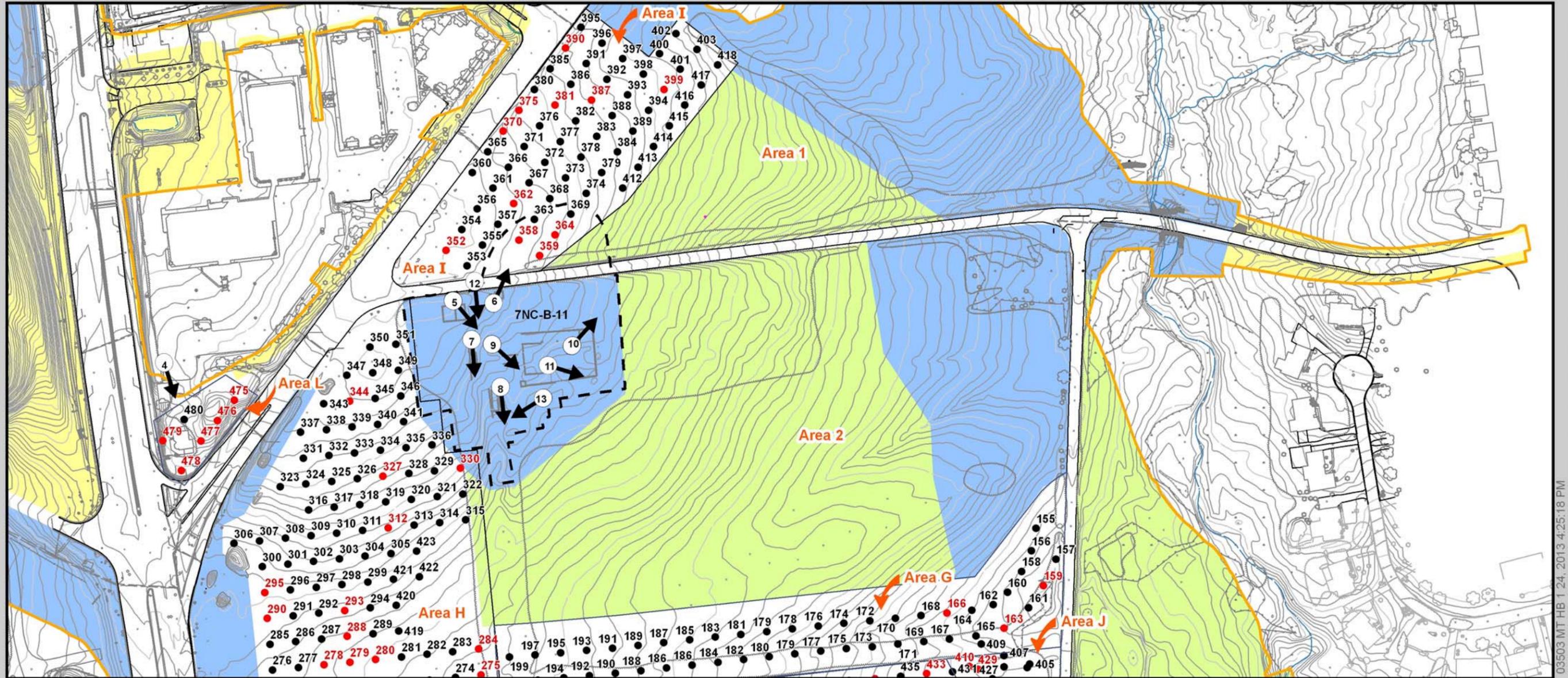


Figure 12E
Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey
Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware



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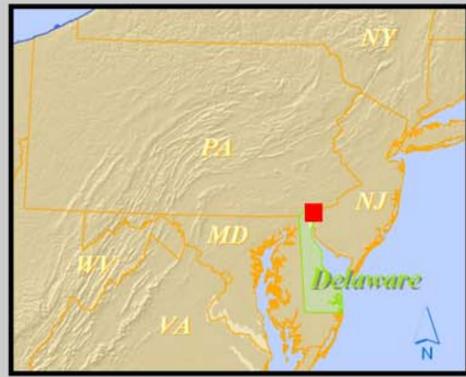
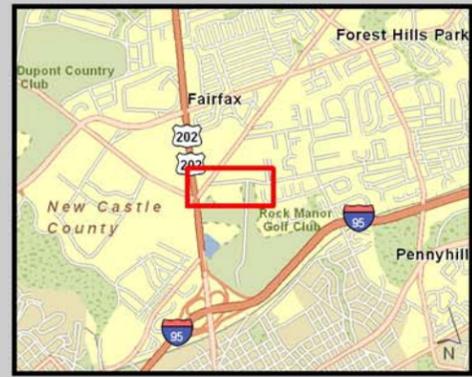
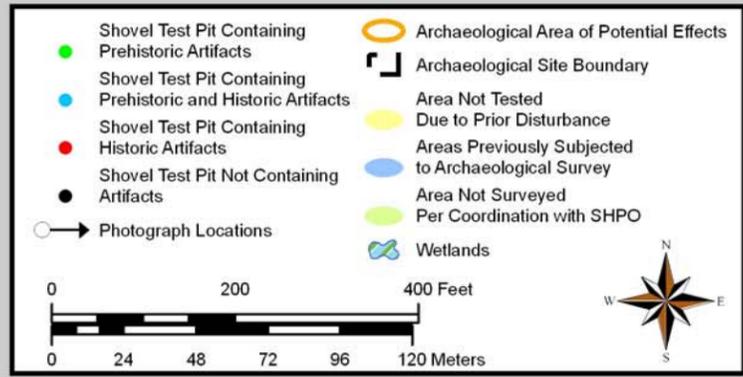
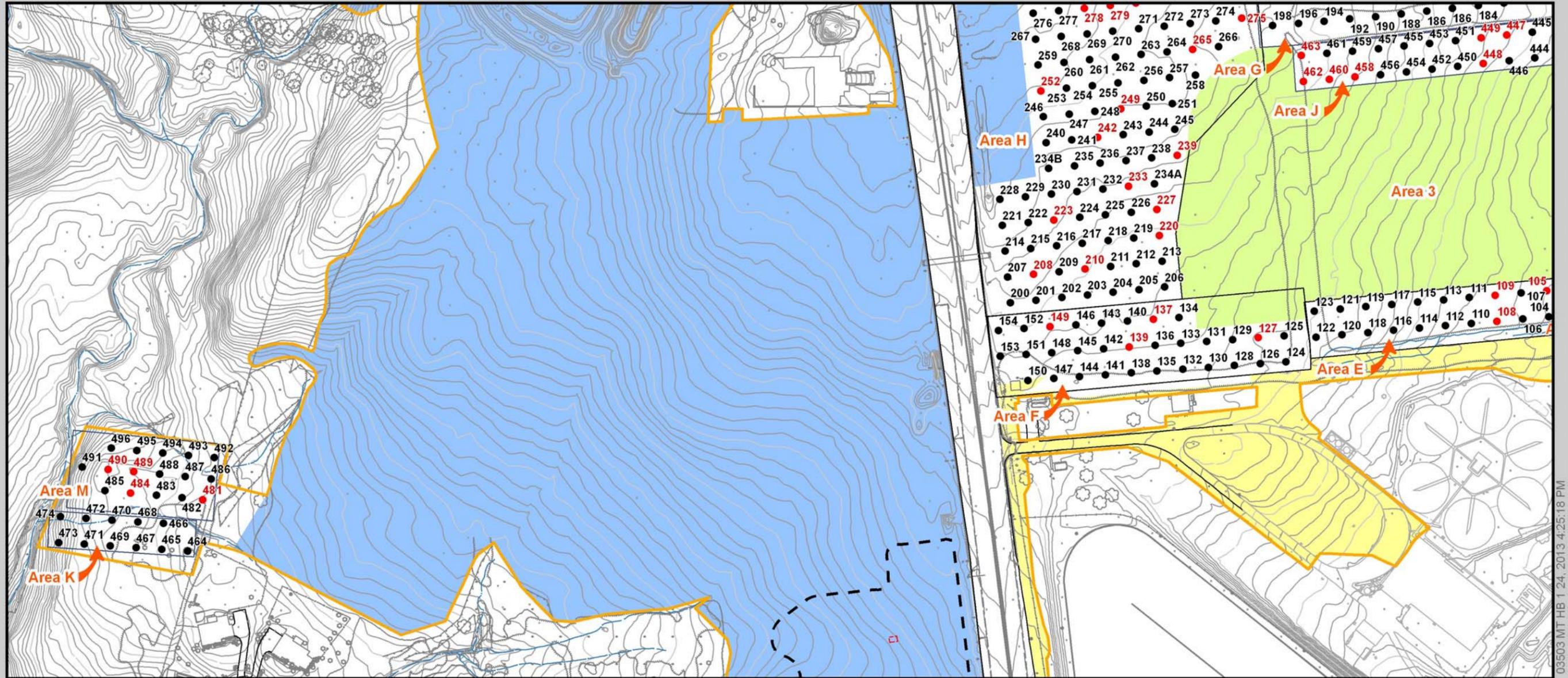


Figure 12F

**Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey**

**Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware**



03503 MT HB 1 24, 2013 4:25:16 PM

● Shovel Test Pit Containing Prehistoric Artifacts	○ Archaeological Area of Potential Effects
● Shovel Test Pit Containing Prehistoric and Historic Artifacts	□ Archaeological Site Boundary
● Shovel Test Pit Containing Historic Artifacts	■ Area Not Tested Due to Prior Disturbance
● Shovel Test Pit Not Containing Artifacts	■ Areas Previously Subjected to Archaeological Survey
○ Photograph Locations	■ Area Not Surveyed Per Coordination with SHPO
	■ Wetlands

0 200 400 Feet

0 24 48 72 96 120 Meters

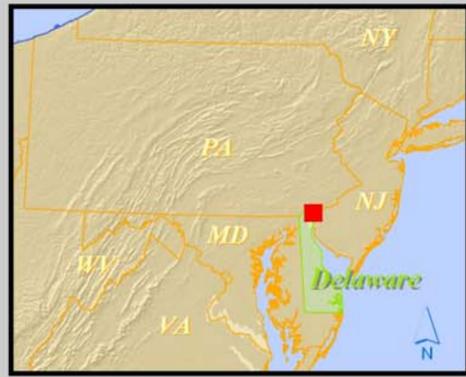
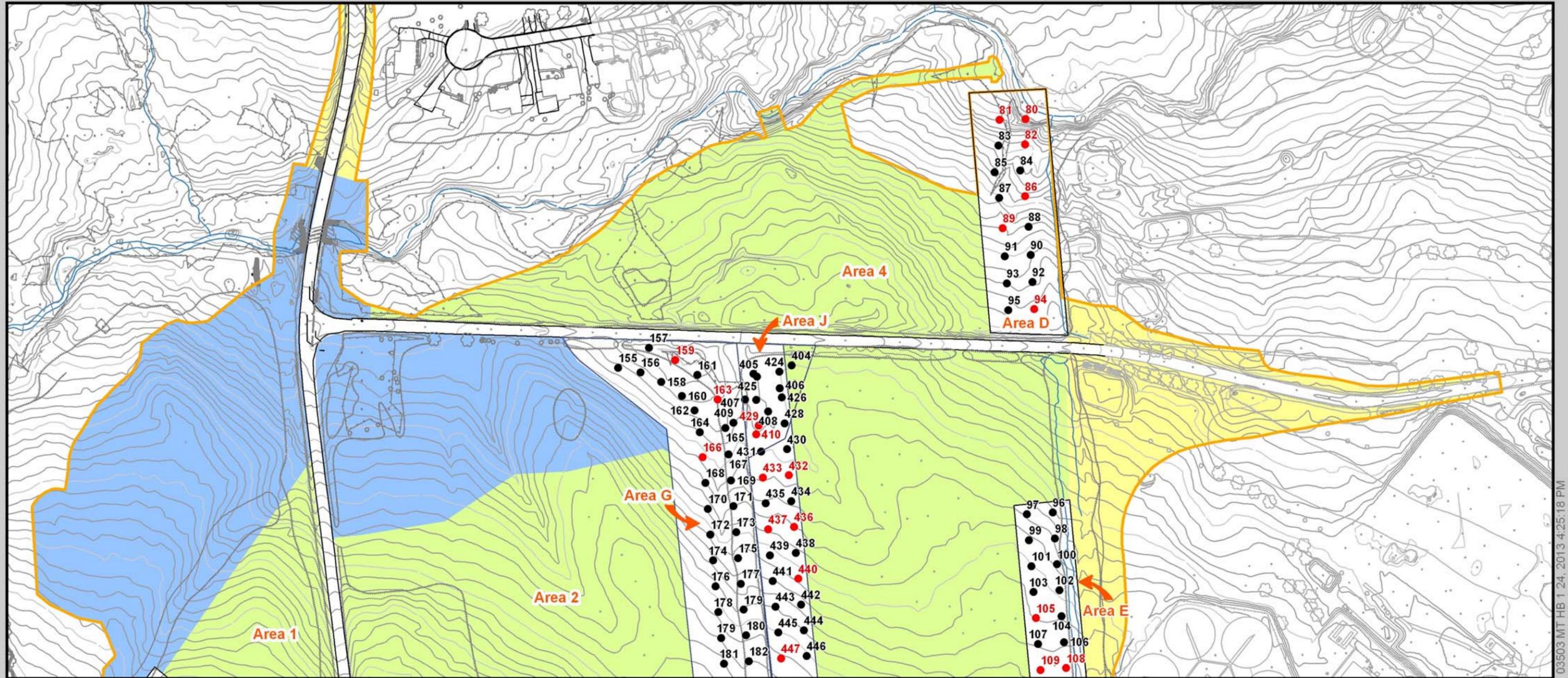


Figure 12G

**Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey**

**Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware**



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● Shovel Test Pit Containing Prehistoric Artifacts	○ Archaeological Site Boundary
● Shovel Test Pit Containing Prehistoric and Historic Artifacts	Area Not Tested Due to Prior Disturbance
● Shovel Test Pit Containing Historic Artifacts	Areas Previously Subjected to Archaeological Survey
● Shovel Test Pit Not Containing Artifacts	Area Not Surveyed Per Coordination with SHPO
○ Photograph Locations	Wetlands

0 200 400 Feet

0 24 48 72 96 120 Meters

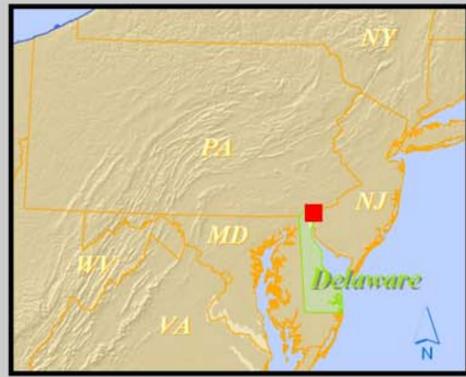
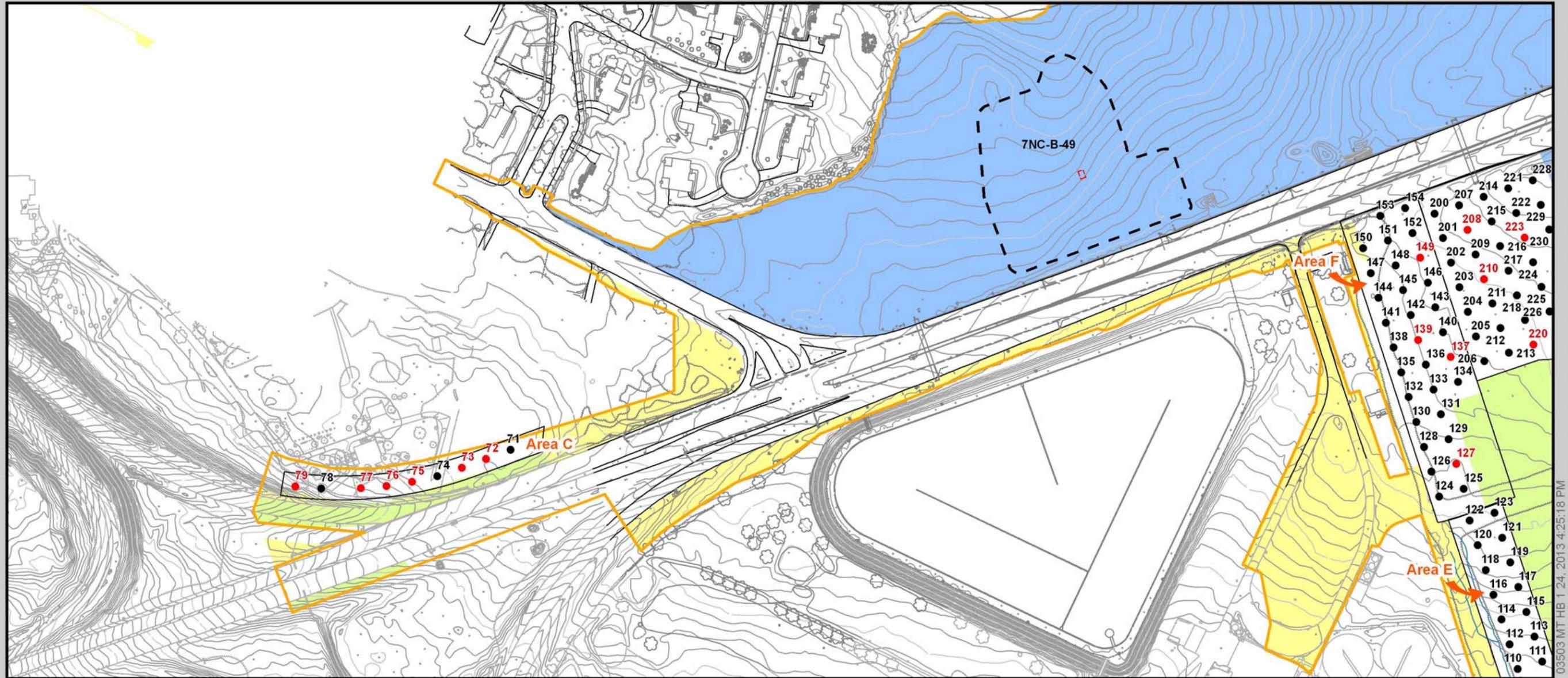


Figure 12H

**Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey**

**Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware**



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● Shovel Test Pit Containing Prehistoric Artifacts	○ Archaeological Area of Potential Effects
● Shovel Test Pit Containing Prehistoric and Historic Artifacts	□ Archaeological Site Boundary
● Shovel Test Pit Containing Historic Artifacts	■ Area Not Tested Due to Prior Disturbance
● Shovel Test Pit Not Containing Artifacts	■ Areas Previously Subjected to Archaeological Survey
○ Photograph Locations	■ Area Not Surveyed Per Coordination with SHPO
	■ Wetlands

0 200 400 Feet

0 24 48 72 96 120 Meters

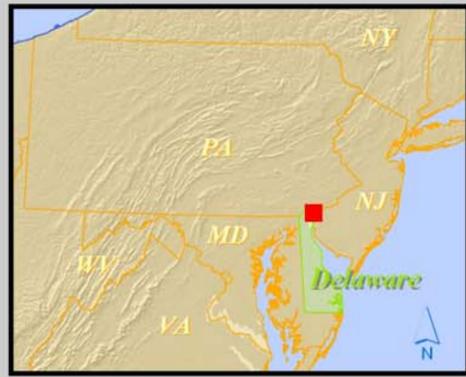
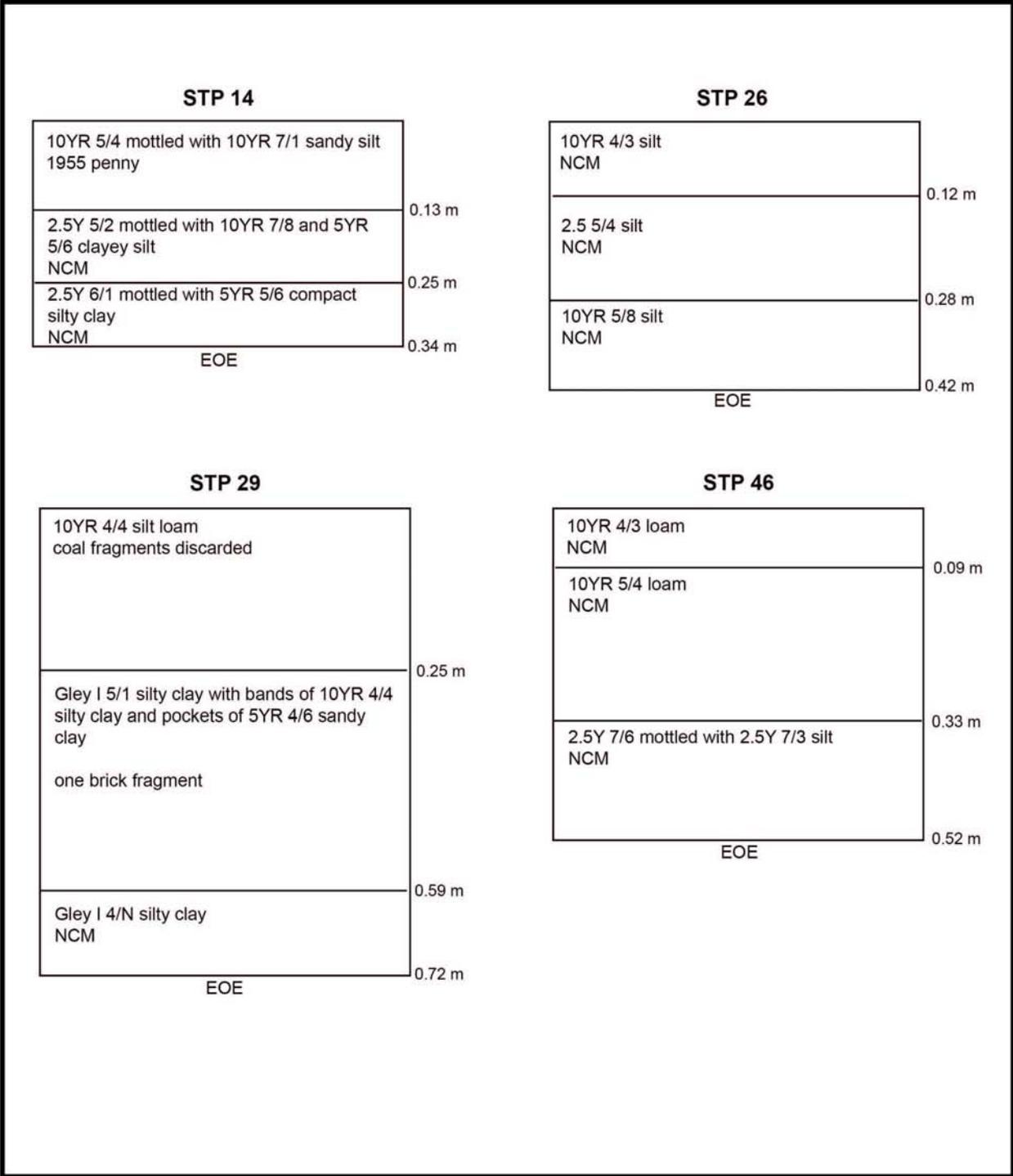


Figure 121

**Archaeological Area of Potential Effects
Phase I Archaeological Identification Survey**

**Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware**



EOE - End of Excavation
NCM - No Cultural Material

0.10 0.20 meters

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Figure 13
Profile for STPs 14, 26, 29, 46

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Brandywine Hundred, New Castle County, Delaware



Photograph 2: Disturbed landform adjacent to the Nemours Heath Clinic, facing southeast.



Photograph 3: Disturbed area at northern terminus of Area A APE, facing northwest.

Artifacts found in the STPs excavated in Area A were recovered from fill or A horizon contexts and included the following: one piece of bottle glass from STP 1; one machine part (a small metal ring) from STP 3; one wire nail from STP 4; one unidentifiable nail from STP 6; three pieces of floor tile, two pieces of window glass, a piece of plastic, and a piece of wood from STP 7; one piece of bottle glass from STP 9; one piece of brick and one piece of bottle glass from STP 10; one piece of bottle glass from STP 12; 13 pieces of bottle glass, one piece of window glass and three pieces of plastic from STP 13; one 1955 penny from STP 14; one piece of macadam and one piece of terra cotta pipe from STP 15; two pieces of bottle glass from STP 17; two pieces of macadam, two pieces of plastic, one piece of brown bottle glass, and one shard of redware from STP 18; one piece of bottle glass and one piece of brick from STP 20; one piece of bottle glass, one piece of window glass, one piece of macadam, one piece of plastic, and one piece of Styrofoam from STP 24; one piece of brick from STP 29; one piece of window glass from STP 30; one piece of whiteware and one piece of Styrofoam from STP 34; three pieces of brick, three pieces of bottle glass, and one piece of plastic from STP 49; one shard of whiteware and one piece of plastic from STP 52; one piece of window glass and two pieces of bottle glass from STP 54; one piece of creamware and one piece of bottle glass from STP 55; two pieces of window glass and one piece of bottle glass from STP 58; three pieces of coal, three pieces of brick, three pieces of window glass, two pieces of bottle glass, and one piece of plastic from STP 59; three pieces of window glass, one piece of plastic, and 26 pieces of beer bottle glass from STP 60; ten pieces of bottle glass, three pieces of window glass, three pieces of asphalt shingle, a furniture spring, one piece of metal, one piece of foil, two pieces of plastic, and two pieces of ironstone from STP 61; two pieces of glass from STP 63; one piece of bottle glass in STPs 64 and 65; two pieces of window glass, two pieces of bottle glass, one piece of coal, one piece of unglazed redware, and one piece of metal in STP 66; and three pieces of bottle glass in STP 67. The artifacts recovered in Area A were interpreted as field scatter and/or random refuse deposits and were not considered archaeological sites.

2. Area B

Area B consists of the area west of Children's Drive that will be impacted by the proposed S.R. 141 Spur. Within Area B, only a sliver of undisturbed ground in the southwest quadrant of the proposed S.R. 141/Children's Drive intersection was found to warrant archaeological testing; the remainder was previously disturbed by prior development. Shovel tests 68-70 were excavated in Area B (*Figure 12C*). This set of tests and was placed in a briar patch near a stone wall that was likely used as a property boundary. (Background research has not provided any evidence of any structures or other features in this area.) This set of shovel tests exhibited a relatively undisturbed profile similar to that found in STP 46. Two bullet casings found in STP 69 were the only artifacts recovered in Area B.

3. Area C

Area C is located along the western edge of the southbound S.R. 0202 entrance ramp to I-95. This portion of the APE will impact a section of the east lawn associated with 1 Rock Manor, an early twentieth century architectural property determined to be eligible for listing in the National Register of Historic Places (Delaware CRS N-12673). A set of nine STPs (71-79) were excavated within the Area C APE (*Figure 12H*). The area north of STP 71 had been previously

disturbed, probably by prior activities associated with the construction of SR 0202. Therefore, no testing was conducted north of STP 70.

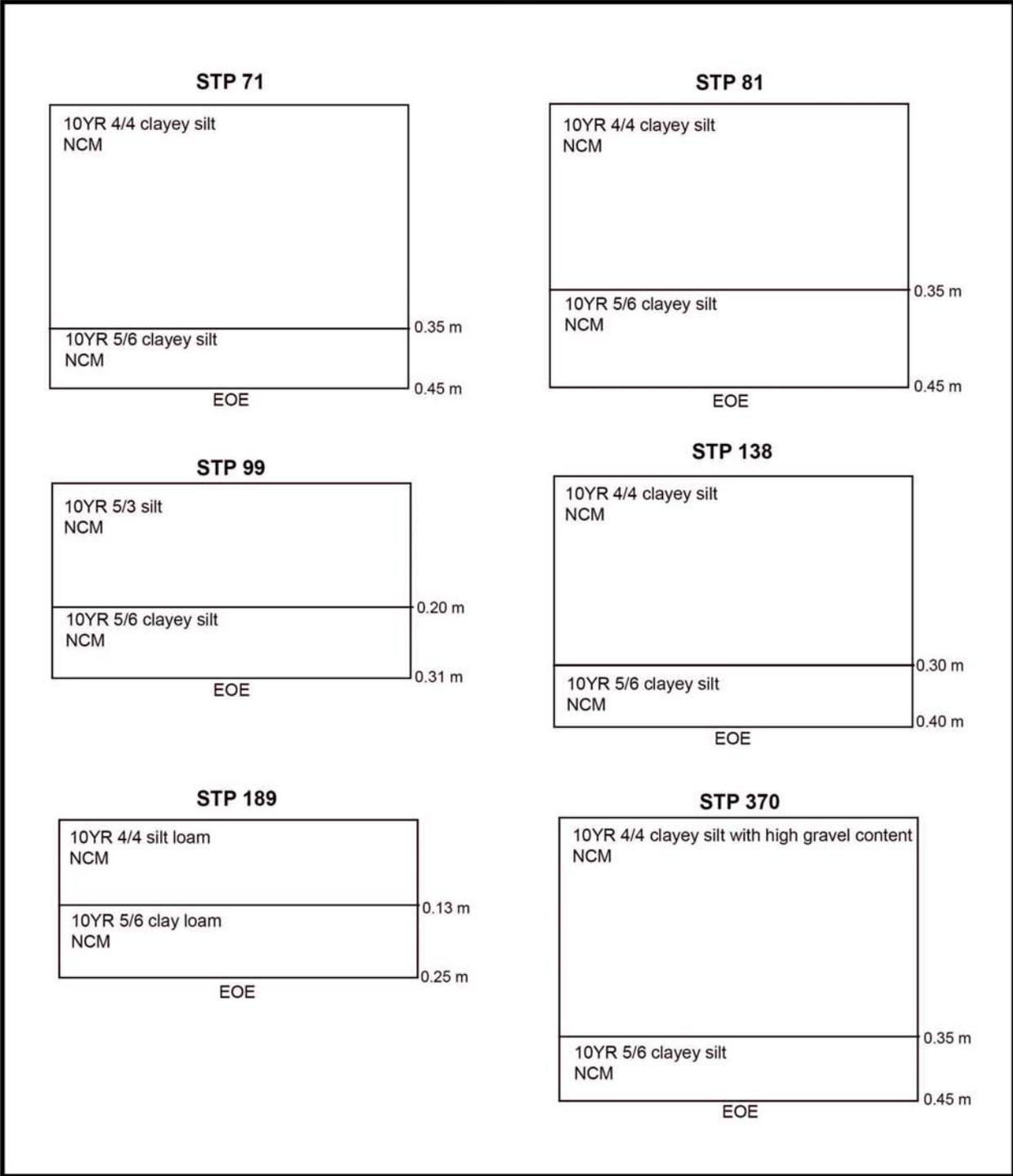
Some localized disturbances were noted within the lawn. The current property owner pointed out an area in which a sinkhole and tile drain is located, which was discernable in the field by differential vegetation. Due to the presence of the sinkhole and drainage, STP 78 was excavated 23 meters (~75.5 feet) to the south of STP 77 (*Figure 12H*).

The soil profiles for the STPs excavated in Area C were composed of a dark yellowish brown (10YR 4/4) clayey silt plowzone overtop a yellowish brown (10YR 5/6) clayey silt subsoil (*Figure 14*). Shovel test 72 was an exception; a crushed rock driveway was exposed at 0.15 meter below ground surface in this STP. A total of fifteen artifacts associated with 1 Rock Manor were recovered from the Area C shovel tests, they included: one piece of bottle glass from STP 72; four pieces of bottle glass, one shard of whiteware, and one chunk of concrete from STP 73; one piece of bottle glass from STP 75; one piece of roofing slate from STP 76; three pieces of roofing slate from STP 77; and one piece of brick, one piece of window glass, and one piece of bottle glass from STP 79. Because only a remote small sliver of the side yard was sampled during the Phase I testing, it is very likely that more significant artifact-bearing deposits extend outside of the APE for this project (towards the house and backyard areas). The untested portions of the yard outside the APE may or may not have the potential to contribute significant information in history. However, the portion of the side yard within the confined APE does not have that potential. No additional archaeological work is recommended in this portion of the APE.

4. Area D

Area D is located to the east of Carruthers Lane and the west of Matson Run in the area of the proposed bike path. Due to the presence of Matson Run, a geomorphological evaluation was conducted in order to establish the depth of potential artifact bearing soils within the APE (*Appendix E*). The geomorphologist indicated that all the landforms within APE in Area D are upland settings; therefore testing was conducted through the excavation of STPs. The geomorphologist noted that the potential for the existence of pre-contact archaeological resources was high within the A horizon in this area. Additionally, the Matson Run Site was previously identified just north of the APE, increasing pre-contact archaeological potential.

Sixteen STPs, 80-95 were excavated in Area D (*Figure 12G*). This area was overgrown with briars at the time of the Phase I survey. The soil profiles exhibited a dark yellowish brown (10YR 4/4) clayey silt plowzone overtop a yellowish brown (10YR 5/6) clayey silt subsoil (*Figure 14*). Just eight artifacts were recovered from Area D, they included two pieces of brick from STP 80; one piece of whiteware in STP 81; one piece of bottle glass in STP 82; one piece of brick in STP 86; one piece of beer bottle glass in STP 89; and one piece of window glass and one piece of bottle glass from STP 94. The artifacts/trash were interpreted as field scatter/random refuse deposits; therefore no additional archaeological work is recommended in this portion of the APE.



EOE - End of Excavation
 NCM - No Cultural Material



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Figure 14

Profiles for STPs 71, 81, 99, 138, 189, and 370

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 Brandywine Hundred, New Castle County, Delaware

5. Area E

Area E consists of the eastern portion of the proposed new entrance into the Porter Reservoir. This area is currently a fallow field. Twenty-eight STPs (96-123) were excavated in Area E (**Figure 12F-12G**). The soil profiles consisted of a brown (10YR 5/3) loam silt plowzone overtop a yellowish brown (10YR 5/6) subsoil (**Figure 14**). Recovered artifacts included one piece of coal and one piece of bottle glass from STP 105, one piece of bottle glass from STP 108, and one cut nail from STP 109. The artifacts were interpreted as field scatter/random refuse deposits. No additional archaeological work is recommended in this area.

6. Area F

Area F contains the western portion of the proposed new entrance road into the Porter Reservoir. Thirty-one (31) STPs, 124-154, were excavated in Area F (**Figure 12F**). As with Area E, soil profiles consisted of a brown (10YR 4/4) loam silt plowzone overtop a yellowish brown (10YR 5/6) subsoil (**Figure 14**). Recovered artifacts included one piece of unidentifiable metal from STP 127; one shard of ironstone from STP 137; one piece of window glass from STP 139; and one piece of window glass and one piece of bottle glass from STP 149. The artifacts were interpreted as field scatter/random refuse deposits. No additional archaeological work is recommended in this area.

7. Area G

Area G represents the APE for a proposed bike path that extends from the existing Carruthers Lane to a tree line that separates the fallow field comprising Area G from the field comprising Area H. Shovel tests 155-199 were initially excavated in Area G (**Figure 12E-12G**). After the initial STPs had been excavated, the proposed plans were revised. As a result, an additional seven STPs (404-410), were excavated to the south of the proposed bike path in this area. The STP profiles consisted of a brown (10YR 4/4) loam silt plowzone overtop a yellowish brown (10YR 5/6) subsoil (**Figure 14**). Artifacts recovered from Area G included one piece of bottle glass from STP 159, one shard of porcelain from STP 163, one piece of bottle glass from STP 166, in addition to one shard of whiteware from STP 410. The artifacts were interpreted as field scatter/random refuse deposits. No additional archaeological work is recommended in this area.

8. Area H

Area H is located east of SR 0202 and west of the tree line delineating Area G. Improvements to SR 0202, Weldin Road, and Foulk Road are proposed in this area, as well as the construction of a new bike path. One hundred and fifty-six (156) STPs, 206-351 and 419-423, were laid out in this area on a 15 meter grid (**Figure 12E-F**). Shovel Test Pits 307, 308, and 323, located near the intersection of Foulk and Weldin Roads, were not excavated due to the obviously disturbed ground surface in the area. It is likely that the disturbance was associated with construction staging activities during the construction SR 0202. The remainder of the STPs exhibited plowzone/subsoil stratigraphy similar to STP 189.

A total of 44 artifacts were recovered in Area H. These included one piece of window glass from both STPs 208 and 210; a pipe bowl fragment from STP 220; one piece of window glass and one piece of whiteware from STP 223; one shard of stoneware from STP 227; five pieces of metal and one piece of slag in STP 233; one shard of redware from STP 239; one shard of porcelain from STP 242; a chunk of mortar/lime and one shard of whiteware from STP 249; one shard of redware from STP 252; one piece of brick from STP 265; one shard of porcelain from STP 275; six pieces of brick from STP 278; three shards of redware and one piece of creamware in STP 279; one shard of redware in STP 280; one piece of canning jar liner, and three pieces of clay pigeon from STP 284; two pieces of bottle glass from STP 288; one piece of brick from STP 290; one piece of window glass from STP 293; one piece of ironstone from STP 295; one piece of glass from STP 312; one shard of porcelain from STP 327; and one metal machine part from STP 344. The artifacts were interpreted as field scatter/random refuse deposits. No additional archaeological work is recommended in this area.

9. Area I

Area I is associated with the proposed improvements to Foulk Road. This portion of the APE is located in the northwestern quadrant of the intersection of Weldin and Foulk Roads and lies directly across Weldin Road from the Weldin Plantation Archaeological Site. Fifty-nine (59) STPs, 353-403 and 412-418, were excavated in this field on a 15 meter grid (*Figure 12E*).

The shovel test profiles exhibited a brown (10YR 4/4) clayey silt plowzone ovetop a yellowish brown (10YR 5/6) clayey silt subsoil (*Figure 14*). A total of 47 historic or modern artifacts were recovered from Area I. Thirty four of these artifacts, the majority of which date to the nineteenth century, were recovered from a group of three STPs excavated within approximately 45 meters (~147 feet) of the Weldin Site, and were therefore considered to be associated with the site and were included within the site boundary. The highest density of artifacts recovered within the revised site boundary was from STP 359. The twenty five artifacts recovered from this test included a horseshoe, eight pieces of brick, two pieces of bottle glass, eight pieces of redware, one piece of creamware, one piece of whiteware, one unidentifiable nail, one piece of window glass, on chain link, and one piece of Styrofoam. Additionally, STP 364 contained three pieces of whiteware, one piece of creamware, one piece of brick, and one chunk of slag, and STP 358 contained two pieces of redware and one piece of Styrofoam.

Additional artifacts recovered from outside the Weldin Site boundary included one piece of redware from STP 352; one shard of redware and one chunk of slag from STP 362; one piece of window glass from STP 370; two pieces of bottle glass, one shard of redware, and one unidentifiable nail form STP 375; one piece of redware and one piece of whiteware from STP 381; one shard of porcelain from STP 387; one piece of bottle glass from STP 390; and one piece of window glass from STP 399. Due to the relatively low densities and distance from the Weldin Site, these artifacts were interpreted as field scatter/random refuse deposits and were not considered to be associated with the site.

10. Area J

Area J consists of the impact area for a proposed park road. It is located in the field west of Carruthers Lane, just south of the portion of the APE tested as Area G. In this Area, two rows of STPs (428-463) were excavated at 15 meter intervals (*Figures 12F-G*). The STP profiles were similar to the ones excavated in Area G and included a brown (10YR 4/4) loam silt plowzone overtop a yellowish brown (10YR 5/6) subsoil. Recovered artifacts included one piece of whiteware from STP 429; one piece of clear vessel glass and one piece of whiteware from STP 432; one piece of redware, one brick fragment, one piece of vessel glass, and one chunk of slag from STP 433; one piece of redware from STP 436; one piece of redware from STP 437; one piece of bottle glass from STP 440; one clay pigeon fragment, one chunk of slag, and one piece of whiteware from STP 447; one brick fragment from STP 448; one piece of redware from STP 449; one piece of whiteware from STP 458; one oyster shell fragment from STP 460; three pieces of glass from STP 462; and one piece of whiteware, one piece of ironstone, and one brick fragment from STP 463. The artifacts recovered from Area J were interpreted as field scatter and were not considered to constitute an archaeological site.

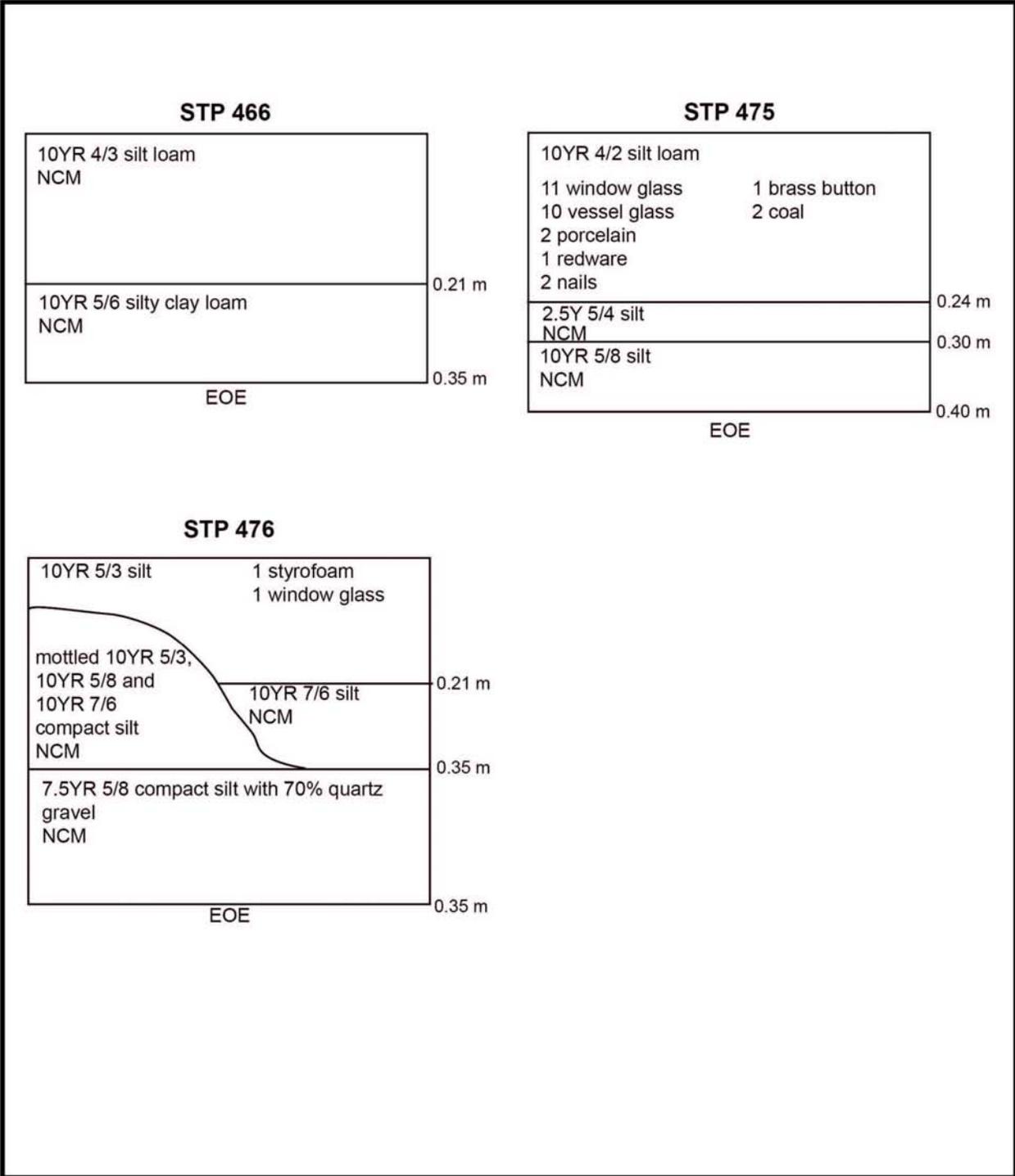
11. Areas K and M

Collectively, Areas K and M represent the APE for two proposed drainage easements. These adjacent areas are located to the west of the Augustine Cutoff approximately 250 feet (~76 meters) northwest of Rockland Circle, on a relatively flat partially wooded stream bench overlooking Alapocas Creek. Shovel tests 464-474 were excavated in Area K and 481-496 were excavated in Area M (*Figure 12F*). The area north of STP 464 was not tested due to disturbance associated with an existing drainage swale. The STPs excavated in Areas K and M exhibited upland soil profiles consisting of brown (10YR 4/3) silt loam plowzone overtop a dark yellowish brown (10YR 5/6) clayey silt subsoil (*Figure 15*).

No cultural materials were recovered in Area K, although a light scatter of historic artifacts was found in Area M. These included one clear glass fragment, and one ironstone fragment in STP 481; one brick fragment, and a piece of coal in STP 482; two clear glass fragments in STP 484; one ironstone fragment in STP 489; and one brick fragment, one piece of mortar, one nail, two glass fragments, and one ironstone fragment in STP 490. The recovered artifacts were considered field scatter and were not considered an archaeological site.

12. Area L

Area L consists of the property associated the Weldin-Husbands House (N-4049/Phillip Husbands House). The Weldin-Husbands House was constructed circa 1882 and rests on an elevated landform overlooking the intersection of Foulk Road and S.R. 0202. A stone wall delineates the property boundary to the south and west of the house. At the time of the Phase I testing, the Weldin-Husbands house was abandoned and the majority of the east and north yard areas were covered by massive piles of earthen fill and stone rubble debris with the remainder of the property being covered by brush, shrubs, and trees of various age (*Photograph 4*). The presence of the large fill piles limited the testable areas associated with the house. Therefore, archaeological testing was limited to six STPs placed in areas that were not covered by fill and



EOE - End of Excavation
NCM - No Cultural Material

0.10 0.20 meters

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Figure 15
Profile for STPs 466, 475 and 476

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Brandywine Hundred, New Castle County, Delaware



Photograph 4: Rear of the Weldin-Husbands House, facing south.

did not exhibit obvious prior disturbance. Three of these tests (STPs 475-477) were excavated at 50 foot (~15 meter) intervals parallel to Foulk Road, one STP (480) was placed 30 feet (~9 meters) to the south of the southwest corner of the house, one (STP 479) was placed 13 feet (~4 meters) to the west of the northwest corner of the house, and one (STP 480) was placed 20 feet (~6 meters) to the north of the house (*Figure 12D-12E*). Shovel tests 475, 477, and 478 appeared somewhat intact and were composed of an initial dark grayish brown (10YR 4/2) silt loam plowzone overtop a yellowish brown (10YR 5/4-5/8) silt subsoil (*Figure 15*). The remaining three STP profiles exhibited disturbed soils consisting of various layers of fill overlying subsoil (*Figure 15*).

A total of 55 artifacts were found within the STPs excavated in Area L. These included 28 artifacts from the surface horizon in STP 475 (11 pieces of window glass, seven pieces of bottle glass, two pieces of light bulb glass, one piece of milk glass, one shard of porcelain, one shard of redware, one brass button, two pieces of coal, and two unidentifiable nails); two artifacts from the disturbed surface horizon in STP 476 (one piece of window glass and one piece of Styrofoam); 14 artifacts from the surface horizon in STP 477 (four shards of ironstone, one piece of window glass, one piece of slate, two pieces of coal, four pieces of brick, one wire nail, and one unidentifiable nail); eight artifacts in STP 478 (six pieces of terra cotta pipe, one piece of redware, and one piece of bone); and three artifacts in STP 479 (one unidentifiable nail, one piece of shell, and one piece of glass). Due to the past dumping activities on the site and the disturbed nature of the STP profiles, the contextual integrity of the area surrounding the house was considered poor leaving the association of the recovered artifacts to the Weldin-Husbands house in question, therefore no additional archaeological investigations are recommended in Area L.

B. Archaeological Evaluation Survey

Archaeological Evaluation Surveys were conducted on three previously identified archaeological sites within the APE: 7NC-B11, the Weldin Plantation Site; 7NC-B-49, the Ronald McDonald House Site (formerly the Milner 1 Site); and 7NC-B-54, the Augustine Cutoff Site.

1. The Weldin Plantation Site (7NC-B-11)

The Weldin Plantation Site lies to the south of Weldin Road just east of its intersection with SR 241. It was discovered during Thunderbird's 1985-1986 Phase I survey (Taylor: 1989). Thunderbird's relatively extensive archival investigations indicated that the site was likely established during the first quarter of the eighteenth century and was utilized as a farm into the middle of the twentieth century (Taylor et al. 1989: 261). During this time the farmstead was occupied by a number of its owners, except for the period between 1785 and 1861, when it was primarily worked by tenant farmers. In 1861, Jacob Weldin acquired the dilapidated property and gradually converted it into a dairy farm. The farmstead operated as a dairy until 1934 when it was acquired from the Weldin estate by a real estate development company (Taylor et al. 1989: 217).

Thunderbird's field studies included the arbitrary placement and excavation of 24 STPs, 31 3x3 foot TUs, and two linear trenches. Their investigations were successful in locating the remains

of six structures associated with the farmstead. These included the main farmhouse (Structure A) (*Photograph 5*), a structure that they interpreted as a detached dependency to the main residence (Structure B) (*Photograph 6*), an equipment shed (Structure C) (*Photograph 7*), an additional outbuilding of unknown function (Structure D) (*Photograph 8*), a concrete pad associated with a structure of unknown function (Feature 3), and a barn/barnyard complex (*Photographs 9, 10, and 11*). Based on the results of the Phase I work, Thunderbird recommended Phase II investigations based on the presence of intact contexts and features that would provide information regarding tenant occupied farms from the late eighteenth through mid nineteenth centuries in contrast to the owner occupied period from in the late nineteenth century (Taylor et al 1989: 261).

The Phase II Evaluation Survey conducted by McCormick Taylor included an initial Vegetation Survey (*Appendix D*) followed by the excavation of 170 systematically placed STPs at either 20 or 40 foot intervals and 20 arbitrarily placed 3x3 foot TUs (*Figure 16*).

a. Shovel Test Pit Excavations

The majority of the STP profiles excavated at the Weldin Site consisted of a dark yellowish brown (10YR 4/4) loam silt A/Ap horizon overtop a yellowish brown to dark yellowish brown (10YR 5/6-4/6) clay loam subsoil, as seen in the profiles for STP 5 (*Figure 17*). In some cases, an initial very dark grayish brown (10YR 3/2) silt loam O horizon was found to overlay the A horizon (*Figure 17*).

Several exceptions to this stratigraphic sequence were noted. In STP 51, excavated immediately to the west of Structure C (the equipment shed), two fill horizons were noted beneath the modern O horizon (Stratum I) and above the original A horizon (Stratum IV) (*Figure 17*). These fill horizons appeared to be associated with the excavation and re-deposition of the soils to the west of the foundation prior to its construction. In STP 53 the original Ap horizon appeared truncated and the profile of this tests consisted of the modern O horizon (10YR 3/2 silt loam) overtop the subsoil (7.5YR 5/6 clay).

In addition, the majority of the tests in the two transects containing STPs 74-103 exhibited disturbances associated with Weldin Plantation Drive, the original road for the site (*Photograph 12*). Shovel test 91, excavated in the road, is representative of these tests. The soil profile consisted of several layers of fill overlying bedrock (*Figure 17*). The STPs south of 79 and 94 contained a large amount of oyster shell and gravel fill, which would have been used as fill to improve the drainage of the roadway. The roadway would have likely been susceptible to poor drainage due to the clay B horizon underlying the road.

The road was abandoned sometime after Weldin purchased the property in 1862. Weldin Road was constructed at some time during the third quarter of the nineteenth century; it is probable that the Weldin Plantation Drive was no longer in use as the main entrance to the property at that time. The Weldin Plantation Road was likely not being used as the entrance at the time that Structure D was constructed, Structure D was built in the center of the Weldin Plantation Road. The portion of the road north of Structure D was used as a driveway after the construction of Weldin Road.



Photograph 5: Weldin Plantation Site, view of Structure A, facing southeast.



Photograph 6: Weldin Plantation Site, view of Structure B, facing north.



Photograph 7: Weldin Plantation Site, view of Structure C, facing south.



Photograph 8: Weldin Plantation Site, view of Structure D, facing south.



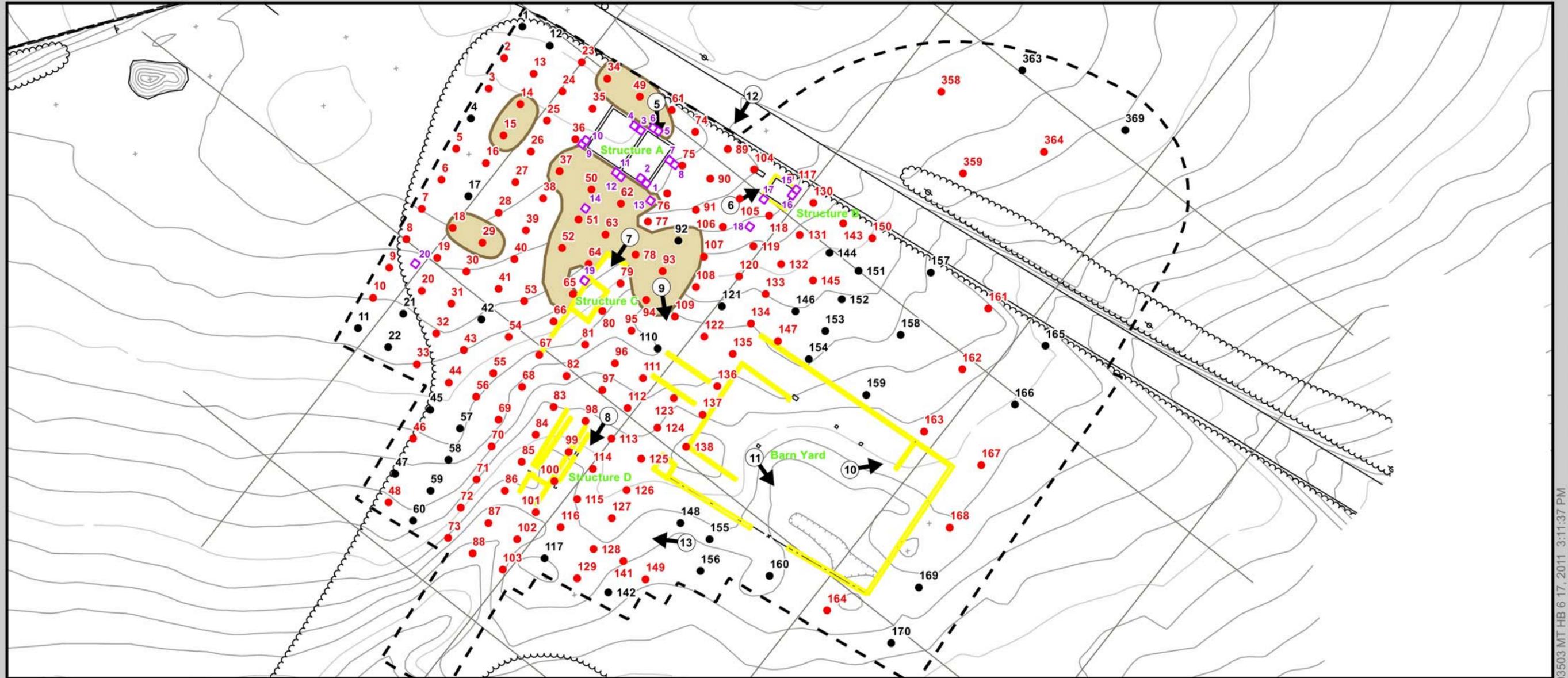
Photograph 9: Weldin Plantation Site, view of barn ramp, facing southeast.



Photograph 10: Weldin Plantation Site, view of barnyard, facing northeast.



Photograph 11: Weldin Plantation Site, view of barnyard, facing southeast.



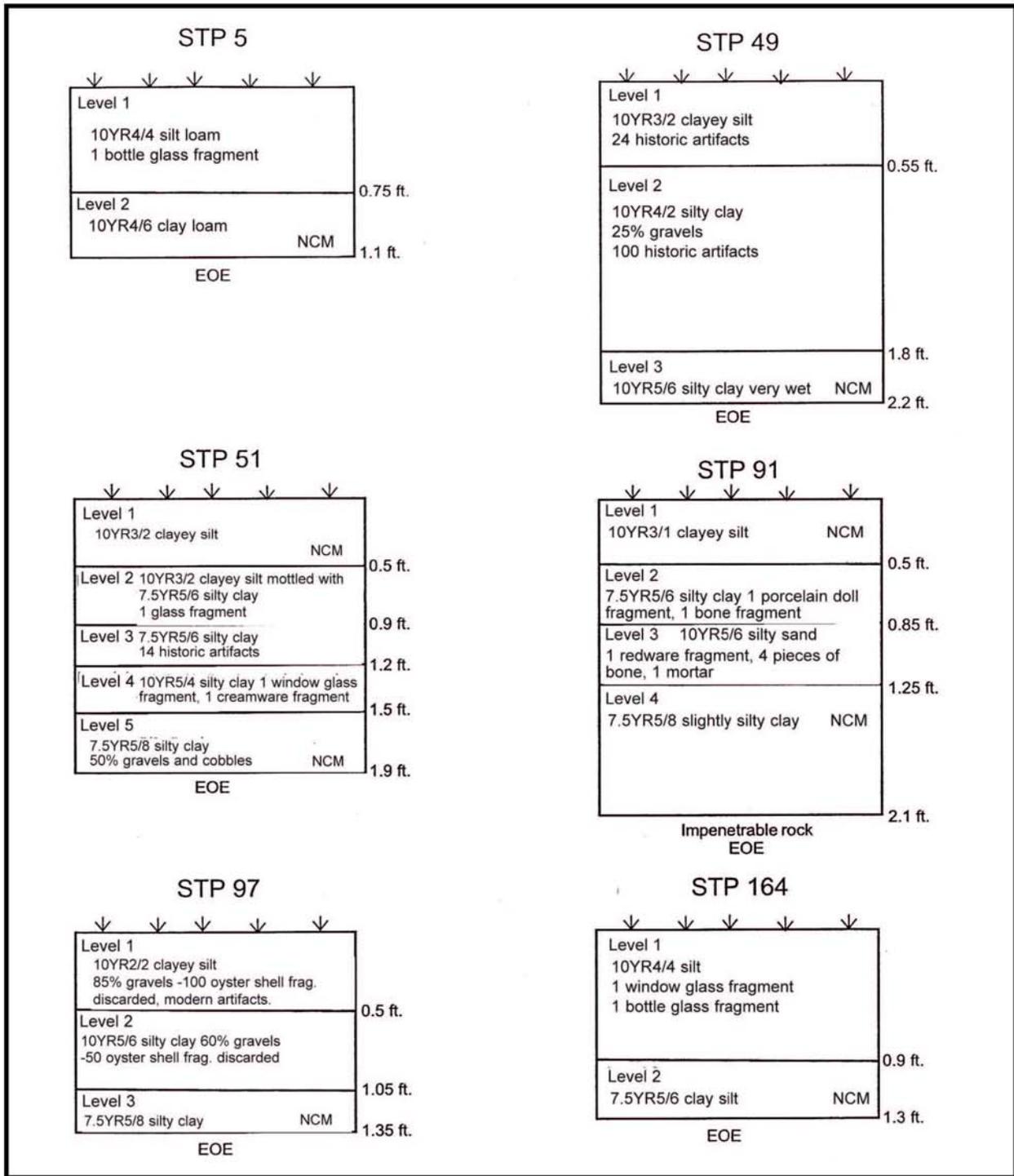
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● Shovel Test Pit Containing Prehistoric Artifacts	Photograph Locations
● Shovel Test Pit Containing Prehistoric and Historic Artifacts	Archaeological Site Boundary
● Shovel Test Pit Containing Historic Artifacts	Structures Constructed after 1862
● Shovel Test Pit Not Containing Artifacts	Context from which Pre-Mid 19th Century Artifacts Were Recovered
	Test Unit

0 50 100 Feet
0 6 12 18 24 30 Meters



Figure 16
Weldin Plantation Site (7NC-B-11)
Phase II Archaeological Evaluation Testing
Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware



EOE - End of Excavation
 NCM - No Cultural Material



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Figure 17

Profiles for STPs 5, 49, 51, 91, 97, 164

Weldin Plantation Site, 7NC-B-11
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 Brandywine Hundred, New Castle County, Delaware



Photograph 12: Weldin Plantation Site, view of farm road, facing south.

The area roughly delineated by STPs 41, 45, 137, and 156 exhibited variable disturbances, as this portion of the site was used as a dump throughout the twentieth century. The soils encountered in STP 97 are representative of this portion of the site. It contained an initial gravel and oyster shell laden very dark brown (10YR 2/2) clayey silt O/A Horizon that was underlain by a predominantly yellowish brown (10YR 5/6) silty clay with gravels and oyster shell, and the strong brown (7.5YR 5/6) silty clay subsoil, respectively (*Figure 17*). As excavations proceeded towards the east, a relatively intact profile consisting of a dark yellowish brown (10YR 4/4) silt plowzone overtop the strong brown (7.5YR 5/6) silty clay subsoil, as seen in STP 164 (*Figure 17*).

The Phase II shovel testing successfully identified the west, south, and east boundaries of the Weldin Site, which was found to roughly correspond to the existing tree line. The western and southernmost transects of shovel tests, excavated just inside the tree line, yielded relatively low densities of artifacts. Just one of the tests along the westernmost transect, STP 8, yielded more than 10 artifacts; it contained three pieces of bottle glass, a piece of clay pigeon, two pieces of whiteware, one piece of redware, one piece of pearlware, one ceramic electrical insulator, one piece of window glass, and one piece of coal. The area west of this transect of STPs was disturbed during the installation of underground utilities and is currently used a parking and staging area. Along the southern treeline, STP 129 yielded 32 artifacts, but 20 of these were bottle glass and five were pieces of an oil can; four pieces of roofing slate, two pieces of window glass, and one piece of bone were also recovered from the test. It represents one of two STPs along the southern edge of the site yielding more than 10 finds. Shovel test 103 yielded 11 artifacts, although eight of these were pieces of brown bottle glass; three pieces of clam shell were also recovered from the test. One transect of shovel tests was excavated to the east of the barnyard area. Shovel test 167 was the only STP on this transect containing more than 10 artifacts. It contained eight pieces of bottle glass, seven pieces of window glass, and one unidentifiable nail. No additional testing was conducted to the east due to the low artifact densities in the easternmost STP transect. The northern site boundary was delineated during the Phase I testing. Thirty four artifacts, the majority of which date to the nineteenth century, were recovered from a group of three STPs excavated north of Weldin Road (within approximately 45 meters [~147 feet] of the Weldin Site), and were therefore considered to be associated with the site and were included within the site boundary (*Figure 16*). The highest density of artifacts recovered within the revised site boundary was from STP 359. The twenty five artifacts recovered from this test included a horseshoe, eight pieces of brick, two pieces of bottle glass, eight pieces of redware, one piece of creamware, one piece of whiteware, one unidentifiable nail, one piece of window glass, on chain link, and one piece of Styrofoam. Additionally, STP 364 contained three pieces of whiteware, one piece of creamware, one piece of brick, and one chunk of slag, and STP 358 contained two pieces of redware and one piece of Styrofoam.

The density of historic artifacts across the site was found to be variable due to the amount of secondary deposition of twentieth century debris on the site, and for this reason, artifact counts encountered in the STPs were deceptively high. This was particularly evident in the area roughly bounded by STPs 41, 45, 137, and 156. This portion of the site was used as a dump throughout the twentieth century. Modern artifacts such as rusty buckets and barrels, tires, plastic and glass bottles, sheets of aluminum, mattress springs, chunks of concrete, assorted car parts and other twentieth century materials were observed on the ground surface (*Photograph 13*). Therefore,



Photograph 13: Weldin Plantation Site, view of twentieth century dump, facing southwest.

the majority of the STPs excavated in this area contain high volumes of twentieth century trash in the A horizon. For example, STP 67 contained a relatively high quantity of artifacts (267), but 185 of the finds consisted of pieces of broken glass (148 vessel glass, 35 window glass, one safety glass, and one piece of salad dressing bottle) that appear to date to the twentieth century. Additionally, 16 pieces of plastic were recovered from the test, in addition to an oil can, coal fragments, and miscellaneous pieces of metal. The artifacts datable to the nineteenth century included 39 ceramic fragments (18 redware, 15 whiteware, five ironstone, and 1 yellowware) but the association of these finds to the site's inhabitants is not clear due to the secondary deposition in this area. For this reason, this portion of the site lacks the level of integrity exhibited in the areas in which modern dumping has not occurred.

The highest quantity of artifacts dating to the mid-nineteenth century or earlier were recovered in the areas to the north and south of Structure A and to the west of Structure C. In the area north of Structure A Shovel test 49 contained 125 artifacts, 53% of which were domestic in nature. These included 17 ceramic sherds dating to the eighteenth century (13 pieces of creamware and four pieces of Jackfield), in addition to 39 shards of nineteenth century ceramics (19 pieces of pearlware, 19 pieces of redware, one piece of porcelain), one piece of oyster shell, and seven pieces of bottle glass. Forty-four % of the finds were architectural items. These included 17 pieces of brick, 26 pieces of window glass, two nails, and a chunk of plaster. Two pieces of mirror glass and one piece of slag were also recovered from STP 49.

To the south of Structure A, STP 50 contained 85 artifacts, the highest quantity in the south yard area. Architectural items represented 71% of the assemblage; these included 39 pieces of brick, 11 pieces of window glass, seven unidentifiable nails, four pieces of roofing slate, and an electrical insulator. Domestic finds included 11 pieces of redware, five pieces of creamware, two pieces of whiteware, one piece of pearlware, and two pieces of bottle glass. One piece of coal and one piece of bone were also recovered from STP 50.

The area west of Structure C also appeared to be an area used primarily for refuse disposal. Shovel test 65 contained the highest concentration, it yielded 82 artifacts. These included 10 shards of whiteware, 10 shards of redware, three pieces of Jackfield, 41 pieces of bottle glass, one piece of yellowware, three pieces of window glass, seven nails, four oyster shell fragments, and three pieces of automobile safety glass.

Relatively high artifact densities were also encountered recovered from the STPs excavated in the location of the original road, although many of the artifacts were interpreted as fill related. In STP 94, approximately 250 fragments of brick were recovered and STP 96 contained hundred of shell fragments. In both of the tests, the brick and/or shell appeared to be deposited as road fill.

b. Test Unit Excavations Associated with Structure A

Structure A is the main house on the site. It is located approximately 7.62 meters (~25 feet) south of Weldin Road at the northwest corner of the property. At ground surface, the structure is divided into two sections (an east section and west section) by a visible interior basement wall. Both sides of the cellar were filled with demolition debris at time of the Phase II Evaluation. Based on the results of the Phase I Survey (which located a well/sump in the western portion of

the building), the potential for features in the cellar were high. As a result, four TUs were excavated within Structure A; Test Units 1 and 2 were placed within the southwest corner of the eastern portion of the structure (just south of a suspected doorway to the first floor), and TUs 3 and 4 were placed within the northeast corner of the western portion of the structure.

Eight additional TUs were placed on the exterior of the foundation; Test Units 5 and 6 were placed against the exterior of the north wall on the east side of the building in an area which tested positive for a relatively high concentration of early artifacts such as creamware, slipped redware and several varieties of pearlware. Test Units 7 and 8 were placed against the southern exterior of a potential bulkhead entrance near the northeast corner of the building to investigate the presence of a builder's trench associated with it. Test Units 9 and 10 were excavated at the southwest corner of the building to further investigate the buried A horizon contacted in STPs 36 and 37 that produced a low density of early artifacts including pearlware and slipped redware. Test Units 11 and 12 were placed adjacent to the southern wall of Structure A at the location where the interior partition wall of adjoins with the south foundation wall. The goal of this excavation was to obtain additional information regarding the construction chronology of the two sections of the house.

i. Test Units 1 and 2

Test Units 1 and 2 were placed in the southeast corner of the Structure A, several feet south of the suspected doorway to the house (*Figure 16*). Interestingly, a large rectangular stone with the initials "WT" carved into the face was located on the surface of the demolition debris near this location. This stone probably represents the lintel that would have been located above the doorway. The letters inscribed into the lintel stone may represent the last initials of Jacob Weldin and his wife Hannah Talley; deed research failed to identify any other inhabitants of the property with the initials WT.

Level I of the excavation consisted of demolition debris containing predominantly unconsolidated large foundation stones and decaying mortar. Several bricks were also noted within the architectural debris. The bricks were probably associated with a brick-lined bulkhead entrance which was situated along the south wall approximately 1.5 feet (~0.5 meter) west of the southeast corner. Level I was excavated to approximately 4.5 feet (~1.4 meters) below ground surface where a concrete basement floor (Level II) was uncovered. The concrete floor was removed and was found to overlie a layer of coal slag and ash fill (Level III) approximately 0.2-0.3 feet (0.06-0.09 meter) in thickness. Level III, was underlain by a thin mottled sand silt and clay fill horizon which (Level IV), in turn overlaid subsoil (*Figure 18*).

Level I, the demolition fill, contained mostly late nineteenth and twentieth century artifacts which were deposited subsequent to the abandonment of the property. Level II consisted of the concrete floor, therefore it lacked artifacts, although it appeared to seal early to mid nineteenth century contexts. Level III (the coal and slag layer directly beneath the concrete) appeared to date to the mid-nineteenth century based on the recovery of eight nails (three machine cut and five unidentifiable), three pieces of window glass, and one shard of slipped redware. Level IV contained 27 artifacts that dated to the early to mid nineteenth century. These included 10 shards of redware, four shards of creamware, three shards of pearlware, two shards of whiteware, three

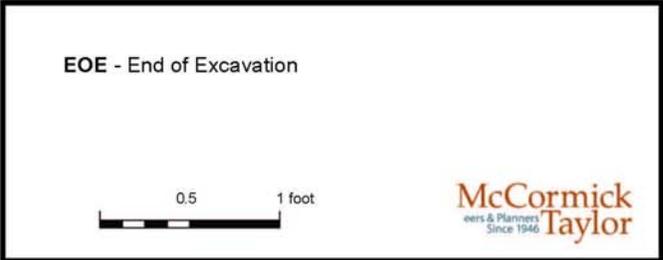
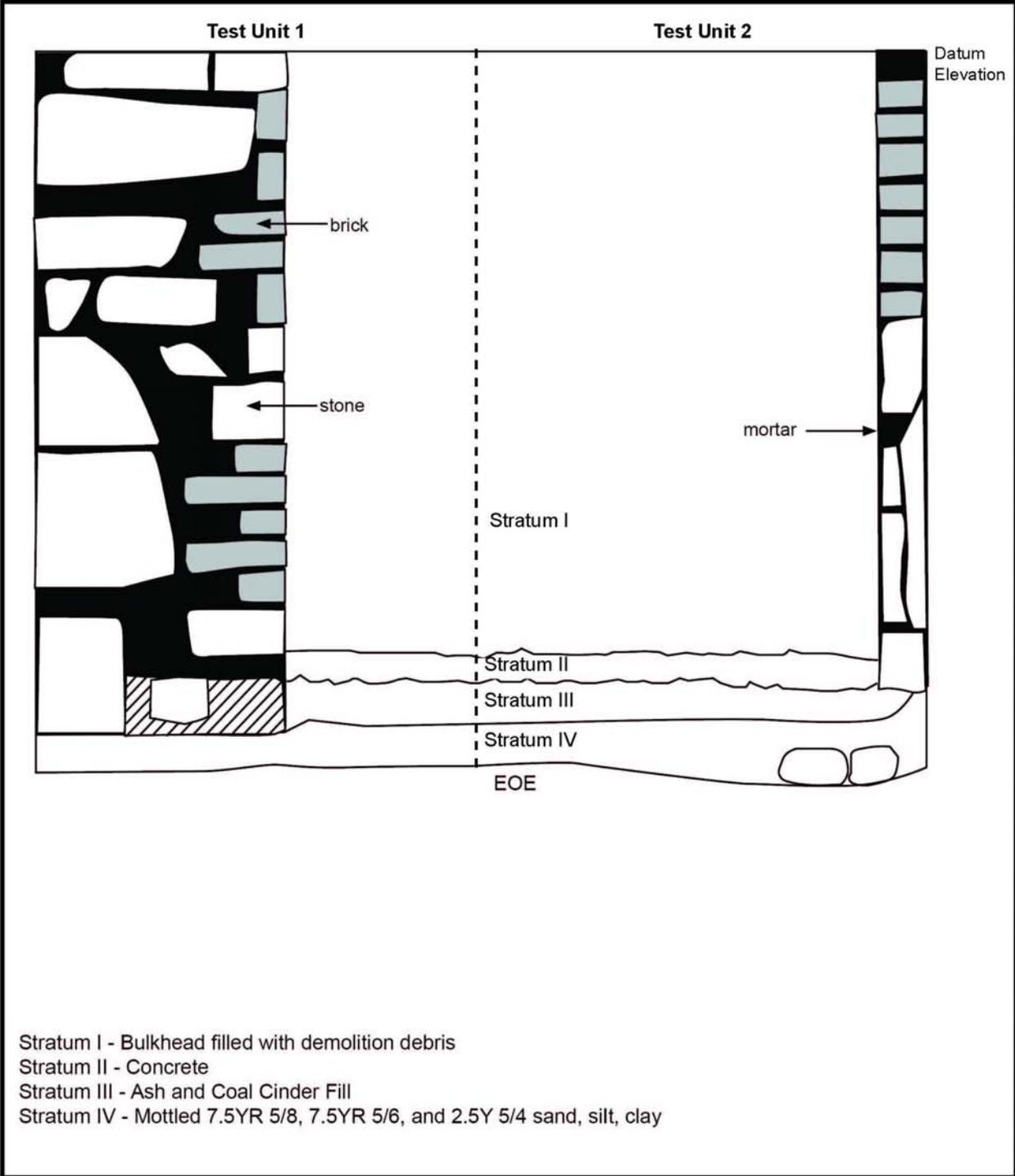


Figure 18
Test Unit 1 and 2 South Profile

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pieces of non-diagnostic bottle glass, two pieces of window glass, two pieces of cow bone, and one pewter button. Additionally, Features 2 and 3 were identified during the excavation of TUs 1 and 2.

- **Feature 2**

Feature 2 was identified by a dark yellowish brown (10YR 4/6) funnel-shaped stain near the center of TU 1 (*Figure 19*). The anomaly measured approximately 0.8 feet (~0.24 meter) wide at the southern terminus of the unit and narrowed to 0.2 feet (0.06 meter) at the northern limits of excavation. Feature 2 was relatively shallow (0.1-0.2 feet [0.03-0.06 meter] in depth) and was excavated in its entirety. The feature fill was silty in texture and contained some carbon flecking. Artifacts recovered from the feature included six pieces of brick, five pieces of redware, and one piece of window glass. It is possible that Feature 2 represents the remains a small drainage channel associated with Feature 3.

- **Feature 3**

Feature 3 represents a series of deliberately placed rocks (oriented N-S) intrusive to Level IV, (*Figure 19; Photograph 14*). The removal of several of the larger rocks revealed that the feature was two courses deep, with the second layer of rocks being oriented E-W and laid into a shallow channel that was intrusive to the subsoil. The clayey soils surrounding the feature appeared poorly drained and heavily mottled (light gray [5YR 7/1], light olive brown [2.5Y 5/4], and strong brown [7.5YR 5/8]), indicating poor drainage. It is likely that the feature represents a French drain. Feature 3 appears to represent an early nineteenth century context based on the recovery of two shards of pearlware and one piece of non-diagnostic window glass.

ii. **Test Units 3 and 4**

Test Units 3 and 4 were excavated in the northeastern corner of the western portion of Structure A (*Figure 16*). Strata I and II were mostly composed of demolition debris, with Level 1 exhibiting a slightly darker matrix due to the accumulation of organic material. Both Levels yielded artifacts dating predominantly to the twentieth century. The architectural debris was underlain by a brick basement floor laid in a herring-bone pattern. The brick floor was found to overlie a relatively thin horizon of brown (7.5YR 5/6) sandy fill (Level IV), which was void of cultural materials. Subsoil (Level V) was contacted approximately 7.2 feet (~2.2 meters) below ground surface. It consisted of a mottled yellowish red (5YR 5/8) and light yellowish brown (2.5Y 6/4) silty clay. Feature 8 was discovered along the east wall of TU 3.

- **Feature 8**

A 1.25 foot wide trench feature oriented parallel to the interior basement wall was encountered at the interface with the subsoil. The feature fill, which was approximately 0.6 feet (~0.18 meter) in depth, consisted of rocks covered by deteriorating mortar and sand (*Figure 20 and Photograph 15*). A total of three unidentifiable nails were recovered from the feature. Feature 8 likely represents either a builder's trench or a drainage feature (such as a French drain).

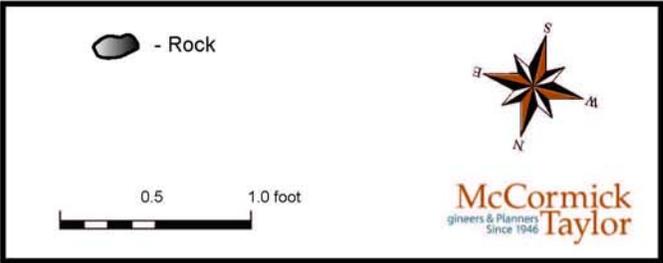
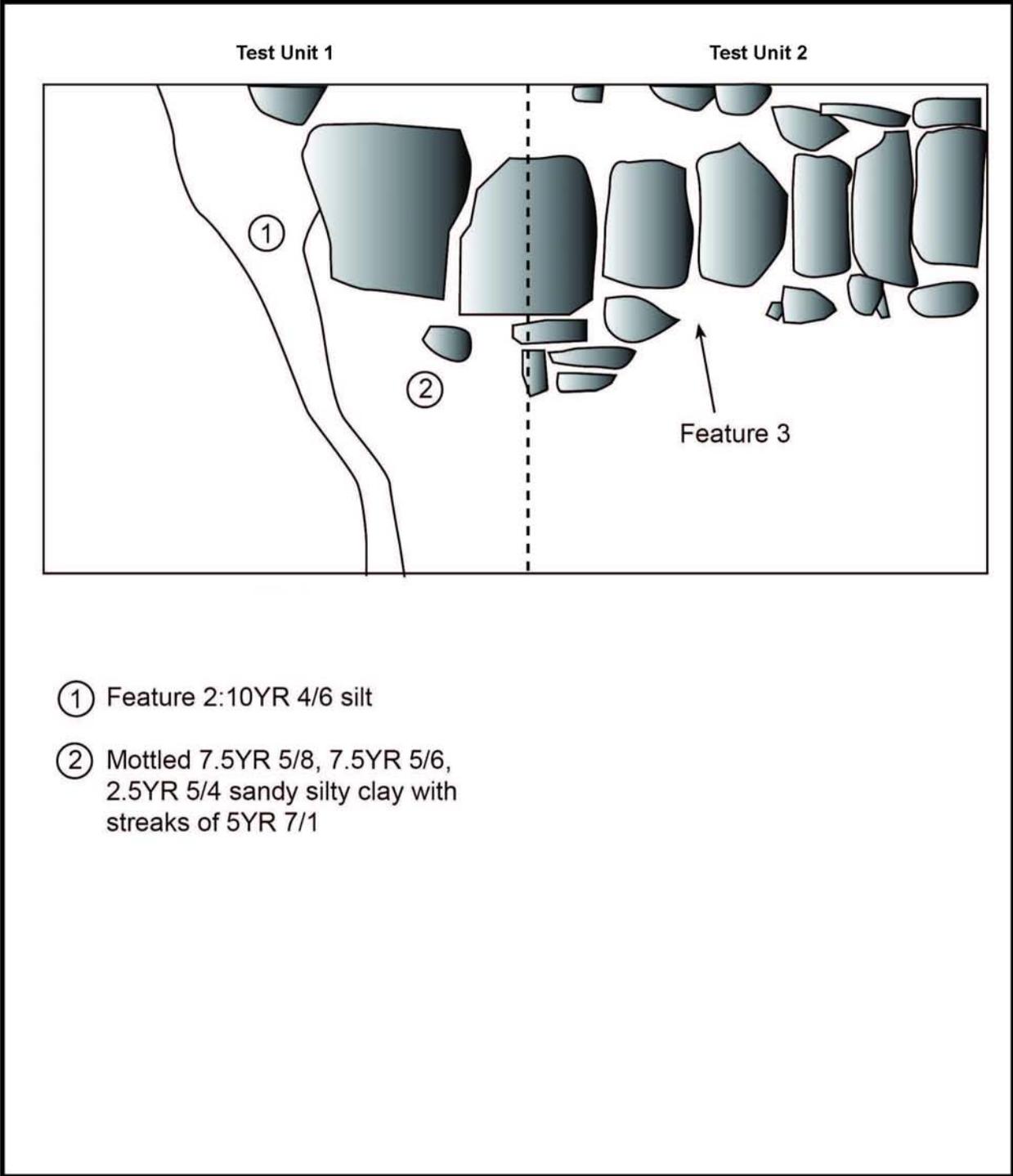


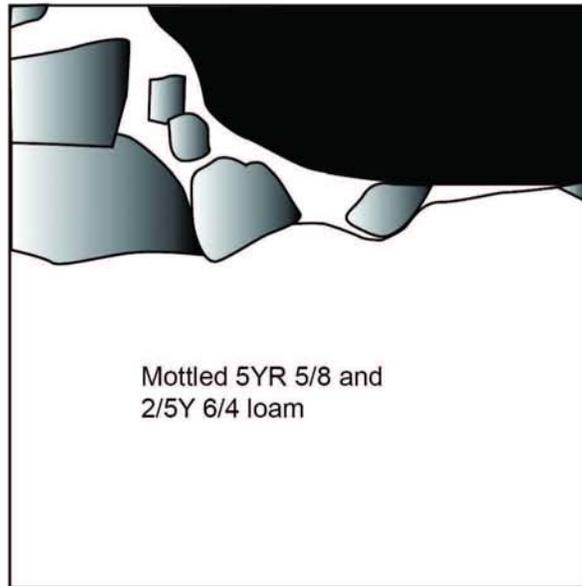
Figure 19
Planview of Feature 2 and 3

Weldin Plantation Site, 7NC-B-11
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Photograph 14: Weldin Plantation Site, Feature 3 planview, facing south.

Test Unit 3



- Rock
- Mortar



0.5 1.0 foot

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Figure 20

Feature 8 Planview

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Photograph 15: Weldin Plantation Site, Feature 8 planview, facing east.

iii. Test Units 5 and 6

Shovel Tests Pits 34 and 49 both tested positive for artifacts dating to the late 18th and early 19th Centuries. Test Units 5 and 6 were placed in this area to investigate the potential early nineteenth century contexts (*Figure 16*).

The upper four strata were found to correspond in the two units. Level I consisted of the initial A horizon, a very dark gray (10YR 3/1) silt loam with a maximum thickness of 0.6 feet (~0.18 meter). It overlaid a dark yellowish brown (10YR 4/4) sandy loam that ranged between 0.5-1.0 feet (~0.15-0.3 meter) in thickness; it was designated Level II. Both Levels I and II contained twentieth century artifacts in addition to numerous pieces of bottle glass (n=1631) and high quantities of window glass (n=575) and other architectural debris such as nails, roofing slate, mortar, plaster, and foundation stones. The mean dates for the artifacts recovered from Levels I and II are attributable to the early twentieth century. Based on the soil morphology and the relatively late dates of these contexts, Levels I and II appears to date to the structure's demolition in the early to mid-twentieth century.

Level III consisted of a friable yellowish brown (10YR 5/4) loam that ranged between 0.2-0.5 feet (~0.06-0.15 meter) in thickness. Combined, a total of 417 artifacts were recovered in TUs 5 and 6 from Level III. Seventy-four % of the finds were architectural by class. The finds from Level III generated a mean date of 1857 in TU 5 and 1859 in TU 6. Based on the recovery of numerous sherds of late eighteenth and early nineteenth century ceramics such as creamware, spattered whiteware, and transfer printed pearlware, this context appeared to represent a mid-nineteenth century context.

At the interface of Level II and III, a brick pier located adjacent to the southeastern corner of the wall was uncovered. The brick pier was found to be four courses high and cemented to a stone footer. The stone footer rested on the subsoil. The brick pier was interpreted as the footer for a porch, and based on its stratigraphic position, likely dates to the mid nineteenth century.

The soils excavated from Level IV were composed of a yellowish brown (10YR 5/6) clayey loam mottled with carbon flecking and small pieces of burned wood. This soil horizon was heavily disturbed by rodent burrows, some of which penetrated the underlying subsoil. Combined, a total of 661 artifacts were recovered from Level IV (272 from TU 5 and 389 from TU 6). These included a high quantity of domestic artifacts including a bone handled fork and knife, a brass spoon, and historic ceramics such as pearlware, porcelain, redware, Jackfield, creamware, and delftware. A total of 324 pieces of bone were recovered from Level IV in the two units. A diverse array of specimens such as pig, cow, turkey, chicken, pheasant, rabbit, goose, and deer, in addition to ground hog and rat were found within this context. A relatively high number of architectural artifacts were recovered as well. The attribution for the diagnostic domestic artifacts was consistently to the late eighteenth to early nineteenth century, suggesting a secure context, probably the original ground surface associated with the farmhouse. Several pieces of mold blown bottle glass dating to the twentieth century were recovered from TU 6 (TU 5 was void of later artifacts), although these artifacts were likely intrusive from the overlying strata.

An additional lense of soil (Level V; a light brownish gray [10 YR 6/2] clayey silt) approximately 0.4 feet in thickness was encountered just above the B horizon in TU 6. This deposit feathered-out as excavations proceeded toward the east and was not observable in TU 5. Level V contained just four artifacts; a bone comb and three additional pieces of bone. A potential foundation wall was uncovered within the lower portion of Level IV in TU 6. It consisted of two courses of cut stone oriented perpendicular to the north wall of the house. A concentration of mortar was found to overlie the cut stones (*Figure 21*) supporting that the anomaly is the remains of a wall, rather than demolition debris. The soils comprising Level V were likely associated with the original construction of this wall.

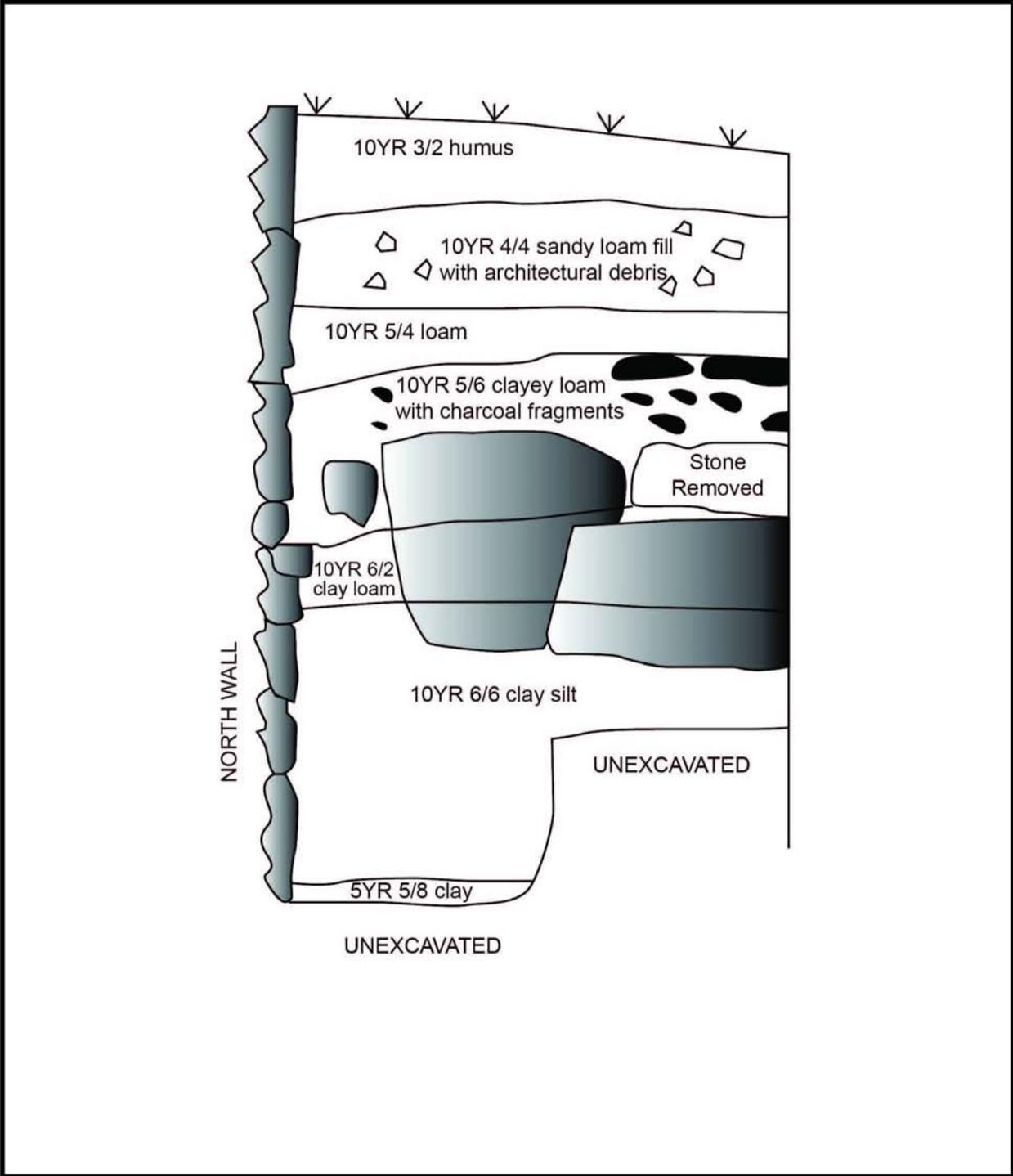
The brownish yellow (10YR 6/6) clayey silt subsoil was reached approximately 3.0 feet (~0.9 meter) below ground surface in both test units (*Figure 21 and Photograph 16*). It contained 16 artifacts in TU 5 and was void of artifacts in TU 6. The artifacts found in the subsoil were likely deposited through the heavy bioturbation noted within the overlying stratum.

iv. Test Units 7 and 8

TUs 7 and 8 were placed on the eastern side of Structure A against the south bulkhead wall (*Figure 16*). Level I was composed of a mottled dark yellowish brown (10YR 4/4) and strong brown (7.5YR 5/6) loam that contained foundation stones, brick fragments and numerous twentieth century artifacts. It was interpreted as a fill horizon associated with the demolition of the structure in the twentieth century. Level II, a very dark grayish brown (10YR 3/2) silt loam appeared to represent an A/O horizon. Level III consisted of the yellowish brown (10YR 5/6) clay loam subsoil, although a small pocket of mottled brown (10YR 4/3) and yellowish brown (10YR 5/4 and 10YR 5/6) was found in TU 7 at the interface with the subsoil. This soil deposit may represent the original truncated A/Ap horizon (*Figure 22*). Two irregular soil anomalies containing modern artifacts were found to be intrusive to the subsoil. The first, located in TU 7, originated at the existing ground surface and was composed of Level I soils, and the second, located in the southwest corner of TU 8, originated at the interface of Levels II and III and contained Stratum II soils. All of the contexts from TUs 7 and 8 contained modern artifacts. It appears that the area around the bulkhead was subjected to relatively severe ground disturbing activities sometime during the 20th century, likely during the demolition of the structure.

v. Test Units 9 and 10

Test Units 9 and 10, excavated along the west wall of Structure A, penetrated four strata. Level I consisted of a layer of demolition debris that was composed of mostly foundation stones, brick, and mortar. The underlying Level II soils were comprised of a strong brown (7.5YR 5/8) silty clay fill that contained a total of 59 artifacts that date to the mid to late nineteenth century. Level III, a brown (10YR 4/3) silt loam, appeared to represent the original A horizon. It contained a total of 40 artifacts, 73% of which were domestic by class. These included shards of creamware, delftware, and shell edged whiteware that date the assemblage to the late eighteenth to early nineteenth century. The undisturbed subsoil (Level IV) was found to underlie the buried A horizon (*Figure 23*).



 - Rock
 - Mortar

0.5 1.0 foot



 gineers & Planners Since 1946

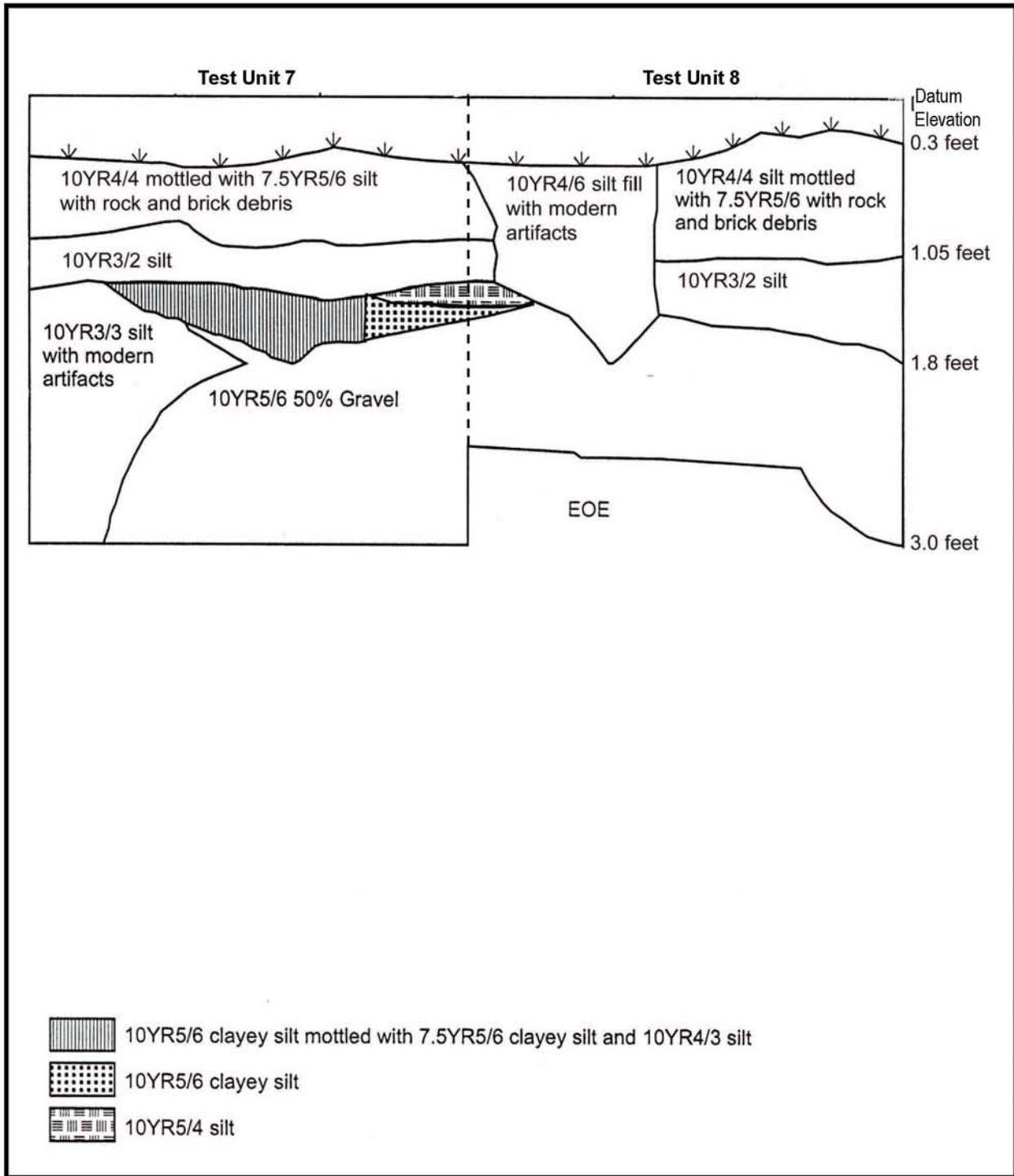
Figure 21

Test Unit 6 West Profile

Weldin Plantation Site, 7NC-B-11
 Blue Ball Area Properties
 Transportation Improvement Project
 Brandywine Hundred, New Castle County, Delaware



Photograph 16: Weldin Plantation Site, Test Unit 6 west profile.



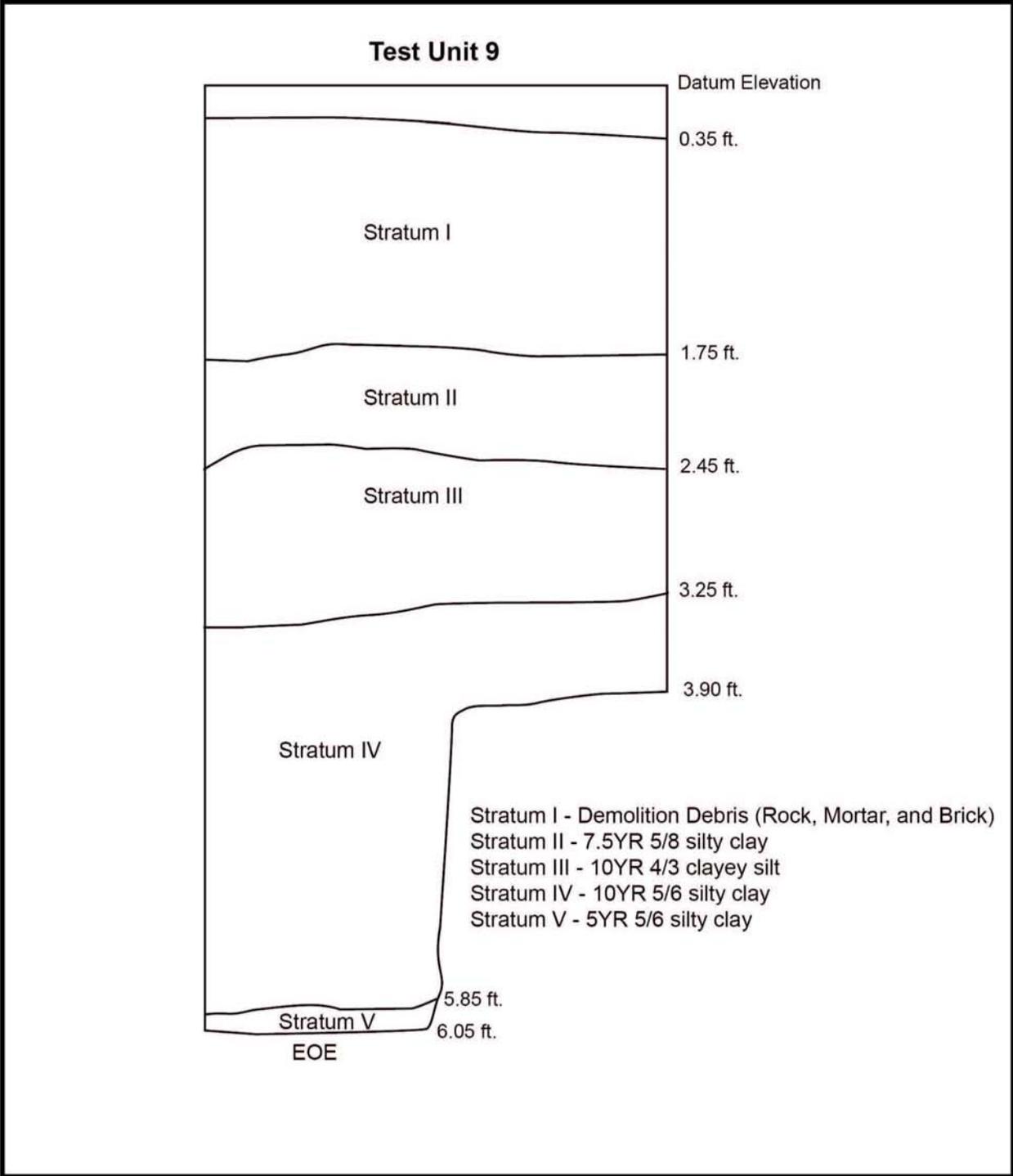
EOE - End of Excavation

0.5 1.0 foot

McCormick Taylor
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Figure 22
Test Unit 7 and 8 South Profile

Weldin Plantation Site, 7NC-B-11
Blue Ball Area Properties
Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware



EOE - End of Excavation

0.5 1.0 foot

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Figure 23
Test Unit 9 South Profile

Weldin Plantation Site, 7NC-B-11
 Blue Ball Area Properties
 Transportation Improvement Project
 Brandywine Hundred, New Castle County, Delaware

- **Feature 4**

Feature 4, a linear trench feature comprised of 7.5 YR 5/8 silty clay fill, was found at the interface of Levels II and III along the Structure A foundation (*Photograph 17*). This feature was possibly created during the excavation of the cellar hole and was filled subsequent to the construction of the foundation wall. The feature fill contained four chunks of mortar, one cut nail, one shard of creamware, and one shard of pearlware.

vi. Test Units 11 and 12

Test Units 11 and 12 were placed along southern wall of Structure A at the approximate location of the interior partition wall (*Figure 16*). The stratigraphy of the units closely matched that of TUs 9 and 10. The portion Structure A exterior exposed in TU 11 indicates that the western portion of the foundation likely represents a later addition to the house. The eastern portion of the foundation exhibited a finished wall at its southwest. At this point the western portion of the foundation appears to be butted against the east section (*Photograph 18*).

- **Feature 9**

Feature 9 consisted of a brick footer that was four courses in thickness and two bricks in width (*Photograph 19*). The bricks were built upon a stone foundation that rested on the subsoil. Along with the brick footer found in TU 6, Feature 4 was interpreted as the footer for a porch. It was exposed within the fill layer overlying the original A horizon. Based on its stratigraphic position, it likely dates to the mid nineteenth century.

vii. Test Unit 13

TU 13 was excavated just outside the southeast corner of Structure A. Level I in this unit consisted of dark brown (10YR 3/3) A horizon that extended to approximately 1.1 feet (~0.34 meter) below ground surface. It contained a total of 79 artifacts that dated mostly to the late nineteenth to twentieth century. It was underlain by a thin ash lens (Level II) with a maximum thickness of 0.2 feet (~0.06 meter). The ash lense produced 44 artifacts including nineteenth century ceramics, architectural items, and two porcelain doll fragments. It rested on a mottled strong brown (7.5YR 5/8) and light gray (2.5Y 7/1) silty clay fill horizon that appeared to be re-deposited subsoil. This stratum, designated Level III, contained 71 artifacts that were mostly architectural (83%) by class. This fill deposit was found to overlie a dark yellowish brown (10YR 3/4) Ab horizon (Level IV) that ranged between 0.05 and 0.46 feet (~0.02 and 0.14 meter) in thickness. The Ab contained 172 artifacts that were consistent with a mid nineteenth century date. The Ab was underlain by the subsoil (Level V); a yellowish brown (10YR 5/6) clay loam. In the southeast corner of TU 13, a mottled dark yellowish brown (10YR 3/4) and yellowish brown (10YR 5/6) semi-circular stain was exposed (Level VI). In profile, this anomaly was basin shaped and reached a depth of 0.65 feet (~0.19 meter) (*Figure 24*). It contained 32 artifacts that date the context to the early nineteenth century.



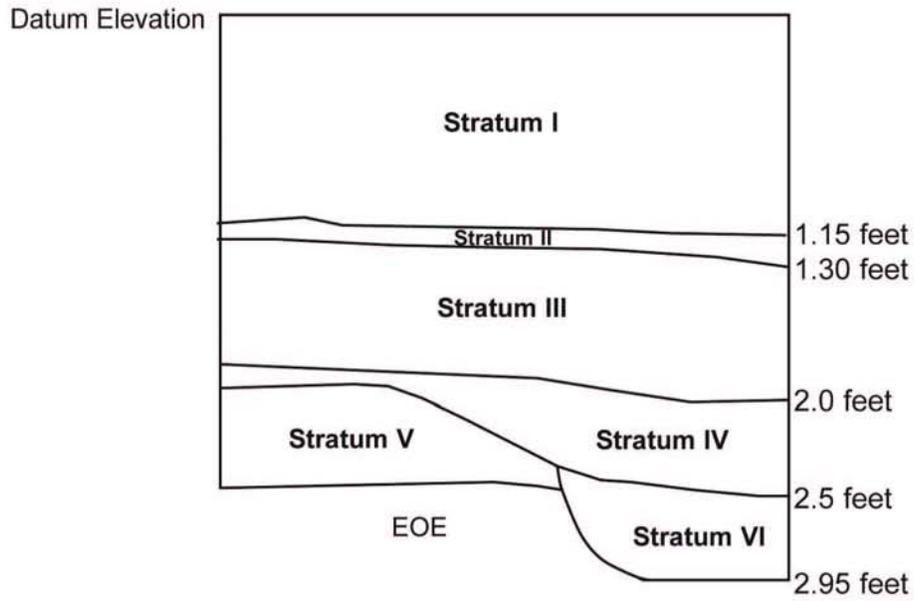
Photograph 17: Weldin Plantation Site, Feature 4 planview, facing east.



Photograph 18: Weldin Plantation Site, Test Units 11 and 12 north profile.



Photograph 19: Weldin Plantation Site, Feature 9 planview, facing north.



- Stratum I - 10YR 3/3 silt loam
- Stratum II - Ash lense
- Stratum III - Mottled 7.5YR 5/8, 10YR 4/4, and 2.5YR 7/1 Clay Silt
- Stratum IV - 10YR 3/4 Silt loam
- Stratum V - 10YR 5/6 Clay loam
- Stratum VI - 10YR 3/4 and 10YR 5/6 Clay loam

EOE - End of Excavation



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Figure 24

Test Unit 13 East Profile

Weldin Plantation Site, 7NC-B-11
 Blue Ball Area Properties
 Transportation Improvement Project
 Brandywine Hundred, New Castle County, Delaware

viii. Test Unit 14

Test Unit 14 was placed in the south yard of Structure A. The initial stratum, a brown (10YR 4/3) silty clay approximately 0.9 foot in thickness, contained 71 artifacts attributable to the late nineteenth to twentieth century. It was overlain by a brown (10YR 5/3) clay loam that was approximately 0.6 foot in thickness. Level II yielded 31 artifacts, all of which were domestic by class. The mottled strong brown (7.5YR 5/8) and light gray (2.5Y 7/1) clay loam subsoil was excavated as Level III. It was void of cultural materials.

c. Test Unit Excavations Associated with Structure B

Structure B is located approximately sixty feet (~18 meters) east of Structure A, approximately ten feet (~3 meters) south of Weldin Road. At the time of the Phase II survey, the foundation walls are roughly 80% intact. While fieldwork was in progress, McCormick Taylor archaeologists were informed by the nephew of Jacob Weldin that this structure was in use during the Weldin dairy operation. It was utilized as an ice house to keep milk cold.

i. Test Units 15 and 16

Test Units 15 and 16 were excavated within the northeast corner of Structure B. Level I consisted of mostly demolition debris that contained predominantly twentieth century artifacts. It was found to directly overlie a concrete floor (Level II), which in turn, overlaid a brick floor (Level III) that was one course in depth and laid in no particular pattern. A layer of stone and mortar that was excavated as Level IV was found beneath the brick floor. The soils excavated from Level V consisted of a thin (approximately 0.05 feet [~0.02 meter]) dark yellowish brown (10YR 4/4) silt from which five brick fragments and one unidentifiable nail were recovered (from TU 16). It was underlain by the mottled strong brown (7.5YR 5/6) and light gray (2.5Y 7/1) silty clay subsoil (Level VI) that was void of artifacts.

ii. Test Unit 17

Test Unit 17 was excavated at the southwest corner of Structure B. It penetrated three strata. Level I consisted of a black (10YR 2/1) loam that contained a high quantity of deteriorating mortar, foundation stones, and broken pieces of concrete. It yielded 148 artifacts (54% bottle glass) that dated from the late nineteenth to twentieth century. It was underlain by a very dark grayish brown (10YR 3/2) silty sandy loam (Level II) that was approximately 0.4 feet (~0.12 meter) in thickness. It contained 255 artifacts that again dated to the late nineteenth to early twentieth century. Level III consisted of a very wet mottled yellowish brown (10YR 5/6) and very dark grayish brown (10YR 3/2) clay loam fill horizon that contained 43 artifacts and was underlain by subsoil (*Figure 25*). Based on the recovery of a dry cell battery, this context dates to the late nineteenth century.

- **Feature 10**

Feature 10, a dark circular stain approximately 0.55 feet (~0.17 meter) in diameter and 1.1 foot in depth was located in the eastern portion of the TU 17 at the interface of Levels II and III

(*Figure 25*). One unidentifiable nail was recovered from Feature 10. It is interpreted as a posthole.

iii. Test Unit 18

Test Unit 18 was placed in the south yard area associated with Structure B. It penetrated three strata. The first, a very dark grayish brown (10YR 3/2) silt loam A/O horizon contained 37 pieces of bottle glass, one cut nail, and one piece of redware in addition to a very high density of shell. It overlaid a mottled dark yellowish brown (10YR 4/4) and strong brown (7.5YR 5/8) loam that ranged between 0.25 and 0.44 feet (~0.08 and 0.13 meter) in thickness. It yielded 37 artifacts that were attributable to the mid nineteenth century. This level appeared to represent the truncated original Ap horizon. It was underlain by the culturally sterile yellowish brown (10YR 5/6) clay loam subsoil.

d. Test Unit Excavations Associated with Structure C

i. Test Unit 19

Test Unit 19 was placed adjacent to the west wall of Structure C. The initial A/O horizon consisted of a dark grayish brown clay loam that contained 262 artifacts, 170 of which were beer or soda bottle glass. Level II appeared to represent the original disturbed/truncated A horizon, it was characterized by a mottled brown (10YR 4/3) and strong brown (7.5YR 5/8) silty clay that was approximately 0.35 foot in thickness. It contained 195 artifacts that were attributable to the mid to late nineteenth century. Level III, the strong brown (7.5YR 5/8) silty clay subsoil, was excavated as Level III. It was void of artifacts. An amorphous area of brown (7.5YR 4/4) soil, that was excavated as Level IV, was noted in the southwest corner of the unit (*Figure 26*). In plan, this anomaly extended beyond the limits of the excavation. It contained a total of 48 artifacts (22 bottle glass, 23 window glass, one unidentifiable nail, and two pieces of pearlware).

e. Test Unit Excavations Not Associated with Structures

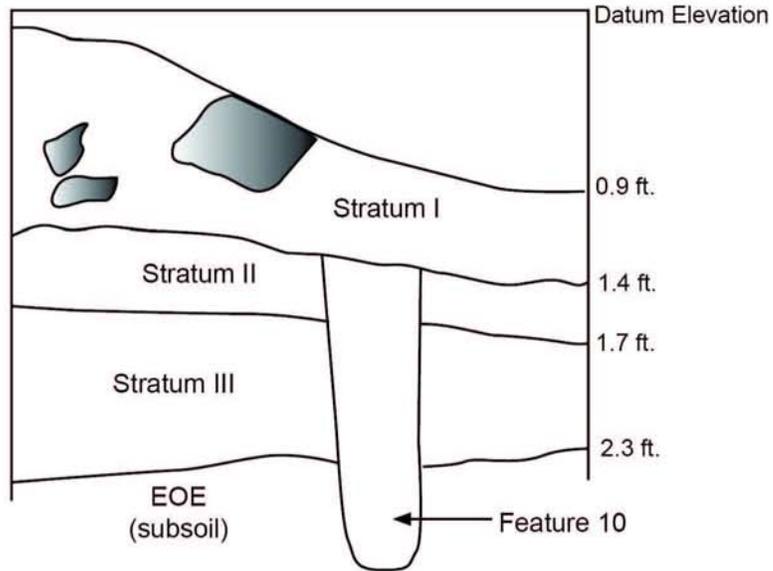
i. Test Unit 20

Test Unit 20 was placed along the western periphery of the site and exhibited plowzone/subsoil stratigraphy. It contained a total of 12 artifacts from A horizon contexts.

f. Artifact Analysis

Phase II excavations at the Weldin Site (7NC-B-11) produced a total of 13,603 historic artifacts and one pre-contact artifact (*Appendix F*). The assemblage was composed primarily of domestic class artifacts (64%) and architectural class artifacts (29%). Other artifact classes were farming-related, gardening-related, transportation-related, heating by-product, arms/ammunition, tool, ecological and indeterminate. The single pre-contact artifact was a projectile point. Terminus Post Quem (TPQ) dates were calculated to identify probable time period of deposition for all proveniences that possessed datable artifacts. Terminus Post Quem and Mean artifact dates

Test Unit 17



Stratum I - 10YR 2/1 loam with large rocks
 Stratum II - 10YR 3/2 loam
 Stratum III - mottled 10YR 5/8 and 10YR 3/2 clay loam

EOE - End of Excavation
 - Rock



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Figure 25

Test Unit 17 East Profile

Weldin Plantation Site, 7NC-B-11
 Blue Ball Area Properties
 Transportation Improvement Project
 Brandywine Hundred, New Castle County, Delaware

aided in differentiating deposits formed during the Weldin family occupation and those formed prior to their occupation.

Artifacts classified as domestic were items generally used or stored within the home. The majority of domestic artifacts in this assemblage were beverage and food bottle parts (73%) and ceramic vessel fragments (12%). Other domestic artifacts included cooking and food storage items, kitchen/dining utensils, glass tableware, home furnishings, radio and television parts, lighting glass and light bulb parts, a d-cell battery, a paint can, sewing items, clothing parts, toiletry and pharmaceutical items, tobacco smoking equipment, toys, coins and other personal items such as pocket knives and writing utensils. Bone and shell identifiable as consumed species, or that exhibited butchery marks or burning (excluding burned remains of non-consumed species such as rat) were classified as domestic. Artifacts unidentifiable to form or function but consisting of material generally used in the domestic setting, such as aluminum foil and styrofoam, were also classified as domestic.

Architectural class artifacts were items used in building construction. Window glass (47%), nails (25%) and brick (15%) were the predominant architectural artifacts. Most of the nails were machine-cut (70%), which was a method used from 1791 to 1891. Wrought nails (to 1805) and wire nails (1850 to present) were also present. Other architectural artifacts included brick, building stone, mortar, plaster, lime, cement, floor and wall tiles, drainage tile and plumbing hardware, ornamental hardware, shutter fasteners, door and window hardware, roofing slate, tar paper, asphalt tile, spouting, electrical material, modified wood (some of which had nails driven through) and miscellaneous fasteners such as rivets, bolts and spikes.

The remaining 7% of the assemblage were artifacts related to other activities or that could not be identified to a specific function. Farming-related artifacts included barbed and fencing wire, horse and pony shoes, a livestock shoe nail, harness parts and a sickle mower part. Gardening-related artifacts were redware flowerpots. Transportation-related artifacts were auto safety glass, a valve stem and oil can fragments. Heating by-products were coal, cinder, slag, and ash. Arms/ammunition were shotgun casings and rim-fire and center-fire ammunition. Tools included hammers, sandpaper, a wrench, a file, a pulley, a chisel, and chain link. Ecological class remains were bone from non-consumed species and nutshells. Indeterminate class artifacts were unidentifiable to a specific activity and included unidentifiable glass, unidentifiable metal objects, miscellaneous machine parts, miscellaneous hardware, metal wire, leather, plastic, paper, rubber, unidentifiable textile, wood, macadam, metal cans unidentifiable to content/use and bone not identifiable as consumed or non-consumed species.

Terminus Post Quem (TPQ) and Mean artifact dates were calculated for all proveniences that contained datable artifacts. Occupational periods for each provenience were determined by TPQ and Mean artifact dates. When the Mean date fell within an occupational period later than the period suggested by the TPQ date, the context was defined by the later Mean date, because the mean production dates for the majority of the artifacts indicated a possibility that the deposit was formed during the later occupational period. When a context would have been defined as an earlier deposit than the context which lay stratigraphically below it (e.g. a Weldin deposit above a Post-Weldin deposit or a Pre-Weldin deposit above a Weldin deposit) the overlying deposit was assigned the same occupational period as the underlying deposit. A few mixed contexts

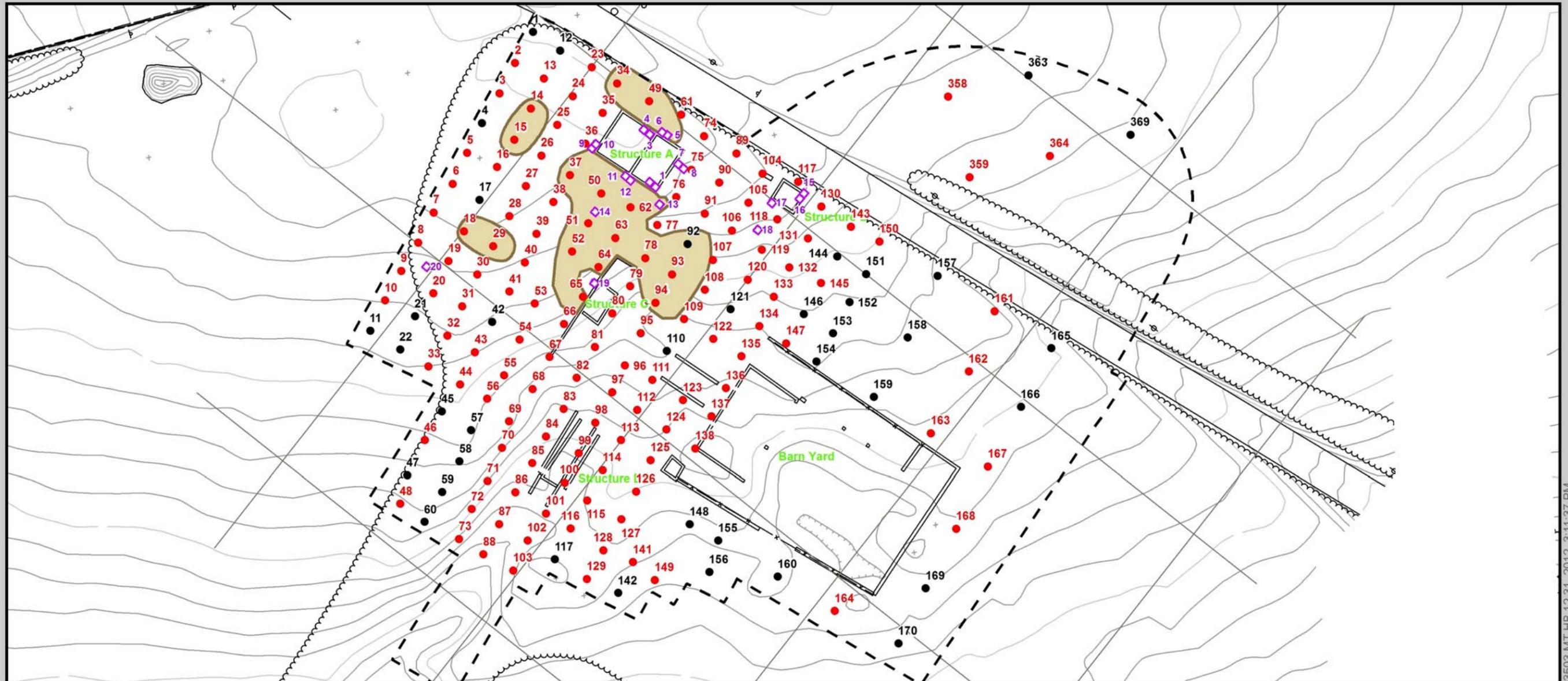
were observed; these were contexts with artifacts whose manufacturing periods were separated by 50 years or more (e.g. pearlware [1780-1840] in the same context as machine made bottles [1903-present]). Though two proveniences, Test Unit 5 Stratum III and Test Unit 6 Stratum IV, were mixed contexts they were identified as pre-Weldin because the few 20th century artifacts, which made them mixed contexts, were likely intrusive from Stratum II in Test Unit 5 and wall fall in Test Unit 6 and without those 20th century artifacts the TPQ and Mean dates were pre-1860. Proveniences with TPQs and Mean dates before 1860 were considered to be pre-Weldin family era deposits. Additionally, any provenience that did not have datable artifacts but underlay a pre-Weldin deposit was also considered a pre-Weldin deposit. Stratum I contexts with pre-1860 TPQ and Mean dates, however, were not considered to be pre-Weldin since these were modern surface and plowzone contexts in which older artifacts would have been deposited by rodent, plow or fill disturbance. Stratum I contexts that possessed pre-Weldin TPQs and Mean dates were defined as Weldin/post-Weldin. Proveniences that possessed TPQs between 1860 and 1933, or pre-1860 TPQs with Mean dates between 1860 and 1933, were defined as Weldin era deposits. Proveniences with post-1933 TPQs, or pre-1933 TPQs with post-1933 Mean dates were defined as post-Weldin deposits.

i. Pre-Weldin Era Assemblage

The pre-Weldin assemblage was composed of 2077 artifacts from sixty-one proveniences, most of which were within test units excavated near the house (*Figure 27*). Artifact classes represented were architectural, domestic, heating by-product, farming-related, indeterminate and ecological. The predominant artifact classes were architectural (45%) and domestic (42%). Though no portion of this assemblage was attributable to a particular resident, the pre-Weldin assemblage was typical of an assemblage deposited by late 18th century to mid-19th century residents of upper middle socioeconomic status.

A variety of architectural artifacts were present. Window glass (64% of architectural), nails (21%) and brick (10%) comprised the majority of the architectural artifacts. Most of the nails were machine cut nails (85%). A few wrought nails (1%, n=3) and wire nails (1%, n=2) were also present. Other architectural artifacts were dressed wood, mortar, plaster, roofing slate, tarpaper, a bolt, cut spikes, earthenware drainage pipe and a ceramic electrical insulator. The ceramic insulator, which is a late 19th century to 20th century artifact, was recovered from the aforementioned TU 5 Stratum III and was likely intrusive from an overlying mixed deposit.

The majority of the domestic artifacts were ceramic vessel fragments. Ceramic types included white salt-glazed stoneware (1% of ceramics), delftware (1%), Jackfield ware (2%), creamware (12%), pearlware (26%), whiteware (11%), ironstone (2%), yellowware (.4%), porcelain (3%) and redware (41%). Most of the pearlware fragments were decorated, while most of the white salt-glazed stoneware, creamware, whiteware and ironstone fragments and were undecorated. Yellowware was undecorated only. Decorative styles for pearlware were shell edging in blue or green (17% of pearlware), simple bands (10%), transfer print in blue (6%) or mulberry (1%), underglaze painting in blue (13%), brown (8%) or polychrome (8%) designs, spatter decoration (6%) and overglaze painting in blue (1%). Decoration for delftware was limited to blue painted designs. White salt-glazed stoneware was observed in scratch-blue and molded or slip-cast designs. Creamware was decorated with shell edging, Whieldon glaze and painted designs.



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● Shovel Test Pit Containing Prehistoric Artifacts	 Archaeological Site Boundary
● Shovel Test Pit Containing Prehistoric and Historic Artifacts	 Context from which Pre-Mid 19th Century Artifacts Were Recovered
● Shovel Test Pit Containing Historic Artifacts	 Test Unit
● Shovel Test Pit Not Containing Artifacts	



Figure 27

Contexts Containing Pre-Mid 19th Century Artifacts

Ronald McDonald House Site, 7NC-B-54
Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware

Decoration for whiteware was shell edging in blue, simple bands, spatter or sponge decorations, transfer printing in blue or “other” color”, underglaze painting and majolica-English or American. Ironstone decoration was limited to simple bands and transfer printing in blue. Porcelain was primarily decorated with painted blue Oriental designs, but was also undecorated, underglaze decal decorated and overglaze painted in floral and indeterminate designs. Most of the redware was simply lead glazed, but a few slip-trailed pieces were also present.

Other domestic artifacts were glass bottles, kitchen/dining utensils, glass tableware, clothing, toiletry, toys, and other personal items, smoking equipment, lighting glass, bone and shell identifiable as being consumed and a miscellaneous lead weight. Glass bottle types were wine, bulk, pharmaceutical, soda, beer and unidentifiable. The soda and beer bottle fragments were present in TU 5 Stratum III and TU 6 Stratum IV and Stratum IV-A, and all were likely intrusive from overlying strata, since they were 20th century artifacts in proveniences containing mostly late 18th and early 19th century artifacts. The pharmaceutical bottle was represented by a neck and lip fragment, which did not have a visible mold seam and was consequently dated pre-1860. Kitchen/dining utensils were bone-handled forks and knives, a pewter spoon and a brass spoon that was likely originally silver-plated. The bone handles held flat-tanged utensils and were wedge shaped with deeply scored diagonal or crossed lines. Glass tableware consisted of stemware fragments and a tumbler fragment. Clothing items were buttons made of various materials, most of which were either brass or bone, but a few were also made of pewter, glass or shell. Toiletry items were a grooming mirror fragment and lice comb fragments. Toys were a steel jack and a glass marble of indeterminate manufacturing method (i.e. handmade or machine-made). Other personal items were a black glass bead and a slate pencil. Smoking items were a pipe bowl and stem fragments. Lighting glass consisted of kerosene lamp chimney glass. Identifiable species for domestic bone were cow, pig, sheep and chicken. Other taxa were fish, Ungulate (hoofed mammal, like cow, pig, sheep, deer), and mammal identifiable only to probable size of medium, large and medium/large. Identifiable cuts of meat were beef loin roast or t-bone, beef sirloin roast, large mammal rib, shoulder chop and leg steak or roast, medium mammal loin roast, picnic or arm roast and leg steak or roast, and one butt roast identifiable only as Ungulate species. Butchery methods for the meat cuts were chopping/cleaving and sawing. The beef sirloin roast, Ungulate butt roast, medium mammal picnic/arm roast and two large mammal rib cuts were chopped or cleaved. Sawn meat cuts were the beef t-bone, medium mammal loin roast and leg steak/roast, large mammal shoulder chop and leg steak/roast, and three large mammal rib cuts. Shell remains were predominantly oyster, but some clamshell was also present. The miscellaneous lead weight was oblong in shape and may have been used in a pendulum clock or a hearth clockjack (a device used to turn a spit).

The remaining artifact classes were composed of a small array of artifacts. Heating by-products were coal and slag. Farming-related items were two horseshoes. Ecological remains were pieces of bone from species not generally consumed, specifically rat, sparrow and groundhog. Indeterminate class artifacts were unidentifiable glass objects, unidentifiable metal objects, miscellaneous paper fragments, miscellaneous metal can fragments, hardware consisting of two hooks and a washer and bone not identifiable as being consumed or as non-edible species.

The pre-Weldin assemblage was typical of a late 18th century to mid-19th century assemblage. The ceramic assemblage was composed primarily of late 18th century and early 19th century

ceramic types, with some mid-19th century ceramics. White salt-glazed stoneware, blue-glazed delftware and Jackfield ware, which were a small part of the ceramic assemblage, were produced during the mid to late 18th century. Creamware and pearlware, which accounted for the majority of the refined ceramics, were manufactured during the late 18th and early 19th centuries. Whiteware also accounted for a significant portion of the refined ceramics, and while whiteware production began in 1805 and continues to present day, whiteware in this assemblage was decorated with early to mid-19th century styles/techniques. Ironstone and yellowware were mostly mid-19th century ceramics and were present in small quantities. Ironstone production began in the 1813 for transfer printed wares and 1842 for undecorated wares. Yellowware was manufactured from 1830 to 1940. Additionally, the bone-handled utensils were primarily late 18th century. Though the wedge shape and usage with flat tangs dated the bone handles to the period 1720 to 1770, the scored decorations were typical of late 18th century bone handles (Dunning 2000). Lastly, the nearly equal proportion of sawn and chopped/cleaved bone would be typical of a late 18th to mid-19th century assemblage. Sawing became a popular butchery method during the middle of the 19th century. Prior to that time most meat was chopped or cleaved into individual cuts.

Ceramics in the assemblage suggested the site's early residents, at least those whose discards were left on the property, were of upper middle socioeconomic status. Indicators of wealth were the presence of Oriental porcelain, white salt-glazed stoneware, delftware, and Jackfield ware, as well as the predominance of hand-painted pearlware and whiteware. Oriental porcelain was an expensive ceramic choice because of its fine quality and cost to import, though Noel-Hume (1969) notes Oriental porcelain became more common, less expensive and lower in decorative quality as the 18th century progressed. The cost of Canton porcelain in 1804 was apparently about \$.54 per piece and in 1825 was apparently about \$.21 per piece (Schiffer 1980:21, 30). The pieces present in this assemblage were not datable, but the decorations were underglaze blue Canton-style and well drawn, which suggested though they would have been fairly common they would have still been fairly expensive. White salt-glazed stoneware, delftware and Jackfield ware were also imported ceramics and would have cost more than locally produced redwares that would have served the same functions. Transfer printing allowed for the mass production and lowering cost of decorated vessels, but the number of transfer printed ware fragments is small compared to the number of hand-painted fragments. The quantity of transfer printed versus hand-painted wares, however, may have been influenced by a number of factors, including disposal practices (e.g. the residents may have discarded more hand-painted wares and taken more transfer printed wares with them when they moved away from the site). Indications that the site's early residents did not possess as much wealth as those of upper socioeconomic status were the predominance of pearlware versus porcelain and the quantity of shell edged pearlware. Pearlware, with its blue glaze and initially Oriental style of decoration, was manufactured as a cheaper alternative to Oriental porcelain. The high number of shell edged pearlware fragments also suggested economical purchasing behavior, since research (Miller 1990) shows a cost of cost 2 shillings/dozen for shell edged wares at the beginning of their production in 1783 and a further decline in cost during the early 19th century.

ii. Weldin Era Assemblage

The assemblage attributed to the Weldin family totaled 1944 artifacts from fifty-seven proveniences. The assemblage was composed primarily of domestic (52%) and architectural class artifacts (39%). Other artifact classes were heating by-products, farming-related, transportation-related, tools, arms/ammunition, ecological and indeterminate. Some insight to the socioeconomic status and consumer behavior of the Weldin family was gained from the assemblage.

Most of the domestic artifacts were glass bottle and fruit jar fragments (60%). Identifiable bottle types were wine, beer, soda, milk, bulk, and pharmaceutical. Of the soda bottles, two body fragments were from Pepsi bottles and one bottle base was from a bottle distributed by the Purity Beverage Company in Wilmington, Delaware. The Pepsi bottle fragments and the Purity Beverage bottle were from the same provenience, and may have been from the same bottle. No information could be found on Purity Beverage Company. While the manufacturers were not identifiable for the pharmaceutical bottles, embossing on one bottle indicated it was distributed from Baltimore and embossing on a second bottle indicated it was distributed from Wilmington. Neither, manufacturer nor origin was identifiable for any of the other bottle types or the fruit jars. One fruit jar liner, however, was made by the Hero Fruit Jar Company in Philadelphia, Pennsylvania. The Hero Fruit Jar Company made opal glass liners for Mason fruit jars from 1869 until the factory burned down in 1878.

Ceramic vessel fragments were the second-most abundant domestic artifact (27%). Ceramic types were pearlware (7% of ceramics), whiteware (37%), ironstone (23%), yellowware (1%), porcelain (5%), redware (24%), Jackfield-style redware (1%) and stoneware (1%). Since, pearlware is an early 19th century ceramic type, the pearlware fragments in this assemblage may have been from vessels Jacob Weldin's family brought with them to the site, or they may have been from vessels belonging to previous residents. The majority of the pearlware, whiteware, ironstone, yellowware and porcelain fragments were undecorated. Pearlware decorations were blue transfer print and shell edge blue. Whiteware was decorated with transfer print in blue and transfer print in purple, shell edge blue, dipped bands, colored glaze, overglaze decal, sponged decoration, underglaze painted designs and liquid gold banding. Ironstone was decorated with simple bands and transfer print. The only yellowware decoration observed was mocha, and the only porcelain decoration was overglaze painted polychrome floral designs. Redware was either lead glazed or unglazed; no slip-trailed decoration was present on redware in this assemblage. Stoneware consisted of gray salt glazed pieces, one of which had Albany-type slip on the interior side. Maker's marks were present on one piece of whiteware and one piece of ironstone. The whiteware vessel was manufactured by the Edwin M Knowles company, East Liverpool, Ohio in 1928. The ironstone vessel was manufactured by Willets Manufacturing Company in Trenton, New Jersey between 1879 and 1884.

Other domestic artifacts were glass tableware, lighting, furnishing parts, kitchen-related items, clothing items, a toiletry item, toys, other personal items, smoking equipment, a D-cell battery, bone and shell. Glass tableware was candy dish and tumbler fragments. Lighting consisted of kerosene lamp chimney glass and light bulb parts. Furnishing parts were an escutcheon and a manufacturer's identification plate. The manufacturer's identification plate was for a piece by

Charles C. Geissler of Philadelphia, who manufactured showcases between 1920 and 1930. Kitchen-related items were a milk bottle cap seal and fragments of a beverage can. Clothing items were shoe parts, a glass button and a shell button. The toiletry item was a lipstick container. Toys were a clay marble, parts of a porcelain doll, a metal toy gun, and a doll nursing bottle manufactured by Amsco toys. Other personal items were a pocket knife, a cog from a watch, a magnifying lens and a pewter token. Smoking equipment consisted solely of an undecorated clay tobacco pipe bowl. The D-cell battery was a dry cell type. Bone identifiable as domestic included chicken, goose, cow, pig and fish remains, as well as a medium mammal leg roast or leg steak, a shank roast from an Ungulate species (hoofed mammal) and a charred (burned gray/black) longbone or metapodial fragment from a medium or large mammal. The medium mammal leg roast/steak and the Ungulate shank roast were the only meat cuts in the assemblage and both had been sawn. Shell remains were from oyster and clam. Most of the shell was identifiable only as oyster/clam.

Architectural artifacts included both structural and drainage material. Brick (32% of architectural), window glass (28%) and nails (28%) were the predominant architectural artifacts. Most of the nails were cut (68% of nails), and the only other nails identifiable to manufacturing method were wire nails. Other architectural artifacts were cement or concrete, dressed wood, lime, mortar, plaster, roofing slate, tar paper, a ceramic electrical insulator, a light fixture, a bolt, rivets, spikes, a hinge, marble tile and miscellaneous wall tile and a drain plug. Drainage material was earthenware pipe and salt-glazed stoneware pipe. The earthenware pipe was recovered from STP 76 Stratum I, while the salt-glaze stoneware pipe was recovered from TU 14 Stratum I.

A wide variety of artifacts formed the remainder of the assemblage. Heating by-products were coal, cinder and slag. Farming-related artifacts were fencing and barbed wire. Transportation-related artifacts were fragments of an oil can. Tools were a hammer, a pulley, a wrench and sandpaper. Arms/ammunition consisted of a rim-fire bullet casing. The ecological remain was a rat bone. Indeterminate class artifacts were metal can fragments unidentifiable to content/use, metal sheeting, unidentifiable metal objects, paper, plastic, textile, wood, bone not identifiable as from a consumed or non-consumed animal, miscellaneous electrical wire, chain link, a hook, a washer, screws and a miscellaneous machine part.

The content of this assemblage indicated the Weldin family possessed an average socioeconomic status and consumer behavior oriented toward locally or, at least, American made goods. The greater number of whiteware and ironstone fragments, as well as the high number of undecorated ceramics, and the presence of fruit jars suggested frugal behavior. Whiteware was an inexpensive ceramic type compared to ironstone and porcelain. Ironstone, though more expensive than whiteware, was touted as more durable and therefore would have still been considered an economical purchase. The presence of porcelain suggested that the Weldins were able to purchase more expensive ceramics, but the small number of porcelain and the undecorated nature of most of it suggested they purchased this ceramic type infrequently and opted for the less expensive pieces. Undecorated vessels of any ceramic type would have been cheaper than decorated vessels. Home canning in fruit jars would have been a cost-efficient way to have fruits or vegetables when they were no longer in season. The maker's mark on ceramic vessels and glass bottles indicated a preference for American made, especially locally

manufactured, items. Both of the pharmaceutical bottles with maker's marks were from the Mid-Atlantic region, one even being from Wilmington. The Purity Beverage Company soda bottle could have been an intentional local purchase if the company manufactured its own beverages, but if they only bottled other beverage brands it would simply have been a factor of product distribution (i.e. a soda maker, like Pepsi, may have used Purity Beverage as a local distributor for its product).

The average socioeconomic status suggested by this assemblage may not be accurate, however. Probate inventories for Jacob and Atwood Weldin demonstrated more material wealth, and consequently higher socioeconomic status, than was reflected in the assemblage. The total value of Jacob Weldin's goods, excluding land and structures, in 1893 was \$5851. Most of the items were related to the family's agricultural activities and some were likely by-products of their farm, like the goose feather bed and the hen feather bed (Jacob owned four geese and fifty pairs of chickens at the time of his death (Taylor et al. 1989: 213). Other items would have been considered luxuries, though, including the secretary desk, two marble top tables, silver utensils, telescope and several books on military, local and Methodist history. The value of the family's dishes was not included in the probate inventory, so no correlation could be made between the artifact assemblage ceramics and any documented ceramics. The inventory of Jacob's son Atwood did not detail house contents, but was similarly appraised at \$5,571 in 1919.

The discrepancy between status suggested by the assemblage and status suggested by the probate inventories was likely a factor of curation. What was observed in the assemblage were items which were broken or simply replaced, while the probate inventories list items which were curated by the family through descending generations or, possibly, sold off when no longer used or wanted. As seen in the inventories, many of the Weldin family's possessions were not discarded on site, especially those of significant monetary value.

g. Interpretations

Based on documentary research, the Weldin site was occupied continuously from the early eighteenth century until its abandonment in 1934. Although the use and function of the farm varied during this rather long timeframe, the occupation of the farmstead can be broken down into three general phases. These include the owner occupied phase that dates from the original occupation of the property until the turn of the nineteenth century; the tenancy phase, which lasted from the turn of the nineteenth century until approximately 1861; and the final phase which began in 1861 when Jacob Weldin acquired the dilapidated property and gradually converted it into a dairy farm. The farmstead operated as a dairy until 1934 when it was acquired from the Weldin estate by a real estate development company (Taylor et al. 1989: 217).

One goal of the Phase II field work was to attempt to differentiate between contexts that predated the Weldin occupation of the site and those that date to the Weldin occupation or later. Problematically, a number of structures with relatively massive foundations were constructed during the Weldin occupation of the property. Disturbance associated with Weldin's construction activities appears to have impacted the of the eighteenth or early nineteenth century archaeological deposits in these areas, as some of the contexts examined during the Phase II were mixed, containing artifacts that date from multiple phases of the farmstead.

Based on the Phase II Archaeological Evaluation Testing, it appears that all of the visible structures on the property except for Structure A, the main residence, were constructed by Weldin after his acquisition of the property in 1862. The excavations have demonstrated that, as TAA proposed, the eastern portion of Structure A was constructed prior to the western portion, although both portions were probably constructed in the eighteenth century. The Phase II testing identified sixty-one proveniences that pre-date the Weldin occupation; most of these contexts were within test units associated with Structure A. These included Level IV and Features 2 and 3 located beneath the concrete floor in TUs 1 and 2; Levels III and IV in TUs 5 and 6; Levels III and IV and Feature 4 in TUs 9 and 10; Levels V and VI in TUs 11 and 12; Levels III-VI in TU 13, and Stratum II in TU 14. Other contexts that appear to pre-date the Weldin occupation include Level II in TU 18 and Level IV in TU 19. The STPs and TUs that contained strata appearing to pre-date the Weldin occupation of the site are listed in and are graphically depicted on *Figure 27*.

Jacob Weldin acquired the property in 1862 in a dilapidated condition. By 1870 Weldin had shifted the emphasis of the farm operation from crops to successful dairy production, and the construction of additional structures was necessary in order to accommodate the shift in strategy. Mr. Thomas Weldin, a descendent of the site's original occupants, indicated that Structure B functioned as a milk house. Structure C is interpreted as an equipment shed, as proposed by TAA. It is believed that Structure D was a shed/corn crib.

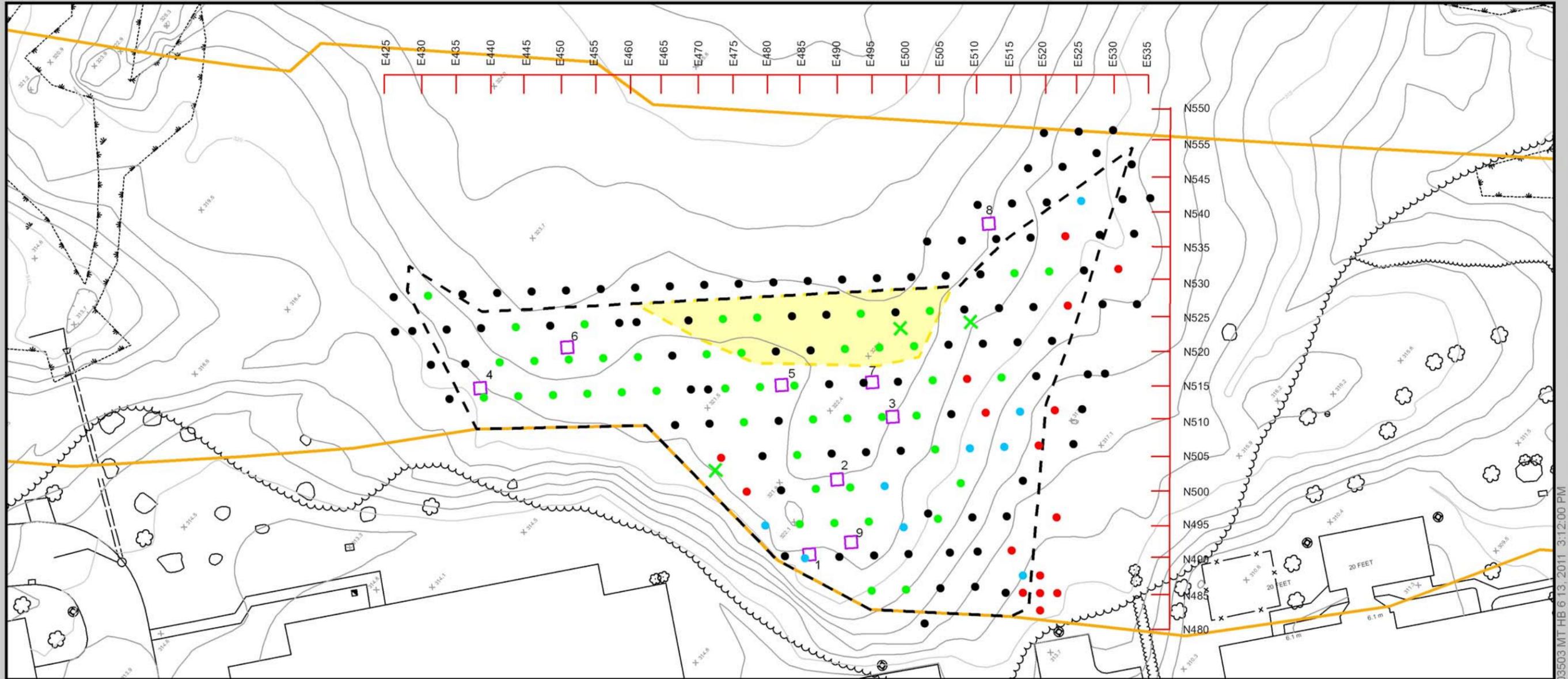
With respect to site boundaries, the area west of the first transect of STPs has been severely disturbed through previous construction staging activities and the installation of underground utilities. It appears, however, from the data gathered from the excavation of the STPs, that the first two transects of STPs were excavated on the original periphery of the site. The artifact density was low and there was no indication of features. The southern site boundary roughly corresponds to the existing tree line, and the majority of the artifacts within this portion of the site appeared to represent secondary deposits associated with twentieth century dumping activities. To the east, the artifact density drops off drastically in the areas to the north, east, and south of the barn yard, therefore, the site boundary was delineated by the easternmost transect of STPs.

2. The Ronald McDonald House Site (7NC-B-54)

a. Excavations

Phase II evaluation testing at 7NC-B-54 involved the excavation of 163 STPs placed at a 5 meter (~16.4 foot) interval followed by the excavation of nine 1x1 meter TUs (*Figure 28*). The Phase II STPs were identified by their grid coordinates. Phase II testing began in the vicinity of the artifacts recovered by JMA and proceeded in all cardinal directions.

The site is predominantly situated on a gently sloping wooded upland that is flanked by wetlands to the east and west. The soils, which are formed from residual materials derived from the native metamorphic gneiss and amphibolite rock of the region, are well developed. The maturity and density of this woodland indicates that the site area has not been plowed in recent times. In order



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● Shovel Test Pit Containing Prehistoric Artifacts	— Archaeological Area of Potential Effects
● Shovel Test Pit Containing Prehistoric and Historic Artifacts	- - Archaeological Site Boundary
● Shovel Test Pit Containing Historic Artifacts	■ Disturbed Area
● Shovel Test Pit Not Containing Artifacts	✕ Surface Prehistoric Artifact
	□ Test Unit

0 50 100 Feet

0 6 12 18 24 30 Meters

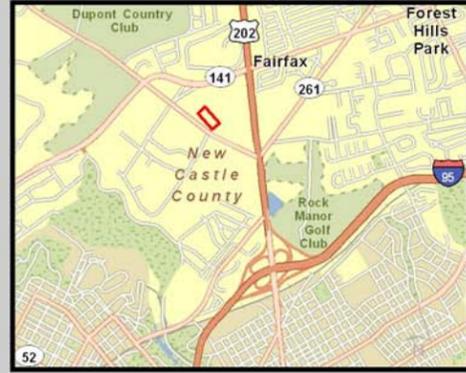


Figure 28

Ronald McDonald House Site (7NC-B-54)
Phase II Archaeological Evaluation Testing

Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware

to determine the level of disturbance across the site, Daniel Wagner, PhD, examined the soil profile in several locations within the site (*Appendix E*). He expressed the opinion that the site was probably plowed a small number of times using a plow drawn by farm animals. However, he indicated that the soil profile retains a relatively high level of integrity.

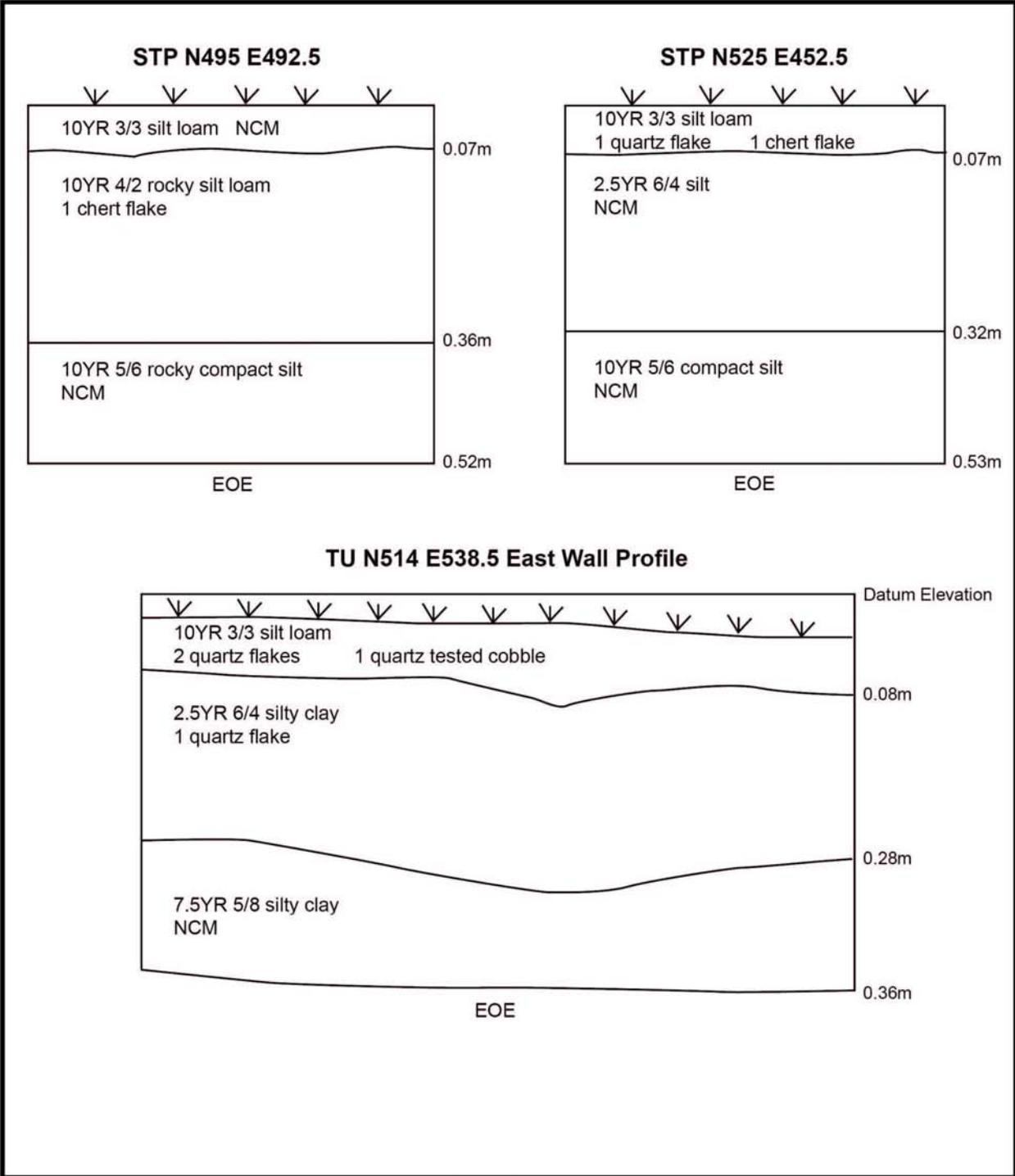
The excavations revealed two soil profile types. The first, as exhibited in the profile for STP N495 E492.5, appeared plow disturbed. It consisted of an initial dark brown (10YR 3/3) silt loam A/O horizon that was underlain by a brown silt Ap horizon and the compact yellowish brown (10YR 5/6) silt B horizon (*Figure 29*). The second exhibited the dark brown (10YR 3/3) silt loam A/O horizon above a light reddish brown (2.5YR 6/4) E/B horizon and a yellowish brown (10YR 5/6) to strong brown (7.5YR 5/8) silty clay Bt horizon, respectively (*Figure 29 and Photograph 20*).

A total of 182 pre-contact artifacts were recovered. These included three contracting-stemmed argillite projectile points; one quartz expanding stem point; one quartz corner notched point; one stemmed quartzite point; one basal notched metaquartzite point; five late stage bifaces; one middle stage biface; one early stage biface; two indeterminate bifaces; four retouched flakes; one jasper freehand core; one pebble tool; one manuport; one tested cobble; and 158 pieces of lithic debitage. No archaeological features were identified during the archaeological testing.

The east and west boundaries of 7NC-B-54 were established by McCormick Taylor, Inc. during the Evaluation Survey by excavating two consecutive non-artifact bearing STPs in each direction beyond all STPs containing pre-contact artifacts. The top edge of the graded slope associated with the Nemours Health Care Clinic and its parking lot are considered to be the southern boundary of the site. It is likely that the site extended to the south into the area that was by the construction of the Nemours Health Care and the Ronald McDonald House. The northern site boundary was established by disturbance caused from preliminary construction activities on the AstraZeneca Property while the Evaluation Survey was in progress. Although a transect of negative STPs had been excavated in the area before it was disturbed, artifact-bearing horizons were destroyed by the excavation and removal of large stumps by bulldozers. This area was surface collected subsequent to these activities. The western and eastern edges of the site coincide with the natural landscape. Artifact densities decreased with increasing proximity to the poorly drained wetlands to the east and west of the site.

Eight hundred and twenty-four historic artifacts were also recovered during the excavations. The artifacts were clustered in two locations; at the northeast corner of the site in STP N540 E525 and in the southeastern corner of the site in STPs N485 E510 and N485 E520. Historic artifacts were visible on the ground surface in both areas. Shovel test N540 E525 contained 531 twentieth century artifacts, 337 of which were clear vessel glass. No additional testing was performed in this area since the artifacts appeared to have been dumped in this area in the twentieth century. The surrounding STPs did not contain high quantities of historic artifacts.

Additional STPs were excavated around the concentration of historic artifacts in the southeastern corner of the site at 2.5 meter intervals to determine the approximate age of the deposit and to investigate the presence of features. The excavation of the close interval shovel tests indicated that the deposit was also a dump, approximately 10x5 meters (~33x16 feet) in size. A mix of



EOE - End of Excavation
 NCM - No Cultural Material

10 cm 20 cm

McCormick Taylor
 Engineers & Planners
 Since 1946

Figure 29
Representative Soil Profiles

Ronald McDonald House Site, 7NC-B-54
 Blue Ball Area Properties
 Transportation Improvement Project
 Brandywine Hundred, New Castle County, Delaware



Photograph 20: Ronald McDonald House Site, Test Unit N514 E538.5 north profile.

twentieth and nineteenth century artifacts were recovered from this area. This artifact concentration appears to represent a secondary deposit, as no historic structures were located in the vicinity, based on the results of the background research.

b. Artifact Analysis

One hundred and eighty-two pre-contact lithic artifacts were recovered from Phase II field effort at the Ronald McDonald House Site (*Table 2*), 158 of which were flakes (*Table 3*). Complete and fragmentary stone tools comprise approximately 13 % of the assemblage for a calculated tool to debitage ratio of 1:7.6. While eight different lithic material types were recovered, quartz artifacts make up 69.8 % of the assemblage, followed by jasper at 13.2 %, chert at 6 %, chalcedony at 4.4 %, quartzite at 3.3 %, and argillite at 2.2 %. A single biface tip of an unknown igneous material was recovered as well as a small, unworked pebble of what appears to be ironstone. This object is included in the assemblage as a possible manuport.

i. Artifact Description and Analysis

- **Tools**
- **Projectile Points**

Three contracting-stemmed argillite points were recovered from the site. One of these was recovered from the A/Ap horizon of STP N495E477.5 (*Figure 30a*). This point is nearly complete; however the tip appears to have been removed during recovery. The total length of the point is 57 mm with a width to thickness ratio at the shoulder of 2.25:1. The other two contracting-stemmed argillite points were recovered from the B horizon of TU 7 (N515 E495, Stratum II, Level 1). One of these is substantially complete, but a small portion of the tip was removed during the pre-contact period (*Figure 30b*). This point is 65 mm in total length with a width to thickness ratio at the shoulder of 2.3:1. An estimated 1/3 of the blade of the other argillite point is missing, also removed during the pre-contact period based the similarity of patination between the break and the face of the artifact (*Figure 30c*). This point displays a width to thickness ratio at the shoulder of 2:1. All of these points are weathered to the extent that flaking patterns are no longer discernable, making it difficult to determine whether pre-contact breakage was the result of impact fracture or the application of load during maintenance. From a typological perspective, these points resemble the Lackawaxen Converging Stem subtype proposed by Kinsey (1972:408-411). Radiometric dates stratigraphically associated with several of the Lackawaxen subtypes in the upper Delaware drainage span the fifth millenium BP (Kinsey 1975:52-60) while those from the middle Delaware Black's Eddy site cover the late fifth to middle fourth millenium BP (Schuldenrein et al 1991:58-64). It is important to note that Lackawaxen subtypes may be coterminous with Broadspear types of the middle fourth millenium BP at the Black's Eddy Site. Alternatively, their association with Broadspears at this site may be due to landscape stability during the fourth millenium BP (Schuldenrein et al 1991:65-66). Custer ascribes a much longer time span for the use of Lackawaxen types. Based on excavations

Table 2: 7NC-B-54 Artifact Type Distribution within Lithic Raw Material Types

Artifact Type	Lithic Raw Material								Type Totals
	Quartz	Jasper	Chert	Chalcedony	Quartzite	Argillite	Ironstone	Igneous	
Projectile Point	2				2	3			7 (3.9%)
Early-Stage Biface	1								1 (0.5%)
Middle-Stage Biface	1								1 (0.5%)
Late-Stage Biface	2	1			1			1	5 (2.8%)
Indeterminate Biface	1	1							2 (1.1%)
Retouched Flake	3				1				4 (2.2%)
Pebble Tool		1							1 (0.5%)
Freehand Core		1							1 (0.5%)
Decortication Flake	4								4 (2.2%)
Early Reduction Flake	12	6	3		1				22 (12.1%)
Biface Reduction Flake	13	7	2	6		1			29 (15.9%)
Bipolar Flake			1						1 (0.5%)
Indeterminate Flake	14	1		1					16 (8.8%)
Flake Fragment	56	6	4	1					67 (36.8%)
Blocky Shatter	17		1		1				19 (10.4%)
Tested Cobble	1								1 (0.5%)
Unmodified Raw Material							1		1 (0.5%)
Raw Material Totals	127 (69.8%)	24 (13.2%)	11 (6.0%)	8 (4.4%)	6 (3.3%)	4 (2.2%)	1 (0.5%)	1 (0.5%)	N=182

Table 3: 7NC-B-54 Distribution of Flake Debris by Type and Raw Material

Artifact Type	Lithic Raw Material								Type Totals
	Quartz	Jasper	Chert	Chalcedony	Quartzite	Argillite	Ironstone	Igneous	
Decortication Flake	4								4 (2.6%)
Early Reduction Flake	12	6	3		1				22 (13.8%)
Biface Reduction Flake	13	7	2	6		1			29 (18.2%)
Bipolar Flake			1						1 (0.6%)
Indeterminate Flake	14	1		1					16 (10.1%)
Flake Fragment	56	6	4	1					67 (42.1%)
Blocky Shatter	17		1		1				19 (12.0%)
Raw Material Totals	117 (73.6%)	20 (12.6%)	11 (6.9%)	8 (5.0%)	2 (1.3%)	1 (0.6%)	0	0	N=158



Figure 30a
Argillite Lackawaxen-
like Projectile Point
STP N495 E477.5
Stratum I



Figure 30b
Argillite Lackawaxen-
like Projectile Point
TU 7 (N515 E495)
Stratum II Level 1

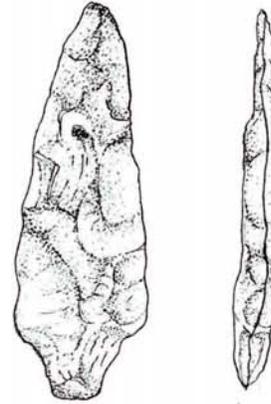


Figure 30c
Argillite Lackawaxen-
like Projectile Point
TU 7 (N515 E495)
Stratum II Level 1



Figure 30d
Quartz Corner-Notched
Projectile Point
STP N515 E447.5
Stratum I

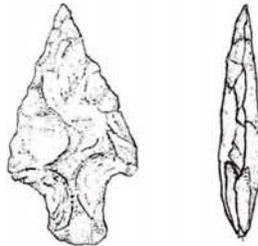


Figure 30e
Quartzite Stemmed
Projectile Point
STP N525 E447.5
Stratum I

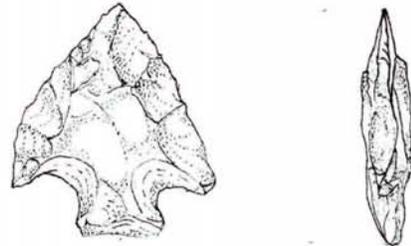


Figure 30f
Metaquartzite
Basal-Notched
Projectile Point
TU 9 (N492 E492)
Stratum II Level 1



McCormick
 Engineers & Planners
 Since 1946 **Taylor**

Figure 30
7NC-B-54 Artifact Illustrations

Blue Ball Area Properties
 Transportation Improvement Project
 Brandywine Hundred, New Castle County, Delaware

at the Clyde Farm, Custer sees this type persisting as late as the mid-third millennium BP (Custer 1984:80-81).

A single quartz expanding stem point was recovered from TU 9 (N492 E492, Stratum II, Level 2). The tip is missing; a combination of a flat fracture on the break and a hinge fracture originating at the break suggest that the point fractured on impact. Total length is 54 mm and the width to thickness ratio at the shoulder is 2.2:1. The edges of this point are slightly excurvate and the base is straight. This point is the largest of all the recovered points and its size probably indicates that a bedded source or quartz float from a bedded source was used for its manufacture. As with many of the stemmed and notched projectile forms, this example does not allow a restricted chronological placement. As Custer notes, generalized expanding stem points are present in contexts spanning the seventh to first millennium BP (2001:40).

A small quartz corner-notched point was recovered from STP N515 E447.5, Level 1 (*Figure 30d*). Total length is 27 mm. One shoulder was removed therefore a width to thickness ratio could not be calculated. Blade edges are straight and exhibit careful and even retouch. The base is slightly concave. Although this specimen bears some resemblance to the Jack's Reef Corner-Notched type defined by Ritchie (1971:26-27), it is certainly not a "classic" example of the type and can only be referred to the general span of Custer's Woodland I cultural period (Custer 1984:28-30).

A small, stemmed quartzite projectile was recovered from STP N525 E477.5, Level 1 (*Figure 30e*). Total length is 40 mm. Blade edges are straight and converge to an isocetes form. Width to thickness ratio at the shoulder is 2.75:1. The notches join the stem at right angles. The base is slightly convex and lightly abraded. Like the above point, it is ascribable only to the broad Woodland I cultural period (Custer 1984:28-30).

A single basal-notched projectile point of blue-grey metaquartzite was recovered from the B horizon of TU 9 (N492 E492, Stratum II, Level 1) (*Figure 30f*). This point has a straight-stemmed base with deep notches originating from the base. Blade edges are asymmetrical with one excurvate and one straight edge. A large "stack" on one face indicates that the point was significantly larger at one time. Total length is 39 mm and the width to thickness ratio at the shoulder is 3.1:1. Basal notched points were stratigraphically associated with Mockley pottery at the Erb Rockshelter in Lancaster County, Pennsylvania (Kent and Packard 1969) and Custer (1989:156) notes that if this association is correct, basal-notched forms should date between 0 and 600 A.D.

- **Other Bifaces**

One early-stage and one middle-stage biface fragment, both manufactured from quartz were recovered from the site. The early stage biface fragment is from STP 510 E495, Level 2. It is 45 mm in maximum length and displays a perverse fracture along its long axis. The middle-stage fragment is from TU 5 (N514.5 E482) Stratum 2, Level 2. Its maximum length is 48 mm and the break is flat. The pattern of breakage on both fragments suggests manufacturing failures.

The site yielded five late-stage biface fragments: One quartzite point tip from STP N510 E515, Level 2, a quartz biface tip from the surface at N535 E475, a biface tip of an unknown igneous material from STP N495 E477.5, Level 1, a small shoulder fragment of a notched quartz point from STP N520 E440, Level 2, and a well-thinned, finely-retouched jasper biface midsection from STP N525 E512.5, Level 2.

The site also yielded two indeterminate bifaces: a bifacially worked jasper fragment from STP N500 E490, Level 2, and a complete, thin, bifacially retouched quartz specimen from STP N525 E492.5. The latter specimen probably represents a generalized cutting tool.

- **Retouched Flakes**

Four retouched flakes were recovered from the site. One quartz flake (26 mm max. length) from STP N505 E507.5, Level 2 is bifacially retouched along its distal margin. Another, larger quartz flake (41 mm max. length) from STP N505 E482.5, Level 1, is bifacially retouched along both lateral margins. The quartz flake from STP N520 E495, Level 2 (30 mm max length) is bifacially retouched along a single lateral margin. Finally, a quartzite flake (32 mm max. length) from STP N530 E515, Level 1 displays extensive unifacial retouch along its lateral edge.

- **Other Tools**

A single pebble tool was recovered from STP N505 E512.5, Level 1. This specimen is a thin, oval jasper pebble 34 mm in maximum dimension with three flakes removed from one end. A 9 mm long portion of the flaked margin displays abrasion, probably from use.

- **Debitage**

- **Cores**

A single jasper freehand core fragment was recovered from STP N520 E490, Level 2. This specimen is 42 mm in maximum length and weighs 20.6 g. Coarse quartz crystals cover a portion of its surface indicating a bedded source. Flake scars are multidirectional and suggest the production of usable flakes.

One hundred fifty-eight pieces of flake debris were recovered during Phase II testing at the Ronald McDonald House Site (*Table 3*). In general, flake debris from the site suggests that although early- through late-stage tool manufacture was undertaken, the majority of debitage was removed during later stages. The four quartz decortication flakes all display varying amounts of pebble cortex over 50 % on their dorsal surfaces. The pebbles from which they were struck may have been reduced in a bipolar fashion, but compression rings are not evident on their ventral surfaces. Of the 22 early reduction flakes, six retained pebble cortex on their platforms. These six early reduction flakes were on quartz (N=3), chert (N=2), and jasper (N=1). A single chert bipolar flake is present in the assemblage; this specimen also bears pebble cortex. Blocky shatter is represented by 19 artifacts (*Table 4*). Eleven of these specimens are large enough to suggest their removal from relatively large objective pieces while eight are less than one gram. These eight may actually be small flake fragments which did not possess clear dorsal flake scars.

Table 4: 7NC-B-54 Weight Distribution of Blocky Shatter

Weight	Total and Lithic Material
0 to 1g	8 quartz
1.1 to 5g	5 quartz, 1 chert, 1 quartzite
5.1 to 10g	1 quartz
10.1 to 20g	2 quartz
20.1 to 30g	1 quartz

Later stages of tool manufacture are indicated by the size distribution of the subassemblage of complete flakes. Although the type name “early reduction flakes” suggests early stage reduction, the primary attributes for inclusion in this type are either cortical or flat platforms. As noted above, early reduction flakes with cortical platforms comprise roughly one-quarter of this flake type, indicating some attention to the earlier stages of reduction. However, flakes with flat platforms can be produced in several reduction trajectories, including the early stages of core or biface reduction, core trimming/rejuvenation, the reduction of bifacial preforms into finished bifaces, and uniface production. All things being equal, however, the expectation is that core reduction for usable flakes or the initial and middle stages of biface manufacture should result in a relatively higher number of larger flakes, and this is not the case in the subassemblage of complete flakes.

In order to quantify the distribution of flake size, a size index was calculated for all complete flakes (i.e. flakes that display feathered, hinged, or overshoot terminations) where flake length was multiplied by flake width and divided by 100 for a manageable number. Using this system, a flake 10 mm in length and 10 mm in width has a size index of 1.00. As can be seen in *Table 5*, the result for complete quartz flakes, regardless of type, is that 23 of 25 flakes have size indices of less than 2.01, which means that the overwhelming majority of complete quartz flakes are 20 mm or less in maximum dimension. This distribution suggests that the majority of complete quartz flakes were removed during later stages of reduction rather than in core reduction, initial biface edging or thinning.

Table 5: 7NC-B-54 Size Distribution of Complete Quartz Flakes

Length in millimeters	Early Reduction Flake	Biface Reduction Flake	Indeterminate Flakes	Total
0 to 1	2	3	7	12
1.01 to 2	2	5	4	11
2.01 to 3	1	0	0	1
3.01 to 4	1	0	0	1
4.01 to 5	0	0	0	0
5.01 to 6	0	0	0	0
Total	6	8	11	25

The size distribution of complete jasper, chert, and chalcedony flakes, depicted in *Table 6*, is similar to that of quartz in that the majority of flakes are less than 2.00 mm in maximum dimension, suggesting again that flakes of these raw material types were removed during later stages of tool production. However, a single chert flakes has a size index of 8.23, which probably represents a biface thinning flake. The complete flake data for these raw material types must be viewed with caution, because a lower proportion of complete to broken flakes is present than was the case with quartz flakes. A single complete biface reduction flake of argillite not included in the above table has an index of 4.83, which probably represents a thinning flake.

Table 6: 7NC-B-54 Size Distribution of Complete Jasper, Chert, and Chalcedony Flakes

Length in millimeters	Early Reduction Flake	Biface Reduction Flake	Indeterminate Flakes	Total
0 to 1	0	1	1	2
1.01 to 2	1	5	1	7
2.01 to 3	2	0	0	2
3.01 to 4	0	0	0	0
4.01 to 5	0	0	0	0
5.01 to 6	0	0	0	0
6.01 to 9	0	1	0	1
Total	3	7	2	12

ii. Raw Material Utilization

Within both tool and debitage subassemblages, quartz appears to have been the most frequently used raw material, which probably reflects its availability in site soils and its more likely source, the bed of the small tributary which borders the site (*Table 7*). Bedded sources of quartz are also present in close proximity to the site within the Wissahickon Formation. As noted in the above sections, both pebbles and bedded sources were utilized for tool manufacture. Jasper was the next most frequently utilized material, displaying approximately equal representation as finished tools and debitage. Neither chert nor chalcedony tools were recovered, although they are represented by minor amounts of debitage. This pattern is difficult to explain for chert, because it occurs at the same bedded locations approximately 30 km west of the site, although this may be related to the small excavated sample. Again, there is evidence for the utilization of both bedded and secondary sources of chert at the site. Quartzite is represented primarily as finished tools as is argillite. Although this may reflect a premium on the curation of tools of these materials due to the distance of their sources, Custer (1989:57-59) notes that the former is present as pebbles/cobble in Fall Line and coastal deposits while small outcrops of the later are present within Delaware’s portion of the piedmont. Perhaps the “safest” interpretation of the patterns of raw material utilization at this site is that the predominance of quartz represents its greater availability to the site’s occupants while the minor amounts of other materials reflects their relative scarcity in the immediate area.

Table 7: 7NC-B-54 Distribution of Tools and Debitage by Raw Material Types

Artifact Type	Lithic Raw Material								Totals
	Quartz	Jasper	Chert	Chalcedony	Quartzite	Argillite	Ironstone	Igneous	
All Tools	10	3	0	0	4	3	0	1	21
% within Material	47.6	14.3	0.0	0.0	19.0	14.3	0.0	4.8	100.0
All Debitage	117	21	11	8	2	1	0	0	160
% within Material	73.1	13.1	6.9	5.0	1.3	0.6	0.0	0.0	100.0

iii. Spatial Patterning

Table 8 depicts the vertical distribution of artifacts within test units. It is apparent that the majority of artifacts were recovered beneath the present A/Ap horizon. This is also true of the vertical distribution of artifacts recovered from shovel tests outside of the disturbed area (*Table 9*). When combined, the raw data on vertical distribution within the soil profile suggests that the majority of artifacts were left at the site prior the formation of the modern A/Ap horizon. Two of the three Lackawaxen points, the Basal Notched point, and the expanded stem point were recovered from the B horizon, while the other Lackawaxen point, the corner-notched point, and the stemmed pointed were recovered from the A/Ap horizon. Although the distribution of these chronologically diagnostic artifacts suggests that the organic enrichment of the A/Ap horizon soils may have taken place after the Woodland I cultural period, their low number does not permit a conclusive statement one way or the other. All that can be said with certainty based on the data at hand is that the majority of artifacts are likely to have been discarded prior to the deposition of sediment that makes up the current A/Ap horizon.

Table 8: 7NC-B-54 Vertical Distribution of Artifacts from Test Units

Stratum	# Artifacts	% Artifacts
Stratum I	12	22.2
Stratum II, Level 1	27	50.0
Stratum II, Level 2	11	20.4
Stratum III, Level 1	4	7.4
Total	54	100

Table 9: 7NC-B-54 Vertical Distribution of Artifacts from Shovel Tests

Level	# Artifacts	% Artifacts
Level 1	19	19.5
Level 2	64	66.0
Level 3	5	5.2
Level not noted	9	9.3
Total	97	100

Horizontal patterning on the site is more clear-cut, at least in terms of artifact density. Two areas of higher artifact density are present; one concentrated in the flatter, southeastern and central portions of the site and the other in the more steeply sloped northwestern portion. The majority of tools are concentrated in the latter high-density area. The recovery of two Lackawaxen points in Test Unit 7 may reflect the close proximity of an early Woodland I activity area.

c. Interpretations

Based on the above analysis, human use of the site may date as early as ca. 5000 BP and continued to at least ca. 1400 BP, effectively spanning the Woodland I cultural period. The excavated sample from this site did not result in the definition of obvious horizontally or vertically separable components or activity areas that can be linked to shorter intervals within this 4000-year span, and therefore our conclusions regarding the nature of site utilization are based on a time-averaged sample. The tool to debitage ratio at this site is relatively high at 1:7.6., but at the same time, overall tool diversity is relatively low. Projectile points, bifaces (in the process of manufacture and at the end of their use lives), retouched flakes, and a single pebble tool were the only tool forms recovered. These assemblage characteristics, together with the fact that the majority of the debitage can be assigned to later portions of the reduction sequence, suggest that a restricted range of activities were carried out at the site. This conclusion is also supported by the lack of evidence for resource processing (i.e. features, or feature indicators like fire-cracked rock). And although absence of evidence is not necessarily “evidence of absence”, the data recovered through the use of a 5-meter test interval suggest that if features are present at the site, they are probably small and spatially restricted.

3. The Augustine Cutoff Site (7NC-B-49)

The Phase I testing conducted by TAA identified an open cistern approximately 50 feet (~15 meters) to the west of Concord Pike, in addition to a concentration of brick and mortar on the ground surface near the cistern in a relatively confined area measuring approximately 50x100 feet (~15x30 meters), and concentrations of artifacts from the shovel tests excavated in the vicinity of the cistern (Wholey et al. 2000: 57).

Additional background research, which included the review of early twentieth aerial photographs and historic maps indicated that there were two structures on this property. An early sketch map of early twentieth landmarks along Concord Pike (Mariane 1992) includes two houses in the location of the Augustine Cutoff Site. The maps consist of the recollections of a woman who lived in the area in the twentieth century who referred to the land across from the Porter Reservoir as “Alfred I DuPont Farmland” and the buildings are described as “duPont Employee Homes.” These houses do not appear on the 1893 Atlas of New Castle County, the 1904 West Chester, Pennsylvania USGS 15 minute series quadrangle, nor aerial photographs taken circa 1927 and in 1935. However, they appear in the distance on a photograph taken during the construction of the Porter Reservoir, which was completed in 1909 (*Photograph 1*). Therefore, the houses were likely constructed between 1904 and 1909, and were demolished before 1927.

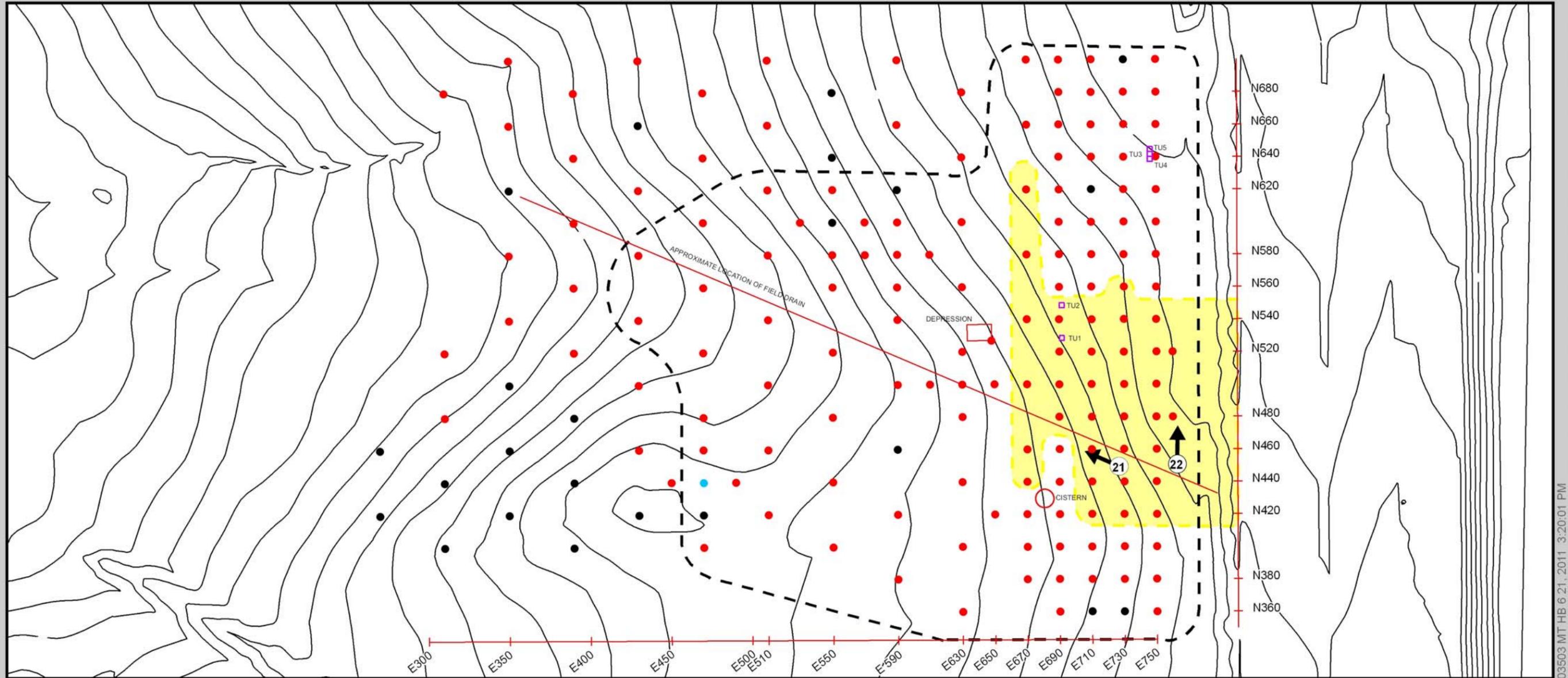
a. Excavations

The Phase II Evaluation testing (*Figure 31*) initially focused on the area around the cistern with the excavation of STPs placed at 20 foot intervals (*Photographs 21 and 22*). The STP interval was increased to 40 feet (~12.2 meters) as artifact densities decreased with increasing distance from the portion of the site containing the cistern. The first transect of shovel tests was placed approximately 50 feet (~15 meters) west of Concord Pike due to underground utilities that parallel the road. The Phase II Evaluation investigations at the Augustine Cutoff Site involved the excavation of 175 STPs and five 3x3 foot TUs (*Figure 31*). Each STP was numbered according to their grid coordinates.

The vast majority of the STPs excavated in the field containing the site exhibited a dark yellowish brown (10YR 4/4) plowzone overlying the strong brown (7.5YR 5/6) to yellowish brown (10YR 5/8) silty clay subsoil as seen in the profile for STP N380 E670 in *Figure 32*. With the exception of STPs N460 E690, N460 E670, and N440 E690, which revealed typical plowzone/subsoil stratigraphy, the STPs excavated to the north of the cistern within an area measuring approximately 140x140 feet (~42.7x42.7 meters) revealed profiles exhibiting variable levels of disturbance. Shovel test N420 E750 for example, contained a dark yellowish brown (10YR 3/4) silt loam modern plowzone and a brownish yellow (10YR 6/6) loam above the original dark yellowish brown (10YR 3/4) silt loam plowzone and the yellowish brown (10YR 5/8) clay loam subsoil, respectively (*Figure 32*). Moving northward, the profiles revealed higher levels of disturbance. No intact soils were encountered in STP N540 E750, for example. This test revealed the initial dark yellowish brown (10YR 3/4) silt loam surface horizon, but was underlain by yellowish red (5YR 4/6) clay loam fill and the yellowish brown (10YR 5/6) silty clay subsoil (*Figure 32*). A number of the shovel tests excavated within the disturbed area north of the cistern contained large rocks within fill-related contexts that may have been associated with a foundation, but no intact stone foundation remains were encountered.

Further soil anomalies were encountered in three consecutive shovel tests along the E690 line (STPs N520 E690, N540 E690, and N560 E690). In STP N520 E690 the stone laden plowzone and overlying fill layers were truncated (*Figure 32*); in STP N540 E690 the plowzone contained high quantities of rock that appeared to correspond with the disturbed soil in the previous STP; and the edge of a soil stain was identified at the subsoil interface in STP N560 E690. This area was further investigated with TUs 1 and 2 and is described below.

In addition to the cistern, a 10 by 15 foot rectangular depression located approximately 100 feet (~30 meters) north of the cistern (~160 feet [~49 meters] west of the existing edge of Concord Pike) was discovered during the shovel testing of the field containing the site (*Figure 31*). Shovel test N527E648 was excavated at the southeastern corner of the depression. In this shovel test, a rectangular postmold was encountered at the interface between the plowzone and the subsoil. To expose the feature in its entirety, the shovel test was expanded to comprise an area measuring approximately 2x3 feet (~0.6x0.9 meter). The postmold measured approximately 0.6x0.8 feet (~0.18x0.24 meter) in plan size and was found to lie just outside of the depression at the corner. The depression probably represents the previous location of an outbuilding.



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● Shovel Test Pit Containing Prehistoric Artifacts	○ → Photograph Locations
● Shovel Test Pit Containing Prehistoric and Historic Artifacts	--- Archaeological Site Boundary
● Shovel Test Pit Containing Historic Artifacts	● Areas Exhibiting Disturbed STP Profiles
● Shovel Test Pit Not Containing Artifacts	□ Test Unit

0 50 100 Feet
0 6 12 18 24 30 Meters

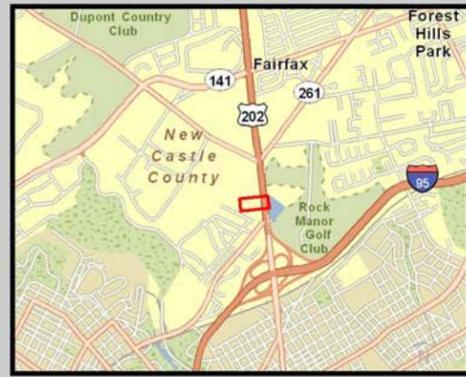


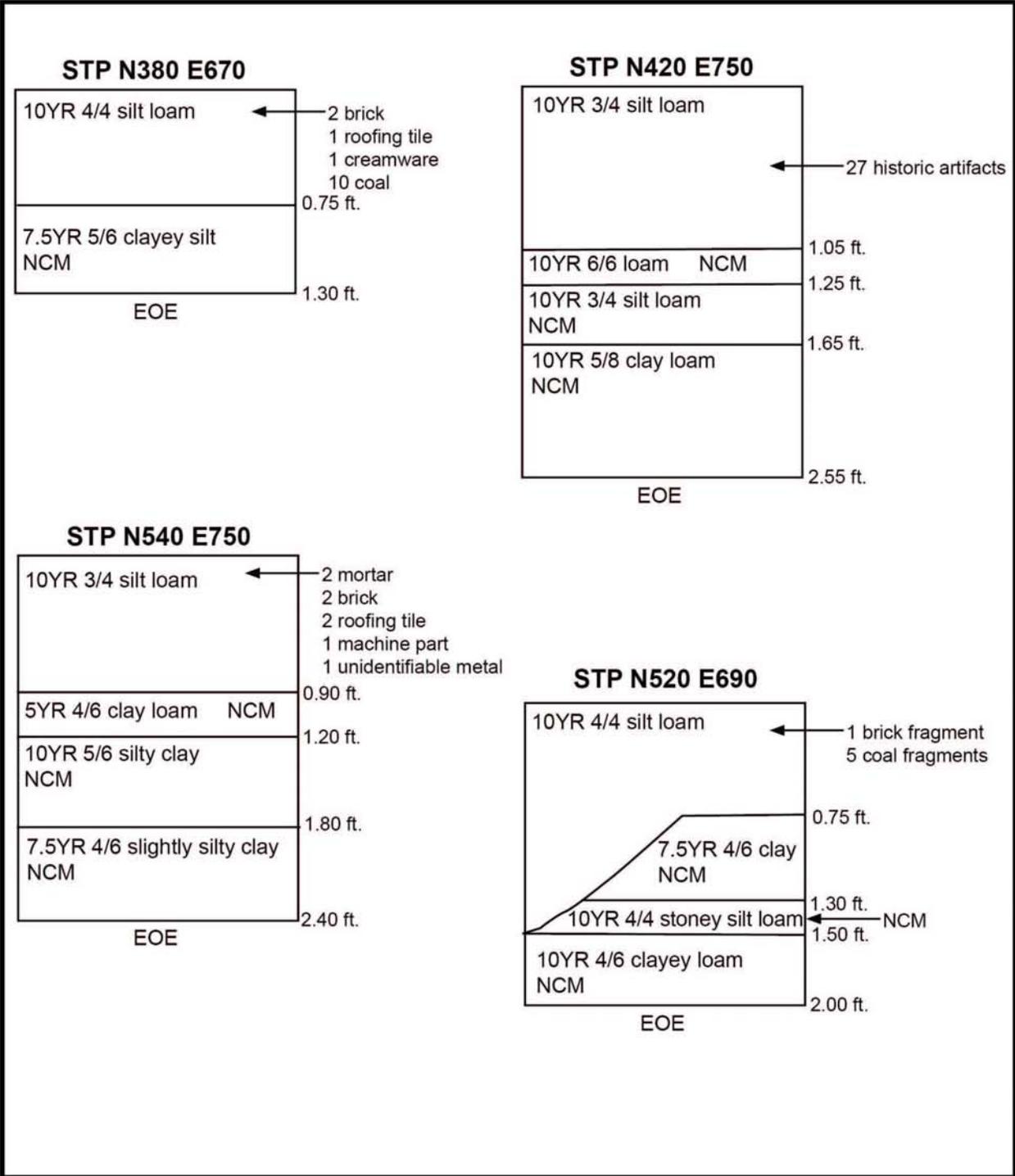
Figure 31
Augustine Cutoff Site (7NC-B-49)
Phase II Archaeological Evaluation Testing
Blue Ball Properties Area Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware



Photograph 21: View of field containing the Augustine Cutoff Site, facing west.



Photograph 22: View of the field containing the Augustine Cutoff Site, facing north.



EOE - End of Excavation
 NCM - No Cultural Material

0.5 1.0 foot

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Figure 32
Representative STP Profiles

Augustine Cutoff Site, 7NC-B-49
 Blue Ball Area Properties
 Transportation Improvement Project
 Brandywine Hundred, New Castle County, Delaware

Artifacts recovered during the shovel testing generally consisted of a low density scatter of late nineteenth/early twentieth century architectural and domestic artifacts. Thirteen of the artifacts predate the late nineteenth century. These include 1 delft ceramic fragment (STP N520E710), 3 possible creamware fragments (STPs N380E670, 2 from N460E670), 2 possible pearlware fragments (STPs N380E730, N420E710), and 7 possible early bottle glass fragments (STPs N400E710, N460E670, N460E690, N500E710, 3 from N500E750). The earlier artifacts were interpreted as field scatter deposited prior to the occupation of the site. Just one pre-contact artifact, a chert biface, was recovered from STP N440E470. The artifact was the medial portion of a denticulated edge blade. The STP was bracketed at 20 foot intervals to investigate the presence of additional pre-contact artifacts. No additional pre-contact artifacts were recovered.

i. Test Units 1 and 2

To ascertain whether the soil anomalies encountered in the STPs along the E690 line were foundation of feature related, TUs 1 (N530E690) and 2 (N550E690) were placed in the area to provide additional stratigraphic information. Test Unit 1 consisted of the plowzone overlying the subsoil and did not appear to have been disturbed other than through plowing. Thirty-three historic artifacts were recovered from TU 1.

In TU 2, two fill horizons, the dark yellowish brown (10YR 4/4) modern plowzone (Level 1) and a strong brown clay (Level 2) were found to overlay the rock and gravel laden brown (10YR 4/3) original plowzone (Level 3) that contained broken pieces of earthenware pipe that appeared to be a field drain (*Figure 33*). After further pedestrian reconnaissance of the field containing the site, other collapsed sections of field drain were observable on the ground surface in areas that were not covered in fill.

ii. Test Units 3-5

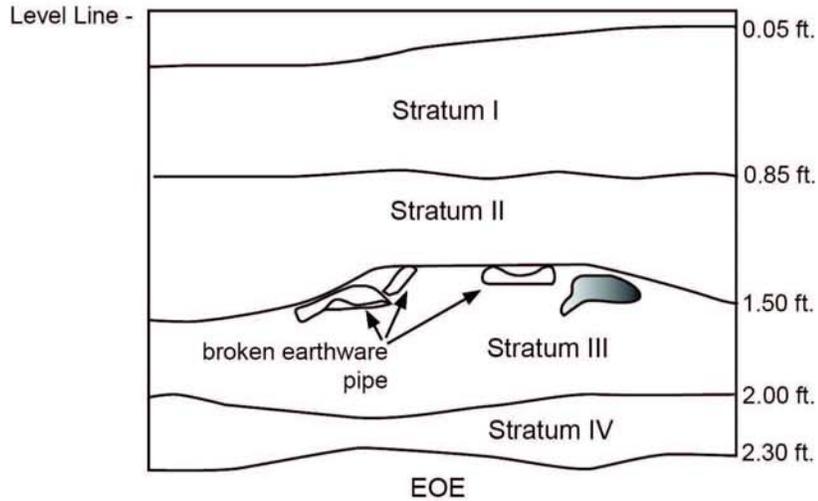
The western portion of the STP N640E750 contained the edge of a soil stain (designated Feature 1) at the interface with the subsoil. An abundance of late nineteenth century/early twentieth century artifacts, some which appeared to have been burned, were found within the stain. Test Unit 3 (N640E736) was excavated adjacent to the west of the STP in which the Feature 1 was originally identified (*Figure 34*). Test Units 4 (N637E746) and 5 (N643E746) were subsequently excavated to the south and north of TU 3 to define the limits of the feature.

The stratigraphy in TUs 3-5 consisted of a roughly 0.5 foot (~.15 meter) thick plowzone overlying the subsoil. A total of 502 artifacts were recovered from the plowzone in TUs 3-5.

- **Feature 1**

The approximate western, northern, and southern boundaries of Feature 1 were delineated at the interface of the subsoil (*Figure 34*). The feature was roughly rectangular in shape, approximately 5.5 feet (~1.7 meters) in length along its north to south axis and 3.5 feet (~1.0 meter) in width along its east to west axis. The portion of Feature 1 that fell within TUs 3 and 4 was excavated and the depth was found to extend approximately 1.1 feet (~0.34 meter) below the elevation of the subsoil (*Figure 35*). The feature fill consisted of a layer of coal ash and cinders

Test Unit 2



- Stratum I - 10YR 4/4 silt loam
- Stratum II - 7.5YR 5/8 clay loam
- Stratum III - 10YR 4/3 silt loam - approximately 75% gravel
- Stratum IV - 10YR 5/8 silty clay

EOE - End of Excavation

 - Rock

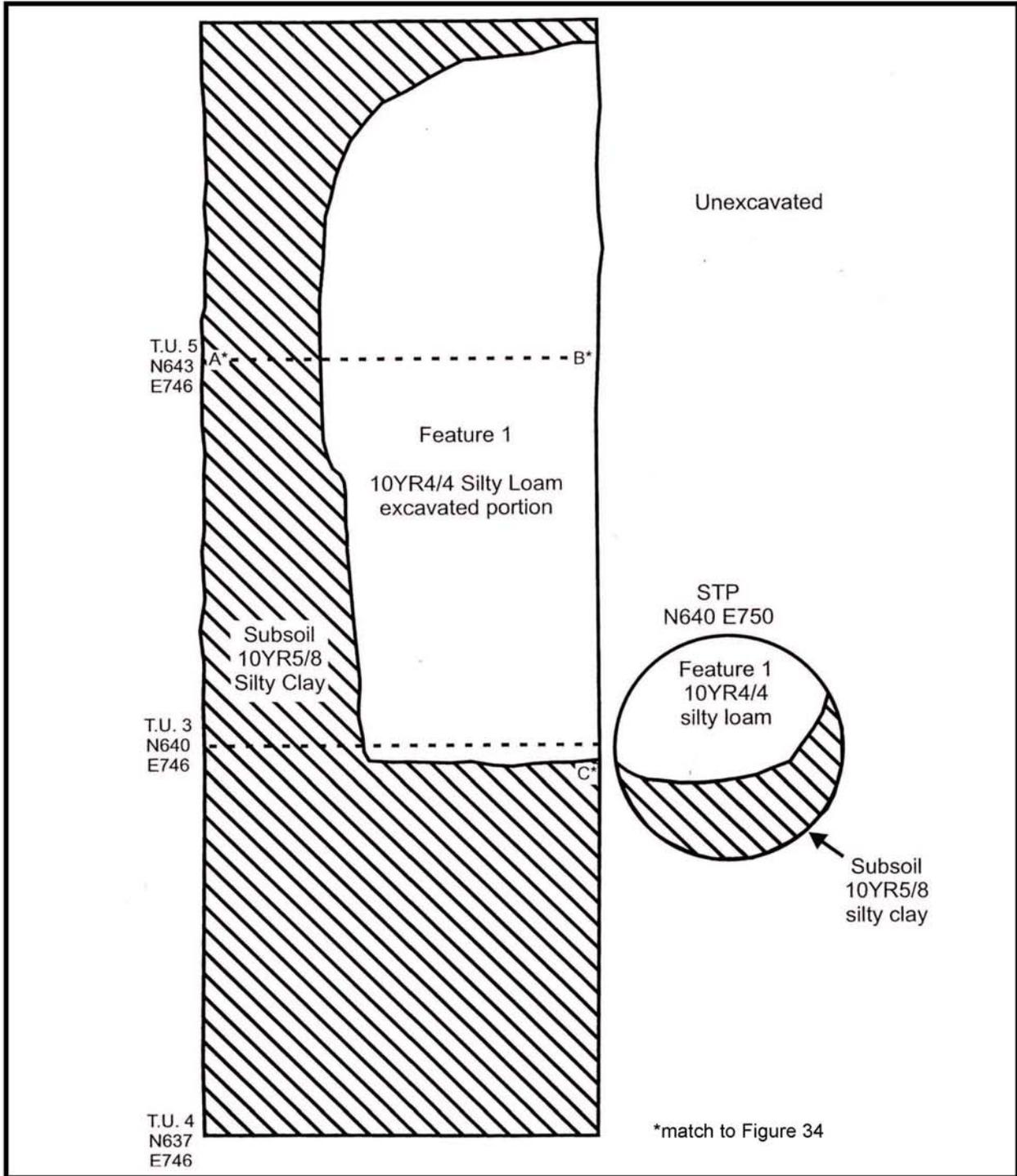


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Figure 33

Test Unit 2 (N550 E690) North Profile

Augustine Cutoff Site, 7NC-B-49
 Blue Ball Area Properties
 Transportation Improvement Project
 Brandywine Hundred, New Castle County, Delaware



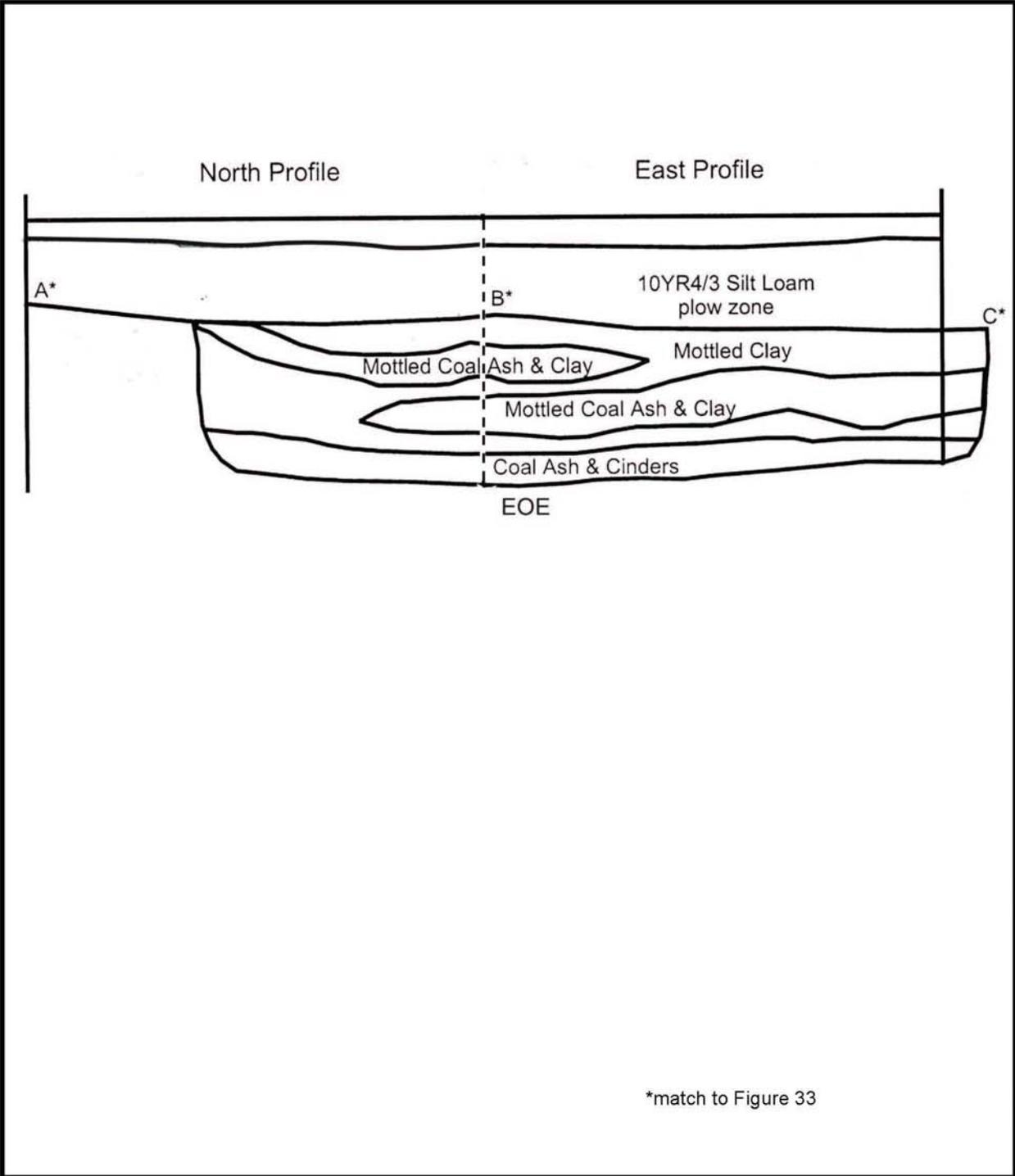
EOE - End of Excavation

0.5 1.0 foot

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Figure 34
Feature 1 Planview

Augustive Cutoff Site, 7NC-B-49
Blue Ball Area Properties
Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware



EOE - End of Excavation

0.5 1.0 foot

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Figure 35

Test Unit 3, Feature 1 Profile

Augustive Cutoff Site, 7NC-B-49
Blue Ball Area Properties
Transportation Improvement Project
Brandywine Hundred, New Castle County, Delaware

overlain by a mottled clay fill. The mottled clay fill contained lenses of coal and cinder also. No evidence of burned soil was observed during the excavation of the pit, therefore it appears that the pit was partially filled with material that had been burned elsewhere and was then introduced to the pit, along with additional unburned items. Feature 1 yielded 1756 historic artifacts, dating predominantly to the late nineteenth/early twentieth century. Based on the dates of the recovered artifacts, it appears that Feature 1 was created when the property was abandoned in the 1910s or early-mid 1920s.

b. Artifact Analysis

Excavations at Augustine Cutoff (7NC-B-49) yielded a total of 4181 historic artifacts and one pre-contact artifact (*Appendix F*), the medial portion of a denticulated chert biface. The historic assemblage consisted predominantly of nineteenth century and twentieth century artifacts; several dating to the eighteenth century were also recovered. Historic artifact classes were domestic, architectural, heating by-product, farming-related, transportation-related, arms or ammunition, and indeterminate. The assemblage was recovered from 153 shovel test pits and five test units. Terminus Post Quem (TPQ) dates indicated nineteenth century and early to mid-twentieth century depositional periods for most proveniences.

Domestic artifacts accounted for 41% of the historic assemblage. Artifacts classed as domestic were tableware, beverage and food associated artifacts, home furnishings, personal items, gardening-related items, and paper, plastic, styrofoam and textile artifacts unidentifiable to form or function. Tableware included earthenware, stoneware, refined earthenware and porcelain vessel fragments, as well as tumbler glass, a glass serving bowl and a brass fork. Fragments of redware vessels likely used for food storage or presentation were 9% of the tableware ceramics and stoneware vessel fragments were .7%. Two fragments of delftware were present and were .4% of tableware ceramics. Whiteware was the dominant refined earthenware (82%) and tableware ceramic type (61%). Creamware fragments were .9% of tableware ceramics, pearlware was .4%, ironstone was 10%, and yellow ware was .5%. Several ironstone and whiteware pieces possessed manufacturing marks. All maker's marks were for New Jersey based pottery companies; three were used by the Cook (and Mellor) pottery company during the late nineteenth and early twentieth century, and one was used by the Mercer pottery company during the late nineteenth century. Porcelain was 8% of tableware ceramics. One porcelain vessel was identifiable as a Canton or Nanking decorated eggcup (mfg. ca. AD 1770 to 1830). Beverage and food associated items included bottle glass, jar glass, a fruit jar glass liner, bottle closures, metal can fragments, beer can fragments, bone identifiable only as mammal and bird and shell identified as oyster or clam. Bottle glass comprised the majority of the domestic artifacts and was predominantly unidentifiable to type (92%). Bottle glass fragments identifiable to beverage type were alcohol, soda and milk. Marks on some of the bottles and on one bottle closure indicated their contents were bottled by Robinson and Moore in Wilmington, Delaware. Home furnishings were a furniture or box hinge, a drawer pull, a furniture wheel, a copper lamp fitting, a brass finial, mirror glass, paint container fragments and light bulb parts. Personal items were pharmaceutical bottle fragments, comb fragments, a grooming mirror fragment, a ring, graphite pencil fragments, a glass marble, porcelain doll and brass teacup fragments, a toy gun, miscellaneous toy parts, china buttons, clothing snaps, and a shoe heel. Two pharmaceutical bottles were identifiable as castoria manufactured by Charles H. Fletcher, New York City.

Gardening-related items were earthenware flowerpot fragments, which included some glazed varieties, but were mostly unglazed terracotta.

Terminus Post Quem dates were identifiable for eighty-seven shovel test proveniences and six test unit proveniences. Terminus Post Quem dates for the test units are listed in *Table 10*. Seventeenth century TPQs were observed for 21% (n=18) of the shovel test proveniences, but these were represented by redware, which was manufactured into the late nineteenth century. 4% (n=4) of the shovel test proveniences possessed mid-eighteenth century TPQs represented by creamware, which was manufactured into the early nineteenth century, and delftware, which was manufactured until the late eighteenth century. The majority of the shovel test proveniences (44%, n=38) possessed early nineteenth century TPQs, with 1805 being the most common (n=27) early nineteenth century TPQ. The 1805 TPQs were represented by whiteware, which is still manufactured today. Mid to late nineteenth century TPQs were observed for 21% (n=18) of shovel test proveniences. Among the late nineteenth century TPQs, 1880 was the most common and was represented by redware flowerpots which are still manufactured today. The remaining 10% (n=9) of shovel test proveniences possessed early to mid-twentieth century TPQs. Mixed context (containing artifacts with manufacturing periods separated by fifty or more years) was only observed for one provenience, Feature 1 in Test Unit 3, which contained artifacts manufactured exclusively in the late eighteenth to early nineteenth century and artifacts manufactured exclusively in the twentieth century.

Architectural artifacts were 40% of the historic assemblage. Most of the architectural artifacts were brick (20%), nails (46%), window glass (14%), and terracotta roofing tile (9%). 61% of the nails were unidentifiable to manufacturing type, but those identifiable to manufacturing type were cut (mfg. ca. 1791 to 1891) and wire nails (mfg. ca. 1850 to present). Other architectural artifacts included building block fragments, mortar, plaster, lime, cement or concrete, roofing slate, marble, a ceramic electrical insulator, cut and wire spikes, a bolt, a door hinge and salt glazed earthenware and unglazed earthenware sewage/drainage tile.

The remainder of the assemblage was composed of heating by-products (14%), farming-related artifacts (.3%), transportation-related artifacts (.05%), arm/ammunition-related artifacts (.07%) and indeterminate class artifacts (4%). Heating by-products were coal, cinders, slag, ash and charred wood. Farming-related artifacts were barbed wire and general fencing wire. Transportation-related artifacts were a turning light cover and a valve stem cover. Arms/ammunition artifacts were a center fire bullet and plastic shotgun cartridges. Indeterminate class artifacts included unidentifiable metal, glass, synthetic material, brass and conglomerate material. Indeterminate class artifacts also consisted of hardware that could have been used architecturally or elsewhere, machine parts, a possible kettle fragment, bone not culturally modified or identifiable as a domestic species and shell identifiable only as Mollusc.

c. Interpretations

The site was a holding of the du Pont family, who were very influential in northern Delaware during the early twentieth century. It appears that the buildings associated with the Augustine Cutoff Site represent DuPont employee housing. Although Feature 1 contained a relatively high quantity of late nineteenth century/early twentieth century artifacts, the results of the Phase II

Table 10: 7NC-B-49 Terminus Post Quem Dates (Test Units Only)

Provenience	TPQ	TPQ Artifact	Mixed Context
Test Unit 1, Stratum I	1762	Creamware	N/A
Test Unit 2, Stratum I	1830	Shell edged whiteware	N/A
Test Unit 3, Stratum I	1880	Redware flowerpot	N/A
Test Unit 3, Feature 1	1939	Bottle labeled “not to be refilled”	Yes-Canton/Nanking porcelain with machine made bottle glass
Test Unit 4, Stratum I	1880	Redware flowerpot	N/A
Test Unit 5, Stratum I	1880	Redware flowerpot	N/A

Evaluation Testing indicated that the remainder of the site lacks integrity. The structural remains for the two houses known to exist on the property were not located during the survey. Based on the review of historic photographs and maps, the locations of these structures, which were adjacent to Concord Pike, are within the zone of construction for Concord Pike when it was widened from two lanes during the time the site was occupied, to seven lanes later in the twentieth century. Widening of the road occurred primarily to the west of Concord Pike, due to the location of Porter Reservoir, which is adjacent to the east side of the road. In addition to the road widening, the installation of modern underground utilities along the west edge of Concord Pike further disturbed the site.