

Chapter 4

DESIGN FOR ARCHAEOLOGICAL RESEARCH

A. PHASE I INVESTIGATIONS

In 2006, a phase I study had examined the area along the west side of U.S. Route 13, (Environment and Archaeology, LLC 2006: Table 6). This investigation included subsurface testing carried out at a reported 7-meter interval, although the scale given in the Phase I Management Summary suggests that the interval was closer to four meters (Environment and Archaeology, LLC 2006: Figure 22). It is, however, only possible to reconcile this figure very roughly with the surveyed map used for the Phase II and III studies, since both the scale and the detail appear to be incorrect.

Two loci yielding historic archaeological materials were identified. The northern locus (Shovel Tests AA-11 through AA-16) lay east of the Parkway Motel. The southern locus (Shovel Tests AA-5 through AA-8 and BB-3 through BB-8) lay to the south, and was separated from the northern locus by the hotel driveway. The two areas combined covered about 300 feet by 30 feet (9,000 square feet). A brick feature of uncertain function (which subsequently proved to be part of the Boyd house) was located in Shovel Test BB-3 at the southern end of the southern locus. The area closest to the intersection was reported as disturbed by utilities.

B. PHASE II INVESTIGATIONS

The purpose of the Phase II archaeological investigations was to evaluate the vertical and horizontal extent, integrity and National Register eligibility of the Boyd's Store and House site [7NC-G-169] within

the Area of Potential Effect lying between the Right-of-Way line and the edge of the road pavement in 2007/8.

1. Methodology

The approved excavation strategy deployed the equivalent of seven, five-foot-square units and eight, three-foot-square units. The placement of individual excavation units was based on the location of the structures shown on the 1932 and 1923/5 as-built maps, plotted onto the current intersection improvement plan. The as-built maps indicated that at least six structures: a stable, a trough, a barn, a windmill, a pump house and a two-story frame house, potentially lay within the proposed limits of construction (Figure 4.1).

The 1849 map (Figure 3.1) appears to show a store detached from, and south of, a dwelling house. From its location it was suspected that the two-story frame house shown on the 1932 as-built map had its origin as the store. Locating the house/store was the primary objective of the initial excavation units, the thought being that if the house could be located securely, units positioned to investigate the remaining buildings could be adjusted north or south according to their relationship to the house shown on the as-built map.

The Phase II archaeological fieldwork (Figures 4.1 and 4.2, Plates 4.1 and 4.2) took place from October 16 through November 6, 2007, and finally entailed the excavation of 18 excavation units (increased by three from the original 15 proposed). These units were excavated down to sterile soils or, in one case, to a physical impasse (road debris/rubble). Three informal shovel tests were also conducted to supplement unit

excavations in the northern portion of the property area to ensure coverage of the Area of Potential Effect. Soil profiles were recorded using standard parameters such as horizon thickness, soil color according to the Munsell system, field determination of soil texture, soil structure, and content, and notes. All excavated soils were screened through ¼-inch-hardware cloth in order to isolate and retrieve cultural artifacts. All cultural materials recovered from the excavations were labeled and bagged according to standard archaeological field procedures. The artifacts were counted and assessed for future cataloging. The locations of the archaeological investigations were mapped using project plans provided by the client as a base. The archaeological fieldwork was documented in a field notebook and through digital photography.

2. AREA SOUTH OF THE SEMI-CIRCULAR MOTEL DRIVEWAY

South of the semi-circular motel driveway a total of 13 excavation units were positioned to locate Boyd's house/store, and to investigate the integrity of the surrounding stratigraphy and locate probable sheet middens. Seven units measured three-foot square (EUs 6-8 and 15-18), four units measured two-and-a-half-by-ten-feet (EUs 1-4), with one unit measuring three-by-four-feet (EU 5) and one unit measuring three-by-six feet (EU 14).

a. The House/Store foundation

The location of the two-story frame structure, posited as Boyd's house/store, was plotted in the field from the 1932 as-built map so that units could be best positioned to locate the north and south walls.

The first unit (EU 1) was placed to encounter the predicted location of the north wall. It failed to do so, but did recover over 300 artifacts, several dating to

the early 19th century, but most dating to the mid- and late 19th century. Stratigraphy in this unit (Figure 4.3) proved to be representative of areas north of the house site. The lowest context, encountered in an auger test at three feet below 2007 grade, comprised a culturally sterile silty clay with larger gravel inclusions. Above this was a largely stone-free silty clay, quite dry at the time of excavation. This was also free of cultural material. Context 2, a sandy silt loam encountered about 0.6 feet below grade and extending down to about one foot below grade, produced 152 historic artifacts and two undiagnostic prehistoric lithics.

Excavation Unit 2 encountered the foundation of Boyd's house/store immediately below the sod, context 1 (Figure 4.4; Plates 4.3 and 4.4). Based on the historic map data this unit had been expected to encounter the south wall of the foundation. The wall turned out to be the front or eastern foundation wall of the house/store. The lower portion of the wall [10] was of stone construction with three courses of brick surviving on the top. The west (interior) face of the wall had a thick layer of whitewash down to at least four and a half feet below the surviving top of the wall. The bottom of the wall was not reached because massive pieces of concrete slab, possibly from the pavement of U.S. Route 13, lay in the basement fill. The exposed depth, coupled with the presence of whitewash, suggest the structure had a full basement rather than a crawlspace.

The foundation wall had been disturbed by a tapering circular hole [50], interpreted as shovel test pit BB-3 excavated during the Phase I survey of the property, and which was not at that time understood to have struck a wall foundation.

Following the exposure of the masonry in EU 2, a steel probe was used to locate the eastern/front wall of the house, which was found to be about 37 feet

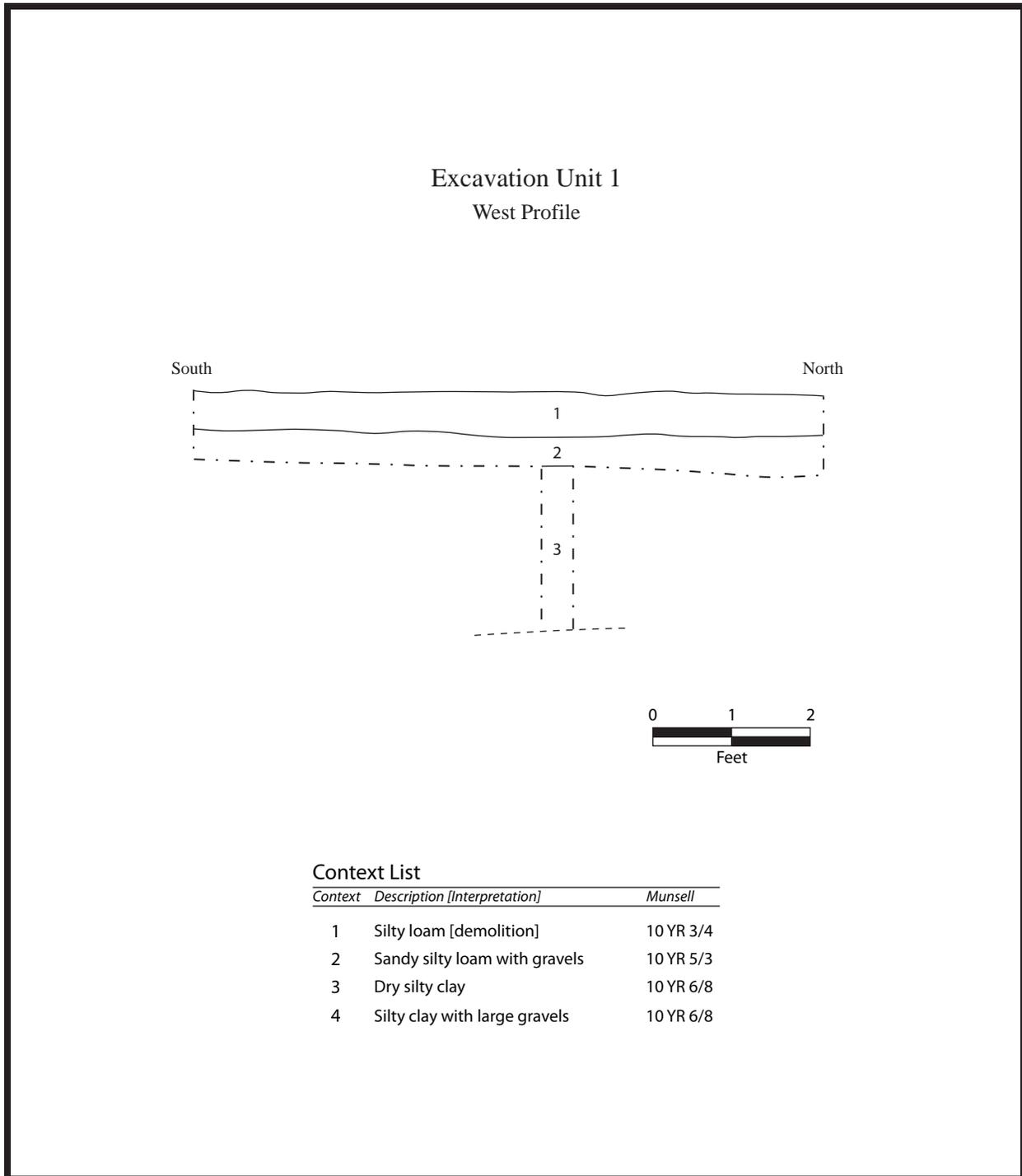


Figure 4.3. Excavation Unit 1. North profile showing a typical site soil sequence away from historic structures. Context 2 yielded historic cultural materials chiefly of 19th century date.

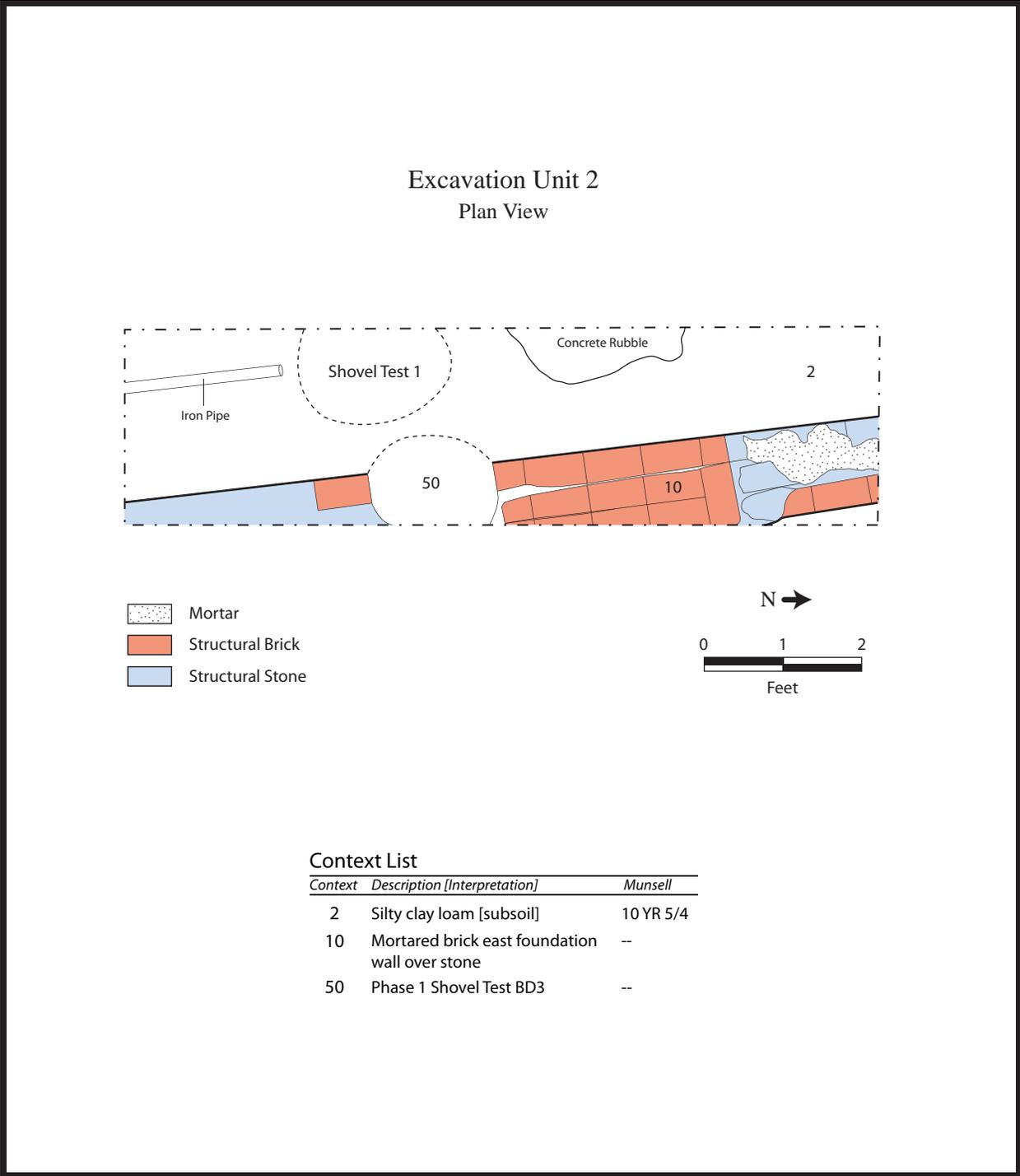


Figure 4.4. Excavation Unit 2. Plan showing portion of the eastern wall [10] of the Boyd House site with the filled basement [2] on its western side.



Plate 4.3. Excavation Unit 2 showing Phase I shovel test location through the east cellar foundation wall of the Boyd house looking north (Photographer: William B. Liebeknecht, October 2007) [HRI Neg.#07051/D2:0026].



Plate 4.4. Excavation Unit 2 showing Phase I shovel test location through the east cellar foundation wall of the Boyd house looking west (Photographer: William B. Liebeknecht, October 2007) [HRI Neg.#07051/D2:0034].

long. The northeastern corner was quickly located by removing the sod. No formal excavation unit was opened here.

The southeastern corner proved more difficult to locate. EU 14 was initially opened as a three-foot-square unit and was then expanded to the south, following the wall [10,11] an additional three feet until it became clear when the wall turned (Figures 4.5 and 4.6). This complex unit also located the builder's trench for the house [6,5] and the foundation for the secondary front porch [15, 8,7].

These investigations showed that the house structure lay some 25 feet south of its apparent position as it was predicted from analysis of the 1932 as-built plan. The latter depicts the house as lying parallel to the DuPont Highway as configured at that time. The pre-1932 road alignment and right-of-way were actually angled very slightly to the west of the current U.S. Route 13 centerline. It can now be seen that the actual alignment of the house is at an angle not only to the present alignment of U.S. Route 13, but also to the road as it was in 1932. The overall configuration of the farmstead complex as shown on Figure 4.1 is therefore based on the archaeologically demonstrated location of the frame house, assuming that the other buildings are laid out on the same axis.

b. Brick Drain (EUs 3, 5, 15 and 16)

A brick drain was located south of the house/store foundation in EU 3 (Figures 4.7 through 4.9). The drain was constructed from half- and three-quarter-length bricks. Several of the bricks had "glazed" headers. None of the bricks exhibited any signs of mortar, implying they were left over or broken bricks not employed in the construction of the house/store, and used specifically for the construction of the drain. The bricks forming the sidewalls sloped inwards at a slight angle. The bottom or floor of the drain was formed by

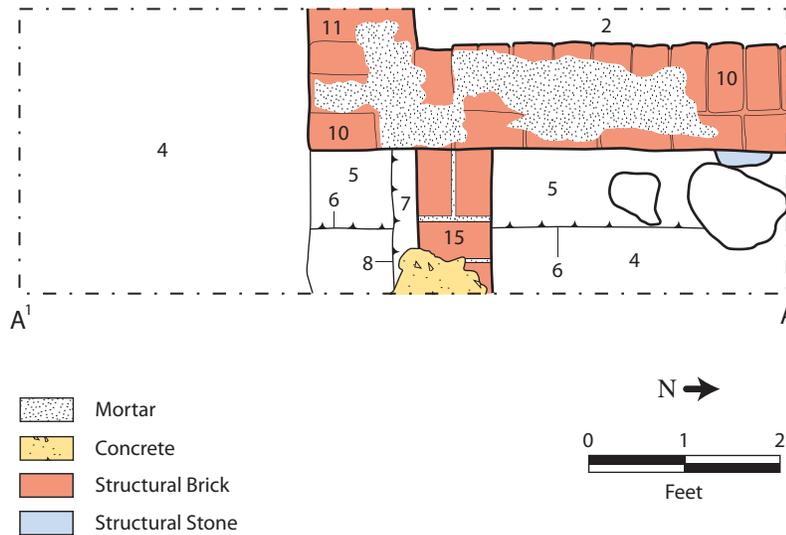
a line of bricks placed end to end with the "shiner" or "bull stretcher" surface of the brick exposed. No drain cover was present, but was probably of brick (see EU 15 below). The drain was disturbed by a circular hole, interpreted as a shovel test pit excavated during the Phase I survey of the property.

The drain feature was pursued in an adjacent unit (EU 5), placed immediately to the west to ensure it was indeed a drain as interpreted. A shallow square feature [7,8] located just south of the drain is provisionally interpreted as a truncated posthole. The relationship of the drain to the house/store was still unclear, so its limits were pursued using a steel probe. EUs 15 and 16 were placed to examine the area where the location of the drain became unclear in probing to the east and west.

EU 15, 15 feet east of EU 3, uncovered a fully intact section of the drain with a brick cover consisting of three-quarter brickbats (Figure 4.9). The drain was examined, recorded and left *in situ*. EU 16, four feet west of EU 5, found the drain to be heavily disturbed.

Of particular interest were two coins recovered from contexts 2 and 3 in EU 16. The first is a Spanish silver half-real dated 1806. The front side exhibits a bust of King Carlos the IV and the reverse side exhibits the arms of Castile and León, between the Pillars of Hercules (the Straits of Gibraltar). The text on the coin, which was minted in Mexico City, Mexico, reads "DEI GRATIA. 1806. CAROLUS. IIII HISPAN. ET IND. R. M. T.H" which translates to "By the Grace of God 1806 Charles IV King of the Spains and of the Indies, Mexico City Mint". This coin was considered legal tender in the United States until 1857. The second coin was a U.S. large cent, dated 1816 depicting a bust of Lady Liberty surround by 13 stars on the front. This is the matron head variety of the coronet type, first minted in 1816.

Excavation Unit 14
Plan View



Context List

Context	Description [Interpretation]	Munsell	Context	Description [Interpretation]	Munsell
2	Silty sand [fill]	10 YR 4/3	8	Cut of 7	--
4	Silty clay [subsoil]	10 YR 5/6	10	Brick and stone foundation [east wall of building]	--
5	Clayey silt [builder's trench for 10]	10 YR 5/2	11	Brick and stone foundation [south wall of building]	--
6	Cut of 5 (not visible on profile)	--	15	Brick foundation for porch	--
7	Clayey silt [builder's trench for 15]	10 YR 5/2			

Figure 4.5. Excavation Unit 14. Plan showing southeast corner of the Boyd House [10,11] and the southern wall of the secondary porch [15].

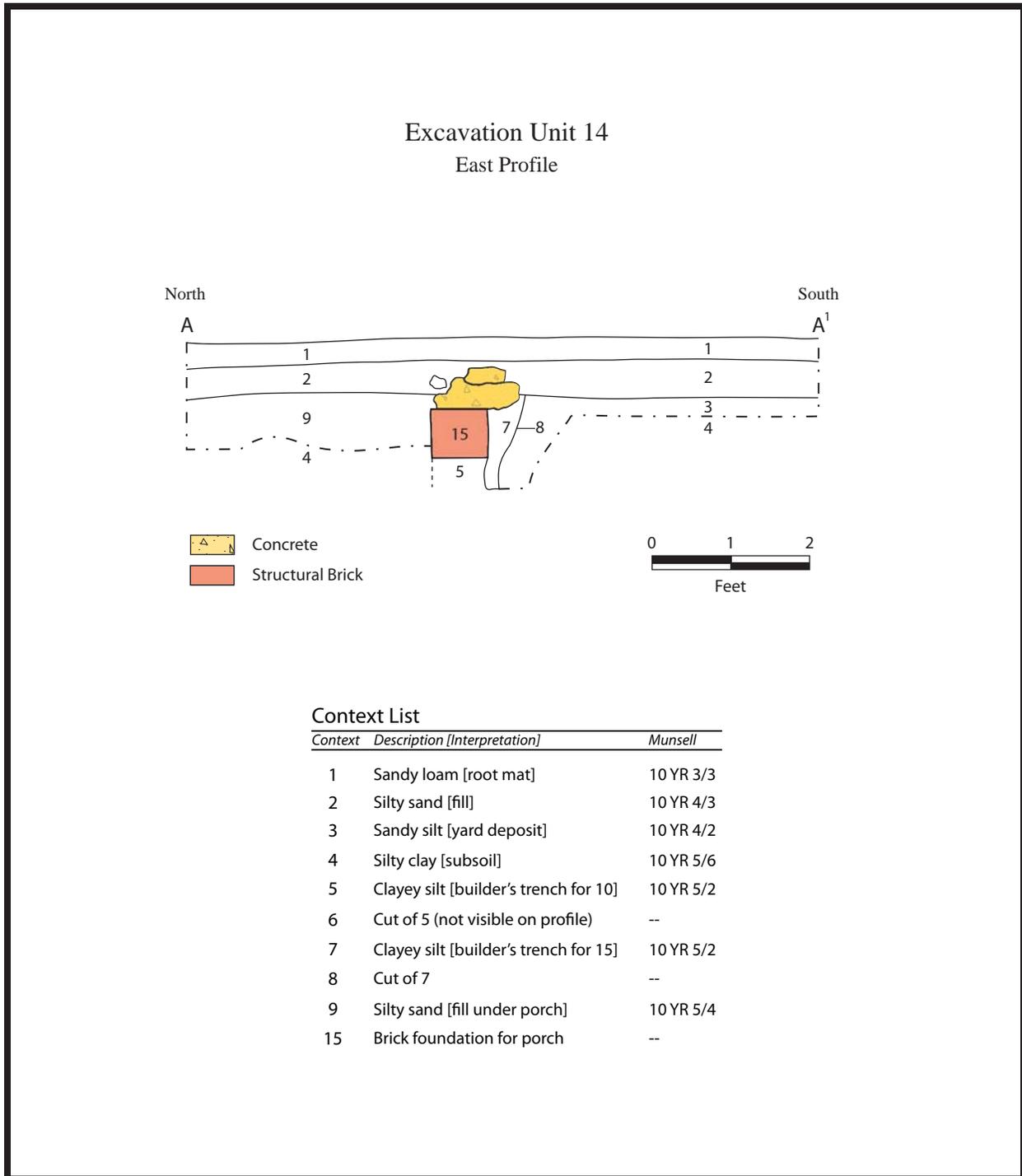


Figure 4.6. Excavation Unit 14. East Profile across porch wall 15.

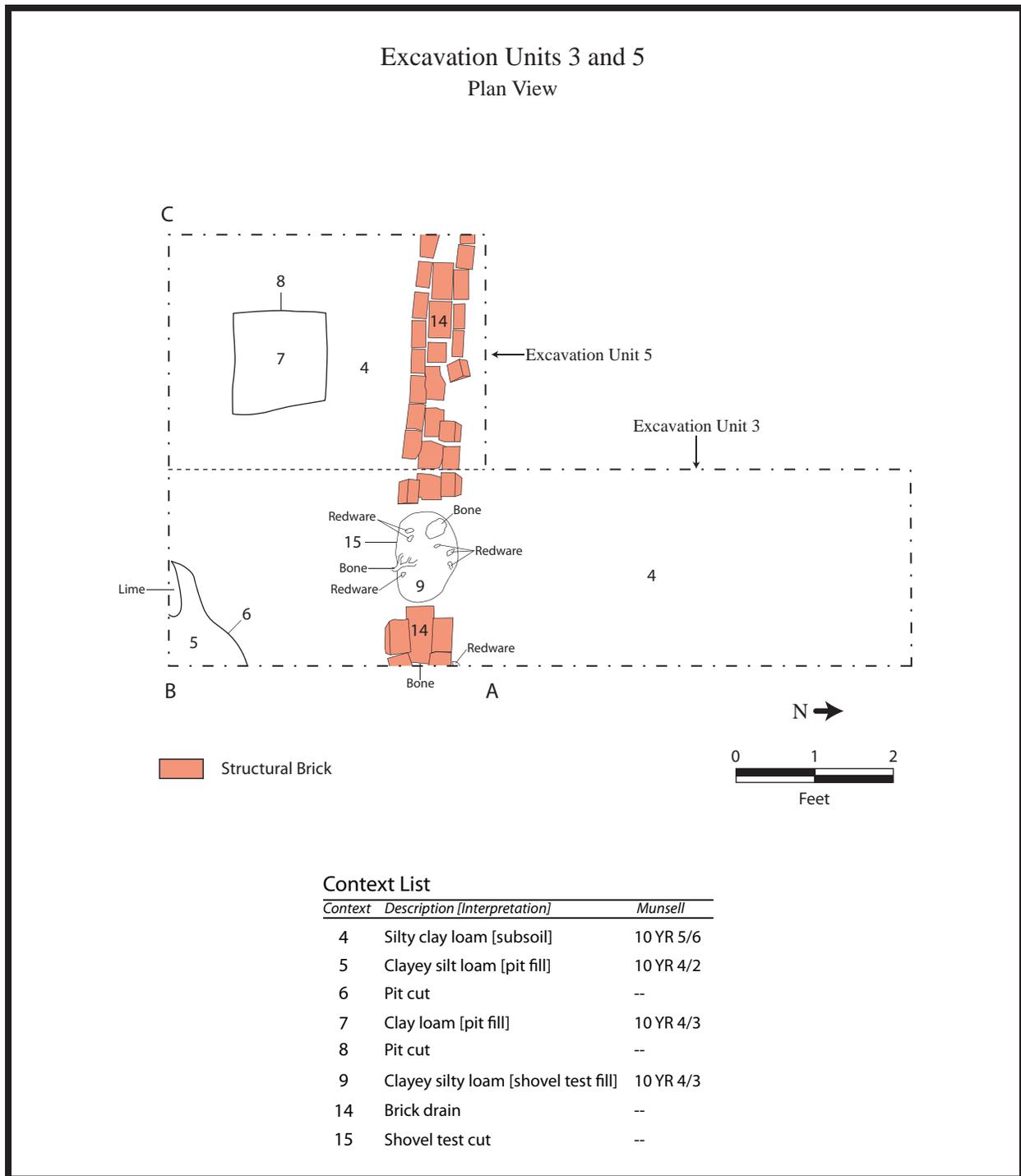
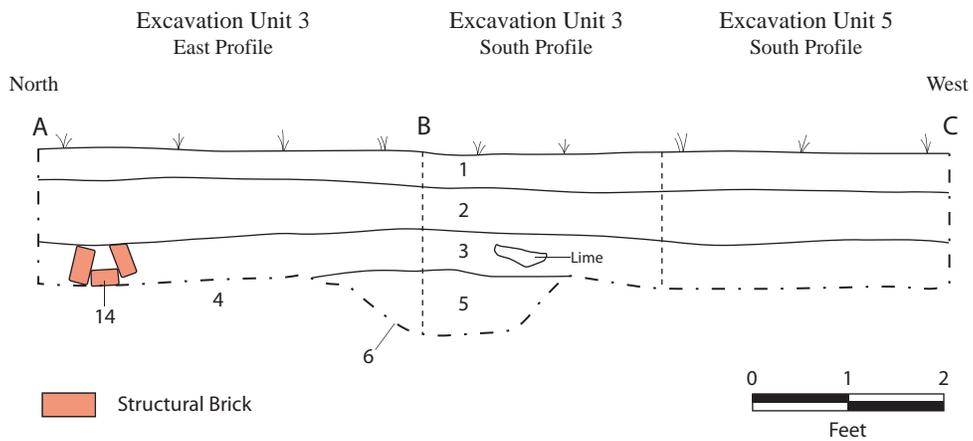


Figure 4.7. Excavation Units 3 and 5. Plan showing brick drain and cultural features to the south. Profile Figure 4.8.

Excavation Units 3 and 5
East and South Profiles



Context List

Context	Description [Interpretation]	Munsell
1	Silty loam [root mat]	10 YR 3/3
2	Clay loam with gravel	10 YR 4/3
3	Clayey silt	10 YR 5/4
4	Clay loam [subsoil]	10 YR 5/6
5	Clayey silt loam [pit feature]	10 YR 4/2
6	Cut of 5	--
14	Brick drain	--

Figure 4.8. Excavation Units 3 and 5. East and south profiles showing brick drain, and pit in southeast corner of EU3.

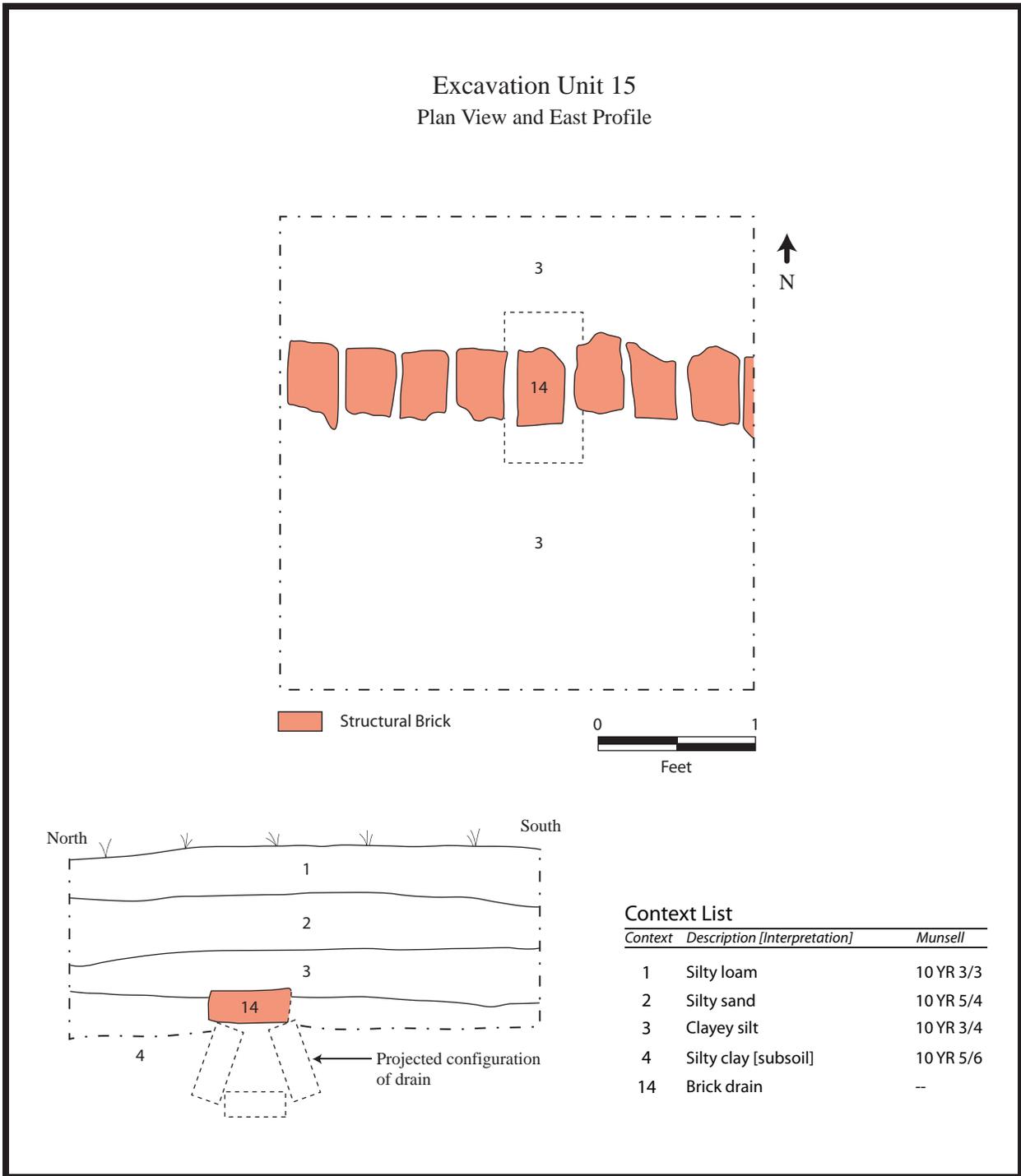


Figure 4.9. Excavation Unit 15. Plan and east profile showing covered brick drain.

c. Pit/Cut

A possible pit or cut was observed near the drain in EU 3 (Figures 4.7 and 4.8). A segment of this apparently circular feature was situated in the southeastern corner of the unit and contained two large pieces of lime. The majority of the feature extends south and east of the limits of the excavation unit. The presence of lime may indicate the feature could be a privy since this material was commonly added to privies to help break down organic matter.

d. Historic Yard Surface (EUs 1, 3-8, 16-18)

A historic yard surface/sheet midden was observed in all of the excavation units south of the motel driveway not disrupted by the house/store foundations (Figure 4.10). Identification and separation of this context was difficult in the parched soil conditions prevailing during the excavations. It was however noticeable that the deeper Context 2 was excavated the older the artifacts dated. Artifacts from the bottom of what was then identified as Context 2 exhibited a date range of *circa* 1790 to about 1840. With aid of water sprayers and passing showers a slight difference was observed and identified as Context 3.

Context 3 is rich in material culture and produced one of the most intriguing artifacts recovered from the excavations, a porcelain marble (EU 4, Context 2). Normally a porcelain marble would not be out of the ordinary, but in this case the hand painted marble was in pristine condition, suggesting it had never been played with by a child.. The condition of the marble raises the possibility that was a lost piece of merchandise. One can imagine a lot of marbles being unloaded from a supply wagon and a crate containing some marbles falling or being dropped with a few marbles rolling in every direction.

e. Unidentified Historic Features (EUs 17 and 18)

Two features were encountered in the field but their function is uncertain. In EU 17 an irregular cut [5] was filled with soils similar to the C horizon clays, but slightly mottled [4]. Initially it was thought to be an extremely old groundhog den but upon excavation appeared to be a possible erosional gully naturally cut down into the subsoil (Figure 4.11). The feature extended beyond the limits of the unit to the north and east. The few artifacts recovered from the fill date to the 19th century.

A second feature, located in EU 18, also exhibits fill soils similar to the C horizon but in this case the feature was circular, similar to a tree planting hole (Figure 4.12). Once again only a few artifacts were recovered from this feature dating to the early 19th century. A small portion of this feature extends beyond the limits of the unit to the north.

f. Evidence of Prehistoric Occupation

No prehistoric features were observed in the project area. A few prehistoric artifacts were however recovered from across the southern portion of the project area from Contexts 2 and 3. The only formal tool recovered was a small stemmed projectile point that was recovered from EU 17, Context 3. This projectile point type is widely dated across the Woodland I and Woodland II periods. Smaller-stemmed projectile points such as this one are generally dated to the latter period.

3. Area Within the Semi-Circular Motel Driveway (Plates 12-14).

Within the semi-circular motel driveway a total of five excavation units (EUs 9-13) were placed to investigate a barn, pump house, windmill and a stable shown

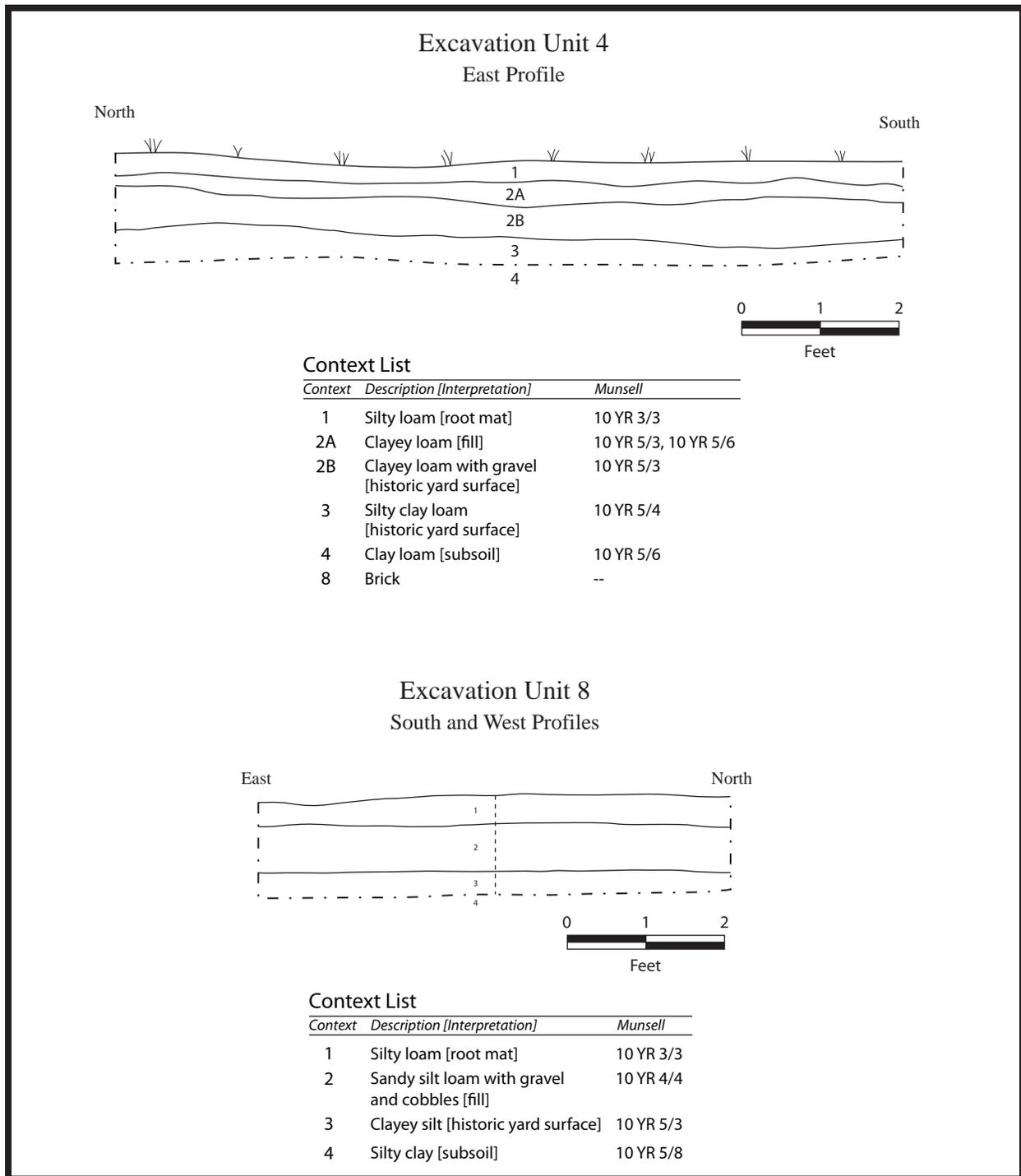


Figure 4.10. Excavation Units 4 and 8. Representative profiles of units containing the historic yard surface, Context 3.

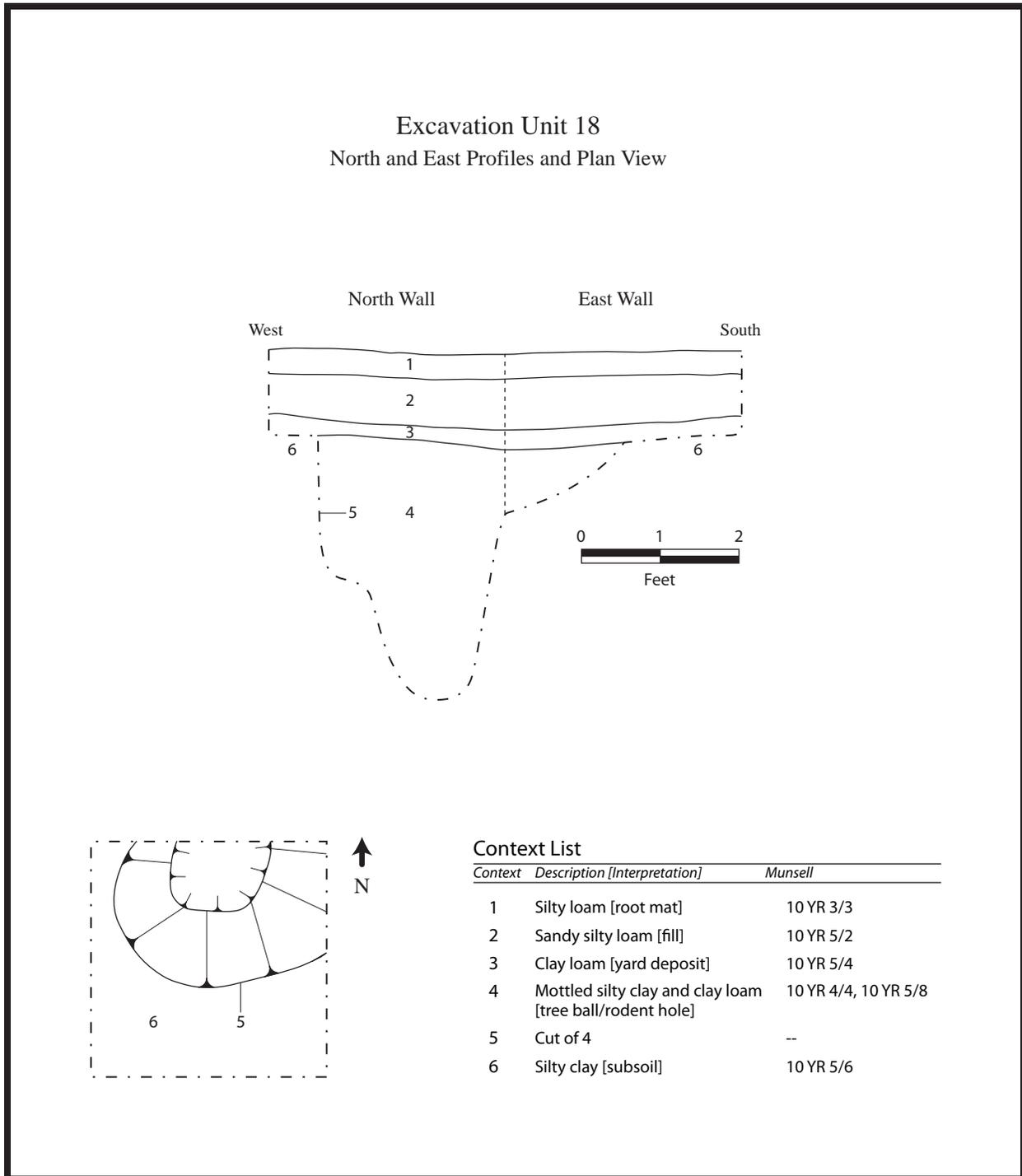


Figure 4.12. Excavation Unit 18. North and east profiles and plan showing possible tree hole.

on the 1932 as-built plan, to investigate the integrity of the surrounding stratigraphy and to locate probable sheet middens. Two units measured three-foot square (EUs 11 and 12), three units measured two-and-a-half-by-ten feet (EUs 9, 10 and 13). Three informal shovel tests were also quickly excavated to confirm the stratigraphy of the soils within the right-of-way.

Units excavated within the semi-circular driveway east of the right-of-way line failed to locate any structural evidence of the farm complex shown on the as-built plans. Excavation Units 12 and 13 each exhibited postholes likely associated with a former fence line or an extension of the former stable. In both cases the upper stratigraphy of the postholes was truncated. In general the entire area within the semi-circular motel driveway appears to have had the A and B horizons stripped and then capped by a layer of topsoil. It is not certain when this occurred but it seems likely it may have happened when the motel was built or perhaps during one of the road widening events for U.S. Route 13. A metal anchor for a former utility pole encountered in EU 10 suggests utility poles may have been moved as a result of road widening and possibly stripped to create a level grade. Three shovel tests placed along the western edge of the right-of-way exhibited a similar profile as the excavation units. Figure 4.13 is representative of conditions in this part of the site.

Only 165 artifacts, or about 6% of the Phase II total, were recovered from this area. Most of these artifacts (133) derived from soils suspected as being fill material brought onto the site from an unknown source. They are mostly mid-20th-century bottle glass or building debris.

After the fieldwork was completed, the possibility was entertained that the low, small cinderblock foundation capped with a tin roof located near the older motel sign might be the "pump shed" depicted on the 1932 as-built plan. Given the adjustments to the location of

the farm buildings resulting from the accurate location of the house/store, most of these can now be seen to lie to the west of the new proposed right-of-way line. Even with this adjustment, however, the mapped locations of the 1932 pump shed and adjacent windmill remain within the right of way. Unless the 1932 and 1923/5 as-builts are greatly in error, the existing concrete pump house does not appear to be the same as the one mapped on the as-built plans.

C. EVALUATION OF SIGNIFICANCE

1. Integrity

For archaeological properties to be eligible for the National Register under Criterion D, they must retain integrity. "Integrity" is defined as the survival of the relationships between artifacts, features and cultural stratigraphy to an extent great enough to permit the reconstruction of the character and development of the property through time. Additionally, the property should be capable of providing significant information about the human past when subjected to hypothesis testing under a research design that reflects current research directions within a historic context framework. Although the National Register guidelines for the evaluation of archaeological properties place assessment of integrity at a later stage in the process, experience has shown that unless integrity is present there is little point in proceeding with other aspects of significance evaluation.

The Phase II archaeological investigations demonstrated the presence of intact features and stratigraphy in the area south of the semi-circular motel driveway. Features comprised the basemented foundation of a house (hypothesized as functioning as the store in the 19th century), a drain, and a possible privy. These are associated with horizontal stratigraphy containing late 18th- through 20th-century artifacts and reflect-

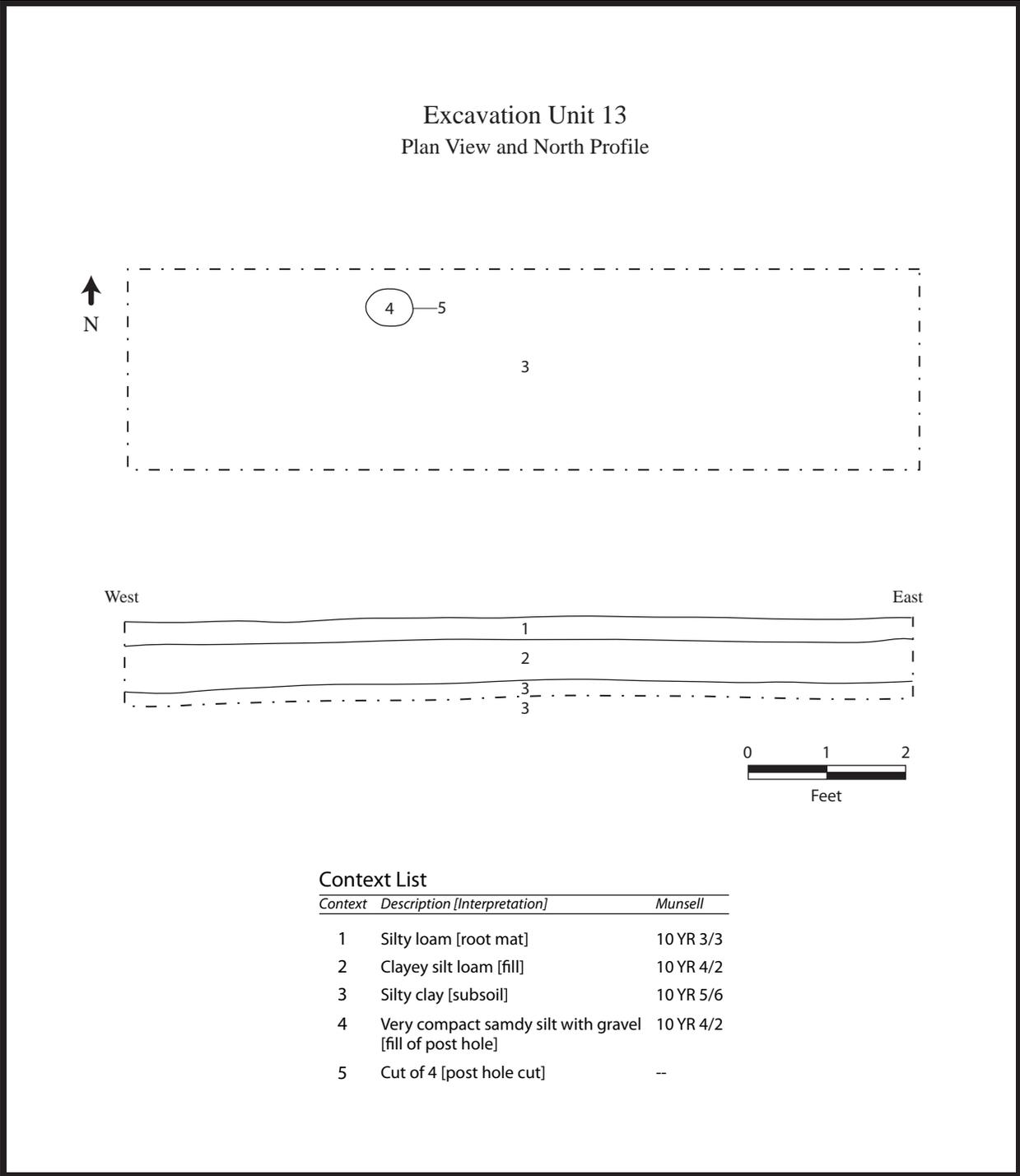


Figure 4.13. Excavation Unit 13. Plan showing truncated historic post hole [4, 5], and north profile.

ing utilized surfaces or sheet middens. A substantial artifact collection was recovered, including items that possibly pointed to a commercial function for the site.

Within the motel driveway area integrity appeared to have been lost through grading and drainage work. Truncated posthole features were found, and it is possible that lower portions of the pump house and windmill may remain here, but overall integrity in this area was considered to be low overall.

These data indicated that the southern portion of the site could provide information important in history if studied within the framework of a research design.

2. Evaluation of Significance

The historical and archaeological research undertaken for the Phase II study indicated that the site should be considered under the following contextual themes from the Delaware Comprehensive Historic Preservation Plan:

1770-1830+/- Early Industrialization
1830-1880+/- Industrialization and Early Urbanization
1880-1940+/- Early Urbanization and Industrialization

In these chronological periods these three themes are relevant:

- Retailing/wholesaling
- Transportation and communication
- Settlement Pattern and Demographic Changes

Contextual studies more specific to the site include De Cunzo et al. 1992a, and Siders et al. 1991.

Of particular relevance is the 1992 study of the John Darrach Store Site in Kent County, Delaware (De Cunzo, Hoseth, Hodny, Jamison, Catts, and Bachmar 1992). In addition to undertaking a detailed analysis

of the site itself, this study included comparative architectural and archaeological data from store sites in Delaware and Maryland.

The Darrach Store operated as such from 1778 to 1805, and, from the latter date until its demolition in the late 1860s, was a tenant house. The store functions of this and the Boyd's store are therefore not contemporaneous, but this study provided a solid starting point for the development of the research program at the Boyd's Store and House site

Given the demonstrated archaeological integrity of the site, its relevance to several historic contexts, and the existence of a body of regional research on store sites, it was therefore considered that the portion of the Boyd's Store and House site [7NC-G-169; CRS N-12742] lying south of the semi-circular motel driveway was eligible for the National Register under Criterion D. It was felt that eligibility under Criterion C should also be evaluated if the architectural remains of the house/store are sufficient to be of a distinctive type.

3. Assessment of Effects

The archaeological work has shown that the house/store site lies almost entirely within the proposed right-of-way for U.S. Route 13 and Route 896 (Boyd's Corner Road). Structural features probably associated with the house/store lie to its south, and midden or surface deposits are present as far north as the south driveway entrance to the motel. It appears from the available construction plans that the southwestern portion of the house/store, and the areas to the east and south will be adversely affected by the construction of a turning lane and associated grading and landscaping. With the exception of the basement and any deep shaft features, the site is quite shallow. Even limited negative grade changes were assessed as resulting in the loss of significant archaeological resources.

It was concluded that the effect from the proposed intersection improvements of the federally funded undertaking was adverse on the eligible property 7NC-G-169. This adverse effect would result in a loss of integrity that renders the site ineligible for the National Register. The Delaware Department of Transportation (as agent for the Federal Highway Administration), in consultation with the Delaware State Historic Preservation Office, concurred with these conclusions, and requested development of a data recovery program to provide appropriate treatment for the property under 36CFR 800.6. This was developed with reference to the Advisory Council on Historic Preservation's *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* (2002).

D. ARCHAEOLOGICAL RESEARCH DESIGN FOR DATA RECOVERY

Within the framework of the overall research design, several specific hypotheses were developed that could be explicitly tested archaeologically. This approach was favored over the presentation of research "questions" that run the risk of being too open-ended or bland to provide a basis for meaningful testing in the field.

Hypothesis 1-II

The frame Structure identified in the 2007 Phase II investigations was used as a store and residence.

Research implications and data requirements:

1. Higher than average numbers and varieties of buttons, coins and ceramic sets will be recovered. These materials will show little or no sign of use. This "higher" number will be established through com-

parison between the site and other store and non-store sites in northern Delaware (using existing reports and studies).

2. There will be openings into the cellar from the exterior (cf. Brick Store, Blackbird Hundred [Catts, Hodny and Custer 1989:124]). These are sizable openings that are reached by shallow ramps or from-grade in embanked buildings. They contrast with more traditional domestic cellar entrances via stepped bulkheads because they are designed for frequent use for movement of bulky goods. Good examples are seen at the Cornelius Low house in Piscataway, Middlesex County New Jersey.

3. Only one side of the building (residence) will be heated.

Hypothesis 1-III

Evidence for perishable agricultural products will survive within the building in the form of phytoliths, plant remains or pollen.

Research implications and data requirements:

Soil sampling, flotation and analysis program from key, sealed contexts dating to the store period if present.

Securely stratified soil contexts were less prevalent than had been hoped, and a total of 14 samples were taken from key contexts. Re-examination of the data suggests that these contexts are not numerous or secure enough to make the analysis worthwhile and this research is not now proposed (Table 4.1).

Table 4.1 BOYD'S CORNER PHASE III SOIL SAMPLES

EU	Context	Description
23	149	Sediments in brick drain
23	317	Posthole fill
23	Under 235	Below north wall of store
23	Builders Trench under 235	below north wall of store
23	321	Posthole fill
23	324	Posthole fill
43	132 Column sample	Deposit under mid c19 porch
44	261	Barrel privy upper
44	361	Barrel privy lower
44	263	Linear feature next to privy
44	203	Soil within stone feature
44	348	Posthole fill
44	346	Posthole fill

Hypothesis 1-IV

The high percentage of ceramics in the artifact assemblage at Boyd's Corner directly reflects the site's use as a store.

Research implications and data requirements:

1. Review of archaeological assemblages from contemporary store and non-store sites in northern Delaware. Included among these will be Robert Ferguson/Weber Homestead; Hutchinson Weldin [7NC-G-137], Lynch B [7NC-G-48B], Knotts [7NC-J-220], McKean/Cochran Farm second phase [7NC-F-13], Darrach Store [7K-A-101] and Dickson Store sites.

2. Examine the surviving records of neighboring contemporaneous merchants (Ford, Davis, Alle, Coomb and Polk as identified above) to locate references to the sale of ceramics.

Hypothesis 3-I

The portion of the farmstead available for investigation was devoted to domestic and commercial activities through the period of significance.

E. FIELD AND ANALYSIS METHODS

1. Field Strategy

A staged excavation strategy was proposed. The objective was to identify and, at a minimum, sample all archaeological features within the defined project limits. Areas where features are already known to be present were to be further investigated by hand prior to machine-stripping of topsoil from the site.

Removal of Backfill from Phase II Units

All units excavated during the Phase II investigations, which covered 4% of the available site area, were to be re-excavated. These were lined with blue plastic tarps prior to backfilling to facilitate re-excavation and to protect unexcavated features.

Additional Excavation Units

Following completion of this task additional units were to be excavated, sampling a further 5% (approximately) of the plowzone. Hand excavation will be taken down to the base of the plowzone, with exposure and limited investigation of features below this level. The rationale for this percentage is based on the specific features already identified, artifact distribution, the size of the site, and the research design objectives. To assist in this determination, data recovery investigations at a number of historic sites located in Delaware and nearby states were reviewed and percentages of plowzone sampling established. Percentages as low as 1% were sampled at the Augustine Creek South and Thomas Dawson Sites while as much as 25% was investigated at the Cazier and Moore Taylor Farm Sites.

Main features identified during the Phase II investigations consisted of an east-west brick-lined drain, located south of the store/house foundation in EUs 3, 5 and 15, and a pit feature located immediately south of the drain in EU 5. Additional units here will connect the stratigraphy of the drain to the store/house foundation and elucidate their functional and chronological relationship. A secondary purpose for emphasizing this area is its complexity and fragility that might make backhoe excavation problematic. It is hypothesized that the drain diverted water away from the foundation along southern porch not shown on the as-built maps. Additional units are placed to provide coverage and reference points for the remainder of the area. These include an additional 100 square feet within the basement and across the walls

of the house. These are designed to provide further control over the stratigraphy and structural remains. If they encounter dense modern rubble these units were to be abandoned.

At this point a site meeting was to be held with SHPO and DelDOT to determine the mechanical stripping strategy in detail.

Mechanical Stripping

Following the plowzone sampling, a backhoe with rubber tires and a flat bladed bucket will strip the uppermost context, using the depth data from the units as a control. This will remove up to 0.7 feet of material over an area of about 12,000 square feet, a volume of 8,400 cubic feet or 300+ cubic yards. An expansion factor of 25% must be allowed, totaling about 400 cubic yards of material to be stockpiled.

The backhoe operator was to be directed at all times by a qualified archaeologist so that the maximum amount of overburden can be removed from the site prior to the final phase of excavation. A silt fence was to be erected around the entire site to prevent soil loss from the site. Stripped topsoil was to be stockpiled in the project area and periodically examined for artifacts. These were to be cataloged as general provenience.

Feature Excavation

Following the removal of the topsoil across the site a team of archaeologists will manually remove the remaining topsoil and clean the surface of the subsoil to expose features. Features were to be mapped, photographed and fully excavated or sampled with soil samples taken as appropriate from features such as shafts (wells, privies and cisterns) and pits for botanical and soil chemistry samples. Features exceeding the depth of five feet were to be excavated with the

assistance of a backhoe to prevent injury to field crew. Features such as wells and privies, which are typically deep, were to be dismantled from the safety of a sloped trench along one side allowing excavators to bisect and better understand the depositional sequence. Manual excavation of at least four profiles of the builder's trench of the store/house were to be completed. The demolition fill in the basement was to be removed by machine, and the floor levels excavated by hand. As a final operation a backhoe trench was to be excavated along the exterior perimeter to expose the exterior face of the foundation in relation to the surrounding soils.

Excavation recording will use the context system, whereby each identifiable soil stratum, each judgmentally distinguished unit of excavation, and each distinguishable human action in the archaeological record is assigned a unique number in a single numerical sequence. This methodology provides the basis both for all stratigraphic analysis and for the retrieval and analysis of cultural materials recovered from the site. Each context was to be systematically recorded using a pre-printed record sheet that will prompt the compilation of specific categories of information (e.g., horizontal and vertical extent, stratigraphic relationships, associated cultural materials, soil color [recorded according to the Munsell system] and texture, and administrative information). All manually excavated soils were to be screened through ¼-inch hardware cloth in order to isolate and retrieve cultural artifacts. All cultural material recovered from the excavations was to be labeled and bagged according to standard archaeological field procedures. Elevation data was to be recorded for key contexts and artifacts that may provide information on site function or age.

The site data will also be recorded through scaled plans and profiles, site photography and the collection of cultural materials and samples. Site photography will involve the shooting of digital images to provide a straightforward excavation record, overall site views

and an indication of typical excavation activities. Excavation record photographs will contain a bar scale and north arrow and other identifying information. A daily site notebook was to be maintained by the Senior Archaeologist. The Principal Investigator will also keep a daily field journal in which evolving site interpretations and administrative issues are addressed.

2. Artifact and Environmental Analysis

Faunal Material

One hundred and sixty two faunal items were recovered in the Phase II and Phase III work. Reitz & Scarry (1985) suggest that 1400 or more fragments or a minimum of 200 individuals are required for statistically meaningful analysis. However, meaningful results were obtained from a small sample (640 fragments) at Tweeds Tavern (Hunter Research, Inc. 2003: Appendix D and page 7-2) and it is therefore proposed that similar analysis be undertaken by faunal specialist Marie Lorraine Pipes. This analysis will include data on species, portion of animal represented, preparation, cooking and disposal practices.

Soils

Fourteen soil samples were to be submitted for soil chemistry analysis (by Sue Wooler, University of Delaware Department of Plant and Soil Sciences). Analysis was to be for PH, Phosphate, Potassium, Magnesium and Calcium to permit comparison with the Darrach Store data.

Flotation

Fourteen flotation samples were to be analyzed by Hunter Research's consultant Justine McKnight. The primary objective will be to identify floral materials from commercial crops that may represent store contents from local farms.

Artifacts

Artifact analysis of the materials from the Phase I, II and Phase III investigations will classify and catalog materials using a modified version of the South (1977) scheme. Complete or nearly complete items that do not exhibit use-wear (plates, platters or bowls without cut marks) may reflect items broken in shipment and discarded on the property in an open trash pit or ditch. Redware, a low-fired earthenware, is susceptible to breakage and was to be examined closely for lack of use. The ceramics, in particular were to be examined in the light of associated historical research on ceramics from other store sites. Some specific items, such as the sleigh bell, buttons, and tobacco pipes were to be researched in some detail.

The total of 87 prehistoric artifacts from the Phase II and III investigations were to be analyzed for data, material and function. The contexts of these finds were to be examined in the light of the site formation processes in order to determine as far as possible the prehistoric site conditions and the impact of the historic site upon them.

3. Stratigraphy and Site Sequence

The site sequence was to be established through the analysis of relationships recorded in graphic and written formats. The basic sequence presented in the

Management Summary was to be reviewed, adjusted if necessary, and expanded. The sequence was to be an important organizing principle of the report.

