PHASE II ARCHAEOLOGICAL INVESTIGATION OF THE EISENHOWER AVENUE EARTHWORK SITE, ALEXANDRIA, VIRGINIA

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ABSTRACT

A Phase II Archaeological Investigation was conducted for the Eisenhower Avenue Earthwork site (44AX54), located in the city of Alexandria. The site was located during a previous survey of segment J-2 of the Franconia-Springfield Metrorail line and it was identified as a possible Confederate fortification and associated encampment area. The investigative techniques employed in the Phase II study included a program of documentary research focused primarily on Civil War history in northern Virginia, conducted by Dr. Amy Friedlander of Louis Berger & Associates, Inc. (LBA) assisted by Walton H. Owen and Kim Bernard Holien, Civil War Specialists. A program of field investigations including a metal detector survey, test excavation in the hypothesized encampment area, and cross-trenching of the earthwork was conducted by Charles LeeDecker (LBA). The soil profile analysis was conducted by Dr. Daniel Wagner of GEO-SCI Consultants, Inc.

No evidence was found that would support the interpretation of the site as a military fortification. Rather, it appears to have been built as a haul road or access ramp for the Manassas Gap Railroad. The site is not considered eligible for the National Register and no further investigation of the site is recommended.

LOUIS BERGER & ASSOCIATES, INC.
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I. INTRODUCTION

A Phase II Archaeological Investigation of the Eisenhower Avenue Earthwork site was conducted by the Cultural Resource Group of Louis Berger and Associates, Inc. (LBA). This study was sponsored by the Washington Metropolitan Area Transit Authority (WMATA) through Wallace Roberts & Todd, WMATA's contractor for environmental planning studies. As a recipient of Federal funding from the Urban Mass Transit Administration, WMATA undertook this study in order to comply with Federal cultural resource management policies which require consideration of the effects of construction on significant prehistoric and historic resources.

The Eisenhower Avenue Earthwork Site is located in the proposed parking lot associated with the Van Dorn Street Station on Segment J-2 of the Franconia-Springfield Metrorail line in the City of Alexandria, Virginia. The site was initially identified during a Phase I survey of Segment J-2 undertaken by Professional Service Industries, Inc. (LeeDecker et al. 1983). The site consists of a linear embankment nearly 400 feet long and located along the Orange and Alexandria Railroad (now the Southern Railroad) and the unfinished Manassas Gap Railroad. During the Phase I survey, it was identified as a possible Civil War fortification, however, no documentary evidence was found during the Phase I investigations to corroborate this interpretation. Local experts at the Fort Ward Museum and the Center for Military History, Department of Defense were consulted and invited to the site for a field inspection. Based on the earthwork's formal characteristics and strategic location, it was then identified as a possible Confederate fortification with an associated encampment area immediately to the west. This interpretation was tentative and it was agreed that further documentary research and archaeological investigation were necessary to positively determine the function of the site. The site has been registered as site 44AX54 by the Virginia Research Center for Archaeology.

The objectives of the present Phase II study are (1) to determine whether or not the site meets the criteria of eligibility for inclusion in the National Register of Historic Places; (2) to determine what impact the proposed WMATA development will have on the site; and (3) to develop methods for mitigation of adverse impacts on the site, if appropriate. In order to maximize the usefulness of the data gathering and analytical efforts, the program of investigations was structured to provide answers to the following research questions:

(1) What is the function of the earthen embankment, that is, when was it built, by whom and for what purpose?

(2) Is there evidence that an encampment existed behind (to the west of) the embankment? If so, what was the size and duration of the encampment?

(3) Assuming that the embankment is a Confederate fortification, what was its significance in overall Confederate military strategy?

The study methodology for this project included both documentary research and field investigations. The documentary research included examination of maps, county deed and tax records as well as specialized military archives.

Field investigations included a systematic metal detector survey of the site, archaeological excavations in the possible encampment area and in the earthwork itself, and a program of soil augering in and around the earthwork feature. Field investigations were completed between April 18 and May 1, 1984.

Arrangements have been made to deposit the field notes, artifacts and associated materials to the Alexandria Urban Archaeology Program, City of Alexandria for permanent curation.

II. SETTING

The Eisenhower Avenue Earthwork site is located in the southwestern section of the City of Alexandria. The site occupies a small undeveloped tract within a commercial and industrial zone of the city. The site is bordered on the north by a truck yard used by the Southern Railroad, on the east by a parking lot servicing the United Parcel Service building, on the west by a METRO connector road and on the south by Eisenhower Avenue (see Figure 1). The Southern Railroad lies approximately 500 feet to the north and Richmond, Fredericksburg and Potomac Railroad lies approximately 600 feet to the south. The earthwork feature is oriented approximately north-south and is roughly perpendicular to the two railroads. Also, the unfinished Manassas Gap Railroad, now partially destroyed by the Southern Railroad truck yard, would probably have intersected the earthwork at its northern terminus. Topographically the site occupies a north-facing slope along the valley of Back Lick Run, a tributary of Cameron Run and Hunting Creek. The site is presently forested with a mix of deciduous and evergreen trees, with an understory of vines, shrubs, ferns and weeds. Local soils are generally characterized by loamy surface horizons and clayey or silty clay subsoils.

III. HISTORICAL RESEARCH

Introduction

This chapter discusses the results of the historical research component and the methods of data collection used. The research design posited three questions concerning the possible function and significance of the structure (see above, Chapter I). The first question addressed the function of the earthwork, and the

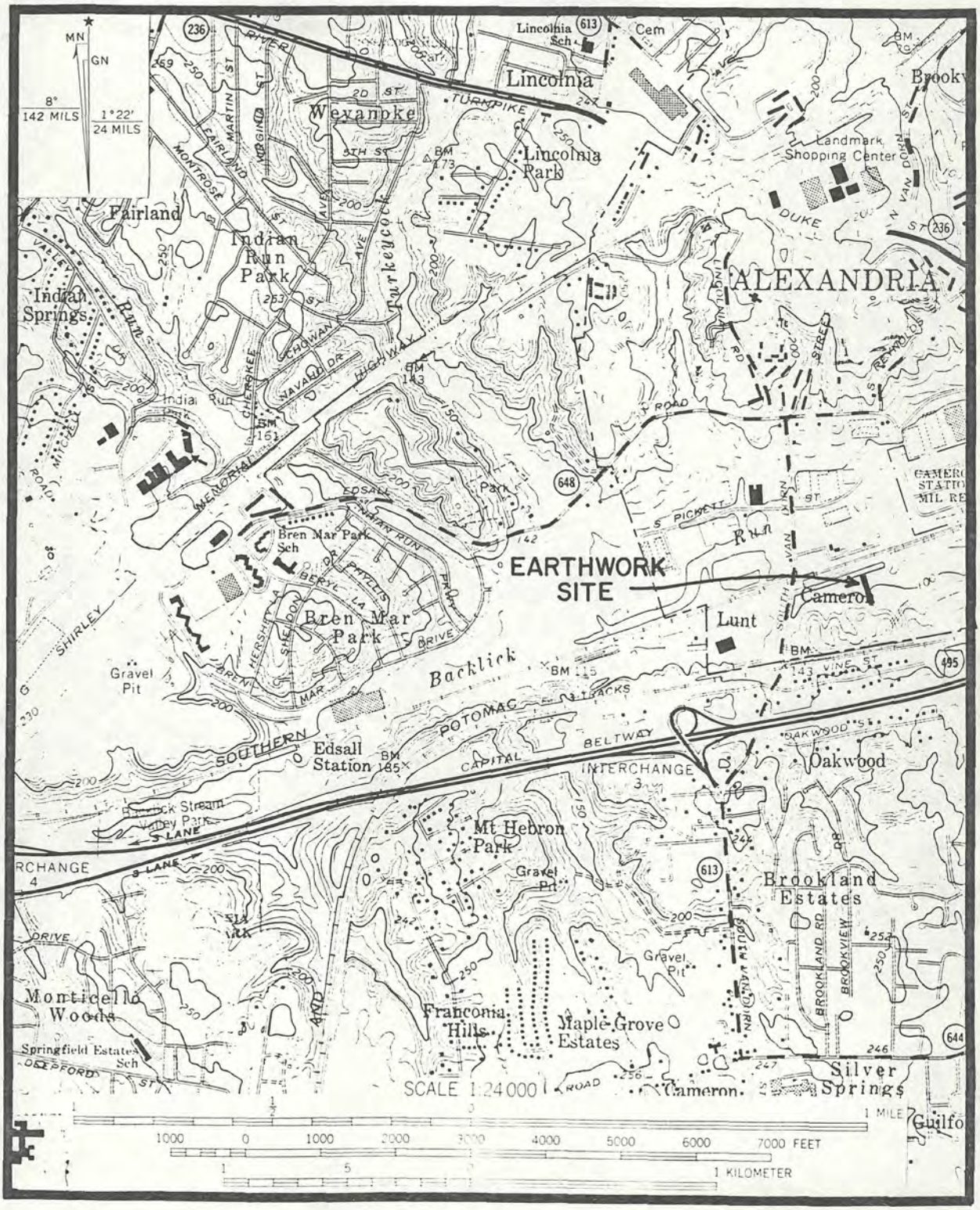


Figure 1: Local Setting. USGS 7.5 min. Quadrangle Annandale, Virginia.

second and third questions elaborated upon the historic context of the earthwork in the event that it proved to be an earthen fortification associated with the Civil War. The program of investigations, however, concluded that the earthwork was not constructed as a fortification. This conclusion obviated the need to address the second and third questions; therefore no discussion is provided.

Historical data was collected between March 26, 1984 and April 18, 1984. In addition to LBA staff, two local historians, who possess highly specialized knowledge of the Civil War and its history in Fairfax County, participated in this project. Their input included both historical research and on-going consultation as the archaeological field work progressed. Their findings concerning this resource are presented in Appendix A. One research trip was made to Richmond, Virginia. Other repositories visited include the National Archives, Library of Congress, Fairfax County Courthouse, Fairfax County Archives, City of Alexandria Courthouse and Alexandria Public Library (Lloyd House). At the conclusion of Phase I investigations (LeeDecker et al. 1983), it was hypothesized that the structure was a Confederate fortification, constructed possibly during the spring of 1861, and occupied through the late summer, fall and early winter after the Union defeat at First Manassas. An alternative explanation of the hypothesized military fortification suggested that it may have been used during 1862 after Second Manassas. This explanation was believed to be unlikely since movements in this area after Second Manassas were primarily by cavalry, whose mobility would have been impaired by the presence of heavy weaponry.

Arguments supporting identification of the structure as a Confederate military fortification relied on its placement relative to the railroad (then the Orange and Alexandria, and now the Southern), its engineering characteristics, and its potential role in the events of the late summer, fall and early winter of 1861. Chapter IV discusses the physical characteristics of the structure and their similarity to those of mid-nineteenth century military fortifications. Collection of historical data focuses on military activities in this area during the period during which the earthwork might have been constructed and occupied, and on land uses in this vicinity that might have resulted in construction of a road. On the basis of the historical research, it is held that the structure is probably the remnant of a mid-nineteenth century road that led from a settlement on the ridge down to the embankment that would have formed the road bed for the Manassas Gap Rail Road, had the assignment not been abandoned.

Military Activities in the vicinity of the Project Area

On May 8, 1861, Confederate General Philip St. George Cocke observed that holding Alexandria, Virginia, would prove difficult

for the Confederate Army since it was situated opposite Washington, D.C. in the re-entering curve of the Potomac River. "The enemy," he noted, "by proceeding below, to Fort Washington or Mount Vernon, may turn the position, take in the rear, and cut off its communication, and so by advancing over the bridges from above the enemy may, by short lines, turn and get in the rear of that place" (U.S. Department of War:1881:II:815-816). Robert E. Lee counseled commanders to secure the rail lines, and on May 11, 1861, Cocke reported to Daniel Ruggles, who commanded Confederate forces at Fredericksburg, Virginia, that he proposed to secure the area "in the direction of the Orange and Alexandria Railroad" with Ruggles's line extended through Aquia Creek to Dumfries and the Occoquan (Ibid.:831-832). Cocke continued to show concern for his right flank, due to the proximity of the Potomac River to his position, noting that if Alexandria fell, its loss signified "the whole system of railroads, which debouching from Alexandria, penetrates this noble country to its very heart, connected with the valley and strategically with Harper's Ferry, and thus laying bare the very vitals of the State to a deadly attack or to a stunning blow" (Ibid.:842).

Despite Cocke's concern regarding the proximity of the Potomac, Alexandria fell on May 24, 1864 to Union troops who advanced on the city from the north. By June 24, 1861 the Union Army controlled the Orange and Alexandria line "some seven miles outside of Alexandria" (U.S. Department of War:1881:II:720). The Confederates controlled the line fifteen miles from Manassas, and the area between had been "destroyed effectively as possible and a long deep cut filled in with trees and earth" (Ibid.). The Confederate line was established at Manassas with forward positions at Fairfax Courthouse, Centreville, Germantown and Fairfax Station (Ibid.:718, 722).

After the Battle of First Manassas in late July 1861, the Confederate Army was located around Fairfax Courthouse, "with strong outposts at Munson's and Mason's Hills, with the cavalry" under the command of J.E.B. Stuart (Johnston 1874:67). Their line extended to Springfield Station on the Orange and Alexandria Railroad (U.S. Department of War:1881:V:881). Both Joseph Johnson and Jubal Early carefully justified the Confederate Army's decision <u>not</u> to pursue the retreating Union Army to the banks of the Potomac in the aftermath of their victory at Manassas (Johnston 1874:60-61; Early 1960:44), suggesting that Confederate forces did not establish a position as far east as the project area. The Union Army, in fact, had not entirely abandoned positions in northern Virginia. On August 11, 1861, Pierre G.T. Beauregard suggested that the Confederates use their advanced positions in the vicinity of Fairfax Courthouse and Fairfax Station to "capture the enemy's advanced forces at Annandale" (U.S. Department of War 1881:V:778-779), which is north and west of the project area.

In September the Confederates began to fall back from their forward positions, withdrawing troops from Munson's and Mason's Hills (Johnston 1874:74). Still concerned because the semi-circular course of the Potomac River "made it easy for the Federal army to turn either of our (Confederate) flanks without exposing its own communications, "The Confederates withdrew to Centreville (Ibid.:77). Confederate engineers were instructed to fortify the hill in the vicinity of Centreville, but since they "had no artillery enough for their works and for the army fighting elsewhere, at the same time, rough wooden imitations of guns were made, and kept near the embrasures, in readiness for exhibition in them" (Ibid.:78). During these months, skirmishes took place at Ball's Cross-Roads (August 27-28, 1861); Bailey's Cross-Roads (August 28-30, 1861); Munson's Hill (August 31, 1861); Springfield Station (October 3, 1861); between Falls Church and Fairfax Courthouse (November 18, 1861); Vienna (November 26, 1861); Dranesville (November 26-27, 1861); Annandale (December 2, 1861); and Burke's Station (December 4, 1861). All of these are north and west of the project area.

In the winter of 1861-1862, the Confederate Army held the line from Evansport, Dumfries, Occoquan and Manassas in northern Virginia. Between March 7 and 9, 1862, they withdrew below the Rapahannock River. When the Confederate forces again swept through this area after the Battle of Second Manassas (August 29-September 1, 1862), the commanders opted not to launch an assault eastward to Washington, D.C., but instead swung north toward Maryland in the campaign that ended in the Battle of Antietam on September 17, 1862 (Early 1960:134).

This review of the events in northern Virginia Failed to identify information explicitly identifying an earthwork fortification south of the Orange and Alexandria Railroad, approximately five miles from Alexandria. From this summary, moreover, construction of such a fortification appears unlikely. In particular, Union commanders controlled the Orange and Alexandria Railroad line for seven miles outside of Alexandria before the Battle of First Manassas. After this battle, the Confederate line appears to have been located substantially west of the project area, and during the fall, their forces tended rather to withdraw than advance.

Mid-Nineteenth Century Land Use in the Vicinity of the Project Area

A "Topographical Survey of the Right Bank of the Potomac" by the U.S. Coast Survey, done in November and December 1861, depicts the Union line in northern Virginia (U.S. Coast Survey 1861). A Confederate breastwork is shown north of Springfield Station. The Union line surrounding Washington, D.C. is also shown as well as roads, railroads, settlements and names of individual land owners.

Comparison of this historic map with a modern U.S.G.S quad sheet (Annandale, Virginia, Quad) indicates that Springfield Station corresponds to the location of the modern Springfield Station.

The project area is located three miles east of Springfield Station on the Southern Railroad. When this distance was measured along the Orange and Alexandria Railroad (now the Southern), it was found that a farm road articulated with an embankment parallel to the south of the Orange and Alexandria Rail Road. At the head of the road, which was perpendicular to the embankment and to the railroad, was a small settlement. No landowner was listed, and the nearest neighbor identified was a "Mrs. Scott", whose property was located immediately east, toward Alexandria.

A title search of the project area shows that the property was originally part of a 185 1/4-acre tract (City Record Card, City of Alexandria, Department of Real Estate Assessment; City of Alexandria Deed Book 885, Page 312; Fairfax County Deed Book C-9, Page 224; Fairfax County Deed Book C-9, Page 301; Fairfax County Deed Book I-9, Page 36). Emmanuel G. and Lucinda Compton of Alexandria sold the Property to William Earnest, Samuel Evans and Charles Huston, Pennsylvania-based investors, on November 15, 1855 (Fairfax County Deed Book X-3:83). The deed noted that the property was crossed by the Orange and Alexandria and the Manassas Gap Railroads and bordered on the east by land owned by Scott. County tax records indicate that there were buildings valued at $500.00 on this property in 1856 (Fairfax County 1856:15). In 1861, these improvements were valued at $600.00, and in 1867, they were again valued at $600.00 (Ibid. 1861:15; Ibid. 1867:18).

The information contained in the tax records confirms details presented in the map described earlier. Specifically the data confirm the presence of a small settlement, the boundary with the Scott property, and the presence of two railroad lines. Since details can be independently verified, the reliability of the map is enhanced. It, therefore, appears that the road shown three miles east of Springfield Station on the Orange and Alexandria corresponds to the earthwork under investigation.

IV. FIELD INVESTIGATIONS

Field investigations conducted for the present Phase II study included a metal detector survey within a grid of 50x50 foot squares, test excavation of a tentatively identified winter hut pit located to the west of the embankment, cross-trenching of the earthwork, and analysis of soil profiles. During the Phase I study (LeeDecker et al. 1983), 1x1x1 foot shovel tests were excavated at 75 foot intervals across the site, but with completely negative results. Also, a topographic map and cross-section of the earthwork were prepared using a transit (Ibid.:18).

For spatial control, a grid of 50x50 foot squares was establishd over the site area. A point near the southern terminus of the

earthwork feature was chosen as the grid origin and baselines were laid out parallel to and perpendicular to the axis of the earthwork feature (Figure 2). Each grid square was designated according to the coordinates at its southwest corner.

The tentatively identified winter hut pit was designated Feature 1 (Plate 1). It is located approximately 130 feet west of the earthwork and it is near the crest of a small hill, occupying an elevation approximately three feet above the top of the earthwork. The leaf litter and brush were cleared from the pit and immediately adjacent area so that plan and profile drawings could be prepared (Figure 3). A grid of 5x5 foot squares was laid out over Feature 1 and tied in to the site grid. The pit is rectangular in plan, measuring approximately 9x14 feet at the ground surface. The walls slope strongly toward the bottom of the pit and there is no evidence that any attempt was made to level the floor or staighten the sides of the pit.

A large mound of backdirt is immediately adjacent to the pit's northwestern edge while a smaller scatter of backdirt is present to the southeast of the pit.

A 2.5x5 foot excavation unit, Test Pit A, was laid out to one side of the long axis of the pit to determine whether any artifacts were present which might date the feature or provide interpretive information. Two 0.5 foot levels were excavated and screened through 1/4 inch mesh, but with completely negative results. Two soil strata were defined during excavation of Test Pit A. Stratum A was a very dark grayish brown (10YR 3/2) loose loam which ranged in thickness from 0.1 to 0.5 foot in thickness; it was a humus zone that apparently had developed in recent pit fill. Stratum B was the natural subsoil, a dark yellowish brown (10YR 4/4) silty clay, which was identical to the backdirt piled at opposite ends of the pit.

The pit had the appearance of having been dug relatively recently, probably within the last 20 to 50 years, as there were no large trees either in the pit or the backdirt piles, and because both the backdirt and pit fill were structureless and very loose in consistency.

The earthwork feature, designated Feature 2, was examined by excavation of a cross-trench. The cross-trench was placed along the 100-North baseline, a location which afforded a representative profile of the feature. Impediments posed by trees and the irregular topography in the immediate are of the earthwork prevented the use of a machinery to excavate the trench, therefore it was excavated by hand.

The cross-trench (Plate 2) was 42 feet long and extended to level ground on both sides of the embankment. It was excavated to natural soils at both ends, but because of extremely heavy clay

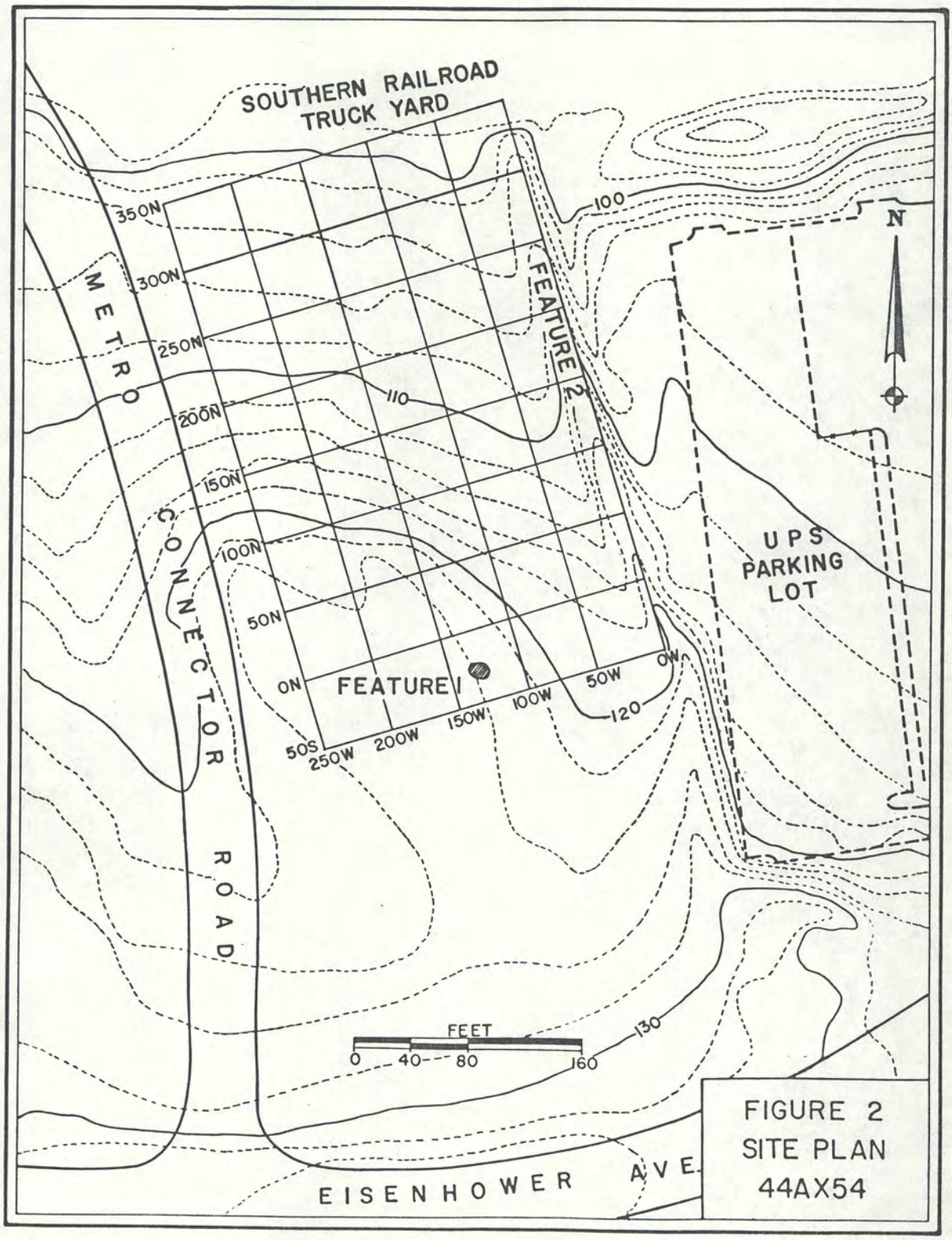


FIGURE 2
SITE PLAN
44AX54

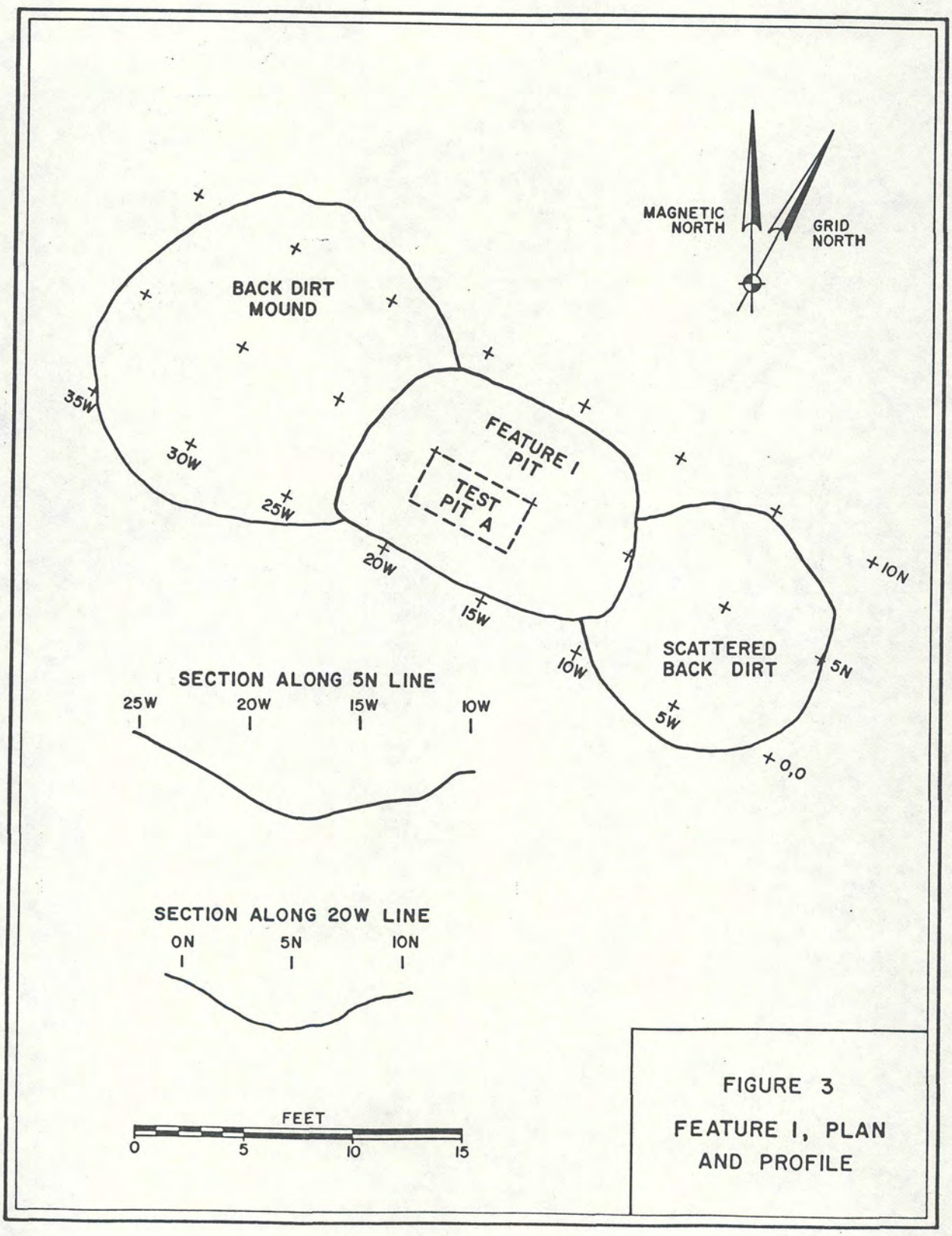


FIGURE 3

FEATURE I, PLAN AND PROFILE

PLATE 1. View of Feature 1, Facing Southwest, After Excavation of Test Pit A.

PLATE 2. View of Feature 2, Along Cross-Trench, Facing Northeast.

soils encountered in the core of the feature, the central portion of the trench was not fully excavated, but was augered instead.

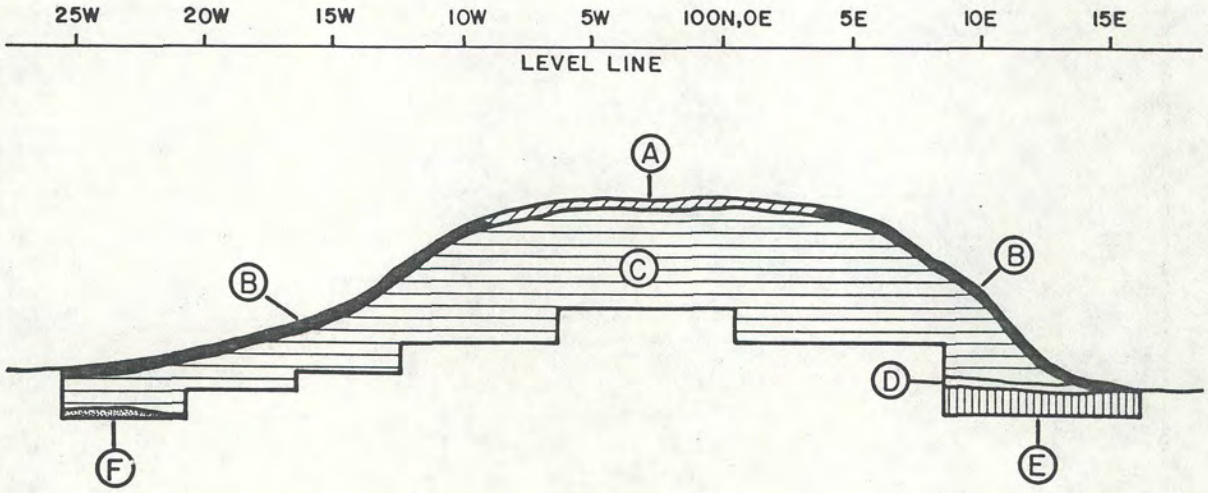
The soil profile observed in the cross-trench is illustrated in Figure 4. The topmost stratum, Stratum A, was thin cap of gravel and pebbles mixed with a brown (10YR 4/3) sandy loam which extended across the top of the embankment. Stratum B was a thin surface veneer of brown (10YR 4/4) silt loam covering the sides and foot of the feature. The interior of the embankment, Stratum C, was a zone of mixed fills, including yellowish brown (10YR 6/6) silt loam, mottled brown (10YR 5/3) and yellowish red (5YR 5/8) clay, dark grayish brown (10YR 4/2) silt loam, decaying organic material and scattered pebbles and cobbles.

At the eastern end of the trench, the original land surface was exposed. This consisted of Sratum D, a very dark brown (10YR 2/2) loam which rested on Stratum E, a brown (10YR 4/4) silt loam. At the western end of the trench, Stratum F was encountered beneath the zone of mixed fills. Stratum F was a yellowish brown (10YR 5/6) silty clay loam, a subsoil horizon. (The consulting soils scientist's report provides detailed soil descriptions in Appendix B).

Examination of the cross-trench through the earthwork revealed important characteristics of its construction which are incompatible with typical military fortifications of the Civil War (cf. Mahan 1968). First, the gravel and cobble cap is somewhat anomalous and it appears that this stratum would most likely have functioned as a pavement. Second, examination of the cross-trench profile showed that downcutting of the original soils was very pronounced on the western side of the feature while the original soils to the east of the earthwork were relatively undisturbed. If the earthwork were constructed to defend higher ground to the west, the cross-trench should have revealed substantial downcutting of the original soils on the east side of the embankment. Constructed in this way, the ditch would have served as an impediment to advancing enemy forces. Examination of the subsurface soil profiles indicates that what appears to be a ditch on the eastern side of the embankment is actually an erosional gully whose contours have been accentuated by grading of the immeditely adjacent parking lot.

Finally, if the earthwork feature were a military fortification, it would have been constructed simply by excavation of a ditch and piling the dirt to one side, therefore the soils in the embankment should be identical to those in the immediate area. Examination of the cross-trench profile and auger tests showed that the earthwork was constructed only partially of local soils. One of the identified fill materials was a dark grayish brown silt loam which must have been transported to the site from a low-lying, poorly drained location. These poorly drained soils are more prominent in the base of the earthwork, thereby indi-

FIGURE 4
FEATURE 2
PROFILE OF
EARTHWORK, NORTH WALL



Ⓐ GRAVEL AND PEBBLE CAP WITH BROWN (10YR4/3) VERY SANDY LOAM.

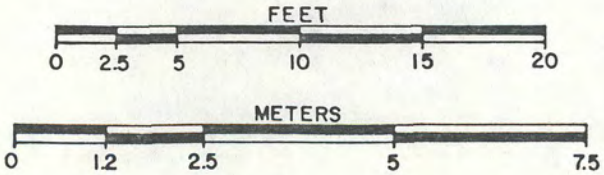
Ⓑ HUMUS ZONE; BROWN (10 YR 4/3) TO DARK BROWN (10 YR 3/3) LOAM.

Ⓒ MIXED FILLS INCLUDING MOTTLED BROWN (10YR 5/3) AND YELLOWISH RED (5YR 5/8) CLAY, MOTTLED DARK GRAYISH BROWN (10YR 4/2) AND DARK RED (2.5YR 3/6) CLAY, DARK GRAYISH BROWN (10 YR 4/2) SILT LOAM, YELLOWISH BROWN (10 YR 6/6) SILT LOAM, PEBBLES, COBBLES AND ORGANICS.

Ⓓ ORIGINAL LAND SURFACE, VERY DARK BROWN (10 YR 2/2) LOAM.

Ⓔ BROWN (10 YR 4/4) SILT LOAM.

Ⓕ SUBSOIL, (TRUNCATED NATURAL SOIL), YELLOWISH BROWN (10YR 5/6) SILTY CLAY LOAM.



cating that they were used to form a foundation or core for the earthwork. Selection of heavy, non-local soils suggests engineering design of a structure of significantly greater load-bearing capacity than would be necessary for a military fortification.

The metal detector survey was conducted within the gridded area, with an attempt to provide systematic coverage within each grid square. This was not always possible, however, due to the numerous vine thickets and fallen trees throughout the site area. Generally, a period of at least 20 minutes was spent in each 50x50 foot unit, however much more time, in some cases more than one hour, was spent in units where very heavy concentrations of metallic material were identified. Each point where the metal detector indicated the presence of a buried object was excavated to identify the particular metallic object. Materials of obvious recent origin were left in the field, while older material were bagged and removed from the field on a selective basis. Field notes were taken for each square surveyed, indicating what objects had been located in the particular unit.

Three major areas of concentrated metallic material were identified during the survey: (1) the area surrounding Feature 1; (2) the area at the northern edge of the site, adjacent to the truck yard; and (3) the southeastern edge of the site, adjacent to the United Parcel Service building parking lot. Table 1 summarizes the materials identified during the metal detector survey according to grid squares.

The heaviest concentration of cultural debris observed on the site was that immediately surrounding Feature 1, particularly squares 50S/150W and 50S/100W. The concentration of structural debris including nails, asphalt shingles and rotted boards suggest that some sort of structure had been present in this area. Also, the assortment of kitchen pans, milk bottles and bed springs suggests a domestic occupation. This may have been a hunting cabin or camp, as suggested by the fairly wide scatter of shotgun shells on the site, or it may have been small shack occupied by a hobo or transient.

Concentrations of metallic debris along the north edge of the site (particularly units 300N/200W, 300N/150W and 300N/100W) and along the eastern edge of the site (particularly units 50S/0E, ON/OE and 100N/0E) reflect recent discard activity by individuals using these parking lots. Items which were noted in these areas include beverage containers, light bulbs, oil cans, an oil filter, hose clamps, a pressure gauge, etc.

Various types of ammunition were identified during the metal detector survey, including shotgun shells, .22-caliber shells, one 9 mm shell and a lead bullet. Of these, the shotgun shells were the most numerous, as more than a dozen were found scattered

TABLE 1. Results of Metal Detector Survey.

GRID UNIT	MATERIALS IDENTIFIED
250N/250W	coat hanger; beverage cans; wire
200N/250W	cans; bottles
150N/250W	cans; foil; tire
100N/250W	sterile
50N/250W	wire; slag; cut nail (c)
ON/250W	cans; wire nails
50S/250W	lead bullet (c); beer cans; surveyor's nails
300N/200W	truck parts; fence wire
250N/200W	bottle caps; foil; cut nail (c)
200N/200W	horseshoe fragment (c)
150N/200W	wire nail; fence wire; corrugated sheet metal
100N/200W	cut nail (c); surveyor's nails
50N/200W	cut nail (c); shotgun shell; 1943 dime and 1941 penny in plastic change carrier; wire
ON/200W	bicycle parts; washer; spike; cut nail (c); horeshoe fragment (c)
50S/200W	cans; bicycle parts
300N/150W	foil; automobile light parts; bottles with metal caps; shotgun shells; nuts; 2 light bulbs; bolts; screws
250N/150W	beverage cans; large bolt with two nuts
200N/150W	corrugated metal roofing; large nut and bolt; foil; wire nails; bottle cap; shotgun shell; wire frame
150N/150W	wire building mesh; wire nails; shotgun shell; foil

(c): collected

TABLE 1. Results of Metal Detector Survey (Continued).

GRID UNIT	MATERIALS IDENTIFIED
100N/150W	can; foil
50N/150W	shotgun shell; wire nails (c); chicken wire; foil; cut nail (c); hinge piece
ON/150W	wire nail; foil
50S/150W	pull tab; wire nails (c); roofing nails (c); axe head (c); faucet part; fence wire; .22 shell (c); milk bottle cap (c)
300N/100W	beverage cans; automobile parts; foil; metal bar; wire nails
250N/100W	cut nail (c); foil; fence wire
200N/100W	foil; beverage can; cut nail (c)
150N/100W	shotgun shell; foil; tin enameled pan; railroad rail bracket
100N/100W	wire nails; shotgun shell; cut nail (c); harmonica (c); horseshoe fragment (c)
50N/100W	wire nails; 4 shotgun shells; chicken wire
ON/100W	chicken wire; fence wire; wire nails; shotgun shell; cut nail (c) corner reinforcement pieces for trunk; hinge fragment (c); quartz decortication flake (c)
50S/100W	fence wire; chicken wire; wire nails; kitchen pans; tin enameled basins; cans; bed spring wire; cut nails (c) asphalt shingles with roofing nails
300N/50W	beverage cans; automobile parts; foil; bar; wire nails
250N/50W	reinforcing bar; wire; foil; automobile parts; slag; nut; bolts; cut nails (c); railroad spike (c)
200N/50W	wire nails; foil; slag; washer; cut nail (c); 9 mm bullet cartridge (c)

(c): collected

TABLE 1. Results of Metal Detector Survey (Continued).

GRID UNIT	MATERIALS IDENTIFIED
150N/50W	railroad spike; wire nail; wire; cans; iron pipe
100N/50W	screw ring; iron bar
50N/50W	hardware loop; corroded mass; shotgun shell; surveyor's pipe
ON/50W	metal strap; juice can; spark plug; reinforced concrete; buckle
50S/50W	railroad spike; wire nails; fence wire; tin cans; foil; large metal plate; iron bar; cut nail (c)
300N/OE	automobile parts; rivet
250N/OE	cans; chain link fence; foil; railroad bolt; iron plate; wire
200N/OE	metal pipe; wire; straps; bottles; cans
150N/OE	railroad spike; wire nail; foil; bolt; threaded pipe; iron straps; large iron rod; cut nail (c)
100N/OE	wire; cans; foil
50N/OE	railroad spike; wire; foil; pliers; bolt
ON/OE	pull tabs; beverage cans; cassette tape; bottle caps; oil cans; oil filter; cut nai (c)
50S/OE	beverage cans; bottle caps; foil wrappers, transmission gear; hose clamp; pressure gauge; barbecue grill; hose; screw plug; cut nail (c)

(c): collected

throughout the site. The lead bullet is the only artifact that provides even a hint that the site was occupied during the Civil War. It was found in the southwest corner of the gridded area, in unit 50S/250W. It is a .57-caliber Enfield-Pritchett pattern bullet with three grooves around the base and a conical pointed basal cavity. The bullet is heavily patinated with lead oxide, indicating that it has been in the ground for many years, and its point bears the imprint of a ball puller, indicating that the bullet had been unloaded before firing. Enfield-Pritchett pattern bullets were widely used by both the Union and Confederate armies during the Civil War (McKee and Mason 1980), although this particular type bullet is believed to have been used primarily by the Union army (Ibid.:51, Item 358).

A number of railroad-related artifacts were found during the metal detector survey including railroad spikes and an assortment of bolts, nuts and a bracket used to join rails together. These items were all found in the eastern portion of the site, concentrated on a near embankment.

Other noteworthy items identified during the metal detector survey are nails and horseshoes. Aside from recent beverage containers and foil, nails were the single most numerous type of artifact found. Cut nails were widely scattered throughout the site while wire nails (both common and roofing varieties) were concentrated most heavily around Feature 1. Wire nails have been in use since the mid-nineteenth century. The nails provide little information for dating the occupation of the site, since cut nails have been in use since the early nineteenth century and wire nails have in use since the mid-nineteenth century (Nelson 1963; Noel Hume 1970). Virtually all of the nails found on the site were so corroded as to preclude more refined analysis of manufacturing technique. Three fragmentary horseshoes were found and all are highly corroded. Based on Noel Hume's discussion (Ibid.:237-239), none appear to pre-date the nineteenth century.

Finally, one prehistoric artifact was fortuitously discovered during the metal detector survey, a quartz decortication flake. It was located near Feature 1 in unit ON,100W. It appears that this reflects only transient use of the area during prehistoric times, as it is the only item of prehistoric origin located during the Phase I and Phase II examination of the site.

V. SUMMARY AND RECOMMENDATIONS

No documentary evidence was found which would indicate that the Eisenhower Avenue Earthwork site was a Confederate military fortification. While research indicates that Confederate leaders did take steps to secure positions along the rail lines leading to Alexandria, the nearest known Confederate position along the Orange and Alexandria Railroad was located at Springfield Station, some three miles west of the Eisenhower Avenue site.

The field investigations also failed to support the hypothesis that the site was an advanced Confederate position. While one lead bullet was found during the metal detector survey, this alone is insufficient to infer an encampment of any duration. Camp California, a major Union supply post, was nearby and there were numerous troops in this area later in the war than the period when rebel forces might have held this position. The earthwork itself exhibits several characteristics which indicate that it was not constructed for the purpose of military fortification: the presence of a gravel and cobble cap on the crown of the embankment; the lack of a ditch along the presumed front of the embankment; and the use of non-local soils as fill.

The most plausible interpretation is that the earthwork is simply a haul road or access ramp to the unfinished Manassas Gap Railroad. This interpretation is supported by a mid-nineteenth century map showing a road leading directly to the partially complete railroad grade (U.S. Coast Survey 1861) as well as the design and construction features of the embankment and the concentration of railroad-related artifacts on the earthwork itself and the immediately adjacent areas.

While the site is a well preserved example of nineteenth century transportation engineering and construction, it does not possess any particular historic significance. It is, therefore, not considered eligible for the National Register of Historic Places. The site will be destroyed by construction of a parking lot for the Van Dorn Street METRO station, however, this is considered an acceptable loss since the site has been thoroughly studied.

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APPENDIX A

Consulting Historian's Report

A REPORT ON THE EISENHOWER EARTHWORK SITE

SUBMITTED TO

LOUIS BERGER & ASSOCIATES, INC.
1730 Rhode Island Ave., NW
Washington, D.C. 20036
Attn. Amy Friedlander, Ph.D.
Senior Historian

FROM

Walton H. Owen
Kim Bernard Holien

22 S. French Street
Alexandria, Virginia 22304
(703) 751-1155

MAY 16, 1984

REPORT ON THE EISENHOWER EARTHWORK SITE

PREFACE

As local historians that specialize in Civil War history, Mr. Holien and I were commited to a high degree of professional in-depth research for this project. From the initial queries regarding the site, we have been concerned that all leads be checked and evaluated. The nature of the project deserved close attention. If it could be proven by documentation and/or archaeological evidence that the site is indeed a Confederate earthwork, then several important pages in our local history would have to been rewritten.

The justification for a project of this type, involving research and archaeological site examination, can be seen by example; less than two-months ago, an unrecorded rifle trench was discovered by developers in a section of woods near the 4100 block of Seminary Road in Alexandria, Va. Through research and site examination the rifle trench was identified as Federal. This was confirmed by artifacts removed from the site.

RESEARCH APPROACH

As part of the Phase II Archaeological Investigations being conducted on the Eisenhower Avenue earthwork site, Mr. Holien and I traveled to Richmond, Virginia to perform research in three repositories: the Reference Library of the Museum of the Confederacy, Virginia State Library, and the Virginia State Historical Society.

Prior to our trip to Richmond, Mr. Holien and I reviewed pertinent background material to formulate a sound research approach. References consulted were:

> The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies, (hereafter cited as Official Records).
>
> A Complete Treatise on Field Fortifications, by D.H. Mahan.
>
> A Report on the Defenses of Washington to the Chief Engineers, U.S. Army, by Bvt. Maj. General John G. Barnard.
>
> Background information and site measurements provided by Charles LeeDecker.

Our research approach addressed two specific areas that would require investigation:

1) The earthwork as an advanced Confederate field fortification.
2) The earthwork as an ancillary railroad embankment.

RESEARCH SUMMARY

The research performed in Richmond, Virginia provided no concrete documentation to the form, function, or origin of the Eisenhower Avenue site. In terms of the military aspects of the site, the librarians at the Museum of the Confederacy and the Virginia State Historical Society both felt that the answers we were seeking were too site specific, and could not be found in early war reports. Such reports are often vague, or nonexistent from Confederate sources as a result of the destruction of Confederate papers during the evacuation of Richmond, Virginia in 1865. The military maps that were consulted focused on the Manassas-Centreville areas, or did not provide a detailed scale.

However, research at the Museum of the Confederacy did highlight the unorganized state of preparedness of the 6th Battalion Virginia Volunteers (Alexandria Battalion, later the 17th Virginia Infantry). These troops evacuated the City of Alexandria on the morning of May 24, 1861, and were taken to Manassas junction by Orange & Alexandria railway cars, passing the site of the earthwork on Eisenhower Ave. It is highly questionable whether these troops would have retreated past a completed earthwork. George Wise, author of the History of the Seventeenth Virginia Infantry, C.S.A., stated that "the bright sun, on the morning of the 25th of May . . . shone upon . . . scores of sleeping forms and hosts of hungery homeless soldiers, unprovided for in any respect, save that each man's cartridge box contained two rounds of ammunition." [1] The battalion left Alexandria without mess equipment, tents, and in some cases without arms.[2]

It is apparent that the Eisenhower site was located in no mans land for periods in 1861 and 1862, although, the closest skirmish's took place at Springfield Station on the Orange & Alexandria Railway line and on Little River Turnpike in October, 1861. Of these two skirmish's, the one on Little River Turnpike is still over two miles away in-line-of flight, and the one at Springfield Station is about 3 miles away in-line-of flight.

The repositories in Richmond provided no pertinent information on the site as a possible railroad embankment. The Virginia State Library and the Virginia State Historical Society each had various holographs from the Orange & Alexandria Railroad and the Manassas Gap Railroad. These contained appointments of engineers, concerns and recommendations etc., lists of stock subscribers, proceedings of meetings and one 1850 map which showed elevations.

---

[1]George Wise, History of the Seventeenth Virginia Infantry (Baltimore, Maryland: Kelly, Piet & Company, 1870), p. 15.

[2]M.L. Bonham to General R.E. Lee, May 25, 1861, Official Records of the Union and Confederate Armies During the War of the Rebellion (Washington, D.C. 1818-1901), Series I, Vol. II, p. 43.

EVIDENCE AND CONCLUSIONS

Since limited information could be obtained from historical research methods, Mr. Holien and I placed an emphasis on the field investigations; especially the soil content and types of artifacts recovered from the site. The germane determining factors that guided our conclusions are listed as follows:

-Soil Content- The embankment contained a soil provenance that was not original to the site and had been transported from another area. Mr. LeeDecker described the site " as one that was over engineered and contained features that might indicate a "haul road". This is not indicative of a hastily constructed temporary field fortification.

-The size of the ditch- The earth from the ditch only accounted for slightly more than half of the soil content of the earthwork. This is also not indicative of a field fortification.

-Artifacts- The artifacts found at the site did not indicate an encampment, or fortified emplacements. Artifacts recovered were: one "pulled" bullet and assorted railway debris found on the earthwork.

-Map containing road trace and tax record information- Verbal information received from Ms. Amy Friedlander stating that a road trace had been found in the records of the Fairfax County Government which corresponded to the site of the Eisenhower Ave. earthwork.

-Documented Skirmishes- As mentioned in the narrative, the closest skirmishes to the Eisenhower site took place at Springfield Station, Oct. 2,3, 1861 and at Little River Turnpike, Oct. 15, 1861. Many other skirmishes also took place north and west of the site. This would indicate that the major areas of conflict were located to the west of the embankment. Although, the area of the site was probably in no mans land for periods of time.

After reviewing the evidence as presented, it is our professional opinion that the Eisenhower earthwork is a "haul road" embankment that was possibly used by the Orange & Alexandria Railroad and built for that purpose. From the archaeological investigations performed on the site, there seems to be no indication of an encampment to the west of the earthen mound. However, the site may have been used as a picket/guard post for either Union or Confederate soldiers; the site offering a "ready made" fortification with a position of strength.

Submitted by,

Kim Bernard Holien
Walton H. Owen
May 16, 1984

APPENDIX B

Soils Report

GEO-SCI CONSULTANTS, INC.

POST OFFICE BOX 1125, COLLEGE PARK, MARYLAND 20740-1036

D. P. WAGNER
PRESIDENT

(301) 345-6384

PEDOLOGICAL INVESTIGATION OF THE EISENHOWER AVENUE EMBANKMENT

Prepared for

Louis Berger & Associates, Inc.

May 8, 1984

by

Daniel P. Wagner, Ph.D.

Introduction

A pedological examination of the Eisenhower Avenue embankment was undertaken to assist in developing interpretations of the origin and potential purpose of the man-made earthen structure. Materials utilized in construction of the embankment were evaluated in an effort to identify potential borrow locations for the embankment fill. Soils in areas beside the embankment were also examined for this purpose. Since some speculation has suggested that the embankment is potentially a Civil War era breastwork, the presence of immediately adjacent borrow areas would be considered important support for this conjecture.

Soil profiles were examined on April 27, 1984 both by hand augering and by observations along a trench previously excavated through the embankment. A total of nine soil profiles were described using standard pedological techniques. Soil features described included horizonation, texture and color, as well as other soil horizon properties. Observations of site landscapes and interpretations of available topographic maps were also utilized in the pedological investigation of the site.

Site Setting

The Eisenhower Avenue embankment is situated within the planned parking area for the Van Dorn Street Station of the Franconia - Springfield METRO route. This area is within a wooded, relatively undisturbed tract which shows little evidence of appreciable land alterations other than the embankment itself. The tract is situated along the well drained upland periphery of the Backlick Run alluvial valley. Slopes fall generally

to the north toward Backlick Run, and site elevations range from about 100 to 125 feet. Natural soils are developed predominantly in fine-textured Coastal Plain deposits of Cretaceous age. Mostly clayey, these Cretaceous deposits are frequently mixed with sandier strata, and high knolls in the area are generally capped by gravelly deposits of probable Pleistocene age.

North of the tract and below the elevation of about 100 feet, natural soil parent materials would likely have consisted of alluvial and colluvial sediments deposited within the Backlick Run valley. The valley soils are apparently highly disturbed, and the present course of Backlick Run is more likely the product of artificial channelization and filling than natural stream positioning. Originally, the Backlick Run valley would have contained an assortment of alluvial soils ranging from well drained terrace soils to poorly drained swamp or perhaps fresh water marsh soils.

The embankment is oriented northwest - southeast and is roughly parallel to the western edge of the nearby UPS parking lot. Extending from a point about 150 feet northwest of Eisenhower Avenue to the edge of a trailer storage area abutting the Southern Railroad line along Backlick Run, the embankment is approximately 375 feet in length. Average heights above adjoining terrain range from 5 to over 7 feet, and width ranges from 8 feet at the embankment's top to over 30 feet at its base. The embankment is nearly flat on top but falls northwestward along its length by slopes of 4 to 8 percent.

Results

Soil profile locations are shown in Figure 1, and descriptions of the profiles are given in Appendix A.

Profile 1 was located in the center of the embankment where exposures of the stratigraphy were provided along the walls of a stepped trench cut through the embankment. The profile description was made from a combination of the trench wall exposure (upper 40 inches) and a hand auger boring (40 to 120 inches) which penetrated through the base of the embankment into the underlying natural soil. This boring revealed the fill thickness to be approximately 94 inches at the point examined.

As observed in profile 1, the embankment fill was composed of three major layers. The surface layer was only 4 inches in thickness and consisted of very gravelly sandy loam. This gravelly layer was confined to the nearly flat surface along the top of the embankment and did not extend down the sides. Gravel deposits occur near Eisenhower Avenue, thus providing a nearby source for this material. Beneath the thin gravelly layer was a silt loam and loam layer extending to a depth of 17 inches. This layer was continuous across the embankment and was also the dominant material of the side surfaces. The central core of the embankment consisted of fine-textured fill ranging from silty clay loam to clay. This material was first encountered at a depth of 17 inches and continued to a depth of 91 inches. Hence, the bulk of the embankment mass consisted of this very fine-textured fill.

With the exception of the surficial gravelly layer, most of the fill was generally grayish in color (2.5Y 5/2 to 5Y 3/2) and mottled.

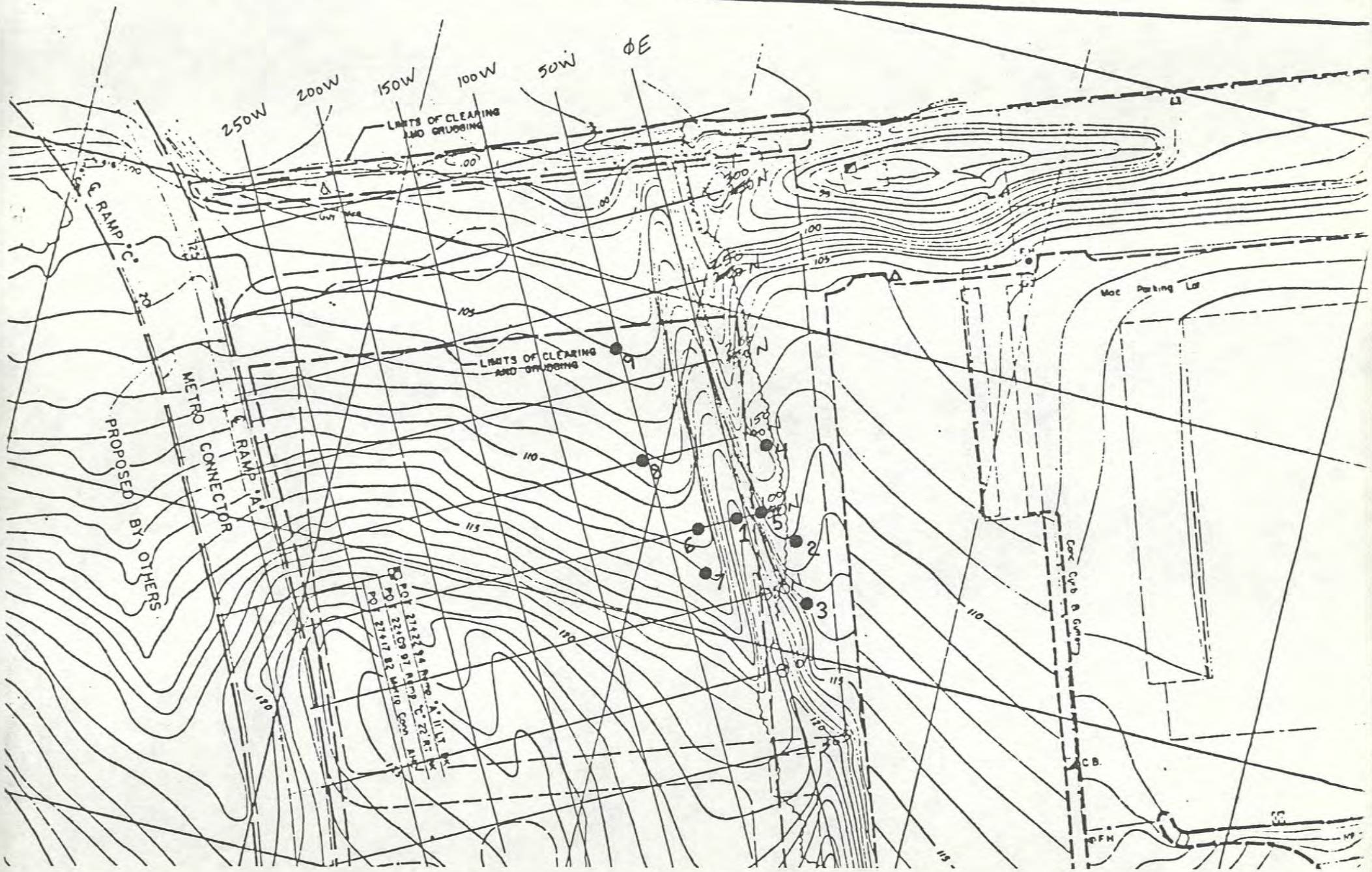


Figure 1. Soil profile locations in the area of the Eisenhower Avenue embankment.

These colors together with preserved organic remains, organic odors, and generally fine textures strongly suggest that most of the fill originated from a poorly drained location. Soils immediately adjacent to the embankment are much better drained than the soils from which the fill appears to have been derived. The closest location for such poorly drained materials would have been 200 to 1,000 feet north of the site in the Backlick Run valley.

The selection of poorly drained soils for a fill source seems odd. This is particularly so since similarly textured soil could have been obtained much closer to the site, at a higher elevation than the site (avoiding uphill hauling), and without the difficulties inherent in excavating saturated soils. A preliminary soil investigation of the site made in July of 1982 revealed clayey soils to be common in directions both uphill and west of the embankment. Perhaps the excavation of the fill from a poorly drained area was for an additional purpose other than merely providing fill materials for the embankment. Builders of the embankment may simply have utilized spoil materials available from independent stream channelization or pond excavation activities in the vicinity of Backlick Run.

Soils adjacent to the embankment were examined at eight locations. These eight soil profiles as well as the natural soil observed beneath the embankment in profile 1 can generally be described as well to moderately well drained upland soils with weak to strong soil development. Two types of natural soils were observed, and no disturbed borrow areas were identified. The soil type of greatest areal extent is typified by profile 7. This profile is developed in loamy Coastal Plain sediments and contains a strongly developed argillic horizon suggesting a weathering

interval dating to at least late Pleistocene.

A soil type of more restricted distribution is represented by profile 2. This weakly developed soil is formed in local wash deposits of silt and sand apparently deposited in what was originally a swale position. Wash deposits were also identified in the upper levels of profiles 3 and 5. A thin veneer of wash appeared to be present in profile 1 between the base of the fill and the top of the underlying natural soil.

The distribution of wash deposits on the site indicate that the embankment was constructed across a small swale. Filling and grading operations made after construction of the embankment have obliterated the lower reaches of the swale. Profile morphologies, however, indicate that the center of the swale would have corresponded to the location of profile 2. Profiles 3 and 5 contain thinner deposits of wash, thus suggesting the approximate edges of the swale. Figure 2 shows the estimated location of the former swale and the probable direction originally followed by runoff flow.

The existing gully on the eastern side of the embankment presently serves as a collection channel for runoff, but it is not a natural channel. A fill thickness of nearly 4 feet observed in profile 4 indicates that the channel has been formed as a result of fill placement to within a few feet of the embankment. The fill observed in profile 4 was likely derived from grading activities in the construction of the UPS parking lot

Conclusions

The Eisenhower Avenue embankment is constructed from mostly clayey, grayish soil materials derived from a poorly drained location. The generally well drained soils adjacent to the embankment are morphologically incompatible with the bulk of the fill material in the embankment. A likely source area for most of the fill would have been in the vicinity of Backlick Run. The thin surface layer of gravelly fill could have been obtained from a closer source, perhaps from the area now near Eisenhower Avenue.

The embankment appears to have been constructed across a small swale. Landscape contours originally defining the lower portion of the swale have been greatly altered by later cut and fill activities.

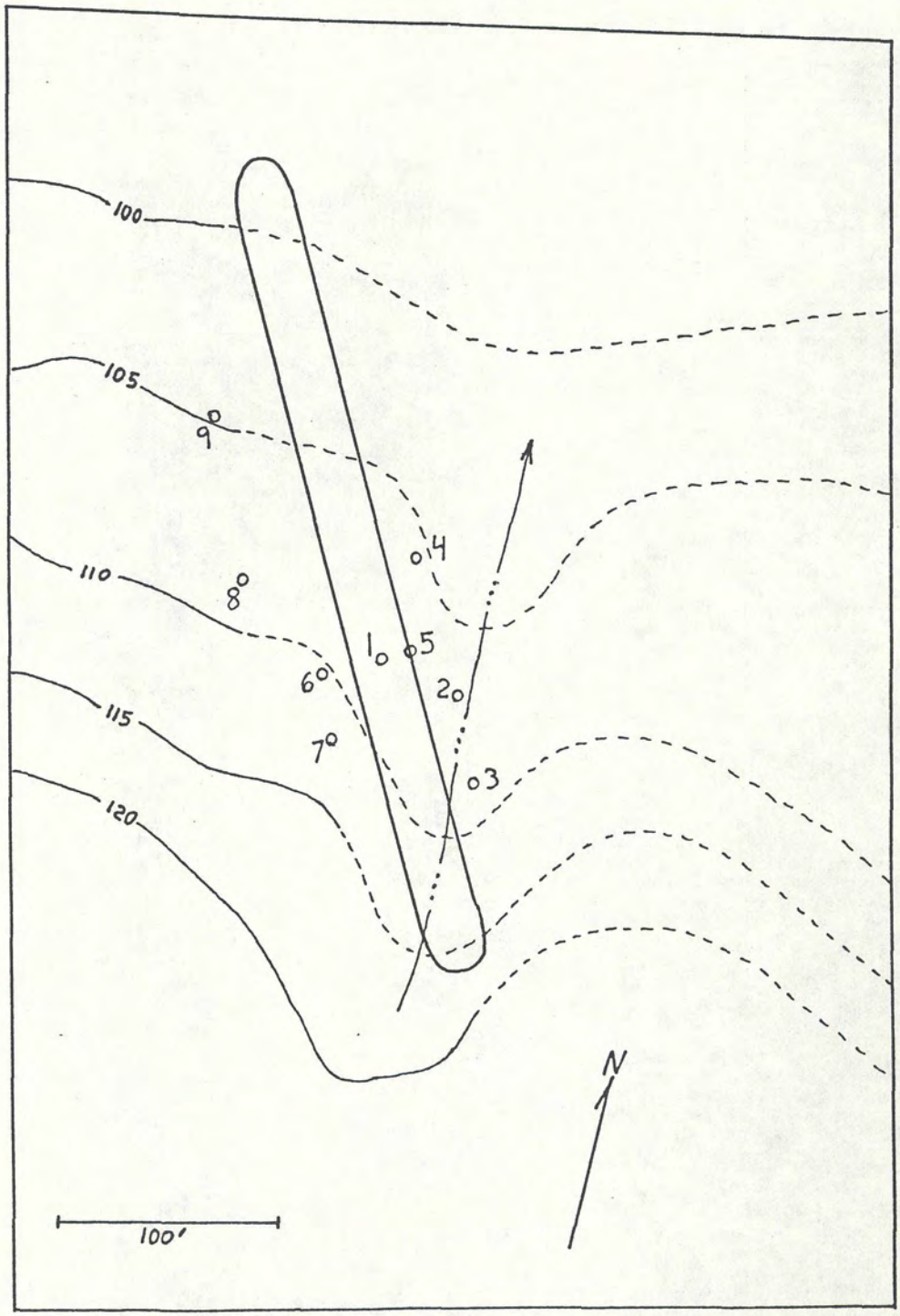


Figure 2. Estimated surface topography prior to construction of the embankment and later grading of the adjacent area to the east.

Appendix A: Soil Descriptions

ABBREVIATIONS AND NOTATION

CONSISTENCE

L	loose
VFR	very friable
FR	friable
FI	firm
VFI	very firm
EFI	extremely firm

DRAINAGE

VERY POOR	gleyed below thick dark surface
POOR	gleyed below surface
SOMEWHAT POOR	mottled 8 to 18 inches below surface
MODERATELY WELL	mottled 18 to 36 inches below surface
WELL	not mottled above 36 inches below surface
EXCESSIVELY WELL	same as well drained with textures of loamy sand or coarser throughout profile

MOTTLING

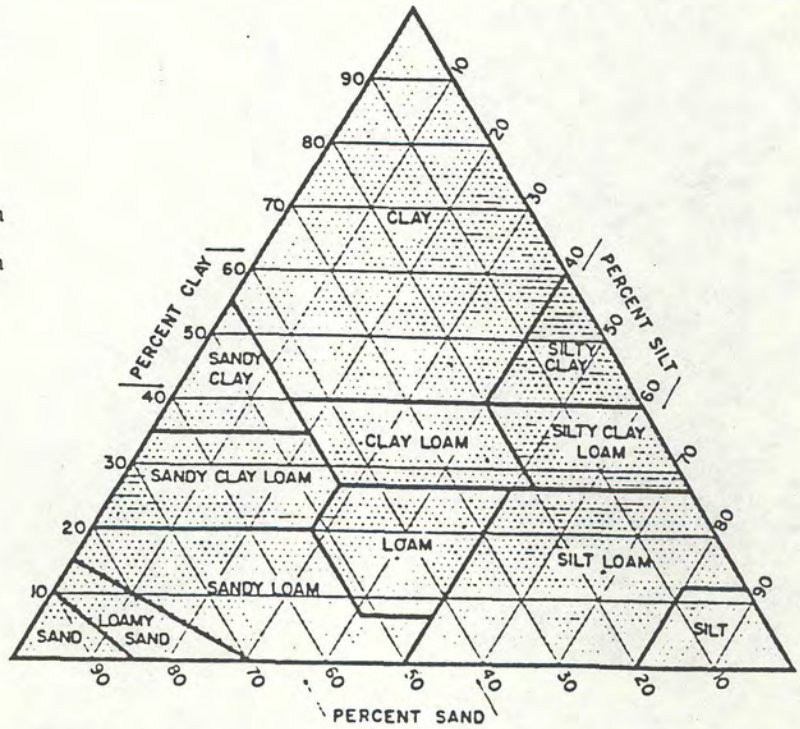
Abundance		Size		Contrast	
F	few = less than 2% of area	1	fine = less than 5 mm	F	faint
C	common = 2-20% of area	2	medium = 5-15 mm	D	distinct
M	many = over 20% of area	3	large = over 15 mm	P	prominent

example: C2D = common medium distinct mottles

TEXTURE

S	Sand
LS	Loamy sand
SL	Sandy loam
L	Loam
SIL	Silt loam
SI	Silt
SICL	Silty clay loam
CL	Clay loam
SCL	Sandy clay loam
SC	Sandy clay
C	Clay
SIC	Silty clay

F	Fine
CO	Coarse
VCO	Very coarse
G	Gravelly



GEO-SCI CONSULTANTS, INC.

Report of Investigation

Client L. BERGER Job No. 8432 Described by DPW Date 4/27/81

Observation No. 1 Series _____ Type PIT/AUGER
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks EMBANKMENT CENTER

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
A	0-4	VGSL	1MSBK	10YR 3/3, 4/4			FR	
C1	4-17	SIL, L	OM	5Y 5/3	VARIEGATED		FR	STRAT. C, SL LAYERS
C2	17-33	SICL	OM	10YR 3/2	VARIEGATED		FR	STRAT. C, SIC, SL
C3	33-73	C	OM	2.5Y 5/2	VARIEGATED		FI	STRAT. CL, SL, SICL ORGANIC
C4	73-91	SICL	OM	5Y 3/2			FI	ORGANICS ODOR
C5	91-94	L	OM	10YR 5/4,	10YR 4/4		FR	WASH DISTURBED SURFACE
II E	94-99	SIL	1MPL	10YR 5/4	MID	7.5YR 5/6	FR	
II BE	99-104	SIL		10YR 4/4,	5/6		FR	

Observation No. 1 CONT'D Series _____ Type AUGER
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks _____

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
II Bt	104-111	SICL		10YR 5/6			FR	
III Bt	111-120+	GCL		10YR 5/6			FR	

Observation No. 2 Series _____ Type AUGER
Physiography SWALE Slope/Aspect _____ Water Table _____
Drainage _____ Remarks _____

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
A1	0-9	SIL		10YR 3/3			VFR	
A2	9-14	SIL		10YR 4/3			FR	
A3	14-17	SIL		10YR 4/4			FR	
C	17-31	L		7.5YR 4/6			FR	POSSIBLE WEAK B
Ab	31-35	SIL		10YR 4/4			FR	VERY SILTY
II C1	35-43	SL		10YR 4/6			VFR	
II C2	43-55	LS		10YR 5/6			L	FEW GRAVELS
II C3	55-72+	LS		10YR 5/6			L	

Report of Investigation

Client L. BERGER Job No. 8432 Described by DPW Date 4/27/84

Observation No. 3 Series _____ Type AUGER
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks _____

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
A1	0-5	SIL		10YR3/3			VFR	
A2	5-13	SIL		10YR4/3			FR	
A3	13-17	SIL		10YR4/4			FR	
Bt1	17-24	L		10YR4/6			FR	POSSIBLE C HOR.
IIBt	24-36	GSCL		10YR4/6			FR	
IIBC	36-48	GSC		10YR5/6			VFR	SCL LAMELLAE
II C	48-65+	GLS		10YR5/6			FR	SL LAMELLAE

Observation No. 4 Series _____ Type AUGER
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks _____

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
C	0-43	L-CL		10YR5/6			FR	FILL
Ab	43-46	SIL		10YR3/2			FR	
Bt	46-61	GCL		7.5YR5/6			FI	
BC	61-70+	GSCL		10YR5/6			FR	

Observation No. 5 Series _____ Type PIT/AUGER
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks EMBANKMENT EDGE

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
C	0-19	SIL		10YR5/4			FR	FILL
Ab	19-21	L		10YR2/1			FR	
C	21-26	L-SIL		10YR5/6			FR	
Ab	26-33	SIL		10YR4/4			FR	
BE	33-39	SIL		10YR5/4			FR	
Bt	39-45	SIL		7.5YR4/4			FR	
IIBt	45-53+	GCL		7.5YR4/6			FI	

Report of Investigation

Client L. BERGER Job No. 8432 Described by DPW Date 4/27/84

Observation No. 6 Series _____ Type PIT/AUGER
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks 10' W OF EMBANKMENT, TRENCH END

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
A	0-2	GSL		10YR3/2			VFR	
C1	2-11	SIL		10YR5/4			FR	FILL
C2	11-18	SICL		5Y4/2			FI	FILL
IIRt	18-29	CL		10YR5/6			FI	SURFACE TRUNCATED
IIBC	29-38	SL		10YR5/6			FR	
IIIBC	38-44+	GSL		10YR5/6	C1D	10YR6/2	FR	SCL LAMELLAE

Observation No. 7 Series _____ Type AUGER
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks _____

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
A	0-6	SIL		10YR3/2			VFR	
Bt1	6-16	SICL		10YR5/6			FI	
Bt2	16-36	L		10YR5/6	C2D	10YR6/2	FR	
BC	36-43+	L		10YR5/6	C2D	10YR6/2	FR	FEW GRAVELS

Observation No. 8 Series _____ Type AUGER
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks _____

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
A1	0-2	SIL		10YR2/1			VFR	
A2	2-14	SIL		10YR4/4			FR	
Bt	14-35+	SICL		10YR5/6			FI	

GEO-SCI CONSULTANTS, INC.

Report of Investigation

Client L. BERGER Job No. 8432 Described by DPW Date 4/27/84

Observation No. 9 Series _____ Type AUGER
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks _____

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features
A1	0-6	S/L		10YR3/2			VFR	
A2	6-12	S/L		10YR5/4			FR	
Bt	12-24+	C		7.5YR5/6			FR	

Observation No. _____ Series _____ Type _____
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks _____

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features

Observation No. _____ Series _____ Type _____
Physiography _____ Slope/Aspect _____ Water Table _____
Drainage _____ Remarks _____

Horizon	Depth	Texture	Structure	Color	Mottling		Consistence	Other Features

APPENDIX C

RESUMES OF PREPARERS

RESUME

NAME: John A. Hotopp

EDUCATION:

Ph.D., Anthropology, University of Iowa, Iowa City, 1969-1978.
University of Colorado, Boulder, 1969.
M.A., Political Science, Marshall University, Huntington, W. Va., 1964-1968.
B.A., Economics and Political Science, Morris Harvey College, Charleston, W. Va., 1961-1963.
West Virginia University, Morgantown, W. Va., 1959-1961.

PROFESSIONAL AFFILIATIONS:

Society of American Anthropology
Society for Historical Archaeology
Society for Industrial Archaeology
Archaeological Society of New Jersey
Society for Pennsylvania Archaeology
Iowa Archaeological Society
Association of Iowa Archaeologists
Illinois Association for the Advancement of Archaeology
Plains Anthropologist
Pi Gamma Mu
Phi Alpha Theta
Sigma Xi

EXPERIENCE:
1981 to Present

*Director and Principal Archaeologist, The Cultural Resource Group, Louis Berger & Associates, Inc.

Project Director, Phase III Mitigation, Abbott Farm Project, Routes I-195, I-295, N.J. 29, and N.J. 129 near Trenton N.J., for the New Jersey Department of Transportation.

Principal Archaeologist, Cultural Resources Investigations For PeaceKeeper (Mx) Environmental Impact Assessment. Cheyenne, Wyoming.

Project Director, Resource Inventory 1 for Georgia Power Company, Burke, Effingham, and Screven Counties, Georgia.

Project Director, Phase III Cultural Resource Mitigation of Prehistoric Sites, Iowa Great River Road Project, Louisa County, Iowa, For the Iowa Department of Transportation.

Project Director, Phase I Documentary Research and Archaeological Assessment, Barclays Bank Site, Manhattan, New York.

Project Director, Phase II Cultural Resource Survey, Abbott Farm Project, Routes I-195, I-295, N.J. 29, and N.J. 129, near Trenton, N.J., for the New Jersey Department of Transportation.

Project Director, Lower Raritan River Multipurpose Study, Cultural Resource Reconnaissance, Middlesex and Somerset Counties, N.J., for the United States Army Corps of Engineers.

Project Director, Phase II Cultural Resource Survey, Route U.S. 206 between Princeton and Somerville, N.J., for the New Jersey Department of Transportation.

Project Director, Phase II Cultural Resource Survey, Routes U.S. 22 and I-78 Interchange, Still Valley, Greenwich and Pohatacong Townships, N.J., for the New Jersey Department of Transportation.

Project Director, Phase II Cultural Resource Survey, Route N.J. 31 between Flemington and Clinton, N.J., for the New Jersey Department of Transportation.

1980 *Research Fellow in Anthropology, Smithsonian Institution.

Position involved independent research based on the collections of the Smithsonian. Current research involves the analysis of 39 ST 1, a multi-component archaeological site located in South Dakota which was excavated as part of the post-World II ILnteragency Archaeological Salvage Program in the Missouri River Basin. Also involved in

test excavations at 18 Ch 89, a prehistoric ossuary in Maryland.

*Archaeological Consultant, Dennett Muessig & Associates.

Position involved assisting in proposal preparation, archaeological fieldwork and photography, and establishing ground controls for photographic mapping of structures and archaeological sites. Invovled in photographic mapping of a Metro tunnel in Washington, D.C. to identify tights, and photogrammetric mapping of the Gallery Row project, Washington, D.C. and of the excavation on the grounds of Plum Grove, a former governor's home in Iowa City, Iowa.

*Archaeologist, Iowa Department of Transportation.

Designed a preservation and development plan for an archaeological site acquired as part of the Iowa Great River Road project. Coordinated with State Historic Preservation Officer, Federal Highway Adminstration, Iowa Conservation Commission, and Iowa Native Americans.

*Archaeological Consultant, Iowa State University.

Established ground controls for excavations at Buxton, Iowa, a defunct coal mining town.

1970 to 1980

*Director of Transportation Archaeology for the Iowa Department of Transportation Cultural Resource Surveys Contract, Office of the State Archaeologist, University of Iowa.

Position involved directing surveys along proposed highway corridors, testing sites for eligibility to the National Register of Historic Places, and conducting mitigation- level excavations. Directed Historic American Buildings Survey recording of Gothic Revival dwelling in Knoxville, Iowa, excavations at the Lambert Site, a Woodland camp on the Des

Moines River, and the cultual and natural resources survey of the Iowa Great River Road. All involved assembling and managing interdisciplinary teams of archaeologists, historians, historical architects, geologists, and ecologists.

*Senior Research Scientist, University of Iowa (position concurrent with Directorship of Transportation Archaeology Program, which was run under annual contracts between the university and the Iowa Department of Transportation).

*Adjunct Lecturer, Department of Anthropology, University of Iowa.

Taught courses in laboratory analysis, field methodology, site surveying, and mapping. Also supervised independent study students.

*Director, Iowa Archaeological Site Records Inventory, Office of the State Archaeologist.

Position involved correcting and updating existing site records and compiling all new site records filed with the State Archaeologist.

*Project Director, Office of the State Archaeologist.

Position involved the excavation of an archaic ossuary in Council Bluffs, Iowa (as a result of this project revisions were made to the Iowa Code providing for cooperation between Native Americans and archaeologists), the excavation of a Central Plains earthlodge at the Glenwood State School, Glenwood, Iowa, and the survey of cultural resources to be impounded by the Waubonsie Reservoir, Mills and Fremont Counties, Iowa.

*Director of Salvage Archaeology, Iowa Department of Transportation.

Position involved the direction of excavations of 14 earthlodges and a Woodland site within the zone of impact of the relocation of Highway 34, Glenwood, Iowa.

*Project Coordinator, MACOS Project, University of Iowa.

Position involved coordinating joint research between the Anthropology and Education Departments.

1965 to 1969

Instructor of Social Sciences, Morris Harvey College.

*Instructor, Adult Education Program, West Virginia University.

*Faculty Advisor, Pi Gamma Mu (Social Science Honorary), Morris Harvey College.

RESUME

NAME:	Amy Friedlander
EDUCATION:	Ph.D., Emory University, Atlanta, Georgia, 1979 M.A., Emory University, Atlanta, Georgia, 1975 B.A., Vassar College, Poughkeepsie, New York, 1974
PROFEESSIONAL AFFILIATIONS:	Southern Historical Association Georgia Association of Historians National Trust for Historic Preservation
EXPERIENCE:	
1983 to Present	* Senior Historian, Louis Berger & Associates, Inc. Senior Historian, Cultural Resources Survey, Georgia Power Company Transmission Line, Burke, Screven and Effingham Counties.
1982 to 1983	* Chief Historian, Soil Systems, Inc. Chief Historian, Phase II Archaeological Investigation, Proposed Social Security Administration Building, Jamaica, Queens County, New York. Chief Historian, Phase III Data Recovery Program, Proposed Social Security Administration Building, Jamaica, Queens County, New York. Chief Historian, Archaeological and Historical Investigations at 175 Water Street, New York, New York.
1980 to 1982	* Historian, Soil Systems, Inc. Historian, Phase I, Cultural Resources Plan, Proposed Federal Building, Jamaica, Queens, New York. Historian, Historic Analysis for Proposed Times Square Hotel, New York. Historian, Historical Documentation of Green Coffee Complex, New York.

1980 to 1982 (continued)	Assessment of the Alexander R. Shepherd House, Washington, D.C.
	Historian, Industrial Archaeological Investigation, Washington, D.C. Navy Yard, Washington, D.C.

RESUME

NAME: Charles H. LeeDecker

EDUCATION: M.A., Anthropology, The George Washington University,1978.
B.A., Anthropology, Cornell University, 1970.

PROFESSIONAL AFFILIATIONS: Society of Professional Archaeologists
Society for American Archaeology
Missouri Association of Professional Archaeologists
Eastern States Archaeological Federation
Archaeological Society of Virginia
Arkansas Archaeological Society

EXPERIENCE:

1984 - Present Archaeologist, Louis Berger & Associates, Inc., East Orange, New Jersey.

Co-Principal Investigator, Phase I, II, and III Cultural Resource study for a block in Wilmington, Delaware; for the City of Wilmington.

Principal Investigator, Phase II Survey of Eisenhower Road for the Washington Metropolitan Transit Authority.

1981 - 1984 Senior Archaeologist and Branch Manager, Soil Systems Division, Alexandria, Virginia. Responsible for supervision of multidisciplinary research projects, administration, long-term planning and business development in the Middle Atlantic region.

1980 - 1981 President, LeeDecker & Associates. Directed cultural resource projects for the Caruthersville Harbor, Missouri; four dredge disposal sites in Dorchester County, Maryland; Helena and Vicinity, Arkansas; and La Grue Bayou, Arkansas.

1976 - 1980 Technical Director for Archaeology, Iroquois Research Institute. Planned and directed more than 30 successfully completed research projects involving total expenditure of $1.2 million. Supervised multi disciplinary research programs involving the effort of up to 20 anthropologists, historians, archaeologists, architectural historians, soil scientists, etc. Established and managed the Institute's first branch office in Memphis,

EXPERIENCE:
(continued)

Tennessee. Developed a comprehensive field manual for cultural resource management evaluations, the first of its kind in the U.S.

1975 — Archaeological excavations and laboratory processing at the Shawnee-Minisink site, a multi-component stratified site in the Upper Delaware River Valley, Pennsylvania.

1974 - 1975 — Student Intern, Smithsonian Institution, Museum of Natural History, Conservation Laboratory. Conservation and restoration of archaeological and ethnographic collections.