

1987

An Admirable Police Maintained: Evidence of Sanitary Practices at the New Windsor Cantonment

Edward J. Lenik

Follow this and additional works at: <http://orb.binghamton.edu/neha>



Part of the [Archaeological Anthropology Commons](#)

Recommended Citation

Lenik, Edward J. (1987) "An Admirable Police Maintained: Evidence of Sanitary Practices at the New Windsor Cantonment," *Northeast Historical Archaeology*: Vol. 16 16, Article 4.
<https://doi.org/10.22191/neha/vol16/iss1/4> Available at: <http://orb.binghamton.edu/neha/vol16/iss1/4>

This Article is brought to you for free and open access by The Open Repository @ Binghamton (The ORB). It has been accepted for inclusion in *Northeast Historical Archaeology* by an authorized editor of The Open Repository @ Binghamton (The ORB). For more information, please contact ORB@binghamton.edu.

AN ADMIRABLE POLICE MAINTAINED: EVIDENCE OF SANITARY PRACTICES AT THE NEW WINDSOR CANTONMENT

Edward J. Lenik

An archaeological survey at the 1782-83 winter encampment of the Continental Army at New Windsor, New York, has revealed the presence of several large pits or depressions located some 250 ft (76.2 m) from the site of the soldiers' huts. Test excavations and chemical analysis of the soils have determined that these pits were utilized as latrines or necessities. The land use pattern at the site, including the location of the soldiers' huts and the delineation of use areas for trash disposal and necessities, reflects the officers' successful attempt to impose order and discipline on the troops.

Une enquête archéologique effectuée au camp de l'hiver 1782-83 de l'Armée continentale à New Windsor (New York) a révélé la présence de plusieurs grandes fosses ou dépressions situées à quelque 250 pieds (76.2 m) de l'emplacement du baraquement des soldats. Des sondages de vérification et une analyse chimique du sol ont établi que ces fosses faisaient fonction de latrines ou de lieux d'aisances. Le mode d'utilisation du terrain, y compris l'emplacement du baraquement et la délimitation d'endroits servant de décharges de déchet et de lieux d'aisances, montre que les officiers ont réussi à imposer ordre et discipline à leur soldats.

Introduction and Background

Every time the Commander in Chief passes through the line he finds himself very agreeably affected with a view of the present comfortable and beautiful situation of the troops; and while he considers it as a just testimony of applause to assert that the huts in point of convenience, regularity and elegance have equaled, if not surpassed his most sanguine expectations, he wishes the soldiery to be assured that it will be his most earnest study and endeavour that health and happiness should bless the inhabitants of them, for which purpose he

thinks proper to give some general directions, which are to be often read and inculcated and will be considered as standing regulations so long as the troops shall continue in their winter cantonment. (Fitzpatrick 1938: 111-113)

Commander in Chief George Washington delivered the general orders of Monday, February 10, 1783, on the Parade Ground of the winter Cantonment at New Windsor, New York, expressing his pleasure with the "present comfortable and beautiful situation of the troops." He went on to spell out with the force of regulations exactly how he expected this situation to be maintained. Huts were to be swept and cleansed daily; small brush and rubbish was to be burned or piled in heaps to be fired when expedient. Necessaries were to be built at proper places, sheltered from view, and the vaults to be covered daily with earth as soon as the warm weather advanced. These very specific housekeeping rules were followed by promises of blankets and money soon to arrive. He ended the orders with exhortation once again sheathed in compliment, reminding the troops "of a circumstance which will be remembered to their immortal reputation; that during the whole time the army was encamped at the Last Campaign on Verplank Point, there never was any filth or trash to be seen on the parade nor anything offensive to the sight or smell in the environs of the encampment but on the contrary, there appeared to be an admirable police maintained" (Fitzpatrick 1938: 111-113). At the New Windsor Cantonment he expected nothing less.

The winter Cantonment began in December, 1782, and lasted until victory was declared in April, 1783. The army began to disband in June, 1783, and by September, the huts were sold off. Seven years as an army had given the Continentals some practice at soldiering, but the troops were still "sometimes soldiers," not the career troops of the British. Washington devoted much attention to details of camp housekeeping. He and his officers understood both the sanitary and the disciplinary importance of clean and structured surroundings. He demanded an order, a military order, more stringent than many of his troops practiced at home.

In recent excavations at New Windsor, New York (FIG. 1), archaeological evidence revealed

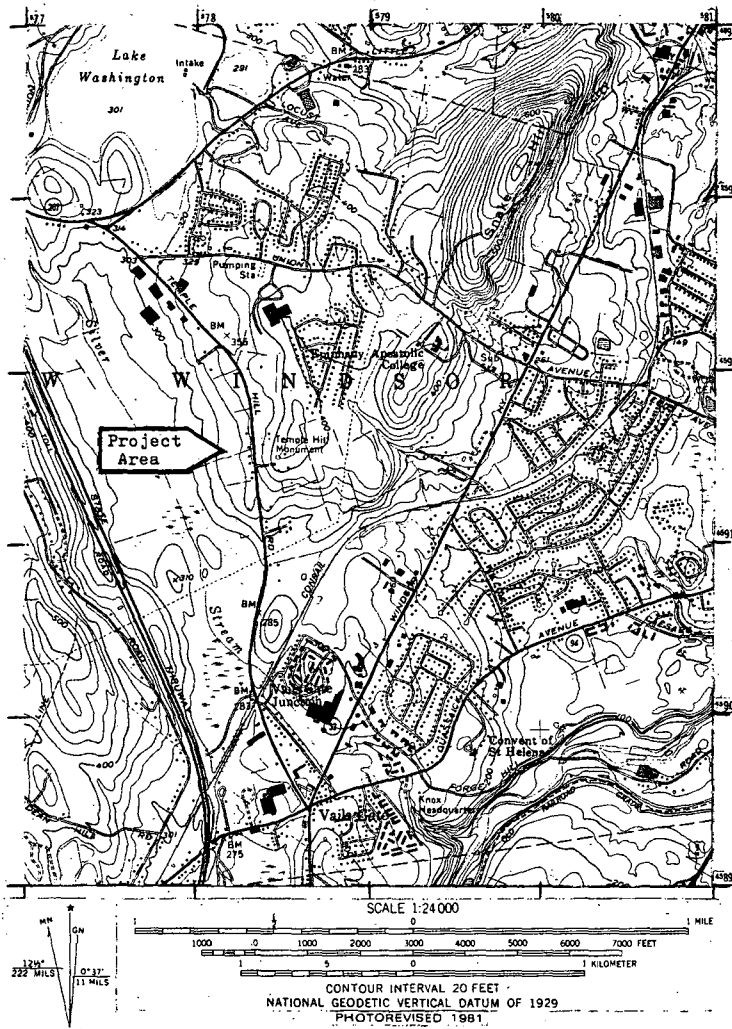


Figure 1. Portion of USGS map, Cornwall Quadrangle, showing location of project area.

land use practices designed to please the commander in chief. The Cantonment encompassed an area of approximately 1600 acres, upon which the army built some 700 log structures and a number of other outbuildings such as stables, kitchens, guardhouses, blacksmith shops, and a hospital. Six to eight thousand people from New York, New Jersey, Massachusetts, New Hampshire, and Maryland were quartered in the log huts that were constructed for their shelter. A significant portion of the site is now maintained as the New Windsor Cantonment Town Park-

lands by the town of New Windsor, Orange County, New York.

Archaeological excavations were undertaken at the site in 1986 by Sheffield Archeological Consultants of Wayne, New Jersey, under the direction of the author (Lenik 1986). The New Windsor Historical Commission proposed to reconstruct a military company street consisting of ten log structures on this site.

Test excavations were conducted within a $1\frac{1}{2}$ -acre parcel of land at the southeastern end of the park where the reconstructed military street

was to be located. The purpose of this investigation was to evaluate the archaeological potential of the construction site. The study area was bounded by the Peace Bell Site (a modern feature) and woods on the north, the 1st Massachusetts Brigade Parade on the east, a dirt road on the south, and a densely wooded area on the west. In 1965 and 1966, a 1st Massachusetts Brigade 4th Regiment hut site and "trash area" were excavated near the southeast corner of the project zone by archaeologist John H. Mead of the Palisades Interstate Park.

Field reconnaissance by Sheffield Consultants had revealed the presence of four shallow pits or depressions within the project area. Two additional depressions were located immediately to the west of the study area, and these features were previously tested in 1982 (Fisher 1983: 5-11). The research design included the investigation of previous land use in the area and of the trash disposal practices of the troops quartered in the huts located to the east of the site.

Four test pits, dug at the eastern edge of the site bordering the brigade parade ground, confirmed earlier indications that this was a sheet trash area (Mead 1980; Fisher 1982). Over 500 bone fragments, most of them calcined, were recovered from these units, as were numerous fragments of charcoal and burned wood. Regimental orders of April 22, 1783, forbade cooking in the huts, directing that the hearths be swept clean, ashes taken from them, and that green brush be put in the chimneys. All cooking was to be done in the kitchens situated in front of the parade for that purpose (Regimental Orders 1783: April 22). The kitchens were located east of and across the parade from the excavated trash area. It would appear that garbage, including bones, was burned in the kitchens or hut hearths and then carried across the parade ground to the trash area to be dumped. Nail fragments, a brick fragment, and a red earthenware ceramic fragment with dark brown interior glaze were also found in this area.

Tests dug in the middle of the project zone between the trash area at the eastern end and the depressions at the western end revealed no evidence of human disturbance and few artifacts. Two horseshoes, a straight pin fragment, one chain link, a tiny piece of glass, and one bone

fragment—most likely from a cottontail rabbit—are the sum total of material found. The soils were undisturbed, and no features were detected in the visual reconnaissance and test excavations. This area would appear to have been left undisturbed during the Cantonment.

Tests within the four depressions at the western end of the site uncovered evidence indicating that three of them were used as latrines or necessities, as Washington called them in the 18th century. He had directed "Necessaries to be built at proper places, to be sheltered from view and the vaults daily covered with earth as soon as the warm season advances" (Fitzpatrick 1938: 111-113). The natural area between these features and the trash area next to the parade would have provided the "shelter from view."

The Archaeological Features

Feature 1, Test 8

Feature 1 is a large oval depression lying along the western border of the project area. This depression measures 9 ft (2.7 m) in length from north to south and 7 ft (2.1 m) in width from east to west (FIG. 2). There is a large backfill pile of earth along the westerly side of the depression. Bedrock outcrop is visible on the surface approximately 2 ft (61 cm) south of the depression, and a second outcrop is located 4 ft (1.22 m) to the northwest. Fisher (1983: 14), in a previous excavation in this area, speculated that such circular pit-depressions may have served as sources of clay for covering the sinks or depressions.

A test measuring 2 ft × 2 ft (61 cm × 61 cm) designated as Number 8 was excavated in the center of this depression. Soil Stratum I was a grayish brown (Munsell 10YR 5/2) silt that ranged in depth from 10 in (25 cm) along the west side of the test to 25 in (64 cm) on the east. This soil layer was hard packed and contained cobbles, pebbles, and a few specks of charcoal. Stratum II consisted of light olive brown silt (Munsell 2.5Y 5/4) that contained a large quantity of cobbles and pebbles. A few specks of charcoal were also found in this soil layer, which was extremely hard packed. The excavation of this

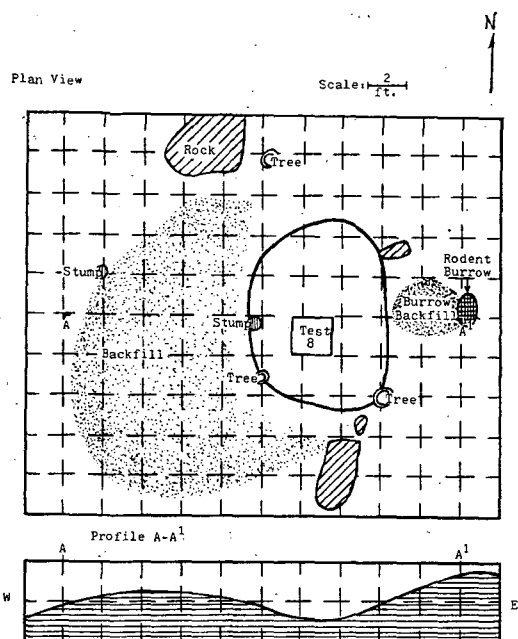


Figure 2. Plan view and profile of Feature 1, depression.

test was halted at a maximum depth of $26\frac{1}{2}$ in (67 cm).

Two soil samples were taken from Feature 1, Test 8. The chemical analysis of these samples produced the following results: Stratum I and Stratum II each contained less than 5 parts per million (ppm) of phosphorus (Potack 1986).

The presence of phosphates in soils is particularly useful for detecting human-altered soils, since they are associated with human activities. A high phosphate value can be interpreted as chemical evidence of human settlement activities (Eidt 1977: 1327).

Two soil samples were taken for control purposes from the site. These control samples produced values of less than 5 ppm and 14 ppm of phosphorus, which are considered "normal" for forested environments (Nancy Potack, personal communication, 1986). Thus, the low value of less than 5 ppm of phosphorus from Test 8 in Feature 1 is considered as normal for the area and *not* as evidence of human activity. Furthermore, no artifacts were recovered from this test, and the soils appeared to be undisturbed. Therefore, it was concluded that this depression or pit was not a sink or necessary.

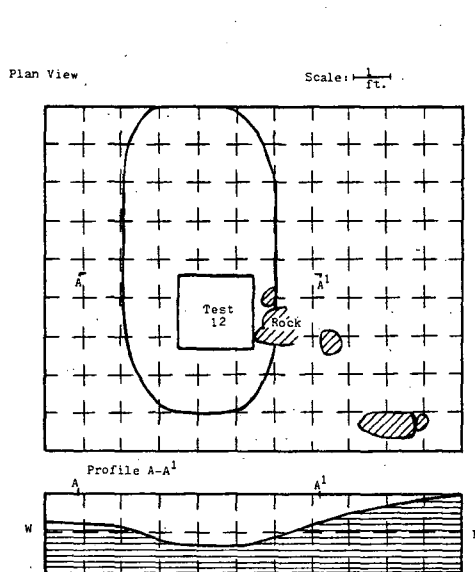


Figure 3. Plan view and profile of Feature 2, depression.

The possibility exists, however, that this pit was used as a source of soil or clay to cover latrines or necessities located elsewhere, as Washington directed. The relatively large size of this depression and the presence of a large backfill pile strongly suggests that the pit was excavated and is not the result of a natural tree fall or animal burrowing activity.

Feature 2, Test 12

Feature 2 is a rectangular depression that is located approximately 20 ft (6.1 m) to the east of Feature 1. This pit or depression is also located in the western end of the project area. Feature 2 measures 8 ft (2.44 m) in length from north to south, 4 ft (1.22 m) in width from east to west, and has rounded corners (FIG. 3). A large, flat rock is present on the surface approximately $2\frac{1}{2}$ ft (76 cm) from the southeast corner of the depression. There is also a large outcrop of bedrock 5 ft (1.52 m) south of this feature.

A test measuring 2 ft \times 2 ft (61 cm \times 61 cm) was excavated within Feature 2, and was placed adjacent to a large rock visible along its east wall. Stratum I was dark brown silt (Munsell 10YR 3/3) that contained cobbles, pebbles, and roots. This

soil layer ranged in depth from 12 to 14 in (30-36 cm). Several fragments of charcoal were found near the bottom of Stratum I, very near its juncture with Stratum II. Soil Stratum II was a mottled yellowish brown and dark brown (Munsell 10YR 5/4, 3/3) silt layer that was excavated to a depth of 24 in (61 cm). Stratum II also contained cobbles, pebbles, and a few specks of charcoal. This soil layer was hard packed, appeared to be undisturbed, and was readily distinguishable from Stratum I above.

Two soil samples were taken from Test Number 12. The chemical analysis of these samples revealed that Stratum I contained 210 ppm of phosphorus, while Stratum II contained less than 5 ppm of phosphorus.

No artifacts were recovered from Test 12. The large rocks along the east wall of the feature do not appear to be a structural element of this feature. The high level of phosphorus found within Stratum I, however, strongly indicates human activity or use. Furthermore, the presence of charcoal near the bottom of Stratum I and within a context of loose dark soil supports this conclusion. The uniform and rectangular shape of this feature also strongly suggests that it was used as a necessary by the troops at the Cantonment.

Feature 3, Test 15

Feature 3 is also a rectangular depression or pit that is located near the northwest corner of the project area. Feature 3 is located approximately 30 ft (9.1 m) to the north of, and is in line with, Feature 1. Feature 3 measures 7 ft (2.1 m) in length from north to south and 4 ft (1.22 m) in width from east to west (FIG. 4). It is a shallow depression with rounded corners, and some backfill soil is present along its westerly side. A large flat rock is visible on the surface adjacent to the northeast edge of the pit.

Test Number 15 was excavated within Feature 3 and was located near its northern end. Stratum I was very dark grayish brown silt (Munsell 10YR 3/2) that contained pebbles and charcoal. A large rock was encountered in the north wall of this soil layer. Stratum II consisted of hard packed yellowish brown silt (Munsell 10YR 5/8) that contained many large cobbles. Test 15 was excavated to a maximum depth of 27 in (69 cm).

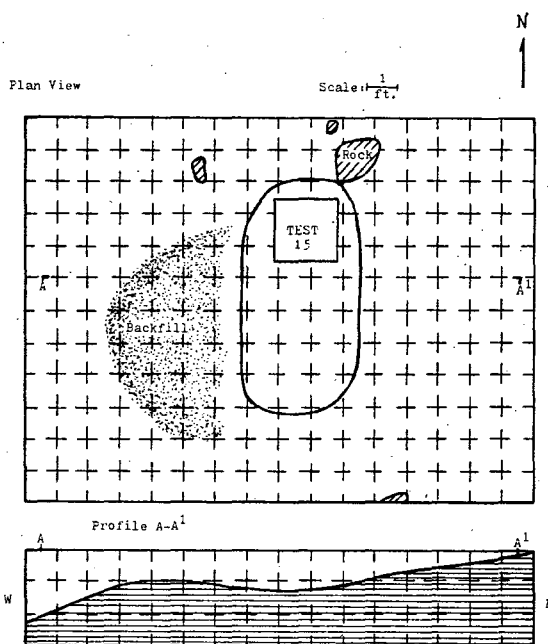


Figure 4. Plan view and profile of Feature 3, depression.

Two soil samples were collected from Feature 3. The sample taken from Stratum I contained less than 5 ppm of phosphorus. The sample taken from Stratum II contained 230 ppm of phosphorus.

No artifacts were found within Feature 3. Our test, however, revealed the presence of charcoal within Stratum I and a large number of rocks and cobbles, particularly within soil Stratum II. Once again, the high level of phosphorus (230 ppm) found within Stratum II strongly suggests human activity or use within this feature. Furthermore, the presence of a backfill pile along the west side of the depression indicates that this pit was excavated by humans and is not the result of animal burrowing or a tree fall.

The large flat rock located at the northeast corner of the depression could have been used as a support for a wooden structure placed over the pit. This is pure conjecture, however, since no other stone placements were found around the edge of the feature. Fisher (1983: 5, 11) reported similar stone placements along the edge of two linear depressions located to the west and southwest of our project area and concluded that they could be supports for a wooden structure.

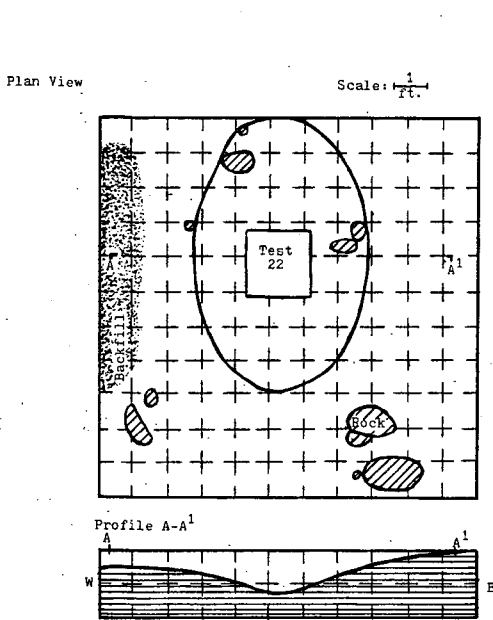


Figure 5. Plan view and profile of Feature 4, depression.

In summary, the uniform, rectangular shape of Feature 3, together with the presence of a back-fill pile, charcoal, and high concentration of phosphorus strongly suggest that this feature was used as a necessary.

Feature 4, Test 22

Feature 4 is an oval depression located in the northwest corner of the project area. This feature lies approximately 15 ft (4.6 m) north and slightly west of Feature 3. Feature 4 is also roughly in line with Features 1 and 3.

Feature 4 is a rectangular depression with rounded corners measuring 8 ft (2.4 m) in length from north to south and 5 ft (1.5 m) in width from east to west (FIG. 5). Several stones are visible on the surface within this feature: two stones are along the east-center edge of the depression, and one large stone is located at the northwest corner. Also, there are three flat stones located immediately outside the southeast corner of the depression and two smaller stones outside the southwest corner. Some back-fill soil is present along the west side of the pit.

Test 22 was excavated within the center of Feature 4. Stratum I was a dark brown silt (Munsell

10YR 3/3) that extended from 0 to 25 in (0-64 cm) in depth. This soil layer contained very few rocks and pebbles. Specks of charcoal were found throughout Stratum I, and two animal teeth were recovered at depths of 14 in (36 cm) and 17 in (43 cm).

Stratum II consisted of light olive brown (Munsell 2.5Y 5/4) silty clay that contained many pebbles and cobbles. No artifacts were recovered from this soil layer, which appears to be undisturbed. Stratum II was excavated to a depth of 30 in (76 cm).

Two soil samples were collected from Feature 4. The sample taken from Stratum I contained less than 5 ppm of phosphorus, while the sample taken from Stratum II contained 630 ppm of phosphorus.

Our analysis of the data from Test 22 strongly indicates human activity and use within the pit-depression. Two animal teeth were found within Stratum I, and these have been identified as coming from a domestic cow (*Bos taurus*; Susan Ochoa, personal communication, 1986). Furthermore, several specks of charcoal were found throughout Stratum I as well. This soil layer was loose fine silt that was relatively free of pebbles and cobbles. These data strongly support our conclusion. Finally, the high level of phosphorus (630 ppm) found within Stratum II also suggests human activity or use, i.e., the elimination of human waste. This soil stratum was undoubtedly the exposed bottom surface of a sink or necessary during the Cantonment period.

As noted earlier, several flat rocks are present on the surface near the southeast corner of the pit. Stones were also visible on the surface near the southwest corner and at the northwest corner. Four large stones that appear to have fallen into the pit were also found within Stratum I of Test 22. The presence of these stones around the edge of this feature suggests that they might have been used as supports for a wooden structure over the pit.

Summary and Interpretations

The recent archaeological investigations indicate that the project area contained four land-use zones (FIG. 6). The soldiers' huts were located at the east end of the site. A sheet trash area was

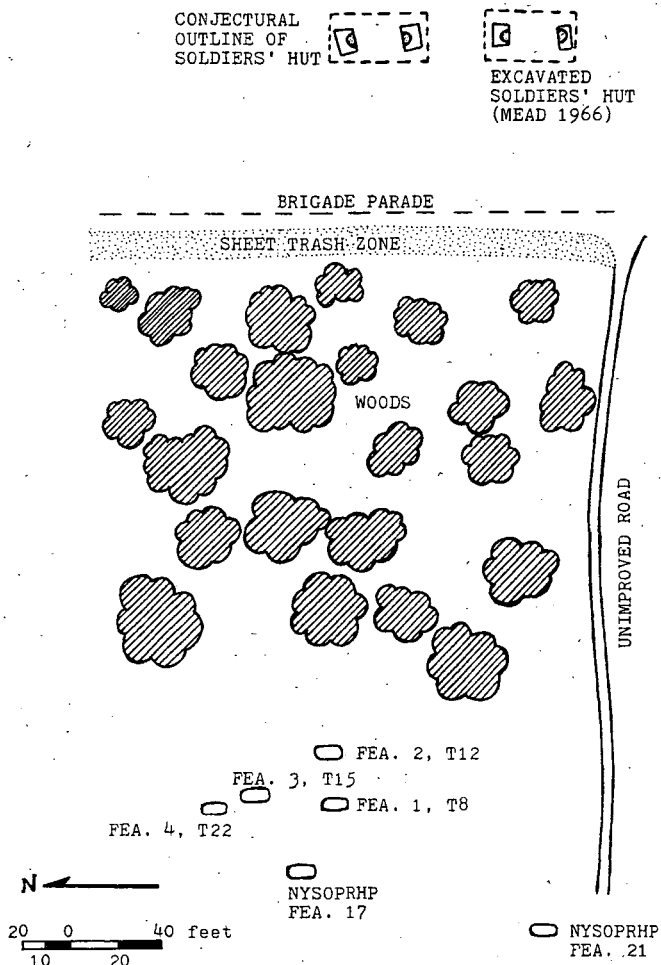


Figure 6. Map of project area showing land-use pattern, i.e., the locations of huts, trash zone, and necessities.

found next to the brigade parade, and just beyond it was a natural wooded area. A walk through this area brought a soldier to three latrines or necessities removed from the parade and hut area for sanitary reasons and for privacy. Undoubtedly many more latrines were located elsewhere nearby.

During the construction of the log huts in 1782-83, clay or clay-like subsoil was used to fill the space between the logs to keep out the wind, rain, and snow. Clay for this purpose would have been secured from pits dug into the ground from which material was removed for chinking. Various archaeological investigations at the New Windsor Cantonment hut sites resulted in the

recovery of numerous specimens of "fused" clay (Fisher 1982, 1983) and burned clay (Lenik 1986). Clay was also used in place of mortar as chinking in stone fireplaces and, in at least one instance, as the bed of a hearth (Mead 1980: 102).

Landis (n.d.: 2) has observed that at the Valley Forge, Pennsylvania (1777, 1778), and Morristown, New Jersey (1779-1780), encampments, clay pits were dug at any suitable location where the subsoil was satisfactory and required the least amount of work. Furthermore, since these pits were already dug, most of them would have been converted into latrines or trash pits. At the New Windsor Cantonment, however, no pits

were found in the areas around the hut sites; instead, they were located some 250 ft (76.2 m) or more to the west.

Landis (n.d.: 1) further notes that clay pits were located in a "regular order or alignment" at the Varum Brigade Site at Valley Forge and at the Second Connecticut Brigade Site in Morristown. It appears that at these two sites Baron Von Steuben's regulations were being observed. Von Steuben's regulations stated:

The sinks of the first line are to be 300 feet in front, and those of the second line the same distance in the rear of the camp. The quartermaster must be answerable . . . that sinks are filled up and new ones dug every four days and oftener in warm weather (Riling 1966: 80, 85).

At the Valley Forge and Morristown encampments the latrines have all been located in the pits from which clay chinking was removed (Landis n.d.: 3). It is not likely that sinks would have been dug as often as required by Von Steuben's regulations.

In the late 1960s, at least six pits or latrines were archaeologically excavated at the New Jersey Brigade hut camp near Morristown, New Jersey (Landis n.d.: 12-23). These excavations revealed that the latrines, which Landis described as slit trenches, were generally rectangular in shape and measured 5 ft (1.5 m) in length and 2 ft (61 cm) in width. These latrines contained very few artifacts and were backfilled with earth and stones. The paucity of artifacts and the act of backfilling the pits is identical to the findings at New Windsor. The lack of artifacts within the latrines suggests limited use of these features. In his study of camp life in the Continental Army, Wright (1975: 38) has noted that latrines were covered with brush, but the men were not inclined to use them.

Our work at New Windsor revealed that three of the excavated pits, identified as Features 2, 3, and 4 in this study, contained charcoal fragments and a high concentration of phosphorus. Also, two teeth from a domestic cow were found within Feature 4. The conclusion, therefore, is that Features 2, 3, and 4 clearly show evidence of human activity or use and that they functioned as necessities or latrines during the 1782-1783 encampment. Furthermore, two "linear" depres-

sions excavated by Fisher in 1982 and located nearby are also former sinks or necessities (Fisher 1983: 5, 11). Feature 1, a depression measuring 9 ft × 7 ft (2.7 m × 2.1 m), was probably used as a source of clay for the huts as well as for backfill soil to cover the necessities located nearby.

The necessities at the New Windsor Cantonment are larger in size than those found at Morristown. The New Windsor latrines were 8 ft × 4 ft (2.4 m × 1.22 m), 7 ft × 4 ft (2.1 m × 1.22 m), 8 ft × 5 ft (2.4 m × 1.5 m), 11 ft × 2 ft (3.4 m × 61 cm), and 15 ft × 4 ft (4.6 m × 2.1 m), while those at Morristown, which were found near officers' huts, were generally 5 ft × 2 ft (1.5 m × .6 m) in size. The latrines at New Windsor are associated with the enlisted men's huts, and their larger size may be the result of deliberate construction to accommodate use by more individuals.

The archaeological evidence uncovered in this excavation gives physical testimony to the effectiveness of Washington's leadership. Order and discipline are revealed not only in the straight rows of the huts upon a rocky hillside, but also in the delineation of use areas for sanitary practices. Even the necessities are aligned on the cardinal axis with the huts. Washington's own testimony is that "he finds himself very agreeably affected with a view of the present comfortable and beautiful situation of the troops" (Fitzpatrick 1938: 111).

New Windsor's dramatic story of Washington's effort to avert an officers' mutiny at the Cantonment demonstrates his grasp of leadership. The physical orderliness of New Windsor reflects that same leadership in a far more subtle way.

References

- Eidt, Robert C.
1977 Detection and Examination of Anthrosols by Phosphate Analysis. *Science* 197(4311): 1327-1333.
- Fisher, Charles
1982 Archaeological Reconnaissance Survey in the Area of the 1st Massachusetts Brigade, New Windsor Cantonment, Orange County, New York. New York State Parks, Recreation and Historic Preservation, Bureau of Historic Sites, Peebles Island, Waterford, NY.
- 1983 Report on the 1982 Field Season of Archaeologi-

cal Survey in the Area of the 1st Massachusetts Brigade, New Windsor Cantonment, Orange County, New York. New York State Parks, Recreation and Historic Preservation, Bureau of Historic Sites, Peebles Island, Waterford, NY.

Fitzpatrick, John C., ed.

1938 *The Writings of George Washington from the Original Manuscript Sources 1745-1799*. Vol. 26. United States Government Printing Office, Washington, D.C.

Landis, Stanley W.

n.d. Archaeological Explorations of the New Jersey Brigade Campsite, Winter of 1779-1780 at the Sherman Wildlife Preserve. Manuscript on file, Morristown National Historic Park, Morristown, NJ.

Lenik, Edward J.

1986 Archaeological Investigations of the Hut Reconstruction Site, New Windsor Cantonment Town Park, New York. Sheffield Archeological Consultants, Wayne, NJ.

Mead, John

1980 Summary of Archaeological Surveys, Excavations, etc., at the New Windsor Cantonment, 1782-1783. Trailside Museums, Bear Mountain, NY.

Potack, Nancy

1986 Laboratory Report, General Testing Corp., Hackensack, NJ. Report on file, Sheffield Archeological Consultants, Wayne, NJ.

Regimental Orders

1783 Regimental Orders, 2nd Massachusetts Regiment, April 22. Copies on file, National Temple Hill Association, Vails Gate, NY.

Riling, Joseph R.

1966 *Baron Von Steuben and his Regulations*. Reprinted by Ray Riling Arms Book Company, Philadelphia, PA.

Wright, Col. John Womack

1975 *Some Notes on the Continental Army*. New Windsor Cantonment Publication 2. National Temple Hill Association, Vails Gate, NY.

Edward J. Lenik

Sheffield Archeological Consultants

100 Deerfield Road

Wayne, NJ 07470