

Final Report

**PHASE I ARCHAEOLOGICAL SURVEY OF FORT MONMOUTH,
MONMOUTH COUNTY, NEW JERSEY**

Contract No. W91278-06-D-0026

Task Order No. 0005

Prepared for:

**Mobile District, U.S. Army Corps of Engineers,
BRAC / NEPA Support Team**

Prepared by:



6850 Versar Center
Springfield, Virginia 22151

for



Chesterfield, Missouri

December 2008

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Prepared by:

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for

Parsons, Inc.
Chesterfield, Missouri

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EXECUTIVE SUMMARY

This report documents the findings of a Phase I archaeological survey of Fort Monmouth, Monmouth County, New Jersey. Versar, Inc., under contract to Parsons, conducted a Phase I archaeological survey on behalf of the Fort Worth District, U.S. Army Corps of Engineers at Fort Monmouth, Monmouth County, New Jersey. The purpose of the survey was to identify archaeological resources within selected portions of the Main Post and Charles Wood Area in compliance with Section 106 of the National Historic Preservation Act as required by the proposed closing of Fort Monmouth as part of the Base Realignment and Closure (BRAC) process. The work included subsurface testing within areas demonstrating high-to-moderate archaeological sensitivity; pedestrian reconnaissance and subsurface testing at the locations of previously recorded sites; and development of management recommendations concerning previously recorded and newly identified resources within the survey areas.

Fieldwork for this survey consisted of the excavation of 435 shovel tests distributed within 14 non-contiguous survey areas and one previously recorded site location: the total area subjected to subsurface testing was 163 acres. This survey identified two previously undocumented archaeological sites (28MO386 and 28MO387); completed additional documentation for one previously identified site (28MO385); and recovered one isolated prehistoric artifact (designated as IF-1). The locations of five previously recorded prehistoric sites were surveyed for purposes of relocation. None of the sites was relocated: in each case, evidence indicated the locations had been disturbed by installation development. The table below summarizes the National Register recommendations for the sites investigated in the current study. Neither of the two sites identified during the current investigation nor the six previously identified sites are recommended as potentially eligible for the NRHP. No further cultural resources investigations are recommended for Fort Monmouth.

Site Number	Location	Description	Recommendation
28MO385	Main Post	Historical culvert and subsurface feature	Not Eligible
28MO386	Main Post	Prehistoric lithic scatter	Not Eligible
28MO387	Main Post	Historical artifact scatter and small pit	Not Eligible
28MO126	Main Post	Prehistoric site lead	Not Eligible
28MO127	Main Post	Prehistoric site lead	Not Eligible
28MO128	Main Post	Prehistoric site lead	Not Eligible
28MO129	Main Post	Prehistoric site lead	Not Eligible
28MO130	Main Post	Prehistoric site lead	Not Eligible

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1.0 INTRODUCTION

1.1 Purpose and Scope

This report documents the findings of a Phase I archaeological survey of 163 acres at Fort Monmouth, Monmouth County, New Jersey. The project is intended to identify historic properties in compliance with Section 106 of the National Historic Preservation Act and 36 CFR 800 as required by the proposed closing of Fort Monmouth under the National Defense Authorization Act for Fiscal Year 2002 (Public Law 107-107), and the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510). The Phase I survey conformed to the New Jersey Historic Preservation Office (NJHPO) guidelines for Phase I survey. Investigations were conducted by Versar, Inc., staff archaeologists under subcontract to Parsons, Inc., between 20 August and 31 August, 2007.

1.2 Location

Fort Monmouth is located in the boroughs of Eatontown, Oceanport, and Tinton Falls, Monmouth County, New Jersey. It is approximately 73 kilometers (km) (45 miles [mi]) south of New York City and 113 km (70 mi) northeast of Philadelphia in the east-central portion of the state. The Atlantic Ocean is approximately 5 km (3 mi) to the east. The post encompasses 1,126 acres in two distinct operational areas: the Main Post (637 acres) and the Charles Wood Area (489 acres), separated by about one-half mile (Figure 1-1).

1.3 Report Organization

This report details the results of the Phase I archaeological survey at Fort Monmouth. Following this introductory section, Section 2.0 provides a summary of environmental conditions and historic contexts for the study area. Section 3.0 summarizes the field and lab methods used in the investigation. The results of the field investigations are presented in Section 4.0. Section 5.0 provides management recommendations for the identified resources. Section 6.0 is a list of references cited in the report. Three appendices contain a list of project personnel, an inventory of collected artifacts, and copies of NJ State Museum site forms for newly identified sites.

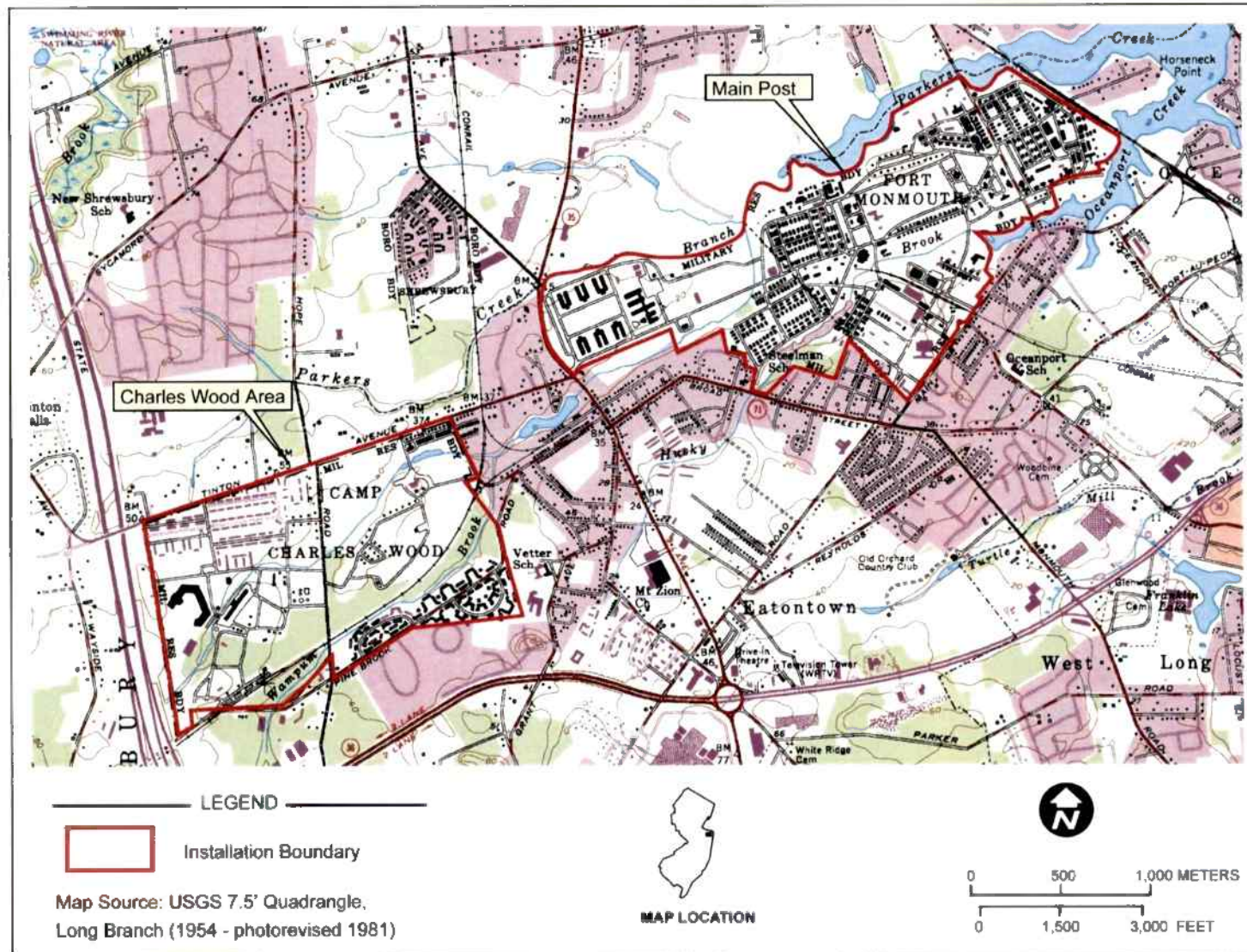


Figure 1-1. Relative Locations of the Main Post and Charles Wood Area Shown on USGS 7.5' Quadrangle Topographic Map

2.0 BACKGROUND

2.1 Environmental Context

Physiography and Geology. Fort Monmouth is located on the Outer Coastal Plain, one of five physiographic provinces of New Jersey (Widmer 1964; Wolfe 1977) (Figure 2-1). To the northwest is the boundary between the Outer and Inner Coastal Plains, marked by a line of hills extending southwest, from the Atlantic Highlands overlooking Sandy Hook Bay, to a point southeast of Freehold and then across the state to the Delaware Bay. The Outer Coastal Plain is low, flat, cut by streams, and slopes gently to the east. It drains into the Atlantic Ocean or Delaware Bay. Elevations in Monmouth County rise from sea level at the shore to approximately 122 meters (m) (400 feet [ft]) above mean sea level (amsl). Elevations in the Main Post Area do not exceed 9 m (30 ft) amsl and no more than 12 m (40 ft) amsl in the Charles Wood Area.

The Atlantic Coastal Plain was formed by the deposition of sediments on metamorphic rocks. During the Cretaceous period and the Tertiary era, this land was successively inundated and exposed resulting in the deposition of unconsolidated sediments that characterize the geology of the region. Fifteen Cretaceous and Tertiary sedimentary geologic formations have been identified in northern Monmouth County, extending to crystalline bedrock at depths of 360-400m (1,200-1,300 ft) below sea level. Sand and gravel deposited in recent geologic times lie above these formations (Fitch and Glover 1989).

Fort Monmouth is in the Shrewsbury River drainage, in the Nevesink River basin, which contains tributary streams with low gradients. The Main Post is bounded on the north by Lafetra Brook and Parkers Creek, which are brackish to saline. Mill Brook flows across the western portion of the Main Post into Lafetra Brook. On the south side of the Main Post is Oceanport Creek. Husky Brook flows from the west into Husky Brook Lake in the Main Post and drains into Oceanport Creek. In the Charles Wood Area, a small stream flows northeast across the property and drains into Wampum Brook, which flows into Oceanport Creek. All these streams flow into the Shrewsbury River, a tidal estuary that empties into Sandy Hook Bay and is separated from the Atlantic Ocean by a narrow barrier beach ending at Sandy Hook. As is discussed below, the ocean's shore was not always within 5 km (3 mi) of Fort Monmouth. Prior to 12,000 years ago, northern Monmouth County was an inland environment with glacial meltwater streams flowing southeastward.

Soils. The following soil descriptions are excerpted from the *Soil Survey of Monmouth County, New Jersey*, published by the USDA-SCS (Jablonski and Baumley 1989). These soils are grouped within the greater Freehold-Urban land-Holmdel soil association which covers an area that extends west approximately 4-6 km (3-4 mi) from the shoreline of Shrewsbury Bay. These soils are described as nearly level to steep, well drained to somewhat poorly drained loamy soils intermixed with Urban land, the latter describing areas that have been modified by development and the introduction of fill materials. Most of the soil types at Fort Monmouth within the survey areas are classified as Urban land. They are described as follows:

- Freehold sandy loam-Urban land complex, 0 to 10 percent slopes
- Holmdel sandy loam-Urban land complex, 0 to 5 percent slopes
- Tinton loamy sand-Urban land complex, 0 to 5 percent slopes

Udorthents, altered by excavation or filling
Udorthents-Urban land complex, 0 to 3 percent slopes

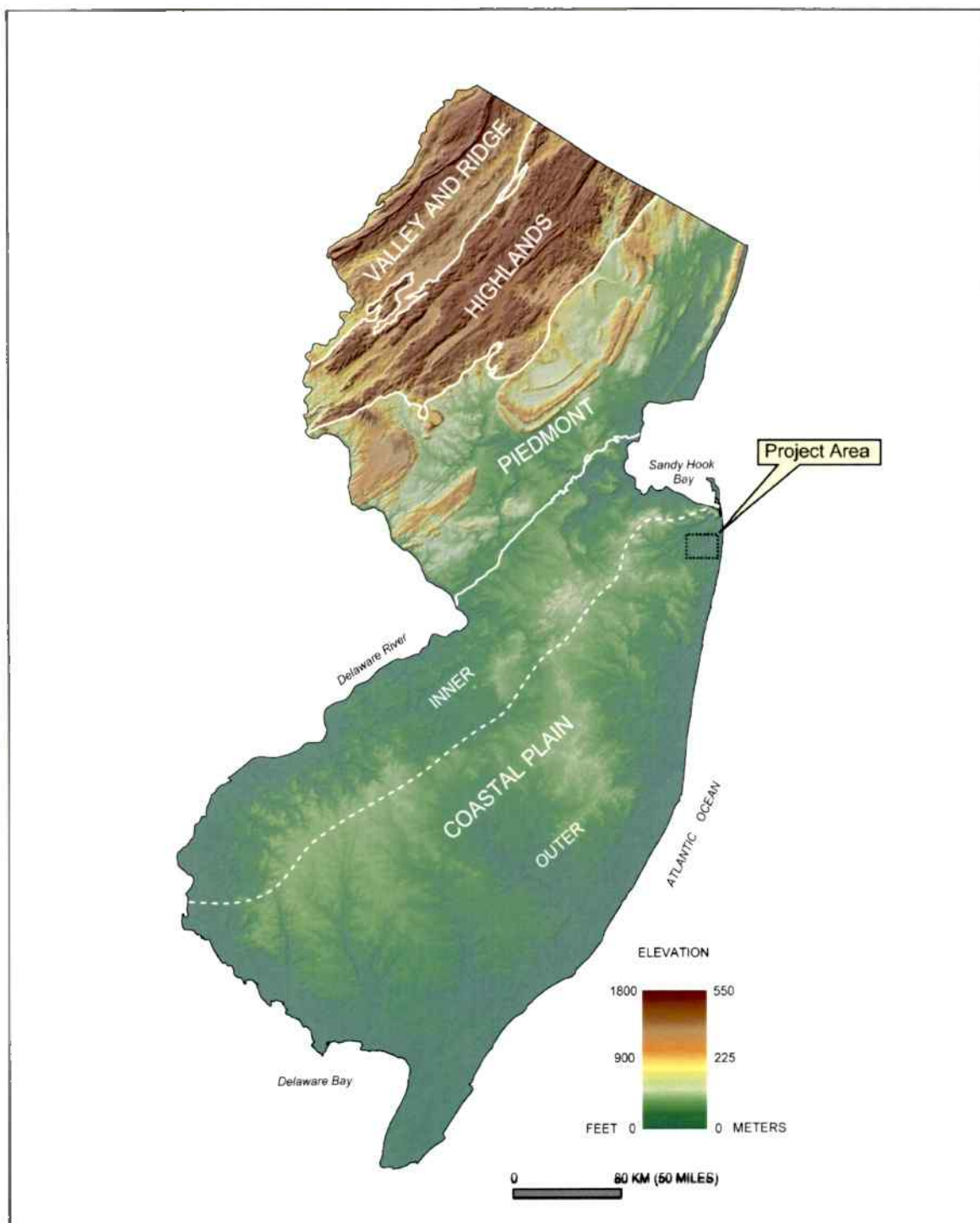


Figure 2-1. Physiographic Provinces of New Jersey
(after Dalton 2003, Widmer 1964)

Climate. The climate of Fort Monmouth is continental in nature. During the winter, cold air from Canada is carried by winds from the northwest. In the summer, hot and moist air masses from the tropics come from the south. The ocean moderates temperatures somewhat, while ocean storms occasionally affect the region. Temperatures in the summer are as high as 90° F, but are rarely below 0° F in the winter. The mean annual temperature of Monmouth County is 53° F. Humidity is generally high. Precipitation falls as winter snow and abundant rain in other seasons, particularly in the summer. Average annual precipitation ranges from 114 to 120 cm (45 to 47 in) (U.S. Army 1995:2-9)

Biota. The land near Fort Monmouth is characterized by salt marshes near tidal estuaries and palustrine woodlands with broad-leaved deciduous trees along streams. Generally, the physiographic province in which Fort Monmouth is located contains marsh grasses, herbaceous plants, mixed woodland, and cultivated-landscaped areas which are habitats for small mammals, fish, reptiles, amphibians, and migrating birds (U.S. Army 1995:2-10).

Prehistorically, the vicinity would have been an environment providing a wide range of food resources, including shellfish and waterfowl from the tidal estuaries, small game and fish from the forests and swamps, and a variety of wild plants. Historically, woodlands and parklands across the vicinity have been cleared and used for farms and pastures, with salt-marsh hay grown widely in the nineteenth century and more recently, a range of commercial crops for modern urban markets.

2.2 Cultural Context

The Cultural Context section was excerpted from the latest installation ICRMP which was recently updated by Versar (Fort Monmouth 2006).

Prehistory. The prehistory of New Jersey, consistent with the rest of northeastern North America, has been divided into three periods based on general adaptations to the environment: Paleoindian, Archaic, and Woodland. The Archaic and Woodland periods are further subdivided into sub-periods—Early, Middle, and Late—based on the occurrence of temporally sensitive or diagnostic artifacts that appear to mark significant cultural variations signaling continuing adaptation to developing environmental conditions. Table 2-1 presents a prehistoric cultural chronology of New Jersey including diagnostic artifact types, based on studies by Fitch and Glover (1989), Grumet (1995), Wall et al. (1996), Grossman-Bailey (2001), and Dincauze (2004).

Environments in northeastern North America have changed considerably through time. Pollen analysis is one analytical technique that has provided data on past vegetation, and by inference, the climate in New Jersey (Marshall 1982; Wolfe 1977). Around 17,000 years ago, with glaciers covering much of northern New Jersey, herbaceous plants dominated the landscape south of the glacial limit. As glacial ice retreated, open parkland developed and was succeeded by a pine-spruce forest about 13,000 years ago. Oaks and hemlocks predominated by 8,500 years ago, with pines more common in droughty, well-drained areas (Sirkin et al. 1970; Sirkin and Minard 1972). Between about 11,000 and 9,500 years ago the climate was cool and somewhat dry, followed by a warming trend until about 5,750 years ago. About 3,000 years ago, there was a slight cooling trend, with increased moisture, and within several hundred years, essentially

modern conditions predominated with an oak-hickory-pine forest covering much of the New Jersey Coastal Plain (Wall et al. 1996).

Fort Monmouth was located south of the ice sheets present during the Wisconsin glaciation. The terminal moraine, or southern extent of the ice sheets, passes from Long Island through the New York City area into northern New Jersey and central Pennsylvania. Because lower sea levels were present during the Pleistocene epoch, the Atlantic Ocean was about 130 km (80 mi) east of the current shoreline. The exposed land formed a large, relatively level plain. The Hudson River cut across this plain and drained into the Atlantic well to the east of its current mouth. Sea level rose with the melting of the ice sheets and the formerly exposed land was gradually inundated. These drowned areas are now under the ocean on the Continental Shelf, and any locations that were occupied by humans are now submerged (Dincauze 2004). As the glaciers receded northwards, soils and landforms gradually developed creating the physiographic provinces, basins, and river courses that exist today.

The Fort Monmouth vicinity is an area of sandy soils with few rocks on the surface. Sources of lithic material (rocks) suitable for tool making can be found within 80 km (50 mi) of the terminal glacial moraines, in the abundant gravel deposits found there. Consequently, lithics resources were acquired at some distance from the region and brought into the area.

Table 2-1: Prehistoric Cultural Chronology of New Jersey

Period or Subperiod	Dates	Cultural Subdivisions and Diagnostic Artifacts*
Paleoindian	10,500 - 8000 B.C	Eastern Clovis and Gainey point types followed by Dalton point horizon and Turkey Swamp points.
Early Archaic	8000 - 6000 B.C.	Early side-notched point horizon followed by corner-notched point horizon, and by bifurcate-base point horizon (i.e., Kirk, Palmer).
Middle Archaic	6000 - 4000 B.C.	Stanley, Neville, Morrow Mountain II, Stark, Poplar Island points, various groundstone tools.
Late Archaic	4000 - 1000 B.C.	Small Stemmed Point tradition, Susquehanna tradition, Snook Kill, Perkiomen, Lehigh-Koens-Crispin complex, Brewerton corner-notched, and Lackawaxen straight-stemmed points, increased use of groundstone tools, steatite.
Early Woodland	1000 B.C. - A.D. 500	Meadowood points, steatite, ceramics.
Middle Woodland	A.D. 500 - 900	Jack's Reef and Fox Creek points, triangular points, Mockley and Abbott- Zoned ceramics.
Late Woodland	A.D. 900 -1600	Levanna points, Townsend and Overpeck ceramics, and ceramics with complex incised motifs.
Contact/Protohistoric	A.D. 1600 -1700	Delaware Indian culture, grit-tempered ceramics including Bowmans Brook and Overpeck wares.

*Based on Dincauze (2004), Fitch and, Glover (1989), Grossman-Bailey (2001), Grumet (1995), and Wall et al. (1996).

Paleoindian Period (Before 8000 B.C.) – The earliest confirmed occupations in New Jersey, according to the widely-established chronology for the region, were Paleoindian. Occupations may have occurred in the region before the glacial retreat, yet Paleoindian sites in the Northeastern U.S. are later than those in the Southeast and Southwest (Dincauze 2004). Paleoindian entry into the region may have been the “haphazard and unrestricted wanderings of tiny groups of hunters equipped with a small inventory of chipped-stone tools” (Ritchie 1965:1). Paleoindian occupation was characterized by very low population density, with small groups of mobile hunter-gatherers scattered across the region. The diagnostic artifact is the fluted projectile point. These points are typically made from high-quality cryptocrystalline cherts, resources that often originate far from where the points are found. Other diagnostic artifacts of this time period are unfluted lanceolate and notched points. Many additional stone tool forms are found, including drills, graters, *pieces esquillees* or wedges, unifacial tools, bifacial knives, and various types of scrapers (Funk 1978:17). Ground stone tools such as hammerstones, anvils, pitted stones, and abraders were also used. Together, these were part of a generalized tool kit of a highly mobile people, who exploited a variety of plant and animals for food clothing, shelter, and tools. Paleoindian sites are found throughout North America, with regional variations in lifeways (Cannon and Meltzer 2004; Ritchie 1980). Paleoindian social organization was probably relatively simple, consisting of egalitarian bands made up of small family units that only periodically gathered together (Anderson 1996). They moved between temporary camps as resources became available through the year. Neither horticulture nor settled village life was practiced by these people.

Paleoindians are typically described as big-game hunters, depending on mastodons or mammoths for much of their diet. It is much more likely however, that smaller game and wild plants provided an important part of their diet. Mastodon remains have been found in New Jersey and southern New York, including the area between Fort Monmouth and Sandy Hook. Mastodon and mammoth remains have also been found offshore on the Continental Shelf (Kraft 1973). Caribou bone has been found with fluted points in a site in southern New York, and it is likely that caribou ranged into the mid-Atlantic region as well. Essentially modern species of animals (deer, elk, beaver, bear and possibly caribou) were the dominant species in the region at that time (Pagoulatos 2004:125; Ritchie 1965:10-11).

Paleoindian sites in the Fort Monmouth vicinity are anticipated to show few, if any, adaptations to a coastal environment. Reconstruction of the paleoenvironment suggests an environment colder than today. Tundra and pine-spruce forests were present, followed by oak-hemlock forests. After oaks came to dominate the landscape, there was an increase in the availability of food for mammals (acorns) and, therefore, their human hunters.

A survey of the distribution of Paleoindian points in New Jersey identified 48 fluted points from the Outer Coastal Plain, and of these, 18 from Monmouth County (Grossman-Bailey 2001). These artifacts were recovered from the shores of Raritan Bay, at the headwaters of the Navesink River, and south of the Shrewsbury River, some of them from within a few miles of Fort Monmouth. Fluted points in New Jersey are predominantly made of jasper, chert, and flint which may have been derived from cobbles in local deposits or from sources in Pennsylvania and New York (Marshall 1982; Pagoulatos 2004). Many of the Paleoindian artifacts found in the

region were isolated finds or various tool types used for a variety of activities, i.e., burins, graters, bifaces, channel flakes, as well as the fluted points (Pagoulatos 2004:134).

The early Paleoindian period, about 10,500 to 8000 B.C., is characterized by Clovis-type fluted points, while the later Paleoindian period, about 8000 to 6000 B.C., is characterized by non-Clovis fluted points, and various unfluted point forms, emphasizing the continuity of the Paleoindian period with the succeeding Early Archaic (Funk 1978; Marshall 1982:15; Petersen et al. 1998).

Locations favored by Paleoindian populations include ridges overlooking lowlands, freshwater, rivers and swamps (Marshall 1982:35-36). Klein et al. (1984:24) suggest that the Fort Monmouth vicinity "would have offered both fresh water sources and the riverine and swamp locations known to have been favored in other areas." Sites near the Fort Monmouth vicinity identified as having Paleoindian components include the Port Mobil site, a probable base camp at the southwestern tip of Staten Island, New York (Kraft 1977); and the Turkey Swamp site, in Freehold, New Jersey (Cavallo 1981). Turkey Swamp is a multi-component site with an artifact assemblage that has been classified as part of the Dalton-Hardaway Late Paleoindian subphase because of the presence of basally thinned points (Cavallo 1981). Other researchers disagree with a terminal Paleoindian classification for the site because of relatively late radiocarbon dates and the similarity of the lithic assemblage to Archaic assemblages such as those identified at the Abbott Farm locales near Trenton, New Jersey (Wall et al. 1996; Pagoulatos 2004:130). Site 28-Mo-215 contained several Paleoindian features and a fluted jasper biface and channel flake sourced to Lehigh County, Pennsylvania, about 80 km distant (Pagoulatos 2004:131). Other sites with Paleoindian artifacts in Monmouth County are the Kandy Bar Ranch site and the Timber Swamp Brook site (Pagoulatos 2004).

Archaic Period (8000 to 1000 B.C.) – The Archaic period is generally divided into three subperiods: Early (8000 to 6000 B.C.); Middle (6000 to 4000 B.C.); and Late (4000 to 1000 B.C.). The Archaic period is characterized by the presence of small groups of hunters and gatherers who used a wide range of resources. Changes in climate provided a diverse subsistence base, including white-tailed deer, migratory birds, waterfowl and shellfish. A traditional definition of the Archaic focuses on what was not present, including horticulture and ceramic production (Ritchie 1932). This definition, however, simplifies the processes involved in the development of horticulture because the end of the Archaic probably saw selective plant tending and cultivation. In their discussion of the Archaic in New Jersey, Kraft and Mounier (1982a) state that this period has not been studied in detail, and that:

Only a few sites have been excavated adequately, and most of these are small, multi-component and non-specific, even where the plow has not already disturbed the prehistoric cultural associations. The generally acidic soils in New Jersey have dissolved most of the Archaic human burials as well as faunal and floral remains, and artifacts manufactured from bone, antler, wood, and other perishable materials. Archaic period house patterns are unknown, and only the most general and hypothetical judgments can be made concerning settlement patterns, social structures, religious attitudes,

and many aspects of the Archaic period economy and technology (Kraft and Mounier 1982a:55-56).

Kraft and Mounier go on to caution the student of the Archaic in New Jersey to be wary of generalizations that certain parts of New Jersey were unoccupied or sparsely inhabited. They contend that, although different environments would have had different patterns of subsistence and settlement during the Archaic, the sampling biases of early researchers has affected perceptions about distribution of settlements (Kraft and Mounier 1982a: 84).

The transition from the Paleoindian to the Early Archaic period in northeastern North America poses an interesting problem. There is an abrupt change from fluted projectile points to bifurcate-base and side-notched points, which are characteristic of the Early Archaic. Few points that may represent a transition from the Paleoindian to the Early Archaic in eastern North America, have been found in New Jersey. Archaeologists have speculated that Paleoindian people abandoned places like New Jersey, and that newcomers subsequently replaced them. Perhaps the development of spruce-fir forests, which provide fewer food sources than do the environments which preceded or succeeded them, may have supported smaller populations than had previously lived in the region. An alternative to the abandonment hypothesis is that Paleoindian people continued to live in the Northeast, but that their later projectile point styles have not been recognized (Kraft and Mounier 1982a:64).

One definition of the Early Archaic in eastern North America presents it as a post-Paleoindian cultural manifestation which preceded the development of distinctive regional variations of Archaic culture (Tuck 1974:73). Subsistence was based on hunting, fishing, and gathering within limited territories (Ritchie and Funk 1973:337; Kraft and Mounier 1982a:77). The presence of many types of artifacts in various ecological settings may indicate use of more resources than was previously utilized. Wide distribution but light density of artifacts dated to the Early Archaic suggest that populations at this time were small and mobile (Kraft and Mounier 1982a:77). Early Archaic sites recorded within five km (3 mi) of Fort Monmouth include 28-Mo-145 and possibly 28-Mo-146 and 28-Mo-193 (Fitch and Glover 1989:210-211). Cross (1941) investigated an Early Archaic site at Lincroft in Monmouth County.

In comparison with the Early Archaic, the Middle Archaic in northeastern North America is characterized by more sites, larger sites, and the use of many ecological settings. Most sites are located in riverine, lacustrine, or coastal settings. Increased population size or increased sedentism may be reflected in the greater number and size of Middle Archaic sites. Alternatively, this may indicate a more efficient adaptation to the environment by people of the Middle Archaic. Artifacts found in Middle Archaic sites in New Jersey include types similar to those found along much of the eastern seaboard, part of what has been called the Poplar Island complex, which includes long, slender projectile points with tapered stems. The points are similar to Morrow Mountain II points from North Carolina (Coe 1964:37) and the Stark point from New Hampshire (Dincauze 1971:195-196). Poplar Island shows some continuity from the earlier Stanly and Neville types, but the absence of good stratigraphic data on these points is a problem for assigning a Middle Archaic date to them (Kraft and Mounier 1982a:79). There are few sites in the Monmouth County area that are reported to contain Middle Archaic components.

The Late Archaic period is characterized as a time when people became increasingly mobile in comparison to earlier populations. Generally, there is a major shift in settlement and subsistence practices seen in the archaeological record; sites are typically larger than those of the Middle Archaic and were repeatedly occupied. Population increased in this period, which may be due both to warmer, milder temperatures as well as the more efficient uses of locally available resources (Grossman-Bailey 2001). Artifact complexes found within bounded areas suggest the development of territoriality. There was also an elaboration of the tool kit, which is probably related to a broadening of the types of food resources, which were used in the Late Archaic. Tools included spears with stemmed, side-notched, and corner-notched points (Kraft and Mounier 1982a:67). Non-local lithic materials were used, suggesting a network of regional trade. This is also supported by the rise of ceremonial mortuary practices throughout the region (Kraft and Mounier 1982a:80-81).

Several cultural traditions (i.e., customs or traits which persist through time and may be reflected archaeologically) have been identified in the Late Archaic, including the Small-Stemmed Point and the Susquehanna traditions are present in the archaeological record of New Jersey.

The Small Stemmed Point tradition includes both the small stemmed points from which it draws its name, and small triangular projectile points, ground stone tools, and atlatls (i.e., spear-throwers). Archaeological evidence of this tradition is found along the coast and major rivers from Virginia to southern New England; occupations have been dated between 3200 and 1700 B.C.

The Susquehanna tradition is characterized by artifacts such as broad-bladed stemmed and notched points and narrow notched "fishtail" points, and by specific mortuary practices such as cremation. The Susquehanna tradition may have originated in southeastern North America and spread northeast. Phases of the Susquehanna tradition identified in New Jersey include Perkiomen, Frost Island (Susquehanna), Dry Brook, and Orient. An archaeological complex related to the Susquehanna tradition is the Koens-Crispin complex. It is identified by broad stemmed projectile points, atlatls, stone vessels, cremation burials, and early ceramics (Kraft and Mounier 1982a:81-84). This complex, along with others, has sometimes been categorized as part of the Terminal or Transitional Archaic (1500 to 1000 B.C.). Spear points (Koens-Crispin, Snook Kill, and Perkiomen), bowls carved from soapstone (steatite), and full-grooved axes are characteristic of the Terminal Archaic (Kraft and Mounier 1982a:69).

Following the general pattern of site settlement in the region, sites from the Late Archaic are more common in the vicinity of Fort Monmouth than are earlier sites. Within a five km (3 mi) radius of the post, the following Late Archaic sites have been recorded: 28-Mo-126; 28-Mo-127; 28-Mo-128; 28-Mo-130; 28-Mo-133; 28-Mo-135; 28-Mo-150; and possibly 28-Mo-146 and 28-Mo-193 (Klein et al. 1984, Fitch and Glover 1989:210-211).

Woodland Period (1000 B.C. to A.D. 1630) – The Woodland is a period of cultural transformation in the Eastern Woodlands, a region that extends from the Mississippi River to the Atlantic Ocean (Kraft 1986:89). Like the Archaic, the Woodland period is often divided into three subperiods: Early (1000 B.C. to A.D. 500), Middle (A.D. 500 to 900), and Late (A.D. 900 to 1600). While pottery may have been adopted in some areas somewhat prior to the Woodland

period, fired-clay vessels made using ground soapstone/steatite tempering appeared in the region during the Early Woodland subperiod (Stewart 1998:158, 162). By the end of the Woodland period, Native American groups were dependent upon plant cultivation with widespread use of maize, ceramics had developed to the point where regional and local ceramic types and variants were established, and elaborate ritual and ceremonial customs become apparent.

Distinctions between Early and Middle Woodland periods are not clear in New Jersey and they are usually based upon distinctive burial practices/mortuary ceremonialism derived from the Adena and Hopewell cultures that originated to the west in the Ohio River Valley (Custer 1996). Kinsey (1974) considers Early and Middle Woodland periods as one, lasting from 1000 B.C. to A.D. 1000. Following Kinsey and other recent authors, this document discusses these two periods together.

Although similar to the Late Archaic, Early/Middle Woodland period culture was distinguished by technological changes, particularly the introduction of new container technology in the form of pottery. There was also increased use of shellfish resources along the shorelines and estuaries. Plants used include a variety of nuts and possibly wild rice. A diagnostic projectile point type for the Early Woodland in the northeast is the Meadowood point. The Meadowood phase (1000 B.C. to 500 B.C.), as defined in New York State, is one cultural subdivision recognized for this period. Sites with Meadowood components are characterized by the presence of these points as well as cremation burials and Vinette I pottery (Ritchie 1965:180). Two sites reported within Fort Monmouth (28-Mo-126 and 28-Mo-129) probably date from this period; 28-Mo-129 is described as containing a Meadowood point.

Early ceramic traditions in the central New Jersey archaeological record include the Vinette I, Ware Plain, and Marcy Creek pottery types. Steatite tempered pottery similar to Marcy Creek is among the earliest dated ceramics in the upper Delaware River Valley and were found in Late Archaic-Early Woodland features at Abbott Farm (Stewart 1998:158, 162). Early steatite tempered pottery is flat-bottomed; use of steatite tempering may have continued into the Middle Woodland period in southern New Jersey (Stewart 1998:162). Ware Plain pottery may be contemporary with Marcy Creek; it has similar form and surface treatment as that type but is grit and/or sand tempered (Stewart 1998:163). Vinette I pottery is characterized by cord marking (sometimes on both the interior and exterior) and a conoidal shape. While Vinette I pottery and Meadowood projectile points have a similar distribution area and are temporally diagnostic for this period, at Abbott Farm similar wares Vinette pottery were associated with Orient fishtail-type components that are considered transitional or terminal Archaic (Stewart 1998:167).

A variety of resources were used during the Early/Middle Woodland period. The coastal environments and wetlands, principally tidal estuaries and salt water bays, were rich in shellfish and anadromous fish. Land-based subsistence based on hunting and gathering of a wide variety of resources including deer, nuts, and wild rice. Evidence of horticulture in the region is indirect at this time and the point at which plant cultivation overtook gathered plant resources in importance has not been determined (Williams and Thomas 1982:124).

The Late Woodland period in New Jersey is characterized by intensive occupation and horticulture along rivers with seasonal occupation of interior and coastal areas (Kraft and

Mounier 1982b:141; Wall et al. 1996). Generally, the Late Woodland period experienced population increases, occupation of larger sites with food storage facilities, and the development of local pottery styles (Kraft and Mounier 1982b:159). A combination of horticulture and foraging was the Late Woodland means of subsistence. The cultivation of domesticates such as maize, beans, tobacco, squash and sunflower was fully established during the Late Woodland. Artifacts recovered from Late Woodland sites include clay tobacco pipes, Levanna triangle projectile points, groundstone pestles and celts, perforated pendants and effigy objects, and assorted pottery types. On the coastal plain, distinctive pottery types developed, including Overpeck Incised, Bowmans Brook Incised, and Riggins Fabric-Imprinted (Kraft and Mounier 1982b).

Most field research into the Late Woodland period in New Jersey has focused on the Delaware River Valley, e.g, Wall et al. (1996) and Stewart (1998). Uneven coverage of the state and the development of historic settlements in desired site locations have contributed to the paucity of data on this period. Many Late Woodland period areas of occupation were apparently located near sites that became historical settlements. As a result, cities, towns, and suburbs have destroyed evidence of many sites from this period. Hundreds of identified Late Woodland period sites are recorded in the Outer Coastal Plain, however few are near Fort Monmouth. One Levanna projectile point from a private collection was recovered from the ground surface in the Charles Wood Area (Klein et al. 1984).

The end of the Woodland period was a time during which Native American populations first encountered European explorers and early settlers (ca. A.D. 1600 in this region), and during which they first entered the European written record. The period of early European contact was dynamic and filled with violence and hardship that led to the collapse of Native American lifeways. Many of cultural changes caused by contact are apparent in the archaeological record. A shift away from the traditional use of natural resources is seen with a rapidly growing dependence on European goods. Permanent European settlement in the Northeast is generally considered to mark the end of the Late Woodland and beginning of the Contact/Protohistoric period.

Pre-military History. For the time period before the establishment of a military facility at Fort Monmouth, the following categories are used: Colonial, Federal, and Industrial. In developing historic contexts for NRHP purposes, the reader is referred to the works cited and to Chesler (1982).

Table 4.2-1 presents a brief timeline of major historical events and patterns in New Jersey prior to the military presence at Fort Monmouth. A list of chronologically diagnostic artifacts commonly found in historic archaeological sites in the northeast is also given.

Colonial Period (ca. A.D. 1630-1775) – The history of permanent European settlement of New Jersey began in 1664. The Dutch had made an unsuccessful attempt at settlement in 1624. Swedes and Fins established a settlement in 1638. The Dutch took this settlement in 1655, and it in turn was taken by the English in 1664. These early European settlements and their residents were transitory. The English occupation is considered the first stable settlement.

Table 2-2: Historic Cultural Chronology of New Jersey Before the Establishment of a Military Facility at Fort Monmouth

Period	Major Events & Patterns*	Diagnostic Artifacts
Colonial 1630-1775	Dutch, Swedish, Finnish settlement (1624-1655); Dutch-Delaware fighting (1640s); English conquest (1664); Navesink Patent (1664); Monmouth County established (1682-1683); royal colony (1702); Treaty of Easton (1758); agriculture, forestry, iron, intracoastal trade; water-powered mills for local production.	Imported tin-glazed earthenware; white salt glaze; English brown, Westerwald, and scratch-blue stoneware; redwares; pipestems with mean bore diameter of 4-6/64 in; handwrought nails; freeblown and molded glass
Federal 1775-1810	Much military activity during the Revolution; Battle of Monmouth Court House (1778); agriculture, industry, and trade slowed down through the period.	Creamware; pearlware; pipestems w/ mean bore diameter of 4/64 in; handwrought nails; machine cut nails after 1790
Industrial 1810-1917	Industry grew after War of 1812; water power developed; steamboats after 1830 and railroads after 1835; peak rural population in mid-nineteenth century; industrial expansion during Civil War, northern, then southern and eastern European immigration; post-Civil War African-American migration from the South; major technological innovations; chemical industry starts (1840s); decline of iron industry; resort development on shore from 1850 on; Monmouth Park Racetrack (1870, 1890); commercial truck farming with improved transportation; mechanization of agriculture; US entry into World War I; interurban transit and the beginnings of suburbanization.	Pearlware in early part of period; whiteware from 1820 on; yellowware from 1827; transfer-print on ceramics; 3-piece molded bottles after 1810 and 2-piece molded bottles after 1840; tin cans after 1819; pressed glass 1827; vulcanized rubber after 1839; wire nails after 1850; condensed milk cans after 1856; Mason jar after 1858; increase in whitewares, machine-made goods, mechanical parts; manufacture dates available from patent numbers and merchants' catalogs

*Based on Fitch and Glover 1989 and other sources.

King Charles II granted the land between the Connecticut and the Delaware Rivers to his brother, the Duke of York. The admiral who took possession of Dutch territories in the region, Richard Nicolls, confirmed land grants in what became New Jersey, including Monmouth County region. Called "Albania" in honor of the Duke of York's Scottish title, this land attracted Baptists and Quakers from England as well as New Englanders who had migrated to Long Island. English settlers were required to purchase land from the native Delaware people.

The Duke of York, however, chose to convey "New Caesarea" or "New Jersey" to John Lord Berkeley and Sir George Carteret as joint proprietors. Control of the land by the proprietors was not without controversy in the Monmouth County region and elsewhere. In 1676 the province was divided into East Jersey (predominantly settled by Puritans from Long Island and New England) and West Jersey (largely occupied by Quakers from Pennsylvania). Joined during the brief existence of the Dominion of New England (1688-1689), when King James II sought greater control over the northern colonies, the two provinces were united permanently with the creation of the royal province of New Jersey in 1702 (Fleming 1977).

Land in East Jersey had been granted to the settlers of Middletown and Shrewsbury under the Navesink Patent of 1664 (Ellis 1885:573). Eatontown was included within the original boundaries of Shrewsbury. Dutch farmers from Long Island also settled in what became Monmouth County in the 1680s. Among the first counties established in East Jersey was Monmouth County, in 1682-1683. In 1693, the Provincial Assembly recognized three townships in the county: Freehold, Middletown, and Shrewsbury.

Generally, in the seventeenth century New Jersey experienced a slow growth in population compared with New York and Pennsylvania (Fleming 1977:18). In addition to people of European ancestry, there were many African and African-American residents, perhaps as high as 10 percent of the total population by the middle of the eighteenth century (Hunton and McCabe 1984:7). Delaware Indians were also still present in New Jersey during the Colonial period, although a steep decline in population occurred between 1600 and 1779 (Goddard 1978:214).

An original nucleated settlement pattern was soon replaced by one of dispersed farms. Agriculture was the principal economic activity throughout the period. On streams, mills were constructed. Thomas Eaton built a mill on Wampum Brook in Eatontown in the 1670s (Ellis 1885:875). Mills during this period were small, serving the needs of the immediately surrounding communities rather than producing goods for more distant markets. Charcoal was also prepared for use in the local iron industry.

Archaeological remains from this period generally represent agriculture, farm crafts (e.g., smithing, coopering), and mill operations (e.g., mill races). Klein et al. (1984:2-10) and Fitch and Glover (1989:223) suggest that the shores of Parkers and Oceanport Creeks may have been used as landings, and that streams on Fort Monmouth may have been locations of mill sites.

Federal Period (1775 to 1810) – New Jersey was the scene of many military engagements during the American Revolution. The Battle of Monmouth Court House took place in Freehold on June 28, 1778. The battle was inconclusive but was followed by the retreat of British forces to Sandy Hook.

At the time of the American Revolution, many of the patterns of economy and society which would be in place until the beginning of the Industrial period had already been established. The population in the Outer Coastal Plain did not grow as quickly as in other physiographic regions of New Jersey (Wacker 1982:2 12, 215). Agriculture remained a major activity in this period, as did maritime pursuits. Alexander Hamilton proposed constructing a large industrial city on the Passaic River at the site of today's City of Paterson. The initial attempt in the 1790s and a second in the early 1800s ended in failure (Fleming 1977:89-93). No industrial projects of this scale were considered for Monmouth County's rivers.

Extractive and processing industries had been established in New Jersey during the eighteenth century. These rural industries included charcoal, glass, iron, and lumber. At the end of this period, the value of improved transportation for both the expansion of industries and also the opening of new markets for agricultural goods was being recognized.

Archaeological remains from this period generally reflect rural households engaged in agriculture. It is not likely that materials related to military activity during the American Revolution will exist at Fort Monmouth.

Industrial Period (1810 to 1917) – A corridor extending from the area west of New York City and running southwest to Philadelphia was the scene of intense development of transportation and industry. To the north and south of this corridor, smaller, local industries were established. These included iron mining and smelting, lime burning, and glass making. Monmouth County

had a charcoal industry, with ships carrying the charcoal from Oceanport to New York City (Hunton and McCabe 1984:27).

Monmouth County, however, was largely outside of the area of greatest industrial activity, urbanization, and immigration. Construction did not reach the scale found to the north of Fort Monmouth during the first part of this period. Rural landscapes, which provided vegetables for markets in New York, predominated, and agriculture saw improved techniques, mechanization, and crop specialization. Mulberries for silkworms were not very successful, but commercial cranberry production became an important industry (Larrabee 1982).

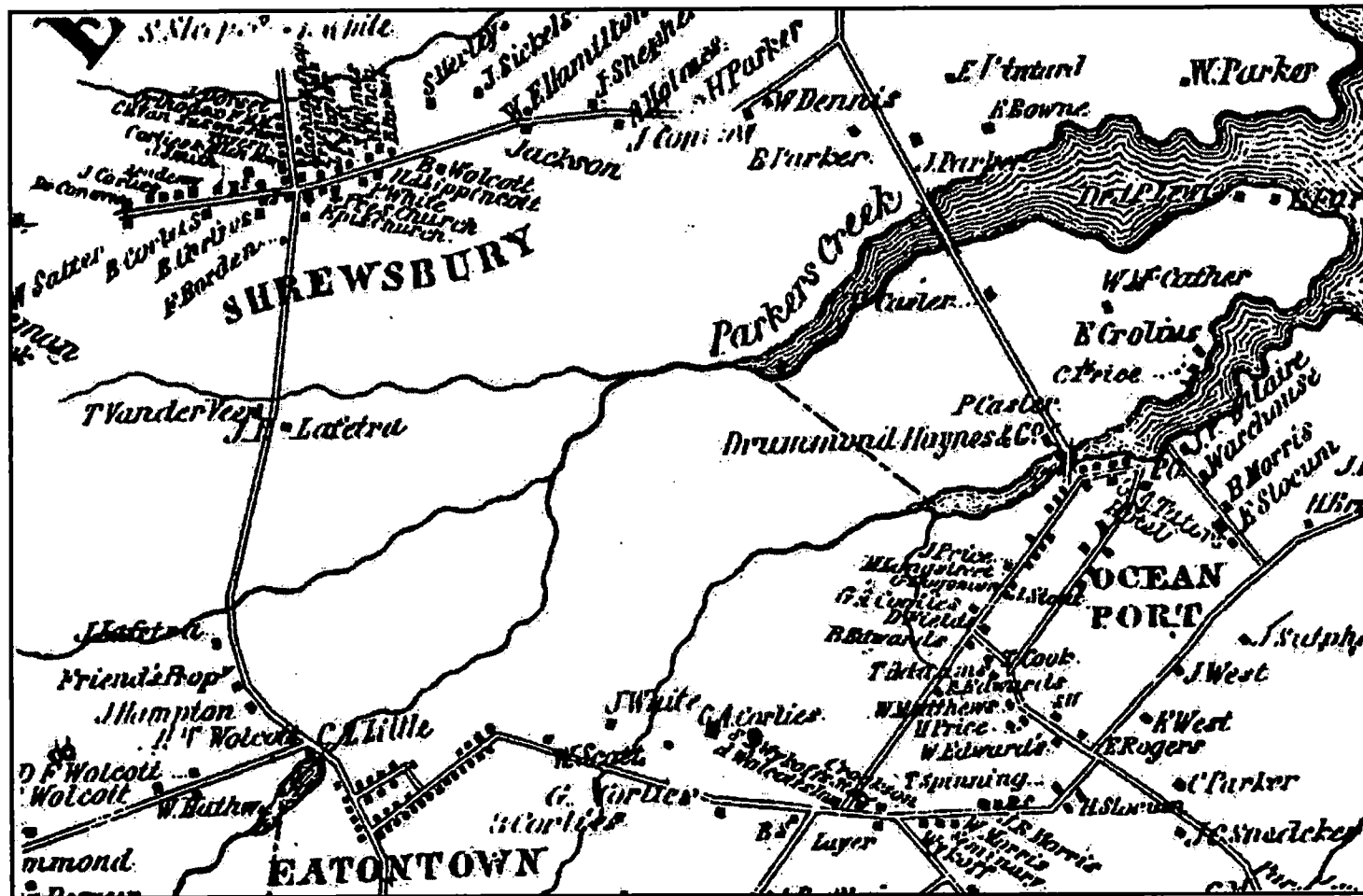
The peak of the rural population in the area occurred in the middle of the nineteenth century, but improved production methods, including mechanization, and the opportunities of city life or western lands reduced the number of rural residents after the Civil War. In the latter part of the period, there was an increase in population with the arrival of Irish, German, Jewish, and Italian immigrants. In addition, African-Americans moved north in the latter part of the nineteenth century (Hunton and McCabe 1984:26; Larrabee 1982:223). Figures 2-2 and 2-3 present historical maps of the Fort Monmouth region dating to 1851 and 1873, respectively.

Associated with the themes of industrialization, urbanization, and immigration is the increasing connection of the region to metropolitan areas, particularly New York City. Starting in 1830, there was steamboat service to New York. Much of the present road network was also established in the nineteenth century: the Shrewsbury Turnpike, for example, was operating by 1860 (Larrabee 1982:226; Lane 1939:148-149). Railroads were begun in New Jersey as early as the 1830s, and the Delaware and Raritan Bay Railroad operated west of Fort Monmouth, starting in 1861 (Hunton and McCabe 1984:30; Larrabee 1982:229). This railroad connected with a steamboat wharf at Port Monmouth. Subsequent railroad construction facilitated travel to New York. In addition to contributing to industry and commercial agriculture, improved transportation also permitted the development of a tourism industry.

Tourism and seasonal residence began with a change in attitude toward the seacoast, which can be traced to the 1820s. By the 1840s, there were seaside resorts, and in the 1850s a "wealthy class" of people reportedly vacationed at Long Branch (Lewis Publishing 1922 1:247-249). After the Civil War, the New Jersey shore rivaled Saratoga Springs and Newport as an upper class resort.

At the site of Fort Monmouth, J. McDavison and J. F. Chamberlain bought 128 acres of the Corlies estate in 1869 (Building Technologies, Inc. 1984). A racetrack was constructed in 1870, with a larger track built in 1890 (Figures 2-4 and 2-5). Monmouth Park Racetrack was accessible by a railroad link to the steamship landings. Unfortunately for the racetrack, gambling was outlawed in New Jersey in 1893, and the property fell into disuse.

Archaeological remains from this period at Fort Monmouth are expected to be agricultural implements or household goods. Industrial remains will probably be artifacts related to rural crafts, such as blacksmithing, rather than large-scale manufacturing.



**Figure 2-2. Historical Map of Shrewsbury, New Jersey
(Lightfoot 1851)**

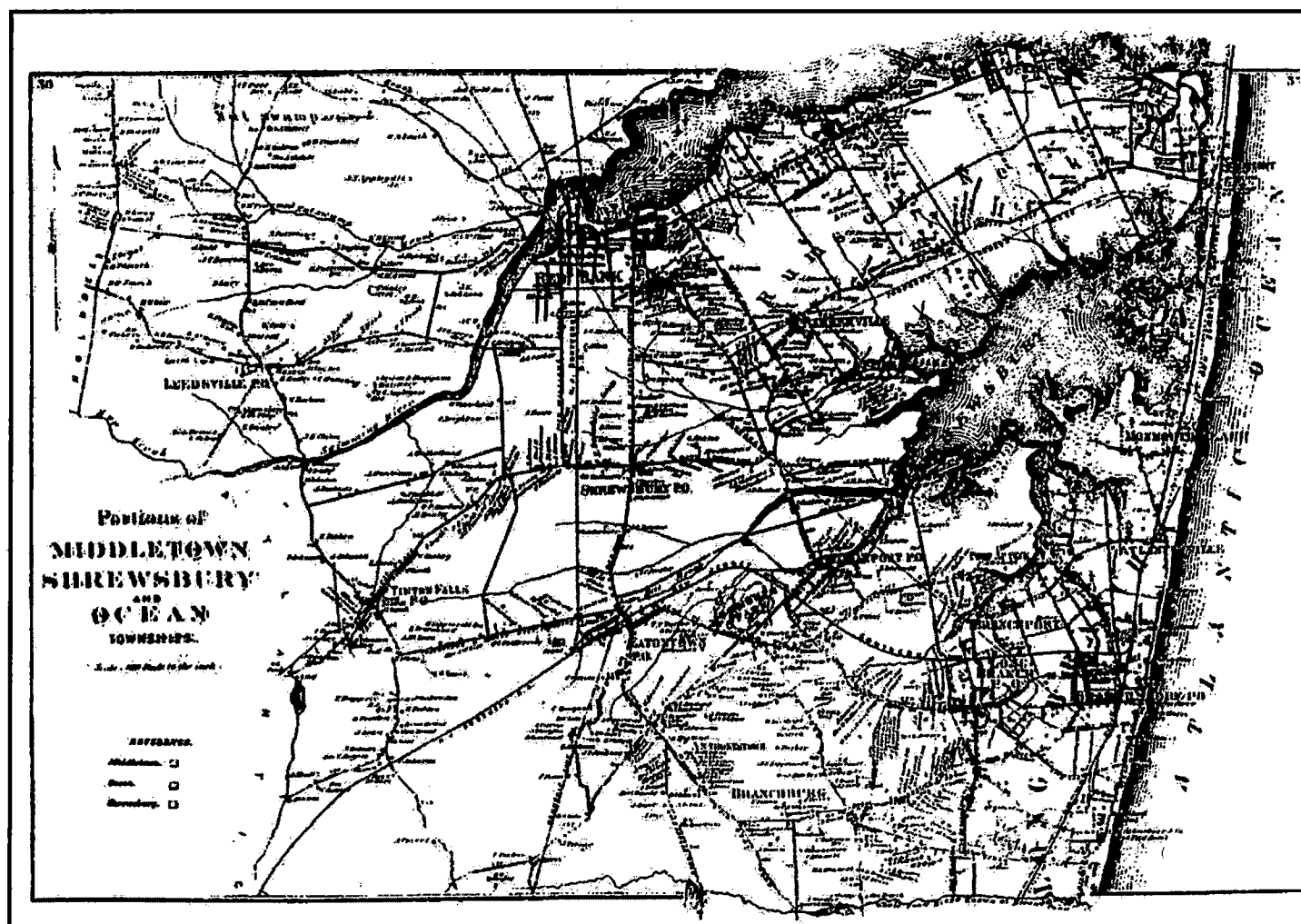


Figure 2-3. Historical Map of Middletown, Shrewsbury, and Oceanport Townships, New Jersey
(Beers 1873)

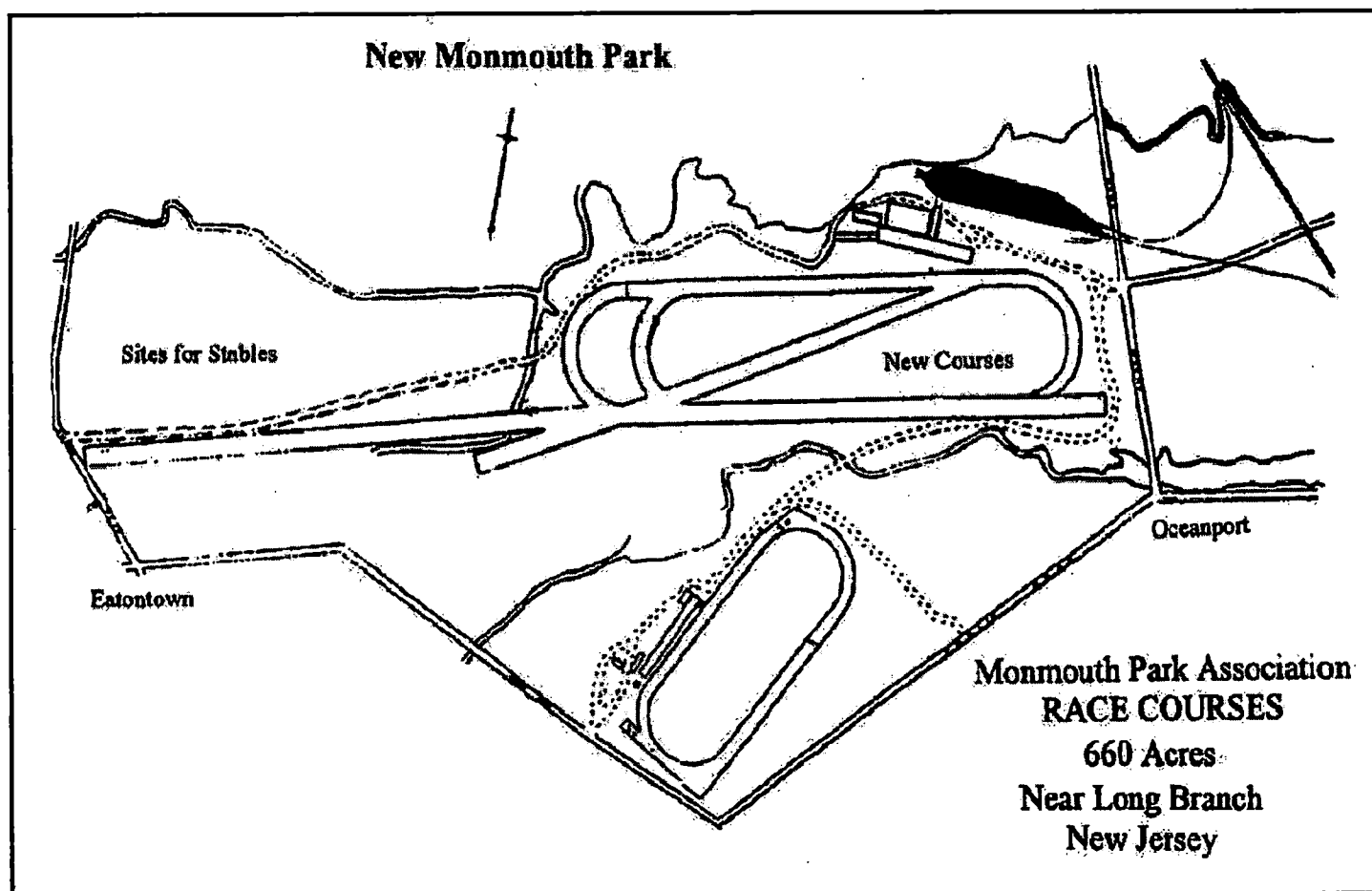


Figure 2-4. Historical Map of New Monmouth Park Racetrack
(Anonymous 1890a)

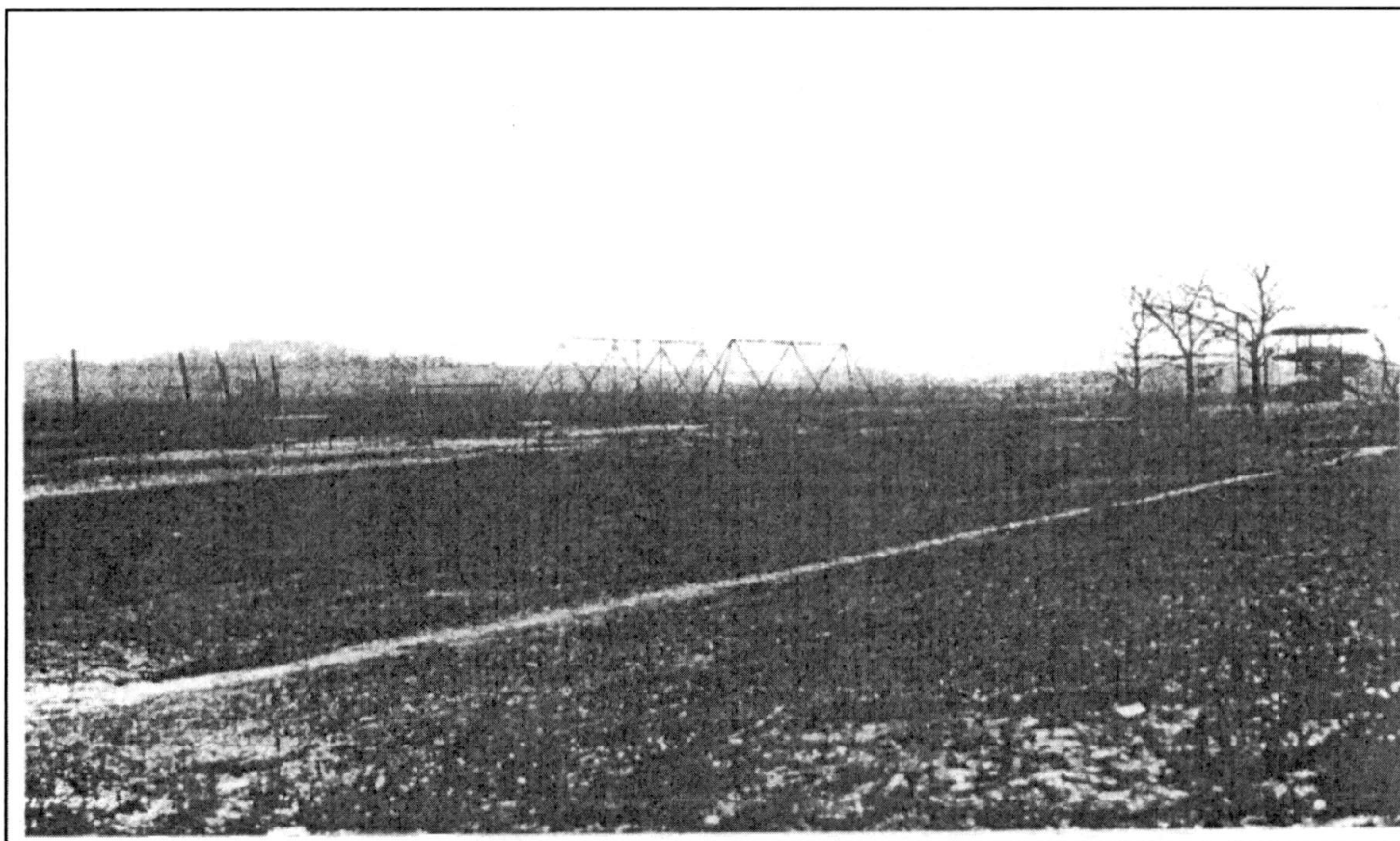


Figure 2-5. Photograph of New Monmouth Park Racetrack Circa 1890
(Anonymous 1890b)

Fort Monmouth History. After the establishment of the Signal Corps camp in 1917, Eatontown and its vicinity were greatly affected by U.S. Army activity. Trends other than military use also had impacts on the region. Among these were improvements in transportation and increasing suburbanization. In the present discussion, the time since the establishment of a military facility at Fort Monmouth is divided on the basis of major military events: Early Military, Cold War, and Post-Cold War. Within each of these there were substantial military developments, which could justify further delineation of periods, such as the interwar period, World War II, or the Vietnam War.

Generally, archaeological remains from the Fort Monmouth period will reflect military hardware, supplies, and personal effects of personnel, which is typical of each subperiod or decade. Places which may have been locations of barracks or other buildings or structures which are no longer standing may have the potential for containing artifacts and features related to the period of occupancy.

Early Military Period (1917 to 1946) – The Early Military period refers to the period from the establishment of a military presence, in 1917, through 1946, including the years between the world wars (1917-1941), World War II itself (1941-1945), and the demobilization of forces after the conclusion of the war (1945-1946). This period saw the development of military aviation and mechanized warfare, improvements in radio communication, and the invention of radar (Radio Detection and Ranging).

In 1917, the Army rented approximately 468 acres of the old Monmouth Park Racetrack, establishing Camp Little Silver as one of four camps for Signal Corps troops - the others were at Fort Leavenworth, Kansas; Leon Springs, Texas; and the Presidio of Monterey, California. The area was chosen primarily because of its availability and railroad connections to New York City. Some of the land had been in cultivation during the summer of 1917 when military personnel arrived to transform the landscape into an Army camp (Fort Monmouth Tradition Committee 1961). The old infield of the racetrack became a flying field and later, a parade ground. Barracks and laboratories were constructed (Figure 2-6). Buildings and structures from this period constituted the "old wooden camp" as opposed to the later permanent buildings. By September 1917, an administration building, a hospital, and motor vehicle sheds and garages had been completed (Fitch and Glover 1989:258). Construction and the influx of personnel over a short time resulted in an economic boom for the area immediately around the camp, renamed Camp Alfred Vail, in honor of the colleague of Samuel F. B. Morse who received the first telegraphed message.

Instruction in communications was a main activity at Camp Vail. Courses began in late July 1917, with students learning cryptography, heliography (signaling with reflected light), semaphore, and map reading. Later, with the development of radio, intensive radio communication was taught. Telegraph Battalions trained at the camp were sent to France starting in August 1917. German-speaking personnel were needed for the war, and foreign languages and codes were other subjects of instruction (Fort Monmouth Tradition Committee 1961).

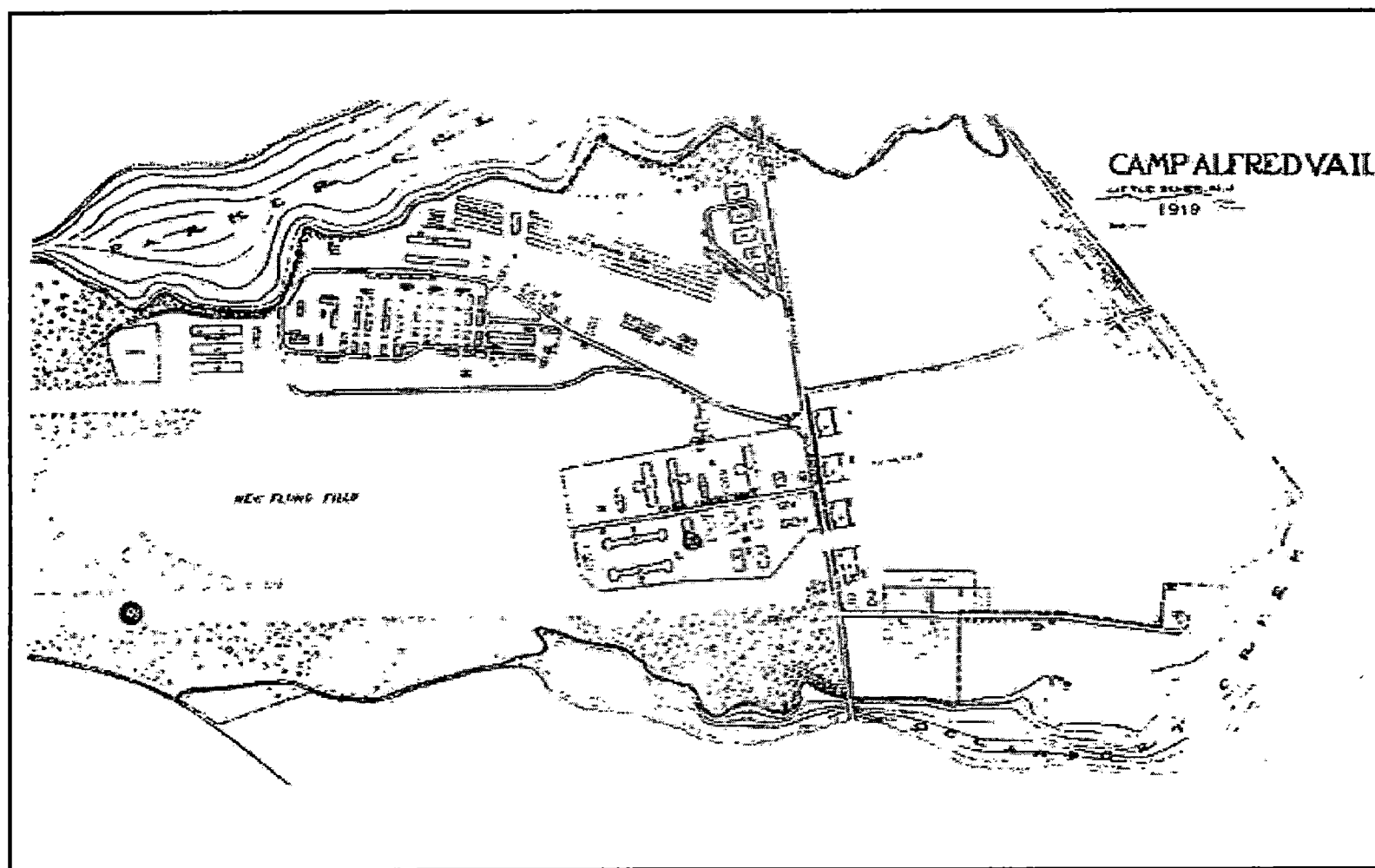


Figure 2-6. Historical Map of Camp Alfred Vail
(U.S. Army 1919)

A need for improved military communications required a research laboratory, and one was established at Camp Vail under the direction of Major General George O. Squier, and the Engineering and Research Division of the Signal Corps moved from Washington, D.C., to the camp. In 1918, work on the standardization of vacuum tubes was conducted. Other projects included work on the radio telephone, the voice radio, and the airborne radio. Other work at the laboratory focused on testing manufactured equipment from contractors. Personnel from the camp took models of equipment to Europe for trials in actual battlefield situations. Air-to-ground radio communications was an important subject for research, and aircraft hangars were built to support this project. The old racetrack was the flying field. Another aerial contribution to the war effort was the Pigeon Service, which bred pigeons for carrying messages. During World War I, 129 semi-permanent buildings were constructed (Fort Monmouth Tradition Committee 1961; Communications and Electronics Command [CECOM] Historical Office 1985, 1994).

In 1925 the camp became a permanent installation and was renamed in honor of the soldiers who fought at the battle of Monmouth Courthouse. The Signal School continued, as did the research laboratory (Phillips 1967). Technological development projects at this time included the SCR-136 ground telephone and telegraph set for artillery fire control, the SCR-131 portable telegraph, the SCR-162 for artillery boat and shore communication, and the SCR-132, which could transmit telephone messages for 160 km (100 mi) (CECOM Historical Office 1985).

In 1929, Signal Corps laboratory facilities were consolidated at Fort Monmouth. Also added to Fort Monmouth was the underwater sound laboratory. Most of the communications equipment that was to be used during World War II, including the SCR-268 and SCR-270 radar sets, were developed at Fort Monmouth during this period. The SCR-300 - the famed "Walkie-Talkie" radio was developed in 1936 (CECOM Historical Office 1985, 1994).

The 1920s and 1930s saw major changes at Fort Monmouth. Between 1927 and 1937 more than 70 permanent buildings were constructed (Figure 2-7). These structures included the buildings which are now contained in the NRHP district: enlisted barracks, the NCO and officer's housing, the theater, fire station, and headquarters building (see Section 5.3.2). The configuration of the present facility took shape during this period. In the late 1930s and early 1940s, expansion of the Signal Corps research efforts necessitated absorption of a country club and golf course (the present Charles Wood Area) and the former facilities of the Marconi Company (the Evans Area).

Research on radar was carried out under the direction of Herbert A. Zahl starting around 1931. His work demonstrated that it was possible to detect aircraft at distances greater than the line-of sight. In 1935, Detection Project was conducted at Navesink Light in Highlands, New Jersey. This project showed that high-frequency radio beams were the most effective means of detecting aerial targets (Fort Monmouth Tradition Committee 1961). This research was reported in the popular press as a "Mystery Ray" and excited interest by the Japanese.

Before World War II began, an increase in military preparedness led to the acquisition of several parcels in Monmouth County. There were four sub-installations of Fort Monmouth. A laboratory (Camp Coles) was established near Red Bank, New Jersey. Another was started in the Charles Wood Area, and a third one at Fort Hancock, on Sandy Hook. The Charles Wood

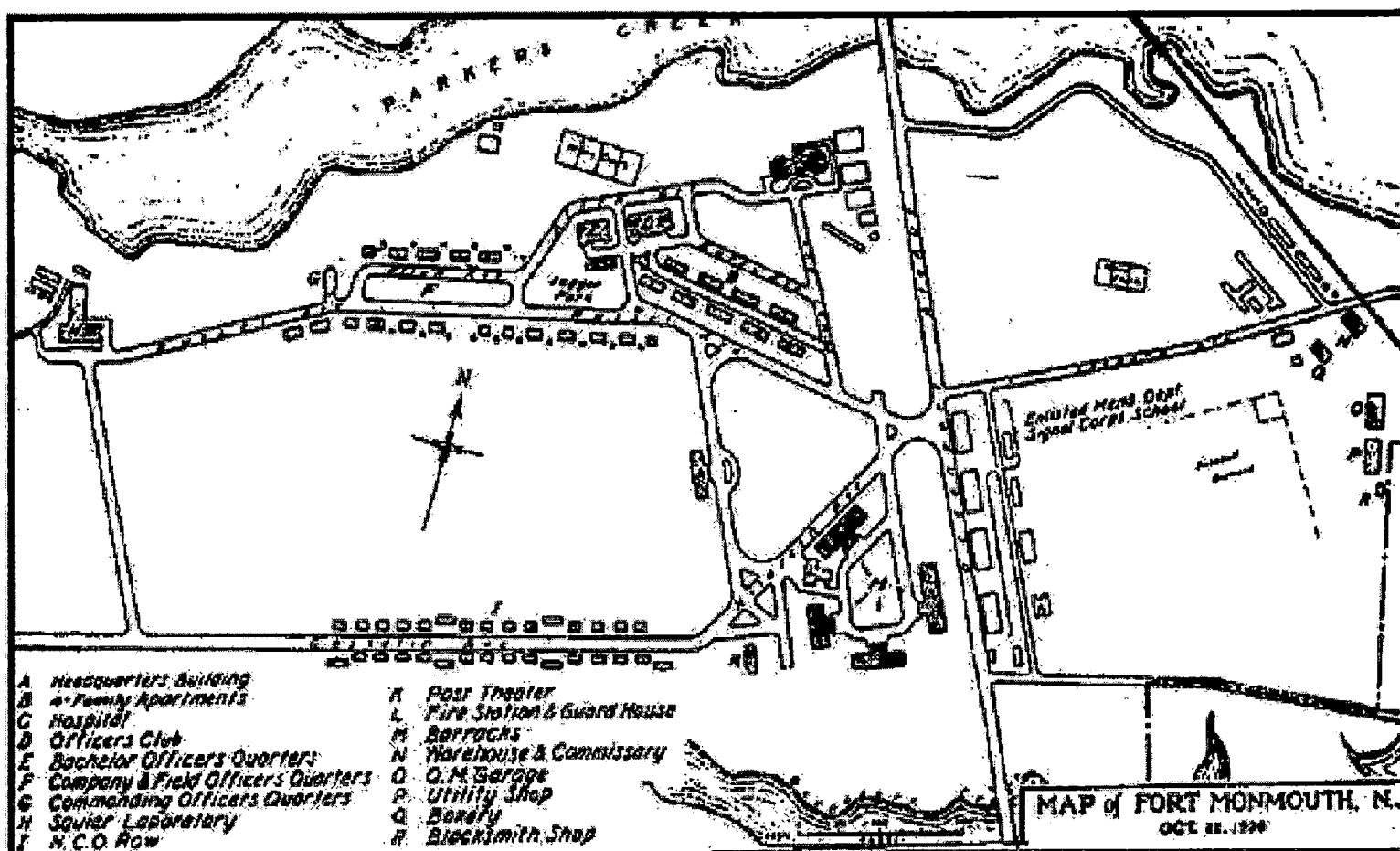


Figure 2-7. Historical Map of Fort Monmouth, October 22, 1936
(U.S. Army 1936).

Area had been a golf course, which was developed in the 1920s. On it stands a former clubhouse, which is now Gibbs Hall. It was acquired by the U.S. Army in 1941, and used as a camp.

Sixty barracks, eight mess halls, 19 school buildings, ten administration buildings, and other buildings were constructed within 90 days. The camp was dedicated in 1942 (Fort Monmouth Tradition Committee 1961:25) (Figure 2-8). Most of the buildings presently standing in the Charles Wood Area, however, date from the 1950s when personnel housing and the "Hexagon" research center were constructed (Building Technologies, Inc. 1984).

At the start of 1941, the Signal Corps Replacement Center had a capacity of 5,000 men for a year-long training program (Figure 2-9). By the end of that year, the capacity had increased to 7,000 and the training was reduced to 13 weeks (CECOM Historical Office 1985, 1994). A prisoner-of-war camp for Italian military personnel was located in the northern part of the Main Post Area, east of Oceanport Avenue.

When the war in Europe ended, a Redeployment Branch was started at Fort Monmouth. This was intended to train personnel who had returned from Europe to be ready to fight in the Pacific. Japan's surrender made this unnecessary, and a Separation Center came into operation. More than a thousand men each day were discharged from military service in the fall and early winter of 1945-46 (CECOM Historical Office 1985).

Cold War Period (1946 to 1989) – An historic context for the Cold War Period at Fort Monmouth has been developed by Reed et al. (1996:29-43). Discussion of methods for assessing Cold War material culture may be found in Lewis et al. (1995). This volume contains important background perspective on Cold War material resources (Murphey 1995), the impacts of the Cold War on society and culture (Boyer and Murphey 1995), and a chronology of events and policies (Lewis and Roxlau 1995).

There is disagreement between historians as to when the Cold War began; some argue in favor of the "Trinity" atomic test in 1945 and others argue for the "Iron Curtain" speech of Winston Churchill in 1946. For the purposes of Fort Monmouth, the Cold War is considered to be the time between 1946 and the fall of the Berlin Wall in 1989. This era was a time of intense competition between the United States and its allies on one hand and the Soviet Union, its allies, and other communist countries on the other. Aspects of the Cold War include, but are not limited to: military occupation and economic reconstruction of Europe and Asia following World War II; the Berlin Airlift; communist expansion in Eastern Europe, China, and elsewhere; the Korean War; technologies related to atom and hydrogen bombs and associated delivery systems; efforts to detect, respond to, and survive attack on the U.S. (including protecting the civilian population); military, political, and diplomatic efforts at home and in foreign countries to stop the spread of communism; the Cuban Missile Crisis of 1962; the Vietnam War; and the development of satellite communications and other space technologies.

Boyer and Murphey (1995) divide the Cold War into early and later periods. The early Cold War, up to 1962, was a time when concern about communist expansion, particularly the extension of the power of the Soviet Union, reached its greatest height. Cultural influences of

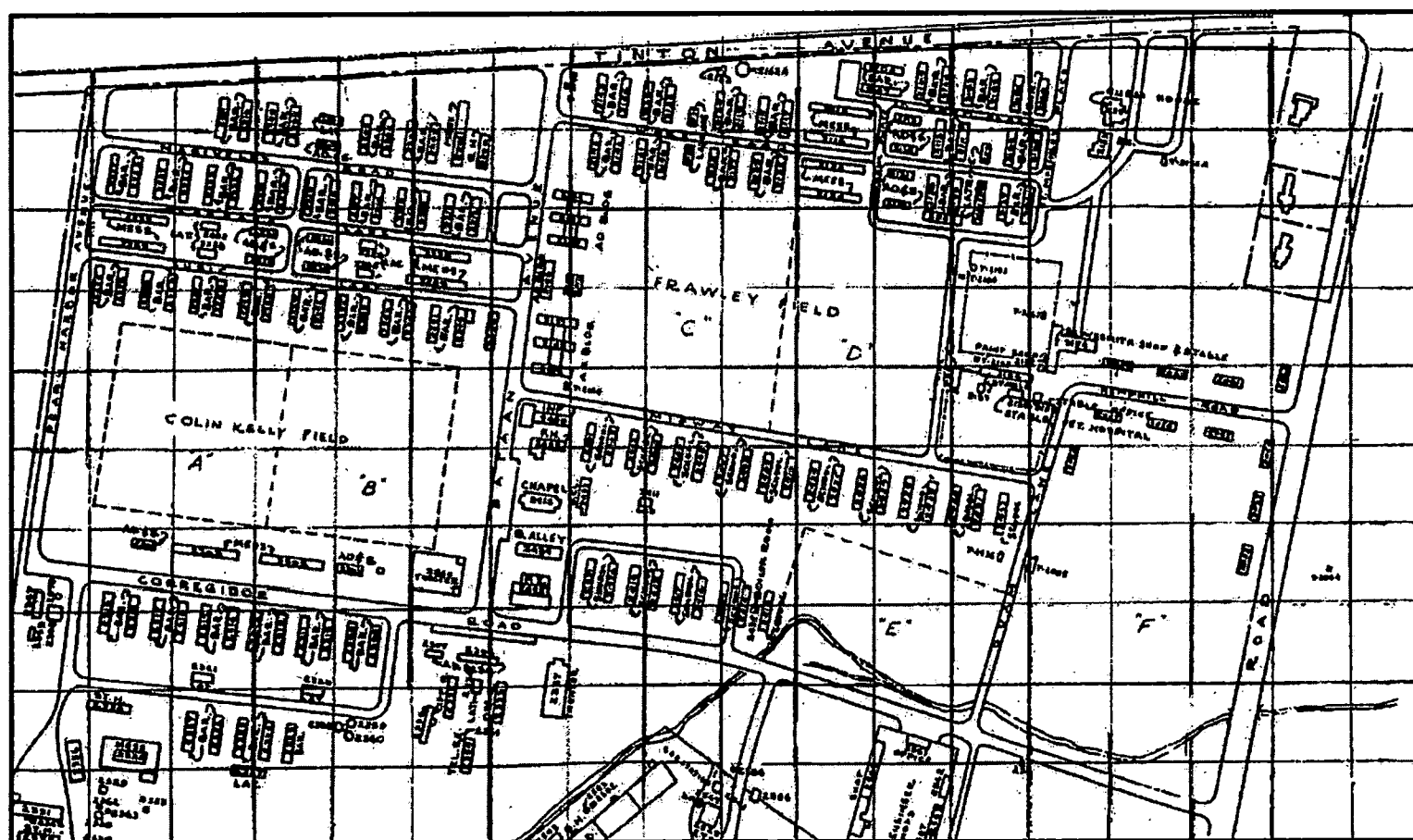


Figure 2-8. Camp Charles Wood Map, Northwest Portion
(U.S. Army 1946)

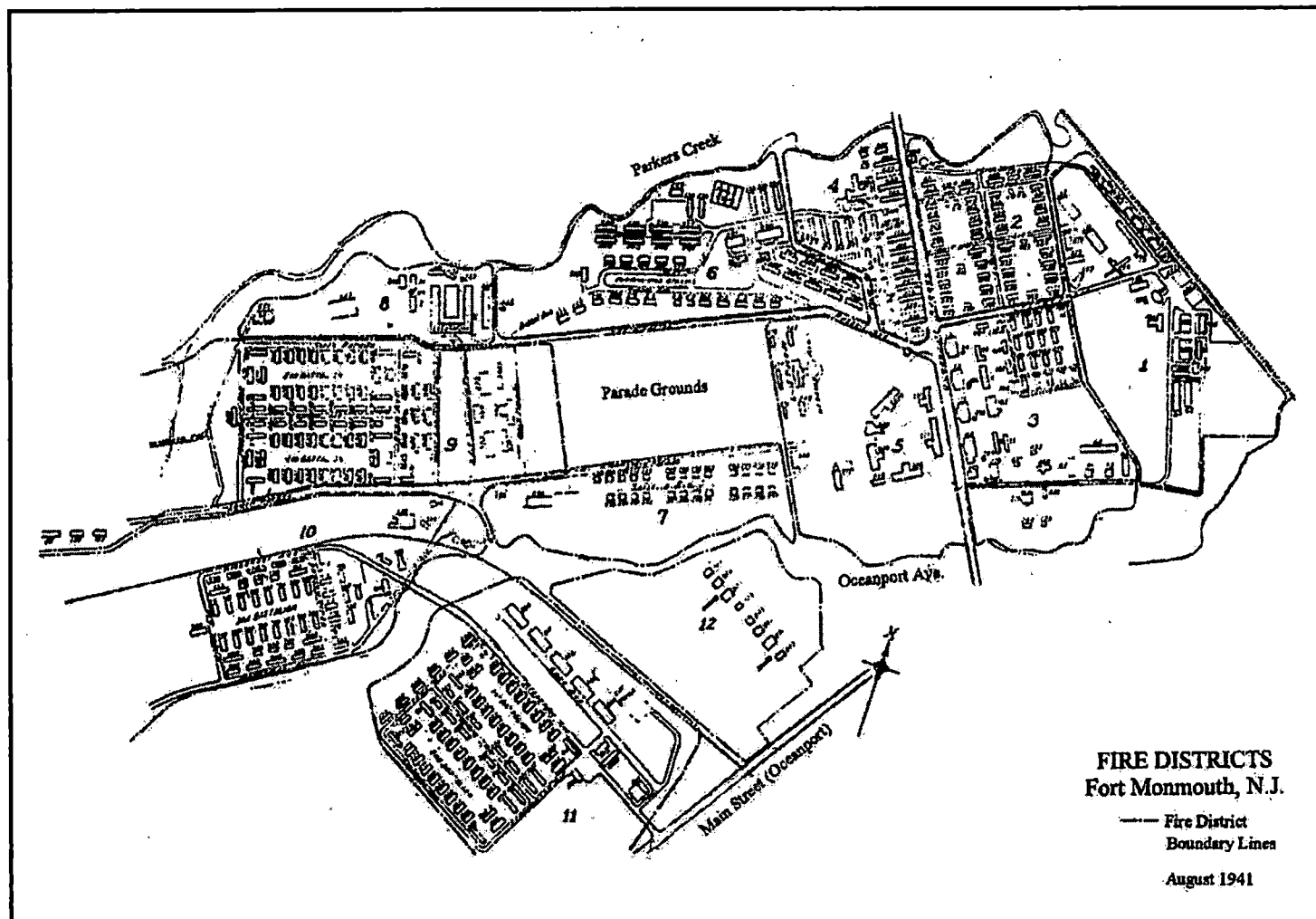


Figure 2-9. Map of Main Post Fire Districts, August 1941
(U.S. Army 1941)

the Cold War were also very intense, and the fear of nuclear confrontation was widespread. The Cuban Missile Crisis and its aftermath, changes in Soviet leadership, the Sino-Soviet split, and changing domestic political conditions in the United States and its allies led to a shift in policy. Later years of the Cold War were marked by reductions of nuclear threats. Conflicts, such as the Vietnam War, as well as episodes of difficult relations between the superpowers, did occur. Toward the end of the period, the United States experienced a military build up, and defense programs such as the Strategic Defense Initiative (SDI) were proposed. An economically ailing Soviet Union underwent major internal changes and eventually broke apart, devolving into a series of republics which largely rejected communism.

In the years between World War II and the Korean War, Fort Monmouth's funding remained high, even as the number of personnel dropped in 1945-46 (Reed et al. 1996:29). With the start of the Cold War, there was an increase in the number of both military and civilian personnel at Fort Monmouth. There were 9,705 personnel in 1947. This number rose to 17,358 in 1953 (CECOM Historical Office 1985). Housing construction increased, particularly in the Charles Wood Area and included single family homes for military personnel. Laboratories continued in operation at the Main Post, the Coles Signal Laboratory, the Charles Wood Area, and the Evans Signal Laboratory.

Early in this period, a major scientific question addressed by researchers at Fort Monmouth was whether or not the earth's ionosphere represented a barrier to radio waves. Project Diana was intended to answer the question (Reed et al. 1996). In the Evans Area, on January 10, 1946, a group of researchers from Fort Monmouth sent a radio signal to the moon and received the returned signal 2.5 seconds later. This event constituted the first contact between the earth and a celestial body. Interestingly enough, the project was authorized by the laboratory commander, Lt. Col. John J. DeWitt, because he did not have enough work for his staff to do in the months after World War II ended (CECOM Historical Office 1994).

Facilities at Fort Monmouth did not radically change during the Korean War, but new technologies were taught and researched. The laboratory in Squier Hall performed quartz crystal research, Coles Signal Laboratory concentrated on radio and television technology and laboratories in the Charles Wood Area studied aviation electronics (avionics), and the Evans Signal Corps Laboratory worked on radar, vacuum tubes, and meteorological devices (Reed et al. 1996:30). The Evans laboratory was also the location for radiation-related research starting in 1951. During the Korean War, the AN/MPQ-10 Mortar Locating Radar was developed at Fort Monmouth (CECOM Historical Office 1994:5).

Satellite technology became a new field for research at Fort Monmouth in the 1950s. Following the launch of Sputnik by the Soviets, intensive work was conducted by American scientists to catch up. At Fort Monmouth, the following technological advances were produced for the "Space Race": solar electrical power supply to be used in space on the Vanguard I satellite (1958); electronics equipment for the Vanguard II satellite; and a high-capacity communications satellite (1960).

Significant technological trends reflected in the work at Fort Monmouth and by its research and development contractors in this period were the micro-miniaturization of military communication electronics and the invention of automatic assembly of integrated circuits for communications equipment (Richard Bingham to Reed, personal communication, 1996). This last development involved the use of photo-etching to mass-produce wire circuitry (Reed et al. 1996:38). Experimental work preliminary to the development of transistors was also conducted at Fort Monmouth, and ways to apply transistor technology were studied here as well. Among the other technological achievements of Fort Monmouth personnel during this period include the development of weather radar (1948); synthetic quartz (1948); multi-channel laser relay (1965); passive night vision devices (1968); and the passive thermal viewer (1971) (CECOM Historical Office 1994; Building Technologies, Inc. 1984).

Research and development of communications technology continued at Fort Monmouth throughout the Cold War era, but more work was being done off-site by contractors in later years. In the Charles Wood Area, a large research facility, known as the Hexagon (Building 2700) and now called the Albert Myer Research and Development Center, was built in 1954 (Figure 2-10).



Figure 2-10. The Hexagon, Charles Wood Area, Circa 1950
(Courtesy CECOM Historic Research Collection, Fort Monmouth)

During the Vietnam War, Fort Monmouth's technological advances and contributions included work on the replacement of vacuum tubes with transistors and integrated circuits, making communications equipment smaller, lighter, more dependable, and more versatile. Such equipment reached lower into the ranks and accommodated a much larger volume than

ever before, providing more information to more people more of the time (CECOM Historical Office 1994:17). One project, eventually abandoned because of the difficulty in implementation, was a remotely-monitored battlefield sensor system using well-disguised sensors (Reed et al. 1996:42).

Although there were changes in command structure during the 1970s and 1980s, research continued at Fort Monmouth. As Reed et al. (1996:43) note, more recent work is generally less known to the public because of the restricted access to this information. Among the projects are probably SDI components. The U.S. Army Signal Center and School remained at Fort Monmouth until 1976, when it was moved to Fort Gordon, Georgia (CECOM Historical Office 1985:47).

Post-Cold War Period (1989-present) – The conclusion of the Cold War has required a reorientation of the military away from a focus on the former Soviet Union. The end of Cold War had seen the downsizing of the military. There were numerous proposed facility decommissions associate with the Defense Base Realignment and Closure Act (BRAC) of 1990. Among the implemented recommendations of the BRAC commission were the closure of the Evans Area, the CECOM Office Building, and the Vint Hill Farms Station, with their activities to be relocated at the Main Post and Charles Wood Area. More recent history has seen a focus away from the former Soviet Union. Conflicts up to this point have been on a smaller, more regional level, such as the Persian Gulf War.

2.3 Previous Investigations

The first cultural resource investigation conducted at Fort Monmouth was an archaeological overview and management plan prepared in 1984 by Envirosphere Company (Klein et al. 1984). This document summarized the historical and environmental contexts for Fort Monmouth, inventoried known historic properties on the Main Post, Charles Wood Area, and the now-excessed Evans Area, and provided management recommendations. Klein et al. (1984) interviewed a former groundskeeper, Redacted - Privacy Act, who had collected numerous prehistoric artifacts from the property during his tenure at the installation between 1947 and 1972. According to Klein et al. (1984), Redacted - Privacy Act indicated that the sites were situated in close proximity to creeks, lakes, lagoons and marshes. Only diagnostic artifacts (i.e., points, bifaces, ceramics) were collected from the site locales, and these were still in the possession of Redacted - Privacy Act as of 1995 (USACE 1995). The collected artifacts are reported to span the Late Archaic through Late Woodland periods. Based on the interview with Redacted - Privacy Act, Klein et al. (1984) were able to identify the locations from which the artifacts were collected and to formally record the sites with the New Jersey State Museum (Table 2-3). Their report also included a review of historical maps in order to determine the archaeological potential for historic sites within the boundaries of Fort Monmouth.

A reconnaissance survey and archaeological assessment of the Main Post were conducted by Fitch and Glover in 1989 as part of an Environmental Impact Statement (EIS) related to the realignment of several Army installations around the country (Trierweiler et al 1996). The survey included the identification of a historic site in the form of a bridge culvert depicted on a historic map (Table 2-3). The site was designated Site A, but it was not formally recorded and no subsurface investigations were conducted.

Table 2-3: Previously Reported Archaeological Sites at Fort Monmouth

Site Number	Recorder; Date	Location	Cultural Affiliation; Description	Survey, Collection Policy	Comments, References*
28MO126	Redacted - Privacy; 1947-72	Main Post	Late Archaic to Middle Woodland; lithics (fully- grooved ax, jasper biface), ceramics, shell suggestive of midden	Diagnostic collection, no mapping	Redacted - Privacy, personal communication 1983, 1996
28MO127	Redacted - Privacy; 1947-72	Main Post	Late Archaic; lithics (small stemmed point, broad stemmed point)	Diagnostic collection, no mapping	Redacted - Privacy, personal communication 1983, 1996
28MO128	Redacted - Privacy; 1947-72	Main Post	Late Archaic/ Woodland; lithics (triangular and other quartz points)	Diagnostic collection, no mapping	Redacted - Privacy, personal communication 1983, 1996
28MO129	Redacted - Privacy; 1947-72	Main Post	Early Woodland; lithics (Meadowood point)	Diagnostic collection, no mapping	Redacted - Privacy, personal communication 1983, 1996
28MO130	Redacted - Privacy; 1947-72	Main Post	Late Archaic; lithics(stemmed argillite point)	Diagnostic collection, no mapping	Redacted - Privacy, personal communication 1983, 1996
28MO131	Redacted - Privacy; 1947-72	Charles Wood Area	Unknown prehistoric; lithics (black chert biface)	Diagnostic collection, no mapping	Redacted - Privacy, personal communication 1983, 1996
28MO132	Redacted - Privacy; 1947-72	Charles Wood Area	Late Woodland; lithics (triangular point)	Diagnostic collection, no mapping	Redacted - Privacy, personal communication 1983, 1996
28MO138	Redacted - Privacy; 1947-72;	Main Post	Unknown prehistoric; information not available; 2004 Phase I survey did not relocate the site	Redacted - Privacy Act; Diagnostic collection, no mapping; Baldwin and Heaton (2004) – 15 shovel test units on a 15-m grid,, no prehistoric artifacts	Redacted - Privacy, personal communication 1983, 1996; Baldwin and Heaton 2004
28MO385 (Site A)	V. A. Fitch and S. Glover; 1989	Main Post	Historic brick and mortar culvert	Field observation, no collection, not formally recorded	Wolverton and Breou 1889; Fitch and Glover 1989:287

*Source: Trierweiler et al. 1996.

In 1996, Geo-Marine Inc. conducted a windshield and pedestrian survey for archaeological surface deposits or features within the Charles Wood Area (Reed et al. 1996). The survey covered approximately 30 acres of the western portion of the Charles Wood Area, to the west of Hope Road and north of the Conrail railroad right-of-way. The survey was implemented as part of a BRAC assessment of the Evans and Charles Wood Areas. These investigations also attempted to relocate Sites 28MO131 and 28MO132 as described by Klein et al. 1984, but found no evidence of prehistoric deposits on the surface of the reported site locations. The report concluded that due to intensive development, archaeological deposits were unlikely to remain intact. No further archaeological investigations were recommended within the western portion of the Charles Wood Area.

Only one archaeological field investigation involving subsurface testing has been conducted at Fort Monmouth. A Phase Ib archaeological survey was performed in October of 2004 by John Milner Associates (Baldwin and Heaton 2004). The survey consisted of subsurface testing of a 1-acre area which coincided with the reported location of Site 28MO138. The survey was conducted in advance of construction of housing units under the Residential Community Initiative (RCI). Fifteen shovel test units were excavated on a 15-meter interval grid within the project area. Recovered artifacts consisted entirely of mid-20th-century architectural debris from previously demolished World War II-era barracks. No prehistoric artifacts were recovered. The report concluded that either the reported location of Site 28MO138 was erroneous or that development in that area had resulted in the destruction of the prehistoric deposits.

In addition to the overviews and reconnaissance surveys, several attempts have been made at assessing the post's archaeological sensitivity in order to focus future survey and compliance investigations. The archaeological overview and management plan by Klein et al. 1984 included a review of historical maps to determine historic archaeological site potential on the Main Post and Charles Wood Area. The maps reviewed included Lightfoot (1851), Beers and Beers (1861), Beers (1873), Wolverton and Breou (1889), and several U.S. Army maps on file at Fort Monmouth dated 1919, ca. 1922, 1936, and 1944. Based on the map review, Klein et al. (1984) identified over 200 historical structures that may have stood within the boundaries of Fort Monmouth. A table of these potential site locations can be found in Klein et al. 1984. No subsurface testing or reconnaissance has been undertaken to verify the absence or presence of these potential sites. Klein et al. (1984) did qualify their findings by noting that the presence of the sites is tentative and that primary source documentation should be researched prior to any field investigations.

An archaeological sensitivity assessment of the Main Post was conducted by Fitch and Glover as part of their 1989 archaeological reconnaissance investigations. Criteria for assessing archaeological sensitivity included prior disturbance, distance to water, soil type, and slope (Trierweiler et al 1996). The assessment found the majority of the Main Post to have low potential for containing archaeological deposits and 10 percent to have moderate to high archaeological potential (Klein and Baldwin 2003).

The 1996 Cultural Resource Management Plan (CRMP) also included an archaeological sensitivity assessment of the Main Post and Charles Wood Area (Trierweiler et al. 1996).

Maps delineating areas of low, medium, and high archaeological potential were produced for the Main Post and Charles Wood Area. In this study, archaeological potential was based on previous research and the distribution of previously identified cultural resources, prior ground disturbance, and environmental factors such as proximity to water and slope. As a result of the assessment, the CRMP identified 446 acres as having high potential for containing archaeological deposits, 156 acres as having medium potential for containing archaeological deposits, and 602 acres as having a low potential for containing archaeological deposits. These maps were later revised by the U.S. Army Corps of Engineers, Fort Worth District to assist with the field strategy for the current investigation

3.0 METHODS

3.1 Field Strategy

The following tables and figures present the field strategy as proposed prior to fieldwork for archaeological testing within the two parcels that comprise Fort Monmouth; the Main Post (Tables 3-1 and 3-2, Figure 3-1) and the Charles Wood Area (Table 3-2, Figure 3-3). The proposed field strategy called for subsurface testing within 17 non-contiguous survey areas totaling 166 acres, and the relocation of five previously recorded prehistoric sites and one undocumented historical site. The proposed survey areas were derived from those indicated on installation maps provided by the U.S. Army Corps of Engineers in the request for proposal (RFP) for this task order. The survey areas in the RFP were modified based on review of historical topographic maps, recent aerial imagery, and by a non-systematic walkover conducted by Versar personnel in November 2005. Areas removed from the survey included those that showed evidence of extensive disturbance, such as locations of demolished military structures, paved parking lots, and recent ground disturbing construction and utility maintenance. Areas added to the survey include areas that appeared relatively undisturbed by development of Fort Monmouth: the wooded areas along the southern edge the Golf Course and the railroad right-of-way at the Charles Wood Area; and the stream margins below Husky Brook Lake near the historical culvert designated as Site A on the Main Post. Survey areas were further modified in the field upon identification of disturbances not readily apparent in the aerial photographs and maps or through visual inspection (e.g. utility disturbances, former landfills, and other public works projects).

Shovel test intervals of 15 and 30 m (50 and 100 ft) were employed for this survey. Radial shovel tests, when utilized, were excavated at half the appropriate survey area interval. The testing intervals are based on NJHPO guidelines, which recommend "an average of 17 one-foot [30 cm] diameter subsurface probes per acre" (NJHPO 2004). Open areas along stream margins that appeared to be relatively undisturbed by development of the installation were tested on a 15-m (50-ft) interval grid. Similar areas that are densely wooded were tested on 15-m (50-ft) interval transects where practical. Several open areas, including MP-7 through MP-10 on the Main Post, and CW-6 and CW-7 in the Charles Wood Area, were considered to exhibit moderate site potential and were tested on 30-m (100-ft) interval transects. These areas occur on high ground at drainage divides, often at a distance from streams in the vicinity. Study of historical maps and aerial photographs suggested that development impacts in these areas may have been limited to the construction of recreation or parade fields or to the installation of well-defined utilities.

The locations of previously recorded archaeological sites were based on UTM coordinates of each site as determined by Klein et al. (1984). Klein et al. (1984) do not give dimensions or areas for the sites, thus for the purposes of proposing a field effort the coordinates were assumed to be center points and the sites were assumed to be less than one acre in size. The ground surface of these locations was systematically inspected for cultural materials. Following pedestrian survey and assessment of utility and other disturbances, shovel testing was conducted to relocate the archaeological deposits, establish site boundaries, and

Table 3-1: Archaeological Survey Areas – Main Post

<i>Survey Area</i>	<i>Acreage</i>	<i>Testing Strategy</i>
MP-1	2.7	Test at 15-m (50-ft) interval – stream margin, appears relatively undisturbed by installation development
MP-2	6.8	Test at 15-m (50-ft) interval – stream margin, appears relatively undisturbed by installation development
MP-3	15.2	Test at 15-m (50-ft) interval – stream margin, appears relatively undisturbed by installation development
MP-4	4.6	Test at 15-m (50-ft) interval – stream margin, appears relatively undisturbed by installation development
MP-5	9.5	Test at 15-m (50-ft) interval – stream margin, appears relatively undisturbed by installation development
MP-6	9.4	Test at 15-m (50-ft) interval – stream margin, appears relatively undisturbed by installation development
MP-7	21.0	Test at 30-m (100-ft) interval – high ground at drainage divide, no structures in past 50 yrs, rec. fields/utility impacts
MP-8	5.6	Test at 30-m (100-ft) interval – high ground at drainage divide, no structures in past 50 yrs, rec. fields/utility impacts
MP-9	10.3	Test at 30-m (100-ft) interval – high ground at drainage divide, no structures in past 50 yrs, rec. fields/utility impacts
MP-10	3.0	Test at 30-m (100-ft) interval – high ground at drainage divide, no structures in past 50 yrs, rec. fields/utility impacts
Total	88.1	

Table 3-2: Previously Recorded Archaeological Sites to be Relocated at the Main Post

<i>Site Number</i>	<i>Acreage</i>	<i>Site Type</i>	<i>Testing Strategy</i>
28MO126	>1	Prehistoric site lead – previously surf. collected	Pedestrian reconnaissance and judgmental subsurface testing in reported location on 15-m grid, update site form
28MO127	>1	Prehistoric site lead – previously surf. collected	Pedestrian reconnaissance and judgmental subsurface testing in reported location on 15-m grid, update site form
28MO128	>1	Prehistoric site lead – previously surf. collected	Pedestrian reconnaissance and judgmental subsurface testing in reported location on 15-m grid, update site form
28MO129	>1	Prehistoric site lead – previously surf. collected	Pedestrian reconnaissance and judgmental subsurface testing in reported location on 15-m grid, update site form
28MO130	>1	Prehistoric site lead – previously surf. collected	Pedestrian reconnaissance and judgmental subsurface testing in reported location on 15-m grid, update site form
28MO385 (Site A)	>1	Historical culvert – not formally recorded	Map, document, submit NJSM site form



Figure 3-1. Location of Archaeological Survey Areas and Previously Recorded Sites within the Main Post
(Base Image: NJGIS 2002)

Table 3-3: Archaeological Survey Areas – Charles Wood Area

Survey Area	Acreage	Testing Strategy
CW-1	2.7	Test at 15-m (50-ft) interval as terrain dictates – stream margin, wooded, appears relatively undisturbed by installation development
CW-2	10.7	Test at 15-m (50-ft) interval as terrain dictates – stream margin, wooded, appears relatively undisturbed by installation development
CW-3	14.9	Test at 15-m (50-ft) interval as terrain dictates – stream margin, wooded, appears relatively undisturbed by installation development
CW-4	12.7	Test at 15-m (50-ft) interval as terrain dictates – stream margin, wooded, appears relatively undisturbed by installation development
CW-5	23.4	Test at 15-m (50-ft) interval as terrain dictates – stream margin, wooded, appears relatively undisturbed by installation development
CW-6	6.4	Test at 30-m (100-ft) interval – high ground at drainage divide, no structures in past 50 yrs, rec. fields/utility impacts
CW-7	5.6	Test at 30-m (100-ft) interval – high ground at drainage divide, no structures in past 50 yrs, rec. fields/utility impacts
Total	76.4	



Figure 3-2. Location of Archaeological Survey Areas within the Charles Wood Area
(Base Image: NJGIS 2002)

investigate subsurface integrity. Site A, the historical culvert below Husky Brook Lake first identified by Fitch and Glover (1989), was documented and registered with the New Jersey State Museum. Documentation of Site A included measurements and color digital photography.

3.2 Field Methods and Documentation

Each shovel test measured ca. 30 cm (1 ft) in diameter and was excavated to a depth of 50 cm (1.6 ft) or at least 10 cm (4 in) into sterile subsoil (if the subsoil was encountered at depths less than 50 cm), depending on the degree of soil development. Shovel tests were excavated by natural stratigraphic levels (i.e., by soil color/texture change), and depths were measured relative to ground surface. Stratigraphic profiles of each shovel test were recorded on standard forms listing soil texture, color, and inclusions. Individual shovel tests were identified by survey area, transect number, and sequential shovel test number (e.g., MP3-12-5). Distances between transect and shovel tests were paced.

Soil from each stratum was screened through quarter-inch hardware cloth to ensure uniform recovery of cultural materials. All shovel tests were screened onto plastic tarps and backfilled (Figure 3-3). Artifacts were placed in resealable polyethylene bags by stratum. These bags were numbered and labeled with complete provenience information using indelible marker. Provenience information from each bag was recorded on a bag inventory sheet. Any modern artifacts or recent historical artifacts recovered from a disturbed context were described and returned to their respective shovel tests during backfilling. All identified sites, features, and isolated finds were plotted using GPS (global positioning system) equipment. Plan maps of each area were prepared detailing major landscape features and the locations of positive and negative shovel tests. Additional field documentation included daily field notes and digital photography.



Figure 3-3. Shovel Testing within Survey Area MP-2

3.3 Artifact Processing/Curation

The artifacts were cleaned in plain water and bagged in 4-mil polyethylene zip-lock bags according to provenience and material type. Consecutive bag numbers were assigned in the field for each provenience where artifacts were recovered, and artifact numbers were assigned to the specimens as they were cataloged. Artifact numbers were written in indelible ink on the exteriors of the artifact bags, and acid-free tags with the site number, provenience information, and artifact numbers were placed within the bags. In addition, diagnostic artifacts were hand-labeled with the site number and artifact number using acryloid B-72 sealant and black or white pigment ink. At the conclusion of the project all artifacts and field records will be curated at a facility to be determined.

The artifacts were cataloged by count, material type, artifact type, function, and segment. Additional attributes were recorded where they contributed to the determination of artifact function or temporal range. The cataloging also included grouping the historical period artifacts in categories in order to provide a framework for analysis. The groups used were based on those employed in a system developed by Stanley South (1977), and included Activity (e.g., flowerpot), Architectural (e.g., brick, nails), Arms (e.g. bullets), Clothing (e.g., buttons), Domestic (e.g., ceramic and glass vessels), Personal (e.g., tobacco pipe), Fuel (e.g., coal), and Faunal (e.g., bone). The groups were further divided into classes. References consulted in the identification of artifacts recovered during this investigation included Smith and Adams (1970) for buttons; Godden (1991), Ketchum (1991) and Kovel and Kovel (1986) for ceramic marks; Smith (1996) and the Society for Historical Archaeology's Glass Bottle Identification Website (2007) for bottle marks and types; and Steinhauer (2007) for cartridge headstamp identification. The complete artifact inventory is found in Appendix B.

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4.0 RESULTS

Survey Area MP-1

Acreage: 2.75

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area MP-1 is located on the south bank of Parker's Creek between Buildings 288 and 230 (Figure 4-1). The area is level except for steep slope that rises up along the southern and eastern periphery toward Russel Avenue and the Officer Housing Area. Current vegetation consists of cut grass and large mature hardwood trees in the east half and northwest corner of the parcel. Multiple underground utility lines are present along the western and northern boundaries of the survey area.

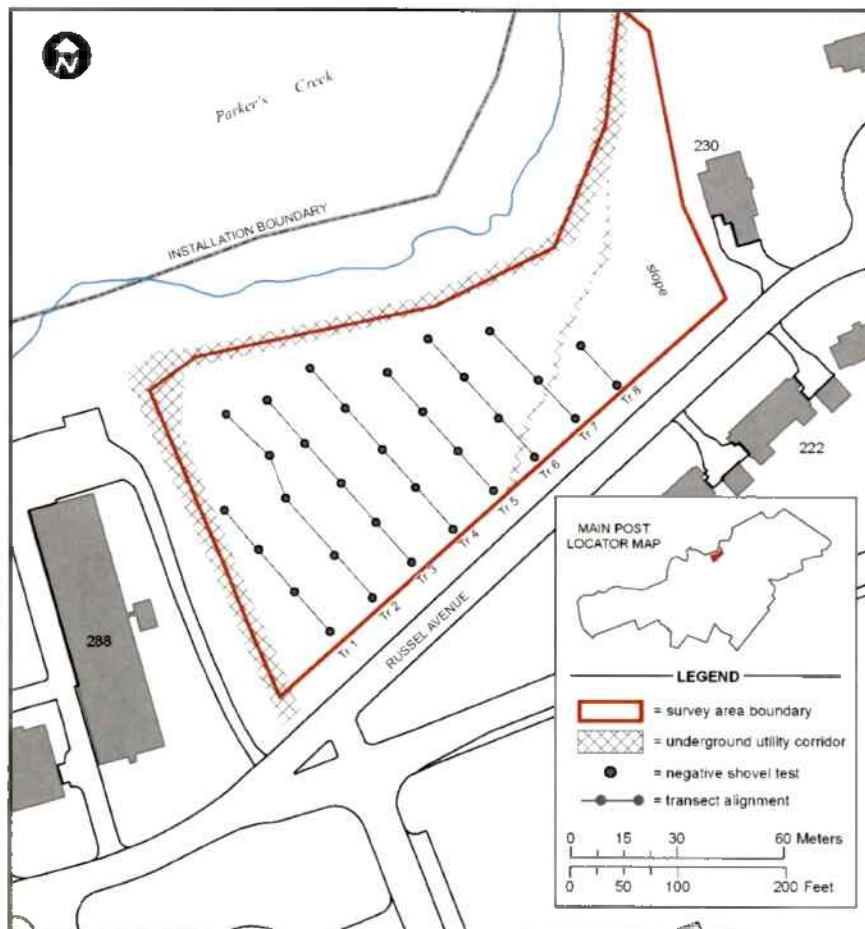


Figure 4-1. Survey Area MP-1

Subsurface Testing

In total, 32 shovel tests were excavated within Survey Area MP-1. The tests were excavated at 15-m (50-ft.) intervals on eight transects (Figure 4-1). The following shovel tests typified the stratigraphic sequence observed across the survey area:

Shovel Test MP1-3-3

- A: 0-38 cm brown (10YR 4/3) silt loam, topsoil
- B: 38-43 cm black cinder and gravel lens
- C: 43+ cm grayish brown/light olive brown (2.5Y 5/2-5/6) loamy sand w/ gravels, subsoil, maximum depth excavated 53 cm

Shovel Test MP1-5-2

- A: 0-20 cm brown (10YR 4/3) silt loam, topsoil
- B: 20-23 cm gravel lens
- C: 23-43 cm brown (10YR 4/3) silt loam, truncated topsoil
- D: 43+ cm grayish brown/light olive brown (2.5Y 5/2-5/6) loamy sand w/ gravels, subsoil, maximum depth excavated 53 cm

Shovel Test MP1-6-3

- A: 0-38 cm very dark gray (10YR 3/1) silt loam, topsoil
- B: 38+ cm brownish yellow (10YR 6/6) loamy sand with quartz gravels, subsoil

Shovel Test MP1-8-2

- A: 0-66 cm very dark grayish brown (10YR 3/2) silt loam
- B: 66+ cm blue-gray road gravel, drain field?

The excavations showed the upper portion of the profile across the survey area to be disturbed. General stratigraphy consisted of dark, organic-rich silt loam over lighter colored sandy alluvial sediment with a rounded quartz pebbles and small cobbles. Thin layers of cinders and angular gravels were present at the base or within the topsoil in several tests, suggesting the topsoil was re-deposited or brought in as fill. An abrupt transition between the topsoil and the alluvial subsoil suggests episodes of cut-and-fill have taken place across the survey area, possibly related to grading for the raised landforms on which the 1930's era Officer Housing Area and Russel Avenue were constructed. A few small fragments of whiteware and solarized glass, a wire nail, and a plastic toothbrush were noted but not collected, as they were from near-surface contexts within the disturbed soils.

Cultural Resources Identified

No cultural resources were identified within Survey Area MP-1 during the current investigation other than widely scattered modern and historical refuse that did not represent intact or undisturbed archaeological deposits.

Survey Area MP-2

Acreage: 6.8

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: yes

Location and Setting

Survey Area MP-2 is an irregularly shaped parcel located on the north bank of Oceanport Creek south of Buildings 208 and 275 (Figure 4-2). A large paved parking lot lies in the center of the area dividing it into two sections, west and east. The western section is mostly wooded, with the exception of an open lawn area to the south of Building 275. A small utility building (257) is present at the east end of this section of the survey area, while a marked underground utility corridor and a clear-cut for overhead powerlines crosses the lawn east-west. Beginning at the eastern edge of the section, near the northwest corner of the parking lot, an eroded gully runs through the wooded area south of Building 257 and drains generally southward into Oceanport Creek. The area south of the gully consists of landfill, evidenced by an uneven ground surface consisting of piles of earth, broken concrete, and other debris. The wooded ground contains mostly young hardwood trees and dense underbrush, suggesting that the area had been cleared in the past 20-30 years, probably in association with the introduction of the fill observed there. Similar evidence of fill continues along the fence line south of the parking lot between the eastern and western sections of the survey area.

The eastern section of Survey Area MP-2 is bounded by Oceanport Avenue to the east and tidal marshes that form the margins of Oceanport Creek to the south and west. The installation perimeter fence also bounds the survey area along Oceanport Avenue and the waterfront, where a newer chain link fence has been placed parallel to the older fence. The two fence lines form an enclosed corridor that varies between 5 and 10 m (15 and 30 ft) in width. The eastern section of Survey Area MP-2 is currently used as a picnic area: a gazebo with composite wood-and-metal picnic tables is located in the northeast corner and several barbeque grills are scattered across the central part of the area. In addition, a marble bench and dedication plaque are located near the center of MP-2. The plaque, dedicated to Signal Corps Chief Warrant Officer Edwin D. Augenstine, states that the memorial was originally placed near a tree planted in Augenstine's honor: the tree is no longer standing. Current vegetation across the area consists of a maintained lawn, scattered mature hardwood trees, and tall marsh grasses along the southern periphery. The entire area is generally level with a very gradual slope toward Oceanport Creek.

Subsurface Testing

In total, 93 shovel tests were excavated within Survey Area MP-2, including the western and eastern sections (Figure 4-2).

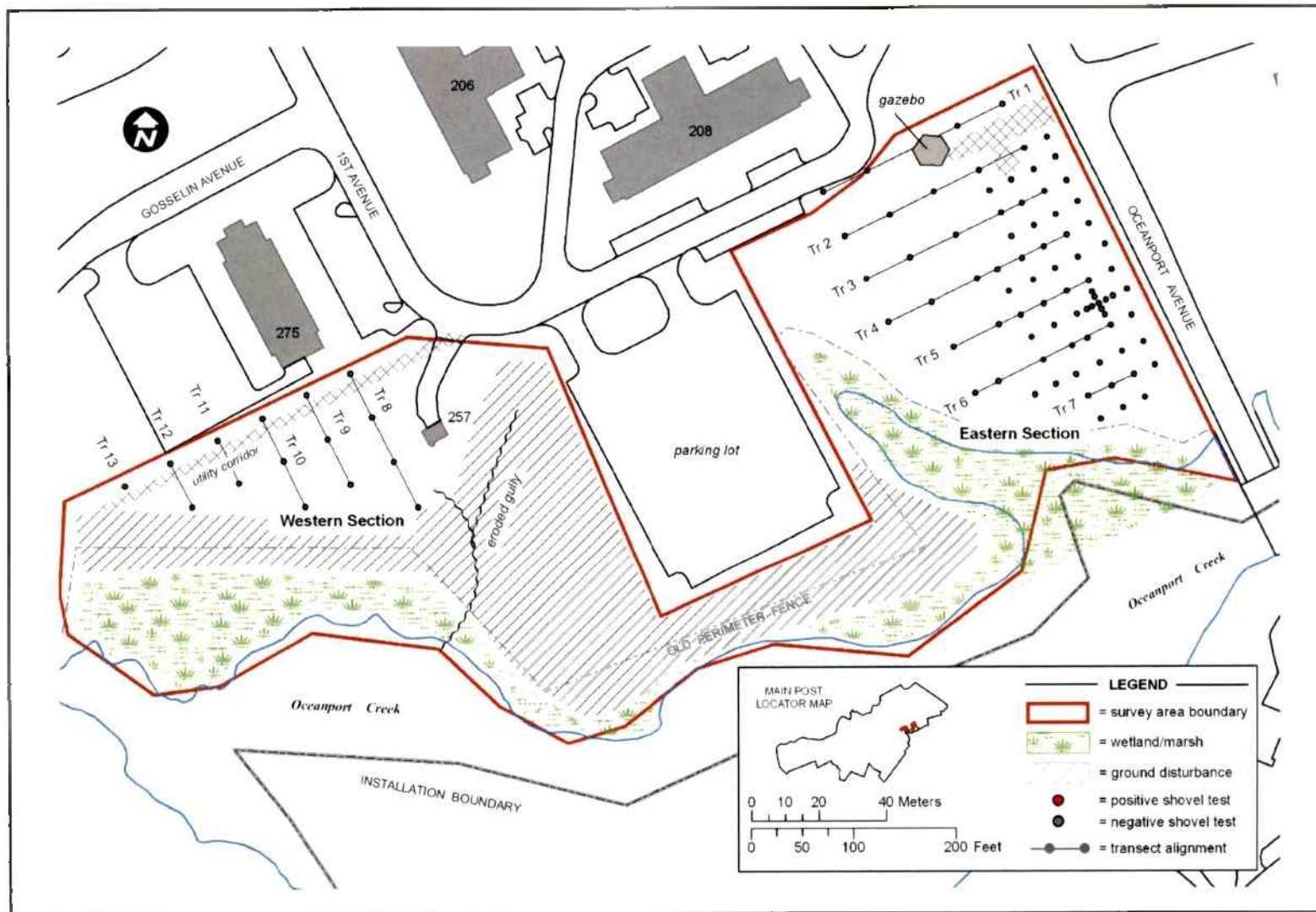


Figure 4-2. Survey Area MP-2 Showing Current Conditions and Shovel Test Locations

Western Section

Fifteen shovel tests were excavated in the western section of Survey Area MP-2, arranged in six short transects that were oriented perpendicularly to the powerline right-of-way that runs parallel to Building 275 and its parking lot (the transects are shown as black lines in Figure x-z). The testing interval was 15 m (50 ft). The following shovel tests typified the stratigraphic sequence observed across the area:

Shovel Test MP2-8-4

- A: 0-11 cm very dark brown (10YR 2/2) loam, topsoil
- B: 11-18 cm brown (10YR 4/3) sandy clay loam
- C: 18-30 cm very dark brown (10YR 2/2) silt loam
- D: 30+ cm olive brown (2.5Y 5/3) loam sand, maximum depth excavated, 40 cm

Shovel Test MP2-9-3

- A: 0-15 cm brown (10YR 4/3) loam, topsoil
- B: 15-20 cm dark grayish brown (10YR 4/2) silt loam
- C: 20+ cm yellowish brown (10YR 5/6) fine sandy loam, maximum depth excavated, 50 cm

Shovel Test MP2-11-2

- A: 0-14 cm gray (10YR 5/1) silt loam, topsoil
- B: 14-19 cm black (10YR 2/1) cinder and gravel
- C: 19-50 cm multiple thin strata of sand, silt loam, and sandy loam, with colors including strong brown (7.5YR 5/8), dark grayish brown (10YR 4/2), light olive brown (2.5Y 5/6), and dark gray (2.5Y 4/1), and containing gravel and brick fragments; abrupt transitions between layers
- D: 50+ cm grayish brown (2.5Y 5/2) sandy silt loam, maximum depth excavated, 60 cm

Evidence of fill was noted across most of the area, exemplified by a buried A horizon documented in MP2-8-4 and a sequence of sharply defined sediment layers containing gravel and artifacts in MP2-11-2. Frequently inundated soils were seen at the bases of profiles in the form of dark, organic-stained sediments and incipient gleying, as in the two shovel tests noted above.

Cultural Resources Identified

No cultural resources were identified within the western portion of Survey Area MP-2 other than widely scattered modern refuse that did not represent intact or undisturbed archaeological deposits.

Eastern Section

Seventy-eight shovel tests were excavated in the eastern section of Survey Area MP-2, including 28 on the initial grid and 50 used to investigate cultural deposits discovered in the area. Initially, shovel tests were excavated at 15-m (50-ft.) intervals on seven transects in a grid oriented to Oceanport Avenue (the transects are shown as black lines in Figure 4-2). The following shovel tests typified the stratigraphic sequence observed across the area:

Shovel Test MP2-2-4(N 175 E515)

- A: 0-6 cm very dark grayish brown (10YR 3/2) loam, topsoil
- B: 6-22 cm yellowish brown (10YR 5/6) silt loam
- C: 22-28 cm light olive brown (2.5Y 5/3) silt loam
- D: 28+ cm very dark gray (10YR 3/1) silt loam, maximum depth excavated, 45 cm

Shovel Test MP2-3-3 (N160 E530)

- A: 0-12 cm very dark gray (10YR 3/1) loam, topsoil
- B: 12-40 cm dark yellowish brown (10YR 4/6) silt loam
- C: 40+ cm dark yellowish brown (10YR 4/4) clay loam, maximum depth excavated, 50 cm

Shovel Test MP2-6-2 (N115 E537.5)

- A: 0-8 cm black (10YR 2/1) silt loam, topsoil
- B: 8-17 cm dark grayish brown (2.5Y 4/2) silt loam
- C: 17+ cm light olive brown (2.5Y 5/4) silt loam, maximum depth excavated, 30 cm

In profile sections, stratigraphy appeared relatively undisturbed, with clear-to-gradual transitions between strata indicating the absence of the type of cut-and-fill sequence seen in many parts of the Main Post. Darker soil colors with depth suggested that the area had been frequently inundated in the past and may have been a wetland during some period.

Cultural Resources Identified

Artifacts, including fragments of nineteenth-century bottle glass, were recovered in STP MP2-6-1 (N115 E560), which led to the excavation of radial shovel tests of which several were also positive. The artifacts were sufficient in quantity to constitute an archaeological site, assigned the state trinomial 28MO387. To refine the assessment of the site, additional shovel tests were excavated as reported in the site description below.

Site 28MO387

Location: Northeast corner of Survey Area MP-2, along Oceanport Avenue (Figure 4-3).

Dimensions: 45 m-x-75 m (147-x-246 ft)

Features: A single feature was noted at the site, an unidentified pit feature designated Feature 1. While the edges of the feature were not fully exposed, its dimensions could be estimated based on evidence from close-interval shovel tests. The feature was contained within a 4-x-4 m (13-x-13 ft) area as determined by the shovel test grid, since it occurred in one shovel test (MP2-6-1 N7.5 [N122.5 E560]) but not in radial shovel tests on a 2-m interval. Thus, the feature is estimated to have measured 2-x-2 m (6-x-6 ft) or less in area. The depth is estimated as at least 75 cm (30 inches).

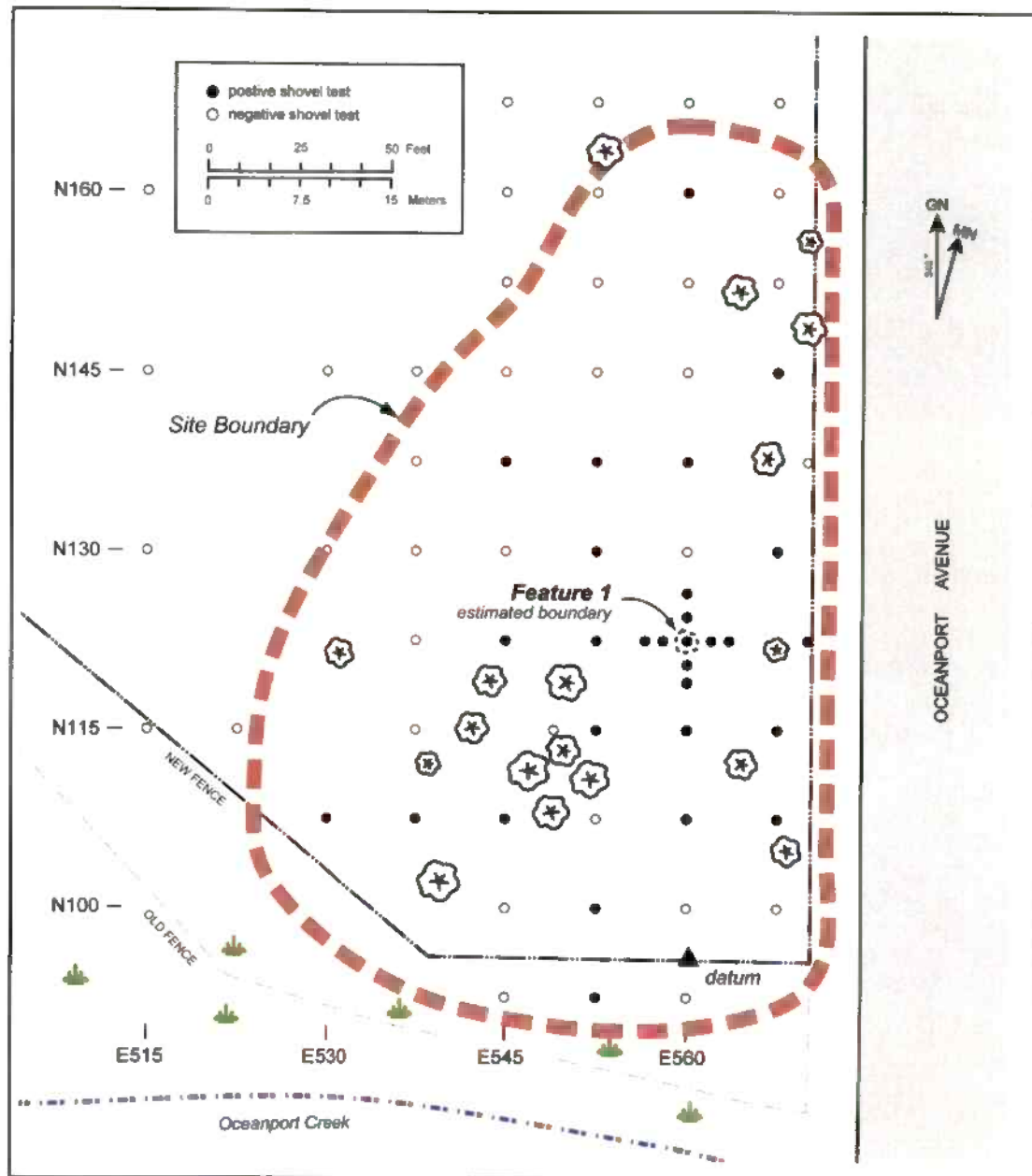


Figure 4-3. Survey Area MP-2, Showing Archaeological Site 28MO387 and Details of the Testing Grid

Stratigraphy: Stratigraphy in the shovel test containing the feature was recorded as follows:

Shovel Test MP2-6-1 N7.5 (N122.5 E560)

- A: 0-25 cm black (10YR 2/1) loam, topsoil
- B: 25-50 cm dark grayish brown (10YR 4/2) sandy loam, coal, coal ash, brick
- C: 50+ cm very dark grayish brown (10YR 3/2) sandy loam, coal, brick, maximum depth excavated, 76 cm

Across the site the upper stratum was relatively shallow and the transition to subsoil heavily organic-stained. Shovel tests within 2 m (6 ft) of the feature exhibited very dark topsoil in a layer that was thicker than across the rest of the site, as documented in the following shovel tests:

Shovel Test MP2-6-1 N5.5 (N120.5 E560)

- A: 0-36 cm black (10YR 2/1) sandy loam, coal, brick, topsoil
B: 36+ cm light olive brown (2.5Y 5/4) silt loam, maximum depth excavated, 47 cm

Shovel Test MP2-6-1 N9.5 (N124.5 E560)

- A: 0-14 cm black (10YR 2/1) loam, coal, brick, topsoil
B: 14-27 cm brick rubble
C: 27-36 cm black (10YR 2/1) silt loam, coal, coal ash, brick
D: 36-45 cm dark gray (10YR 4/1) and gray (10YR 5/1) silt loam
E: 45+ cm very dark gray (10YR 3/1) silt loam, maximum depth excavated, 57 cm

A layer of brick occurred in many of these tests beginning at a depth of 10-15 cm (4-6 in) below the surface, directly beneath the humus layer. Artifacts occurred sporadically throughout the profile in shovel tests around Feature 1: artifacts were recovered from the topsoil layer; the brick layer; and below to the transition to subsoil, which typically occurred about 30 cm (12 in) below surface grade. The feature itself contained artifact-bearing strata to 75 cm (30 in) below grade.

Artifacts: Table 4-1 summarizes the artifacts recovered from the feature and surrounding deposits.

Table 4-1: Artifacts Recovered from Site 28MO387

Type	Count	Details
Domestic		
Glass	123	29% mold blown; 1% lamp chimney; <.1% automatic machine-made
Ceramic	119	41% ironstone; 37% whiteware
Personal	15	buttons, shoe leather, porcelain doll part, tobacco pipe fragments
Animal Remains	23	clam shell, butchered bone
Construction Material (Demolition Debris)		
Nails	70	cut 50%; wire 16%
Glass	135	16% burned
Brick	2	sample only
Miscellaneous Items		
	24	iron pot, 2 brass ammunition cartridges (.32 and .38 caliber)
Total	551	

More than one-half of the artifacts recovered from the site consisted of domestic glass and ceramic objects. The remainder included iron spikes and nails (cut and wire), brick, window glass, clam shell, butchered bone, coal and coal slag, tobacco pipe fragments, porcelain buttons, a doll fragment of porcelain, and shoe leather. The ceramic assemblage was

dominated by ironstone and whiteware, with no early-nineteenth century creamware or pearlware present. Makers' marks indicated late-nineteenth century dates (Figure 4-4):

- *Artifact 17-2*: salt-glazed stoneware vessel, Brown Brothers, Huntington, Long Island, New York (1863-1905)
- *Artifact 23-3*: ironstone saucer, Thomas Elmore & Son, Tunstall, England (1872-1887)
- *Artifact 32-1*: ironstone saucer, Mercer Pottery Company, Trenton, New Jersey (ca. 1900-ca. 1937)



Figure 4-4. Site 28MO387, Ceramic Marks

(L-R): *Artifact 17-2*, Salt-glazed stoneware vessel, Brown Brothers, Huntington, Long Island, New York (1863-1905); *Artifact 23-3*, Ironstone saucer, Thomas Elmore & Son, Tunstall, England (1872-1887); *Artifact 32-1*, Ironstone saucer, Mercer Pottery Company, Trenton, New Jersey (ca. 1900-ca. 1937).

Likewise, glass fragments pointed to site use near the turn of the twentieth century (Figure 4-5). While little machine-made glass characteristic of the later twentieth century was in evidence, finishes, closures and various embossed emblems and legends from local or regional businesses suggested that most of the glass was made and used late in the nineteenth century:

- *Artifact 11-1*: water bottle lip with applied blob finish
- *Artifact 11-2*: pharmaceutical bottle neck with tooled double ring finish
- *Artifact 16-1*: a water bottle with tooled blob finish and remnants of iron lightning closure, embossed "Registered / John Heldt / Long Branch, N.J."
- *Artifact 23-8*: ketchup bottle base embossed "SHREWSBURY/ H. & CO./ N.Y./ TOMATOKETCHUP"
- *Artifact 23-9*: extract bottle neck with tooled patent lip and molded ring on lower neck (ball neck extract)
- *Artifact 23-10*: dairy bottle body and base fragments, embossed "Mc[CUE'S...] CO. / LONG BRANCH / N.J. // M"
- *Artifact 23-11*: beer bottle neck, applied mineral finish



Figure 4-5: Site 28MO387, Selected Glass Artifacts

(top row, L-R): Artifact 1-1, pharmaceutical bottle neck with tooled oil finish; Artifact 11-1, water bottle lip with applied blob finish; Artifact 11-2, pharmaceutical bottle neck with tooled double ring finish; Artifact 16-1, water bottle with tooled blob finish and remnants of iron lightning closure; Artifact 23-8, ketchup bottle base; Artifact 23-9, extract bottle neck with tooled patent lip and molded ring on lower neck (ball neck extract). (bottom row, L-R): Artifact 23-10, dairy bottle body and base fragments; Artifact 23-11, beer bottle neck, applied mineral finish.

Discussion: A pit feature formed the central focus of the site. While its exact nature remains unclear, the size and contents of the pit suggested that it may have been a small root cellar or other excavation associated with a domestic structure. The fill contained coal, coal ash, cinder and other furnace debris, along with a large amount of brick, suggesting infilling following the demolition of nearby buildings. Other artifacts contained in the fill included domestic items such as flatware (mostly whiteware and ironstone) and bottle glass, all of which are characteristic of the latter end of the nineteenth century.

The feature was identified in a single shovel test. Additional tests on a 2-m (6-ft) grid around the pit did not encounter further evidence of the feature, suggesting that it is limited in size. The surrounding shovel tests yielded artifacts that were similar in nature to those from the pit but at frequencies of occurrence that fell off markedly with distance from the pit. The distribution suggested that the same type of debris that filled the pit feature had been spread across the surrounding ground surface, in part as a means of disposal while at the same time filling and leveling the area.

In general, the site did not appear to have been graded substantially. An abrupt transition from topsoil to subsoil was recorded excavations in most parts of the Main Post at Fort Monmouth during the current survey, but such a transition was not observed in this part of Survey Area MP-2. Lying in a narrow location between a marsh and Oceanport Avenue, the site appears to have been spared the type of development common in many other parts of the post. Judging from the evidence of aerial photographs, the site appears to have been in its present condition at least since the 1920's, with no structures or evidence of other activity in the area. Based on the presence of the whole and large fragments of bottles and flatware in near-surface contexts, disturbance to the area seems to have been minimal.

If the pit represents the remains of a root cellar or other feature associated with a house, low artifact frequencies suggest that it was a small structure, perhaps an outbuilding related to a larger structure further to the east, under the current alignment of Oceanport Avenue. The road way may have widened or realigned somewhat since 1851, obscuring evidence of the structure. Brick rubble was densely packed in several shovel tests, yet even though whole and half brick fragments were present, the quantity of brick overall in the 10-x-10 m (30-x-30 ft) area was not sufficient to have represented a substantial structure or even a chimney. No other evidence of intact structural elements such as depressions or berms was present. The rapid decrease in artifact distribution further argues that there are no other features or activity areas nearby. There is some evidence of fire among the artifacts—burned glass, brick and ceramic, and a melted button, but these items may have been burned incidentally. No evidence such as reddened or ashy soil was noted indicating intense fire in this location. The amount of coal and coal ash in the deposits was more consistent with furnace debris than a structural fire.

Chronologically, the artifacts from the site were consistent with a late-nineteenth or early-twentieth century date. Were the site to have been related to the mid-nineteenth century structures associated with the Drummond Haynes & Co., as shown in this approximate location on the 1851 Lightfoot map (Figure 4-6, see also Figure 2-3), it would seem reasonable to expect the presence of earlier ceramic or glass artifacts in the deposits. Both the dates and types of most of artifacts appear more typical of picnic items from the racetrack era. A map of the New Monmouth Park Racetrack dated 1890 (Figure 4-6, see also Figure 2-4) shows the track extending to the corner formed by Oceanport Avenue and the creek, the area encompassed by the archaeological site. Thus it seems reasonable to assume that the debris is a combination of furnace refuse, possibly from a structure to the north under the modern Oceanport Avenue, demolition debris (mostly brick) from the razing of that or other structures, and discarded material from race-goers around the turn of the twentieth century.

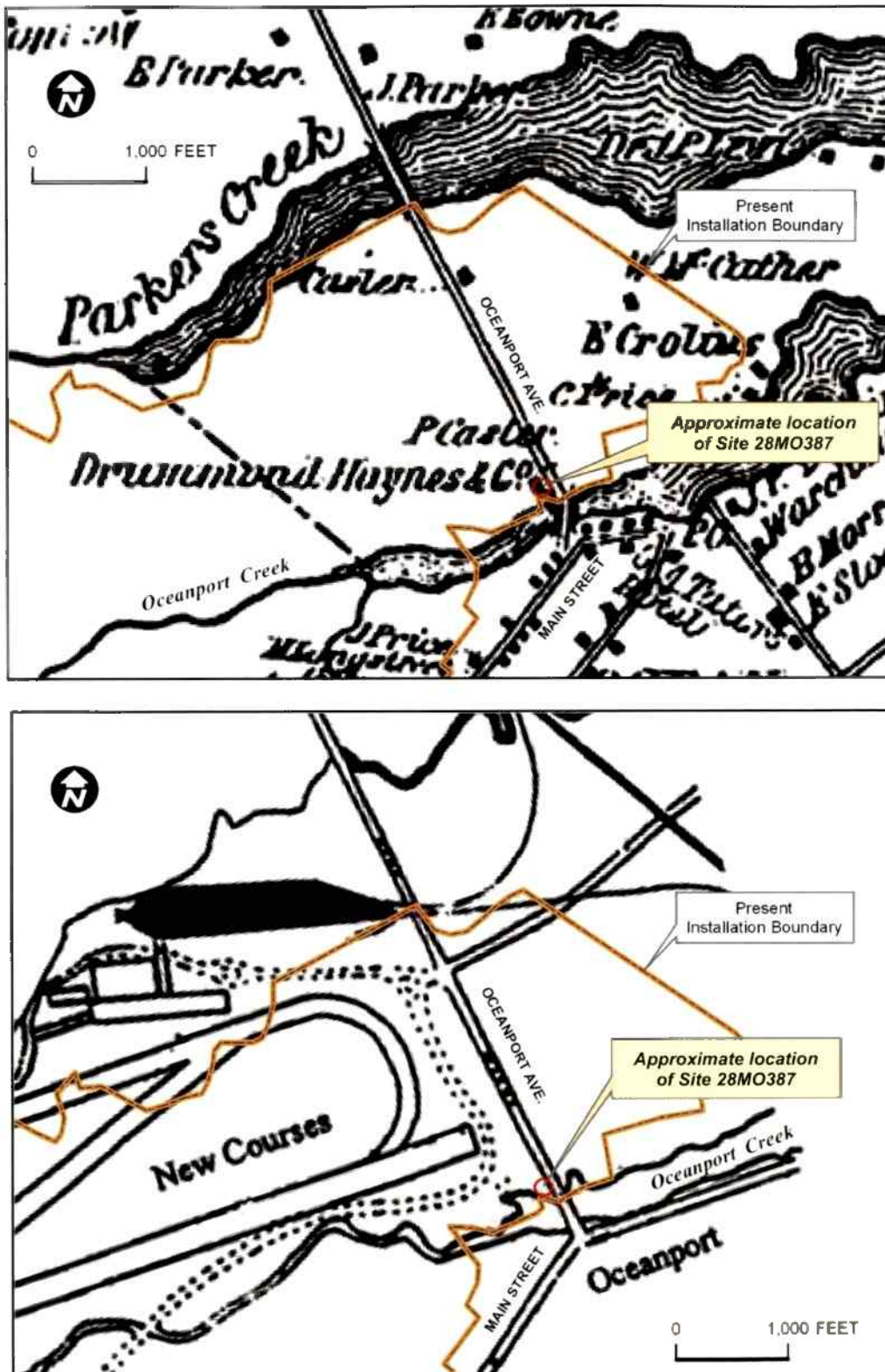


Figure 4-6. Comparison of Georeferenced 1851 Lightfoot and 1890 Monmouth Park Maps, Showing Approximate Location of Site 28MO387

Survey Area MP-3

Acreage: 15.2

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: yes

Location and Setting

Survey Area MP-3 is located immediately south of the historical cantonment area within the Main Post. The survey area is bounded by NCO Family Housing to the north, Buildings 550 and 551 and Malterer Avenue to the west, the "900" building area to the south, and Murphy Drive to the east (Figure 4-7). Topography is generally level except for a short and steep slope up toward the NCO Family Housing and a gradual slope toward the stream on the south side of Husky Brook. Current vegetation in the eastern half of the survey area consists of recently planted wild flowers and tall grasses. Vegetation in the west half of the survey area consists of scattered mature hardwoods and cut grass north of the stream, planted wildflowers and grasses to the south, and dense hardwoods with a brushy understory along the stream margins. The Fort Monmouth Installation Action Plan (2006) designates the entire survey area with the exception of a 1.3-acre section of the southwest corner as a former landfill containing contaminated soils at levels exceeding New Jersey Department of Environmental Protection (NJDEP) standards. The tall grasses and wildflowers that cover much of the survey area are similar to those planted across the installation on the sites of former landfills and demolished structures. According to Fort Monmouth Directorate of Public Works (FMDPW) staff, the vegetation provides soil stabilization for areas that require or have undergone environmental restoration. An underground utility corridor is present on the north side of Husky Brook.

Subsurface Testing

Sixty-seven shovel tests, including thirteen radial tests, were excavated on a 15-m (50-ft) grid across the western half of the survey area (Figure 4-8). Fifty-four shovel tests (Transects 1-13) were excavated on the north side of Husky Brook behind the NCO Family Housing in the area of large oaks and maintained lawn (devoid of typical landfill groundcover). The following shovel tests typified the stratigraphic sequence observed across the area:

Shovel Test MP3-4-3

- | | |
|------------|--|
| A: 0-22 cm | mottled dark grayish brown (2.5Y 4/2) and light yellowish brown (2.5Y 6/4) loamy sand, topsoil |
| B: 22+ cm | light yellowish brown (2.5Y 6/4) sand, subsoil (truncated alluvium), maximum excavated depth 33 cm |

Shovel Test MP3-5-5

- | | |
|-------------|--|
| A: 0-10 cm | very dark brown (10YR2/2) silt loam, humus |
| B: 10-20 cm | dark grayish brown (2.5Y 4/2), sandy loam, topsoil |
| C: 20-26 cm | very dark gray to black (10YR 3/2 -10YR2-1) coal slag, landfill material |
| D: 26-44 cm | dark gray (10YR 4/1) fine sand, landfill material |
| E: 44+ cm | yellowish brown (10YR 5/8) sand, subsoil (truncated alluvium), maximum excavated depth 56 cm |

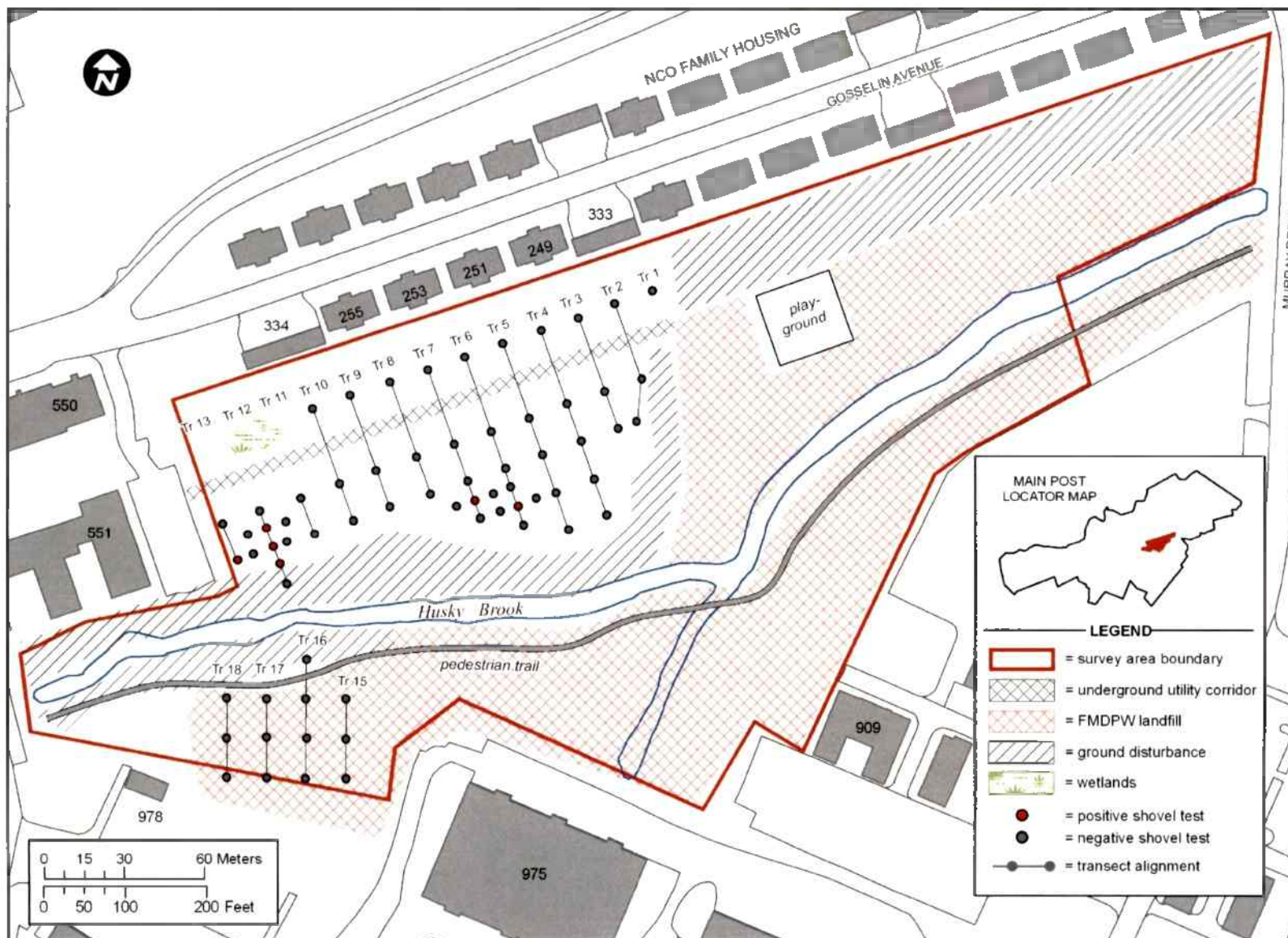


Figure 4-7. Survey Area MP-3

Shovel Test MP3-9-3

- | | |
|------------|---|
| A: 0-12 cm | very dark brown (10YR 2/2) coarse sandy loam, topsoil |
| | brownish yellow (10YR 6/8) grading to yellowish brown (10YR 5/6) |
| B: 12+ cm | medium coarse sand, subsoil (truncated alluvium), maximum excavated depth 40 cm |

Stratigraphy within the wooded portion of Survey Area MP-3 consisted of two predominant sequences: a shallow topsoil away from the stream; and thicker layers of fill containing refuse closer to the stream. Both surface deposits directly overlay a well-sorted alluvial subsoil. An abrupt transition to subsoil in both cases suggests earthmoving activities have impacted the upper portion of the profile. The excavations appear to confirm that the area had been used as a landfill and that topsoil or landfill material was removed or pushed toward the treeline along the stream. Direct evidence of disturbance within the treeline includes hummocky topography and the presence of trash and construction debris. The large oak trees within the survey grid also show evidence of past grading in the form of healed wounds on the upper surfaces of large exposed roots.

The remaining 13 shovel tests (Transects 15-18) were excavated the south side of Husky Brook between Buildings 928 and 975. Although this area was recently planted in the typical landfill groundcover, the area was not designated as landfill on the Installation Action Plan map provided by FMDPW. The following shovel test typified the stratigraphic sequence observed across this portion of the survey area:

Shovel Test MP3-17-3

- | | |
|-------------|--|
| A: 0-20 cm | dark gray (2.5Y 4/1) silt loam, topsoil/fill |
| B: 20-28 cm | light olive brown (2.5Y 5/3), silt loam, fill |
| C: 28-67 cm | light olive brown (2.5Y 5/6), silt loam, fill (noted at 50 cm; clear glass fragment., ceramic tile, brass screw) |
| D: 67+ cm | black (10YR2/1) cinder/ash/slag, landfill, maximum excavated depth 77 cm, auger used from 53-77 cm. |

The area appeared to be capped with clean, redeposited soil. The upper strata were consistent in texture and did not contain natural or cultural inclusions. Below, the landfill strata were identified by the presence of refuse (glass fragments, ceramic tiles, hardware) at approximately 50 cm (20 in) below surface underlain by a dark layer of furnace slag at 60 cm (24 in) below surface. Further excavation was halted due to the documented presence of fill.

Cultural Resources Identified

Six positive shovel tests were recorded within Survey Area MP-3 and designated as Site 28MO386 (Figure 4-8). The shovel tests contained a total of 7 prehistoric lithic reduction flakes which were recovered from two loci 75 m (250 ft) apart. The eastern locus consisted of two shovel tests; MP3-6-5 and MP3-7-4 S7.5. The initial positive shovel test in Transect 7 was excavated out of the 15-m (50-ft) interval sequence, between MP3-7-4 and MP3-7-5, due to a pacing error. An additional six radial shovel tests excavated around the two positive

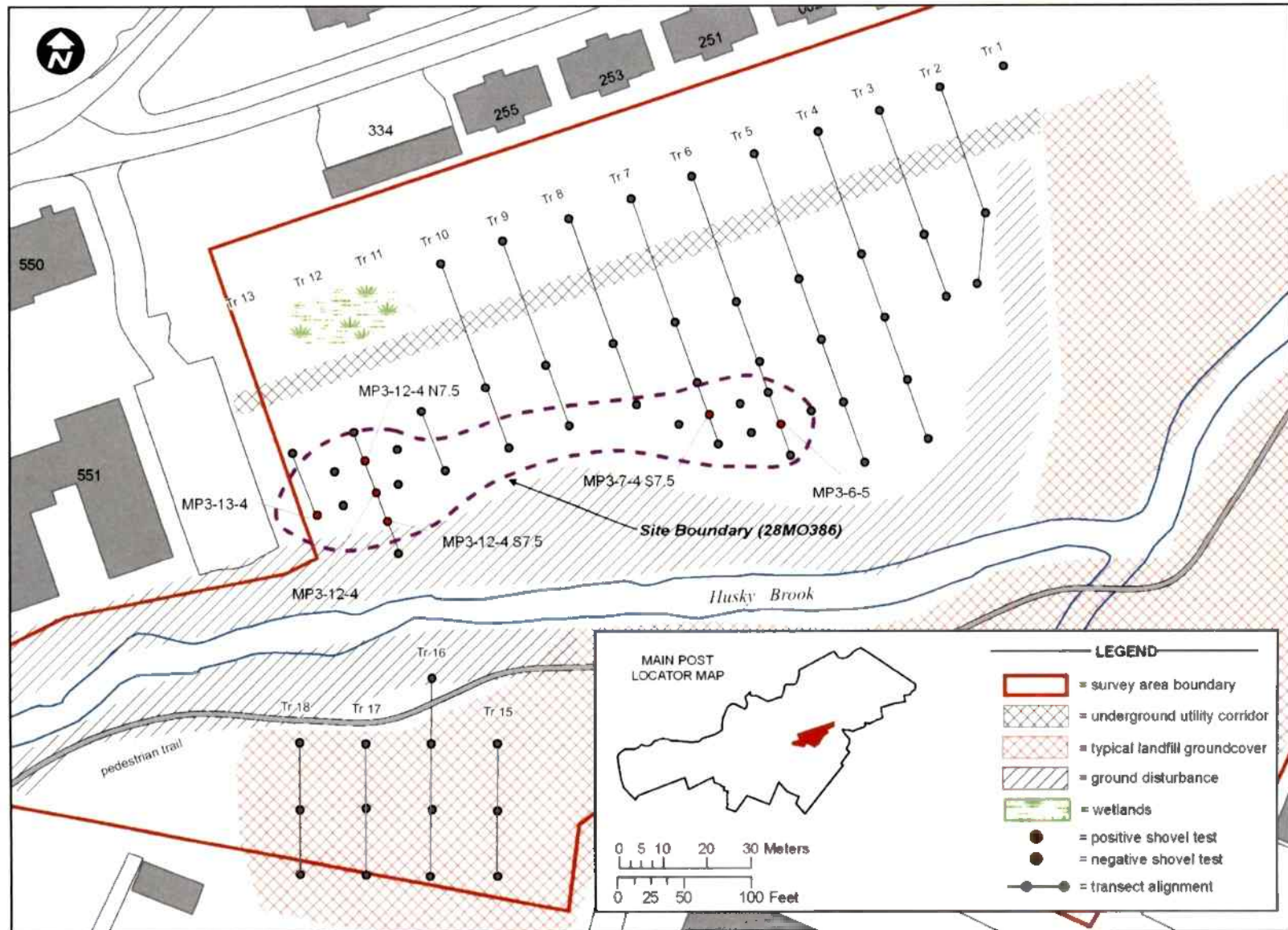


Figure 4-8. Site 28MO386, Survey Area MP-3

tests in Transects 6 and 7 were negative. The initial positive shovel tests within the western locus included MP3-12-4 and MP3-13-4. Two of the six radial tests excavated within this locus were positive. The site was delineated horizontally by negative shovel tests to the north and east, ground disturbance and Husky Brook to the south, and development to the west (Building 551). All but one flake was recovered from the alluvial subsoil. The stratigraphic profiles for the positive shovel tests were recorded as follows:

Shovel Test MP3-6-5

- | | |
|------------|---|
| A: 0-14 cm | very dark brown (10YR 2/2) sandy loam, topsoil (1 argillite flake) |
| B: 14 + cm | yellowish brown (10YR 5/8) sand, subsoil (truncated alluvium), maximum excavated depth 35 cm, (1 argillite flake) |

Shovel Test MP3-7-4 S7.5

- | | |
|------------|--|
| A: 0-17 cm | dark grayish brown (10YR 4/2) sandy loam, topsoil |
| B: 17 + cm | yellowish brown (10YR 5/8) sand, subsoil (truncated alluvium), maximum excavated depth 51 cm (1 argillite flake) |

Shovel Test MP3-12-4

- | | |
|------------|---|
| A: 0-15 cm | very dark brown (10YR 2/2) sandy loam, topsoil |
| B: 15 + cm | yellowish brown (10YR 5/8) sand, subsoil (truncated alluvium), maximum excavated depth 68 cm (1 jasper flake) |

Shovel Test MP3-12-4 N7.5

- | | |
|-------------|--|
| A: 0-15 cm | dark gray (10YR 4/1) sandy loam, topsoil |
| B: 15-30 cm | yellowish brown (10YR 5/6) sand, subsoil (truncated alluvium), gradual transition to C |
| C: 30 + cm | light yellowish brown (2.5Y 6/4) sand, subsoil (truncated alluvium), maximum excavated depth 77 cm (1 chert flake) |

Shovel Test MP3-12-4 S7.5

- | | |
|------------|--|
| A: 0-8 cm | very dark brown (10YR 2/2) sandy loam, humus (w/in treeline) |
| B: 8-26 cm | dark grayish brown (10YR 4/2) sand, topsoil |
| C: 26 + cm | brownish yellow (10YR 6/8) sand, subsoil (truncated alluvium), maximum excavated depth 75 cm (1 chert flake) |

Shovel Test MP3-13-4

- | | |
|-------------|---|
| A: 0-12 cm | dark gray (10YR 4/1) sandy loam, humus (w/in treeline) |
| B: 12-20 cm | brown (10YR 4/3) sand, topsoil |
| C: 26 + cm | brownish yellow (10YR 6/8) sand, subsoil (truncated alluvium), maximum excavated depth 80 cm (1 quartz flake) |

The recovered debitage consisted of a variety of lithic materials including argillite, jasper, chert, and quartz (Table 4-2). Argillite was the only material recovered in the eastern locus, while a mix of materials was recovered from the western locus, but sample sizes are too small to draw any meaningful conclusions from the results. The small sample size and its distribution primarily within the subsoil indicate that these artifacts represent the very base of a cultural deposit which has been destroyed by past development.

Table 4-2: Artifacts Recovered from Site 28MO386, Survey Area MP-3

<i>Shovel Test Number</i>	<i>Artifact Type</i>	<i>Material Type</i>	<i>Comment</i>	<i>Count</i>
MP3-6-5	flake	argillite	1 whole, 1 proximal fragment, gray	2
MP3-7-4 S7.5	flake	argillite	large (59 g), whole, gray	1
MP3-12-4	flake	jasper	whole, brown	1
MP3-12-4 N7.5	flake	chert	whole, black	1
MP3-12-4 S7.5	flake	jasper	medial fragment, red	1
MP3-13-4	flake	quartz	distal fragment, white	1
			Total	7

Survey Area MP-4 / 28MO385 (Site A)

Acreage: 4.6

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: yes

Previous Investigations

Site A was first identified during an archaeological reconnaissance survey conducted by Fitch and Glover (1989). The site consists of a brick culvert located on the western end of Husky Brook Lake. The site is indicated on a historic map (Wolverton and Breou 1889) and its location was confirmed during a field reconnaissance conducted by Fitch and Glover. At that time the site was assigned the temporary designation of "Site A," but it was not formally documented with the NJHPO until the present investigation.

Location and Setting

Survey Area MP-4 is located along the southern boundary of the Main Post near Nicodemus Gate (Figure 4-9). The survey area is bounded by Nicodemus Avenue to the west, Husky Brook Lake to the north, and the installation boundary to the south and east. Husky Brook flows through the middle of the survey area from southwest to northeast. Ground surface across the area slopes toward the stream. A crush-and-run pedestrian trail crosses Husky Brook via a modern wooden bridge constructed on top of the brick culvert (Site A). East of the stream, the path angles to the north.

As indicated in Figure 4-9, an extensive wetlands restoration project was undertaken across a large portion of the survey area in 2006. A plastic deer fence bisects the northern half of Survey Area MP-4, installed as part of the restoration project to protect newly planted vegetation. According to plans on file at FMDPW, the restoration included extensive earthmoving as part of erosion and sediment control measures in advance of planting numerous shrubs, trees, and grasses. As a result, much of the pre-restoration ground surface has been disturbed. Hummocky and unnaturally irregular topography is prevalent north and west of the stream, and in places to the south and east. Most of the restoration area is planted in tall grasses (up to 2 m [6 ft]) in height. The southeast corner of Survey Area MP-4 is sparsely wooded in mature hardwoods with an open understory. The northeast portion of the survey area is also sparsely wooded and open. The stream margins north of the culvert are wooded; the uneven ground surface slopes toward the stream and rocky debris and dense thickets suggest fairly recent disturbance. A gravel road runs along the northeastern boundary of the survey area and is connected to the bridge and culvert by a dirt two-track.

Subsurface Testing

In total, 21 shovel tests were excavated within Survey Area MP-4 (Figure 4-9). The tests were placed at 15-m (50-ft) intervals along the high ground parallel to the eastern installation boundary fence. Portions of this area, particularly the southeast and northeast corners (Transects 1-3 and Transects 11-14, respectively), appeared to be undisturbed, while the intervening area along the fence (Transects 4-10) was tested to sample the extent of

disturbance from restoration activity in an area of apparently low impact away from the stream. The following shovel tests typified the stratigraphic sequence observed across the area:

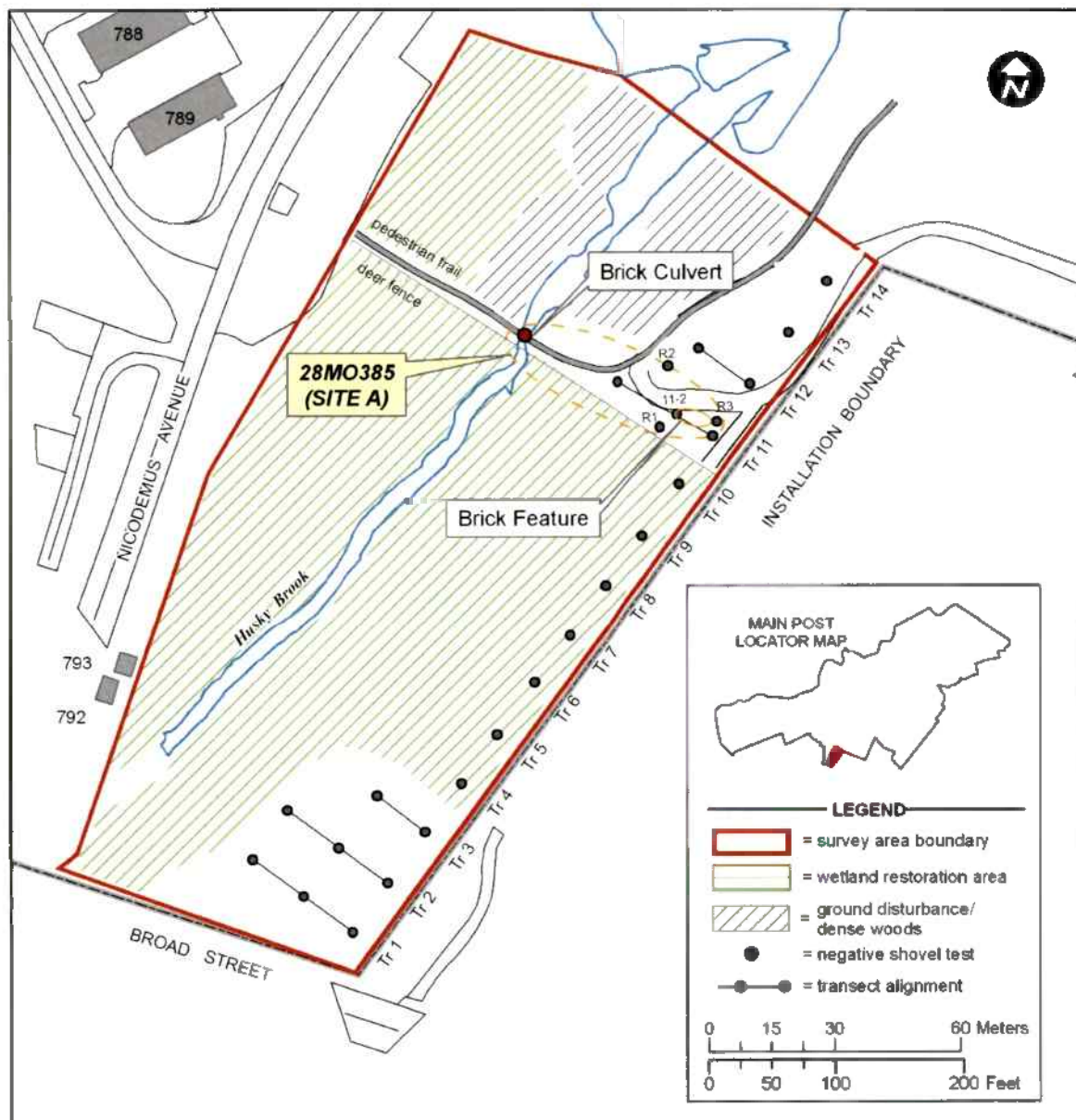


Figure 4-9. Survey Area MP-4 and 28MO385 (Site A)

Shovel Test MP4-2-1

- A: 0-11 cm dark yellowish brown (10YR 3/4) sandy loam, topsoil
B: 11+ cm yellow (10YR 7/8) sand, subsoil, maximum depth excavated 54 cm

Shovel Test MP4-4-1

- A: 0-35 cm very dark gray (10YR 3/1) silt loam, topsoil
B: 35-50 cm black (10YR 2/1) silt loam with coal slag near base (wet and smelling of decayed organics)
C: 50+ cm dark yellowish brown (10YR 4/4) sand with quartz gravels, subsoil, maximum depth excavated 70 cm

Shovel Test MP4-12-1

- A: 0-17 cm dark yellowish brown (10YR 3/4) sandy loam, topsoil
B: 17+ cm yellowish brown (10YR 5/8) sand, subsoil, maximum depth excavated 50 cm

The excavations showed that in the sparsely wooded areas to the southeast and northeast topsoil was thin, with an abrupt transition to well-sorted sandy alluvium suggesting that past earthmoving activities had removed the original surface deposits within these areas. Shovel test profiles within the wetland restoration area typically showed 30-40 cm of dark, moist, organic-rich topsoil over a fill layer, both deposits likely brought in as part of the wetlands restoration project. An abrupt transition to sand and gravel subsoil was noted in each case. Aside from some coal slag and modern glass, no artifacts or other archaeological deposits were documented in the wetland restoration portion of Survey Area MP4.

Cultural Resources Identified

The brick culvert originally identified by Fitch and Glover (1989) as Site A (28MO385) consists of a single span arched structure (Figure 4-10). The bridge superstructure and abutments are constructed entirely of hand-made bricks, each measuring approximately 9-x-3.5-x-2.5 in, with minor variations. The culvert measures 10 ft across at the base and spans a distance of 12 ft from bank to bank. The apex of the intrados, or underside of the arch, is approximately 6 ft above the streambed. A modern wooden pedestrian bridge with a gravel surface has been constructed on top of the arched superstructure (Figure 4-11). The bridge is constructed of pressure-treated dimensional lumber, with 4-x-4 posts, 2-x-6 railings, and 6-x-6 horizontal timbers to contain the gravel.

The culvert has not been regularly maintained and is in poor condition. Portions of the brick facing are missing from the intrados (Figure 4-12). Dense natural overgrowth is present on both the north and south arch facings, obscuring the upstream and downstream views of the structure. The vegetation has been allowed to grow on the structure in places, and roots have taken hold and disrupted the brickwork (Figure 4-13).



**Figure 4-10. Site 28MO385, Brick Culvert,
View North from Husky Brook**

**Figure 4-11. Site 28MO385, Modern
Pedestrian Bridge over Brick Culvert,
View West**



**Figure 4-12. Site 28MO385, Brick Culvert,
View North Showing Present Conditions,
Including Missing Brick on Intrados
(arrow)**

**Figure 4-13. Site 28MO385, Brick Culvert, View
South Showing Tree Growth from Facing of
Arched Superstructure**



An alignment of brick was exposed in shovel tests located 40 m (125 ft) to the east of the culvert (Figure 4-14), and evidence suggests that the brick was associated with the archway. The brick feature, first noted in Shovel Test MP4-11-2, consists of unbonded brick in three vertical courses and two horizontal courses. The western end of the feature, nearest the culvert, has been disturbed by the gravel road trace that extends from the modern boundary fence of the installation downslope to the bridge: brick fragments were exposed in the road surface and along the low cut-bank bordering the road. To the east, following up the slope from the culvert, the feature extends for a length of approximately 13 ft (4 m), as indicated by additional shovel probing. Three radial shovel tests, indicated in Figure 4-9 as R1, R2, and R3, were excavated to determine whether related deposits were present in the immediate vicinity of the brick feature. No artifacts or additional features were encountered in the radial tests. Stratigraphy as revealed in the radial tests was consistent with that of the adjacent transects described above.



**Figure 4-14. Site 28MO385, Brick
Feature As Exposed in Shovel Test
MP4-11-2**

The brick within the feature is similar to that used in construction of the culvert, being hand-made, of similar color and similar, slightly irregular dimensions, suggesting that the feature was contemporary with the archway. No artifacts were found in association with the feature, nor was a builder's trench evident in profile. Nevertheless, the apparent contemporaneity of the two features, along with their physical proximity and configuration, suggests that they were related. The brick may have been part of a small retaining wall that lined a path or roadway leading to a now missing bridge supported by the culvert over Husky Brook. The culvert and brick alignment have thus been included in a single site designation.

Survey Area MP-5 / Site 28MO130

Acreage: 10.9

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Previous Investigations

Site 28MO130 was first formally recorded through an interview with a former employee of Fort Monmouth, Redacted - Privacy Act, as part of an Archaeological Overview of Fort Monmouth prepared by Klein et al. (1984). Redacted - Privacy Act identified the site through surface collection of artifacts during his tenure as a groundskeeper at the installation between 1947 and 1972. Klein et al. (1984) described the site as follows:

“Near the bowling center (Building 689) between Husky Brook Lake and Lafetra Brook [Parker’s Creek], a stemmed argillite point was found indicating an Archaic occupation”

An Archaeological Collections Summary conducted by the USACE in 1995 found that the artifact was still in the possession of Redacted - Privacy Act as of that date.

Location and Setting

Survey Area MP-5 is located on the north and south sides of Mill Creek within the “1100” building area of the Main Post (Figure 4-15). This survey area consists of an irregularly-shaped polygon bounded by the Avenue of Memories to the north, Wilson Avenue to the east, Semaphore Avenue to the southeast, and the installation boundary to the southwest and west. The area is relatively level except for steep slopes along the edges of the deeply cut, partially channelized stream. Building 1123 and its parking lot front Semaphore Avenue in the eastern portion of the survey area. Current vegetation consists of cut grass and large mature hardwood trees to the north of Mill Creek and in the vicinity of Building 1123. Ornamental trees line the south side of the Avenue of Memories. The western portion of the survey area is densely wooded with the exception of a large clearing accessed by gravel vehicle trails which enter from the west end of Alexander Avenue. According to the Fort Monmouth Installation Action Plan (2006), this approximately 7-acre area is designated as a landfill containing hazardous materials at levels exceeding NJDEP standards. Other disturbances within the survey area include underground utility lines along the south side of the Avenue of Memories. The reported location of Site 28MO130 coincides with the southeast corner of Building 1123. The area is presently covered in patchy grass with scattered ornamental trees and shrubs.

Subsurface Testing

In total, 27 shovel tests were excavated within Survey Area MP-5. Twenty-two tests were excavated within 12 short transects placed 15 m (50 ft) apart in the grassy area south of the Avenue of Memories (Figure 4-15). The shovel tests in each transect were placed 10 m (33 ft.) apart to avoid the underground utility corridor and the line of trees adjacent to the street. To investigate the reported location of Site 28MO130, five additional shovel tests were

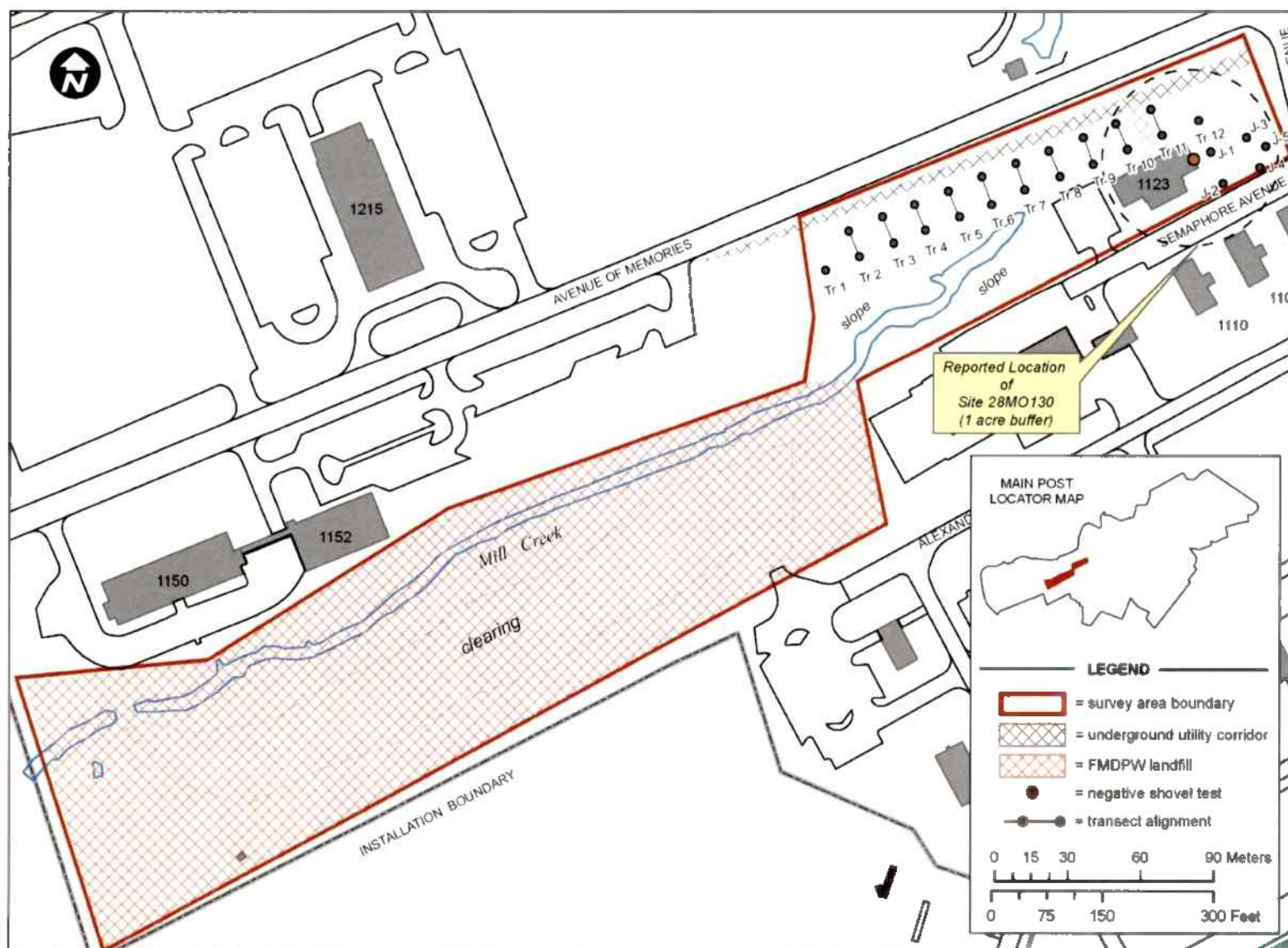


Figure 4-15. Survey Area MP-5 and the Reported Location of Site 28MO130

excavated east of Building 1123. The undisturbed portions of this area were small and irregularly shaped, and a formal testing grid was impractical; thus the additional tests were selectively placed within the area. The following shovel tests typified the stratigraphic sequence observed across Survey Area MP-5:

Shovel Test MP5-4-2

- | | |
|------------|--|
| A: 0-55 cm | very dark grayish brown (10YR 3/2) silt loam, fill (ceramic tiles, brick fragments) |
| B: 55+ cm | light olive brown (2.5Y 5/6) clayey loam with quartz gravels, subsoil, maximum depth excavated 65 cm |

Shovel Test MP5-10-1

- | | |
|-------------|---|
| A: 0-30 cm | dark gray (10YR 4/1) silt loam, fill (ceramic tiles, brick fragments) |
| B: 30-35 cm | olive brown (2.5Y 4/3) silt loam, truncated topsoil |
| C: 35+ cm | strong brown (7.5Y 5/8) sand mottled with dark gray (2.5Y 4/1) sand with quartz gravels, subsoil, maximum depth excavated 60 cm |

Shovel Test MP5-J-4

- | | |
|-------------|--|
| A: 0-16 cm | gray (5Y 5/1) silt loam, fill (concrete fragments) |
| B: 16-58 cm | strong brown (7.5Y 5/8) sand with quartz gravel, displaced subsoil |
| C: 58-76 cm | reddish yellow (7.5Y 6/6) silt loam |
| D: 76+ cm | dark grayish brown (2.5Y 4/2) clayey sand, hydric subsoil, maximum depth excavated 97 cm |

Subsurface testing within the north eastern portion of Survey Area MP-5 showed the area to be heavily disturbed by earthmoving activities associated with building construction and utility placement. Abrupt transitions within the upper strata and at subsoil suggest episodes of cut-and-fill or grading. The top 30-to-70 cm (12-30 in) consisted of mixed fill containing construction and/or demolition debris brought in to level the area possibly in preparation for the construction of Building 1123. Review of the USGS 7.5' quadrangle of the area, dated 1954, shows three barracks-style structures present on the current site of Building 1123, which according to FMDPW records was constructed in 1976. The construction and demolition of these earlier buildings has likely contributed to the disturbances observed in Survey Area MP-5. A notable constituent of the fill were numerous small square, rectangular, hexagonal, and circular ceramic tiles, which may be remnants of the barracks.

Shovel test profiles documented to the east of Building 1123 showed considerably more evidence of disturbance than those in the transects described above, as they coincided with the location of a demolished barrack. Multiple layers of fill mixed with displaced subsoil suggest that the deposits consisted of backfill from foundation excavation or utility placement.

Cultural Resources Identified

No cultural resources were identified within Survey Area MP-5 during the current investigation other than widely scattered demolition debris that did not represent intact or undisturbed archaeological deposits. No evidence of Site 28MO130 was encountered.

Survey Area MP-6 / Site 28MO129

Acreage: 9.4

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Previous Investigations

Site 28MO129 was first formally recorded through an interview with a former employee of Fort Monmouth, Redacted - Privacy Act, as part of an Archaeological Overview of Fort Monmouth prepared by Klein et al. (1984). Redacted - Privacy Act identified the site through surface collection of artifacts during his tenure as a groundskeeper at the installation between 1947 and 1972. Klein et al. (1984) described the site as follows:

“Along the south bank of Lafetra Brook [Creek], a Meadowwood point was found indicating an Early Woodland occupation.”

An Archaeological Collections Summary conducted by the USACE in 1995 found that the artifact was still in the possession of Redacted - Privacy Act as of that date.

Location and Setting

Survey Area MP-6 is located on the south bank of Lafetra Creek and is bounded by North Drive to the south, a canalized portion of Mill Creek to the east, and Building 200 to the west (Figure 4-16). A small picnic area is present along North Drive and a recently constructed pedestrian trail makes a u-shaped loop through the eastern two-thirds of the survey area. Topography is generally level with a slight slope to the northwest toward the stream. There is a low rise at the center of the east end of the survey area. Current vegetation includes recently planted wild flowers and tall grasses across much of the eastern two-thirds of the survey area with scattered mature hardwoods and cut grass along North Drive from the picnic area to Building 200 to the west. The northwest corner is densely wooded with younger hardwoods, saplings, and green briar. Ferns and other wetland vegetation occur in the northern portion of the wooded area adjacent to the stream. The Fort Monmouth Installation Action Plan (2006) designates this entire survey area, including the reported location of Site 28MO129, as a former landfill and burning area containing hazardous materials at levels exceeding NJDEP standards. The tall grasses and wildflowers that cover much of the survey area are similar to those planted across the installation on the sites of former landfills and demolished structures. According to FMDPW staff, the vegetation provides soil stabilization for areas that require or have undergone environmental restoration.

Subsurface Testing

In total, 23 shovel tests were excavated within Survey Area MP-6. Fourteen of the shovel tests were excavated on a 15-m (50-ft) grid in the grassy area between Building 200 and the picnic area (Figure 4-16). The remaining shovel tests were placed in the wooded area to the north (n=4) and within the picnic area (n=5). Subsurface testing was conducted in these portions of Survey Area MP-6 as they appeared to not have been actively used as landfill based on the presence of mature hardwoods (50 yrs.+), relatively level ground surface, and

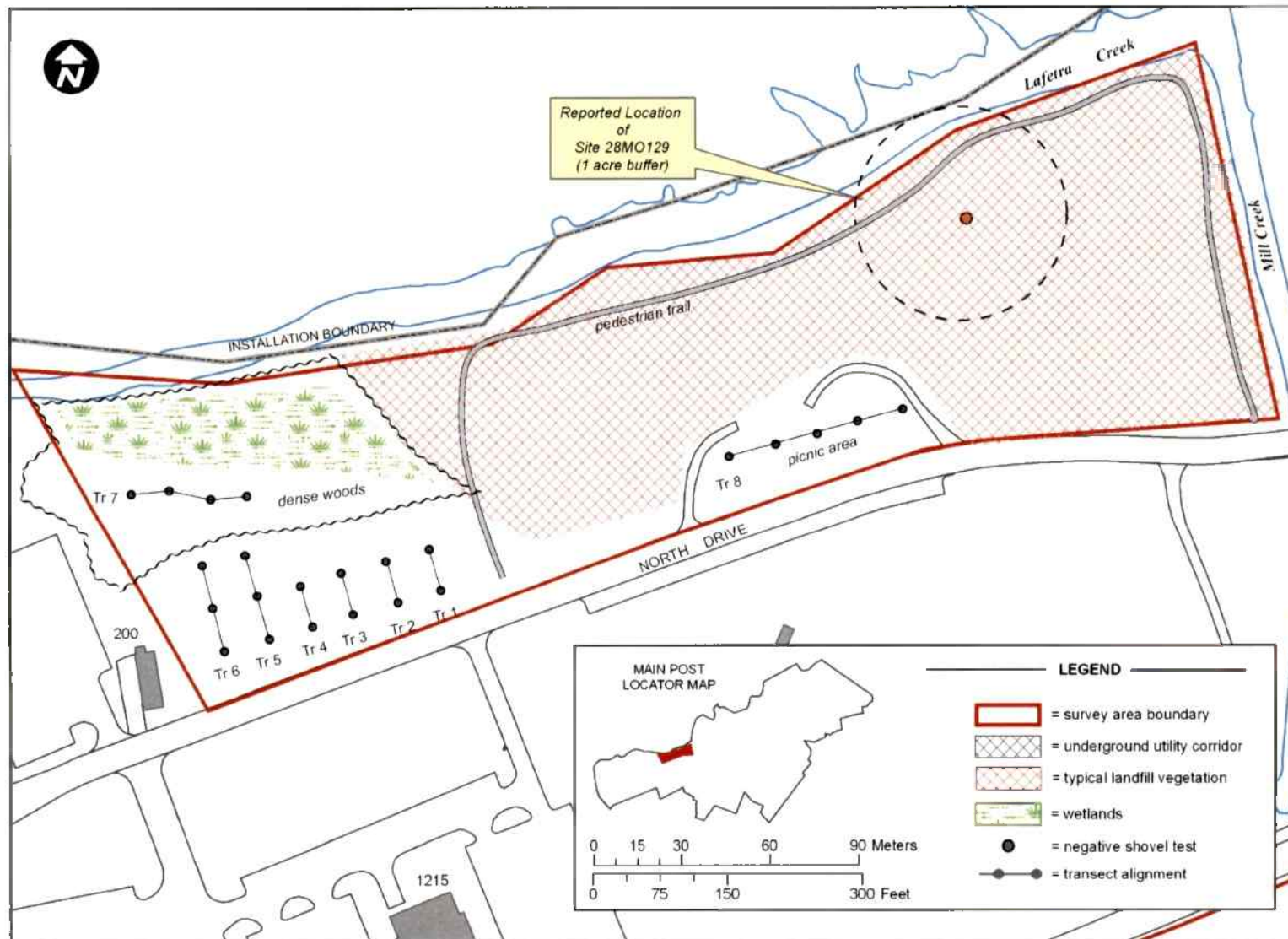


Figure 4-16. Survey Area MP-6 and the Reported Location of Site 28MO129

an absence of the typical landfill cap vegetation. The following shovel tests typified the stratigraphic sequence observed within the tested portions of the survey area:

Shovel Test MP6-4-1

- | | |
|------------|--|
| A: 0-31 cm | dark grayish brown (2.5Y 4/2) silt loam, topsoil |
| B: 31+ cm | light olive brown (2.5Y 5/4) loamy sand with quartz gravels, subsoil,
maximum depth excavated 41 cm |

Shovel Test MP6-7-4

- | | |
|------------|--|
| A: 0-12 cm | dark yellowish brown (10YR 3/4) silt loam, topsoil |
| B: 12+ cm | light olive brown (2.5Y 5/4) loamy sand with quartz gravels, subsoil,
maximum depth excavated 50 cm |

Shovel Test MP6-8-4

- | | |
|------------|--|
| A: 0-28 cm | dark gray (2.5Y 4/1) silt loam, topsoil |
| B: 28+ cm | light olive brown (2.5Y 5/6) loamy sand with quartz gravels, subsoil,
maximum depth excavated 38 cm |

Stratigraphy within the southwest portion of Survey Area MP-6 was characterized by a shallow, organic rich topsoil over a lighter-colored alluvial subsoil. Soil deflation as a result of runoff from North Drive and other paved areas to the south was evident in the thin topsoil, exposed soils and small gullies and washouts within the grassy areas. Artifacts typical of that found along the road side in a heavily developed area, such as clear glass vessel fragments, small brick fragments, ceramic pipe fragments, and an adjustable wrench, were noted in near-surface contexts.

Cultural Resources Identified

No cultural resources were identified within Survey Area MP-6 during the current investigation other than widely scattered modern refuse that did not represent intact or undisturbed archaeological deposits. Although surface visibility was poor due to dense vegetation, no evidence of Site 28MO129 was encountered during pedestrian survey of the vicinity of the reported site location. Moreover, the area is covered by a landfill of unknown depth and any evidence of a site on the original ground surface is likely to have been destroyed by landfill activities.

Survey Area MP-7

Acreage: 21

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: yes

Location and Setting

Survey Area MP-7 represents the Greely Field Parade Grounds located at the center of the historical cantonment within the Main Post. The parade ground is bounded by Sherrill, Malterer, Saltzman, and Wallington Avenues (Figure 4-17). The survey area is roughly rectangular with cut-outs for Buildings 500 and 501 to the west, the World War II Memorial to the north, and a helipad in the northeast corner. An approximately one-acre section near the center of the survey area was also omitted from the survey as it is actively used by U.S. Military Academy Prep School (USMAPS) students as a soccer field – given the findings described below, the subsurface sample from the MP-7 was considered to be sufficient without tests from this portion of the survey area. Currently, topography throughout Survey Area MP-7 is nearly level and vegetation consists of mostly cut grass, with a cluster of mature hardwoods to the south of Building 501 and ornamental trees lining Sherrill and Saltzman Avenues.

Subsurface Testing

Forty-eight shovel tests, including three radial tests, were excavated across the area. The tests were excavated at 30-m (100 ft) intervals along transects spaced 60 m (200 ft) apart (i.e., alternate transects on a 30-m grid). Upon excavating the first five transects, it was apparent that grading and other earthmoving activities had taken place consistently across much of the survey area and the remainder of the 30-m (100 ft) grid was not excavated. Three additional shovel tests were placed off-grid to ensure coverage in the wooded area south of Building 501 (Figure 4-17). The following shovel tests typified the stratigraphic sequence observed across the area:

Shovel Test MP7-2-3

- | | |
|------------|--|
| A: 0-15 cm | very dark grayish brown (10YR 3/2) loamy sand, topsoil |
| | olive yellow (2.5Y 6/6) grading to pale yellow (2.5Y 7/3) fine sand |
| B: 15+ cm | increasingly gleyed with depth, truncated subsoil, maximum depth excavated 50 cm |

Shovel Test MP7-2-10

- | | |
|-------------|---|
| A: 0-20 cm | dark brown (10YR 3/3) silt loam, topsoil |
| B: 20-28 cm | strong brown (7.5 YR 5/6 & 5/8), fine sand, fill |
| C: 28-40 cm | olive gray (10YR 4/4) sandy loam, truncated topsoil |
| D: 40+ cm | yellowish brown (10YR 5/6) to light olive brown (2.5Y 5/4) fine sand, gleyed with depth, subsoil, maximum depth excavated 50 cm |

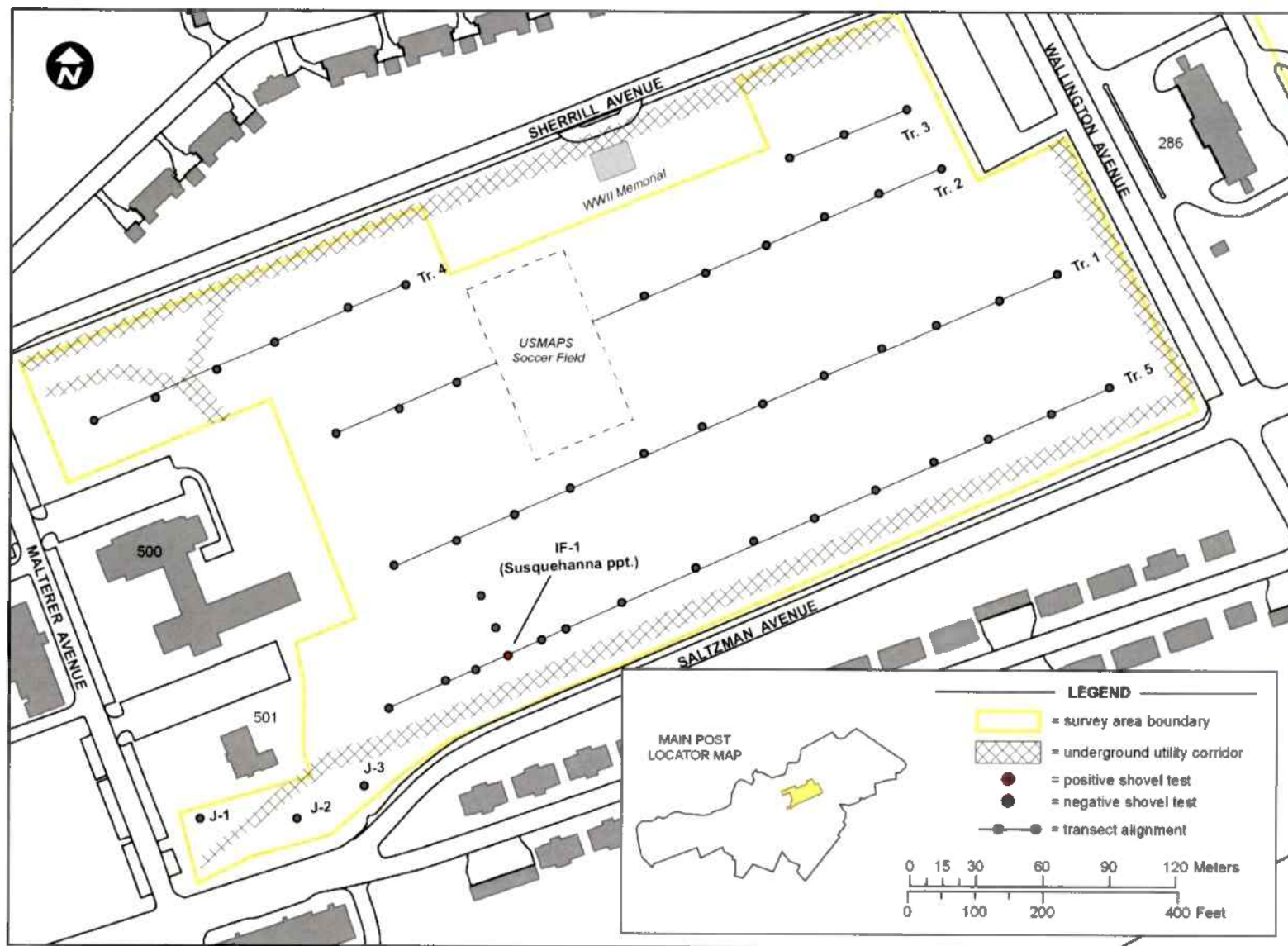


Figure 4-17. Survey Area MP-7

Shovel Test MP7-J-1

- | | |
|-------------|---|
| A: 0-15 cm | dark brown (10YR 3/3) humus mixed with yellowish brown (10YR 5/8) sandy clay loam, fill |
| B: 15-23 cm | very dark gray (2.5Y 3/1), silt loam, truncated topsoil |
| C: 23+ cm | light olive brown (2.5Y 5/6), silty clay loam, subsoil, maximum depth excavated 35 cm |

Excavations in Survey Area MP-7 showed the soil profile to consist of poorly drained sediments overlain by introduced or re-deposited fill and truncated topsoil in a cut-and-fill sequence. The upper portion of the profile contained shallow topsoil or fills of mixed color and texture above truncated subsoil. Subsoil ranged from 10-to-40 cm (4-to-15 inches) below surface and consisted of dark silt loam with little to no gravel content that was gleyed with depth.

Cultural Resources Identified

One positive shovel test, MP7-5-11, was recorded within Survey Area 7. The shovel test contained a complete jasper Susquehanna projectile point (Figure 4-18). The point, designated as IF-1, was recovered from a fill deposit within the first 18 cm (7 in.) below surface. Three radial shovel tests were excavated around the shovel test containing the point. A fourth radial test was not excavated to the south of MP7-5-11 due to the proximity to an underground utility corridor and Saltzman Avenue. All of the radial tests were negative. The stratigraphic profile for the positive shovel test was recorded as follows:

Shovel Test MP7-5-11

- | | |
|-------------|--|
| A: 0-18 cm | very dark grayish brown (10YR 3/2) sandy loam, humus/fill |
| B: 18-26 cm | yellowish red (5 YR 4/6), sandy loam, fill |
| C: 26-36 cm | dark grayish brown (2.5Y 4/2) silt loam, truncated topsoil |
| D: 36+ cm | light olive brown (2.5Y 5/6) silty clay loam, subsoil, maximum depth excavated 46 cm |



Figure 4-18. Susquehanna Projectile Point Recovered from Survey Area MP-7

Survey Area MP-8

Acreage: 5.6

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area MP-8 is a triangular area containing the Garrison flag pole, located between the Garrison Headquarters (Building 286) and the East Gate (Figure 4-19). The survey area is bounded by Sherrill, Sanger, and Hildreth Avenues. The area is open and level with a gradual slope to the northwest and short steep banks up to the road surfaces of Sanger and Sherrill Avenues, suggesting that either the survey area has been graded down or, more likely, that the roadway has been banked up. Underground utility corridors crisscross the entire survey area. Current vegetation consists of cut grass, sparse mature hardwoods, and ornamental trees lining Sanger Avenue.

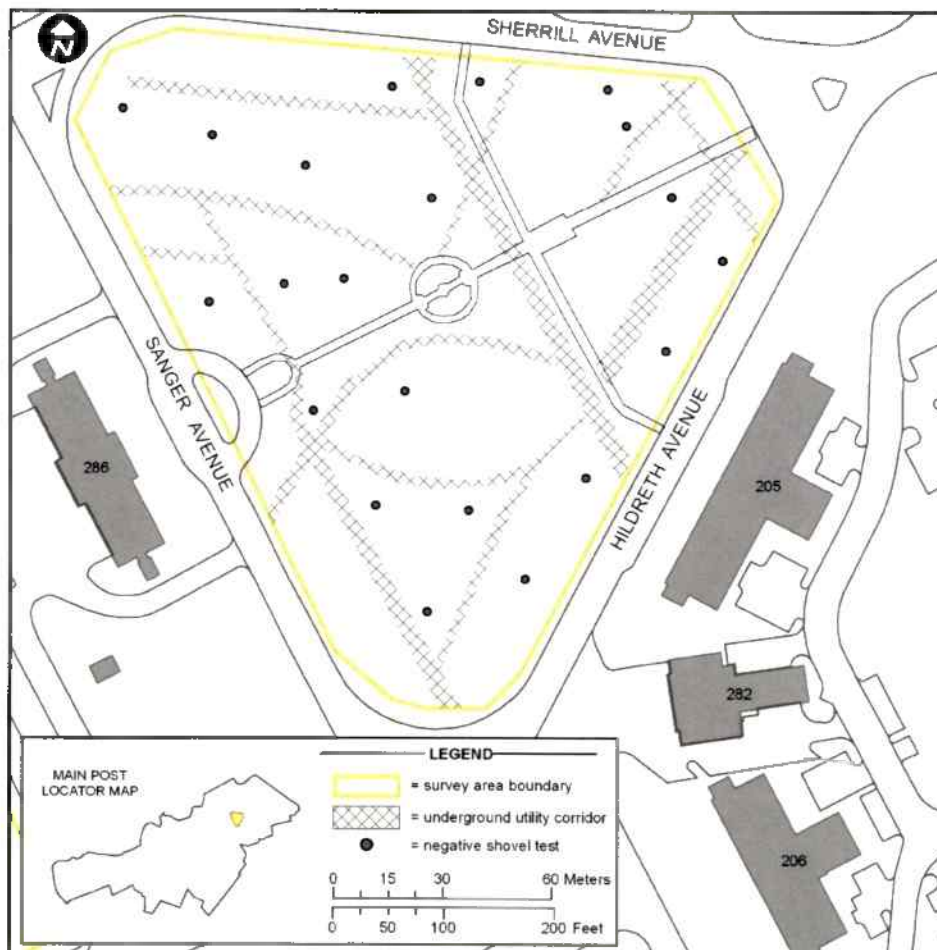


Figure 4-19. Survey Area MP-8

Subsurface Testing

Due to the web of underground utilities, a shovel test grid was not practical. Shovel tests were placed between the utility corridors on a selective basis, while maintaining a 30-m (100 ft) interval where possible (Figure 4-19). The tests were numbered sequentially in order of excavation. In total, 21 shovel tests were excavated. The following shovel tests typified the stratigraphic sequence observed across the area:

Shovel Test MP8-J-1

- | | | |
|----|----------|--|
| A: | 0-18 cm | dark gray (2.5Y 4/1) silt loam, humus |
| B: | 18-27 cm | mottled strong brown (2.5Y 4/2, 6/1, & 5/8) loam, fill |
| C: | 27+ cm | gray (2.5YR 6/1) mottled with light olive brown (2.5Y 5/6) clay loam, increasingly gleyed with depth, truncated subsoil, max depth excavated 43 cm |

Shovel Test MP8-J-11

- | | | |
|----|----------|---|
| A: | 0-12 cm | very dark grayish brown (10YR 3/2) loam, humus |
| B: | 12-36 cm | mottled dark brown (10YR3/3) and olive yellow (5Y 6/8), 6/1, & 5/8) sandy loam, fill (concrete slab at 22-36 cm b.s.) |
| C: | 36-46 cm | very dark gray (2.5Y 3/1) slag and cinder (glass fragment and .45 caliber slug) |
| D: | 46+ cm | light olive brown (2.5Y 5/6), silty clay loam, truncated subsoil, maximum depth excavated 56 cm |

Excavations in Survey Area MP-8 showed a soil profile consisting of poorly drained sediments overlain by introduced or re-deposited fill associated with utility placement and building demolition. The upper portion of the profile contained shallow topsoil or fills of mixed color and texture. Subsoil ranged from 20-to-40 cm (8-to-15 inches) below surface and consisted of dark clay loam with little-to-no gravel content. The sediment was increasingly gleyed with depth, implying frequent inundation. In several tests groundwater seepage was noted between 30-to-40 cm (13-to-15 inches) below surface.

Subsequent review of ca. 1940 oblique aerial photographs on file at the Army Communications and Electronics Museum (Building 275) shows that a large structure and parking lot stood at the southern corner of Survey Area MP-8. The structure is no longer present on the 1954 Long Branch USGS 7.5' Quadrangle. The location of this structure coincides with a concrete slab encountered at 22 cm (8.5 in) below surface in shovel test MP8-J-11 (described above) and layers of coal slag and asphalt noted in adjacent shovel tests. The slab was 9 cm (6 in) thick, made of coarse concrete with pebble aggregate, and was underlain by a thin layer of coal slag. The slab appeared horizontal as exposed in the shovel test and probing with a ½" fiberglass rod showed it to measure 1.2 m (4 ft) east/west by 1.5 m (5 ft) north/south. Given its small size and the presence of slag and refuse (glass fragment and .45 cal. slug) beneath, the slab is unlikely to represent an intact structural feature but rather demolition debris or an unmarked/disused drain feature.

Cultural Resources Identified

No cultural resources were identified within Survey Area MP-8 during the current investigation other than widely scattered demolition debris that did not represent intact or undisturbed archaeological deposits.

Survey Area MP-9

Acreage: 10.3

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area MP-9 is located in the western half of the Main Post. The area is bounded by the Avenue of Memories to the south, Wilson Avenue to the east, North Drive to the north, and the Building 1215 parking lot to the west (Figure 4-20). The western two-thirds of the survey area, designated as Dean Field, consists of two baseball diamonds currently used by USMAPS. A canalized portion of Mill Creek bisects the eastern third of the survey area. The Fort Monmouth Installation Action Plan (2006) designates the east end of the survey area, a 1.4-acre area between Mill Creek and Wilson Avenue, as a former landfill containing contaminated soils at levels exceeding NJDEP standards. Underground utility corridors are present along nearly the entire perimeter of the eastern-most ball field. A stormwater drainage line runs from the southern fence line of the eastern-most ball field toward the Avenue of Memories. Topography is relatively level with a gradual slope to the south before a short steep slope up to the Avenue of Memories, suggesting that either the survey area has been graded down or, more likely, that the roadway has been banked up. Current vegetation within Survey Area MP-9 consists almost entirely of cut grass. Small groups of mature hardwoods are present in the northwest and southeast corners of the survey area and ornamental trees line the Avenue of Memories. Wetland vegetation and willow trees are present on either side of Mill Creek.

Subsurface Testing

No subsurface testing was conducted within the former landfill due to the presence of contaminated soils. The regularly used ball fields were also not subject to subsurface testing due to tripping hazards posed by backfilled shovel tests. To offset the exclusion of the ball fields, shovel tests placed in the remainder of the survey area were excavated at a 15-m (50-ft) interval in lieu of the 30 m (100 ft) interval stated in the work plan. Given the findings in these areas, as described below, the subsurface sample from the MP-9 was considered to be sufficient without tests from the ball fields. In total, 20 shovel tests were excavated within Survey Area MP-9. Eleven of the shovel tests were excavated at 15-m (50-ft) intervals on two transects (Tr 1 and 2) placed to the north of the western ball field parallel to North Drive (Figure 4-19). A third transect (Tr 3) was placed between the two ball fields and two more transects (Tr 4 and 5) south of the western ballfield, parallel to the Avenue of Memories. The final two transects were excavated at 30-m (100-ft) intervals as it became apparent that the area had been graded to facilitate drainage away from the ball fields. The following shovel tests typified the stratigraphic sequence observed within the tested portions of the survey area:

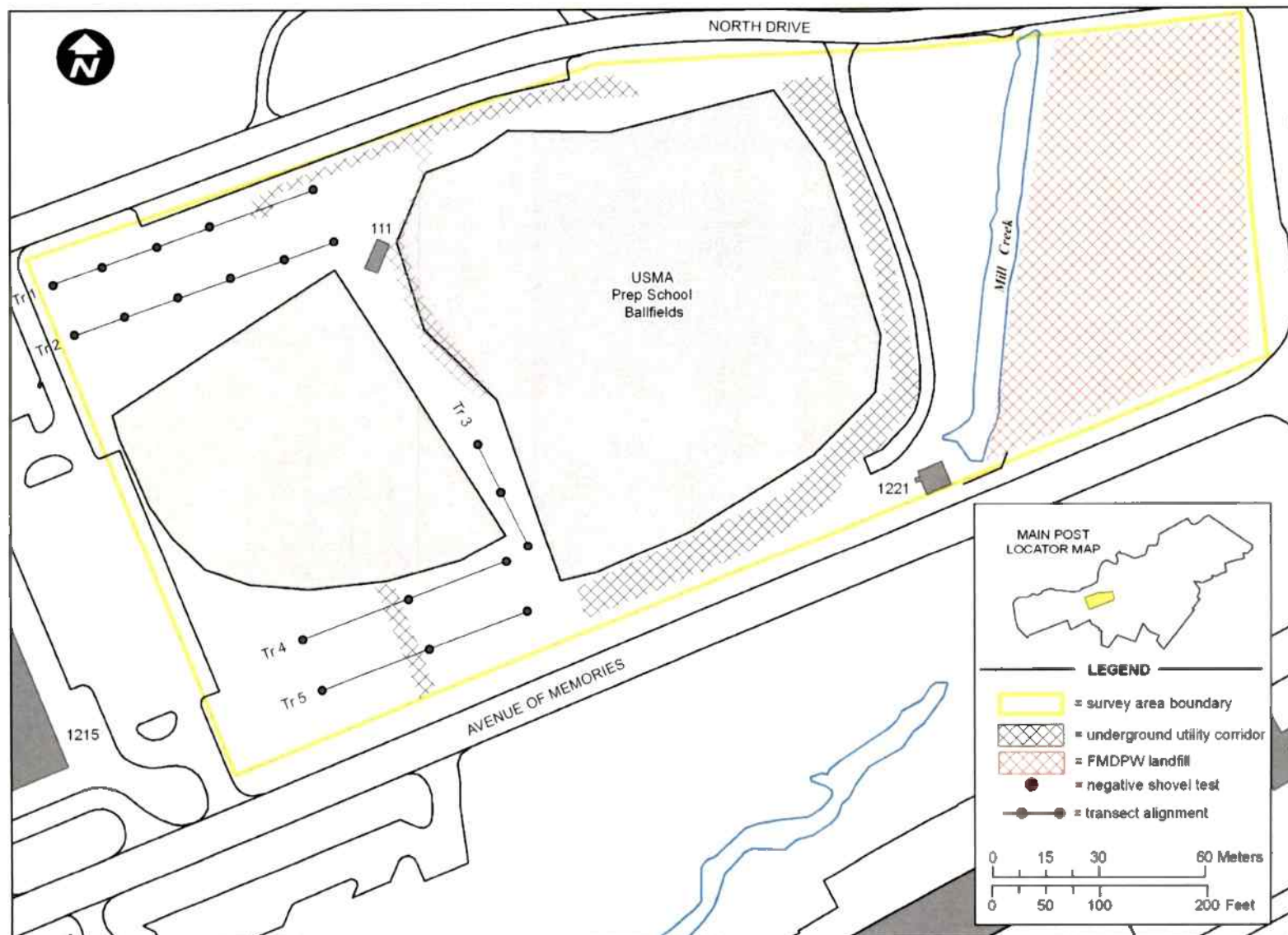


Figure 4-20. Survey Area MP-9

Shovel Test MP9-1-4

- A: 0-14 cm very dark grayish brown (10YR 3/2) silt loam, humus
- B: 14-26 cm olive brown (2.5Y 4/3) silty clay loam
- C: 26-37 cm very dark gray (2.5Y 3/1) sandy loam
- D: 37+ cm light olive brown (10YR 5/6) loamy sand with quartz gravels, subsoil, maximum depth excavated 57 cm, augered to 97 cm

Shovel Test MP9-4-3

- A: 0-9 cm very dark gray (10YR 3/1) silt loam, humus
- B: 9-33 cm mixed- dark yellowish brown (10YR 4/4), strong brown (7.5 YR 5/6 & 5/8), and dark grayish brown (2.5Y 4/2), silty clay loam
- C: 33-36 cm olive gray (5Y 4/2) silt loam
- D: 36-46 cm olive yellow (2.5Y 6/8) loamy sand
- E: 46+ cm light olive brown (2.5Y 5/4) sandy loam with quartz gravels, subsoil, maximum depth excavated 56 cm, augered to 70 cm

The excavations showed the upper portion of the profile within Survey Area MP-9 to be disturbed. Multiple strata with varying textures and color along with abrupt transitions suggest episodes of cut-and-fill or grading have occurred across the area to facilitate drainage, utility placement, and to level and drain the ball fields. A sandy loam subsoil with blocky structure and rounded quartz gravels characteristic of a B horizon was encountered below the disturbed strata at approximately 40 cm (15 in) below surface.

Cultural Resources Identified

No cultural resources were identified within Survey Area MP-9 during the current investigation.

Survey Area MP-10

Acreage: 3.0

Survey Procedure: none

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area MP-10 is a grass covered recreation and parade field located between Abbey and Whitesell Avenues within the "1200" building area (Figure 4-21). Also known as Hemphill Parade Field, this area was initially considered to have archaeological potential based on topography and minimal evidence of military development within the parcel. However, review of FMDPW utility and infrastructure maps indicated that a deeply buried geothermal well field has been placed beneath the entire survey area thus compromising any remaining subsurface integrity. According to FMDPW records, geothermal well fields disturb at least the top 1.5 m (5 ft) below ground surface and consist of multiple closely placed borings over 100 m (330 ft) in depth.

Subsurface Testing

No subsurface testing was conducted within Survey Area MP-10.

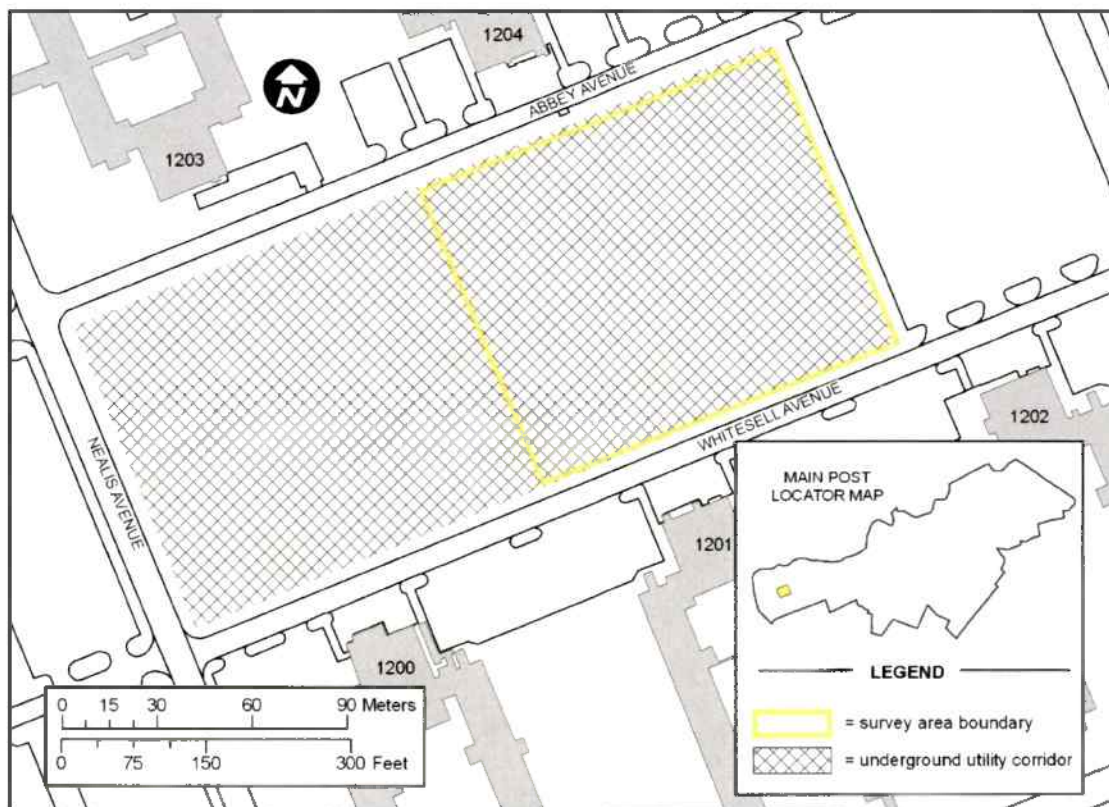


Figure 4-21. Survey Area MP-10

Site 28MO126

Acreage: >1.0

Site Type: Prehistoric site lead – previously surface collected

Survey Procedure: pedestrian survey

Archaeological Deposits: none encountered

Previous Investigations

Site 28MO126 was first formally recorded through an interview with a former employee of Fort Monmouth, Redacted - Privacy Act, as part of an Archaeological Overview of Fort Monmouth prepared by Klein et al. (1984). Redacted - Privacy Act identified the site through surface collection of artifacts during his tenure as a groundskeeper at the installation between 1947 and 1972. Klein et al. (1984) described the site as follows:

“Prehistoric remains were found along the marsh area at the southern edge of Parker’s Creek near Buildings 292, 293 and 289. These include a fully grooved axe, a large jasper biface and ceramics indicating Late Archaic to Middle Woodland occupation. Shell, suggesting the presence of a midden (prehistoric refuse area), has also been observed eroding from the creek bank at this location.”

An Archaeological Collections Summary conducted by the USACE in 1995 found that the artifacts were still in the possession of Redacted - Privacy Act as of that date.

Location and Setting

The reported location of Site 28MO126 is situated on the south bank of Parker’s Creek to the north of Building 293 within the Main Post (Figure 4-22). The site location lies in an area of tall planted grasses and wildflowers between the two perimeter fences. The distance between the fences varies from 30-to-60 meters. Gravel and asphalt are present on the ground surface suggesting the area was previously a paved or gravel lot. A narrow strip of hardwoods is present on the outside of the old perimeter fence, quickly giving way to tidal marsh which extends 90-to-100 meters toward Parker’s Creek. Rip-rap lines the stream bank to the west of the site location preventing surface inspection. According to the Fort Monmouth Installation Action Plan (2006), a 4.1-acre parcel (red hatching in Figure 4-22) including the reported location of Site 28MO126, is designated as a former training area and landfill containing construction debris and soil contaminated at levels exceeding NJDEP standards. The report further states that remedial action including the excavation of test trenches and installation of groundwater monitoring wells has been conducted within this area.

Subsurface Testing

Due to the documented ground disturbance and presence of contaminated soil, no subsurface testing was conducted.

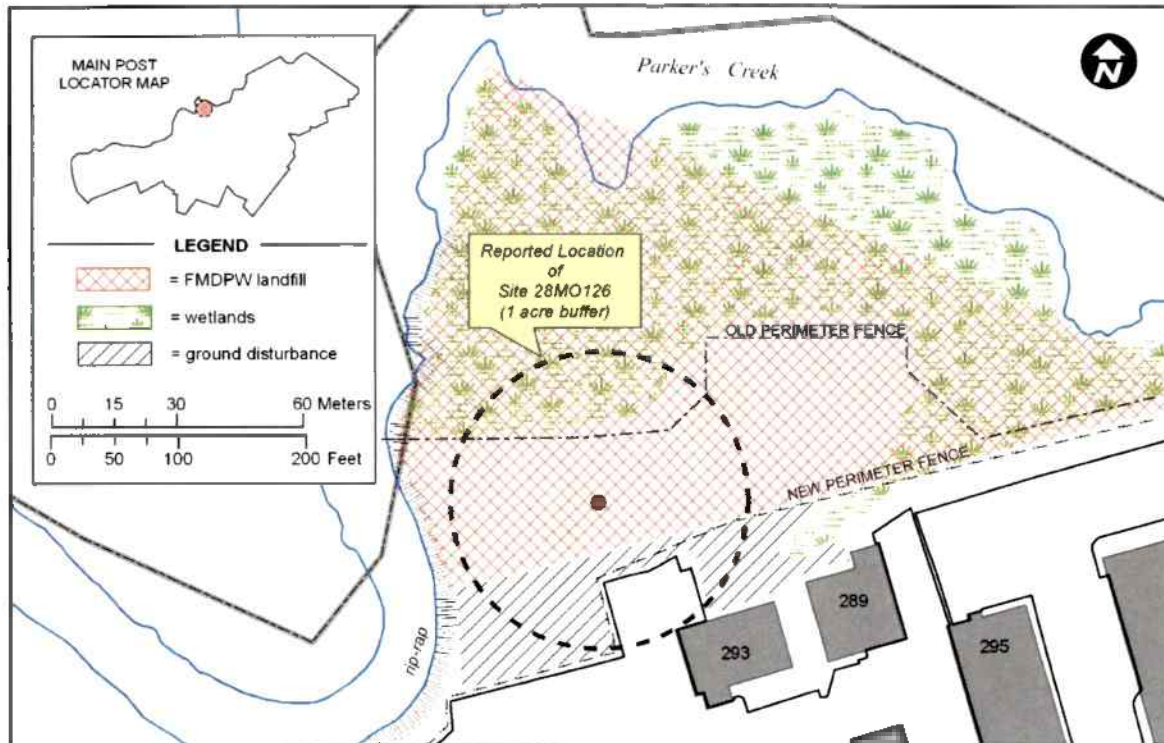


Figure 4-22. Reported Location of Site 28MO126

Cultural Resources Identified

No cultural resources were identified at the reported location of Site 28MO126 during the current investigation. Pedestrian survey within the vicinity of the site location did not identify any prehistoric artifacts on the ground surface. The entire area between the perimeter fences, extending beyond the 1-acre buffer drawn around the site location, was examined. Surface visibility ranged from greater than 50 percent in the western half to less than 20 percent in the eastern half of the surveyed area. In addition, the current shoreline north of the site area was walked; it was found to be covered with rip-rap.

Site 28MO127

Acreage: >1.0

Site Type: Prehistoric site lead – previously surface collected

Survey Procedure: pedestrian survey

Archaeological Deposits: no

Previous Investigations

Site 28MO127 was first formally recorded through an interview with a former employee of Fort Monmouth, ^{Redacted - Privacy Act} Ricci, as part of an Archaeological Overview of Fort Monmouth prepared by Klein et al. (1984). ^{Redacted - Privacy Act} identified the site through surface collection of artifacts during his tenure as a groundskeeper at the installation between 1947 and 1972. Klein et al. (1984) described the site as follows:

“The southern bank of Husky Brook Lake (28-Mo-127) has yielded a small stone ‘ball,’ a small stemmed Archaic point and a broad stemmed point. All the known remains indicate a Late Archaic period occupation.”

An Archaeological Collections Summary conducted by the USACE in 1995 found that the artifacts were still in the possession of ^{Redacted - Privacy Act} as of that date.

Location and Setting

The reported location of Site 28MO127 is situated to the east of Husky Brook Lake between Building 814 and a running track and athletic field (Figure 4-23). A sand-filled shot-put pit and a 12-m (40-ft) diameter paved area are present in the vicinity of the site location. A crush-and-run pedestrian trail to the northwest of the survey area follows the shoreline of the man-made lake. The survey area is level, and a short and steep slope down from the surrounding residential neighborhood along the eastern and southern installation boundary suggests that it has been graded. Current vegetation consists of cut grass. Husky Brook Lake is artificial, formed by a small dam about 300 m (985 ft) to the northeast; the reported location of the site would have been between 150 and 160 m (490 and 525 ft) from the original channel of Husky Brook.

Subsurface Testing

In total, 33 shovel tests were distributed across the site location on a 15-m (50 ft) grid (Figure 4-23). Four transects (Tr 1-4) were placed to cover a one-acre buffer around the site location. When no evidence of the site was encountered in this area, four additional transects (Tr 5-8) were placed to cover an area to the northwest, between the site location and Husky Brook Lake, on the assumption that the site might lie closer to the stream. The following shovel tests typified the stratigraphic sequence observed within the surveyed area:

Shovel Test MO127-3-3

- | | | |
|----|----------|--|
| A: | 0-11 cm | dark brown (10YR 3/3) silt loam, topsoil |
| B: | 11-30 cm | mixed yellowish brown (10YR 5/6) sand and dark brown (10YR 3/3) sandy loam |
| C: | 30-66 cm | gray (10YR 5/1) loamy sand with gravel (green/white glass vessel fragments.) |

- D: 66-76 cm mixed olive (5Y 4/4) and gray (10YR 5/1) loamy sand,
very dark gray (10YR 3/1) and dark yellowish brown (10YR 4/6) sandy clay
E: 76+ cm loam, well sorted alluvium - subsoil, maximum depth excavated 86 cm

Shovel Test MO127-6-1

- A: 0-18 cm dark brown (10YR 3/3) silt loam, topsoil
B: 18-28 cm mixed olive (5Y 4/4) and yellowish brown (10YR 5/8) silt loam
C: 28-50 cm mixed dark grayish brown (10YR 4/2) and yellowish brown (10YR 5/8) loamy sand (small glass and brick fragments)
D: 50+ cm yellowish brown (10YR 5/8) sandy clay loam, subsoil, maximum depth excavated 60 cm, augered to 90 cm

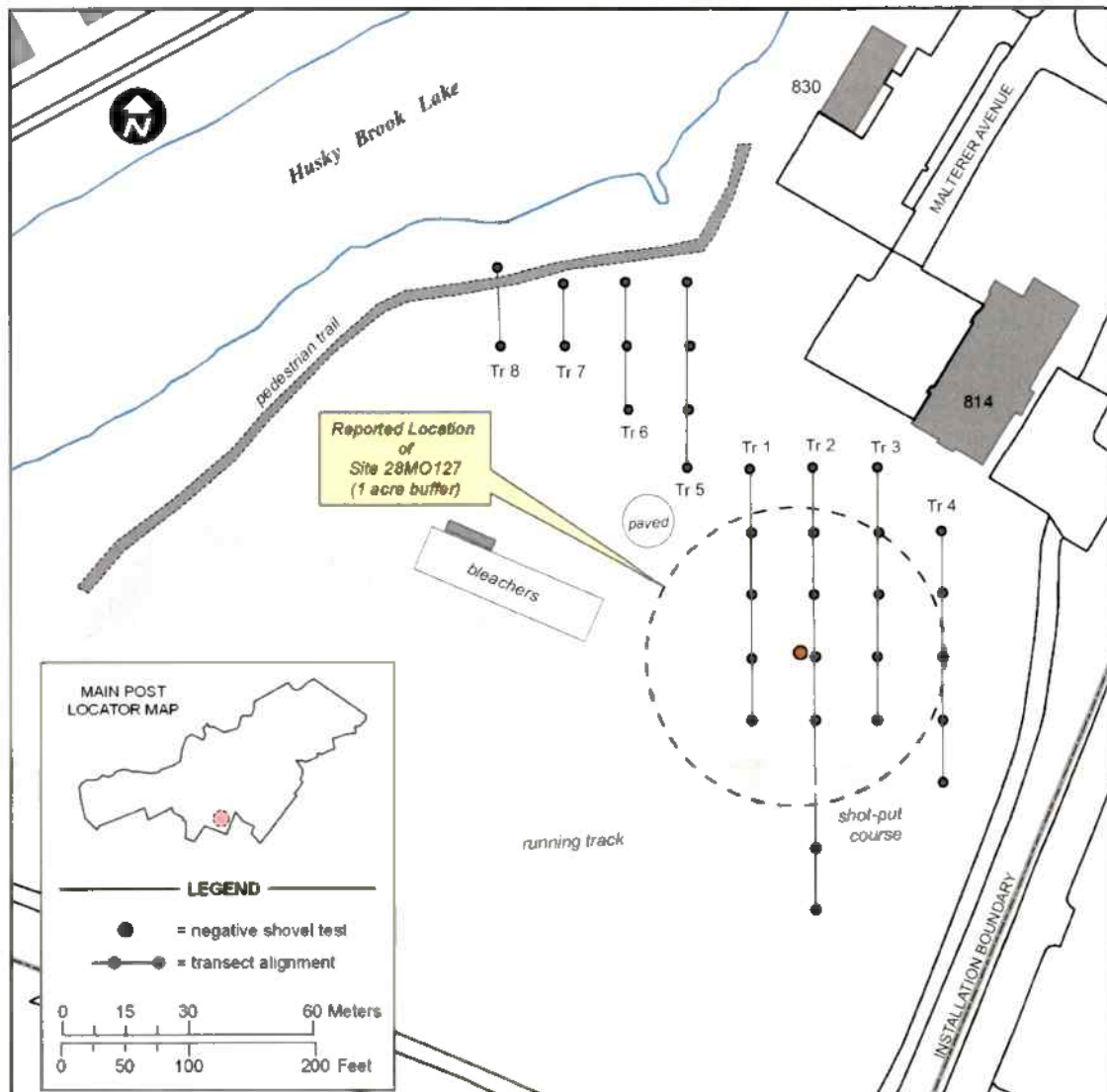


Figure 4-23. Reported Location of Site 28MO127

The general stratigraphic sequence within the surveyed area consisted of an organic-rich topsoil over multiple strata of mixed fill underlain by a truncated, dark-colored hydric

subsoil. A varying topsoil depth [(between 10-40 cm [4-16 in]) and abrupt transitions within the upper strata and at the subsoil interface suggest episodes of cut-and-fill or grading. Such earthmoving may have been associated with grading to level the running track, or with the construction of Husky Brook Lake, or with early or pre-military demolition or wetlands abatement. Historical and modern artifacts were noted in the disturbed upper strata, but they were scattered and infrequent suggesting incidental debris in the fill. The artifacts included white plastic, electrical wire, two whiteware fragments, clear, green, and white vessel glass fragments (n >10), brick fragments (n >10), a cut nail, and two wire nails.

Cultural Resources Identified

No evidence of prehistoric materials or deposits was identified at the reported location of Site 28MO127 during the current investigation. The only artifacts encountered were fragmented and widely scattered modern and historical refuse within fill deposits. No intact or undisturbed archaeological deposits were discovered.

Site 28MO128

Acreage: >1.0

Site Type: Prehistoric site lead – previously surface collected

Survey Procedure: pedestrian survey

Archaeological Deposits: no

Previous Investigations

Site 28MO128 was first formally recorded through an interview with a former employee of Fort Monmouth, Redacted - Privacy Act, as part of an Archaeological Overview of Fort Monmouth prepared by Klein et al. (1984). Redacted - Privacy Act identified the site through surface collection of artifacts during his tenure as a groundskeeper at the installation between 1947 and 1972. Klein et al. (1984) described the site as follows:

“South of Parker’s Creek, in the 600 Building area, a number of quartz points both triangular and tear drop were found indicating a Late Archaic to Woodland occupation.”

An Archaeological Collections Summary conducted by the USACE in 1995 found that the artifacts were still in the possession of Redacted - Privacy Act as of that date.

Location and Setting

The reported location of Site 28MO128 is situated immediately south of Building 601 within the Main Post (Figure 4-24). The site location lies in an area containing buildings and parking areas, between Sherrill and Telegraph Avenues, which were constructed after 1997. According to FMDPW records, a grass covered area to the north of Buildings 601 and 603 contains a geothermal well field. Review of the USGS 7.5’ quadrangle of the area, dated 1954, shows multiple rows of now demolished barrack-style structures at this location. Current groundcover consists of buildings, concrete sidewalks, asphalt parking lots, and patches of manicured grass.

Subsurface Testing

Due to widespread disturbance from recent utility and building construction, no subsurface testing was conducted.

Cultural Resources Identified

No cultural resources were identified at the reported location of Site 28MO128 during the current investigation. Pedestrian survey within the vicinity of the reported site location did not identify any prehistoric artifacts on the ground surface.

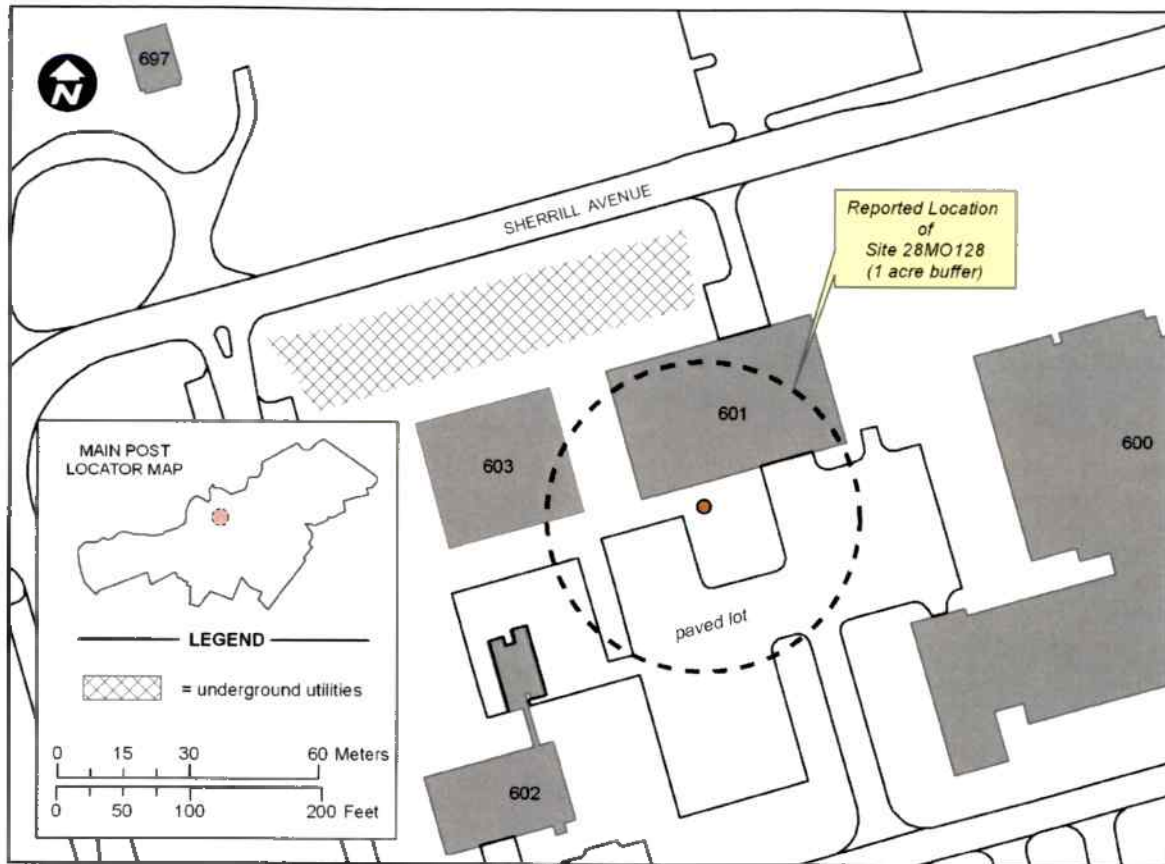


Figure 4-24. Reported Location of Site 28MO128

Survey Area CW-1

Acreage: 2.7

Survey Procedure: pedestrian reconnaissance

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area CW-1 is located on the western edge of the Sun Eagle's Golf Course, along Hope Road approximately halfway between Tinton Avenue and Pine Brook Road (Figure 4-25). The area is entirely wooded, containing no known structures, roads, or vehicle trails. The area consists of an irregular polygon bounded to the west by Hope Road, to the north and east by the golf course, and to the south by an abandoned access road. The area is generally level and low lying. A small, low-order tributary of Parkers Creek runs through the area with no distinct channel; roughly paralleling the road, its present meandering course is influenced somewhat by roadway and fairway construction. Current vegetation includes hydrophyllic arboreal species such as maple and sweet gum, with an often thick understory of briars and vines, and scattered ferns and wetland grasses. Broken concrete and other debris is scattered down a short slope from the cleared edge of the golf course, suggesting push-piles resulting from bulldozing and grading for construction and improvements to the facility. Trees in this part of Survey Area CW-1 are immature, implying that the area had been cleared sometime in the relatively recent past and the trees allowed to return as screening along the fairway margin. No utilities were noted in the survey area.

Subsurface Testing

No subsurface testing was undertaken Survey Area CW-1. Pedestrian survey determined that much of the eastern part of the area had been disturbed during construction of the golf course, with debris from grading and landscaping deposited along the drainage. The remainder of the area was low-lying, covered with wetland vegetation and containing standing water in many areas.

Cultural Resources Identified

No cultural resources were identified within Survey Area CW-1 during the current investigation. Environmental conditions verified by field investigations suggested that the area exhibits low potential for significant cultural resources.

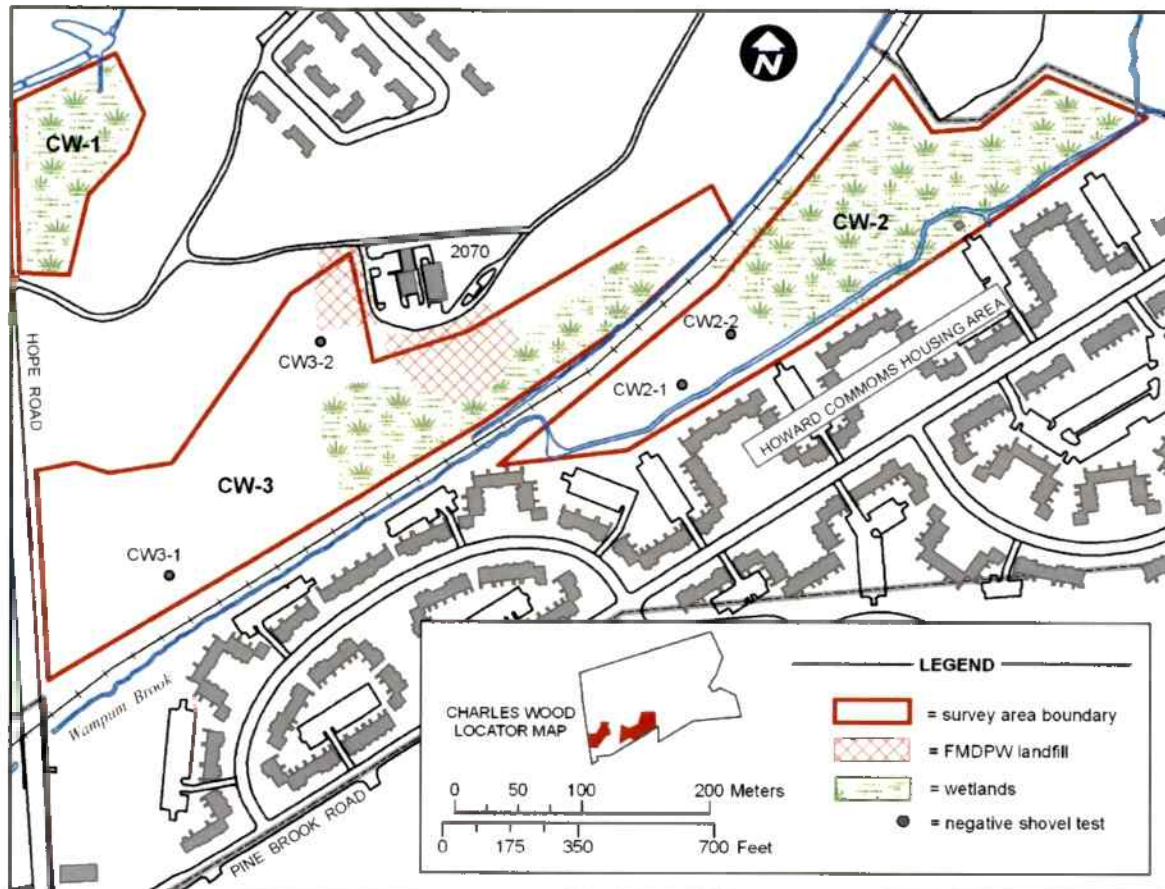


Figure 4-25. Survey Areas CW-1, CW-2, and CW-3

Survey Area CW-2

Acreage: 15.0

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area CW-2 is located between the railroad line and the eastern portion of the Howard Commons Housing (Figure 4-25). The area is entirely wooded, containing no known structures, roads, or vehicle trails. It consists of an irregular, elongated polygon oriented approximately northeast/southwest. The area is bounded to the north by the rail line and to the south by a fenceline bordering the backyards of the Howard Commons Housing along Pine Brook Road. The area is generally level and low lying. Current vegetation includes mature maple, hickory, and sweet gum, with smaller poplars and a scattered understory of briars and vines, along with ferns in low areas. A deep drainage ditch extends along the south side of the area paralleling the fenceline that bounds the housing area. Broken concrete and other debris is scattered near the edges of the ditch. No utilities were noted in the survey area.

Subsurface Testing

Two shovel tests were excavated within Survey Area CW-2 to determine the type of soils present as an aid to assessing the potential for archaeological remains. The tests were excavated in selected locations that appeared representative of the entire area (Figure 4-25). The stratigraphic sequences observed in the shovel tests are shown below:

Shovel Test CW2-1

- | | | |
|----|----------|--|
| A: | 0-24 cm | black (10YR 2/1) silt loam, topsoil |
| B: | 24-35 cm | grayish brown (2.5Y 5/2) silty sand, organic stained |
| C: | 35+ cm | light olive gray (5Y 6/2) loamy sand, gleyed subsoil,
maximum excavated depth 52 cm, augered to 70 cm |

Shovel Test CW2-2

- | | | |
|----|----------|--|
| A: | 0-40 cm | black (10YR 2/1) silt loam, topsoil |
| B: | 40-50 cm | dark olive gray (5Y 3/2) silty sand, organic stained
mottled light gray, very dark gray, light olive brown (2.5Y 6/1,
2.5Y 3/1, 2.5Y 5/6) coarse loamy sand, gleyed subsoil, |
| C: | 50+ cm | maximum excavated depth 70 cm |

Soils in Survey Area CW-2 were characterized by poorly drained wetland sediments. Frequent inundation was evidenced by the low-lying topographic setting, wetland vegetation, and extensive gleying observed in the stratigraphic profiles. The transition between topsoil and subsoil was abrupt, suggesting a form of entisol, a soil order of recent origin in which horizons have not formed, in this instance probably due to periodic flood scouring prior to

the relatively recent introduction of flood control measures in the form of ditches along the railroad right of way and the fenceline along the housing properties.

Cultural Resources Identified

No cultural resources were identified within Survey Area CW-2 during the current investigation. Environmental conditions verified by field investigations suggested that the area exhibits low potential for significant cultural resources.

Survey Area CW-3

Acreage: 14.9

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area CW-3 is located between the railroad line and the southern edge of the Sun Eagle's Golf Course (Figure 4-25). The area is entirely wooded and contains no recorded structures, roads, or vehicle trails. It consists of an irregular, elongated polygon oriented approximately northeast/southwest, bounded to the north by the golf course, to the east and south by the rail line, and to the west by Hope Road. Much of the area is level and low lying, and several streams follow the general but gradual northwest/southeast slope across the area. Current vegetation includes mature maple, hickory, and sweet gum, with smaller poplars and areas of dense briars, vines, and berries. Ferns and grasses occur in many low areas adjacent to streams. A sewer line right-of-way crosses the survey area roughly east-to-west, evidenced by an abandoned clear-cut and a large, concrete-encased manhole situated near the center of the area. Broken concrete and other debris is scattered near the edges of the right-of-way, along the margins of the golf course, and near the railroad right-of-way. Two portions of Survey Area CW-3 are indicated on the Fort Monmouth Installation Action Plan (2006) maps as contaminated: a 1.3-acre area south of Building 2070 (on the south edge of the golf course), marked as a sludge dump; and a 0.7-acre area west of Building 2016 marked as a pesticide disposal area.

Subsurface Testing

Two shovel tests were excavated within Survey Area CW-3 to determine the type of soils present as an aid to assessing the potential for archaeological remains. The tests were excavated in selected locations that appeared representative of the entire area (Figure 4-25). The stratigraphic sequences observed in the shovel tests are shown below:

Shovel Test CW3-1

- | | | |
|----|----------|--|
| A: | 0-26 cm | black (10YR 2/1) silt loam, topsoil |
| B: | 24-35 cm | very dark gray (2.5Y 3/2) silty sand, organic stained |
| C: | 35+ cm | light gray and light olive brown mottled (2.5Y 6/1, 2.5Y 5/6) loamy sand, with coarser sand and small gravel at base of excavation; gleyed subsoil; maximum excavated depth augered to 50 cm |

Shovel Test CW3-2

- | | | |
|----|----------|--|
| A: | 0-18 cm | black (10YR 2/1) silt loam; topsoil |
| B: | 18-24 cm | light gray (2.5Y 6/1) silty loam; organic stained |
| C: | 24-42 cm | dark olive gray (7.5Y 3/2) loamy sand |
| D: | 42+ cm | mottled gray, light olive brown (2.5Y 6/1, 2.5Y 5/6) loamy sand, increasingly gleyed, clayey, and wet with depth; subsoil; maximum excavated depth 52 cm |

Soils in Survey Area CW-3 were characterized by poorly drained wetland sediments that are frequently inundated, as evidenced by the low-lying topographic settings, the prevalence of wetland vegetation, and extensive gleying observed in the stratigraphic profiles. The transition between topsoil and subsoil was abrupt, suggesting an entisol, probably formed as a result of periodic flood scouring prior to relatively recent flood control measures in the form of storm sewers and ditches along the railroad right of way.

Cultural Resources Identified

No cultural resources were identified within Survey Area CW-3 during the current investigation. Environmental conditions verified by field investigations suggested that the area exhibits low potential for significant cultural resources.

Survey Area CW-4

Acreage: 12.7

Survey Procedure: none

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area CW-4 is located in the southwest corner of the Charles Wood section of Fort Monmouth, between the Albert J. Meyer Center to the north and the Fire and Hazmat Training Center to the south (Figure 4-26). The area consists of a low-lying wooded buffer around an open stretch of unnamed creek that drains northeastward before being taken up by storm sewers. Two portions of Survey Area CW-4 were not surveyed: a grass-covered area comprising about 1.1 acres south of the parking lot fronting Building 2705, which FMDPW utility and infrastructure maps note is a geothermal well field; and a 1.8-acre section at the end of the area south that is designated in the Fort Monmouth Installation Action Plan (2006) as a former landfill that contains contaminated soil at levels above NJDEP standards.

Much of the remainder of Survey Area CW-4 is wetland. The stream runs through the center of the area in braided channels, and surrounding areas up to 60 m (200 ft) across are consistently saturated, judging from vegetation and surface soil textures. Sediment and debris have been pushed in along the west side of the area to level the ground surface behind Building 2705. A portion of the survey area to the east rises slightly to higher ground, but the upper levels of the natural soil column in this area have been graded to facilitate access for dumping debris. Yellowish brown and strong brown sandy loam subsoil is exposed across much of this area, which is surrounded by push piles containing darker topsoils and scattered demolition debris such as brick, concrete and metal.

Subsurface Testing

No subsurface testing was conducted in Survey Area CW-4. Pedestrian reconnaissance indicated that the combination of wetlands and landfill present in the area rendered the potential for significant archaeological resources very low.

Cultural Resources Identified

No cultural resources were identified within Survey Area CW-4 during the current investigation.

Survey Area CW-5

Acreage: 23.4

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area CW-5 is located west of Hope Road and north of the rail line that runs along most of the southern boundary of the Charles Wood Area of Fort Monmouth (Figure 4-26). The survey area consists of an irregular polygon that is entirely wooded and contains no known structures, although it is crossed by several vehicle trails and a powerline right-of-way. The area is bounded to the north by cleared portions of the Charles Wood Area, to the east by Hope Road, to the south by the rail line, and to the west by cleared but currently undeveloped ground. Topography is generally level with a very gradual slope to the southeast. Much of Survey Area CW-5 is low lying. Current vegetation includes mature maple, hickory, and sweet gum, with smaller poplars and a scattered understory of briars and vines, along with ferns and grasses in low areas. Broken concrete and other debris is scattered throughout the area, especially near the edges of developed areas and along vehicle trails. The westernmost portion of Survey Area CW-5 is extensively disturbed by clearing and earthmoving associated with training activities.

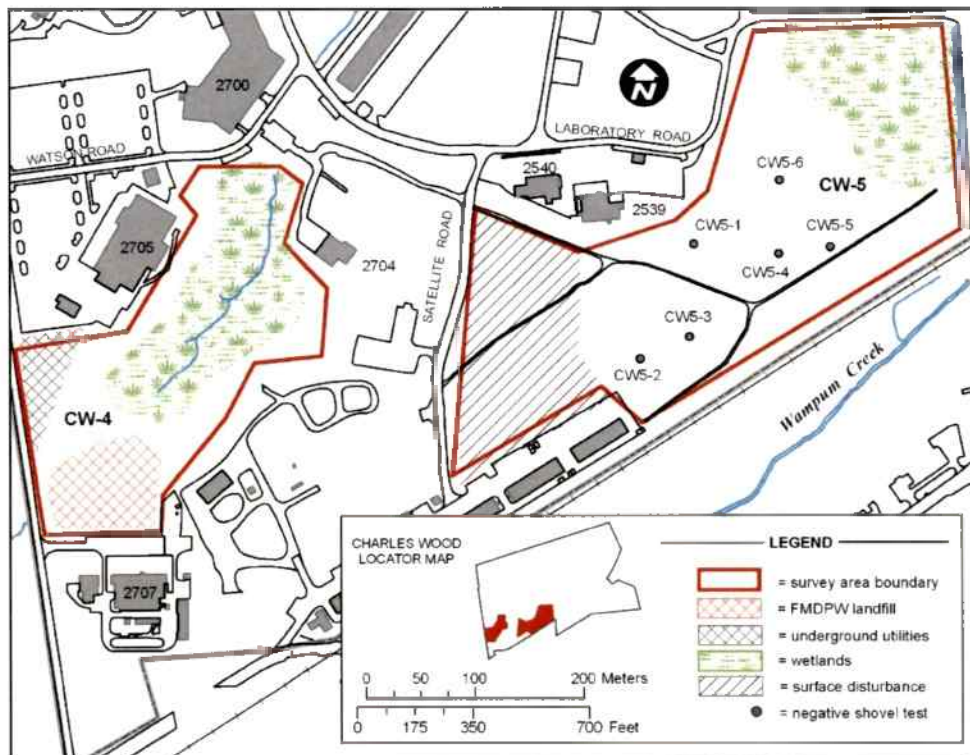


Figure 4-26. Survey Areas CW-4 and CW-5

Subsurface Testing

Six shovel tests were excavated within Survey Area CW-5 to determine the type of soils present as an aid to assessing the potential for archaeological remains. The tests were excavated in selected locations that appeared representative of the entire area (Figure 4-26). The following shovel tests typified the stratigraphic sequence observed across the survey area:

Shovel Test CW5-2

- A: 0-27 cm black (10YR 2/1) loamy humus, topsoil
- B: 27-36 cm dark grayish brown (2.5Y 4/2) silty sand, organic stained
- C: 36+ cm olive gray (5Y 5/2) loamy sand, increasingly compact and wet; gleyed subsoil; maximum excavated depth 55 cm, augered to 65 cm

Shovel Test CW5-5

- A: 0-35 cm black (10YR 2/1) silt loam, topsoil
- B: 35-44 cm gray (5Y 6/1) silty sand, organic stained
- C: 44-55 cm dark olive gray (5Y 3/2) silty sand, hard-packed, abrupt transition from Stratum B, organic, swampy smell; slackwater deposit
- D: 55+ cm very dark grayish brown (2.5Y 3/2) loamy sand, gleyed subsoil; water at 60 cm; maximum excavated depth 70 cm

Shovel Test CW5-6

- A: 0-12 cm black (10YR 2/1) silt loam, topsoil
- B: 12-18 cm gray (10YR 5/1) silty sand, organic stained
- C: 50+ cm mottled light brownish gray, light olive brown, yellowish brown (2.5Y 6/2, 2.5Y 5/8, 10YR 5/6) grading to olive gray (5Y 5/2) coarse loamy sand, gleyed subsoil maximum excavated depth 50 cm, augered to 85 cm

Soils in Survey Area CW-5 were characterized by poorly drained wetland sediments that are frequently inundated, as evidenced by the low-lying topographic setting, wetland vegetation, and extensive gleying observed in the stratigraphic profiles. Transitions between topsoil and subsoil were abrupt, suggesting an entisol, probably formed as a result of periodic flood scouring prior to relatively recent flood control measures in the form of ditches along the railroad right of way and storm drains in developed areas. A former slackwater deposit was observed near the southern edge of the area, in CW5-5, implying swampy conditions in the past.

Cultural Resources Identified

No cultural resources were identified within Survey Area CW-5 during the current investigation. Environmental conditions verified by field investigations suggested that the area exhibits low potential for significant cultural resources.

Survey Area CW-6

Acreage: 6.4

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area CW-6 is located in the western portion of the Charles Wood Area, north of Corregidor Road and the parking lot north of the Albert J. Myer Center (Building 2700) (Figure 4-27). The survey area is rectangular, with a small dogleg to the southeast. The area is entirely open and contains no known structures, although a monitoring well, which has been used as a control for groundwater testing, is present along the southern edge of the area. Topography is generally level with a very gradual slope to the southeast, while a swale at the top of the dogleg suggested landscaping for drainage. Current vegetation consists of cut grass. Recent aerial photographs show ball fields in the western half of the survey area, along with housing that extended from the north edge of the survey area to Tinton Avenue. A baseball diamond is currently present at the east end of the survey area.

Subsurface Testing

Twenty shovel tests were excavated across the area on a 30-meter grid, and two shovel tests were placed in selected locations in the dogleg area (Figure 4-27). The following shovel tests typified the stratigraphic sequence observed across the area:

Shovel Test CW6-2-2

- | | | |
|----|---------|--|
| A: | 0-37 cm | dark brown (10YR 4/3) silt loam, topsoil |
| B: | 37+ cm | mottled brownish yellow, yellowish brown, olive (10YR 6/8, 10YR 5/4, 5Y 5/5) sandy clay loam, gleyed subsoil – maximum excavated depth 80 cm |

Shovel Test CW6-7-2

- | | | |
|----|---------|---|
| A: | 0-40 cm | dark brown (10YR 4/3) silt loam, topsoil |
| B: | 40+ cm | mottled dark grayish brown, light olive brown, yellowish brown, reddish brown (2.5Y 4/2, 2.5Y 5/4, 10YR 5/6, 5YR 4/4) sandy clay loam, gleyed subsoil – maximum excavated depth 80 cm |

Shovel Test CW6-J-2

- | | | |
|----|----------|--|
| A: | 0-24 cm | very dark grayish brown (10YR 3/2) sandy silt, topsoil |
| B: | 24-30 cm | yellowish brown, dark grayish brown (10YR 5/6, 10YR 4/2) sandy silt |
| C: | 30+ cm | mottled light olive brown, dark grayish brown, reddish brown (2.5Y 5/4, 2.5Y 4/2, 5YR 4/4) sandy clay loam, gleyed subsoil – maximum excavated depth 52 cm |

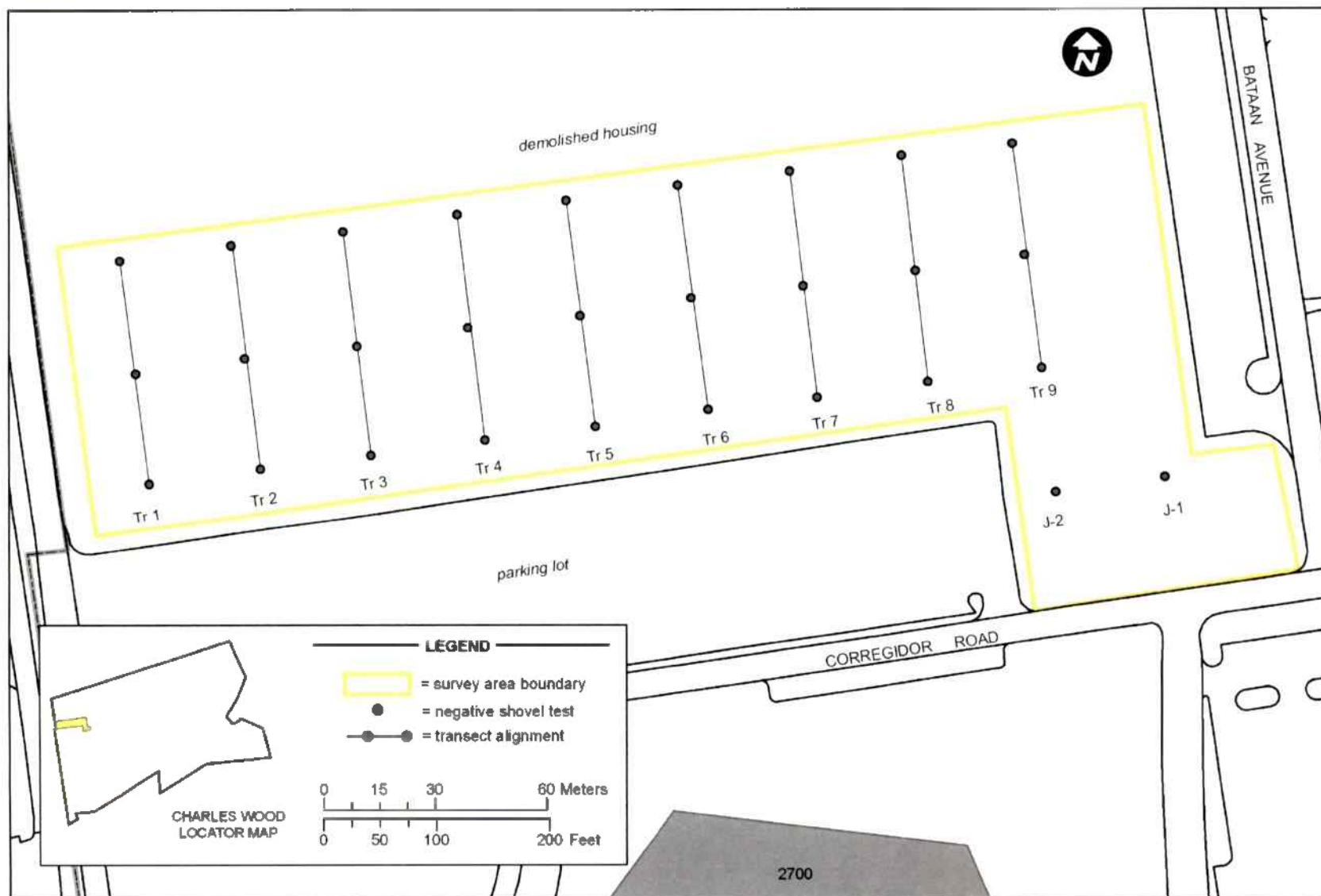


Figure 4-27. Survey Area CW-6

Soils in Survey Area CW-6 were characterized by only two distinct layers, representing poorly drained sediments overlain by recent topsoil in a cut-and-fill sequence. Stratum A, consisted of topsoil, a loamy root zone containing few if any gravels and occasional fragments of brick, bottle and window glass, or asphalt. Subsoil, Stratum B, consisted of sandy clay appearing as an iron-stained and mottled brown or yellowish brown that was increasingly gray to bluish green with depth, suggesting extensive gleying and implying frequently inundated or even hydric soils. The transition to subsoil was abrupt in all cases. As in the wetlands to the south and east (CW-2 through CW-5), the soils exhibited the characteristics of an entisol, in this case formed mechanically, as a result of grading. The degree of gleying implied the presence of wetlands prior in this area to development of the property.

Cultural Resources Identified

The only cultural resources identified within Survey Area CW-6 during the current investigation were widely scattered fragments of glass, brick, and asphalt, none of which appeared to represent intact or undisturbed archaeological deposits.

Survey Area CW-7

Acreage: 5.6

Survey Procedure: pedestrian reconnaissance, shovel testing

Surface Features: no

Archaeological Deposits: no

Location and Setting

Survey Area CW-7 is located northwest of the intersection of Corregidor Road and Guam Lane, in the Charles Wood Area (Figure 4-28). The survey area is rectangular and is entirely open. It contains no known structures, although a monitoring well, which has been used as a control for groundwater testing, is present near the northwest corner of the area. Ground surface slopes gently to the south from higher ground along Tinton Avenue to a drainage ditch paralleling Corregidor Road. The ditch is a channelized portion of a natural stream that meandered through the area prior to development. Housing that stood north of the survey has been recently raised. Current vegetation consists of cut grass. A baseball diamond is located in the southeast corner of the area, an asphalt-covered basketball court lies near the northeast corner, and the remains of playground lie in the north-central part of the area.

Subsurface Testing

To test the area for archaeological remains, 20 shovel tests were excavated on a 30-meter grid (Figure 4-28). The following shovel tests typified the stratigraphic sequence observed across the survey area:

Shovel Test CW7-2-1

- | | | |
|----|----------|---|
| A: | 0-16 cm | very dark grayish brown (10YR 3/2) silty sand, topsoil |
| B: | 16-36 cm | brown (10YR 4/3) silty sand, 25% gravel; wire fragment, coal |
| C: | 36-42cm | light olive brown (2.5Y 5/4) sand; brick fragment |
| D: | 42+ cm | very dark grayish brown, yellowish red (2.5Y 3/2, 5YR 4/6); gleyed subsoil
– maximum excavated depth 52 cm |

Shovel Test CW7-3-3

- | | | |
|----|----------|---|
| A: | 0-18 cm | very dark gray (10YR 3/1 (very dark gray)) silt loam, topsoil |
| B: | 18-34 cm | dark grayish brown (2.5Y 4/2) clay loam |
| C: | 34+ cm | grayish brown, light brownish gray (2.5Y 5/2, 2.5Y 6/2) clay loam,
occasional gravel; gleyed subsoil – maximum excavated depth 45 cm |

Shovel Test CW7-3-4

- | | | |
|----|----------|---|
| A: | 0-23 cm | very dark gray (10YR 3/1) silt loam, topsoil |
| B: | 23-29 cm | light brownish gray (2.5Y 6/2) sand |
| C: | 29+ cm | dark gray, very dark gray (2.5Y 4/1, 2.5Y 3/1) clay loam, gradual color
transition; gleyed subsoil – maximum excavated depth 87 cm |

Soils in Survey Area CW-7 were characterized by mixed deposits near the surface, especially in the northern part of the area adjacent to the recently demolished housing area. Underlying layers of silty sand containing gravel and scattered building debris (brick, glass, wire), suggest disturbance from grading following demolition of the housing area to the north. Subsoil consisted of poorly drained sediments that showed evidence of frequent inundation in the form of gleying observed in the stratigraphic profiles. Wetland soils were increasingly evident in shovel tests to the south as test transects neared the canalized stream.

Cultural Resources Identified

No cultural resources were identified within Survey Area CW-7 during the current investigation other than widely scattered demolition debris that did not represent intact or undisturbed archaeological deposits.

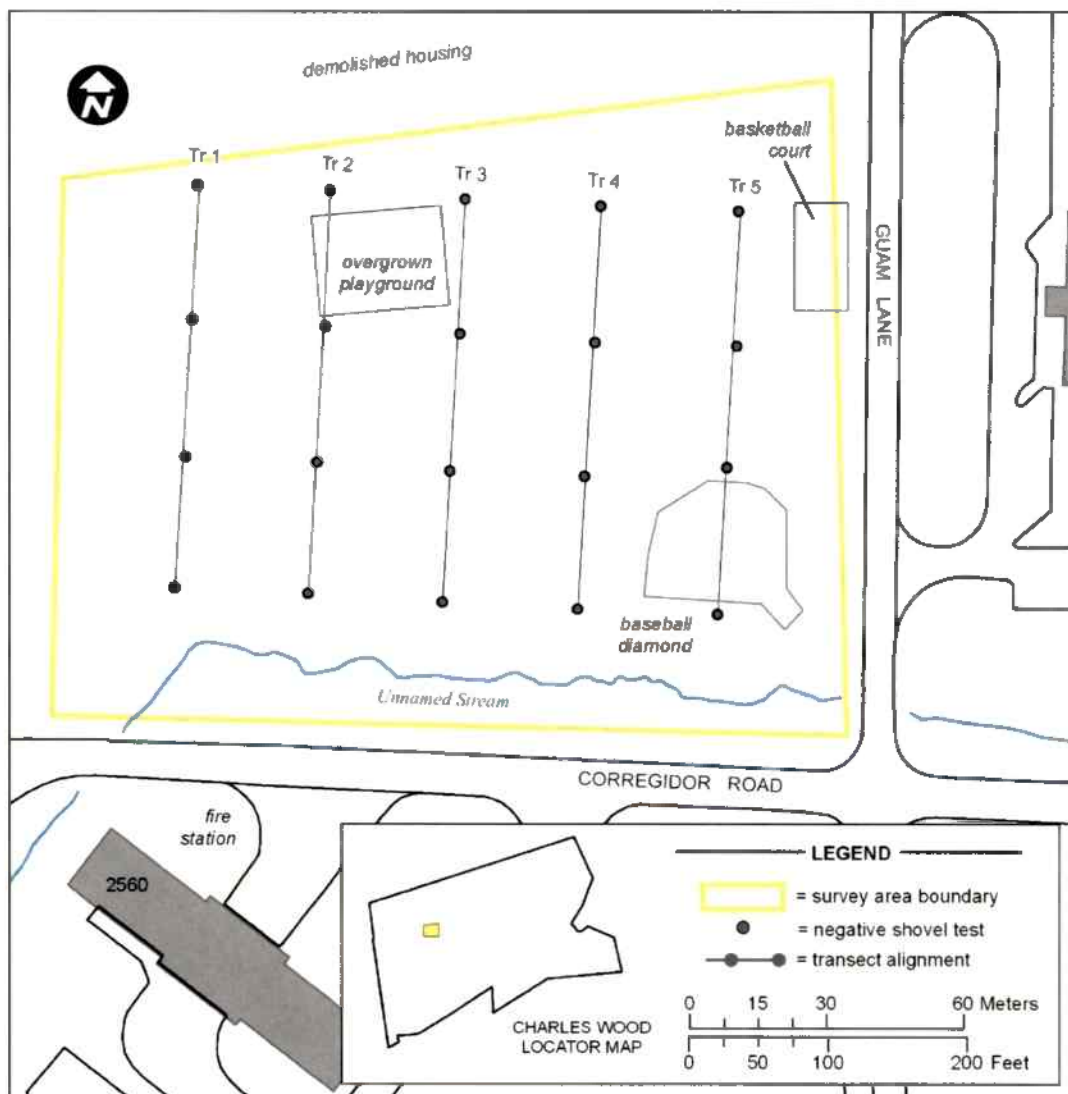


Figure 4-28. Survey Area CW-7

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5.0 MANAGEMENT RECOMMENDATIONS

Versar, Inc., under contract to Parsons, conducted a Phase I archaeological survey on behalf of the Fort Worth District, U.S. Army Corps of Engineers at Fort Monmouth, Monmouth County, New Jersey. The purpose of the survey was to identify archaeological resources within selected portions of the Main Post and Charles Wood Area in compliance with Section 106 of NHPA as required by the BRAC process. The work included subsurface testing within areas demonstrating high-to-moderate archaeological sensitivity; pedestrian reconnaissance and subsurface testing at the locations of previously recorded sites; and development of management recommendations concerning previously recorded and newly identified resources within the survey areas.

5.1 Summary of Survey Results

Fieldwork for this survey consisted of the excavation of 435 shovel tests distributed within 14 non-contiguous survey areas and one previously recorded site location: the total area subjected to subsurface testing was 163 acres (Tables 5-1 and 5-2, Figures 5-1 and 5-2). The proposed field strategy called for testing within 17 survey areas. However, based on discussions with FMDPW staff; review of infrastructure maps and environmental remediation reports; and evidence from pedestrian reconnaissance, on-the-ground survey of four areas and portions of several others was not undertaken. Changes in survey strategy were due to circumstances such as the presence of landfills containing contaminated soil, extensive subsurface utility disturbances, and the extent of wetlands.

The survey identified two previously undocumented archaeological sites (assigned the state trinomials 28MO386 and 28MO387); completed additional documentation for one previously identified site [28MO385 (Site A)]; and recovered one isolated prehistoric artifact (designated as IF-1). The locations of five previously recorded prehistoric sites were surveyed for purposes of relocation (Table 5-3). None of the sites was relocated: in each case, evidence indicated the locations had been disturbed by installation development.

Table 5-1: Summary of Survey Results by Survey Area, Main Post

Survey Area	Acreage	Shovel Tests Excavated	Results
MP-1	2.7	31	No archaeological deposits identified
MP-2	6.8	76	28MO387; historical artifact scatter, small pit feature
MP-3	15.2	67	28MO386; prehistoric lithic scatter
MP-4	4.6	23	28MO385 (Site A); historical brick culvert and subsurface brick feature
MP-5	11.0	27	No archaeological deposits identified
MP-6	9.4	23	No archaeological deposits identified
MP-7	21.0	52	Isolated find (IF-1); Late Archaic Susquehanna projectile point recovered from disturbed context
MP-8	5.6	21	No archaeological deposits identified

Table 5-1: Summary of Survey Results by Survey Area, Main Post

Survey Area	Acreage	Shovel Tests Excavated	Results
MP-9	10.3	21	No archaeological deposits identified
MP-10	[3.0]	0	No testing conducted due to utility disturbance
Total	86.6	341	

Table 5-2: Summary of Survey Results by Survey Area, Charles Wood Area

Survey Area	Acreage	Shovel Tests Excavated	Results
CW-1	2.7	0	No subsurface testing conducted; wetlands
CW-2	10.7	2	Limited testing due to wetlands and ground disturbance. No archaeological deposits identified
CW-3	14.9	2	Limited testing due to wetlands, ground disturbance, and landfills. No archaeological deposits identified
CW-4	12.7	0	No subsurface testing conducted; wetlands, landfill
CW-5	23.4	6	Limited testing due to wetlands and ground disturbance. No archaeological deposits identified
CW-6	6.4	29	No archaeological deposits identified
CW-7	5.6	20	No archaeological deposits identified
Total	76.4	59	

Table 5-3: Summary of Site Relocation Results

Site Number	Acreage	Site Type	Results
28MO126	>1	Prehistoric site lead – reported surface collection	No prehistoric artifacts or deposits identified (pedestrian reconnaissance)
28MO127	>1	Prehistoric site lead – reported surface collection	No prehistoric artifacts or deposits identified (35 shovel tests excavated)
28MO128	>1	Prehistoric site lead – reported surface collection	No prehistoric artifacts or deposits identified (pedestrian reconnaissance)
28MO129	>1	Prehistoric site lead – reported surface collection	No prehistoric artifacts or deposits identified (pedestrian reconnaissance)
28MO130	>1	Prehistoric site lead – reported surface collection	No prehistoric artifacts or deposits identified (pedestrian reconnaissance)

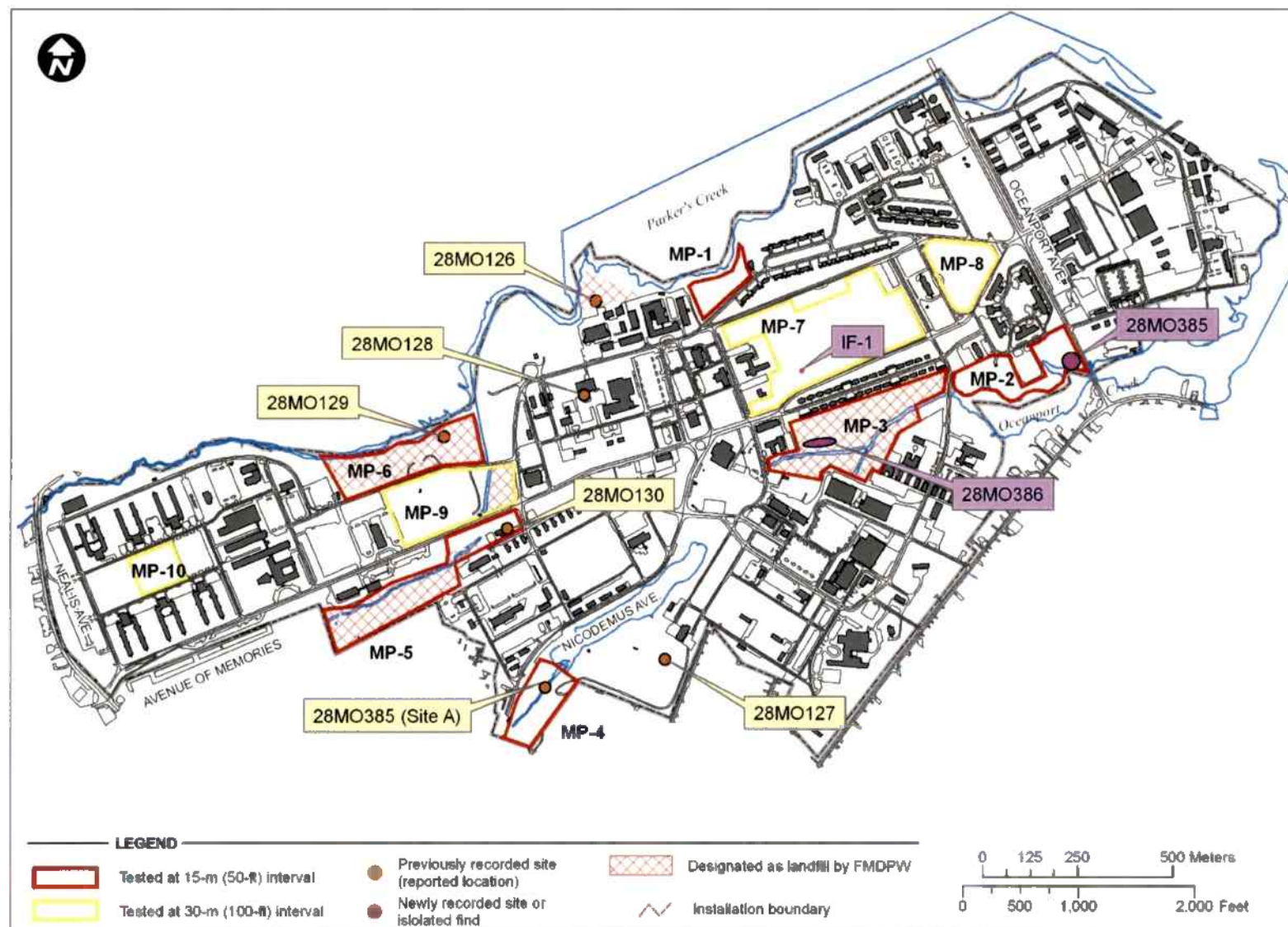


Figure 5-1. Newly and Previously Recorded Cultural Resources and Survey Areas, Main Post

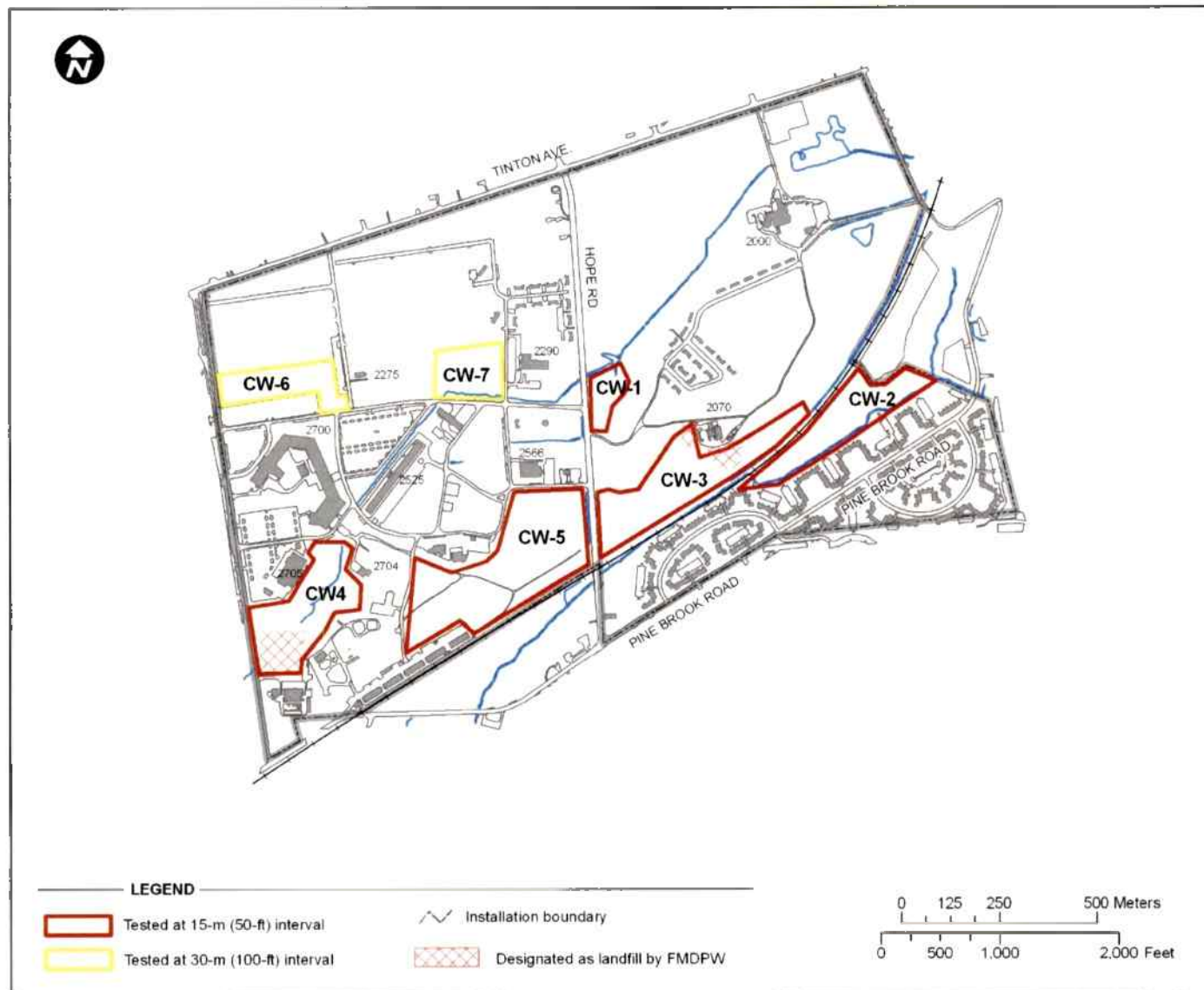


Figure 5-2. Survey Areas, Charles Wood Area

5.2 Management Recommendations

National Register Eligibility Criteria. Significance, as it pertains to archaeological sites, is defined by the National Register criteria for evaluation (36 CFR 60.4) as follows:

“The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and (a) that are associated with events that have made a significant contribution to the broad patterns of history, (b) that are associated with the lives of persons significant in our past, (c) the work of a master, and (d) that have yielded or may be likely to yield information important in prehistory or history.”

Archaeological sites are most often considered eligible for inclusion in the National Register under Criterion (d) (i.e., have yielded or may be likely to yield information important in prehistory or history). All National Register properties, whether listed or eligible, share two defining characteristics: integrity and significance. Possession of only one of these attributes should render a resource “not eligible.”

Table 5-4 summarizes the NRHP recommendations for the sites investigated in the current study. Neither of the two sites identified during the current investigation nor the six previously identified sites are recommended as potentially eligible for the NRHP.

Table 5-4: Summary of Management Recommendations

Site Number	Description	Recommendation
28MO385	Historical culvert and subsurface feature	Not Eligible
28MO386	Prehistoric lithic scatter	Not Eligible
28MO387	Historical artifact scatter and small pit	Not Eligible
28MO126	Prehistoric site lead	Not Eligible
28MO127	Prehistoric site lead	Not Eligible
28MO128	Prehistoric site lead	Not Eligible
28MO129	Prehistoric site lead	Not Eligible
28MO130	Prehistoric site lead	Not Eligible

Site 28MO385 (Site A). The brick culvert over Husky Brook and the nearby subsurface alignment of brick is recommended not eligible for the NRHP. The culvert structure is typical of bridge technology of its era. Masonry arch bridges were the first permanent bridges built in the United States during the eighteenth and nineteenth centuries. Masonry arched technology provided sturdy bridges that were easily adaptable to small crossings. Permanent arch bridges of this type were constructed in the United States as early as the eighteenth century. Most of these bridges were small-scale structures built by local masons. Only during the nineteenth century, with the construction of the National Road and the advent of the railroad era, were masonry arch bridges constructed on a larger scale (Jackson 1988:19). The culvert over Husky Brook is a small-scale and non-distinctive example of masonry arch technology. This structure has no unique or noteworthy engineering or design

features that distinguish it from the larger body of similar nineteenth-century bridges. Research conducted at the Library of Congress found no additional cartographical references for this structure. No evidence has been found that indicates that this structure is associated with any engineer or master builder of bridge technology, nor is it associated with any other person or event of historical importance. Therefore, it is recommended that the culvert does not meet NRHP Criterion A, B, or C. Because the bridge is a common form of engineering for the time and further investigation is unlikely to yield any new or unique information important for the understanding of history, the culvert does not meet NRHP Criterion D. The brick alignment to the east, while probably associated with the culvert chronologically, is in poor depositional context and is unlikely to yield additional information. Site 28MO385 is therefore recommended not eligible for the NRHP. No further work is recommended at the site.

Site 28MO386. This prehistoric site consists of a low-density subsurface scatter of lithic reduction flakes. Seven flakes were recovered within two loci across an area of approximately one-half acre. One of the recovered flakes was not in primary context: it occurred in the topsoil deposit which consisted of fill of unknown provenience. The remaining six artifacts were recovered from well-sorted and otherwise culturally sterile alluvial subsoil that was directly overlain by the disturbed topsoil layer. The soil profile was similar to a soil order referred to as an entisol, a profile with no evidence of common or generic soil horization. The absence of horizons in entisols may be due to active erosion that deters their development, the presence of very old sediments, or of sediments consisting of minerals that do not typically alter to form horizons (USDA 1975:179). In the present case, the soil horizons had been removed by what may be thought of as an artificial form of erosion – grading, which left the undeveloped alluvial C horizon to be capped by redeposited sediments. The artifacts that were present in the soil column were widely and sporadically distributed across a horizontal area measuring more than 100 meters in length. This distribution and the location of the artifacts in alluvial sediments suggested that the artifacts were not in their original vertical proveniences but had migrated downward from the now missing portion of the soil profile to settle in the non-cultural subsoil, probably by means of bioturbation (e.g., rodent burrowing or tree root growth). Thus, the artifacts do not comprise a primary archaeological deposit, but instead represent the disturbed remnants of a cultural deposit that has been removed by development activities. No features were discovered during the survey, and no evidence was encountered to suggest that features might be present: the sandy sediments are unlikely to preserve features. The artifacts, while not in primary context, have been recorded as an archaeological site in order to document the location of the overlying prehistoric occupations that are no longer present. Based on the small number of artifacts at this location, their lack of variety, the absence of temporally diagnostic items, the wide spread distribution of the artifacts, and their lack of contextual integrity (their vertical provenience below the level of original deposition), it is unlikely that the site will yield information important in prehistory. Therefore, Site 28MO386 is recommended not eligible for the NRHP. No further work is recommended at the site.

Site 28MO387. This site consists of a scatter of late-nineteenth and early-twentieth century artifacts occurring in shallow depositional contexts in the northeast corner of survey Area MP2, along Oceanport Avenue. The area is near the location of structures associated with

Drummond Haynes & Co., as they appear on maps from the mid-nineteenth century. In addition to the artifact scatter, a pit feature was identified in a single shovel test. Additional tests on a 2-m (6-ft) grid around the pit did not encounter further evidence of the feature, suggesting that it is limited in size. The surrounding artifact distribution suggested that the same type of debris contained in the pit feature had been spread across the ground surface, in part as a means of disposal while at the same time filling and leveling the area. Artifact dates and types suggested that the deposits probably represented a combination of furnace refuse, possibly from a structure to the north under the modern Oceanport Avenue; demolition debris (mostly brick) from the razing of that or other structures; and discarded material from racegoers around the turn of the twentieth century (e.g., the presence of flatware, beverage bottles, and condiment jars). No evidence of additional features was encountered. The deposits could not be directly associated with an individual or specific nineteenth-century property. The research value of the site is considered to be limited, and it is held that additional work there would provide redundant information. Site 28MO387 is recommended not eligible for the NRHP.

Previously Recorded Prehistoric Sites. None of the five previously recorded prehistoric sites was relocated during this investigation.

Site 28MO126 was originally described as a collection of lithic, ceramic, and shell artifacts dating to the Late Archaic through Middle Woodland time periods. All of the artifacts were recovered from surface contexts. A pedestrian survey of the area found no evidence of prehistoric deposits on the ground surface. Due to the presence of a documented landfill containing contaminated soil, subsurface testing was not conducted at the reported site location. Given military development of the area and documented landfill practices and contaminated soil remediation activities, the likelihood of intact prehistoric deposits remaining at this location is considered to be low. Based on a lack of integrity and the absence of additional prehistoric artifacts at the reported site location, the site is unlikely to yield information important in prehistory and is therefore recommended not eligible for the NRHP. No further work is recommended at Site 28MO126.

Site 28MO127 was originally described as a collection of two untyped projectile points and a stone "ball" recovered from a surface context (Klein et al 1984). Pedestrian reconnaissance and systematic subsurface testing in the vicinity of the reported location did not identify any prehistoric deposits. Recent development, such as the construction of the running track and Husky Brook Lake has disturbed a significant portion of the reported site location. The likelihood of intact prehistoric deposits remaining in this area is low. Based on a lack of integrity and the absence of additional prehistoric artifacts at the reported site location the site is unlikely to yield information important in prehistory and is therefore recommended as not eligible for the NRHP. No further work is recommended for Site 28MO127.

Site 28MO128 was originally described as a collection of several untyped quartz triangular and tear-drop projectile points recovered from surface contexts (Klein et al 1984). Pedestrian reconnaissance in the vicinity of the reported location did not identify any prehistoric deposits. Subsurface testing was not conducted due to extensive development in the vicinity of the site location. Review of the USGS 7.5' quadrangle of the area, dated 1954, shows rows

of now-demolished, barrack-style structures to have been located in this area. Given the construction and demolition of earlier structures and the recent construction of Buildings 600, 601, 602, and 603 and associated utilities, the likelihood of intact subsurface prehistoric deposits being present at this location is very low. Based on a lack of integrity and the absence of additional prehistoric artifacts at the reported site location, the site is unlikely to yield information important in prehistory and is therefore recommended not eligible for the NRHP. No further work is recommended at Site 28MO128.

Site 28MO129 is represented by a single Meadowood projectile point recovered from a surface context (Klein et al 1984). The reported location of Site 28MO129 was included within Survey Area MP-6, as designated in the current investigation. However, subsurface testing was not conducted in a large portion of the survey area due to the presence of a former landfill containing hazardous materials. Pedestrian survey of the site location did not identify any prehistoric surface deposits. The site likely represents an isolated occurrence; however, military landfill practices and development of the installation have reduced the likelihood of additional intact deposits remaining within this area. Based on a lack of integrity and the absence of additional prehistoric artifacts at the reported site location, the site is unlikely to yield information important in prehistory and is therefore recommended not eligible for the NRHP. No further work is recommended at Site 28MO129.

Site 28MO130 is represented by a single, untyped argillite projectile point recovered from a surface context (Klein et al 1984). The reported location of Site 28MO130 was included within Survey Area MP-5, as designated in the current investigation. Subsurface testing at the site location showed the area has been disturbed by cut-and-fill episodes, utilities, and construction of Building 1123. Although the UTM coordinates provided by Klein et al. (1984) place the site adjacent to the building, the description noted by Klein et al. describes a wide area "...near the bowling center (Building 689) between Husky Brook Lake and Lafetra Brook". However, the likelihood of subsurface deposits remaining intact, even within this broad area of the Main Post, is low considering the multiple construction and demolition episodes documented on historical maps and FMDPW records. Review of the USGS 7.5' quadrangle of the area, dated 1954, shows several rows of now demolished barracks-style structures to have been located between the Bowling Center and Husky Brook Lake. Additional subsurface testing, to the northwest of the Bowling Center within Survey Areas MP-9 and MP-6, did not identify prehistoric deposits. Based on a lack of subsurface integrity and the absence additional prehistoric artifacts at the reported site location the site is unlikely to yield information important in prehistory and is therefore recommended not eligible for the NRHP. No further work is recommended at Site 28MO130.

None of the identified cultural resources investigated in this study are eligible for the NRHP. No further cultural resources investigations are recommended for Fort Monmouth.

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1889 *Wolverton's Atlas of Monmouth County*. Chester Wolverton, New York. Copy on file in the Shrewsbury Public Library, Shrewsbury, New Jersey.

APPENDIX A:

PROJECT PERSONNEL

PROJECT PERSONNEL

Brian D. Crane, Project Manager, is a Senior Project Manager in the Cultural Resources Division of Versar and served as the Project Manager for this project. Dr. Crane has twenty years of experience in all phases of historic and prehistoric archaeological projects in the United States, Caribbean, and Central America, with academic projects and projects in compliance with Section 106 of the National Historic Preservation Act of 1966 and other federal, state, and local legislation. Responsibilities have included field supervision, historic research, report writing, and laboratory work. Areas of expertise include historical archaeology, urban archaeology, and African American archaeology. Dr. Crane has prepared numerous cultural resources compliance and planning documents for the Air Force and Army.

Eric Griffiths, Architectural Historian, has over twelve years of professional experience conducting architectural and historical investigations for projects in Pennsylvania, Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, New York, New Jersey, Oklahoma, Michigan, Texas, Iowa, Illinois, New Mexico, Wisconsin, the District of Columbia, and the country of Japan primarily undertaken in fulfillment of Sections 106 and 110 of the National Historic Preservation Act of 1966, and the National Environmental Policy Act of 1969 (NEPA). These projects entailed the field documentation and National Register eligibility evaluation of a wide range of resource types; and Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) documentation.

Rachael Mangum, B.A. is a Staff Archaeologist and Archaeological Laboratory Manager with Versar, Inc., and served as Logistics Coordinator for the project. She graduated with a B.A. in Anthropology in 1997 from Wake Forest University, Winston-Salem, North Carolina, and is currently completing an M.A. in Anthropology from George Washington University, Washington, DC. Ms. Mangum has five years experience as an archaeologist in the Mid-Atlantic region of the United States. Responsibilities have included conducting fieldwork, artifact processing and analysis, archival research, database management, and report writing. She has oversight for the full-scale archaeological laboratory and laboratory staff at Versar.

Dennis Knepper, B.A. is a Staff Archaeologist with Versar and served as field director for this project. Mr. Knepper graduated with a B.A. in History in 1977 from Texas Christian University, Fort Worth, Texas. His experience as an archaeologist extends from Texas, the Southwest and Mid-Atlantic regions of the United States to Latin America, the Caribbean, and East Asia. He has directed numerous field projects in compliance with Sections 106 and 110 of NHPA, with responsibilities including project design and implementation, field and laboratory supervision, artifact analysis, archival research, database management, report writing, and GIS applications.

Christopher Bowen, B.S. is a Staff Archaeologist with Versar and served as crew chief for this project. He graduated with a B.S. in Interdisciplinary Studies, with concentrations in anthropology, geology, and geography from Radford University, Virginia in 1992. Mr.

Bowen's experience extends from the Mid-Atlantic regions of the United States to the Mid-West, Colorado, and California. He has directed numerous field projects in compliance with Sections 106 and 110 of NHPA, with responsibilities ranging from project design and implementation, field and laboratory staff supervision, artifact analysis, archival research, database management, report writing, and GIS applications.

Carter Shields, B.A. is the Cataloging Supervisor with Versar and directed cataloging activities for this project. Ms. Shields has over 17 years experience doing both archaeological field and laboratory work on prehistoric and historical sites in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, as well as other federal, state, and local legislation. Project locations include the Mid-Atlantic, Northeastern, Southeastern, and Midwestern regions of the United States and the Caribbean. She has over fifteen years of experience in archaeological artifact analysis, laboratory supervision, and database management.

Emily Williamson, B.A. is a Staff Archaeologist/Cataloger with Versar and served as artifact cataloger for this project. Mrs. Williamson was trained in archaeology at the University of Mississippi and has ten years experience as an archaeologist in the Mid-Atlantic region of the United States, and three years as a lab technician in the Center for Archaeological Research, University of Mississippi. Responsibilities have included conducting field work, artifact processing and analysis, archival research, database management, graphics production, and report writing. She has cataloged both prehistoric and historic artifact collections from Colorado, Delaware, Florida, Indiana, Mississippi, New York, and Virginia.

APPENDIX B:

ARTIFACT INVENTORY

ARTIFACT INVENTORY CODES

Most of the artifact inventory entries consist of words that are self-explanatory, however others were too lengthy to fit into the printed format and have been abbreviated. The abbreviated entries are listed below.

GROUP

ACT	Activity
ARCH	Architectural
DOM	Domestic
FAUN	Fauna
PER	Personal
PREH	Prehistoric
UNID	Unidentified

CLASS

AMMO	Ammunition
BOTT	Bottle
CM	Construction material
FAST	Fastener
FC/S	Food Consumption and Serving
FSTOR	Food storage
HARD	Hardware
L/H	Lighting/Heating
MAMM	Mammal
REC	Recreation
TOB	Tobacco
UNID	Unidentified
VESS	Vessel

MATERIAL

ARG	Argillite
CA	Cupreous Alloy
CE	Coarse Earthenware
FA	Ferrous Alloy
PORC	Porcelain
RE	Refined Earthenware
SW	Stoneware

COLOR (Body and Decoration)

AMB	Amber
AQU	Aqua
BLK	Black
BLU	Blue
BRN	Brown
CLR	Clear
GRY	Grey
OLV	Olive
POL	Polychrome
WHT	White

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SITE	AREA	SHOVEL TEST PIT	EAST	NORTH	STRAT.	COUNT	GROUP	CLASS	MATERIAL	TYPE	FUNCTION	DECORATION	SEGMENT	BODY COLOR	DECOR. COLOR	NOTES	BAG NO.	ART. NO
28MO387	MP2	3-1	560	160	A	1	DOM	BOTT	GLASS	BLOWN-IN- MOLD	PHARMACEUTICAL		NECK	AQU		RECESSED PANELS, TOOLED OIL FINISH, POPULAR CA. 1875-1920	1	1
28MO387	MP2	3-1	560	160	A	1	DOM	BOTT	GLASS				BODY	AQU			1	2
28MO387	MP2	3-1	560	160	A	1	ARCH	CM	GLASS		WINDOW		FRAGMENT	CLR			1	3
28MO387	MP2	4-1 E7.5	567.5	145	A	1	DOM	L/H	GLASS		LAMP		CHIMNEY	CLR			2	1
28MO387	MP2	4-1 S7.5	560	137.5	A	1	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BODY			SPALL	3	1
28MO387	MP2	4-1 S7.5	560	137.5	A	1	DOM	BOTT	GLASS				BODY	AQU			3	2
28MO387	MP2	4-1 S7.5 W7.5	552.5	137.5	A	3	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BODY			SPALL	4	1
28MO387	MP2	4-1 S7.5 W15	545	137.5	A	2	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BODY			SPALL	5	1
28MO387	MP2	5-1 S3.5	560	126.5	A	2	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BODY			SPALL	6	1
28MO387	MP2	5-1 S3.5	560	126.5	A	1	UNID	UNID	PORC	INDUSTRIAL						SPALL	6	2
28MO387	MP2	5-1 S3.5	560	126.5	A	12	DOM	BOTT	GLASS				BODY	AQU		BURNED	6	3
28MO387	MP2	5-1 S3.5	560	126.5	A	1	DOM	BOTT	GLASS				BODY	AMB			6	4
28MO387	MP2	5-1 S3.5	560	126.5	A	1	PER	FAST	PORC	4-HOLE	BUTTON		HALF			6/16" DIAMETER, PROSSER-TYPE, 1840+ (ALBERT & ADAMS 1970)	6	5
28MO387	MP2	5-1 S3.5	560	126.5	A	5	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			6	6
28MO387	MP2	5-1 S3.5	560	126.5	A	4	ARCH	HARD	FA	WIRE	NAIL		FRAGMENT				6	7
28MO387	MP2	5-1 S3.5	560	126.5	A	5	ARCH	HARD	FA	UNIDENTIFIED	NAIL		FRAGMENT				6	8
28MO387	MP2	5-1 S3.5	560	126.5	B	1	DOM	FC/S	RE	YELLOWWARE	HOLLOWWARE	UNDECORATED	FRAGMENT			SPALL	7	1
28MO387	MP2	5-1 S3.5	560	126.5	B	1	DOM	BOTT	GLASS				FRAGMENT	AQU		BURNED	7	2
28MO387	MP2	5-1 S3.5	560	126.5	B	1	DOM	BOTT	GLASS				FRAGMENT	AMB			7	3
28MO387	MP2	5-1 S3.5	560	126.5	B	1	DOM	L/H	GLASS		LAMP		CHIMNEY	CLR			7	4
28MO387	MP2	5-1 S3.5	560	126.5	B	16	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			7	5
28MO387	MP2	5-1 S3.5	560	126.5	B	1	ARCH	HARD	FA	WIRE	NAIL		FRAGMENT				7	6
28MO387	MP2	5-1 W7.5	552.5	130	A	1	DOM	VESS	GLASS				FRAGMENT	CLR	RED	FLASHED RED	8	1
28MO387	MP2	5-1 W7.5	552.5	130	A	3	DOM	BOTT	GLASS				FRAGMENT	AMB			8	2
28MO387	MP2	5-1 W7.5	552.5	130	A	1	DOM	L/H	GLASS		LAMP		CHIMNEY	CLR			8	3
28MO387	MP2	5-1 W7.5	552.5	130	A	1	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			8	4
28MO387	MP2	5-1 W7.5	552.5	130	B	1	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BODY				9	1
28MO387	MP2	5-1 W7.5	552.5	130	B	2	DOM	BOTT	GLASS				BODY	AMB			9	2
28MO387	MP2	5-1 W7.5	552.5	130	B	1	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			9	3
28MO387	MP2	5-1 E7.5	567.5	130	A	1	ARMS	AMMO	CA		CARTRIDGE		WHOLE			STAMPED "WRA CO / 38 S & W", WINCHESTER REPEATING ARMS CO., .38 SMITH AND WESSON CARTRIDGE, 1866-1932 (Steinhauer 2007)	10	1
28MO387	MP2	5-1 E7.5	567.5	130	A	1	DOM	FC/S	RE	WHITEWARE		HAND PAINTED	BODY		POL	RED, GREEN FLORAL PAINTED	10	2
28MO387	MP2	5-1 E7.5	567.5	130	A	3	DOM	FC/S	RE	WHITEWARE		UNDECORATED	RIM/BODY				10	3
28MO387	MP2	5-1 E7.5	567.5	130	A	1	DOM	BOTT	GLASS		MILK		BODY	CLR		EMBOSSD PORTION OF LETTER OR NUMBER	10	4
28MO387	MP2	5-1 E7.5	567.5	130	A	2	DOM	BOTT	GLASS				BODY	AQU			10	5
28MO387	MP2	5-1 E7.5	567.5	130	A	1	DOM	BOTT	GLASS				BODY	AMB		PANEL	10	6
28MO387	MP2	5-1 E7.5	567.5	130	A	4	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			10	7
28MO387	MP2	5-1 E7.5	567.5	130	A	1	UNID	HARD	FA		BAIL HANDLE		WHOLE			1/4" WIRE IN 4" DIAMETER OVAL, BAIL HANDLE OR CHAIN LINK	10	8
28MO387	MP2	5-1 E7.5	567.5	130	A	2	UNID	HARD	FA		WIRE		FRAGMENT				10	9
28MO387	MP2	5-1 E7.5	567.5	130	A	1	ARCH	HARD	FA	CUT	NAIL		FRAGMENT				10	10
28MO387	MP2	5-1 E7.5	567.5	130	A	3	ARCH	HARD	FA	UNIDENTIFIED	NAIL		FRAGMENT				10	11
28MO387	MP2	5-1 E7.5	567.5	130	A	1	ARCH	CM	BRICK				FRAGMENT				10	12
28MO387	MP2	6-1	560	115	A	1	DOM	BOTT	GLASS	BLOWN-IN- MOLD	WATER		LIP	AQU		APPLIED BLOB FINISH, POPULAR CA. 1840 - CA.1890	11	1
28MO387	MP2	6-1	560	115	A	2	DOM	BOTT	GLASS	BLOWN-IN- MOLD	PHARMACEUTICAL		LIP/NECK	AMB		TOOLED DOUBLE RING CLOSURE, POPULAR CA. 1875 - CA. 1920	11	2
28MO387	MP2	6-1	560	115	A	1	DOM	BOTT	GLASS				BODY	OLV			11	3
28MO387	MP2	6-1	560	115	A	5	DOM	BOTT	GLASS				BODY	AMB			11	4
28MO387	MP2	6-1	560	115	A	4	DOM	BOTT	GLASS				BASE/BODY	AQU			11	5
28MO387	MP2	6-1	560	115	A	1	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			11	6

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SITE	AREA	SHOVEL TEST PIT	EAST	NORTH	STRAT.	COUNT	GROUP	CLASS	MATERIAL	TYPE	FUNCTION	DECORATION	SEGMENT	BODY COLOR	DECOR. COLOR	NOTES	BAG NO.	ART. NO.
28MO387	MP2	6-1	560	115	A	2	ARCH	HARD	FA	WIRE	NAIL		FRAGMENT				11	7
28MO387	MP2	6-1	560	115	A	2	ARCH	HARD	FA	CUT	NAIL		FRAGMENT				11	8
28MO387	MP2	6-1	560	115	A	2	UNID	UNID	FA		SHEET		FRAGMENT			FLAT FRAGS.	11	9
28MO387	MP2	6-1 W7.5	552.5	115	A	1	DOM	BOTT	GLASS	BLOWN-IN-MOLD			FRAGMENT	AQU		EMBOSSD "B.." OR "R.."	12	1
28MO387	MP2	6-1 E7.5	567.5	115	A	1	PER	FAST	PORC	4-HOLE	BUTTON		WHOLE			PROSSER-TYPE, 5/8" DIAMETER, BURNED, 1840+ (ALBERT & ADAMS 1970)	13	1
28MO387	MP2	6-1 E7.5	567.5	115	A	2	DOM	FC/S	RE	IRONSTONE	PLATE	MOLDED	RIM			CURVILINEAR MOLDED DECORATION	13	2
28MO387	MP2	6-1 E7.5	567.5	115	A	2	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BODY				13	3
28MO387	MP2	6-1 E7.5	567.5	115	A	1	DOM	FPREP	CE	REDWARE	BOWL		RIM			BROWN LEAD-GLAZED INT. AND EXT.	13	4
28MO387	MP2	6-1 E7.5	567.5	115	A	1	DOM	BOTT	GLASS	BLOWN-IN-MOLD			BODY	OLV		3-PIECE MOLD	13	5
28MO387	MP2	6-1 E7.5	567.5	115	A	1	DOM	BOTT	GLASS				BODY	AQU		EMBOSSD "S..."	13	6
28MO387	MP2	6-1 E7.5	567.5	115	A	1	PER	GROOMING	GLASS		MIRROR		FRAGMENT				13	7
28MO387	MP2	6-1 E7.5	567.5	115	A	4	DOM	L/H	GLASS		LAMP		CHIMNEY	CLR			13	8
28MO387	MP2	6-1 E7.5	567.5	115	A	7	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			13	9
28MO387	MP2	6-1 E7.5	567.5	115	B	1	DOM	FC/S	RE	WHITEWARE	HOLLOWWARE	HAND PAINTED	BODY		BLU		14	1
28MO387	MP2	6-1 E7.5	567.5	115	B	2	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BASE/BODY				14	2
28MO387	MP2	6-1 E7.5	567.5	115	B	1	DOM	BOTT	GLASS				BODY	OLV		SPALL	14	3
28MO387	MP2	6-1 E7.5	567.5	115	B	1	DOM	VESS	GLASS				BODY	CLR			14	4
28MO387	MP2	6-1 E7.5	567.5	115	B	1	DOM	VESS	GLASS		TUMBLER		BODY	CLR		PANELED	14	5
28MO387	MP2	6-1 E7.5	567.5	115	B	2	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			14	6
28MO387	MP2	6-1 N3.5	560	119	A	1	PER	TOB	BALLCLAY		PIPE		BOWL			EMBOSSD RIBS AND DOTS	15	1
28MO387	MP2	6-1 N3.5	560	119	A	1	PER	TOB	BALLCLAY		PIPE		STEM			5/64" BORE DIAMETER	15	2
28MO387	MP2	6-1 N3.5	560	119	A	1	PER	FAST	PORC	4-HOLE	BUTTON		WHOLE			7/16" DIAMETER, PROSSER-TYPE, 1840+ (ALBERT & ADAMS 1970)	15	3
28MO387	MP2	6-1 N3.5	560	119	A	1	PER	SHOE	CA/LEATHER		HOOK AND GROMMET					BOOT LACE HOOK	15	4
28MO387	MP2	6-1 N3.5	560	119	A	6	PER	SHOE	CA/LEATHER		GROMMET						15	5
28MO387	MP2	6-1 N3.5	560	119	A	1	ARMS	AMMO	CA		CARTRIDGE		WHOLE			STAMPED "UMC / 32 S&W", UNION METALLIC CARTRIDGE COMPANY, .32 SMITH & WESSON CARTRIDGE, 1867-1911 (Steinhauer 2007)	15	6
28MO387	MP2	6-1 N3.5	560	119	A	1	DOM	FC/S	RE	WHITEWARE	BOWL	ANNULAR	BODY			BLUE, BROWN	15	7
28MO387	MP2	6-1 N3.5	560	119	A	2	DOM	FC/S	RE	WHITEWARE	SAUCER	HAND PAINTED	RIM			RED, GREEN FLORAL PAINTED	15	8
28MO387	MP2	6-1 N3.5	560	119	A	4	DOM	FC/S	RE	WHITEWARE	FLATWARE	UNDECORATED	RIM/BODY				15	9
28MO387	MP2	6-1 N3.5	560	119	A	5	DOM	BOTT	GLASS				BODY	AQU			15	10
28MO387	MP2	6-1 N3.5	560	119	A	1	DOM	BOTT	GLASS	BLOWN-IN-MOLD			BASE	AQU		EMBOSSD LARGE, UNEVEN "D"	15	11
28MO387	MP2	6-1 N3.5	560	119	A	7	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			15	12
28MO387	MP2	6-1 N3.5	560	119	A	1	UNID	HARD	FA				FRAGMENT			7/8" KNOB WITH WIRE	15	13
28MO387	MP2	6-1 N3.5	560	119	A	10	ARCH	HARD	FA	CUT	NAIL		FRAGMENT				15	14
28MO387	MP2	6-1 N3.5	560	119	A	7	ARCH	HARD	FA	UNIDENTIFIED	NAIL		FRAGMENT				15	15
28MO387	MP2	6-1 N3.5	560	119	A	2	FAUN	CLAM	SHELL				FRAGMENT				15	16
28MO387	MP2	6-1 N3.5	560	119	B	1	DOM	BOTT	GLASS	BLOWN-IN-MOLD	WATER		WHOLE	AQU		TOOLED BLOB FINISH WITH REMNANTS OF IRON LIGHTNING CLOSURE, POPULAR CA. 1875-1920, EMBOSSD "Registered / John Heldt / Long Branch / N. J. " on side, "JH [merged] / 456" on base	16	1
28MO387	MP2	6-1 N3.5	560	119	B	4	FAUN	MAMM	BONE				FRAGMENT				16	2
28MO387	MP2	6-1 N5.5	560	120.5	A	1	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BODY				17	1

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SITE	AREA	SHOVEL TEST PIT	EAST	NORTH	STRAT.	COUNT	GROUP	CLASS	MATERIAL	TYPE	FUNCTION	DECORATION	SEGMENT	BODY COLOR	DECOR. COLOR	NOTES	BAG NO.	ART. NO.
28MO387	MP2	6-1 N5.5	560	120.5	A	8	DOM	FSTOR	SW	AMERICAN STONEWARE	POT	HAND PAINTED	RIM/BODY	GRY	BLU	SALT-GLAZED EXT., ALBANY SLIP-GLAZED INT., BLUE-FILLED STAMPED MARK BELOW LIP "B[ROWN BRO]THER[S] / HUNT[IN]GTON / L.I.", LONG ISLAND POTTERS 1863- 1905 (KETCHUM 1991:64)	17	2
28MO387	MP2	6-1 N5.5	560	120.5	A	1	DOM	BOTT	GLASS	BLOWN-IN- MOLD			BODY	AQU		SMALL, ROUND, EMBOSSSED "...PER..."	17	3
28MO387	MP2	6-1 N5.5	560	120.5	A	1	DOM	BOTT	GLASS				BODY	AQU		SMALL, ROUND, EMBOSSSED "...DE... / VE..."	17	4
28MO387	MP2	6-1 N5.5	560	120.5	A	1	DOM	BOTT	GLASS				BODY	OLV		LIGHT OLIVE	17	5
28MO387	MP2	6-1 N5.5	560	120.5	A	1	DOM	BOTT	GLASS				BODY	CLR			17	6
28MO387	MP2	6-1 N5.5	560	120.5	A	10	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			17	7
28MO387	MP2	6-1 N5.5	560	120.5	A	1	ARCH	HARD	FA	CUT	SPIKE		FRAGMENT				17	8
28MO387	MP2	6-1 N7.5	560	122.5	A-C	2	DOM	FC/S	RE	IRONSTONE		UNDECORATED	BODY				18	1
28MO387	MP2	6-1 N7.5	560	122.5	A-C	3	DOM	FC/S	RE	WHITEWARE		UNDECORATED	HANDLE / BODY				18	2
28MO387	MP2	6-1 N7.5	560	122.5	A-C	1	DOM	FC/S	RE	SAUCER		HAND PAINTED	RIM			GREEN PAINTED	18	3
28MO387	MP2	6-1 N7.5	560	122.5	A-C	11	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			18	4
28MO387	MP2	6-1 N7.5	560	122.5	A-C	2	ARCH	HARD	FA	CUT	NAIL		FRAGMENT				18	5
28MO387	MP2	6-1 N7.5	560	122.5	A-C	2	ARCH	HARD	FA	UNIDENTIFIED	NAIL		FRAGMENT				18	6
28MO387	MP2	6-1 N7.5	560	122.5	A-C	1	ARCH	HARD	FA	CUT	SPIKE		WHOLE			60d (6")	19	1
28MO387	MP2	6-1 N7.5	560	122.5	C	2	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			20	1
28MO387	MP2	6-1 N7.5	560	122.5	C	1	FUEL	L/H	CLINKER				FRAGMENT			W/ METAL ADHERED	20	2
28MO387	MP2	6-1 N7.5	560	122.5	C	3	ARCH	HARD	FA	CUT	NAIL		FRAGMENT			3+NAILS, CONGLOMERATED	20	3
28MO387	MP2	6-1 N7.5 E2	562	122.5	B	2	DOM	FC/S	RE	WHITEWARE		UNDECORATED	RIM/BASE			BURNED	21	1
28MO387	MP2	6-1 N7.5 E2	562	122.5	B	2	DOM	BOTT	GLASS				FRAGMENT	AQU		BURNED	21	2
28MO387	MP2	6-1 N7.5 E2	562	122.5	B	1	DOM	BOTT	GLASS	BLOWN-IN- MOLD			BODY	AQU		SMALL, ROUND, EMBOSSSED "...RO..."	21	3
28MO387	MP2	6-1 N7.5 E2	562	122.5	B	1	DOM	L/H	GLASS		LAMP		CHIMNEY	CLR			21	4
28MO387	MP2	6-1 N7.5 E2	562	122.5	B	1	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			21	5
28MO387	MP2	6-1 N7.5 E2	562	122.5	B	1	UNID	UNID	FA		SHEET		FRAGMENT			FLAT FRAG.	21	6
28MO387	MP2	6-1 N7.5 E2	562	122.5	B	1	ARCH	CM	BRICK				FRAGMENT			2 1/4" THICK, BURNED	21	7
28MO387	MP2	6-1 N7.5 E2	562	122.5	B	2	FUEL	L/H	COAL				FRAGMENT				21	8
28MO387	MP2	6-1 N7.5 E2	562	122.5	B	2	FAUN	CLAM	SHELL				FRAGMENT				21	9
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A	1	FAUN	MAMM	BONE				FRAGMENT				22	1
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A	1	FAUN	PIG	TOOTH				FRAGMENT				22	2
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A	8	FAUN	CLAM	SHELL				FRAGMENT				22	3
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	1	PER	TOB	BALLCLAY		PIPE		STEM			5/64" BORE DIAMETER	23	1
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	1	PER	REC	PORC	HARD PASTE	DOLL	UNDECORATED	FRAGMENT			DOLL ARM OR LEG FRAG.	23	2
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	16	DOM	FC/S	RE	IRONSTONE	SAUCER	UNDECORATED	RIM/BASE			MEND, BURNED, BASE PRINTED IN BROWN "PARISIAN GRANITE / (ROYAL CREST) / THOMAS ELSMORE & SON / ENGLAND", 1872-1887 (GODDEN 1991:235)	23	3
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	4	DOM	FC/S	RE	IRONSTONE	BOWL	UNDECORATED	RIM/BODY			SERVING DISH	23	4
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	7	DOM	BOTT	SW				BODY/BASE			BURNED, BRISTOL- GLAZED?	23	5

Phase I Archaeological Survey
Fort Monmouth, NJ

SITE	AREA	SHOVEL TEST PIT	EAST	NORTH	STRAT.	COUNT	GROUP	CLASS	MATERIAL	TYPE	FUNCTION	DECORATION	SEGMENT	BODY COLOR	DECOR. COLOR	NOTES	BAG NO.	ART. NO.
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	2	DOM	FC/S	RE	WHITEWARE	BOWL	ANNULAR	BASE			MEND, BURNED, BROWN ANNULAR DEC.	23	6
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	1	DOM	FC/S	RE	IRONSTONE	TEAPOT	UNDECORATED	SPOUT				23	7
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	1	DOM	BOTT	GLASS	BLOWN-IN- MOLD	CONDIMENT		BASE	CLR		EMBOSSED "SHREWSBURY" / H. & CO. / N.Y. / TOMATOKETCHUP", E.C. HAZARD & CO., 1883+ (SMITH 1996:39)	23	8
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	1	DOM	BOTT	GLASS	BLOWN-IN- MOLD	EXTRACT		LIP/NECK	CLR		TOOLED PATENT LIP WITH MOLDED RING ON LOWER NECK (BALL NECK EXTRACT), POPULAR CA. 1870 - CA. 1920	23	9
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	11	DOM	BOTT	GLASS	BLOWN-IN- MOLD	DAIRY		BASE/BODY	AQU		EMBOSSED "Mc[CUE'S...] CO. / LONG BRANCH / N. J. // M" ON SIDE, "M" ON BASE, POST BOTTOM MOLD, CA. 1840-CA.1920	23	10
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	11	DOM	BOTT	GLASS	BLOWN-IN- MOLD	BEER		LIP/BODY	AMB		APPLIED MINERAL FINISH, POPULAR CA. 1840 - CA. 1890	23	11
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	7	DOM	BOTT	GLASS				BODY	CLR			23	12
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	4	DOM	BOTT	GLASS				BODY	CLR/ AQU		BURNED	23	13
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	4	DOM	L/H	GLASS		LAMP	ETCHED	CHIMNEY	CLR		GROUND AND ETCHED FLORAL DECORATION	23	14
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	49	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			23	15
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	1	UNID	HARD	FA		STRIP		FRAGMENT			3/4" WIDE STRIP	23	16
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	6	ARCH	HARD	FA	CUT	NAIL		FRAGMENT				23	17
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	2	ARCH	HARD	FA	WIRE	NAIL		FRAGMENT				23	18
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	3	ARCH	CM	WOOD				FRAGMENT			SINGED FRAGMENTS	23	19
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	2	FUEL	L/H	CLINKER								23	20
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	3	FAUN	CLAM	SHELL				FRAGMENT				23	21
28MO387	MP2	6-1 N7.5 E3.5	563.5	122.5	A-B	1	FAUN	MAMM	BONE				FRAGMENT			CALCINED	23	22
28MO387	MP2	6-1 N7.5 E10	570	122.5	A	1	DOM	FC/S	RE	WHITEWARE	PLATE	TRANSFER PRINTED	BODY		RED		24	1
28MO387	MP2	6-1 N7.5 E10	570	122.5	A	1	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BODY			SPALL	24	2
28MO387	MP2	6-1 N7.5 E10	570	122.5	A	1	DOM	L/H	GLASS		LAMP		CHIMNEY	CLR			24	3
28MO387	MP2	6-1 N7.5 E10	570	122.5	A	3	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			24	4
28MO387	MP2	6-1 N7.5 W2	558	122.5	A	1	DOM	FC/S	RE	WHITEWARE		LINED	RIM		BLK		25	1
28MO387	MP2	6-1 N7.5 W2	558	122.5	A	4	DOM	FC/S	RE	WHITEWARE		UNDECORATED	BODY			SPALLS	25	2
28MO387	MP2	6-1 N7.5 W2	558	122.5	A	1	DOM	VESS	GLASS				BODY	CLR			25	3
28MO387	MP2	6-1 N7.5 W2	558	122.5	A	1	DOM	BOTT	GLASS				BODY	AMB			25	4
28MO387	MP2	6-1 N7.5 W2	558	122.5	A	3	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			25	5
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	A	1	DOM	FC/S	RE	UNIDENTIFIED	FLATWARE	TRANSFER PRINTED	RIM		BLU	PEARLWARE OR WHITEWARE SPALL, PROB. BLUE WILLOW	26	1
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	A	1	DOM	FC/S	RE	WHITEWARE		TRANSFER PRINTED	BODY		BLU		26	2

Phase I Archaeological Survey
Fort Monmouth, NJ

SITE	AREA	SHOVEL TEST PIT	EAST	NORTH	STRAT.	COUNT	GROUP	CLASS	MATERIAL	TYPE	FUNCTION	DECORATION	SEGMENT	BODY COLOR	DECOR. COLOR	NOTES	BAG NO.	ART. NO.
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	A	1	DOM	VESS	GLASS				BODY	CLR			26	3
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	A	1	DOM	BOTT	GLASS				BODY	AQU			26	4
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	A	2	DOM	L/H	GLASS		LAMP		CHIMNEY	CLR			26	5
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	A	1	UNID	UNID	GLASS				FRAGMENT	CLR		BURNED	26	6
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	A	5	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			26	7
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	A	2	ARCH	HARD	FA	CUT	NAIL		FRAGMENT				26	8
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	A	2	FUEL	L/H	CLINKER								26	9
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	B	1	UNID	UNID	PORC				FRAGMENT			FLAT, TAPERED FRAGMENT	27	1
28MO387	MP2	6-1 N7.5 W3.5	556.5	122.5	B	1	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			27	2
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	A	3	DOM	FC/S	RE	IRONSTONE		UNDECORATED	BODY				28	1
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	A	3	DOM	FPREP	RE	YELLOWWARE	HOLLOWWARE	UNDECORATED	BODY				28	2
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	A	1	DOM	FSTOR	SW	AMERICAN STONEWARE	HOLLOWWARE	UNDECORATED	BODY	GRY		SALT-GLAZED EXT., ALBANY SLIP-GLAZED INT., FACETED FORM	28	3
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	A	1	DOM	BOTT	GLASS				BODY	CLR		PANELED	28	4
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	A	2	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			28	5
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	A	3	ARCH	HARD	FA	CUT	NAIL		FRAGMENT				28	6
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	A	1	ARCH	HARD	FA	UNIDENTIFIED	NAIL		FRAGMENT				28	7
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	B	3	DOM	FC/S	RE	IRONSTONE		UNDECORATED	FRAGMENT			SPALL	29	1
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	B	2	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			29	2
28MO387	MP2	6-1 N7.5 W7.5	552.5	122.5	B	2	ARCH	HARD	FA	UNIDENTIFIED	NAIL		FRAGMENT				29	3
28MO387	MP2	6-1 N7.5 W15	545	122.5	B	1	DOM	FC/S	RE	WHITEWARE	PLATE	TRANSFER PRINTED	BODY		BLU	SPALL	30	1
28MO387	MP2	6-1 N9.5	560	124.5	B	1	DOM	VESS	FA		POT		RIM			IN BRICK LAYER, RIM DIAMETER APPROX. 6.5"	31	1
28MO387	MP2	6-1 N9.5	560	124.5	C	15	DOM	FC/S	RE	IRONSTONE	SAUCER	UNDECORATED	RIM/BASE			MEND TO BE BE NEARLY COMPLETE, BLACK PRINTED MARK " M P (STYLIZED) / CO / WARRANTED (IN BANNER) / IRONSTONE/ CHINA ", MERCER POTTERY CO., TRENTON, NJ, MARK USED CA. 1900 -CA. 1937(KOVEL AND KOVEL 1986:22).	32	1
28MO387	MP2	6-1 N9.5	560	124.5	C	1	DOM	BOTT	GLASS				BODY		CLR	BURNED	32	2
28MO387	MP2	6-1 N9.5	560	124.5	C	1	DOM	BOTT	GLASS				BODY		AQU	BURNED	32	3
28MO387	MP2	6-1 N9.5	560	124.5	C	4	ARCH	HARD	FA	CUT	NAIL		FRAGMENT				32	4
28MO387	MP2	6-1 N9.5	560	124.5	C	2	ARCH	HARD	FA	WIRE	NAIL		FRAGMENT				32	5
28MO387	MP2	6-1 N9.5	560	124.5	C	1	FAUN	MAMM	BONE				FRAGMENT			BUTCHERED	32	6
28MO387	MP2	6-1 S7.5	560	107.5	A	1	DOM	FC/S	RE	IRONSTONE		UNDECORATED	BODY				33	1
28MO387	MP2	6-1 S7.5	560	107.5	A	2	DOM	FPREP	CE	REDWARE	HOLLOWWARE		BODY			SPALL	33	2
28MO387	MP2	6-1 S7.5	560	107.5	A	2	ARCH	HARD	FA	UNIDENTIFIED	NAIL		FRAGMENT				33	3
28MO387	MP2	6-1 S7.5 E7.5	567.5	107.5	A-B	2	DOM	BOTT	GLASS	BLOWN-IN- MOLD	WATER		BODY	AQU		EMBOSSSED "... N. [WITHIN ROUND PLATE] / [T]HIS ..." AND "...E..."	34	1
28MO387	MP2	6-1 S7.5 E7.5	567.5	107.5	A-B	1	DOM	BOTT	GLASS				BODY	AQU			34	2

Phase I Archaeological Survey
Fort Monmouth, NJ

SITE	AREA	SHOVEL TEST PIT	EAST	NORTH	STRAT.	COUNT	GROUP	CLASS	MATERIAL	TYPE	FUNCTION	DECORATION	SEGMENT	BODY COLOR	DECOR. COLOR	NOTES	BAG NO.	ART. NO.
28MO387	MP2	6-1 S7.5 E7.5	567.5	107.5	A-B	1	ARCH	CM	GLASS		WINDOW		FRAGMENT	AQU			34	3
28MO387	MP2	7-1 W7.5	552.5	100	A	1	DOM	BOTT	GLASS	MACHINE- MADE	BEER		SHOULDER	AMB		EMBOSSED "...FO..."	35	1
28MO387	MP2	7-1 W7.5	552.5	100	A	2	ARCH	HARD	FA	UNIDENTIFIED	NAIL		FRAGMENT				35	2
28MO387	MP2	7-1 S7.5 W7.5	552.5	92.5	A	1	DOM	FPREP	CE	REDWARE	HOLLOWWARE		BODY			BLACK LEAD-GLAZED INT. AND EXT.	36	1
28MO387	MP2	7-1 W15 N7.5	545	107.5	A	1	DOM	FC/S	RE	IRONSTONE		UNDECORATED	BASE				37	1
28MO387	MP2	7-1 W15 N7.5	545	107.5	A	1	DOM	VESS	GLASS							PANELED	37	2
28MO387	MP2	7-2 N7.5 W7.5	537.5	107.5	A	2	DOM	FC/S	RE	WHITEWARE	TEACUP	TRANSFER PRINTED	BODY		BLU	BLUE FLORAL SEAWEEED LIKE	38	1
28MO387	MP2	7-2 N7.5 W15	530	107.5	B	1	DOM	FC/S	RE	IRONSTONE		UNDECORATED	BODY				39	1
28MO386	MP3	6-5			A	1	PREH		ARG		FLAKE		PROXIMAL	GRY		15.7 GRAMS	40	1
28MO386	MP3	6-5			B	1	PREH		ARG		FLAKE		WHOLE	GRY		2.5 GRAMS	41	1
28MO386	MP3	7-4 S7.5			B	1	PREH		ARG		FLAKE		WHOLE	GRY		59.6 GRAMS	42	1
28MO386	MP3	12-4			B	1	PREH		JASPER		FLAKE		WHOLE	BRN		5.2 GRAMS	43	1
28MO386	MP3	12-4 N7.5			C	1	PREH		CHERT		FLAKE		WHOLE	BLK		1.4 GRAMS, CORTICAL	44	1
28MO386	MP3	12-4 S7.5			C	1	PREH		JASPER		FLAKE		MEDIAL	RED		0.4 GRAMS, CORTICAL	45	1
28MO386	MP3	13-4			C	1	PREH		QUARTZ		FLAKE		DISTAL	WHT		1.0 GRAMS	46	1
28MO385	MP4					1	ARCH	CM	MORTAR				FRAGMENT			SAMPLE FROM BRICK CULVERT	47	1
IS. FIND 1	MP7	5-11			A	1	PREH		JASPER	SUSQUEHANNA	POINT		WHOLE	BRN		6.1 GRAMS, LENGTH=46MM, WIDTH=30MM, THICK=5MM	48	1

APPENDIX C:

NEW JERSEY STATE MUSEUM SITE FORMS



NEW JERSEY STATE MUSEUM
ARCHAEOLOGICAL SITE REGISTRATION PROGRAM
BUREAU OF ARCHAEOLOGY AND ETHNOLOGY
P.O. BOX 530, TRENTON, N.J. 08625-0530
Phone (609) 292-8594; Fax (609) 292-7636

Site Name: Site "A"

SITE #: 28-MO-385

☒ Check this box if you prefer to have this site information restricted to professional archaeologists, academics and environmental researchers conducting project background research. If so, this form will be considered donated information according to New Jersey State Law.

NJ State Atlas Coordinates:

USGS 7.5 Minute Series Quad.: Long Branch
State Plane Coordinates (required): E 618042 N 537169
UTM Coordinates (required): E 580800 N 4462100 Zone 18

County: Monmouth Township: Eatontown

Location (descriptive): The site is located along Husky Brook in an undeveloped portion of Fort Monmouth east of Nicodemus Avenue/ Nicodemus Gate. A recently constructed pedestrian path bisects the site area. Site is approximately 180-x-60 ft.

Period of Site: Late 19th
Industrial Period (1810-1917)

Cultural Affiliation(s) (if known):

Owner's (Tenant's) Name: Department of the Army, Fort Monmouth Directorate of Public Works
Address: Riverside Avenue, Building 167
Phone: Dinker Desai, Cultural Resource Manager, 732 532 1475
Attitude Toward Preservation: Will avoid unless military mission requires disturbance.

Surface Features: None

Prominent Landmarks: None

Vegetation Cover: Stream margin is overgrown in dense saplings and brush. East side of Husky Brook is maintained lawn with scattered mature hardwoods.

Nearest Water Source: Husky Brook Distance: >1 meter

Soil Type: Udorthents, smoothed (soil survey) Erosion: Site susceptible to damage by flooding.
Urban Land - heavily developed

Stratified (if known): No

Threat of Destruction (if known): Future development within Fort Monmouth could impact site area. Vegetation growth and flooding.

Previous Work and References (list below):

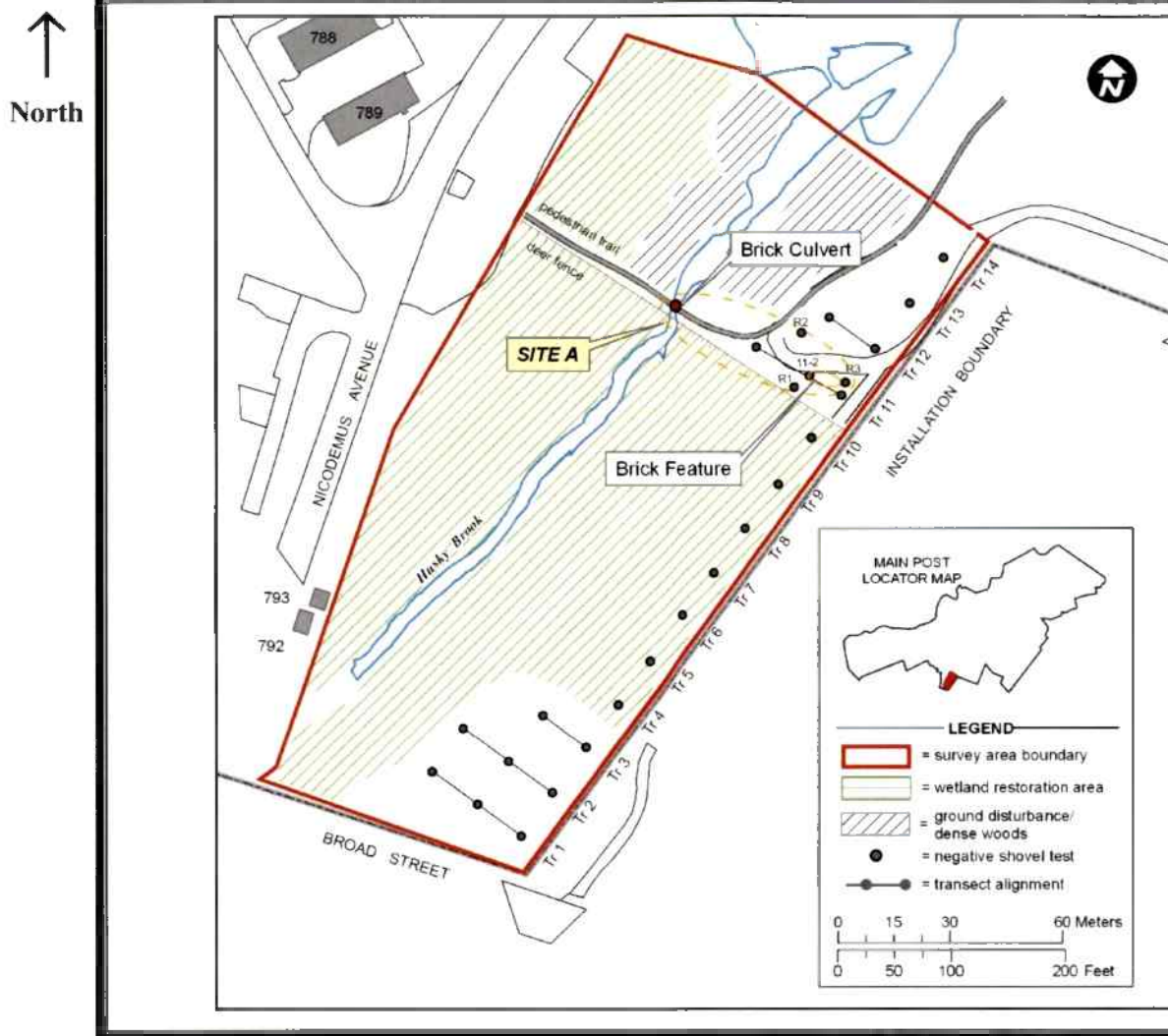
Name	Date	Reference (n/a if unpublished)
1. Fitch and Glover	1989	Historic and Prehistoric Reconnaissance Survey, Fort Monmouth (Main Post), New Jersey. Public Archaeology Laboratory, Inc., Pawtucket, Rhode Island
2. Wolverton, C. and F. Breou	1889	Wolverton's Atlas of Monmouth County. Chester Wolverton, New York. Copy on file in the Shrewsbury Public Library, Shrewsbury, New Jersey.
3. Versar, Inc.	2007	Phase I Archaeological Survey of Fort Monmouth, Monmouth County, New Jersey. On file at Fort Monmouth Directorate of Public Works.

Collections:

Name	Date	Collection Stored	Previous Designation
1.			

Sketch Map of the Site:

Indicate the chief topological features, such as streams, swamps, shorelines, and elevations (approximate). Also show buildings and roads. Indicate the site location by enclosing the site area with a dotted line. Use a scale (approximate) to indicate distance and dimensions.



Scale: see above

Observations, Remarks, or Recommendations:

See Attachment

Recorder's Name (Company): Versar, Inc.
Address: 6850 Versar Center, Springfield, VA 22151
Phone: 703-642-6878
Date Recorder at Site: August 30, 2007

Revised 2007

Observations, Remarks, or Recommendations:

This site consists of a standing brick culvert and subsurface alignment of unbonded brick. The brick culvert was originally identified by Fitch and Glover (1989) as "Site A" and has been revisited by Versar Inc., during a Phase I survey of selected portions of Fort Monmouth as part of the Base Realignment and Closure process. Other than a brief description in 1989 report, no formal documentation has been conducted until the present investigation.

The culvert structure is typical of bridge technology of its era. Masonry arch bridges were the first permanent, constructed bridges built in the United States during the eighteenth and nineteenth centuries. Masonry arched technology provided sturdy bridges that were easily adaptable to small crossings. Permanent arch bridges of this type were constructed in the United States as early as the eighteenth century. Most of these bridges were small-scale structures built by local masons. Only during the nineteenth century, with the construction of the National Road and the advent of the railroad era, were masonry arch bridges constructed on a larger scale (Jackson 1988:19). The culvert over Husky Brook is a small-scale and non-distinctive example of masonry arch technology. This structure has no unique or noteworthy engineering or design features that distinguish it from the larger body of similar nineteenth-century bridges. No evidence has been found that indicates that this structure is associated with any engineer or master builder of bridge technology, or is associated with any other person or event of historical importance. Therefore, it is recommended that the culvert does not meet NRHP Criterion A, B, or C. Because the bridge is a common form of engineering for the time and further investigation is unlikely to yield any new or unique information important for the understanding of history, the culvert does not meet NRHP Criterion D. The brick alignment to the east, while probably associated with the culvert chronologically, is in poor depositional context and is unlikely to yield additional information. Site A is therefore recommended not eligible for the NRHP. No further work is recommended at the site.

The culvert is a single span arched structure (Figure A). The bridge superstructure and abutments are constructed entirely of hand-made bricks, each measuring approximately 9-x-3.5-x-2.5 in, with minor variations. The culvert measures 10 ft across at the base and spans a distance of 12 ft from bank to bank. The apex of the intrados, or underside of the arch, is approximately 6 ft above the streambed. A modern wooden pedestrian bridge with a gravel surface has been constructed on top of the arched superstructure (Figure B). The bridge is constructed of pressure-treated dimensional lumber, with 4-x-4 posts, 2-x-6 railings, and 6-x-6 horizontal timbers to contain the gravel.

The culvert has not been regularly maintained and is in poor condition. Portions of the brick facing are missing from the intrados (Figure C). Dense natural overgrowth is present on both the north and south arch facings, obscuring the upstream and downstream views of the structure. The vegetation has been allowed to grow on the structure in places, and roots have taken hold and disrupted the brickwork (Figure D).



Figure A. Brick Culvert, View North from Husky Brook.

Figure B. Modern Pedestrian Bridge over Brick Culvert, View West.



Figure C. Brick Culvert, View North Showing Present Conditions, Including Missing Brick on Intrados (arrow).



Figure D. Brick Culvert, View South Showing Tree Growth from Facing of Arched Superstructure.

An alignment of brick was exposed during systematic shovel testing of a predesignated survey area (see sketch map above). The feature is located 40 m (125 ft) to the east of the culvert (Figure E) and evidence suggests that the brick was associated with the archway. The brick feature consists of unbonded brick in three vertical courses and two horizontal courses. The western end of the feature, nearest the culvert, has been disturbed by the gravel road trace that extends from the modern boundary fence of the installation downslope to the bridge: brick fragments were exposed in the road surface and along the low cut-bank bordering the road. To the east, following up the slope from the culvert, the feature extends for a length of approximately 13 ft (4 m), as indicated by additional shovel probing. Three radial shovel tests were excavated to determine whether related deposits were present in the immediate vicinity of the brick feature. No artifacts or additional features were encountered in the radial tests. Stratigraphy as revealed in the radial tests was consistent with that of the adjacent transects described above.

The brick within the feature is similar to that used in construction of the culvert, being hand-made, of similar color and similar, slightly irregular dimensions, suggesting that the feature was contemporary with the archway. No artifacts were found in association with the feature, nor was a builder's trench evident in profile. Nevertheless, the apparent contemporaneity of the two features, along with their physical proximity and configuration, suggests that they were related. The brick may have been part of a small retaining wall that lined a path or roadway leading to a now missing bridge supported by the culvert over Husky Brook. The culvert and brick alignment have thus been included in a single site designation.



Figure E. Brick Feature As Exposed in Shovel Test Profile.



NEW JERSEY STATE MUSEUM
ARCHAEOLOGICAL SITE REGISTRATION PROGRAM
BUREAU OF ARCHAEOLOGY AND ETHNOLOGY
P.O. BOX 530, TRENTON, N.J. 08625-0530
Phone (609) 292-8594; Fax (609) 292-7636

Site Name: VSR-2

SITE #: 28-MO-386

☒ Check this box if you prefer to have this site information restricted to professional archaeologists, academics and environmental researchers conducting project background research. If so, this form will be considered donated information according to New Jersey State Law.

NJ State Atlas Coordinates:

USGS 7.5 Minute Series Quad.: Long Branch
State Plane Coordinates (required): E 620341 N 539335
UTM Coordinates (required): E 581509 N4462722 Zone 18

County: Monmouth Township: Oceanport

Location (descriptive): Site is located within the Main Post area of Fort Monmouth, in open area east of Building 551 between NCO Housing (Gosslein Ave) and Husky Brook. Site area is approximately 2,000 sq. meters.

Period of Site: Prehistoric, Unknown

Cultural Affiliation(s) (if known): Unknown

Owner's (Tenant's) Name: Department of the Army, Fort Monmouth Directorate of Public Works
Address: Riverside Avenue, Building 167
Phone: Dinker Desai, Cultural Resource Manager, 732 532 1475
Attitude Toward Preservation: Will avoid unless military mission requires disturbance.

Surface Features: None

Prominent Landmarks: None

Vegetation Cover: Maintained lawn with scattered mature hardwoods.

Nearest Water Source: Husky Brook Distance: 30 meters

Soil Type: Udorthents, smoothed (soil survey) Erosion: Minimal, creek bank is densely wooded and stabilized with wooden stakes.
Urban Land – heavily developed

Stratified (if known): No

Threat of Destruction (if known): Future development within Fort Monmouth could impact site area.

Previous Work and References (list below):

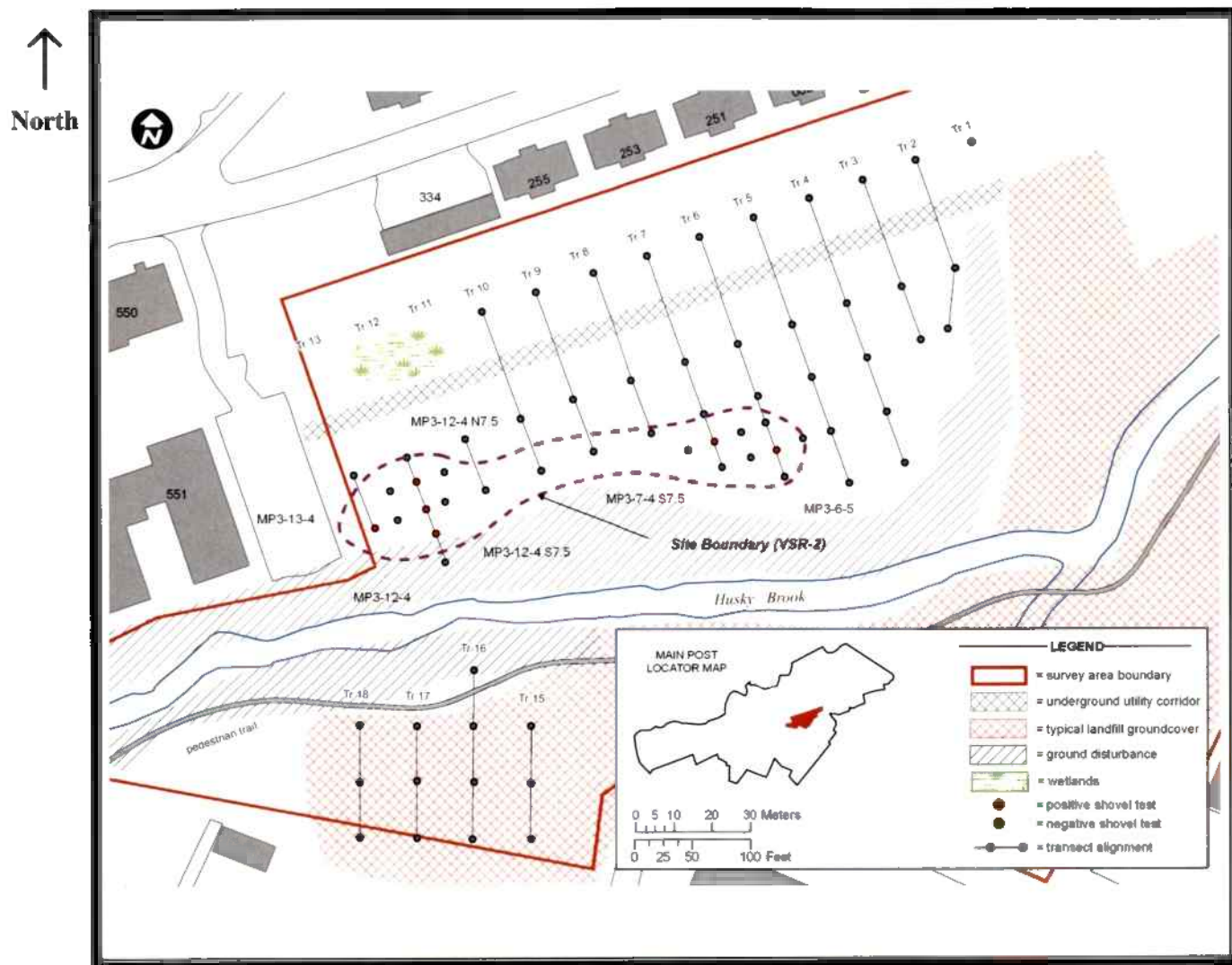
Name	Date	Reference (n/a if unpublished)
1. Versar, Inc.	2007	Phase I Archaeological Survey of Fort Monmouth, Monmouth County, New Jersey. On file at Fort Monmouth Directorate of Public Works.
2.		
3.		

Collections:

Name	Date	Collection Stored	Previous Designation
1.			

Sketch Map of the Site:

Indicate the chief topological features, such as streams, swamps, shorelines, and elevations (approximate). Also show buildings and roads. Indicate the site location by enclosing the site area with a dotted line. Use a scale (approximate) to indicate distance and dimensions.



Scale: see above

Observations, Remarks, or Recommendations:

See Attachment

Recorder's Name (Company): Versar, Inc.
Address: 6850 Versar Center, Springfield, VA 22151
Phone: 703-642-6878
Date Recorder at Site: August 30, 2007

Revised 2007

Observations, Remarks, or Recommendations:

Site VSR-2 was identified through systematic subsurface testing of selected portions of Fort Monmouth as part of a Phase I survey conducted as part of the Base Realignment and Closure process. This prehistoric site consists of a low-density subsurface scatter of lithic reduction flakes. Seven flakes were recovered within two loci across an area of approximately one-half acre. Six of the seven artifacts were recovered from well-sorted and otherwise culturally sterile alluvial subsoil that was overlain by disturbed topsoil, suggesting that these artifacts had migrated downward through the soil profile, probably by means of bioturbation (e.g., rodent burrowing or tree root growth). As such they represent the very base of a cultural deposit which has been destroyed by development activities. Based on the small sample size, the lack of formal tools or temporally diagnostic artifacts, and a lack of contextual integrity, this site is unlikely to yield information important in prehistory and is therefore recommended not eligible for the NRHP. No further work is recommended at Site VSR-2.

Methods: Shovel testing was conducted at 15-m intervals within wooded area with a maintained lawn understory adjacent Husky Brook (see sketch map). Radial tests were spaced at 7.5-meter intervals. All soil screened through 6 mm hardware cloth.

Stratigraphy within the site area consists of two predominant sequences: a shallow topsoil away from the stream; and thicker layers of fill containing refuse closer to the stream. Both surface deposits directly overlay a well-sorted alluvial subsoil. An abrupt transition to subsoil in both cases suggests earthmoving activities have impacted the upper portion of the profile. The following profiles were typical of these sequences;

Shovel Test MP3-6-5

- A: 0-14 cm very dark brown (10YR 2/2) sandy loam, topsoil (1 argillite flake)
B: 14 + cm yellowish brown (10YR 5/8) sand, subsoil (truncated alluvium), maximum excavated depth 35 cm, (1 argillite flake)

Shovel Test MP3-12-4 S7.5

- A: 0-8 cm very dark brown (10YR 2/2) sandy loam, humus (w/in treeline)
B: 8-26 cm dark grayish brown (10YR 4/2) sand, topsoil
C: 26 + cm brownish yellow (10YR 6/8) sand, subsoil (truncated alluvium), maximum excavated depth 75 cm (1 chert flake)

Artifacts Recovered from Site VSR-2.

<i>Shovel Test Number</i>	<i>Artifact Type</i>	<i>Material Type</i>	<i>Comment</i>	<i>Count</i>
MP3-6-5	flake	argillite	1 whole, 1 proximal fragment, gray	2
MP3-7-4 S7.5	flake	argillite	large (59 g), whole, gray	1
MP3-12-4	flake	jasper	whole, brown	1
MP3-12-4 N7.5	flake	chert	whole, black	1
MP3-12-4 S7.5	flake	jasper	medial fragment, red	1
MP3-13-4	flake	quartz	distal fragment, white	1
			Total	7



NEW JERSEY STATE MUSEUM
ARCHAEOLOGICAL SITE REGISTRATION PROGRAM
BUREAU OF ARCHAEOLOGY AND ETHNOLOGY
P.O. BOX 530, TRENTON, N.J. 08625-0530
Phone (609) 292-8594; Fax (609) 292-7636

Site Name: VSR-1

SITE #: 28-MO-387

☒ Check this box if you prefer to have this site information restricted to professional archaeologists, academics and environmental researchers conducting project background research. If so, this form will be considered donated information according to New Jersey State Law.

NJ State Atlas Coordinates:

USGS 7.5 Minute Series Quad.: Long Branch
State Plane Coordinates (required): E 622526 N 540087
UTM Coordinates (required): E 582185 N4462940 Zone 18

County: Monmouth Township: Oceanport

Location (descriptive): Site is located within the Main Post area of Fort Monmouth, within picnic area located on the north bank of Oceanport Creek and bounded to the east by Oceanport Avenue. Site measures 45 m-x-75 m (147-x-246 ft).

Period of Site: Late 19th, Early 20th Century
Industrial Period (1810-1917)

Cultural Affiliation(s) (if known):

Owner's (Tenant's) Name: Department of the Army, Fort Monmouth Directorate of Public Works

Address: Riverside Avenue, Building 167

Phone: Dinker Desai, Cultural Resource Manager, 732 532 1475

Attitude Toward Preservation: Will avoid unless military mission requires disturbance.

Surface Features: None

Prominent Landmarks: None

Vegetation Cover: Maintained lawn with scattered mature hardwoods.

Nearest Water Source: Oceanport Creek Distance: 15 meters

Soil Type: Udorthents, smoothed (soil survey) Erosion: Minimal, tidal creek bank is stabilized by
Urban Land – heavily developed marsh grasses.

Stratified (if known): No

Threat of Destruction (if known): Future development within Fort Monmouth could impact site area.

Previous Work and References (list below):

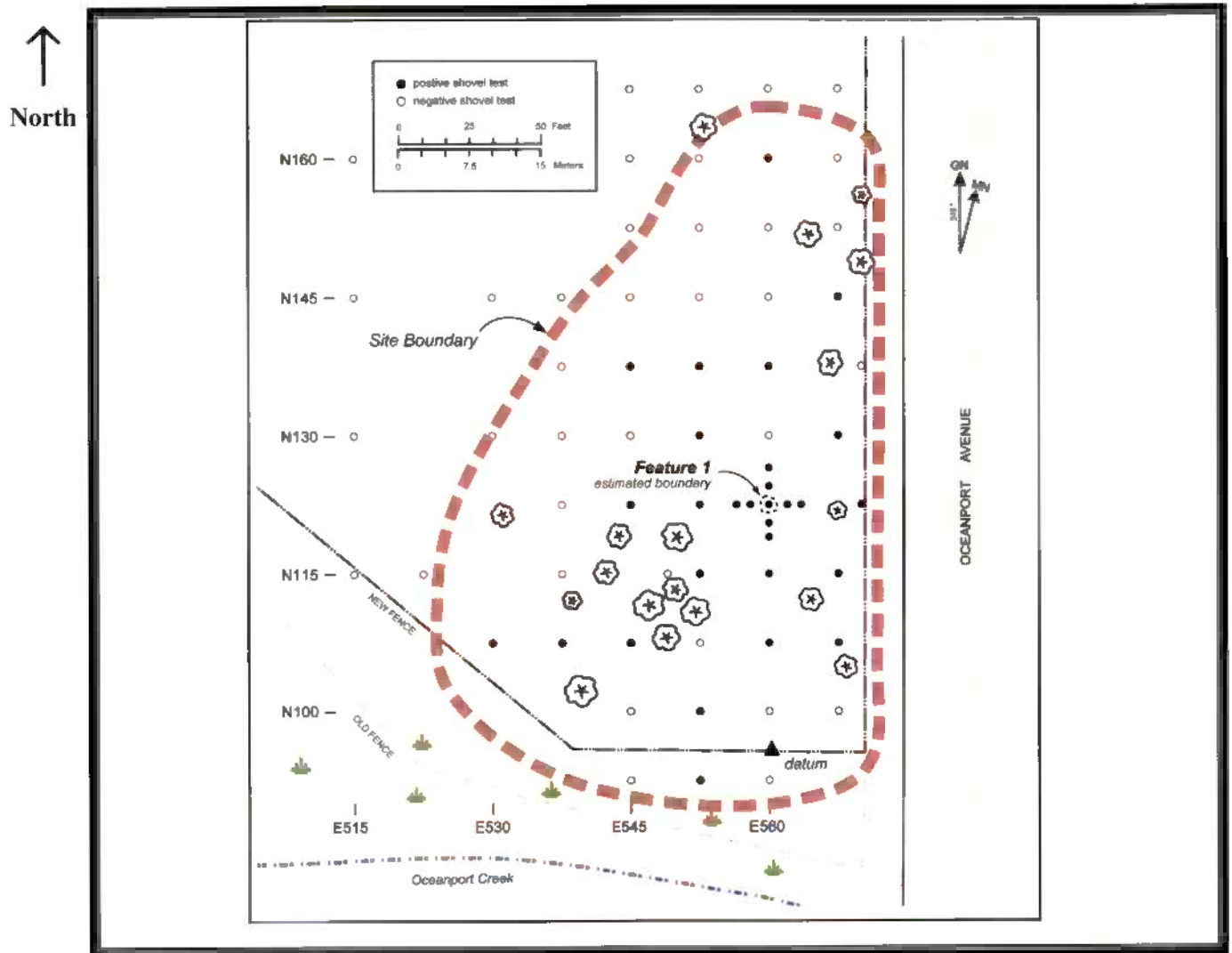
Name	Date	Reference (n/a if unpublished)
1. Lightfoot, J.	1851	Map of Monmouth County, New Jersey. J. B. Shields, publisher, Middletown Point, New Jersey.
2. Versar, Inc.	2007	Phase I Archaeological Survey of Fort Monmouth, Monmouth County, New Jersey. On file at Fort Monmouth Directorate of Public Works.
3.		

Collections:

Name	Date	Collection Stored	Previous Designation
1.			

Sketch Map of the Site:

Indicate the chief topological features, such as streams, swamps, shorelines, and elevations (approximate). Also show buildings and roads. Indicate the site location by enclosing the site area with a dotted line. Use a scale (approximate) to indicate distance and dimensions.



Observations, Remarks, or Recommendations:

See Attachment

Recorder's Name (Company): Versar, Inc.
Address: 6850 Versar Center, Springfield, VA 22151
Phone: 703-642-6878
Date Recorder at Site: August 30, 2007

Revised 2007

Observations, Remarks, or Recommendations:

Site VSR-1 was identified through systematic subsurface testing of selected portions of Fort Monmouth as part of a Phase I survey conducted as part of the Base Realignment and Closure process. This site consists of a scatter of late-nineteenth and early-twentieth century artifacts occurring in shallow depositional contexts along Oceanport Avenue. The area is near the location of structures associated with Drummond Haynes & Co., as they appear on a map from the mid-nineteenth century (Lightfoot 1851). In addition to the artifact scatter, a pit feature was identified in a single shovel test. Additional tests on a 2-m grid around the pit did not encounter further evidence of the feature, suggesting that it is limited in size. The surrounding artifact distribution suggested that the same type of debris contained in the pit feature had been spread across the ground surface, in part as a means of disposal while at the same time filling and leveling the area. Artifact dates and types suggested that the deposits probably represented a combination of furnace refuse, possibly from a structure to the north under the modern Oceanport Avenue; demolition debris (mostly brick) from the razing of that or other structures; and discarded material from race-goers around the turn of the twentieth century. No evidence of additional features was encountered. The deposits could not be directly associated with an individual or specific nineteenth-century property. The research value of the site is considered to be limited, and it is held that additional work there would provide redundant information. The site is recommended not eligible for the NRHP.

Methods: Shovel testing was conducted at 15-m intervals within open grass-covered picnic area adjacent to Oceanport Ave. Close-interval tests were spaced at 7.5-meter intervals to identify additional activity areas in order to better assess site integrity and delineate boundaries. Additional tests at 2-m intervals were excavated to investigate the size and content of Feature 1. All soil screened through 6 mm hardware cloth.

Features: A single unidentified pit feature (Feature 1) was noted at the site (see sketch map). While the edges of the feature were not fully exposed, and its dimensions could be estimated based on evidence from close-interval shovel tests. The feature was contained within a 4-x-4 m (13-x-13 ft) area as determined by the shovel test grid, since it occurred in one shovel test but not in radial shovel tests on a 2-m interval. Thus, the feature is estimated to have measured 2-x-2 m (6-x-6 ft) or less in area. The depth is estimated as at least 75 cm (30 inches).

Stratigraphy: Stratigraphy in the shovel test containing the feature was recorded as follows:

N 122.5 E560

- A: 0-25 cm black (10YR 2/1) loam, topsoil
- B: 25-50 cm dark grayish brown (10YR 4/2) sandy loam, coal, coal ash, brick
- C: 50+ cm very dark grayish brown (10YR 3/2) sandy loam, coal, brick, maximum depth excavated, 76 cm

Across the site the upper stratum was relatively shallow and the transition to subsoil heavily organic-stained. Shovel tests within 2 m of the feature exhibited very dark topsoil in a layer that was thicker than across the rest of the site, as documented in the following shovel tests:

N120.5 E560

- A: 0-36 cm black (10YR 2/1) sandy loam, coal, brick, topsoil
- B: 36+ cm light olive brown (2.5Y 5/4) silt loam, maximum depth excavated, 47 cm

N124.5 E560

- A: 0-14 cm black (10YR 2/1) loam, coal, brick, topsoil
- B: 14-27 cm brick rubble
- C: 27-36 cm black (10YR 2/1) silt loam, coal, coal ash, brick
- D: 36-45 cm dark gray (10YR 4/1) and gray (10YR 5/1) silt loam
- E: 45+ cm very dark gray (10YR 3/1) silt loam, maximum depth excavated, 57 cm

A layer of brick occurred in many of these tests beginning at a depth of 10-15 cm below the surface, directly beneath the humus layer. Artifacts occurred sporadically throughout the profile in shovel tests around Feature 1: artifacts were recovered from the topsoil layer; the brick layer; and below to the transition to subsoil, which typically occurred about 30 cm below surface grade. The feature itself contained artifact-bearing strata to 75 cm below grade.

More than one-half of the artifacts recovered from the site consisted of domestic glass and ceramic objects. The remainder included iron spikes and nails (cut and wire), brick, window glass, clam shell, butchered bone, coal and coal slag, tobacco pipe fragments, porcelain buttons, a doll fragment of porcelain, and shoe leather. The ceramic assemblage was dominated by ironstone and whiteware, with no early-nineteenth century creamware or pearlware present. Makers' marks indicated late-nineteenth century dates. One whole bottle was recovered from the topsoil adjacent to Feature 1; a water bottle with tooled blob finish and remnants of iron lightning closure, embossed "Registered / John Heldt / Long Branch, N.J."

Summary of Artifacts Recovered from Site VSR-1.

Type	Count	Details
Domestic		
Glass	123	29% mold blown; 1% lamp chimney; <.1% automatic machine-made
Ceramic	119	41% ironstone; 37% whiteware
Personal	15	buttons, shoe leather, porcelain doll part, tobacco pipe fragments
Animal Remains	23	clam shell, butchered bone
Construction Material (Demolition Debris)		
Nails	70	cut 50%; wire 16%
Glass	135	16% burned
Brick	2	sample only
Miscellaneous Items		
	24	iron pot, 2 brass ammunition cartridges (.32 and .38 caliber)
Total	551	

BASE FORM

Historic Sites #:

Property Name: Unnamed Pedestrian Path over Husky Brook, aka Site "A"

Street Address: Street #: _____ Apartment #: _____
(Low) (High) (Low) (High)

Prefix: _____ Street Name: Unnamed Path Suffix: _____ Type: _____

County(s): Monmouth **Zip Code:** 07703

Municipality(s): Eatontown

Block(s): _____

Local Place Name(s): Eatontown

Lot(s): _____

Ownership:: Fort Monmouth

USGS Quad(s) Long Branch

Description: The culvert is a single span arched structure with both the bridge superstructure and abutments constructed entirely of brick. The bridge is approximately 10 feet wide and 12 feet long. There is approximately 5 feet from the water surface to the apex of the intrados, or underside of the arch. A wooden deck has been constructed atop the arched superstructure. The wooden deck contains wooden railings along the side walls of the structure consisting of 4x4 inch vertical posts supporting 6x6 inch horizontally placed railings.

**Registration and
Status Dates:**

National Historic
Landmark: _____

SHPO Opinion: _____

National Register: _____

Local Designation: _____

New Jersey Register: _____

Other Designation: _____

Determination of Eligibility: _____

Other Designation Date: _____

Photograph:



Survey Name: Fort Monmouth Phase I Archaeological Survey 2007

Date: August 2007

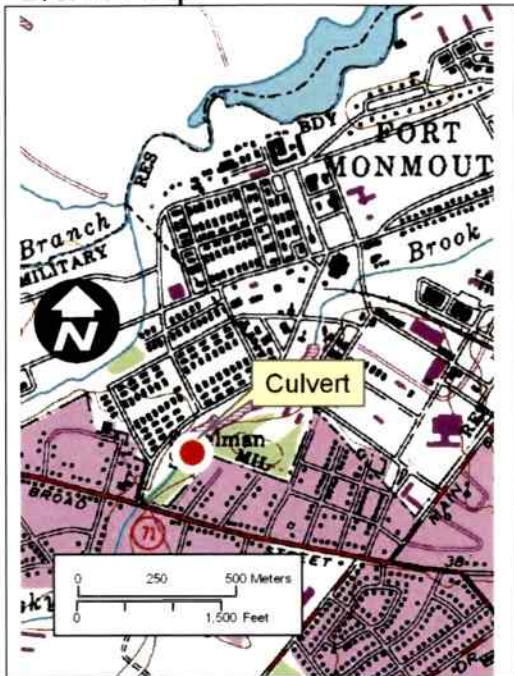
Surveyor: Chris Bowen, Eric Griffiths

Organization: Versar, Inc.

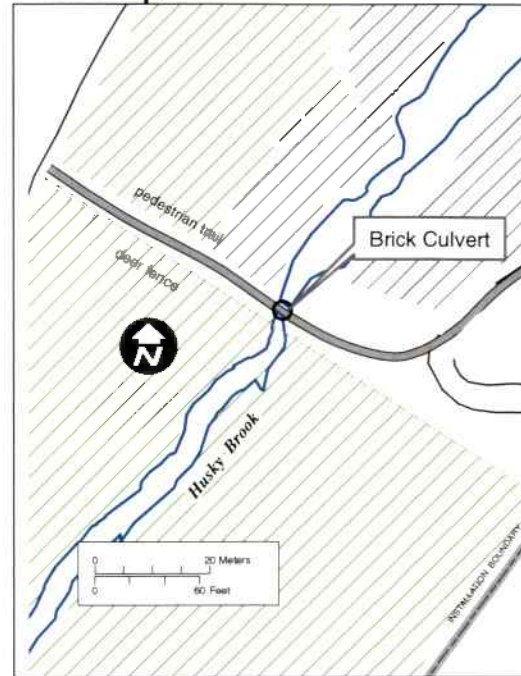
BASE FORM

Historic Sites #:

Location Map:



Site Map:



Bibliography/Sources:

Jackson, Donald C.

1988 *Great American Bridges and Dams*. New York: John Wiley & Sons, Inc.

Wolverton, C. and F. Breou

1889 *Wolverton's Atlas of Monmouth County*. Chester Wolverton, New York. Copy on file in the Shrewsbury Public Library, Shrewsbury, New Jersey.

Additional Information: A site form for the archaeological component of this structure was submitted to the NJ State Museum 12 Sept 2008 and issued the trinomial: 28MO387. Originally recorded in 1989 as an archaeological site (Site A): *Fitch and Glover, 1989, Historic and Prehistoric Reconnaissance Survey, Fort Monmouth (Main Post), New Jersey. Public Archaeology Laboratory, Inc., Pawtucket, Rhode Island*

More Research Needed? ☐ Yes ☒ No

INTENSIVE LEVEL USE ONLY

Attachments Included: ☐ Building ☐ Structure ☐ Object ☒ Bridge
☐ Landscape ☐ Industry

Within Historic District? ☐ Yes ☒ No

Status: ☐ Key-Contributing ☐ Contributing ☒ Non-Contributing

Associated Archaeological Site/Deposit? ☐ Yes
(Known or potential Sites – if yes, please describe briefly)

Survey Name: Fort Monmouth Archaeological Phase I Survey 2007

Date: August 2007

Surveyor: Chris Bowen, Eric Griffiths

Organization: Versar, Inc.

BRIDGE ATTACHMENT

Historic Sites #:

Common Name: Unnamed Pedestrian Path Over Husky Brook at Fort Monmouth, aka Site A
Historic Name: Unknown
Feature Carried: Unnamed Path
Feature Crossed: Husky Brook **Milepost:** N/A
Owner/Operator: U.S. Army **SI&A Structure Number** 0
Construction Date: C. 1880 **Source:** 1889 Atlas of Monmouth County
Alteration Date(s): **Source:**
Engineer Unknown **Physical Condition:**
Builder: Unknown **Remaining Historic Fabric:**
Type: Masonry Arch
Design: Arch **Spans:** 1
Material: Brick **Length:** 12 Feet
Patent Holder: Unknown **Width:** 10 Feet
Patent Date: Unknown

Description: The culvert is a single span arched structure with both the bridge superstructure and abutments constructed entirely of brick. The bridge is approximately 10 feet wide and 12 feet long. There is approximately 5 feet from the water surface to the apex of the intrados, or underside of the arch. A wooden deck has been constructed atop the arched superstructure. The wooden deck contains wooden railings along the side walls of the structure consisting of 4x4 inch vertical posts supporting 6x6 inch horizontally placed railings.

Setting: The culvert is in an undeveloped portion of Fort Monmouth east of Nicodemus Avenue. Both sides of Husky Brook north of the culvert contain dense vegetation that includes large mature trees. Husky Brook Lake is also located north of the culvert. Both the east and west approaches to the bridge consists of a gravel path approximately 10 feet wide. Both sides of the path are lined with wood railings.

Survey Name: Fort Monmouth Phase I Archaeological Survey 2007

Date: December 3, 2008

Surveyor: Chris Bowen, Eric Griffiths

Organization: Versar, Inc.

ELIGIBILITY WORKSHEET

Historic Sites #:

History: The culvert over Husky Brook, aka Site A, was constructed sometime before 1889 and was part of the local 19th century local road system. The structure appears on the 1889 atlas of Monmouth County (Wolverton and Breou 1889). The U.S. Army purchased the property containing the structure during the early twentieth century. The resource has an archaeological component which was first recorded by Fitch and Glover (1989) and designated as "Site A". Archaeological site form being submitted concurrently with this form.

Significance: This structure is typical of bridge technology of its era. Masonry arch bridges were the first permanent constructed bridges built in the United States during the eighteenth and nineteenth century. Masonry arched technology provided sturdy bridges that could be easily adaptable to small crossings. Permanent arch bridges of this type were constructed the United States as early as the eighteenth century. Most bridges were small scale structures built by local masons. Only during the nineteenth century with the construction of the National Road and the advent of the railroad era were masonry arch bridges constructed on a larger scale (Jackson 1988:19).

Eligibility for New Jersey

and National Registers:

☐ Yes

☒ No

National

Register Criteria:

☐ A

☐ B

☐ C

☐ D

Level of Significance

☐ Local

☐ State

☐ National

Justification of Eligibility/Ineligibility: The culvert over Husky Brook is a small scale and non distinctive example of masonry arch technology. This structure has no noteworthy or unique engineering or design features that distinguish itself from the larger body of bridges of this same type constructed during the nineteenth century. Therefore, it is recommended that the culvert does not meet NRHP Criterion A, B, or C. Because the bridge is a common form of engineering for the time that will not yield any new or unique information important for the understanding of history, it is recommended that the culvert does not meet NRHP Criterion D.

For Historic Districts Only:

Property Count: _____ **Key Contributing:** _____ **Contributing:** _____ **Non Contributing:** _____

For Individual Properties Only:

List the completed attachments related to the property's significance:

Base Survey Form

Structure Attachment

Narrative Boundary Description:

Survey Name: Fort Monmouth Archaeological Phase I Survey 2007

Surveyor: Chris Bowen, Eric Griffiths

Organization: Versar, Inc.

Fort
Monmouth
Archaeologica
I Phase I
Date: Survey 2007

APPENDIX D:

LIST OF ABBREVIATIONS AND ACRONYMS

LIST OF ABBREVIATIONS AND ACRONYMS

ACHP	Advisory Council for Historic Preservation
AEC	Army Environmental Center
amsl	Above Mean Sea Level
AR	Army Regulation
ARPA	Archeological Resource Protection Act
BRAC	Base Realignment and Closure Commission
BTI	Building Technologies Inc.
CECOM	U.S. Army Communications-Electronics Command
cm	centimeter
CRM	Cultural Resources Manager
CRMP	Cultural Resources Management Plan
FMDPW	Fort Monmouth Directorate of Public Works
ft	foot/feet
GIS	Geographic Information System
GPS	Global Positioning System
ICRMP	Integrated Cultural Resources Management Plan
in	inch
km	kilometer
m	meter
mi	mile
NCO	Non-commissioned Officer
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NJDEP	New Jersey Department of Environmental Protection
NJHPO	New Jersey Historic Preservation Officer
NR	National Register
NRHP	National Register of Historic Places
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
USMAPS	United States Military Academy Prep School
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
WWRA	World War and Repatriation Act

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