CULTURAL RESOURCES MANAGEMENT PLAN FOR FORT MONMOUTH, NEW JERSEY

Prepared for

Army Corps of Engineers
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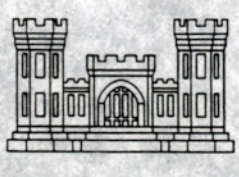
No ber 8, 1996



TRC Mariah Associates Inc.

CULTURAL RESOURCES MANAGEMENT PLAN FOR FORT MONMOUTH, NEW JERSEY

Prepared for

U.S. Army Corps of Engineers
Fort Worth District

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TRC MARIAH ASSOCIATES INC.
Austin, Texas

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CULTURAL RESOURCES MANAGEMENT PLAN
for
FOR MONMOUTH, NEW JERSEY

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EXECUTIVE SUMMARY

This Cultural Resources Management Plan (CRMP) has been prepared in compliance with Army Regulation (AR) 200-4 (replaces AR 420-40). It is a 5-year plan for the integrated management of cultural resources at the U.S. Army's Fort Monmouth. This CRMP is not a decision document, but it provides the Commander, and those responsible for implementing his decisions, with the information needed to make appropriate decisions about the management of the cultural resources at Fort Monmouth.

The National Historic Preservation Act of 1966 (NHPA) requires the Army to consider the effect of its actions on cultural resources which are eligible for inclusion to the National Register of Historic Places (NRHP). In order to do so, the Army must first inventory cultural resources and then must assess their eligibility. AR 200-4 provides guidance for fulfilling this requirement.

Cultural resources at Fort Monmouth include both historic buildings and archeological sites. The inventory of historic buildings is 99% complete. Of the approximately 670 buildings and structures on the Main Post and in the Charles Wood Area, most do not meet the minimum criteria for NRHP eligibility and do not warrant assessment. A total of 343 buildings and structures that meet the minimum criteria have been assessed. Of these, 98 are found to be eligible for inclusion to the NRHP. Most of these buildings are residential. Ninety-three of the 98 eligible buildings are physically located within two districts. An historic district on the Main Post contains 88 of the eligible properties and a smaller historic district in the Charles Wood Area contains five eligible properties. An additional five eligible buildings are not located within either district. Finally, two buildings require secret clearance for access and have not yet been inventoried or assessed.

The archeological inventory is about 3% complete. This 3% sample found no sites. However, nine archeological sites have been recorded by other means. In addition, 204 potential site locations across the entire post are suspected but have not been investigated. None of these archeological sites have been evaluated for NRHP eligibility. The uninventoried portions of Main Post and Charles Wood area have been classified into three zones of archeological potential. Some 446 acres have "high" potential for archeological sites, 156 acres have "medium" potential, and 602 acres have "low" potential.

The CRMP:

- reviews the prehistory and history of Fort Monmouth and it's region and develops a series of historical contexts with which to evaluate the NRHP eligibility of cultural resources at Fort Monmouth;
- identifies management practices which are needed to enable cultural resource compliance;
- delineates eight standard operating procedures (SOP) that will ensure compliance;
- develops a 5-year plan for fiscal years 1996 through 2001.

The 5-year plan has nine key objectives and suggests a time table and a budget necessary for completion. Six of the nine objectives can be wholly completed by currently staffed Fort Monmouth personnel. Achieving these six objectives will require an estimated 3.1 person-years over the 5-year plan. Achieving the remaining three objectives will require supplementary personnel and specialized expertise not currently

available within Fort Monmouth. If procured through contract, these three objectives would require an estimated $553,000 over 5 years. The eight key objectives are:

1) Formal designation and specialized training of a Cultural Resource Manager (CRM) to implement the CRMP and to fulfill the Commanders legal responsibilities (FY 1996-1997, internally staffed);

2) Development and implementation of a Programmatic Agreement (PA) with the New Jersey State Historic Preservation Office (SHPO) and with the Advisory Council on Historic Preservation to streamline recurrent aspects of the compliance process (FY 1996-1997, internally staffed);

3) Regular programming of funds for completion of the 5-year plan (yearly, internally staffed);

4) Initiation of SHPO consultation for in-progress and currently planned undertakings not covered by the PA (yearly, internally staffed);

5) Completion of NRHP eligibility evaluation for two building clusters requiring Secret clearance (FY 1997-1998; estimated funding required $25,000);

6) Completion of the formal NRHP nominations for the two historic districts and for other eligible properties (FY 1997-1998, internally staffed);

7) Recordation and significance testing of the 204 localities with suspected historic sites (FY 1998-2000, estimated funding required $160,000);

8) Completion of archeological inventory and significance testing for the "high" and "medium" potential areas (FY 1999-2001, estimated funding required $368,000); and

9) Update of the CRMP (FY 2001, internally staffed).

The Plan also calls for the CRM to develop an annual report to HQDA/AEC, the Commander, and to the New Jersey SHPO on the status of cultural resource compliance activities and issues.

ACKNOWLEDGEMENTS

Preparation of this CRMP would have been impossible without the lively interest and vital assistance of key Fort Monmouth personnel. Staff of the Department of Public Works (DPW) were especially helpful, including Dinkar Desai, Robert Melascaglia, and Ehab Zagzoug. Other Fort Monmouth personnel who provided information were Dr. Richard Bingham, CECOM Command Historian, and Mindy Rosewitz, Museum Curator. Longtime Fort Monmouth employee Mike Guigno provided important information about the construction and demolition of buildings during the post-World War II period. Retired Fort Monmouth employee and local archeological collector Redacted - Privacy Act provided invaluable insight into the nature of the original archeological finds. Historical maps were provided by DPW and historical photographs were made available courtesy of the U.S. Army Communications-Electronics Museum and the office of the CECOM Command Historian.

In addition, personnel at the State Historic Preservation Office in Trenton were keenly interested in the CRMP and graciously provided open access to their archives and records. We especially thank Deborah Fimbel and Terry Pfoutz.

Technical coordination of our scope-of-work was provided by Patience Patterson of the Fort Worth District, Corps of Engineers.

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LIST OF ACRONYMS

ACHP	Advisory Council for Historic Preservation
ACE	Army Corps of Engineers
AEC	Army Environmental Center
AIRFA	American Indian Religious Freedom Act
APE	Area of Potential Effect
AR	Army Regulation
ARPA	Archeological Resource Protection Act
BRAC	Base Realignment and Closure Commission
CECOM	U.S. Army Communications-Electronics Command
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CRM	Cultural Resources Manager
CRMP	Cultural Resources Management Plan
DARCOM	Development and Readiness Command
DOD	Department of Defense
DDU	Dymaxion Deployment Unit
DPW	Directorate of Public Works
EIS	Environmental Impact Statement
EO	Executive Order
FPO	Federal Preservation Officers
FTE	Full-Time-Equivalent
HABS/HAER	Historic American Buildings Survey/Historic American Engineering Record
HQDA	Headquarters, Department of the Army
KO	Key Objective
MACOM	Major U.S. Army Command
MOA	Memorandum of Agreement
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PA	Programmatic Agreement
PMOA	Programmatic Memorandum of Agreement
SDI	Strategic Defense Initiative
SHPO	State Historic Preservation Officer
SOP	Standard Operating Procedures
TCP	Traditional Cultural Properties
USAMC	U.S. Army Materiel Command
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
WW	World War

1.0 INTRODUCTION

1.1 PURPOSE OF THIS PLAN

This Cultural Resources Management Plan (CRMP) is required by Army Regulation (AR) 200-4. It is a 5-year plan for the integrated management of Fort Monmouth's cultural resources to ensure compliance with federal laws. The CRMP is not a decision document, but it provides the Commander, and those responsible for implementing his decisions, with the information needed to make appropriate decisions about the management of the cultural resources at Fort Monmouth.

This CRMP is designed to assist Fort Monmouth in identifying procedures required to comply with appropriate federal laws and implementing regulations. Among the laws with special consequence to Fort Monmouth are:

- Section 106 of the National Historic Preservation Act (NHPA);
- Section 110 of the NHPA;
- The Native American Graves Protection and Repatriation Act (NAGPRA); and
- The Archeological Resources Protection Act (ARPA).

Failure to take into account the effects of an undertaking on historic properties can result in formal notification from the Advisory Council on Historic Preservation (ACHP) to the Secretary of the Army. Such notice can be used by litigants against the Army in a manner that can halt or delay critical mission activities.

1.2 ARMY POLICIES

Under AR 200-4, the Commanding Officer is responsible for compliance with federal cultural resource laws. AR 200-4 directs installation commanders to:

- designate a Cultural Resources Manager (CRM) to coordinate the installation's cultural resource management program;
- develop an Integrated CRMP;
- establish a process which involves the CRM early in the planning of projects;
- develop and implement an installation wide Programmatic Agreement (PA) to streamline cultural resource compliance procedures; and
- establish funding priorities and program funds for cultural resources compliance into the Environmental Program Requirements report.

1.3 HOW TO USE THIS PLAN

1.3.1 Organization

Section 1 of this CRMP is introductory. This section includes important discussions regarding Army Policy, goals of the plan, how to use the plan, and a brief review of preservation laws and regulations. Following the introduction, the management plan contains three major parts: an overview (Section 2); an inventory (Section 3); and a protection plan (Section 4).

The Overview describes the installation, reviews important characteristics of the natural environment, and provides a narrative of current knowledge about the history and prehistory of Fort Monmouth and its surrounding region. The overview concludes with a summary of Native American groups known to have lived in the region.

The Inventory presents a summary of currently known cultural resources on Fort Monmouth, including the Main Post and the Charles Wood Area. In this section, cultural resources are organized by type, presenting archeological sites, traditional cultural places, historic and architectural resources, and other types or resources. The inventory concludes with the development of standards of significance by which archeological sites and historic buildings may be evaluated for their eligibility for inclusion to the National Register of Historic Places (NRHP).

The Protection Plan contains four key components: (1) a list of undertakings that can affect historic properties, (2) a series of policy statements, (3) a set of Standard Operating Procedures (SOPs), and (4) a 5-year management plan. The policy statements identify several operational responsibilities at Fort Monmouth which need implementation to ensure compliance with cultural resource laws and regulations. These include the designation of responsibilities for an installation point of review for cultural resource compliance, and the need to periodically review, monitor, and report compliance activities. The SOPs are designed to address routine matters of cultural resource compliance and are accompanied by schematic flow-charts. The 5-year management plan identifies key objectives (KO) and specifies the resources and schedule needed to accomplish those objectives.

Finally, four appendices are included. These are: (A) Glossary of key terms, (B) the site location maps from Klein et al. (1984), (C) the PA between the Army and the Council of State Historic Preservation Officers (SHPO) regarding temporary World War (WW) II-era structures, and (D) undertakings categorically excluded from SHPO review.

1.3.2 Updating the CRMP

This CRMP is designed to be a "living" document, of contemporary and practical use to Fort Monmouth planners. As the mission of Fort Monmouth changes, so will the range and frequency of undertakings change. Similarly, as the objectives of the 5-year plan are carried out, new information about Fort Monmouth's cultural resources will naturally be obtained. The format of this CRMP allows for replacement of sections as may be warranted.

Further, the CRMP is intended to be a temporary document, with a purposely limited use-life. The entire CRMP should be revised within 5 years (the year 2001). Accordingly, the final key objective of the 5-year plan is the development of a wholly new CRMP.

1.4 MANAGEMENT OPTIONS

Under the NHPA, every federal action (undertaking) with the potential to affect historic properties must be reviewed though "Section 106 consultation." The Army must consult with the ACHP and with the SHPO to determine if the undertaking will adversely affect any historic properties.

Absent an agreement between the Army, the SHPO, and the ACHP, the Army must follow the above process for every undertaking which can affect historic properties. This consultation process can be lengthy and is often times redundant. AR 200-4 requires that installations prepare and implement an agreement to address and streamline the Section 106 Consultation process for ongoing mission and operations activities.

1.4.1 Case-by-Case Management

Procedures for Section 106 consultation are found in implementing regulation in 36 CFR Part 800, and may be summarized in five steps.

Step 1: Identify and evaluate historic properties. The Army must make a good-faith effort to locate and identify all historic properties which might be affected by the undertaking, and must request the SHPO's views about whether further actions are needed to identify historic properties. Properties must then be evaluated for their National Register (NR) eligibility, and the Army must consult with SHPO regarding their eligibility. Disagreements are referred to the Keeper of the Register who acts on behalf of the Secretary of the Interior. If the Army finds one or more historic properties, it proceeds to step 2.

Step 2: Assess the effects of the undertaking. The Army must determine whether the proposed undertaking could affect the properties in any way. Again, the Army must consult with the SHPO to decide this. The Army's judgment must be made based on the criteria of effect and adverse effect in

implementing regulation 36 CFR 800.9. If the Army finds *no effect*, then it must compile documentation that supports the finding and must notify the SHPO. If the Army finds *no adverse effect*, then the Army must either obtain the SHPOs concurrence and notify the ACHP, or must submit the finding to the ACHP for review and notify the SHPO. In either case, documentation of the finding must be provided. If there is *adverse effect*, the Army must proceed to step 3.

Step 3: Consultation. The agency must consult with the SHPO and must notify the ACHP on ways to avoid, reduce, or mitigate the adverse effects of the undertaking on historic properties. Either party may request the ACHP to join the consultation. Interested persons also may be invited to participate at the discretion of either party. In most cases, the consulting parties can agree on ways to accommodate historic preservation concerns as the undertaking proceeds. Usually, a Memorandum of Agreement (MOA) stipulates how the undertaking will be carried out in order to avoid or mitigate adverse effects.

Step 4: Council Comment. If consultation results in a MOA, the ACHP reviews and comments on it. If consultation fails to reach an agreement, the Army must request written comments from the ACHP and must submit written documentation.

Step 5: Proceed. If the ACHP has accepted or commented on a MOA, the Army may proceed with the undertaking in accordance with the terms of the MOA. Absent a MOA, the Army must take into account the ACHP's comments before making a decision about how to proceed with the undertaking. The Army must then notify the ACHP prior to proceeding.

1.4.2 Alternatives to Case-by-Case Management

To provide agencies with additional flexibility, the implementing regulations (36 CFR 800.4 through 800.6) provide for several alternatives to case-by-case management. The most common alternative to case-by-case review is the PA. This is developed among the Army, the ACHP, and the SHPO. A PA is a special type of MOA typically developed for a large or complex project or for a class of undertaking that would otherwise require numerous individual requests for Council comments under Section 106. Among other situations, PAs are appropriate when the effects on historic properties are similar and repetitive, or when undertakings involve routine management activities at Federal installations. The ACHP and the Army arrange for public notice of the consultation and must request the views of State and local government, Indian tribes, industries, and organizations. Upon reaching agreement, the PA is published in the Federal Register. It remains in force until it expires or is terminated.

Other, less common, alternatives to case-by-case management are counterpart regulations developed by federal agencies to meet their unique circumstances, or the use of state review processes. In both these cases, the ACHP must approve the substitute review process.

1.5 PRESERVATION LAWS AND REGULATIONS

This section contains brief summaries of the scope and intent of cultural resource laws and regulations of primary importance to Fort Monmouth. Other cultural resource protection laws and regulations (such as the Abandoned Shipwreck Act of 1988) are minimally applicable to the installation and are not reviewed here. This section does not provide full citations or interpretations and the actual laws and regulations themselves should be consulted.

1.5.1 Federal Laws

1.5.1.1 Antiquities Act of 1906 (Public Law 59-209)

The Antiquities Act of 1906 allows the President of the United States to set aside federally-owned land as historic landmarks. It also allows for the

federal government to acquire private land for historic preservation. The Act requires that excavation of archeological sites on federal land be conducted by qualified individuals under federally issued permits, and requires that artifacts and objects must be preserved permanently in museums.

The Act establishes penalties for any person who excavates, injures, or destroys any historic property or monument on federal land without permission from the appropriate federal department. The procedure for issuing permits, and instructions for seizure of illegally acquired archeological objects are provided in implementing regulation 43 CFR Part 3.

1.5.1.2 National Historic Preservation Act of 1966 (Public Law 89-665)

The NHPA is the cornerstone of federal preservation law and is the most important piece of legislation for the Fort Monmouth CRM. The Act sets forth a general policy of preserving historic properties by the federal government for the benefit and education of the people of the United States. The Act directs the Secretary of the Interior to create and maintain a NRHP composed of districts, buildings, sites, structures, and objects significant in American history, architecture, archeology, engineering, and culture. The Secretary is directed to establish criteria for nominating properties, and to make determinations of eligibility.

The Act establishes a SHPO to identify and inventory historic properties within each state, and to ensure that NR eligible properties are taken into account during planning and development. The Act further establishes the ACHP as an independent federal agency to advise the President, Congress, and other federal agencies on concerns of historic preservation.

Section 106 of NHPA forms the basis for most of the work conducted by an installation CRM. Federal agencies are required to take into account the effect of their undertakings on any properties eligible for inclusion to the NR, and the ACHP must be given an opportunity to comment on the undertaking's effects on historic properties. Federal agencies must take into account the effects of undertakings at the planning stage and must provide for protective measures for any affected resources. This process is detailed in implementing regulations 36 CFR Part 60, 36 CFR Part 79, and 36 CFR Part 800. Nothing in Section 106 requires that an undertaking be stopped, but reasonable efforts must be made to minimize harm to eligible properties until such time as the consultation process is completed.

Section 110 of the Act sets broad affirmative responsibilities with respect to historic properties. Federal agencies are required to assume responsibility for the preservation of historic properties located on or controlled by the respective agency. Federal agencies are required to locate, inventory, and nominate all properties that appear to qualify for inclusion on the NR. Costs of preservation may be included in the planning efforts of agency undertakings.

Section 111 of the Act requires that federal agencies implement alternatives to historic properties, including the adaptive use, that are not needed for current or projected agency purposes. Agencies may also lease or exchange historic properties if the lease or exchange is compatible with preservation.

Section 112 of the Act requires that all research, preservation, and protection activities be done by persons meeting professional standards developed by the Secretary of the Interior, including both agency and contractor personnel.

1.5.1.3 National Environmental Policy Act of 1969 (Public Law 91-190)

The National Environmental Policy Act (NEPA) establishes a national policy which encourages harmony between man and the environment. The policy states that the federal government shall use all practicable means to preserve the productive harmony of the environment while fulfilling the

social, economic and other requirements of generations of Americans. Included in preserving the environment is the preservation of important historic and cultural aspects of national heritage.

The Act requires all federal agencies to prepare a statement which assesses the impact on the environment of any proposed action. The environmental impact statement (EIS) is to identify any unavoidable adverse environmental effects, as well as alternatives to the proposed action prior to implementation of the proposed action. The statement shall be prepared as early in the planning process as possible, and shall accompany the action's proposal through the agency review process.

NEPA's implementing regulations (40 CFR Parts 1500 - 1508) clarify that the Act in no way directs, replaces, or supersedes NHPA. The integration of the two Acts is very important. NHPA studies are done to determine the effect on historic properties for any federal undertaking, while NEPA will only require full EISs on some federal undertakings. Thus, NHPA studies can occur without NEPA involvement, but NEPA studies never occur without NHPA studies.

1.5.1.4 Archeological Resource Protection Act of 1979 (Public Law 96-95)

The Archeological Resource Protection Act (ARPA) of 1979 establishes that archeological resources on public lands are part of the Nation's heritage and should be preserved for the benefit of the American people. Unauthorized excavation, removal, damage, or alteration of any archeological resource on public lands is prohibited, and the law provides criminal and civil penalties for violation. Permits may be obtained from the appropriate federal agency by qualified individuals who want to excavate or remove archeological resources from federally-owned land. The proposed work must be undertaken strictly for the purpose of furthering archeological knowledge. All archeological artifacts and resources are to remain the property of the United States.

Federal agencies may not disclose any information pertaining to the location of archeological sites unless the disclosure would not create a risk to the condition of archeological resources. Federal agencies must develop plans for surveying lands not scheduled for specific undertakings, must record and report archeological violations, and must develop public awareness programs.

The Act's implementing regulations for the Department of Defense (DOD) (32 CFR Part 229) specify that protected resources must be at least 100 years old. The implementing regulations also outline the process for granting excavation permits.

1.5.1.5 Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-601)

The purpose and intent of NAGPRA is to acknowledge the ownership of certain human remains, funerary objects, and sacred artifacts by Native American tribes. In addition, the Act requires the objects to be treated in a way that is agreeable to these tribes. The Act's implementing regulations are found in 43 CFR Part 10.

For remains or objects discovered on Federal lands after enactment of the Act (1990), the federal agency must notify Native American Tribes of the discovery and must provide them with an opportunity to claim affiliation with the remains or objects. For remains or objects already in the possession of federal institutions or agencies, the agency must inventory the remains or objects and provide the inventory to Native American tribes. The Tribe determined to have right-of-ownership may then consult with the agency to determine disposition of the remains or objects, and the agency is responsible for complying with these determinations. An April 1994 Presidential Memorandum stipulates that consultation with Native American tribes must be conducted on the basis of Government to Government Relations.

1.5.1.6 American Indian Religious Freedom Act of 1978 (Public Law 95-341)

The American Indian Religious Freedom Act (AIFRA) preserves for Native Americans their inherent right to believe, express, and exercise their traditional religions. This right includes access to archeological sites and other sacred places under federal jurisdiction.

1.5.2 Executive Orders

1.5.2.1 Executive Order 11593

Executive Order (EO) 11593, dated 13 May 1971, establishes a national policy to preserve and maintain the historic and cultural environment of the United States. The EO directs federal agencies to administer historic properties under their control so as to preserve the resources for future generations.

Federal agencies must locate, inventory, and nominate all potentially eligible sites, buildings, districts, and objects under their control to the Secretary of the Interior for listing on the NRHP. The federal agencies must also take caution to prevent historic properties from being sold, transferred, or demolished. Any property that will be damaged as a result of a federal undertaking must be fully documented before being impacted. The agencies must report their efforts to the Secretary of the Interior.

1.5.2.2 Executive Order 13007

Executive Order 13007, dated 24 May 1996, establishes the responsibility of federal agencies to accommodate access to and ceremonial use of sacred Indian sites located on federal land by Indian religious practitioners. Agencies shall maintain the confidentiality of such sacred sites and shall avoid adversely affecting their integrity.

1.5.3 Department of Defense Directive 4710.1

The DOD Directive 4710.1, dated 21 June 1984, states that is the policy of the DOD to integrate archeological and historic preservation requirements of various laws with the planning and management of DOD activities. The Directive assigns specific responsibilities to the heads of departments. It briefly lists management responsibilities which mirror the federal laws for archeological and historic resources. The Directive reinforces the DOD's responsibility to comply with these laws and regulations.

1.5.4 Army Regulations

1.5.4.1 Army Regulation 200-1

Army Regulation 200-1 covers environmental protection and enhancement and provides for compliance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and other environmental Acts. The Regulation states that the Army's goal is to protect buildings, structures, sites, and objects of historic, architectural, archeological, and cultural value located on Army-controlled property. The Regulation provides for environmental audits and status reports. Army entities that are responsible for selection of military construction sites will conduct environmental surveys prior to site selection.

1.5.4.2 Army Regulation 200-2

Army Regulation 200-2 establishes policy, procedures, and responsibilities for integrating environmental considerations into Army planning and decision making. The Regulation implements the requirements of NEPA in assessing the environmental effects of Army actions. It establishes criteria for determining what Army actions are categorically excluded from requirements to prepare an EIS, and lists applicable categorical exclusions.

1.5.4.3 Army Regulation 200-4

Army Regulation 200-4, effective 20 June 1996, replaces AR 420-40 and is accompanied by AR 200-4 Circular containing technical information. It prescribes the Army's policies, procedures, and

responsibilities for managing cultural resources, in support of the military mission and consistent with sound principles of resource stewardship.

1.5.4.4 Army Regulation 870-20

Army Regulation 870-20 provides standardized guidelines and procedures for maintaining an Army museum. The procedures include caring for and maintaining historically significant property, certification as a professional museum, establishing exhibits, and acquisition, cataloging, and deaccession of historical objects. This regulation should be used in conjunction with regulation 36 CFR Part 79 of NHPA.

2.0 ENVIRONMENTAL AND CULTURAL OVERVIEW

This overview is comprised of four parts. First is a brief description of the Fort Monmouth military installation. Second is a description of the environmental setting, including brief reviews of physiography, climate, and local biology. This environmental overview is intended to provide a natural context for prehistoric and historic research questions. Third is a overview of the known culture history, including prehistory and history. Fourth is a discussion of Native American tribes known to have an interest in central New Jersey.

2.1 INSTALLATION DESCRIPTION

Fort Monmouth is located in the boroughs of Eatontown, Oceanport, and Tinton Falls, Monmouth County, New Jersey (Figure 2.1). Approximately 73 km (45 mi) south of New York City and 113 km (70 mi) northeast of Philadelphia, it is in the east-central portion of the state. The Atlantic Ocean is approximately 5 km (3 mi) to the east.

The post is currently comprised of three operational areas, including the Main Post, the Charles Wood Area and the Evans Area. The Main Post covers 626 acres (0.98 square miles) (Figure 2.2). The Charles Wood Area, located about 3 km (2 mi) southeast, covers 530 acres (0.83 square miles). The Evans Area, located about 16 km (10 mi) south of the Main Post, covers 217 acres (0.34 square miles).

Pursuant to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510) the Defense Base Realignment and Closure (BRAC) Commission recommended in 1993 that all functions of the Evans Area be transferred to either the Main Post Area or the Charles Wood Area. An Environmental Assessment of this proposed action (U.S. Department of the Army 1994) concluded that the realignment would result in no significant impact. As a result, the Evans Area is not expected to be attached to Fort Monmouth and is excluded from this CRMP (Figure 2.3).

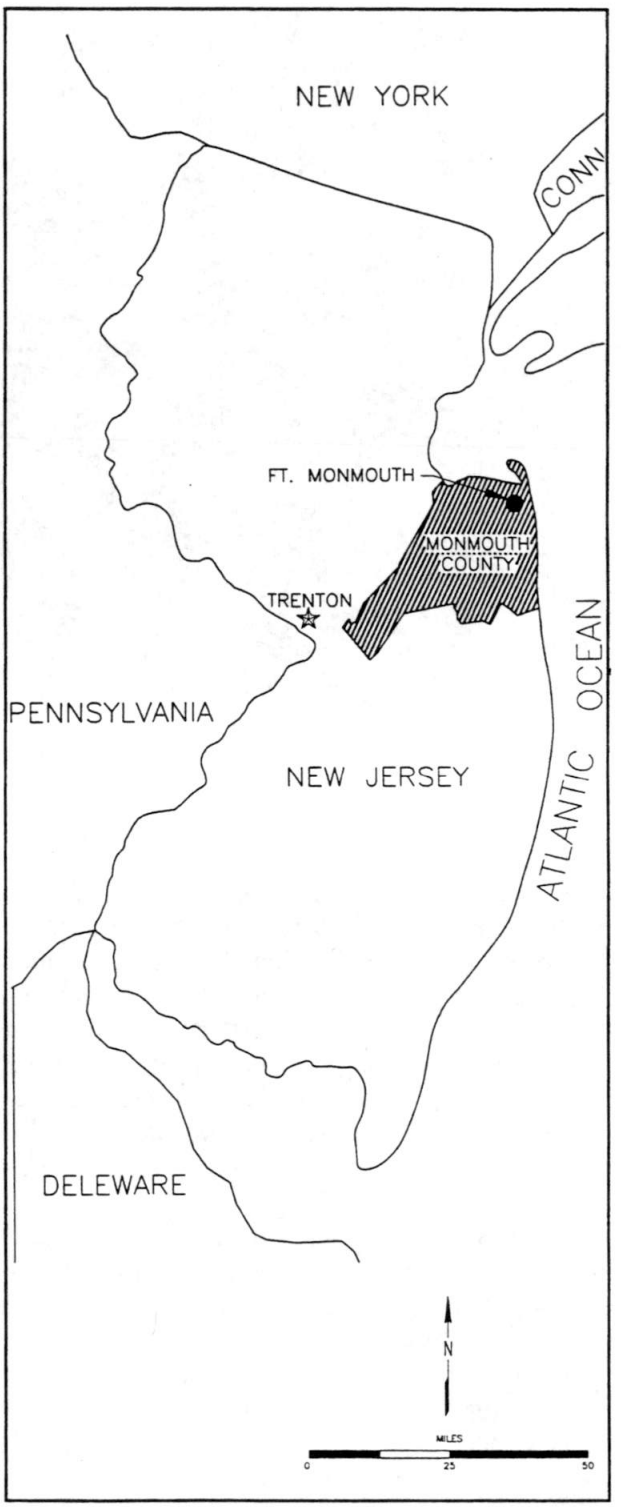


Figure 2.1 Locational Map of Monmouth County, New Jersey.

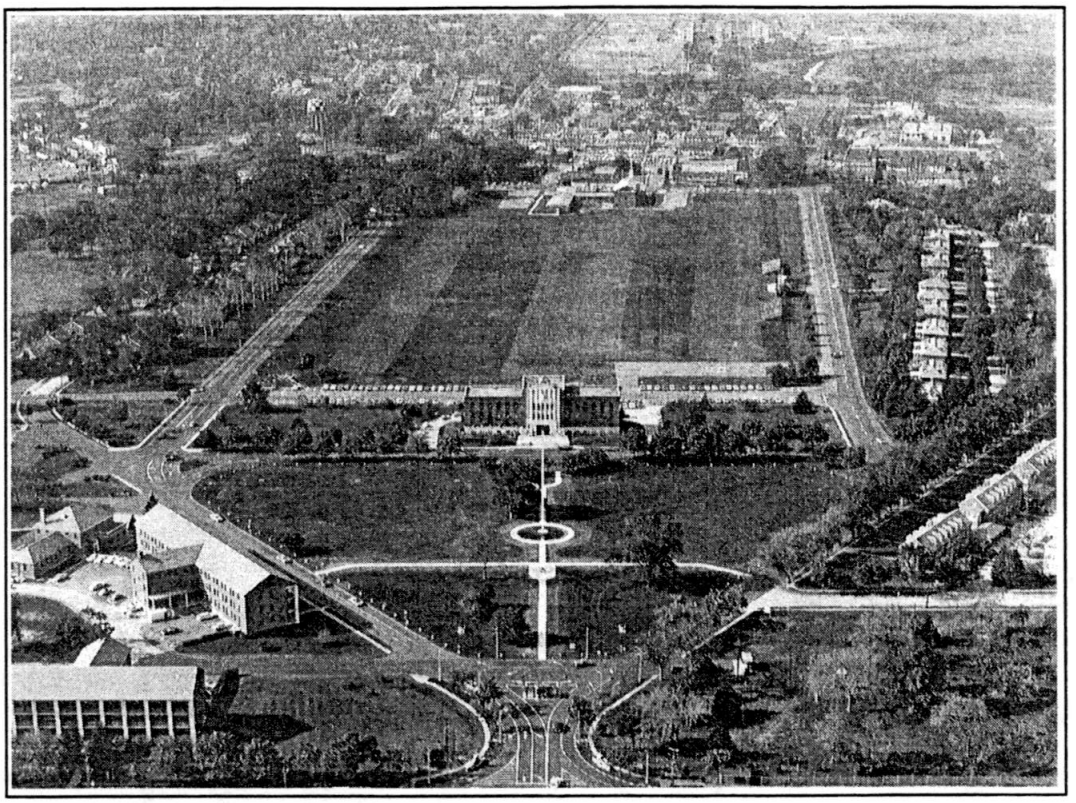


Figure 2.2 Aerial Photograph of Fort Monmouth, Showing the Developed Character of the Post (Undated, ca. 1960s).

Fort Monmouth provides command, administrative, and logistical support for the headquarters of the U.S. Army Communications-Electronics Command (CECOM), a major subordinate command of the U.S. Army Materiel Command (USAMC). After the BRAC action, the Main Post and Charles Wood Area are expected to employ 7,374 personnel, of whom approximately 82% are civilian (U.S. Department of the Army 1994:2-4).

Today, the post is primarily suburban in character, being surrounded by the communities of Shrewsbury to the north, Oceanport to the east, Eatontown to the south, and the Garden State Parkway to the west. Agricultural areas are found in the region, while recreational developments are along the ocean shore. Immediately west of the post is the New Jersey Garden State Parkway.

2.2 ENVIRONMENTAL SETTING

2.2.1 Physiography

Fort Monmouth is located on the Outer Coastal Plain, one of five physiographic provinces of New Jersey (Widmer 1964; Wolfe 1977). To the northwest is the boundary between the Outer and Inner Coastal Plains, marked by a line of hills extending southwest, from Atlantic Highlands overlooking Sandy Hook Bay, to a point southeast of Freehold, New York, and then across the state to 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 less than 122 m (400 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.

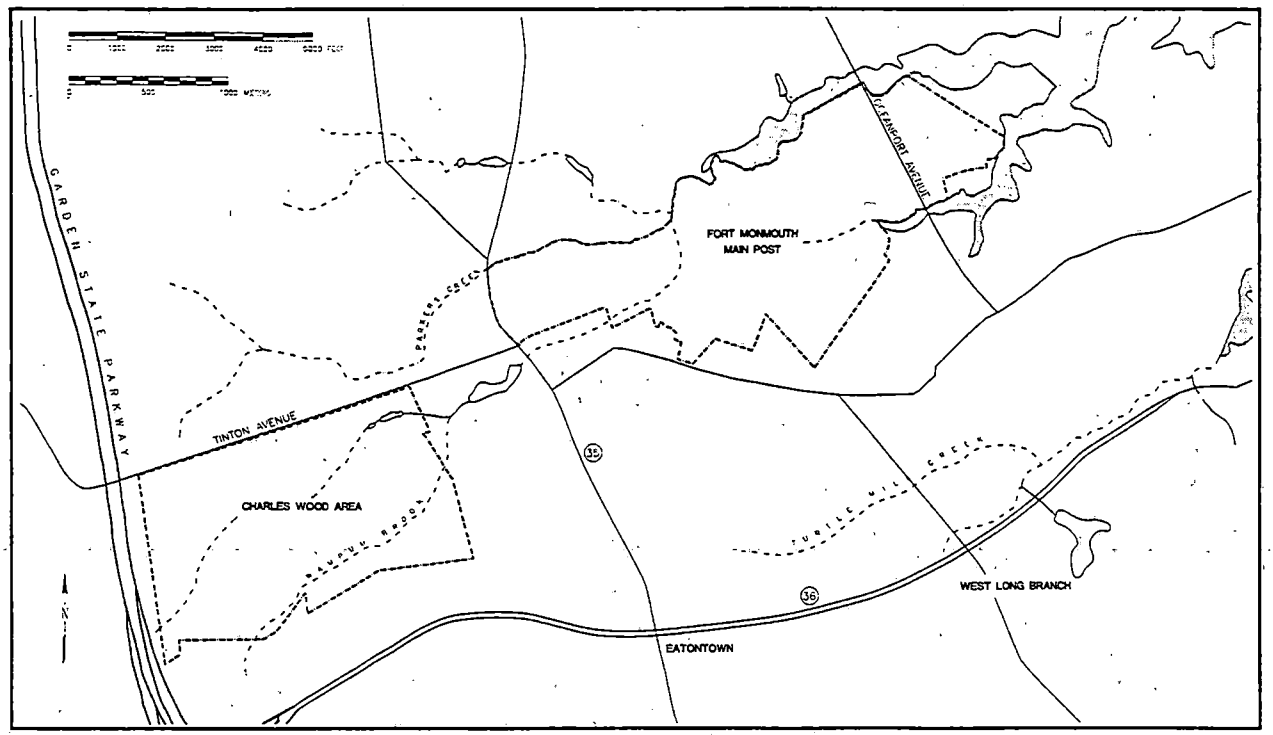


Figure 2.3 Locational Map of Fort Monmouth, Showing the Main Post and the Charles Wood Area.

The earliest 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, and deposits were laid down. As a result, the geology of the region is characterized by unconsolidated sediments. Fifteen Cretaceous and Tertiary geologic formations have been identified in northern Monmouth County, to a depth of more than 360 m (1,200 ft) below sea level, and bedrock is approximately 400 m (1,300 ft) below sea level. Sand and gravel deposited in recent geologic times lie above these formations. Among the soils at Fort Monmouth are Freehold sandy loam and Downer sandy loam, both of which are well drained. Around Parkers Creek are Humaquepts soils, which are very poorly drained. Udorthents-Urban land is the classification of soil which has been modified by construction or infilling; much of Fort Monmouth consists of this soil (Fitch and Glover 1989).

Fort Monmouth is in the Shrewsbury River drainage, in the Navesink River basin, which contains tributary streams with a low gradient. The Main Post Area 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 Area into Lafetra Brook. On the south side of the Main Post Area is Oceanport Creek. Husky Brook flows from the west into Husky Brook Lake in the Main Post Area 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 which 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 southeast.

2.2.2 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. Ocean storms occasionally affect the region. Temperatures in the summer are as high as the 90s 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).

2.2.3 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 which could have provided 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. There are perennial fresh water sources in the region. Historically, the vicinity has been used for farms and pastures. Salt-marsh hay would have been an economically valuable crop. Commercial agriculture for urban markets has been a recent use of the land, and is economically important.

2.3 CULTURAL HISTORICAL OVERVIEW

2.3.1 Prehistoric Period

As is the case throughout northeastern North America, the prehistory of New Jersey traditionally has been divided into three periods based on general adaptations to the environment: Paleoindian, Archaic, and Woodland. Subdivisions of these periods reflect artifacts found at sites which can be dated. A prehistoric cultural chronology of New Jersey, based on Fitch and Glover (1989), is presented in Table 2.1.

Environments in northeastern North America have changed over time. Pollen analysis has provided data on vegetation, and by inference, the climate in New Jersey (Sirkin et al. 1970; Sirkin and Minard 1972; Wolfe 1977). Marshall (1982) summarizes the data. Around 17,000 years ago, herbaceous plants dominated the landscape south of the limit of glacial advance. As glacial ice retreated, an open parkland developed, and this was succeeded by a pine-spruce forest about 13,000 years ago. Oaks and hemlocks predominated by 8,500 years ago. Between about 11,000 and 9,500 years ago the climate was cool, followed by a warming trend until about 5,750 years ago. Since then, there has been a slight cooling to the present (Wolfe 1977).

Glacial ice did not cover the vicinity of Fort Monmouth during the Wisconsin glaciation, the last of four glaciations in North America. The terminal moraine passes from Long Island through the New York City area into northern New Jersey and Central Pennsylvania. New Jersey is roughly divided into two regions, one mostly north of the terminal moraine (northern New Jersey) and the other south of the limit of glacial advance (southern New Jersey) (Kraft and Mounier 1982a:56). After the end of the last glaciation, soils and landforms developed, creating the physiographic provinces which exist today.

Since the Fort Monmouth vicinity was south of the limit of glacial advance, there are few rocks on the surface, but sources of lithic material for tools can be found within 80 km (50 mi) of the terminal

Table 2.1 Prehistoric Cultural Chronology of New Jersey.

Period or Subperiod	Dates	Cultural Subdivisions and Diagnostic Artifacts
Paleoindian	10000 - 8000 B.C.	Eastern Clovis, Plano points
Early Archaic	8000 - 6000 B.C.	Bifurcate base points
Middle Archaic	6000 - 4000 B.C.	Stanley, Neville, Morrow Mountain II, Stark, Poplar Island points
Late Archaic	4000 - 1000 B.C.	Small Stemmed Point tradition, Susquehanna tradition, Koens-Crispin complex
Early Woodland	1000 B.C. - A.D. 500	Meadowood points
Middle Woodland	A.D. 500 - 900	Jack's Reef points
Late Woodland	A.D. 900 -1600	Levanna points
Contact/Protohistoric	A.D. 1600 -1700	Delaware Indian culture

Based on Fitch and Glover (1989).

glacial moraines. Because of lowered sea levels during the Pleistocene epoch, the Atlantic Ocean was about 130 km (80 mi) east of the present shoreline. Nevertheless, the Hudson Channel cut across the exposed land, and there were deep bays and estuaries on the coast (Kraft and Mounier 1982a:58). The locations of many landforms and bodies of water which may have been occupied or used by prehistoric occupants are now under the ocean, on the Continental Shelf. A discussion of environmental zones on the Continental Shelf and their potential food resources is found in Barber (1979). In the late Pleistocene, two large glacial lakes, Glacial Lake Passaic and Glacial Lake Hackensack, existed to the northwest of Fort Monmouth. After these lakes drained, marshes or meadows developed in their basins.

2.3.1.1 Paleoindian Period (Before 8000 B.C.)

The earliest occupants of New Jersey, for which there is evidence, are the people whom archaeologists call the Paleoindians. They may have occupied the region before the glacial retreat. Their 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). Making analogies with the practices of living groups who survive by hunting and gathering, archeologists think it likely that the Paleoindians were highly mobile, traveling in small bands. They moved between temporary camps as resources became available through the year. Neither horticulture nor settled village life was practiced by these people.

As noted above, sea level was lower in the Pleistocene, with Fort Monmouth located well inland from the shore. Consequently, Paleoindian sites in the Fort Monmouth vicinity are anticipated to show few, if any, adaptations to a coastal environment. Reconstruction of the paleo-environment 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 and, therefore, their human hunters.

An artifact diagnostic of Paleoindian culture is the fluted point (a projectile point which has a "flute" or flake removed from the base). As of the early 1980s, a total of 208 fluted points has been found in 21 counties of New Jersey. Forty-eight fluted points have been reported in the Outer Coastal Plain, with 18 found in Monmouth County. These came from along the shore of Raritan Bay, at the

headwaters of the Navesink River, and south of the Shrewsbury River. Fluted points in New Jersey are predominantly made of jasper and chert, which may have been derived from pebbles in local deposits or from sources in Pennsylvania and New York (Marshall 1982). The latter possibility suggests travel to or trade with those locales.

The Paleoindian period in eastern North America has been divided into an early, Clovis-like fluted point stage (10,500 to 8000 B.C.) and a non-Clovis fluted and unfluted later stage (8000 to 6000 B.C.) (Funk 1978). Another way to divide this period is into a fluted point stage, with Clovis, Middle Paleo, and Dalton-Hardaway subphases; followed by a notched-point stage, with Palmer, Kirk, Kirk A, and Warren subphases (Gardner 1974). The latter proposal emphasizes the continuity of the Paleoindian period with the succeeding Early Archaic (Marshall 1982:15).

Sites near the Fort Monmouth vicinity identified as having Paleoindian components include the Port Mobil site at the southwestern tip of Staten Island, New York, and the Turkey Swamp site, in Freehold, New York. The Turkey Swamp site is a multi-component site with an artifact assemblage which is classified as part of the Dalton-Hardaway Late Paleoindian subphase (Cavallo 1978). Some Paleoindian material has been recovered from two other sites, the Kandy Bar Ranch site and the Timber Swamp Brook site.

Paleoindians have been described as big-game hunters, depending on mastodons or mammoths, although it is likely 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 off shore 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. Other animals available for hunters were fox, seal, great beaver, white tailed deer, elk, moose, bison, and Pleistocene horse, bear, and peccary (Ritchie 1965:10-11).

Locations favored by Paleoindians include ridges overlooking lowlands, fresh water, rivers and swamps (Marshall 1982:35-36). Klein et al. (1984:2-4) 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."

2.3.1.2 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 tail deer, migratory birds, and, on the shore, shellfish. A traditional definition of the Archaic has been a negative one - that there was neither horticulture nor ceramic production practiced by people of the time (Ritchie 1932). This definition, however, simplifies the processes involved in the development of horticulture, and 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 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 Plano points or others which 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 they were subsequently replaced by newcomers. Perhaps the development of spruce-fir forests, which provide fewer food sources than do the environments which preceded or succeeded them, may have been able to support only 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 1982a:64).

One definition of the Early Archaic in eastern North America is that it is 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 (Mounier 1982a:77; Ritchie and Funk 1973:337). The presence of many types of artifacts in various ecological settings may indicate use of more resources than were previously utilized. A widely distributed but light density of artifacts dated to the Early Archaic suggests that populations at this time were small and mobile (Mounier 1982a:77). Early Archaic sites recorded within 5 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 in Monmouth County in Lincroft.

In comparison with the Early Archaic, the Middle Archaic is characterized by more sites, larger sites, and the use of many ecological settings in northeastern North America. Curiously, there are no sites in Monmouth County which are reported to contain a Middle Archaic component. 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. Most sites are located in riverine, lacustrine, and coastal settings. 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, these include long, slender projectile points with tapered stems. They 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 Stanley and Neville types, but the absence of good stratigraphic data on these points is a problem for assigning a Middle Archaic date to them (Mounier 1982a:79).

The Late Archaic is characterized as a time when people became well adapted to the hardwood forests. Sites are typically larger than those of the Middle Archaic and were repeatedly occupied. Population increased in this period. 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 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 over a wide area (Mounier 1982a:80-81).

Several cultural traditions (i.e., customs or traits which persist through time and may be reflected archeologically) have been identified in the Late Archaic. One, the Laurentian, is found in northern New York and New England but does not extend into New Jersey. Two others, the small-stemmed point tradition and the Susquehanna tradition, are present in the archaeological record of New Jersey.

The Small Stemmed Point tradition, includes small stemmed and small triangular projectile points, ground stone tools, and atl-atls (i.e., spear-throwers). Found on the coast and along major rivers from Virginia to southern New England, it has been dated between 3200 and 1700 B.C.

The third Late Archaic tradition is the Susquehanna, which includes broad stemmed and notched points and narrow notched "fishtail" points. The Susquehanna tradition may have originated in southeastern North America and spread northeast. Related to the Susquehanna tradition are mortuary practices. 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, atl-atls, stone vessels, cremation burials, and early ceramics (Mounier 1982a:81-84). This complex, along with others, have 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 out of soapstone (steatite), and full-grooved axes are characteristic of the Terminal Archaic (Kraft 1982a:69).

Within a 5 km (3 mi) radius of Fort Monmouth, 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 (Fitch and Glover 1989:210-211).

2.3.1.3 Woodland Period (1000 B.C. to A.D. 1630)

The Woodland Period does not directly refer to an ecological zone, but it refers to a period of cultural transformation in the Eastern Woodlands, the region from the Mississippi River to the Atlantic Ocean (Kraft 1986:89). At the start of the Woodland Period the first pottery in northeastern North America was made with ground soapstone for temper, and some horticulture may have been practiced. When this period ended, Native American groups depended on plant cultivation and faced new people from Europe. Like the Archaic, the Woodland Period is often divided into three subperiods: Early Woodland (1000 B.C. to A.D. 500), Middle Woodland (A.D. 500 to 900), and Late Woodland (A.D. 900 to 1600). These terms were originally defined at the Woodland Conference of 1948 and specifically referred to stages in the development of horticulture among Mississippian groups in the Mississippi Valley (Williams and Thomas 1982:107).

Distinctions between Early and Middle Woodland periods are not clear in the mid-Atlantic region in general and New Jersey in particular. 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.

Early/Middle Woodland culture was similar to that of the Late Archaic except that there were technological changes, particularly pottery. There was also increased use of shellfish resources along the shore and estuaries. 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.), which was defined in New York State, is one cultural subdivision which has been recognized for this period. Sites with Meadowood components are characterized by the presence of these points as well as cremation

burials and Vinette 1 pottery type (Ritchie 1965:180). Two sites in Fort Monmouth (28-Mo-126 and 28-Mo-129) probably date from this period, and 28-Mo-129 contained a Meadowood point.

New Jersey is where the two earliest eastern pottery traditions meet. In the northern part of the state is Vinette 1 type. This pottery has corded designs and is conoidal in shape. Although this pottery has a similar distribution, as do projectile points which are temporally diagnostic for the period, the pottery and the points have not been found in clear association with each other. The second pottery tradition is flat-bottomed vessels with steatite temper. No diagnostic projectile points have been associated with this pottery type (Williams and Thomas 1982:112-113).

A variety of resources were used. The coastal environments, principally tidal estuaries and salt water bays, provided shellfish and anadromous fish. Land-based subsistence continued to rely on hunting and gathering. Horticulture is a greater problem for archeologists studying New Jersey in this period. Evidence of horticulture is indirect, and it is not certain to what extent plant cultivation was a major food source (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). Generally, the Late Woodland experienced increased populations, occupation of larger sites with food storage facilities, and the development of local pottery styles (Mounier 1982b:159). A combination of horticulture and foraging was the Late Woodland means of subsistence. There have been recovered from Late Woodland sites clay tobacco pipes, Levanna triangle projectile points, and pottery. On the coastal plain, distinctive pottery types developed, including Overpeck Incised, Bowmans Brook Incised, and Riggins Fabric-Impressed. These are discussed in detail in Mounier (1982b) and sources cited in that work.

A problem for the study of the Late Woodland in New Jersey is that most field research has focused on the Delaware Valley. Uneven coverage of the state makes generalizing about this period difficult. Another problem is that many Late Woodland areas of occupation were apparently located near what became historic settlements. As a result, cities, towns, and suburbs are on top of what were sites from this period. The Hop Brook Camp site and the Swimming River Lake I and II sites, which are near Fort Monmouth, have Late Woodland components. A Levanna point was collected on the surface in the Charles Wood Area (Klein et al. 1984).

At the end of the Woodland Period is European Contact. Although there may have been brief and sporadic contact, permanent European settlement in the northeast is generally given as the end of the Late Woodland and beginning of the Contact/Protohistoric Period. Further remarks on the Delaware Indians are found in the Section 2.4 below.

2.3.2 Historic Period

For the purposes of this document, the history of the Fort Monmouth and its vicinity is divided into the Historic period (before the establishment of a military facility here) and the Fort Monmouth period (after 1917). Within each of these broad time periods there can be a variety of ways to divide the past. For the time period before the establishment of a military facility at Fort Monmouth, the following categories are used: Colonial, Federal, and Industrial. It is, of course, possible to find events significant in local history to justify considering other categories, such as an Early Industrial period ending after the Civil War, or to use architectural styles as the basis for periodization. In developing historic contexts for NRHP purposes, the reader is referred to the works cited and to Chesler (1982).

Table 2.2 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

Table 2.2 Historic Cultural Chronology of New Jersey Before the Establishment of a Military Facility at Fort Monmouth (based on Fitch and Glover 1989 and other sources).

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 inch; handwrought nails; freeblown and molded glass
Federal 1775-1810	New Jersey the scene of much military activity during the Revolution; Battle of Monmouth Court House (1778); agriculture, industry, and trade slowed down through the period	Creamware; pearlware; pipestems with 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 (1917); interurban transit and the beginnings of suburbanization.	Pearlware in early part of period; whiteware from 1820 on; yellowware from 1827 on; transfer-printing on ceramics; 3-piece molded bottles after 1810 and 2-piece molded bottles after 1840; tin cans after 1819; pressed glass after 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; dates of manufacture available from patent numbers or from merchants' catalogs

found in historic archeological sites in the northeast is also given.

2.3.2.1 Colonial Period (ca. A.D. 1630 to 1775)

An unsuccessful attempt at settlement in what is now New Jersey was made by the Dutch in 1624. Swedes and Finns established a settlement in 1638. This settlement was taken by the Dutch in 1655 and then by the English in 1664. These early European settlements and their residents were transitory. The history of permanent European settlement of New Jersey began in 1664.

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 the 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% 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 in the Colonial period, although there was a steep decline 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 one on Wampum Brook in Eatontown in the 1670s (Ellis 1885:875). Mills probably served the needs of the immediately surrounding communities rather than producing of finished goods for a more distant market. 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.

2.3.2.2 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 1982:212, 215). Agriculture remained a major activity in this period, as did maritime pursuits. Alexander Hamilton proposed constructing a large industrial city across from New York City, at the site of today's City of Patterson. 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.

Archeological 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.

2.3.2.3 Industrial Period (1810 to 1917)

A corridor, 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 was (Larrabee 1982).

The peak of the rural population was 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. There were also African-Americans who moved north (Hunton and McCabe 1984:26; Larrabee 1982:223). Figures 2.4 and 2.5 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, and the Shrewsbury Turnpike 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 I: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, Redacted - Privacy Act and Redacted - Privacy Act bought 128 acres of the Redacted - Privacy estate in 1869 (Building Technologies, Inc. 1984). A racetrack was constructed in 1870, with a larger track built in 1890 (Figures 2.6 and 2.7). 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.

Archeological 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.

2.3.3 Fort Monmouth Period

After the establishment of the Signal Corps camp (Figure 2.8) 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, WW II, or the Viet Nam War.

Generally, archeological 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.

2.3.3.1 Early Military Period (1917 to 1946)

The Early Military period refers to the period from the establishment of a military presence 1917 through 1946, including the years between the world wars (1917-1941), WW 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 about 468 acres of the old Monmouth Park Racetrack and established 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 because of its 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 (see Figure 2.8) (Fort Monmouth Tradition Committee 1961). The old infield of the racetrack became a flying field

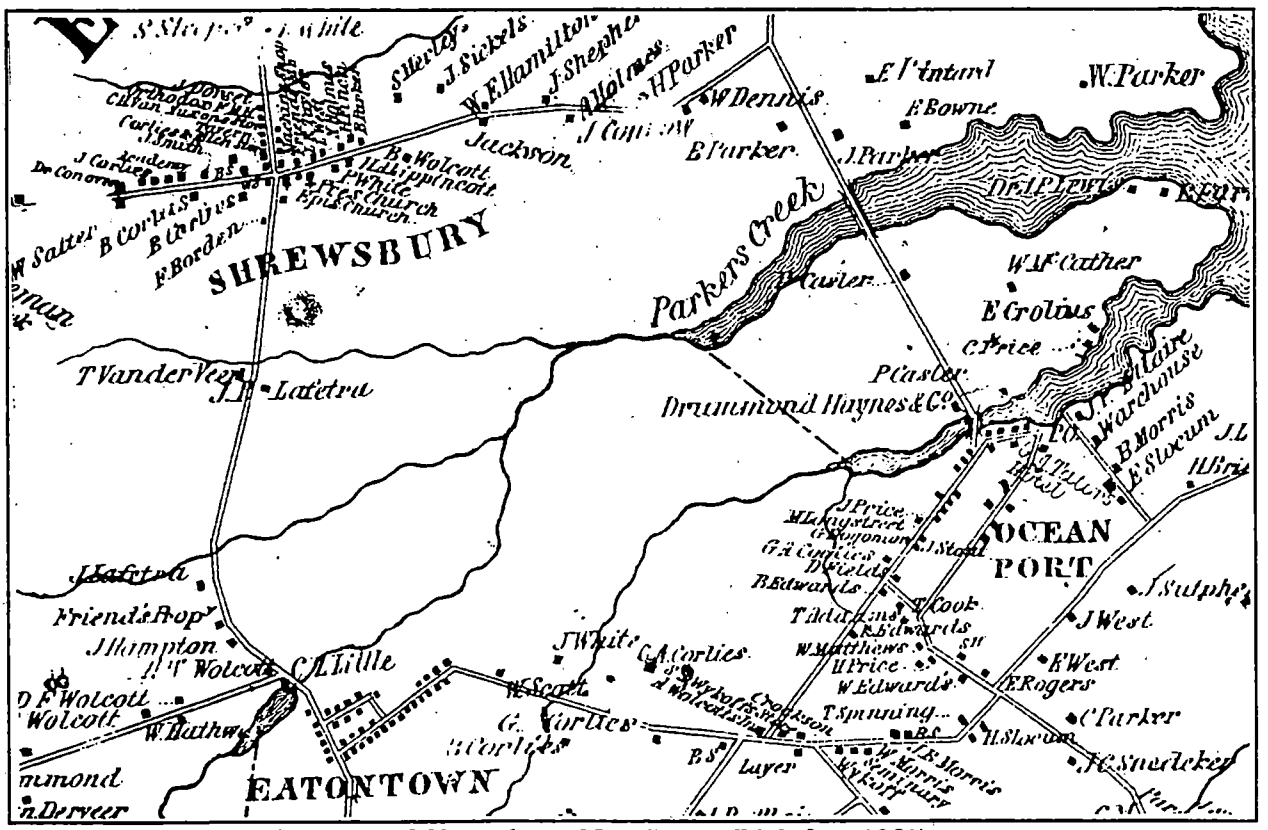


Figure 2.4 Historical Map of Shrewsbury, New Jersey (Lightfoot 1851).

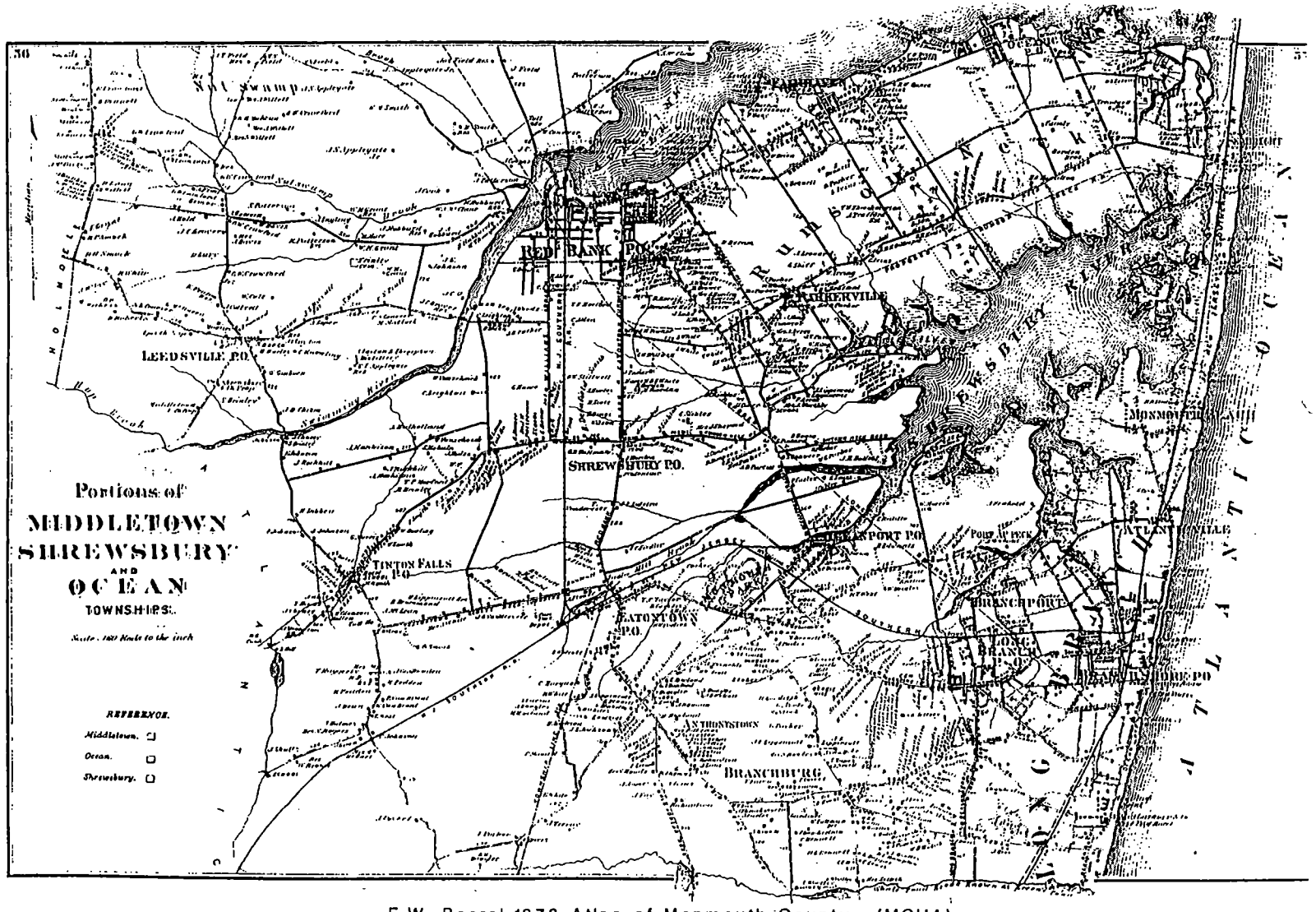


Figure 2.5 Historical Map of Middleton, Shrewsbury, and Ocean Townships, New Jersey (Beers 1873).

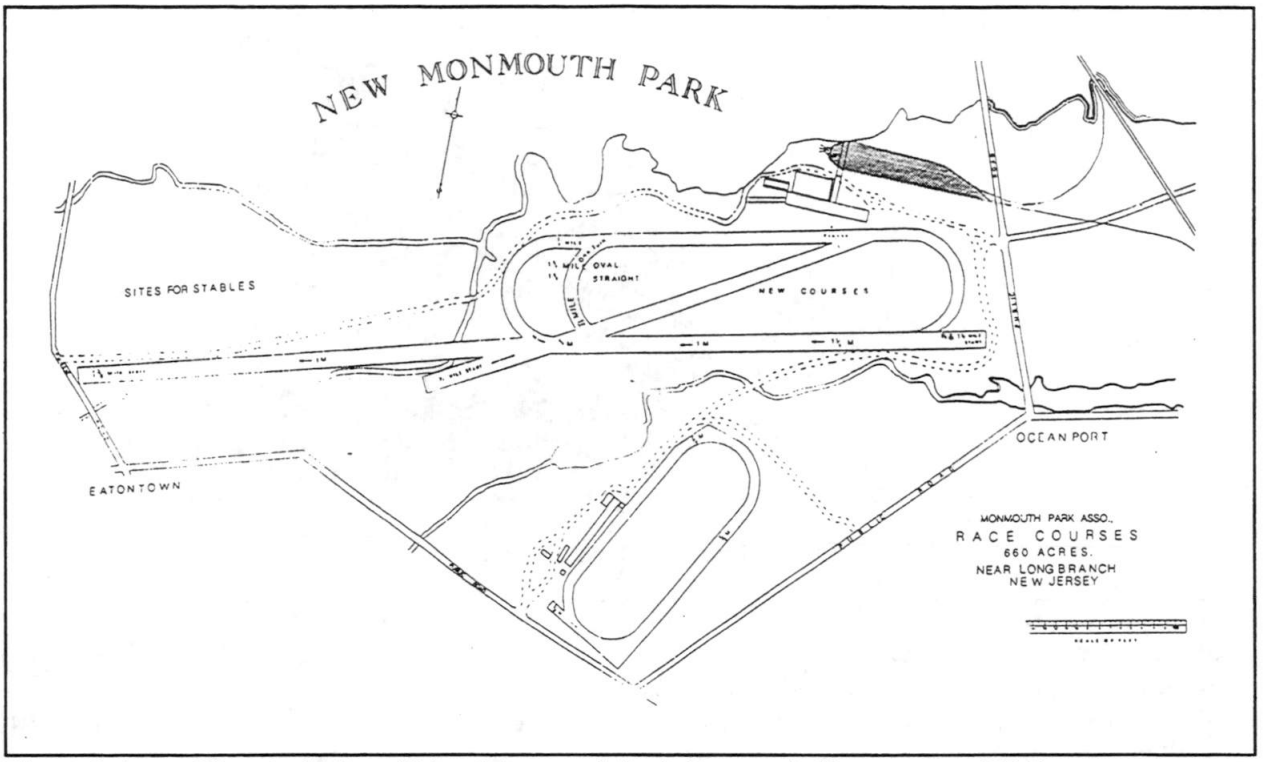


Figure 2.6 Historical Map of New Monmouth Park Racetrack (Anonymous 1890).

Figure 2.7 Photograph of New Monmouth Park Racetrack, Circa 1890.

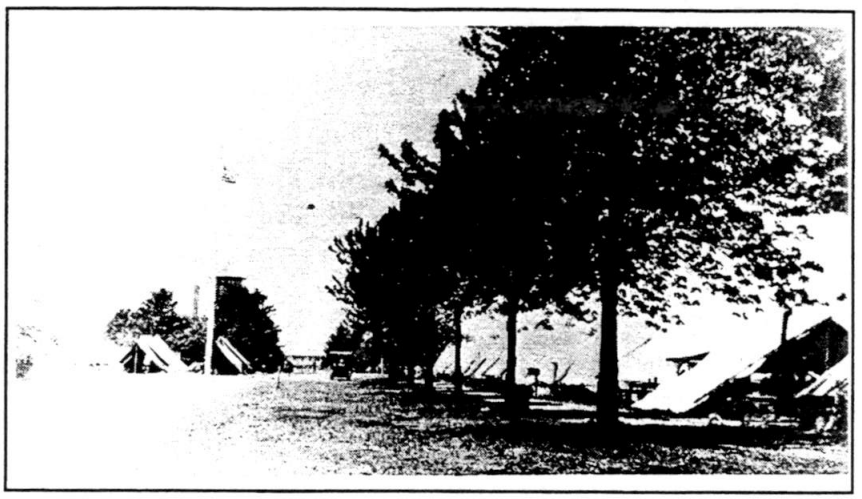


Figure 2.8 Signal Corps Camp, Little Silver, New Jersey, August 1917.

and later a parade ground. Barracks and laboratories were constructed (Figure 2.9). 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 the camp. Courses began in late July, 1917, with students learning cryptography, heliography, semaphore, and map reading. Later, 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).

A need for improved military communications required a research laboratory, and one was established here under the direction of Major General George O. Squier. The Engineering and Research Division of the Signal Corps moved from Washington, D.C. to the camp. In 1918, standardization of vacuum tubes was developed here. Projects included the radio telephone, the voice radio, and the airborne radio. Other work at the laboratory focused on testing manufactured apparatus 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 WW I, 129 semi-permanent buildings were constructed (CECOM Historical Office 1985, 1994; Fort Monmouth Tradition Committee 1961).

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

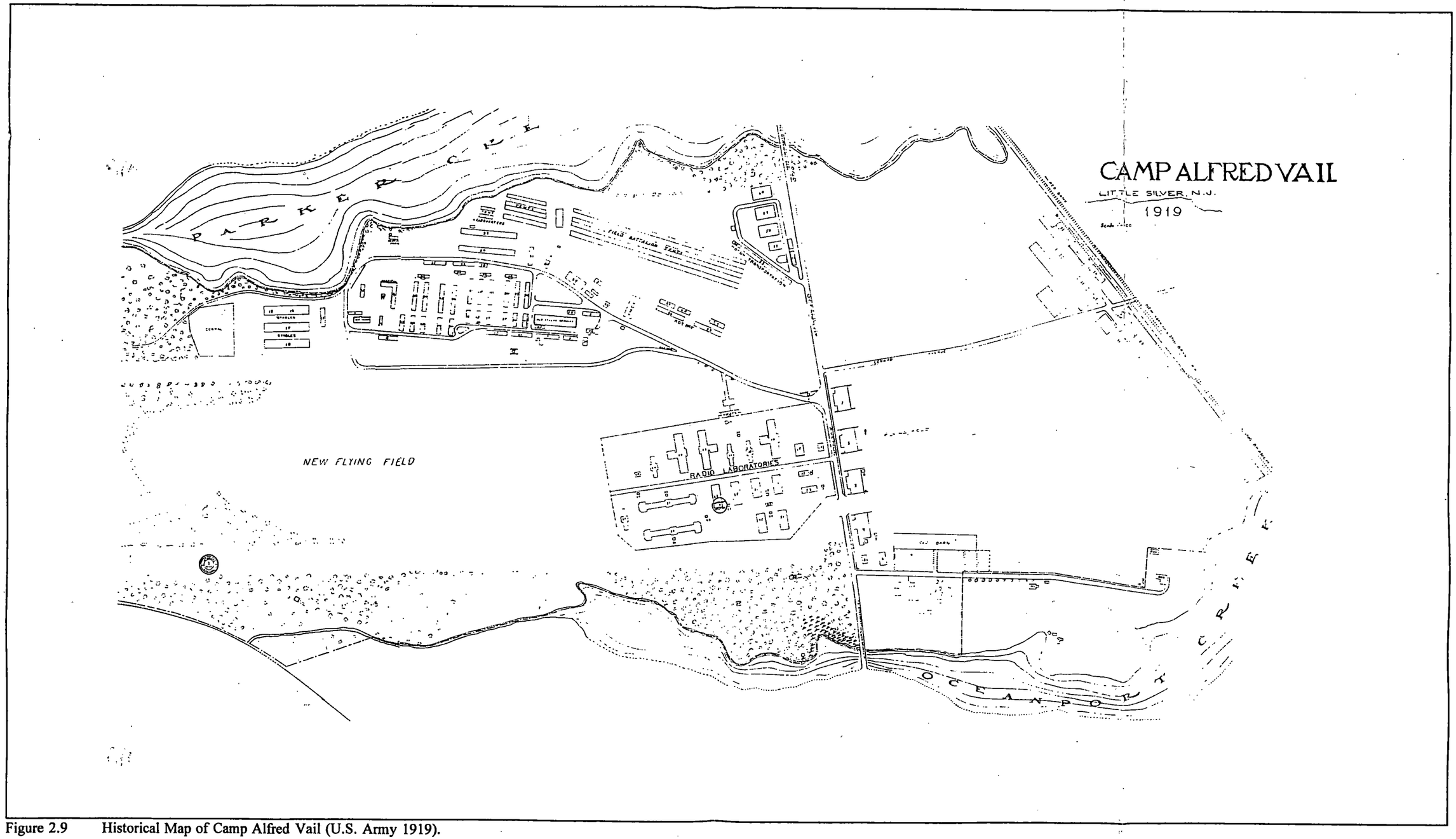


Figure 2.9 Historical Map of Camp Alfred Vail (U.S. Army 1919).

transmit telephone messages for 160 km (100 miles) (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 used during WW II was developed in this period. The SCR-268 and SCR-270 radar sets were developed at Fort Monmouth, as was the SCR-300 - the famed "Walkie-Talkie" radio 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 2.10). These include the buildings which are now contained in the NR district: enlisted barracks, the NCO and officer's housing, the theater, fire station, and headquarters building (see Section 3.4). 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 present 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 (Figures 2.11 and 2.12).

Before WW II began, an increase in military preparedness led to the acquisition of several parcels in Monmouth County. There were four subinstallations 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 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 2.13). 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. 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 (Figure 2.14, area "2").

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).

2.3.3.2 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). A 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).

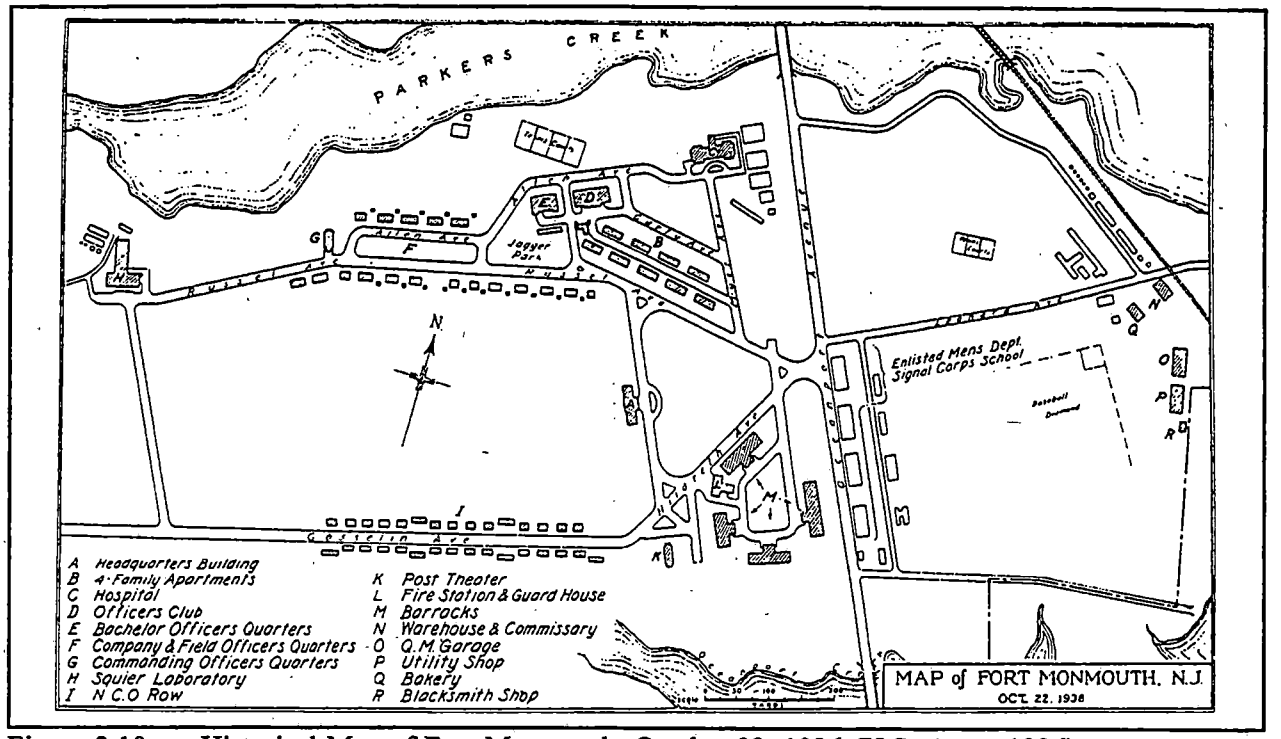


Figure 2.10 Historical Map of Fort Monmouth, October 22, 1936 (U.S. Army 1936).

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 with the Soviet Union, its allies, and other communist countries. Aspects of the Cold War include but are not limited to: military occupation and economic reconstruction of Europe and Asia following WW 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 the Cold War were also very intense, and the fear of nuclear confrontation was widespread. The Cuban Missile Crisis and its aftermath, the 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 into constituent republics which largely rejected communism.

New York American

SATURDAY, AUGUST 3, 1935

ARMY'S MYSTERY RAY

SENSATIONAL NEW DEVICE TO SEE IN DARK

By LOU WEDMAR.

PORT MONMOUTH, N. J., Aug. 2.—The inside story of the United States Army's new so-called "mystery ray," which is expected to revolutionize warfare, was told exclusively to this writer for the first time by a "high" Army official today.

The apparatus, which has been successfully tested during the last few nights in mimic warfare to guard the entrance to New York Harbor, receives a "mystery ray," instead of projecting it, as first reported

By use of the sensational device, which utilizes the most modern principles of television and the "infra-red ray," invisible enemy battle fleets and airplane squadrons can be seen in full detail, despite darkness.

PICTURE OF ENEMY

A picture of the attacking fleet or ships or planes actually appears on a small screen, in a kind of midget "movie," and its location is automatcially charted. The receiving device gathers up the invisible "infra-red rays" and brings them, through a television "scanning" apparatus,, to the screen. When the receiver is properly focused the image of the ship appears as clearly as in daylight.

It was found that the infra-red ray, which lies just beyond the edge of the light spectrum visible to the human eye, could be detected by an apparatus similar to that of the ultra-short-wave receivers designed by the Italian inventor Marconi.

RAYS CAN'T BE SEEN

The infra-red ray, otherwise known as the "heat ray," is produced without exception by all heated objects, from red-hot coal to a warm hot-water bottle. The rays have never been "seen," but their presence can be detected in two ways—by the sense of feeling—which shows them as heat—and by the newly-perfected receptor.

The rays are given off by the engine of a battleship, or that of an airplane, so long as there is any heat whatsoever remaining in the metal. And the rays, like the rays of light, illuminate surrounding objects.

As a result of this discovery, by "grafting" a television apparatus on a "heat-ray" detecting apparatus, the signal corps was able to "see," on a silver screen, a heate dobject in a dark room. After this, an airplane motor was brought in, run for a while, and then, in utter darkness, "seen" in the laboratory.

Figure 2.11 Newsclipping of "Army's Mystery Ray," August 3, 1935 (Wedmar 1935).

CABLE ADDRESS:
"OKURA NEW YORK"

BRANCHES:
BERLIN
DAIREN
FUSHUN
HANKOW
HARBIN
HSINKING
KEIJO
KOBE
KURE
LONDON
MAIZURU
MOJI
MUKDEN
NAGOYA

OKURA & COMPANY

HEAD OFFICE: TOKIO JAPAN

TELEPHONE NO.
CORTLANDT 7-2292-93-94

BRANCHES:
NEW YORK
OSAKA
PARIS
PEIPING
SASEBO
SHANGHAI
SYDNEY
TAIHOKU
TIENTSIN
TSINGTAO
YOKOHAMA
YOKOSUKA

30 CHURCH STREET

NEW YORK

October 16th, 1935

United States Signal Corps Lab.
Fort Monmouth, N.J.

Gentlemen:

We are very much interested in the "Mystery Ray" device described on page 29 of the October 1935 issue of "Popular Science Monthly", which we understand you have developed.

We shall, therefore, appreciate it very much if you will kindly send us at your earliest convenience any further information regarding the "Mystery Ray" that you can.

Thanking you in advance for your kind and prompt attention to the above request, we remain

Yours very truly,

OKURA & COMPANY

Manager.

K/B

Figure 2.12 Letter from Okura & Company, October 16, 1935.

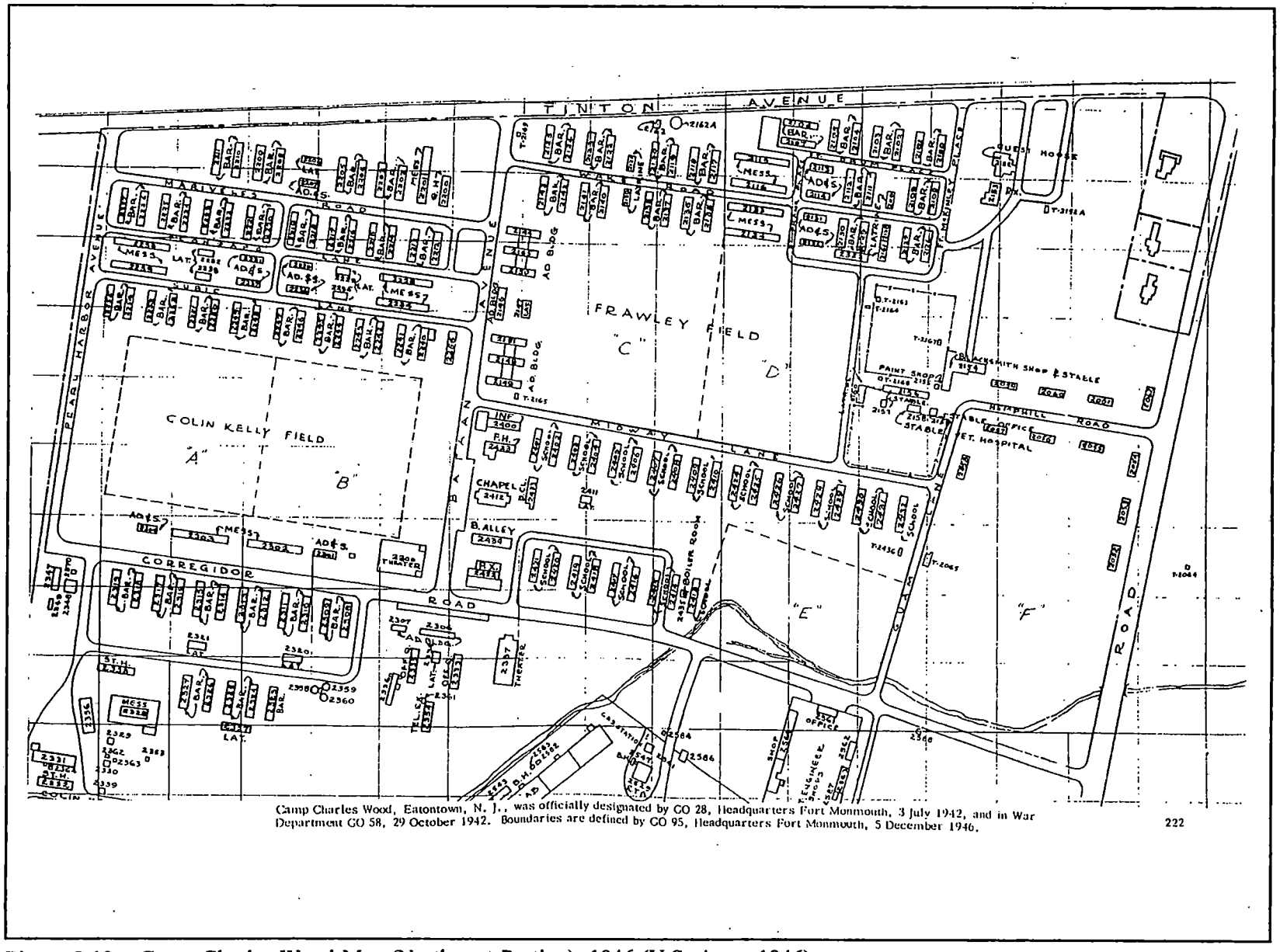


Figure 2.13 Camp Charles Wood Map (Northwest Portion), 1946 (U.S. Army 1946).

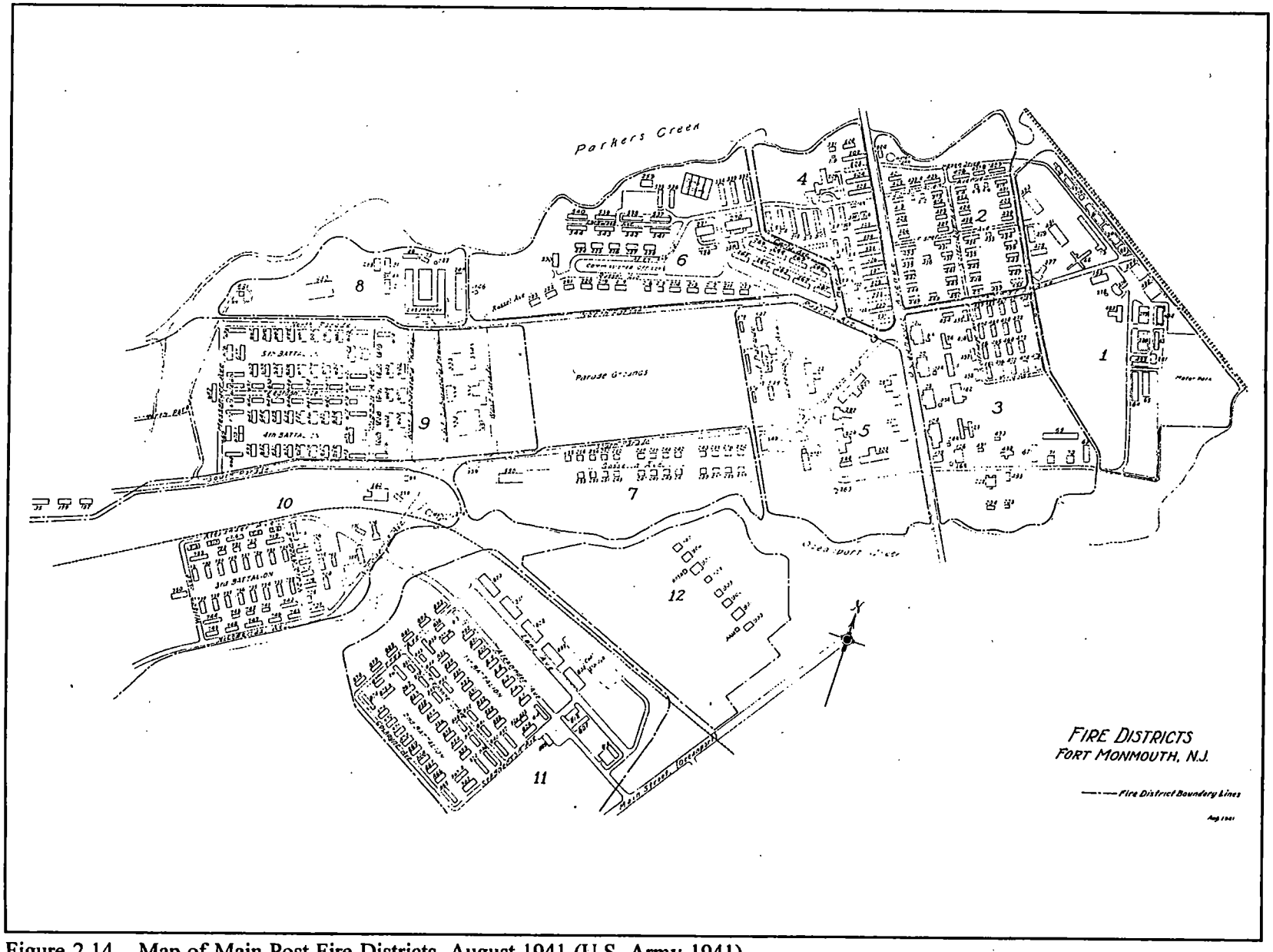


Figure 2.14 Map of Main Post Fire Districts, August 1941 (U.S. Army 1941).

In the years between WW 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, including single family homes for military personnel, took place, particularly in the Charles Wood Area. Laboratories continued in operation at the Main Post, the Coles Signal Laboratory, Camp Charles Wood, and the Evans Signal Laboratory.

Early in this period, a major scientific question was addressed by researchers at Fort Monmouth: was the earth's ionosphere was a barrier to radio waves? Project Diana was intended to prove otherwise (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 was the first time that there was any human 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 WW 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, 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 done 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 are micro-miniaturization of military communication electronics, and the invention of automatic assembly of integrated circuits for communications equipment (Richard Bingham, 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 done 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); multichannel 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 J. Myer Research and Development Center, was built in 1954.

During the Vietnam War, there were technological advances to which Fort Monmouth made contributions. Transistors and integrated circuits replaced tubes. Communications equipment was 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).

2.3.3.3 Post-Cold War Period (1989-present)

Because we are currently in the early Post-Cold War period, it is not possible to adequately address very recent events with any historical perspective. The conclusion of the Cold War, however, has required a reorientation of the military away from a focus on the former Soviet Union. Potential conflicts on a smaller, regional level, such as the Persian Gulf War, have assumed greater importance. Advances in electronics and computer technology offer new areas for communications research.

As was the case at the end of WW II, there has been a downsizing of the military in recent years. The BRAC has proposed several rounds of facility decommissioning. Among them is 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.

2.4 NATIVE AMERICAN CULTURAL GROUPS OF THE REGION

2.4.1 Ethnohistorical Overview

The late prehistoric and early historic Native American groups in New Jersey were branches of the Lenni Lenape or Delaware Indians. These people were distinct from the Owasco people to the north, in New York State, who may have been the ancestors of the historic Iroquois. New Jersey's native inhabitants were speakers of an eastern Algonquian language and had a unique sociopolitical organization (Kraft 1982b:145).

Lenni Lenape people of New Jersey were divided into two linguistic groups. One group has been identified as living in the seventeenth century north of a line running from the Navesink River to Pennsylvania. These people spoke Munsee dialects, which were spoken in northern New Jersey, northeastern Pennsylvania, the New York City area, the lower Hudson Valley, the southern Catskill Mountains, and, possibly central Long Island. Among the local subgroups near Fort Monmouth was the Raritans, who lived on the lower Raritan River up to the 1640s. These people migrated inland when they faced attacks by native groups from the Delaware Valley and the Dutch. Another subgroup was the Navesinks who lived in what is now Atlantic Highlands on Sandy Hook Bay (Goddard 1978:213-215).

The second linguistic group are speakers of Unami dialects. These people occupied the area south of the Raritan River and the Delaware Water Gap. Fort Monmouth is located at the Munsee-Unami linguistic boundary. Unami dialects were divided into two clusters: Northern Unami-Unalachtigo, which was spoken in the Fort Monmouth vicinity, and Southern Unami. Little information is available on the subgroups not living along the Delaware River (Goddard 1978:215).

The Delaware occupied Lenapehoking or the "Land of the Lenape" in the New York-New Jersey-Delaware area. A good study of the archeology, ethnography, and history of these

people is Kraft (1986). First contact with Europeans came in 1524 with the visit of Giovanni da Verrazano. Sustained contact began in the early seventeenth century.

During the seventeenth century, the Delaware were subject to attacks by the Susquehannock of eastern Pennsylvania and the devastation of epidemics originating in European settlements. In the 1640s there was prolonged warfare between the Delaware and the Dutch. Access to sea shells, which could be processed into wampum, also made the Delaware the target of other Native American groups, who sought this valuable resource. Having a poor territory for hunting fur-bearing animals, which had been depleted for the early Dutch fur trade, the Delaware tried to expand their hunting grounds to other areas. This led to further conflict with the Iroquois, who extracted tribute from the Delaware who had migrated into Pennsylvania. Other Delaware went to Ohio, which put them under French colonial influence.

A critical point was the Delaware's decision to side with the French and against the English during the French and Indian War. The Delaware, however, did confer with the English when it became apparent that the odds were against the French. In 1758 the Treaty of Easton, Pennsylvania, ended hostility between the Delaware and the English. This treaty identified the claims of the Munsee and Unami speakers in New Jersey, and the Delaware relinquished their land claims in New Jersey (Kraft 1986). The colony settled accounts with the Delaware for the land (Lewis Publishing 1922 I:14).

The history of the Delaware after the Treaty of Easton is complex (Weslager 1978). Some members of Native American groups stayed in New Jersey, at the reservation in Brotherton or in English communities. Intermarriage and acculturation, which had been happening since the early seventeenth century, continued. Moravian missionaries had a strong influence on these people. As a result of these dynamics, much of the pre-Contact culture had apparently been lost by the American Revolution.

Many of the Delaware continued the migration westward which had begun earlier in the eighteenth century. In Ohio, the Delaware consolidated their power. There was a division among the Delaware during the American Revolution, with Loyalist supporters in northwestern Ohio and Patriot supporters near Pittsburgh. Fighting on the frontier included a massacre of Christian Indians at Gnadenhutten, Ohio, in 1782. Fighting continued after the revolution was over. The Treaty of Greenville of 1795 ended conflict between the United States and the Delaware Indians. Most Delaware moved to Indiana, but others had already migrated to Cape Girardeau, Missouri, Ontario, Canada, and southeastern Michigan. Although the Delaware of Indiana were neutral during the War of 1812, they were compelled by the Treaty of St. Mary, Ohio, to abandon Indiana. They moved to Missouri and then to Kansas, to a tract called the Delaware Outlet. Munsee speakers who had gone to Canada settled with Christianized Indians from Stockbridge, Massachusetts, in Wisconsin after 1837. After the Civil War, some of the Delaware left Kansas for the Cherokee Nation, in what became Oklahoma (Goddard 1978; Kraft 1986).

2.4.2 Historic Native American Cultural Groups

Knowledge of historic Native American cultural groups is important for compliance with NAGPRA, described in Section 1.5 above, as well as for research on topics in post-Contact history.

2.4.2.1 Delaware Tribe of Western Oklahoma

One federally-recognized Delaware tribe exists today. It is the Delaware Tribe of Western Oklahoma. This is the appropriate contact for NAGPRA consultation (U.S. Army Corps of Engineers [ACE] 1995). Correspondence is to be addressed to the Delaware Tribe of Western Oklahoma, President, Delaware Executive Committee, P.O. Box 825, Anadarko, OK 73005.

2.4.2.2 Other Native American Cultural Groups

The Stockbridge-Munsee Community of Mohican Indians of Wisconsin is federally recognized but has been established as a group separate from the Delaware. As of 1996, the Delaware-Muncie of Kansas and the Delaware of Idaho are in the process of petitioning for federal recognition. The petition for federal recognition submitted by the Munsee-Thames River Delaware of Colorado was denied in January 1983.

There are non-federally recognized groups in New Jersey which have been recognized by the state. The Sand Hill Delaware is a group found in Monmouth County. They are descendants of the Delaware, Cherokee, and whites. In the 1870s they established a community in Whitesville, now Neptune, New Jersey. An elected council and chief oversaw community life until 1953. Community affairs of the Sand Hill Delaware are now administered by the New Jersey Indian Office in Orange, New Jersey (Kraft 1986:240-241).

Other groups in New Jersey include the Ramapough Mountain Indians of northern New Jersey and New York. Their origins have been the subject of much debate among anthropologists and historians. In Burlington County, the Powhatan-Renape Nation has been recognized by the state, and they may have originated in Virginia but are related to the Delaware. Nanticoke Indians from the eastern shore of Maryland moved to New Jersey around the Civil War. They have been recognized by the state as the Naticoke-Lenni Lenape Indians of New Jersey (Kraft 1986:242-243).

Some descendants of the Delaware live in Pennsylvania and among the Iroquois in New York and Canada. In Canada, there are two communities of Delaware descendants at Moraviantown and Muncy, Ontario.

3.0 INVENTORY OF CULTURAL RESOURCES

3.1 PREVIOUS CULTURAL RESOURCE STUDIES

Previous cultural resource studies relevant to Fort Monmouth are listed in Table 3.1.

3.1.1 Regional Studies

Early in this century, the New Jersey state government sponsored archeological field studies which resulted in reports by Skinner and Schrabisch (1913) and Cross (1941). While these studies are now considered to be scientifically out of date, they are occasionally cited for site locational information. Chesler, ed., (1982) provides a valuable statewide synthesis of culture history. This work reviews research problems and establishes the priorities for archeological survey in New Jersey, and is the starting point for current archeological research in the state. A master's thesis on the prehistory of Monmouth County was written by Deborah Rinker Fimbel at Temple University in 1985. It addressed sites on the Outer Coastal Plain. An inventory of historic sites in Monmouth County was prepared by Hunton and McCabe (1984). It is on file in the New Jersey Historic Preservation Office and discusses Monmouth County's historic buildings, structures, and places by region. Eatontown and Fort Monmouth are in Region II. The thesis provides points of comparison outside of Fort Monmouth.

3.1.2 Studies of Fort Monmouth

In 1984, Building Technologies, Inc., of Silver Spring, Maryland, prepared a study of historic

Table 3.1 Previous Cultural Resource Studies.

Author(s)	Date	Subject of Study
Regional Studies		
Skinner and Schrabisch	1913	archeological inventory, New Jersey
Cross	1941	archeological inventory, New Jersey
Chesler	1982	archeological synthesis, New Jersey
Fimbel	1985	archeological synthesis, Monmouth County
Hunton and McCabe	1984	architectural inventory, Monmouth County
Studies at Fort Monmouth		
Building Technologies, Inc.	1984	overview, archeological and architectural inventory, management recommendations
Klein, et al.	1984	overview, archeological inventory, management plan
Fitch and Glover	1989	reconnaissance archeological survey
U.S. Army	1994	EIS for realignment of Evans Area
U.S. Army Corps of Engineers	1995	NAGPRA compliance report
Reed, et al.	1996	architectural survey of Evans Area, small portion of Charles Wood Area
Nichols	1996	architectural survey of Main Post and Charles Wood Area
Trierweiler, Holmes and Nichols	1996	CRMP

properties at Fort Monmouth, including the Main Post and the Charles Wood Area and Evans Area (Building Technologies, Inc. 1984). Developed for the U.S. Army Materiel Development and Readiness Command (DARCOM), the report was intended to assist the Army in bringing these installations into compliance with the NHPA. It presents an architectural, historical, and technological overview of Fort Monmouth and identifies properties by established Army categories, with preservation recommendations. In a separate document, but related to the DARCOM effort, archeological resources at Fort Monmouth were treated in an archeological overview and management plan (Klein et al. 1984). Eight prehistoric archeological sites were identified, including six in the Main Post (28-Mo-126, 28-Mo-127, 28-Mo-128, 28-Mo-129, 28-Mo-130, 28-Mo-138) and two in the Charles Wood Area (28-Mo-131 and 28-Mo-132). Numerous locations of *potential* historic archeological sites are listed in Klein et al. (1984:Table 4-4). These are considered in delineating areas with archeological potential for the present CRMP.

In 1989, a reconnaissance survey was conducted of the Main Post Area of Fort Monmouth (Fitch and Glover 1989). It was intended to be included as an appendix to the EIS for the realignment of Fort Monmouth; Fort Devens, Massachusetts; and Fort Huachuca, Arizona. Six prehistoric archeological sites and one historic archaeological site were reported in the Main Post Area. The prehistoric sites are the same as those in Klein et al (1984). The historic site is a brick and mortar bridge culvert documented on an historic map (Wolverton 1889) and observed in the field at the western end of Husky Brook Lake. Fitch and Glover (1989) designated this historic archeological site as "Site A." Other areas of prehistoric and historic site potential were identified. These areas have been considered in the determination of archeological site potential for this CRMP. Standing architecture was also included in the reconnaissance survey. The proposed historic district on the Main Post, the former site of Hangar Number 1 from WW I, and other buildings and structures were noted. All of these buildings and structures are discussed below.

A collections summary for NAGRPA compliance purposes has been completed by the ACE, St. Louis District (1995). This document presents information on the collection made by Redacted - Privacy Act Redacted - Privacy Act a local resident and retired Fort Monmouth employee. The collection does not contain human remains, funerary objects, or other artifacts subject to NAGPRA. The report states that the Delaware Tribe point-of-contact at the Delaware Tribe of Western Oklahoma be informed in the event of the intentional excavation or inadvertent discovery of human remains or other items specified in NAGPRA, as outlined in Section 3 (c) and (d) of NAGPRA.

In 1995 a cultural resources survey was conducted of the Evans Area and sections of the Charles Wood Area (Reed et al. 1996). This study was conducted in preparation for the realignment of the Evans Area in accordance with the recommendations of the BRAC Commission, and in compliance with the findings of an EIS (U.S. Army 1994). The study inventoried 147 buildings and structures at the Evans Area and 39 in the Charles Wood Area, conducted an assessment of archeological potential of 30 acres in the Charles Wood Area and developed a context for assessing Cold War-era buildings and structures at Fort Monmouth.

In July 1996, an architectural inventory of above-ground buildings and structures was completed (Nichols 1996). This work inventoried and assessed NRHP eligibility of 341 buildings and structures on the Main Post and Charles Wood Area, including all 287 of those older than 50 years and 53 buildings younger than 50 years. Two theme-based districts were identified and a total of 98 buildings and structures were assessed as eligible for the NR.

3.2 ARCHEOLOGICAL RESOURCES

Archeological resources include sites, isolated finds, localities, and artifacts.

Sites are defined according to local standards by state or federal agency archeologists, and

are the locations of past human activity. They may contain artifacts (i.e., things made, modified, or used by humans), features (i.e., relatively immovable remains of human activity, such as a fire hearth), and other evidence of occupation (e.g., chemical alteration of the soil). If these archeological materials are found in the place where their original users left them, they are said to be *in situ* and the site has not been disturbed. If they have been disturbed by natural processes (e.g., erosion) or human activity (e.g., construction, deliberate vandalism) they are said to have been redeposited. Sites which have not been disturbed have the greatest scientific value. This is because the relationship between associated archeological material and their vertical and horizontal position can yield important information about the past. Archeological sites which have been recorded at the Site Registration Program, Bureau of Archaeology and Ethnology, New Jersey State Museum in Trenton are given a trinomial designation in the form: 28-Mo-123. The first number is the state number for New Jersey, the letters stand for Monmouth County, and the last digits refer to the sequential order in which the site was recorded.

Isolated occurrences are places where one or only a few artifacts of a single artifact class (e.g., stone tool, faunal remains, pottery) are present. These may represent either redeposited archeological material, the remains of what was once a site which has been disturbed, or the location of some past activity which left sparse material remains. Examples of this last instance include a single arrow point which missed its target, a camp occupied for a very short time, or an object which was lost. Because of their minimal information content, isolated occurrences are rarely eligible for inclusion to the NR.

Localities include places that may have been identified on the basis of collections or documentary research but have not been checked in the field. Examples are places where artifact collectors have found archeological specimens, or the sites of structures as indicated on historic maps. Because localities have not been inspected by professionals, they have not been evaluated for their eligibility for inclusion to the NRHP.

Artifacts are discrete, and generally portable, objects used or manufactured by humans. Individual artifacts are generally not eligible for inclusion to the NRHP, with the exception of specific objects of great historical importance.

3.2.1 NRHP Listed or NRHP Eligible Sites

No archeological sites at Fort Monmouth have been listed on the NRHP or determined eligible for inclusion to the NRHP.

3.2.2 Archeological Sites Not Evaluated for the NRHP

Archeological resources which have not been evaluated for NR eligibility include eight reported prehistoric archeological sites, one historic archeological site, and 204 possible historic localities whose existence has been postulated on the basis of historical research.

The nine reported archeological sites are presented in Table 3.2. These data are derived from the files of the New Jersey SHPO, Klein et al. (1984), Fitch and Glover (1989), and from an interview with Mr. [redacted] Redacted - Privacy Act n July 1996.

The 204 locations of potential historic archeological sites are presented in Table 3.3. These were delineated by Klein et al. (1984) on the basis of documentary research using historic maps, including Lightfoot (1851), Beers and Beers (1861), Beers (1873), Wolverton (1889), and Anonymous (1919, ca. 1922, 1936).

Table 3.2 Reported Archeological Sites at Fort Monmouth.

Site Number/ Designation	Recorder; Date	Area; Location; UTM (Zone 18) Northing/Easting	Cultural Affiliation, Description	Survey, Collection Policy	Comments, References
28-Mo-126	Redacted - Privac; 1947-72	Main Post; Parkers Creek near Buildings 292, 293, and 289; 4463100/580930	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)
28-Mo-127	Redacted - Privac; 1947-72	Main Post; Husky Brook Lake, south bank; 4462160/581120	Late Archaic; lithics (small stemmed point, broad stemmed point)	Diagnostic collection, no mapping	Redacted - Privacy (personal communication 1983, 1996)
28-Mo-128	Redacted - Privac; 1947-72	Main Post; Parkers Creek, in Building 600 area; 4462850/580900	Late Archaic/ Woodland; lithics (triangular and other quartz points)	Diagnostic collection, no mapping	Redacted - Privacy (personal communication 1983, 1996)
28-Mo-129	Redacted - Privac; 1947-72	Main Post; Lafetra Brook, south bank; 4462740/580530	Early Woodland; lithics (Meadowood point)	Diagnostic collection, no mapping	Redacted - Privacy (personal communication 1983, 1996)
28-Mo-130	Redacted - Privac; 1947-72	Main Post; Mill Brook, near Building 689; 4462500/580700	Late Archaic; lithics (stemmed argillite point)	Diagnostic collection, no mapping	Redacted - Privacy (personal communication 1983, 1996)
28-Mo-131	Redacted - Privac; 1947-72	Charles Wood; north of lagoon on south side of Tinton Avenue; 4461740/578780	Unknown prehistoric; lithics (black chert biface)	Diagnostic collection, no mapping	Redacted - Privacy (personal communication 1983, 1996)
28-Mo-132	Redacted - Privac; 1947-72	Charles Wood; near Building 2,000	Late Woodland; lithics (triangular point)	Diagnostic collection, no mapping	Redacted - Privacy (personal communication 1983, 1996)
28-Mo-138	Redacted - Privac; 1947-72	Main Post; Tindall Avenue south of shopping center	Unknown prehistoric; information not available	Diagnostic collection, no mapping	Redacted - Privacy (personal communication 1983, 1996)
A (PAL)	V. A. Fitch and S. Glover; 1989	Main Post; Husky Brook Lake; 4462100/580800	Historic brick and mortar culvert	Field observation, no collection	Wolverton (1889); Fitch and Glover (1989:287)

Table 3.3 Potential Historic Localities at Fort Monmouth (based on Klein et al. 1984).

Localities[a]	Description	UTM[b] Northing	UTM[b] Easting
FMM-1	Site of pre-1851 commercial structure 'Drummond, Haynes & Co.'	4463708	582280
FMM-2	Site of pre-1851 'Redacted - Privacy Act' residence	4463093	582310
FMM-3	Site of pre-1851 'Redacted - Privacy Act' residence	4463507	581923
FMM-4	Site of pre-1851 'Redacted - Privacy Act' residence, later the 'Superintendents Office,' Monmouth Park	4462123	581125
FMM-5	Site of pre-1851 road 'Horseneck Point Road'	4462151	580766
FMM-6	Route of pre-1873 road 'Horseneck Point Road'	4461933 4463338 4463303 4461901	579576 581984 582002 579584
FMM-7	Site of possible pre-1873 'Redacted - Privacy Act' farm complex	4462671 4462604 4462707	579964 580170 580401
FMM-8	Site of possible pre-1878 'Redacted - Privacy Act' residence	4462130	579608
FMM-9	Site of pre-1873 'Redacted - Privacy Act' residence	4462120	581840
FMM-10	Site of pre-1873 'Redacted - Privacy Act' residence	4462089	581960
FMM-11	Grounds & structures associates with Monmouth Park Racing Association 1866-1893	c	c
FMM-12	Site of pre-1873 'Redacted - Privacy Act' residence	4462031	581645
FMM-13	Site of pre-1878 'Redacted - Privacy Act' residence	4461803	581330
FMM-14	Site of pre-1878 'Oceanport' railroad depot	4461614	581711
FMM-15-1	Site of Bldg. #1 'Headquarters' (1919)	4463275	581337
FMM-15-2	Site of Bldg. #2 'Unidentified' (1919)	4463205	581290
FMM-15-3	Site of Bldg. #3 'Guard House' (1919)	4463378	581320
FMM-15-4	Site of Bldg. #4 'Hospital' (1919)	4463175	580773
FMM-15-5	Site of Bldg. #5 'Bakery' (1919)	4463083	580686
FMM-15-6	Site of Bldg. #6 (Unidentified) (1919)	4463393	581122
FMM-15-7	Site of Bldg. #7 (Unidentified) (1919)	4463175	581246
FMM-15-8	Site of Bldg. #8 (Unidentified) (1919)	4462951	580734
FMM-15-9	Site of Bldg. #9 (Barracks?) (1919)	4463261	580970
FMM-15-10	Site of Bldg. #10 (Barracks?) (1919)	4463259	581017
FMM-15-11	Site of Bldg. #11 (Barracks?) (1919)	4463256	581042
FMM-15-12	Site of Bldg. #12 (Barracks?) (1919)	4463176	580996
FMM-15-13	Site of Bldg. #13 (Barracks?) (1919)	4463177	581033
FMM-15-14	Site of Bldg. #14 (Barracks?) (1919)	4463185	581060
FMM-15-15	Site of Bldg. #15 (Unidentified) (1919)	4463051	580588
FMM-15-16	Site of Bldg. #16 'Stables' (1919)	4462940	580509
FMM-15-17	Site of Bldg. #17 'Stables' (1919)	4462984	580505

Table 3.3 (Continued).

Localities[a]	Description	UTM[b] Northing	UTM[b] Easting
FMM-15-18	Site of Bldg. #18 'Stables' (1919)	4463021	580501
FMM-15-19	Site of 'Corral' (1919)	4462926	580312
FMM-15-20	Site of Bldg. #20 (Unidentified) (1919)	4463138	581102
FMM-15-21	Site of Bldg. #21 (Unidentified) (1919)	4463162	581164
FMM-15-22	Site of Bldg. #22 (Unidentified Barracks?) (1919)	4463105	580819
FMM-15-23	Site of Bldg. #23 (Unidentified Barracks?) (1919)	4463187	580829
FMM-15-24	Site of Bldg. #24 (Unidentified Barracks?) (1919)	4463197	580865
FMM-15-25	Site of Bldg. #25 (Unidentified Barracks?) (1919)	4463202	580915
FMM-15-26	Site of Bldg. #26 (Unidentified Barracks?) (1919)	4463210	580948
FMM-15-27	Site of Bldg. #27 (Unidentified Barracks?) (1919)	4463096	580855
FMM-15-28	Site of Bldg. #28 (Unidentified Barracks?) (1919)	4463114	580882
FMM-15-29	Site of Bldg. #29 (Unidentified Barracks?) (1919)	4463119	580923
FMM-15-30	Site of Bldg. #30 (Unidentified Barracks?) (1919)	4463135	580963
FMM-15-31	Site of Bldg. #31 (Unidentified) (1919)	4463339	580898
FMM-15-32	Site of Bldg. #32 (Unidentified) (1919)	4463314	580952
FMM-15-33	Site of Bldg. #33 (Unidentified) (1919)	4463431	580995
FMM-15-34	Site of Bldg. #34 (Unidentified) (1919)	4463229	581229
FMM-15-35	Site of Bldg. #35 (Unidentified Barracks?) (1919)	4463304	581046
FMM-15-36	Site of Bldg. #36 (Unidentified Barracks?) (1919)	4463302	581072
FMM-15-37	Site of Bldg. #37 (Unidentified Barracks?) (1919)	4463310	581101
FMM-15-38	Site of Bldg. #38 (Unidentified Barracks?) (1919)	4463231	581053
FMM-15-39	Site of Bldg. #39 (Unidentified Barracks?) (1919)	4463194	581133
FMM-15-40	Site of Bldg. #40 (Unidentified Barracks?) (1919)	4463211	581166
FMM-15-41	Site of Bldg. #41 (Unidentified Barracks?) (1919)	4463313	581369
FMM-15-42	Site of Bldg. #42 (Unidentified) (1919)	4463292	580789
FMM-15-43	Site of Bldg. #43 (Unidentified) (1919)	4463299	580926
FMM-15-44	Site of Bldg. #44 (Unidentified) (1919)	4463310	581018
FMM-15-45	Site of Bldg. #45 (Unidentified) (1919)	4463328	581089
FMM-15-46	Site of Bldg. #46 (Unidentified) (1919)	4463197	581208
FMM-15-47	Site of unidentified building (1919)	4463348	581332
FMM-15-48	Site of unidentified building (1919)	4463533	581161
FMM-15-49	Site of unidentified building (1919)	4463451	580937
FMM-15-50	Site of unidentified building (1919)	4463409	581169
FMM-15-51	Site of Pigeon Feed House (1922)	4463439	581184
FMM-15-52	Site of Pigeon Coop (1922)	4463251	581454
FMM-15-53	Site of 'Septic Tank' (1922)	4463328	580735
FMM-15-54	Site of unidentified building north of septic tank (1919)	4463337	580713

Table 3.3 (Continued).

Localities[a]	Description	UTM[b] Northing	UTM[b] Easting
FMM-15-55	Site of Bldg. #65 - unidentified (1919)	4463155	580687
FMM-15-56	Site of Bldg. #66, 'R.O.T. Bat'. (1919)	4463332	581562
FMM-15-57	Site of Bldg. #67, 'R.O.T. Bat'. (1919)	4463372	581542
FMM-15-58	Site of Bldg. #68, 'R.O.T. Bat'. (1919)	4463355	581603
FMM-15-59	Site of Bldg. #73, 'R.O.T. Bat'. (1919)	4463323	581681
FMM-15-60	Site of Bldg. #74, 'R.O.T. Bat'. (1919)	4463360	581710
FMM-15-61	Site of Bldg. #75 unidentified (1919)	4463269	581278
FMM-15-62	Site of Bldg. #76 unidentified (1919)	4463222	581365
FMM-15-63	Site of Bldg. #77 unidentified (1919)	4463157	580739
FMM-15-64	Site of Bldg. #78 unidentified (1919)	4463341	580996
FMM-15-65	Site of 'Y.M.C.A.' Bldg. #84 (1919)	4463324	581448
FMM-15-66	Site of unidentified Bldg., 'Construction Office' (1919)	4463331	581314
FMM-15-67	Site of Bldg. #49 'School'	4463359	581270
FMM-15-68	Site of Bldg. #50 unidentified (1919)	4463376	581173
FMM-15-69	Site of Bldg. #51 unidentified (1919)	4463184	581349
FMM-15-70	Site of 'Flag Pole' (1919)	4463235	581583
FMM-15-71	Site of Bldg. #69 (1919)	4463093	580759
FMM-15-72	Site of Tent 'Headquarters' (1919)	4463493	580984
FMM-15-73	Site of Tent 'Barracks' (1919)	4463518	581070
FMM-15-74	Site of 'Field Battalion' Tents (1919)	4463520	581176
FMM-15-75	Site of unidentified feature (1919)	4463195	580648
FMM-15-76	Site of 'Incinerator' (1922)	4463289	580677
FMM-15-77	Sites of 'Water Tanks' (1922)	4463186	580932
FMM-15-78	Sites of 'Water Tanks' (1922)	4463311	581168
FMM-15-79	Site of 'Plumber & Electrician's' Bldg. (1922)	4463255	581304
FMM-15-80	Site of 'Red Cross' Bldg. (1922)	4463234	581441
FMM-15-81	Site of Bldg. #86 'K. of C.' (Knights of Columbus?) (1922)	4463380	581774
FMM-15-82	Unidentified bldgs. (1919)	d	d
FMM-15-83	Unidentified bldgs. (1919)	d	d
FMM-15-84	Unidentified bldgs. (1919)	d	d
FMM-15-85	Unidentified bldgs. (1919)	d	d
FMM-15-86	Unidentified bldgs. (1919)	d	d
FMM-15-87	Unidentified bldgs. (1919)	d	d
FMM-16-1	Site of Bldg. #35 (1919)	4463564	581799
FMM-16-2	Site of Bldg. #48 (1919)	4463588	581690
FMM-16-3	Site of Bldg. #57 (1919)	4463631	581808
FMM-16-4	Site of Bldg. #58 (1919)	4463671	581770

Table 3.3 (Continued).

Localities[a]	Description	UTM[b] Northing	UTM[b] Easting
FMM-16-5	Site of Bldg. #59 (1919)	4463714	581744
FMM-16-6	Site of Bldg. #60 (1919)	4463767	581710
FMM-16-7	Site of Bldg. #70 (1919)	4463599	581844
FMM-16-8	Site of Bldg. #85 (1919)	446349	581832
FMM-16-9	Site of unidentified Bldg. 'Wash Stand' (1919)	4463647	581671
FMM-16-10	Site of unidentified Bldg. motor transportation (1919)	4463584	581832
FMM-16-11	Site of unidentified Bldg. (1922)	4463836	581666
FMM-16-12	Site of Bldg. #89 (1922)	4463533	581773
FMM-17-1	Site of Bldg. #52, Quarter Master Department (1919)	4463581	582328
FMM-17-2	Site of Bldg. #53, Quarter Master Department (1919)	4463531	582441
FMM-17-3	Site of Bldg. #54, Quarter Master Department (1919)	4463555	582417
FMM-17-4	Site of Bldg. #55, Quarter Master Department (1919)	4463561	582407
FMM-17-5	Site of Bldg. #56, Quarter Master Department (1919)	4463593	582348
FMM-17-6	Site of Bldg. #61 (1919)	4463620	582307
FMM-17-7	Site of Bldg. #63	4463567	582355
FMM-17-8	Site of Bldg. #71	4463519	582406
FMM-17-9	Site of Bldg. #72	4463636	582279
FMM-17-10	Site of unidentified bldg. #79	4463574	582299
FMM-17-11	Site of unidentified bldg. #80	4463539	582314
FMM-17-12	Site of unidentified bldg. #81	4463611	582278
FMM-17-13	Site of unidentified bldg. #82	4463541	582385
FMM-17-14	Site of unidentified bldg. #83	4463596	582299
FMM-17-15	Site of unidentified bldg.	4463614	582267
FMM-17-16	Site of 'Coal Bins'	4463650	582256
FMM-17-17	Site of 4 unidentified bldgs. Quarter Master area	4462164	580724
FMM-18	Site of 'Old Pump Station'	4462164	580724
FMM-19-1	Site of Radio Laboratories Bldg. #1	4463243	582087
FMM-19-2	Site of Radio Laboratories Bldg. #2	4463244	582087
FMM-19-3	Site of Radio Laboratories Bldg. #3	4463189	582120
FMM-19-4	Site of Bldg. #8	4463202	582124
FMM-19-5	Site of Bldg. #9, #109	4463262	582105
FMM-19-6	Site of unidentified bldg. south of Bldg. #4	4463124	582167
FMM-19-7	Site of Bldg. #154 'School Headquarters'	4463131	582195
FMM-19-8	Site of 'Flying Field' east of Oceanport Avenue	4463306	582246
FMM-20-1	Site of Bldg. #10	4463205	582561
FMM-20-2	Site of unidentified bldg. near Bldg. #10 R. L.	4463217	582559
FMM-21-1	Site of Bldg. #11 near Q.M.D.	4463513	582488

Table 3.3 (Continued).

Localities[a]	Description	UTM[b] Northing	UTM[b] Easting
FMM-21-2	Site of Bldg. #12	4463061	582068
FMM-21-3	Site of Bldg. #13	4463005	582095
FMM-21-4	Site of Bldg. #14	4463056	582045
FMM-21-5	Site of Bldg. #15	4462990	582070
FMM-21-6	Site of Bldg. #16	4463059	581972
FMM-21-7	Site of Bldg. #17	4462949	581999
FMM-21-8	Site of Bldg. #18	4463017	581908
FMM-21-9	Site of Bldg. #19	4462898	581994
FMM-21-10	Site of Bldg. #20	4462980	581853
FMM-21-11	Site of Bldg. #21	4462914	581941
FMM-21-12	Site of Bldg. #22	4463963	581769
FMM-21-13	Site of Bldg. #23	4462885	581883
FMM-21-14	Site of Bldg. #24	4462940	581710
FMM-21-15	Unidentified bldg. east of Bldg. #53	4462969	582148
FMM-21-16	Site of Bldg. #26	4462882	581636
FMM-21-17	Site of Bldg. #27	4462842	581876
FMM-21-18	Site of Bldg. #28	4462848	581597
FMM-21-19	Site of Bldg. #29	4462865	581842
FMM-21-20	Site of Bldg. #30	4463047	581859
FMM-21-21	Site of Bldg. #31	4462787	581716
FMM-21-22	Site of Bldg. #32	4463084	581803
FMM-21-23	Site of Bldg. #33	4462813	581709
FMM-21-24	Site of Bldg. #34 'Headquarters'	4463180	581849
FMM-21-25	Site of Bldg. #35	4462775	582060
FMM-21-26	Site of Bldg. #36	4462793	581628
FMM-21-27	Site of Bldg. #37	4462706	581600
FMM-21-28	Site of unidentified bldg. north of Bldg. #121	4462928	581901
FMM-21-29	Site of Bldg. #39	4462717	581747
FMM-21-30	Site of Bldg. #41	4462696	581744
FMM-21-31	Site of Bldg. #43	4462789	581825
FMM-21-32	Site of Bldg. #45	4462773	581966
FMM-21-33	Site of Bldg. #47	4462869	582003
FMM-21-34	Site of Bldg. #49	4462846	581999
FMM-21-35	Site of Bldg. #51	4462847	582042
FMM-21-36	Site of Bldg. #53	4462942	582107
FMM-21-37	Site of Bldg. #57 (?)	4462570	581989
FMW-1	Site of pre-1851 'Redacted - Privacy Act' residence	4460475	578203

Table 3.3 (Concluded).

Localities[a]	Description	UTM[b] Northing	UTM[b] Easting
FMW-2	Route of Long Branch spur of Raritan & Delaware Bay Railroad, pre-1861	4460544	577826
FMW-3	Site of pre-1873 'Carriage Factory' later owned by 'Redacted - Privacy Act' (three structures)	4460522	578002
FMW-4	Site of pre-1889 unidentified structure	4460801	577937
FMW-5	Site of pre-1889 'Redacted - Privacy Act' structure	4460207	578043
FMW-6-1	Site of pre-1889 'Redacted - Privacy Act' farmstead (main structure?)	4461332	579520
FMW-6-2	Site of frame building - possibly an outbuilding associated with 'Redacted - Priv' farmstead (FMW-6-1)	4461333	579522
FMW-6-3	Site of frame building - possibly an outbuilding associated with 'Redacted - Priv' farmstead (FMW-6-1)	4461295	579495
FMW-7	Site of 'Ice Pond' owned by 'Redacted - Privacy Act'	4460278	578011
FMW-8	Site of pre-1941 unidentified frame structure possibly associated with 'Smock' farmstead (FMW-6)	4461199	579274
FMW-9-1	Site of pre-1941 unidentified frame structure	4460535	578953
FMW-9-2	Site of pre-1941 unidentified frame structure	4460570	578950
FMW-10	Site of pre-1941 unidentified frame structure	4460745	578773
FMW-11-1	Site of pre-1941 unidentified frame structure	4460726	578954
FMW-11-2	Site of Bldg. #2155 'Print Shop'	4460757	578964
FMW-11-3	Site of pre-1841 unidentified frame structure	4460769	578994
FMW-11-4	Site of pre-1941 unidentified frame structure	4460802	578986
FMW-11-5	Site of pre-1941 unidentified frame structure	4460799	578967
FMW-11-6	Site of pre-1941 unidentified frame structure	4460788	578946
FMW-11-7	Site of pre-1941 unidentified frame structure	4460825	578937
FMW-11-8	Site of pre-1941 unidentified frame structure	4460838	578952
FMW-12	Site of pre-1941 railroad spur to vicinity of Bldg. #2600	4461598	578531
FMW-13	Site of 4 tanks in vicinity of Bldg. #2600 - Camp Charles Wood	4461504	578570
FMW-14	Site of unidentified frame structure	4460229	578320
FMW-15	Site of unidentified frame structure	4460125	578089
FMW-16-1	Site of unidentified frame structure	4460498	578270
FMW-16-2	Site of unidentified frame structure	4460489	578248
FMW-16-3	Site of unidentified frame structure	4460456	578239

[a] = FMM indicates site is on the Main Post; FMW indicates site is located on Camp Charles Wood.
[b] = Accuracy of UTMs is uncertain, especially for the Charles Wood Area.
[c] = Site FMM-11 is the site of the former Monmouth Park race track. Its location is coterminous with subareas A, B, and C at the Main Post.
[d] = No specific UTMs are given.

The Universal Transverse Mercator (UTM) coordinates given in Table 3.3 are reproduced directly from Table A-1 in Klein et al. (1984), but cross-plotting these UTM coordinates suggests that some may be inaccurate, especially those in the Charles Wood Area. Appendix B reproduces the maps in Klein et al. (1984) which may more accurately show the locations of each historic locality.

Of the 204 localities, 176 are on the Main Post and 28 are in the Charles Wood Area. Of those on the Main Post, 14 are pre-military. These include nine residences, a commercial structure, a farm complex, a rail depot, a road, and the grounds and structures associated with the 1866-1893 race track. All of these locations should be considered to have potential archeological significance and should be ground-truthed. The 162 localities on the Main Post which date from after the establishment of a military facility at Fort Monmouth include a wide range of site types with varying archeological potential. Some of these should be ground-truthed, while others can be documented archivally. Examples of localities with low research potential include a flag pole site (FMM-15-70), the flying field (FMM-19-8), and coal bins (FMM-17-16). Localities with high research potential include the site of the 1919 Camp Vail headquarters (FMM-15-1), the 1919 hospital (FMM-15-4), and a septic tank (FMM-15-53). The majority of the localities are of unknown potential, indicating sites of "unidentified buildings". The 28 localities in the Charles Wood Area are mostly the sites of residences, farmstead buildings, and unidentified frame buildings, but also present are a "carriage factory" (FMW-3), and a 1944 post exchange (FMW-9-2).

3.2.3 Archeologically Sensitive Areas

It is possible to rank areas within Fort Monmouth for potential to contain buried and unknown archeological sites. For prehistoric archaeological sites, environmental factors such as slope and distance to water are predominantly used to determine probability for containing sites.

For historic archeological sites, environmental models are less frequently used in lieu of historic maps, which often show structures and roads. Some, like the U.S. Coastal Geodetic Survey Map of 1844 of the Fort Monmouth vicinity, are very detailed and include information on contemporary land use. Historic maps do not show all locations of potential archeological sites however, often ignoring African-Americans, Native Americans, and itinerants.

For both prehistoric and historic archeological sites, level of disturbance is a key factor in determining archeological potential. Plowing, buildings, excavations, and erosion all can disturb archeological sites to various degrees. However, the construction of buildings may not disturb all archeological materials, especially for buildings with pier or slab foundations. Similarly, landscaping or removing vegetation does not always mean that all archeological potential has been lost. Finally, construction and use of buildings can, in themselves, actually contribute archeological material. For example, a WW I barracks may be represented in the archeological record by artifacts and features which illustrate the life of its occupants.

In determining archeological potential at Fort Monmouth, a valuable source of information came from personnel who were intimately acquainted with land-use history and were eyewitnesses or participants in construction. These data, along with visual inspection, have refined the determination of archeological potential presented below and in Figures 3.1 and 3.2.

With the exception of 30 acres of the Charles Wood Area (Reed et al. 1996), Fort Monmouth has not been formally inventoried for archeological sites. Although the character of the post today is largely developed and urban, some portions of the post have the potential for buried and unknown archeological deposits. The physical landform of the post, an interfluve between Parkers and Oceanport Creeks at the head of the Shrewsbury River, and less than an hours walk from the

Atlantic Ocean, is considered to have a high probability for prehistoric site locations.

In 1989, the Main Post was assessed for archeological potential (Fitch and Glover 1989:284-287). Much of the Main Post was assessed as "low sensitivity" and about 10% of the Main Post being designate as "moderate to high sensitivity." Assessment criteria included distance to water, slope, soil type, and evidence of disturbance.

During development of this CRMP, the archeological potential of the post was reassessed, including that of the Charles Wood Area. This reconnaissance stratified the post into three zones, reflecting differing potential for intact archeological deposits. These zones are defined largely on the basis of current construction but have been supplemented with historical maps showing previous configurations of buildings.

3.2.3.1 High Potential Areas

Approximately 446 acres at Fort Monmouth are designated as having high potential for intact archeological deposits (Figures 3.1 and 3.2). Most of these areas occur in the Charles Wood Area and include much of the golf course and the wooded land near the Electronic Warfare building. The golf course is currently a maintained landscape, and has undergone an unknown degree of landscape modification. Although most of the trees have been removed and the native vegetation community has been almost completely replaced, the golf course may have largely retained the original subsurface character and therefore, subsurface archeological deposits may be intact. The wooded land near the Electronics Warfare building is apparently pristine and has the highest potential for intact archeological sites. Other smaller parcels of land in the Charles Wood Area appear to have minimal subsurface disturbance, and may have intact subsurface archeological deposits.

On the Main Post are a number of smaller high potential areas, including parcels near the creeks and much of the parade ground. Thin strips of wooded terrain along Parkers Creek, Oceanport Creek, Mill Brook, Lafetra Brook, and Husky Brook, apparently unsuitable for construction, may be undisturbed and thus have the potential for intact archeological deposits. The parade ground, including both Greeley Field and Myer Park, was the site of the original race track. Similar to the golf course, the parade ground is currently a maintained landscape. The trees have been removed and the native vegetation community has been replaced, but the area has likely undergone a minimum of landsurface modification. Military-period maps show some construction and probable subsurface disturbance, especially near the headquarters building, but there is evidence to suggest that much of the subsurface parade ground is undisturbed and has a high potential for intact archeological deposits. Finally, several small wooded parcels and other apparently undisturbed areas may have intact subsurface deposits. These include Kirk and Dunwoody Parks, a narrow strip adjacent to Highway 35 and north of the West Gate, a thin strip south of the Avenue of Memories, and several other small parcels. The high potential areas all need to be inventoried for buried archeological sites.

3.2.3.2 Medium Potential Areas

Approximately 156 acres at Fort Monmouth are designated as having a medium potential for intact archeological deposits (see Figures 3.1 and 3.2). These include a number of parcels in both the Main Post and the Charles Wood Area. Many of these areas are located adjacent to low potential areas. In general, these areas have some evidence of disturbance, but the disturbances may be localized or not as extensive as in the low probability areas. As a result, these areas have some unknown possibility for intact buried archeological deposits and need to be inventoried.

3.2.3.3 Low Potential Areas

All portions of the post not included in the High or Medium Potential Areas are considered to have low potential for intact archeological deposits (see

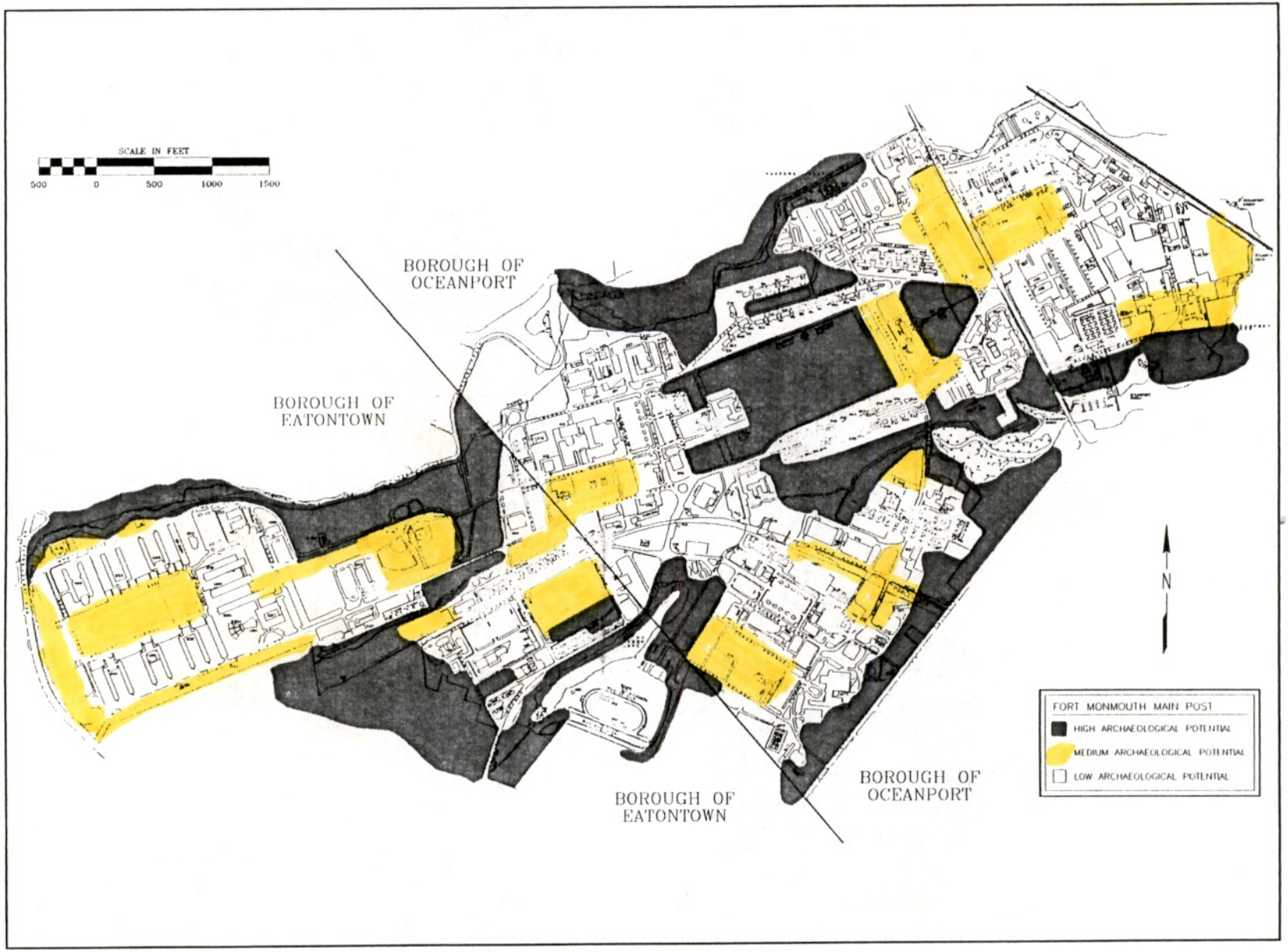


Figure 3.1 Archeological Potential, Main Post.

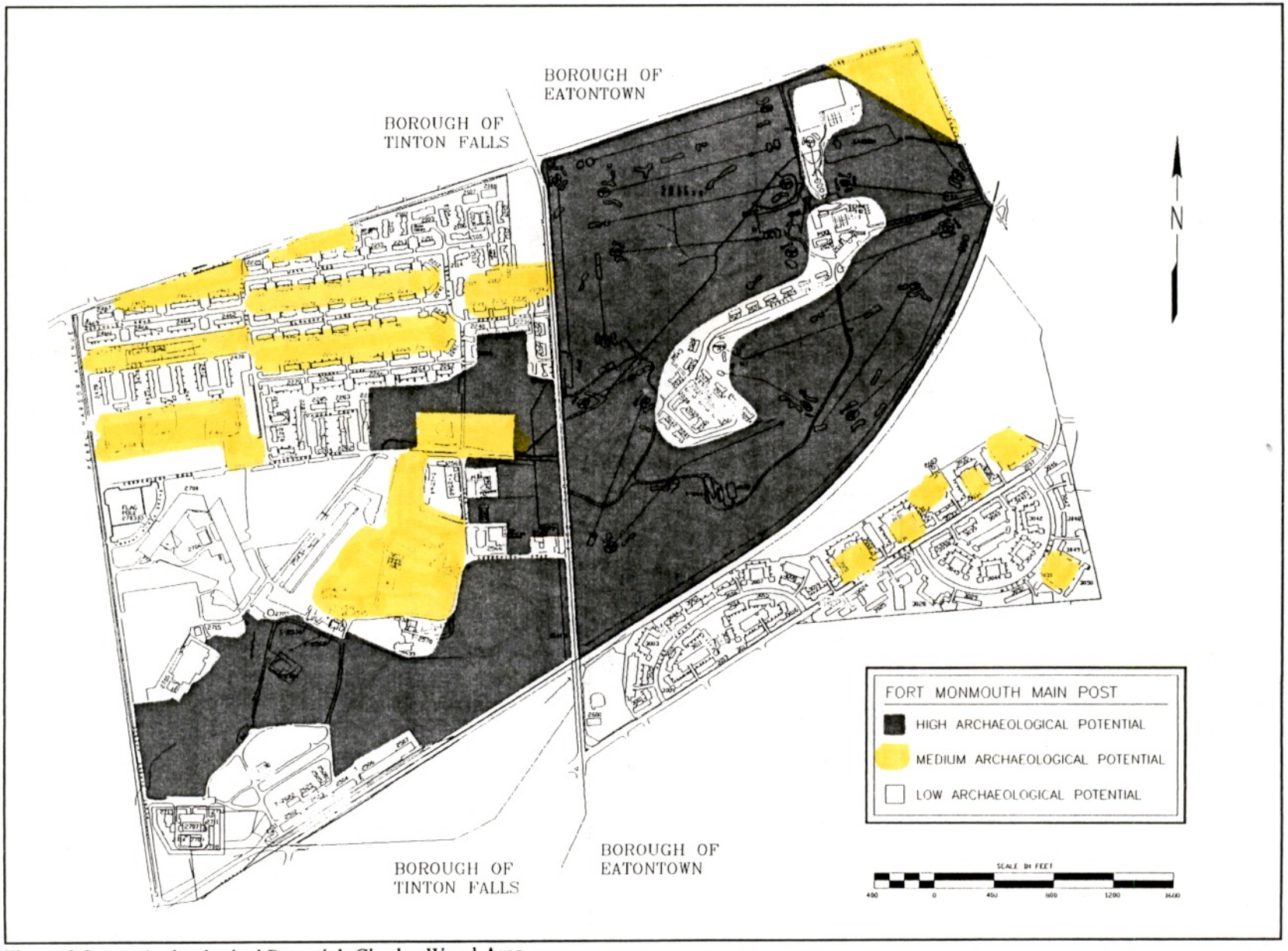


Figure 3.2 Archeological Potential, Charles Wood Area.

Figures 3.1 and 3.2). This includes approximately 602 acres. These areas either have current permanent or semi-permanent construction, or have evidence of previous such construction. It is likely that such construction involved significant disturbance including terrain leveling, excavation of foundation footings, and trenching for plumbing and utility lines. While buried archeological sites may well exist in these areas, it is unlikely that these have sufficient remaining integrity to allow any meaningful interpretation. Any such sites would thus not be eligible for nomination to the NR and would not be treated as historic properties. Archeological inventory is not currently warranted in these areas.

3.3 TRADITIONAL CULTURAL PROPERTIES

Traditional Cultural Properties (TCP) are a category of property eligible for inclusion in the NRHP as discussed in NR Bulletin 38. No TCP or Native American sacred places are known to exist at Fort Monmouth.

3.4 HISTORIC AND ARCHITECTURAL RESOURCES

Fort Monmouth holds approximately 420 buildings and structures at the Main Post, and approximately 250 buildings and structures at the Charles Wood Area. Of these, 290 were constructed prior to 1946 and have been evaluated for their historic and architectural significance as outlined in Section 110 (36 CFR 800) of NHPA (Nichols 1996). An additional 53 properties, constructed after 1946, were also evaluated for their Cold War-era significance to determine their eligibility status based on NR Criterion "g" (properties that have achieved significance within the past 50 years). A total of 98 properties were identified during the 1996 inventory as eligible for inclusion to the NRHP, either individually or as components of a district (Table 3.4).

3.4.1 National Register Districts

Two NR districts were identified during the 1996 inventory at Fort Monmouth, one located at the Main Post and one at the Charles Wood Area. Both districts are composed primarily of pre-1946 buildings and structures, and both appear to meet NRHP Criteria "a" and "c."

3.4.1.1 Main Post District

The proposed Fort Monmouth Main Post district is bordered at the east by Barton and Oceanport Avenues, at the south by Oceanport Creek, at the west by Malterer Avenue, and at the north by Lockwood and Allen Avenues (Figure 3.3). This district was initially identified in 1983 during an inventory conducted on behalf of the U.S. Army's Materiel DARCOM (Building Technologies, Inc. 1984). At that time, boundaries encircled a slightly larger area, including administration and housing facilities south of Parker's Creek and laboratory buildings along Sherrill Avenue near Parker's Creek. As a result of the 1982 inventory, a draft nomination for the Main Post district was submitted to the New Jersey SHPO in 1983. The SHPO returned the document to Fort Monmouth requesting additional information and an update of forms and photography. A final nomination was never submitted, and the proposed district remains unlisted today. Original district boundaries at the north (originally bordered by Parker's Creek) were altered (currently bordered by Allen Avenue) during the 1996 inventory because several buildings have suffered loss of integrity due to renovation, new construction, and adjacent demolition.

The proposed Main Post district contains a total of 88 contributing properties which include housing and administrative facilities, as well as a museum (originally constructed as a theater), and a fire station. These buildings were constructed from 1927-1937 during a ten-year national building program that established the base as a permanent military operation (Figures 3.4 through 3.7). This is significant because military budgets were cut nationwide after WW I, providing the Army with

Table 3.4 Listing of Architecturally Evaluated Buildings and Structures.

DPW Building Number	Area of Post	Date	Administrative	Housing	Training	Storage	Utilities	Recreation	Research	Maintenance	Other	Condition	Eligibility	NR Criteria	Other Building Identification
ELIGIBLE FOR NATIONAL REGISTER															
Within the Main Post District															
205	MP	1927, 1940		●								Good	Eligible	a,c	
206	MP	1927, 1940		●								Good	Eligible	a,c	
207	MP	1927, 1940		●								Good	Eligible	a,c	
208	MP	1927, 1940		●								Good	Eligible	a,c	
211	MP	1929-1935		●								Excellent	Eligible	a,c	
212	MP	1929-1935		●								Excellent	Eligible	a,c	
213	MP	1929-1935		●								Excellent	Eligible	a,c	
214	MP	1929-1935		●								Excellent	Eligible	a,c	
215	MP	1931		●								Good	Eligible	a,c	
216	MP	1931		●								Good	Eligible	a,c	
218	MP	1929-1935		●								Excellent	Eligible	a,c	
219	MP	1929-1935		●								Excellent	Eligible	a,c	
220	MP	1929-1935		●								Excellent	Eligible	a,c	
221	MP	1929-1935		●								Excellent	Eligible	a,c	
222	MP	1929-1935		●								Excellent	Eligible	a,c	
223	MP	1929-1935		●								Excellent	Eligible	a,c	
224	MP	1935, 1931		●								Good	Eligible	a,c	
225	MP	1929-1935		●								Excellent	Eligible	a,c	
226	MP	1929-1935		●								Excellent	Eligible	a,c	
227	MP	1929-1935		●								Excellent	Eligible	a,c	
228	MP	1929-1935		●								Excellent	Eligible	a,c	
229	MP	1931		●								Excellent	Eligible	a,c	
230	MP	1936		●								Excellent	Eligible	a,c	
233	MP	1929		●								Good	Eligible	a,c	
234	MP	1931		●								Good	Eligible	a,c	
235	MP	1931		●								Good	Eligible	a,c	
236	MP	1931		●								Good	Eligible	a,c	
237	MP	1931		●								Good	Eligible	a,c	
238	MP	1931		●								Good	Eligible	a,c	
239	MP	1931		●								Good	Eligible	a,c	
240	MP	1932		●								Good	Eligible	a,c	
241	MP	1931		●								Good	Eligible	a,c	
242	MP	1931		●								Good	Eligible	a,c	
243	MP	1931		●								Good	Eligible	a,c	
244	MP	1931		●								Good	Eligible	a,c	
245	MP	1932		●								Good	Eligible	a,c	
246	MP	1932		●								Good	Eligible	a,c	
247	MP	1934		●								Good	Eligible	a,c	
248	MP	1934		●								Good	Eligible	a,c	
249	MP	1934		●								Good	Eligible	a,c	
250	MP	1934		●								Good	Eligible	a,c	
251	MP	1934		●								Good	Eligible	a,c	
252	MP	1934		●								Good	Eligible	a,c	
253	MP	1934		●								Good	Eligible	a,c	
254	MP	1934		●								Good	Eligible	a,c	
255	MP	1934		●								Good	Eligible	a,c	
256	MP	1934		●								Good	Eligible	a,c	
258	MP	1934		●								Good	Eligible	a,c	
260	MP	1930					●					Fair	Eligible	a,c	
261	MP	1930		●								Good	Eligible	a,c	
262	MP	1930		●								Good	Eligible	a,c	
263	MP	1930		●								Good	Eligible	a,c	
264	MP	1930		●								Good	Eligible	a,c	
265	MP	1930		●								Good	Eligible	a,c	
266	MP	1930		●								Good	Eligible	a,c	
267	MP	1930		●								Good	Eligible	a,c	
268	MP	1930		●								Good	Eligible	a,c	

Table 3.4 (Continued).

DPW Building Number	Area of Post	Date	Administrative	Housing	Training	Storage	Utilities	Recreation	Research	Maintenence	Other	Condition	Eligibility	NR Criteria	Other Building Identification
269	MP	1930		●								Good	Eligible	a,c	
270	MP	1930	●									Good	Eligible	a,c	
271	MP	1934		●								Good	Eligible	a,c	
275	MP	1934						●				Good	Eligible	a,c	theatre
282	MP	1935									●	Good	Eligible	a,c	fire station
286	MP	1936	●									Good	Eligible	a,c	Russel Hall
287	MP	1927		●								Good	Eligible	a,c	
301	MP	1932								●		Good	Eligible	a,c	
302	MP	1932								●		Good	Eligible	a,c	
303	MP	1932								●		Good	Eligible	a,c	
304	MP	1932								●		Good	Eligible	a,c	
305	MP	1932								●		Good	Eligible	a,c	
306	MP	1932								●		Good	Eligible	a,c	
307	MP	1932								●		Good	Eligible	a,c	
308	MP	1932								●		Good	Eligible	a,c	
309	MP	1932								●		Good	Eligible	a,c	
310	MP	1932								●		Good	Eligible	a,c	
315	MP	1932								●		Good	Eligible	a,c	
316	MP	1932								●		Good	Eligible	a,c	
317	MP	1932								●		Good	Eligible	a,c	
318	MP	1932								●		Good	Eligible	a,c	
319	MP	1932								●		Good	Eligible	a,c	
320	MP	1934								●		Good	Eligible	a,c	
321	MP	1934								●		Good	Eligible	a,c	
322	MP	1934								●		Good	Eligible	a,c	
323	MP	1934								●		Good	Eligible	a,c	
324	MP	1934								●		Good	Eligible	a,c	
325	MP	1934								●		Good	Eligible	a,c	
326	MP	1934								●		Good	Eligible	a,c	
327	MP	1937								●		Good	Eligible	a,c	
328	MP	1937								●		Good	Eligible	a,c	
Within the Charles Wood District															
2000	CWA	1926						●				Excellent	Eligible	a,c	Gibbs Hall
2001	CWA	1935						●				Good	Eligible	a,c	tennis courts
2018	CWA	1930				●						Good	Eligible	a,c	
2019	CWA	1946						●				Fair	Eligible	a,c	
2020	CWA	1935						●				Good	Eligible	a,c	swimming pool
Not within a District															
283	MP	1935	●									Good	Eligible	a	Squier Hall
none	MP	1943				●						Good	Eligible	a,c	Dymaxion unit
none	MP	1943				●						Good	Eligible	a,c	Dymaxion unit
2570	CWA	1943				●						Good	Eligible	a,c	Dymaxion unit
2700	CWA	1955	●						●			Excellent	Eligible	g	Hexagon
UNCERTAIN ELIGIBILITY															
2705	CWA	1971	●									Good	unknown	g?	Electronic Warfare
2707	CWA	1988	●									Good	unknown	g?	Pulse Power Center
2708	CWA	1988							●			Good	unknown	g?	Pulse Power Center
2709	CWA	1988							●			Good	unknown	g?	Pulse Power Center
2710	CWA	1988							●			Good	unknown	g?	Pulse Power Center
2711	CWA	1988							●			Good	unknown	g?	Pulse Power Center
2712	CWA	1988							●			Good	unknown	g?	Pulse Power Center
2713	CWA	1988							●			Good	unknown	g?	Pulse Power Center
NOT ELIGIBLE FOR NATIONAL REGISTER															
29a	MP	1943				●						Poor	Not Eligible	-	
63	MP	1940				●						Good	Not Eligible	-	
72	MP	1943				●						Fair	Not Eligible	-	
106	MP	1943				●						Good	Not Eligible	-	
109	MP	1950				●						Good	Not Eligible	-	

Table 3.4 (Continued).

DPW Building Number	Area of Post	Date	Administrative	Housing	Training	Storage	Utilities	Recreation	Research	Maintenance	Other	Condition	Eligibility	NR Criteria	Other Building Identification
109a	MP	1950				●						Good	Not Eligible	-	
114a	MP	1940					●					Good	Not Eligible	-	
115	MP	1952									●	Excellent	Not Eligible	-	WW II Memorial
116	MP	1943				●						Good	Not Eligible	-	
117	MP	1943				●						Good	Not Eligible	-	
142	MP	1922								●		Fair	Not Eligible	-	
145	MP	1941	●									Good	Not Eligible	-	
157	MP	1943									●	Good	Not Eligible	-	
159	MP	1941				●				●		Good	Not Eligible	-	
164	MP	1940	●							●		Good	Not Eligible	-	
165	MP	1941	●		●							Fair	Not Eligible	-	
166	MP	1942								●		Good	Not Eligible	-	
167	MP	1942	●									Good	Not Eligible	-	
170	MP	1943				●						Poor	Not Eligible	-	
170d	MP	1943					●					Good	Not Eligible	-	
171	MP	1943				●						Poor	Not Eligible	-	
197	MP	1942				●						Fair	Not Eligible	-	
198	MP	1943	●			●						Fair	Not Eligible	-	
202	MP	1925		●								Good	Not Eligible	-	
209	MP	1928	●								●	Good	Not Eligible	-	Allison Hall
257	MP	1930					●					Good	Not Eligible	-	
259	MP	1938		●								Good	Not Eligible	-	
276	MP	1934									●	Good	Not Eligible	-	
277	MP	1934	●									Excellent	Not Eligible	-	
278	MP	1943				●						Good	Not Eligible	-	
279	MP	1934				●						Good	Not Eligible	-	
280	MP	1934				●						Good	Not Eligible	-	
281	MP	1934								●		Good	Not Eligible	-	
284	MP	1940				●						Good	Not Eligible	-	
288	MP	1941	●									Good	Not Eligible	-	
289	MP	1941	●									Good	Not Eligible	-	
290	MP	1943								●		Fair	Not Eligible	-	
292	MP	1944	●						●			Good	Not Eligible	-	
293	MP	1943								●		Good	Not Eligible	-	
331	MP	1934								●		Fair	Not Eligible	-	
332	MP	1934								●		Fair	Not Eligible	-	
333	MP	1934								●		Fair	Not Eligible	-	
334	MP	1934								●		Fair	Not Eligible	-	
335	MP	1934								●		Fair	Not Eligible	-	
336	MP	1934								●		Fair	Not Eligible	-	
348	MP	1943				●						Fair	Not Eligible	-	
400	MP	1940					●					Good	Not Eligible	-	
403	MP	1940			●	●						Fair	Not Eligible	-	
405	MP	1940			●	●						Fair	Not Eligible	-	
406	MP	1940			●	●						Fair	Not Eligible	-	
407	MP	1940			●	●						Fair	Not Eligible	-	
409	MP	1940			●	●						Fair	Not Eligible	-	
410	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
411	MP	1940, 1941				●						Fair to poor	Not Eligible	-	
412	MP	1940, 1941				●						Fair to poor	Not Eligible	-	
413	MP	1941	●		●							Fair	Not Eligible	-	
414	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
415	MP	1940, 1941				●						Fair to poor	Not Eligible	-	
416	MP	1940			●	●						Fair	Not Eligible	-	
417	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
418	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
419	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
420	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
421	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
422	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	

Table 3.4 (Continued).

DPW Building Number	Area of Post	Date	Administrative	Housing	Training	Storage	Utilities	Recreation	Research	Maintenance	Other	Condition	Eligibility	NR Criteria	Other Building Identification
423	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
426	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
427	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
428	MP	1941	●		●							Fair	Not Eligible	-	
429	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
430	MP	1941	●			●						Fair	Not Eligible	-	
431	MP	1940, 1941				●						Fair to poor	Not Eligible	-	
432	MP	1940, 1941	●			●		●				Good	Not Eligible	-	
433	MP	1941				●						Fair	Not Eligible	-	
434	MP	1940, 1941	●			●		●				Good	Not Eligible	-	
436	MP	1941				●						Fair	Not Eligible	-	
439	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
443	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
447	MP	1940, 1941	●	●		●		●				Fair	Not Eligible	-	
453	MP	1941	●		●							Fair	Not Eligible	-	
454	MP	1939	●									Good	Not Eligible	-	
475	MP	1941	●									Poor	Not Eligible	-	
480	MP	1941				●						Good	Not Eligible	-	
481	MP	1941				●						Good	Not Eligible	-	
482	MP	1941				●				●		Poor	Not Eligible	-	
483	MP	1941								●		Good	Not Eligible	-	
484	MP	1941				●				●		Good	Not Eligible	-	
485	MP	1941								●		Fair	Not Eligible	-	
487	MP	1943					●					Good	Not Eligible	-	
490	MP	1939								●		Good	Not Eligible	-	
492	MP	1941	●									Good	Not Eligible	-	
494	MP	1940					●					Good	Not Eligible	-	
497	MP	1940				●						Good	Not Eligible	-	
498	MP	1939				●				●		Good	Not Eligible	-	
499	MP	1939	●									Good	Not Eligible	-	
500	MP	1962									●	Good	Not Eligible	-	
501	MP	1969	●									Good	Not Eligible	-	
550	MP	1941	●									Good	Not Eligible	-	
551	MP	1942	●		●							Good	Not Eligible	-	
552	MP	1941						●				Good	Not Eligible	-	
555	MP	1941	●									Good	Not Eligible	-	
557	MP	1943					●					Fair	Not Eligible	-	
557a	MP	1943					●					Good	Not Eligible	-	
562	MP	1941					●					Good	Not Eligible	-	
563	MP	1941	●									Good	Not Eligible	-	
675	MP	1941	●									Good	Not Eligible	-	
676	MP	1941	●									Good	Not Eligible	-	
677	MP	1941	●									Good	Not Eligible	-	
682	MP	1941									●	Good	Not Eligible	-	
684	MP	1943				●						Fair	Not Eligible	-	
687	MP	1941, 1944									●	Good	Not Eligible	-	
688	MP	1941, 1944									●	Good	Not Eligible	-	
693	MP	1941, 1944									●	Good	Not Eligible	-	
694	MP	1941, 1944									●	Good	Not Eligible	-	
695	MP	1943	●									Good	Not Eligible	-	
697	MP	1943				●	●					Good	Not Eligible	-	
701	MP	1941	●									Good	Not Eligible	-	
739	MP	1941	●									Good	Not Eligible	-	
743	MP	1941				●						Faor	Not Eligible	-	
744	MP	1941	●		●							Good	Not Eligible	-	
745	MP	1941	●						●			Good	Not Eligible	-	
746	MP	1941	●									Good	Not Eligible	-	
747	MP	1941	●		●							Good	Not Eligible	-	
748	MP	1941	●									Good	Not Eligible	-	
749	MP	1941	●									Good	Not Eligible	-	

Table 3.4 (Continued).

DPW Building Number	Area of Post	Date	Administrative	Housing	Training	Storage	Utilities	Recreation	Research	Maintenance	Other	Condition	Eligibility	NR Criteria	Other Building Identification
752	MP	1941					●					Good	Not Eligible	-	
787	MP	1941	●									Good	Not Eligible	-	
788	MP	1941	●									Good	Not Eligible	-	
789	MP	1941	●		●							Good	Not Eligible	-	
800	MP	1942	●									Poor	Not Eligible	-	
801	MP	1941						●				Good	Not Eligible	-	
804	MP	1941				●						Fair	Not Eligible	-	
810	MP	1941									●	Good	Not Eligible	-	
811	MP	1941									●	Fair	Not Eligible	-	
812	MP	1941	●									Good	Not Eligible	-	
824	MP	1941			●	●						Fair	Not Eligible	-	
866	MP	1941	●									Good	Not Eligible	-	
886	MP	1943				●						Good	Not Eligible	-	
900	MP	1941			●	●						Fair	Not Eligible	-	
901	MP	1941			●							Fair	Not Eligible	-	
901a	MP	1941					●					Fair	Not Eligible	-	
903a	MP	1941					●					Fair	Not Eligible	-	
905	MP	1941				●				●		Fair	Not Eligible	-	
906	MP	1942	●		●							Good	Not Eligible	-	
906a	MP	1941					●					Fair	Not Eligible	-	
908	MP	1943				●						Fair	Not Eligible	-	
909	MP	1942	●		●							Good	Not Eligible	-	
910	MP	1943	●		●							Good	Not Eligible	-	
911	MP	1943	●		●							Good	Not Eligible	-	
912	MP	1943	●		●							Good	Not Eligible	-	
913	MP	1943	●		●							Good	Not Eligible	-	
914	MP	1943	●		●							Good	Not Eligible	-	
915	MP	1943	●		●							Good	Not Eligible	-	
916	MP	1943	●		●							Good	Not Eligible	-	
917	MP	1943	●		●							Good	Not Eligible	-	
949	MP	1943					●					Good	Not Eligible	-	
952	MP	1946					●					Good	Not Eligible	-	
953	MP	1946					●					Good	Not Eligible	-	
1076	MP	1958					●					Good	Not Eligible	-	
1102	MP	1942	●		●	●						Good	Not Eligible	-	
1103	MP	1942	●		●	●						Good	Not Eligible	-	
1104	MP	1942	●		●	●						Good	Not Eligible	-	
1105	MP	1942	●		●	●						Good	Not Eligible	-	
1106	MP	1942	●		●	●						Good	Not Eligible	-	
1107	MP	1942	●		●	●						Good	Not Eligible	-	
1108	MP	1942	●		●	●						Good	Not Eligible	-	
1109	MP	1942	●		●	●						Good	Not Eligible	-	
1110	MP	1942	●		●	●						Good	Not Eligible	-	
1150	MP	1952	●									Good	Not Eligible	-	Vail Hall
1220	MP	1953					●					Good	Not Eligible	-	
2002	CWA	1960						●				Good	Not Eligible	-	
2022	CWA	1949		●								Good	Not Eligible	-	
2023	CWA	1949		●								Good	Not Eligible	-	
2024	CWA	1949		●								Good	Not Eligible	-	
2025	CWA	1949		●								Good	Not Eligible	-	
2026	CWA	1949		●								Good	Not Eligible	-	
2028	CWA	1949		●								Good	Not Eligible	-	
2029	CWA	1949		●								Good	Not Eligible	-	
2030	CWA	1949, 1955		●								Good	Not Eligible	-	
2031	CWA	1949		●								Good	Not Eligible	-	
2032	CWA	1949		●								Good	Not Eligible	-	
2033	CWA	1949		●								Good	Not Eligible	-	
2034	CWA	1949		●								Good	Not Eligible	-	
2035	CWA	1949, 1955		●								Good	Not Eligible	-	
2036	CWA	1949, 1955		●								Good	Not Eligible	-	

Table 3.4 (Concluded).

DPW Building Number	Area of Post	Date	Administrative	Housing	Training	Storage	Utilities	Recreation	Research	Maintenance	Other	Condition	Eligibility	NR Criteria	Other Building Identification
2037	CWA	1949, 1955		●								Good	Not Eligible	-	
2038	CWA	1949, 1955		●								Good	Not Eligible	-	
2039	CWA	1949, 1955		●								Good	Not Eligible	-	
2040	CWA	1949, 1955		●								Good	Not Eligible	-	
2041	CWA	1949, 1955		●								Good	Not Eligible	-	
2042	CWA	1949, 1955		●								Good	Not Eligible	-	
2043	CWA	1948					●					Good	Not Eligible	-	
2231	CWA	1949, 1955		●								Good	Not Eligible	-	
2232	CWA	1949, 1955		●								Good	Not Eligible	-	
2233	CWA	1949, 1955		●								Good	Not Eligible	-	
2234	CWA	1949, 1955		●								Good	Not Eligible	-	
2235	CWA	1949, 1955		●								Good	Not Eligible	-	
2236	CWA	1949, 1955		●								Good	Not Eligible	-	
2237	CWA	1949, 1955		●								Good	Not Eligible	-	
2238	CWA	1949, 1955		●								Good	Not Eligible	-	
2239	CWA	1949, 1955		●								Good	Not Eligible	-	
2240	CWA	1949, 1955		●								Good	Not Eligible	-	
2260	CWA	1949, 1955		●								Good	Not Eligible	-	
2275	CWA	1942									●	Good	Not Eligible	-	
2501	CWA	1942	●			●						Good	Not Eligible	-	
2502	CWA	1942				●				●		Good	Not Eligible	-	
2503	CWA	1942				●				●		Good	Not Eligible	-	
2504	CWA	1942				●				●		Good	Not Eligible	-	
2506	CWA	1942				●				●		Good	Not Eligible	-	
2507	CWA	1942				●				●		Good	Not Eligible	-	
2508	CWA	1942									●	Good	Not Eligible	-	
2525	CWA	1942	●									Good	Not Eligible	-	
2531	CWA	1942				●			●			Fair to poor	Not Eligible	-	
2532	CWA	1942				●			●			Fair to poor	Not Eligible	-	
2533	CWA	1942				●			●			Fair to poor	Not Eligible	-	
2535	CWA	1942							●			Good	Not Eligible	-	
2536	CWA	1942							●		●	Fair	Not Eligible	-	
2539	CWA	1942	●									Good	Not Eligible	-	
2542	CWA	1942				●					●	Good	Not Eligible	-	
2543	CWA	1942					●					Good	Not Eligible	-	
2561	CWA	1942	●									Fair	Not Eligible	-	
2562	CWA	1942				●						Good	Not Eligible	-	
2564	CWA	1942				●						Good	Not Eligible	-	
2569	CWA	1942						●				Good	Not Eligible	-	
2600	MP	1942				●						Good	Not Eligible	-	
none	MP	1943				●						Fair	Not Eligible	-	field designation "A"
none	MP	1943				●						Fair	Not Eligible	-	field designation "B"
none	MP	1943				●						Fair	Not Eligible	-	field designation "C"
none	MP	1943				●						Fair	Not Eligible	-	field designation "D"
none	MP	1943				●						Fair	Not Eligible	-	field designation "E"
none	MP	1943				●						Fair	Not Eligible	-	field designation "F"
none	MP	1950									●	Excellent	Not Eligible	-	Signal Corps Monument
none	CWA	1945				●						Fair	Not Eligible	-	field designation "G"
none	CWA	1945				●						Good	Not Eligible	-	field designation "H"
none	CWA	1945				●						Good	Not Eligible	-	field designation "I"

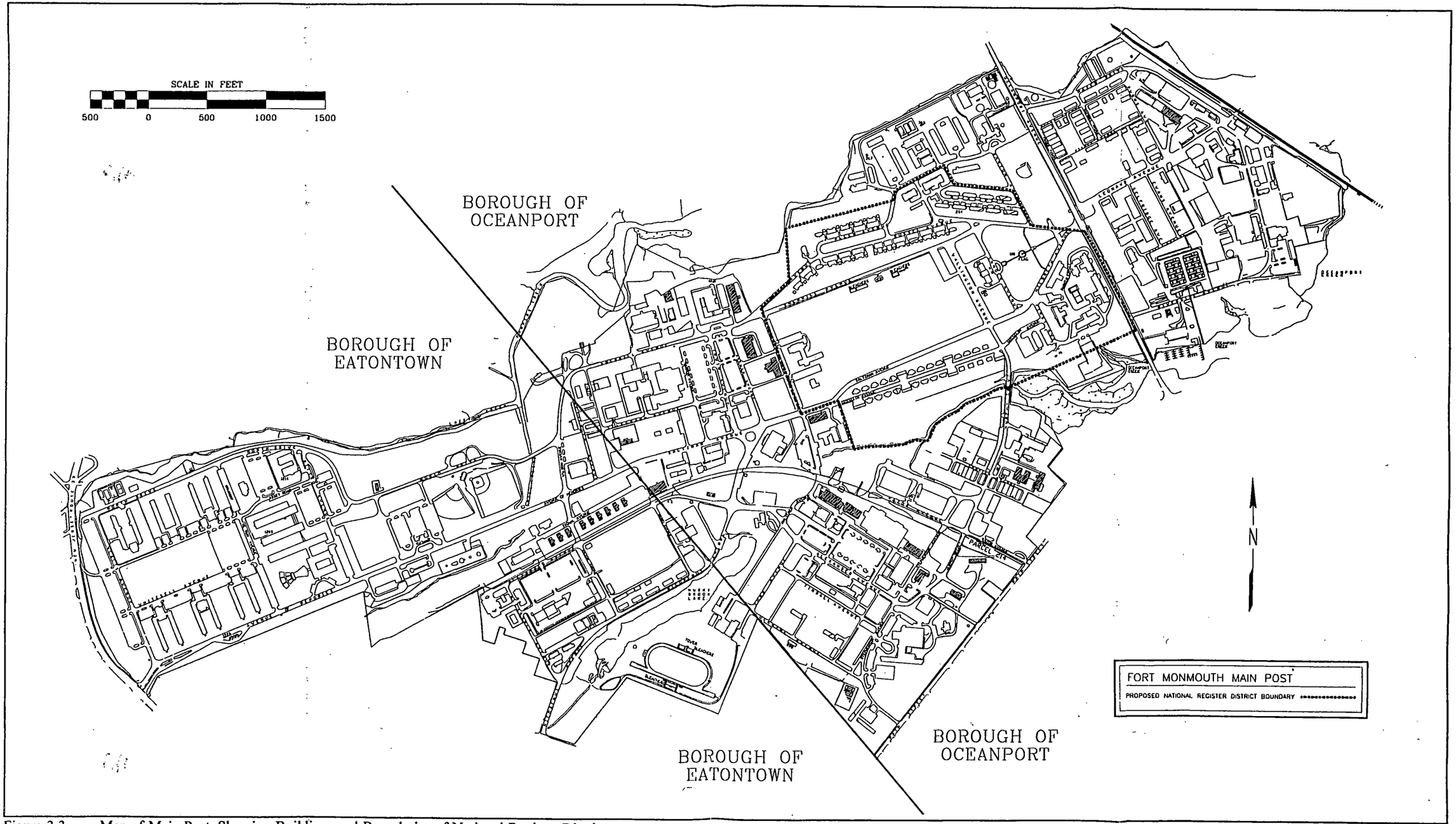


Figure 3.3 Map of Main Post, Showing Buildings and Boundaries of National Register District.

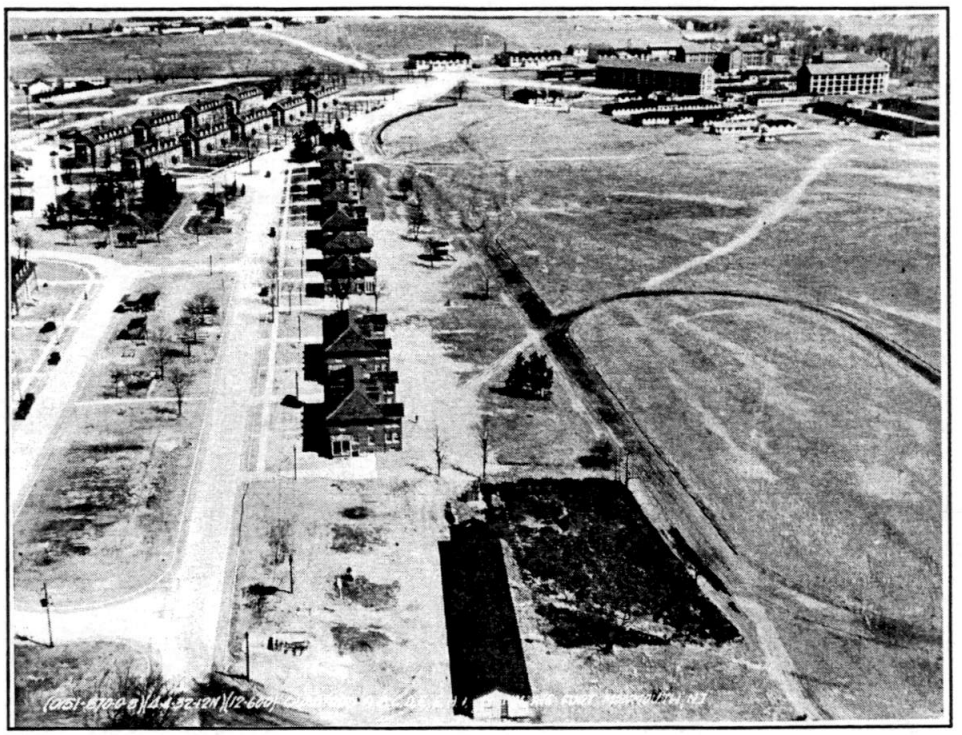


Figure 3.4 Aerial Photograph of Historic District, March 4, 1932.

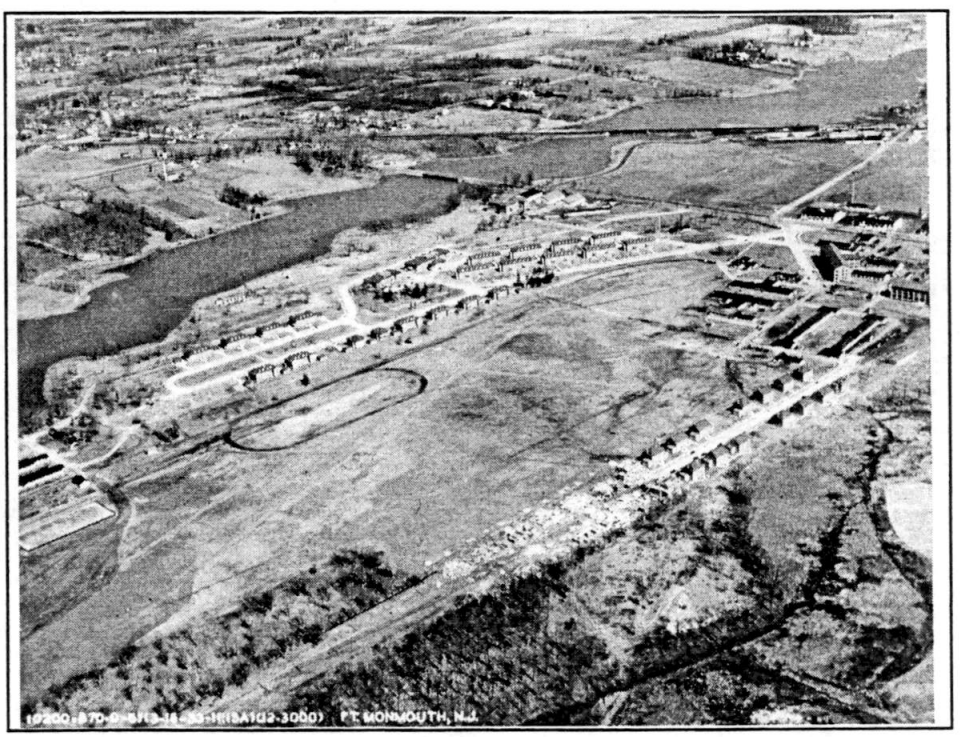


Figure 3.5 Aerial Photograph of Historic District, March 16, 1933.

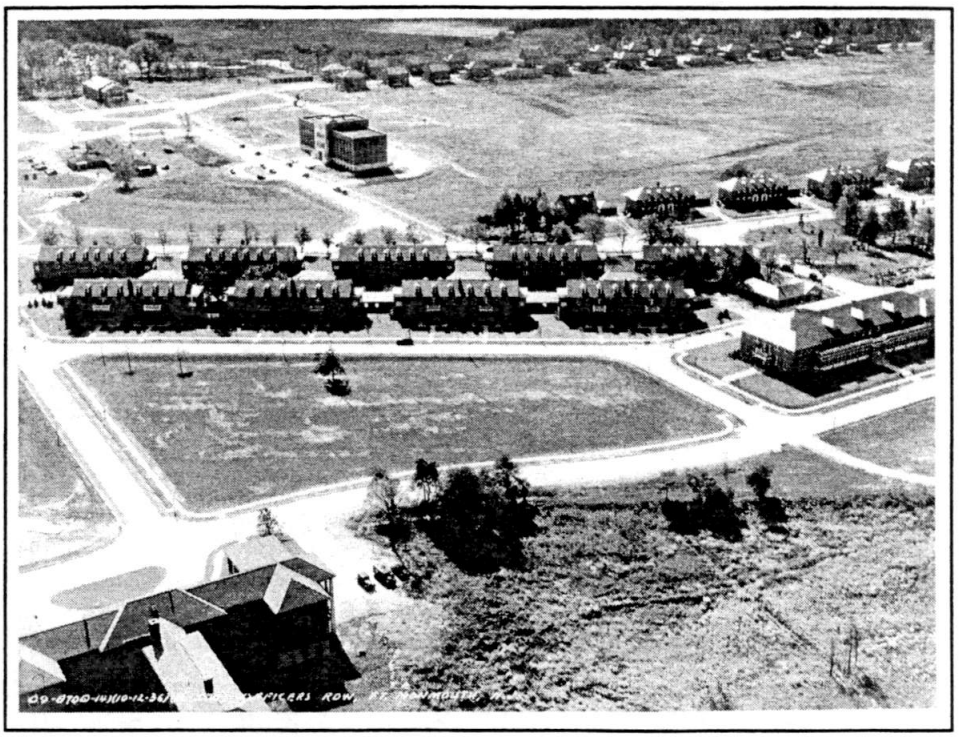


Figure 3.6 Aerial Photograph of Historic District, October 12, 1936.

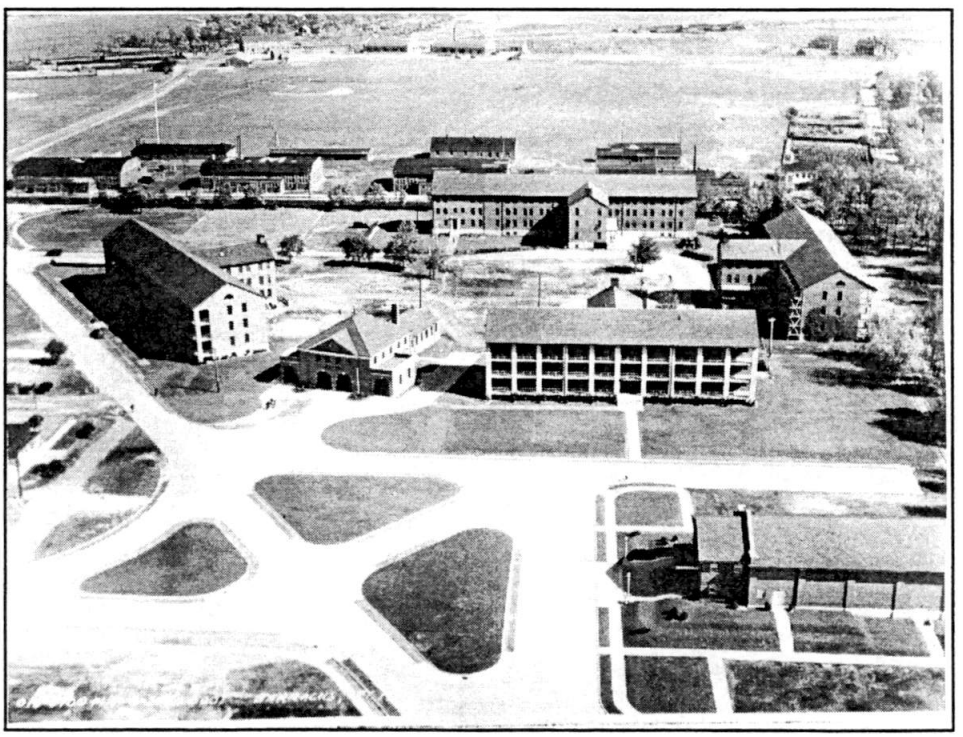


Figure 3.7 Aerial Photograph of Historic District, October 12, 1936.

very little funding for post expansion. The fact that Fort Monmouth underwent growth during this era establishes that it was a vital component in national defense planning. Buildings in the district are Colonial Revival-style brick construction with hipped and gabled roofs, double-hung multi-sash windows, and classical entry surrounds (Figure 3.8). The Colonial Revival style was administered by the U.S. Army's Construction Service of the Quartermaster Corps which included members that previously worked for nationally recognized architectural firms such as McKim, Mead, and White, and master architects such as Cass Gilbert. The Quartermaster architectural staff selected styles for Army building projects based on regional and national themes. The staff decided that Colonial or Georgian Revival styles best suited their projects in the east, as these architectural trends remained fashionable in New England and Virginia throughout the nineteenth and twentieth centuries. Additional Quartermaster Corps selections included Spanish Mission styles for western holdings and the French Provincial style for installations in Louisiana (Orelup 1983: 7-8). Fort Monmouth's proposed district is an excellent example of the Army's unique building program that retains its overall sense of time and place as well as its visual continuity. The district meets NR Criterion "a" for its role in early U.S. Army permanent base development and Criterion "c" for its architectural integrity based on the Colonial Revival style.

3.4.1.2 Charles Wood District

The 1996 inventory (Nichols 1996) identified five resources including a country club, a swimming pool, and a golf course that appear eligible as a NR district based on Criteria "a" and "c." This small district includes only a portion of its surrounding golf course, and is bounded by Tinton Avenue at the north, Maxwell Place at the east, Megill Drive at the south, and Lowther Drive at the north (Figure 3.9). The facilities included in the district date from the mid-1920s to mid-1930s, most of which surround Building 2000, Gibbs Hall. Gibbs Hall, the most visual aspect of the district, is a two and a half-story Tudor Revival style clubhouse with exterior materials of brick, wood, and stucco (Figure 3.10). The building is an excellent example of its style, displaying features such as half-timbering, steep gables, casement windows, and massive decorative chimneys. Surrounding the clubhouse are several support facilities such as a swimming pool, tennis courts, a refreshment stand, and golf course (Buildings/Facilities 2018-2020). These properties are considered to be elemental to the theme of the proposed district. Also within the boundaries of the district are several non-contributing properties including a set of tennis courts (Facility 2002) and water treatment facility (Building 2043). These properties are later additions (constructed 1960 and 1948, respectively) to the district and are not considered to be contributing members of the district because of their age, which does not fall within the district's period of significance (1926-1942).

The Charles Wood District is locally significant because of its history relating to its use as a golf club. Constructed in approximately 1926, Gibbs Hall (Building 2000) originally served as the Sun Eagles Country Club, which was owned and operated by Redacted - Privacy Act. Redacted - Privacy Act purchased the property that was originally used for farming purposes from the Redacted - Privacy A and Redacted - Priv families. Established primarily as a Jewish club, memberships were abolished about 1930 when Redacted - Redacted - Privacy A had a falling out with members. At that time, the organization was re-established as the Monmouth County Country Club. The site remained in use as a clubhouse until it and the surrounding 203 acres were sold to the U.S. Army in 1942. Also included in the tract at that time were two polo fields (CECOM Historical Research Collection 1942). The architect for Building 2000 was Redacted - Privacy Act, and Redacted - Privacy Act designed the three-par golf course originally surrounding the site (Historic American Buildings Survey/Historic American Engineering Record [HABS/HAER] Inventory Cards 1982). The property was a significant landmark in the Tinton Falls/Eatontown area throughout the 1920s and 1930s, and is considered to be a resource of local historical interest.

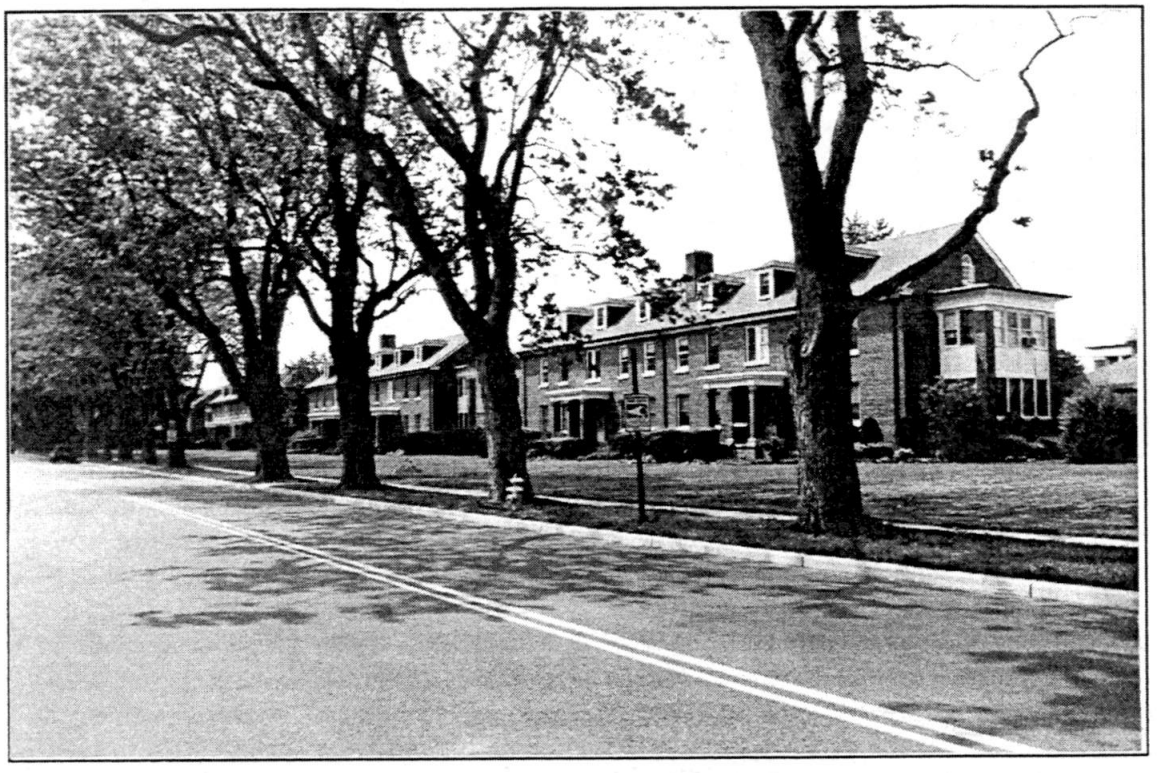


Figure 3.8 Duplex Officers Housing Within the Main Post National Register District.

The Charles Wood Area district meets NR Criterion "a" for its role in the social development of the Tinton Falls/Eatontown area and Criterion "c" as an excellent example of Tudor Revival style architecture. Although Building 2000 has undergone renovations such as side-wing additions and interior remodeling since its transfer of ownership in 1942, these alterations fail to diminish its overall architectural integrity.

3.4.2 Other Buildings

Fort Monmouth holds approximately 670 buildings at the Main Post and Charles Wood Area that range in dates of construction from 1917 to 1995. These buildings represent the installation's history from its initial years as Camp Alfred Vail to the present day. Fort Monmouth gained much of its overall appearance by the mid-1940s, during which time a number of WW II-era temporary buildings were added east of the proposed Main Post district. Following WW II, the Main Post expanded west to the boundary that currently borders New Jersey Route 35. This area of the Main Post is characterized by the addition of many post-1946 facilities. The Charles Wood Area changed significantly after WW II, having originally held very few WW II-era resources (a fire station, chapel, laboratory facilities, and antenna shelters). The property was purchased by Fort Monmouth in 1942 following its use as a local golf and country club during the 1920s and 1930s.

3.4.2.1 National Register Eligible Properties not Included in National Register Districts

The 1996 inventory (Nichols 1996) identified five individual properties that appear to meet NR criteria. These five properties include Building 2700 (the "Hexagon"); Building 283 (Squier Laboratory); and three Dymaxion Deployment Units (DDUs) located both at the Main Post and Charles Wood Area. The DDUs and Building

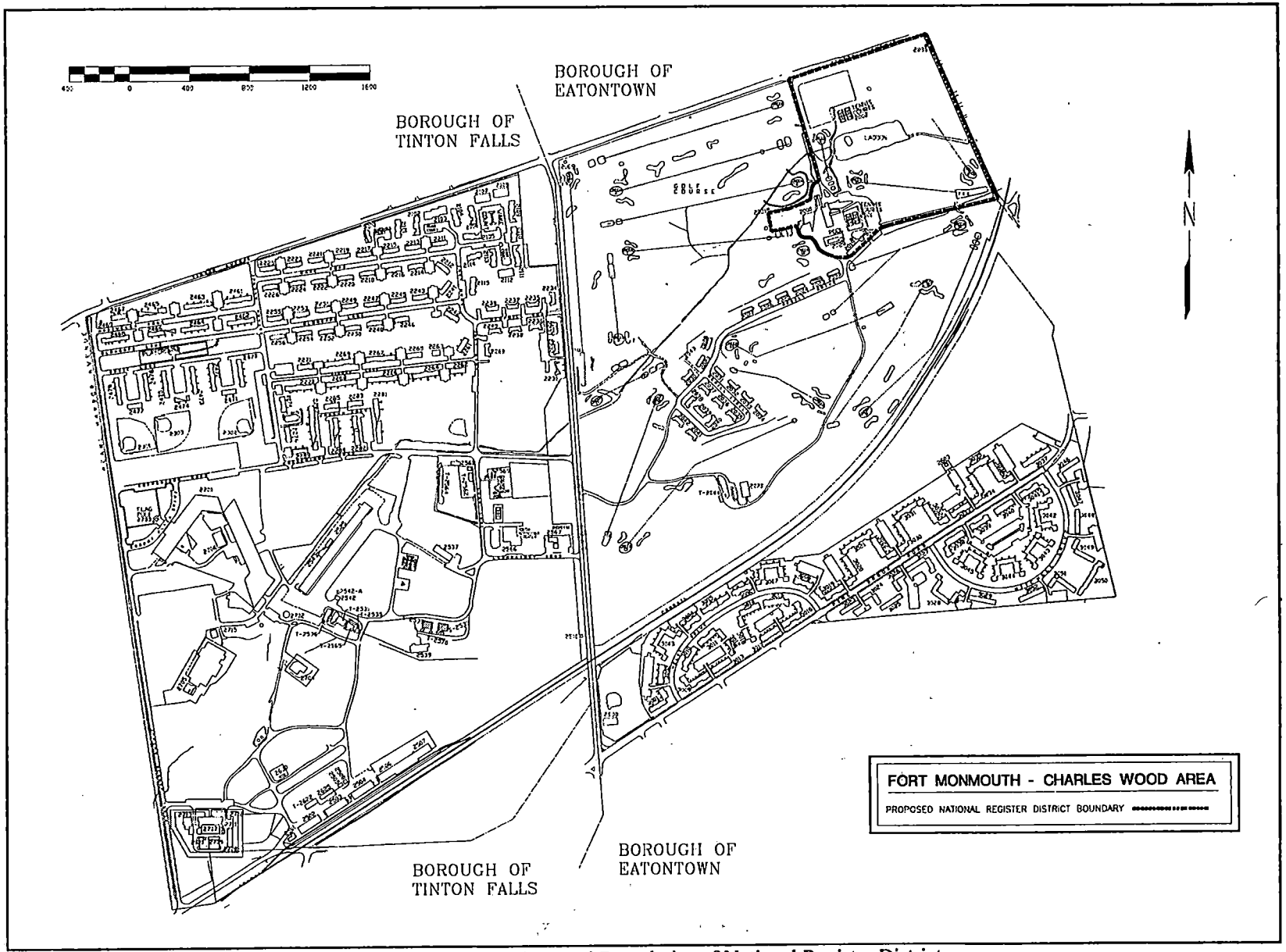


Figure 3.9 Map of Charles Wood Area, Showing Buildings and Boundaries of National Register District.

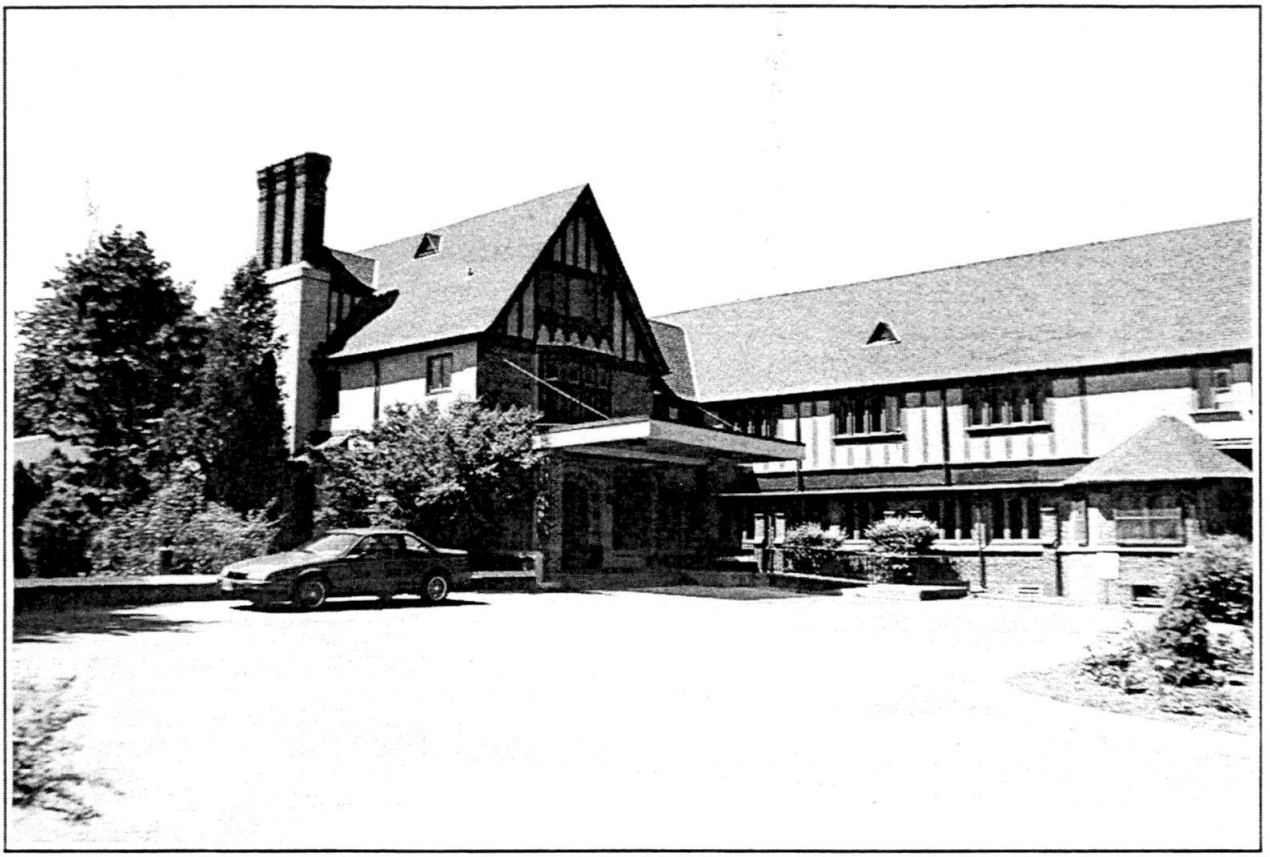


Figure 3.10 Gibbs Hall, 1996.

2700 meet Criteria "a" and "c" for their historic and architectural contributions; whereas Building 283 meets only Criterion "a" due to recent exterior modifications that compromise its original architectural integrity.

Building 283, Squier Laboratory, is a two-story brick research facility located at the Main Post on Sherrill Avenue south of Parker's Creek (Figure 3.11). This 1935 building, constructed during Fort Monmouth's post WW I ten-year building program (1927-1937), was originally included in the proposed Main Post district. The 1996 inventory recommended removal of the building from the district as it no longer contributes to the district's visual conformity due to the addition of exterior stucco. However, the property appears to meet NR Criterion "a" for its role in 1930s-1940s communications research and development missions at the Main Post. Squier Hall originally served as the sole pre-WW II Signal Corps laboratory facility. After WW II, as research and development activities were expanded to comply with post-war missions at Fort Monmouth, laboratory operations broadened to sub-areas such as those at the Charles Wood Area and Coles Laboratory sites. During its years as the primary headquarters for Main Post research activities, Squier Hall administrated communications innovations including the standardization of electrical circuit components, batteries, and power equipment, and the instigation of auto-assembly for miniaturization which was a crucial development in national defense technology (CECOM Historical Research Collection, "Signal Corps Laboratories -- Articles ca. 1950s," n.p.). This facility represents the permanent mission of Fort Monmouth as related to its research and development activities. Squier Hall served as headquarters for Fort Monmouth's pre- and post-

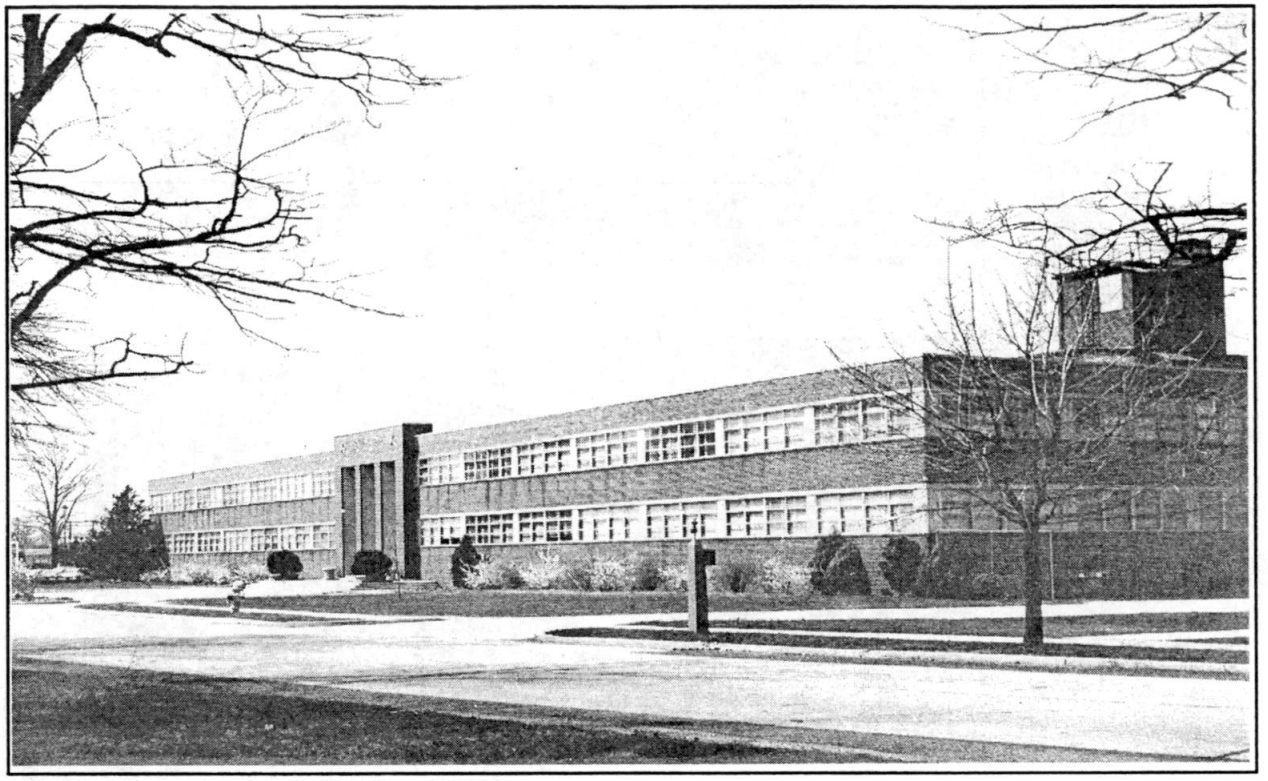


Figure 3.11 Squier Hall, Circa 1970s.

war research and development activities until construction of the Hexagon in 1955.

The Hexagon (Building 2700) is located at the Charles Wood Area at the intersection of Corregidor Road and Pearl Harbor Avenue on Corput Plaza Drive. This four-story hexagonal plan building was constructed in 1955 to house administrative and laboratory activities associated with Fort Monmouth's research and development missions located at the Main Post, Charles Wood Area, and Coles Laboratory areas. The sixth wing of the building was never completed as its intended function was transferred in the early 1950s to Fort Huachuaca, Arizona. Retaining more than 600 laboratories and covering approximately 665,000 square ft, this steel construction building is a unique architectural and technological prototype (Figure 3.12). The Hexagon administrates activities conducted by contract organizations in industry, commercial laboratories, and educational/research institutions. Although a great number of communications developments attributed to Fort Monmouth actually originated off base, the installation nonetheless played an integral role necessary in the conceptualization and completion of the projects. Specific communications advancements associated with Building 2700 include the production of lightweight forward-area radios, global communications systems, mobile combat computers, and aerial surveillance systems (CECOM Historical Research Collection, "U.S. Army Electronics Research and Development Laboratories, Publicity 1960s," n.p.). Building 2700 meets NR Criteria "a" and "c" under Criterion "g" for its unique architectural design, as well as for its role as a research and development site essential to national military defense missions associated with the Cold War era.

Located at both the Main Post and Charles Wood Area are three DDUs. These are one-story metal

Figure 3.12 The "Hexagon," Circa 1980s.

prefabricated circular buildings designed by R. Buckminster Fuller (Figure 3.13). Two of the three inventoried DDUs are located at the Main Post situated south of Razor Avenue between Buildings 800 and 801 and between Main Street and Stephenson Avenue south of the hospital. DDUs at the Main Post are not identified with building numbers on maps or real estate records provided by Fort Monmouth's Directorate of Public Works (DPW) office. The inventoried DDU at the Charles Wood Area is Building 2570 which is located on Laboratory Road south of Buildings 2532 and 2533.

The DDUs were converted steel grain bins manufactured by Butler Manufacturing Company and re-designed by R. Buckminster Fuller, master architect/engineer. Originally intended for use in Britain during WW II, the DDU was deleted from the British acquisitions program because the buildings were constructed of steel, a material that was prioritized for weapons production. Fuller hoped that the design would be adapted in the United States as a housing style, but America also faced steel shortages due to rationing and increased weapons production. The DDU was finally adapted by the military for use in the Persian Gulf where the facilities were utilized as radar shacks and desert housing units (Marks and Fuller 1973, 116). It is feasible that the popularity of the design related to its use as a radar shelter prompted DDU construction at Fort Monmouth. The DDUs at Fort Monmouth's Main Post and Charles Wood Area meet NR Criterion "a" for their role during WW II as specialized antenna shelters and Criterion "c" because of their unique design and association with R. Buckminster Fuller.

3.4.2.2 Other Buildings at Fort Monmouth

A total of 230 properties that do not meet NR criteria for evaluation were identified during the 1996 inventory of Fort Monmouth's Main Post and Charles Wood Area. These facilities include

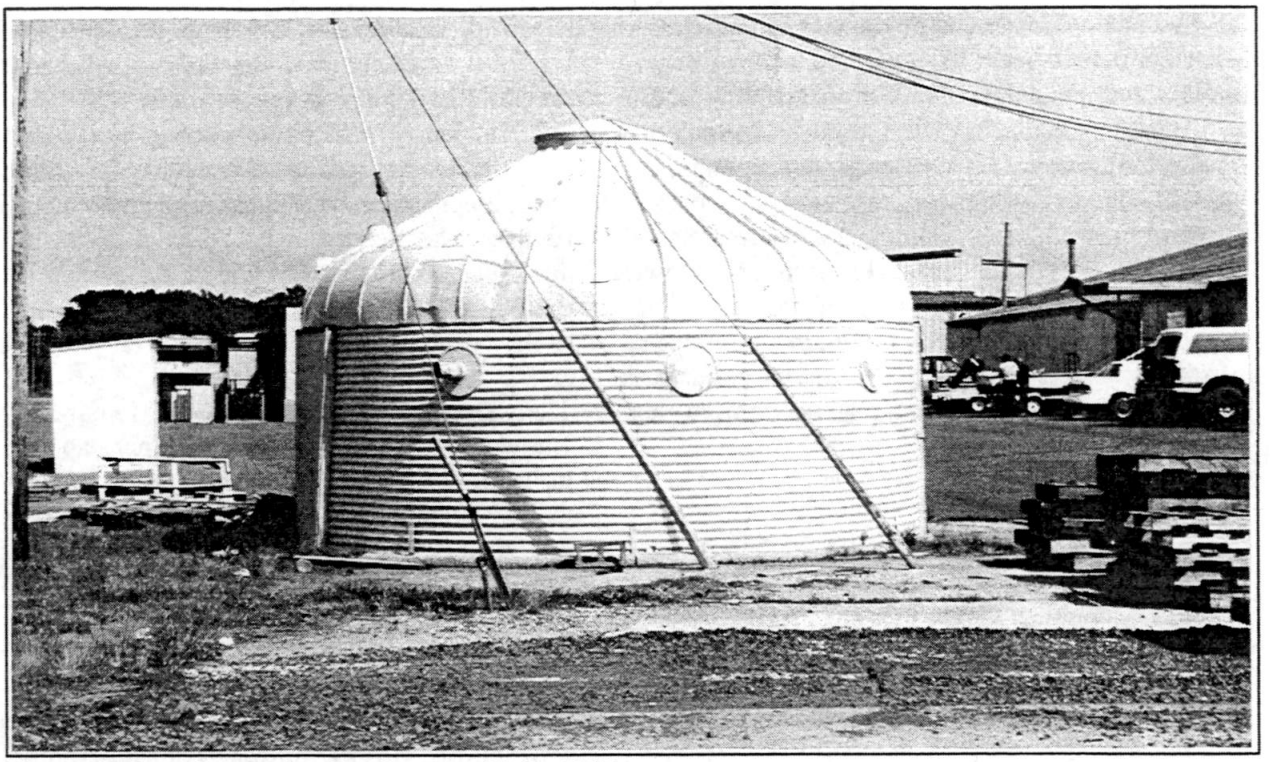


Figure 3.13 Dymaxion Deployment Unit, 1996.

housing, administrative, utility, and support buildings and structures, as well as two post-1946 war memorial monuments (see Table 3.4). These properties fail to meet NRHP Criteria "a," "b," or "c" either because they do not retain historic integrity necessary to convey their integrity or they are less than 50 years of age and fail to exhibit "exceptional" significance associated with Criterion "g." Non-eligible properties are listed individually in Table 3.4. It is recommended that inventoried properties less than 50 years of age be re-evaluated in 5 years; their eligibility status is subject to change as these properties will no longer have to meet Criterion "g" in order to be eligible for NRHP listing.

An additional eight properties were identified for which no determination of eligibility could be made. These facilities include Buildings 2705 and 2707-2713. Building 2705 is the Electronics Warfare Laboratory located off Pearl Harbor Avenue and southwest of the Hexagon. Buildings 2707-2713 comprise the Pulse Power Center located near the convergence of Pearl Harbor Avenue and Pine Brook Road. These properties may meet NR Criterion "a" under Criterion "g." However, their significance could not be adequately evaluated to prove or disprove eligibility due to lack of unclassified information concerning research activities associated with the sites.

3.5 OTHER CULTURAL RESOURCES

3.5.1 Artifacts and Objects

The Fort Monmouth Communications-Electronics Museum contains items of military technology, photographs, and documents related to key developments in military communications and electronics warfare. The collections include numerous communications related specimens such as walkie-talkies, infra-red scopes, night vision goggles, and electronic listening devices. The museum collection also includes a permanent outdoors display of large objects such as radar

dishes, communications equipment, and vehicles. All items have been catalogued and none appear eligible for inclusion to the NRHP. The information contained within Fort Monmouth's collection of documents, records, photographs, and maps may be able to provide important information about archeological and architectural resources. In some cases, this information may serve to reduce the amount of testing and/or recording necessary for certain compliance projects. The usefulness of these collections should be considered during inventories and evaluations.

3.5.2 Documents

An extensive archive of original documents, including published works, memoranda, maps, photographs, and motion pictures relating to the military history of Fort Monmouth, the Signal Corps, and the Communications-Electronic Command are in the custody of the Command Historian. These are valuable resources for research purposes. Many documents, especially the motion picture archives, have not been fully catalogued. Other photographs are in the care of the curator of the Fort Monmouth Museum. The information contained within Fort Monmouth's collection of documents, records, photographs, and maps may be able to provide important information about archeological and architectural resources. In some cases, this information may serve to reduce the amount of testing and/or recording necessary for certain compliance projects. The usefulness of these collections should be considered during inventories and evaluations.

3.5.3 Monuments

The Avenue of Memories, from the West Gate to the Parade Ground, includes 117 markers erected in 1949 and dedicated to Signal Corps soldiers who were killed in action. These monuments have been completely inventoried (Fort Monmouth Tradition Committee 1961:84-86) and are not eligible for inclusion to the NRHP.

The WW II Memorial in Greely Field, identified by DPW as Building 115, was built in 1952 as a memorial for Signal Corps soldiers who were killed in action. The monument serves as a parade review stand and measures 49 ft x 17 ft, including two fountains, a ceremonial torch and two utility rooms. The monument is less than 50 years old and, although it is located within the boundaries of the NRHP district, it is not eligible for inclusion to the NRHP.

The Division Signal Corps Monument in Dunwoody Park is a granite monument about 6 ft in height constructed in 1950 to honor the Signal Corps, Spanish War Division. The monument is less than 50 years old and is not eligible for inclusion to the NRHP.

3.6 CONTEXTS FOR SIGNIFICANCE

The NRHP is the official Federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. It was established by NHPA in 1966. NRHP properties have significance to the prehistory or history of their community, state, or the nation. The NRHP is administered by the National Park Service. Nominations for listing historic properties come from SHPOs and, for properties owned or controlled by the United States Government, Federal Preservation Officers (FPO). A professional review board in each state considers each property proposed for listing and makes a recommendation on its eligibility.

3.6.1 NRHP Significance Criteria

Properties listed in the NRHP have integrity and historic significance. Integrity is the authenticity of a property's historic identity and is evidenced by the survival of physical characteristics that existed during the property's prehistoric or historic period. Qualities which make up integrity are location, design, setting, workmanship, feeling, or association. A property must resemble its historic appearance as well as its physical materials, design features, and aspects of its construction dating

from the period it attained its significance. For archeological sites, integrity is based on the degree to which remaining evidence can provide important information. There are four Criteria for Evaluation (designated Criteria a through d). A property must meet at least one criterion for listing in the NRHP (36 CFR 60.1; NR Bulletin 15, 16B):

a) Associated with historic events or activities that have made a significant contribution to the broad patterns of our history.

b) Associated with the lives of persons significant in our past.

c) Embody of the distinctive characteristics of a type, period, or method of construction, or the represent the work of a master, or possess high artistic values, or represent a significant and distinguished entity whose components may lack individual distinction.

d) Having yielded or may be likely to yield important information about prehistory or history.

Properties which may be considered include (NR Bulletin 15):

- Buildings, which are structures created principally to shelter any form of human activity, such as a house, barn, church, or hotel.
- Structures, which are distinguished from buildings in that they were made usually for purposes other than creating human shelter, such as a bridge, lighthouse, or windmill.
- Objects, which are distinguished from buildings and structures in that they are primarily artistic in nature or are relatively small in scale and simply constructed. Although an object may be movable, it is associated with a specific setting or environment.
- Sites, which are locations of significant events, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.
- Districts, which possess a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Ordinarily the following kinds of properties will not qualify for listing in the NRHP: cemeteries, birthplaces or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historical buildings, properties primarily commemorative in nature, and those achieving significance within the last 50 years. These types of properties can be eligible for the NRHP if they are integral parts of districts that do meet Criteria for Evaluation or if they fall under certain categories called Criteria Considerations (36 CFR 60.4; NR Bulletin 15):

a) A religious property deriving primary significance from architectural or artistic distinction or historical importance.

b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with an historic person or event.

c) A birthplace or grave of a historical figure of outstanding importance if there is not appropriate site or building directly associated with his productive life.

d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from

distinctive design feature, or from association with historic events.

e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived.

f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance.

g) A property achieving significance within the past 50 years if it is of exceptional importance. This is discussed further immediately below.

3.6.1.1 Properties That Have Achieved Significance Within the Last 50 Years

According to Criteria Consideration "g," cultural resources should not be judged solely for their contemporary impact and visibility. It is rarely possible to determine historic importance immediately after an event occurs or a building is constructed. Fifty years was established as an arbitrary limit, designed as a filter, to ensure that enough time had passed to evaluate a property within its historic context. It was not intended to be applied mechanically on a year-by-year basis. Some properties, for instance, can only be evaluated within a block of years, such as the Depression or WW II, rather than within a single year. Another consideration regarding time when evaluating a property for NR eligibility is that the appropriate date is not necessarily the date of construction but the date when the property achieved significance.

Nominations to the NRHP of properties less than 50 years old must clearly state the justification for exceptional importance, documenting the existence of sufficient research or evidence to permit a dispassionate evaluation of the property. "Exceptional" significance does not necessarily mean "national" significance; it is a measure of the significance of a property within the appropriate historic context on a local, state, or national level. Generally, the more recently a property has achieved significance, the more difficult it is to establish exceptional importance.

Criteria Consideration "g" is of potential interest at Fort Monmouth in that properties built and used during the Cold War era (1946-1989) may be eligible for inclusion in the NRHP if they have significance of exceptional importance. Such properties include buildings, structures, sites, objects, or districts associated with critical events or developments during the Cold War era, specifically related to policy, research, or strategic weapons.

3.6.1.2 Traditional Cultural Properties

The TCPs, briefly mentioned in Section 3.3 above and in NR Bulletin 38, are another category of property eligible for inclusion in the NRHP. These are properties which are eligible for the NRHP because of their traditional cultural significance. This significance is derived from the role which the property plays in a community's historically rooted beliefs, customs, and practices. Some examples of TCPs are locations associated with the traditional beliefs of Native American groups, a rural community whose buildings or landscape reflect cultural traditions valued by its long-term residents, and an urban neighborhood that is the home of a particular cultural group and reflects its beliefs and practices.

TCPs are often hard to recognize in that they may look like any other topographic feature, river, place, or building. Archeological, historical, or architectural surveys may not reveal TCPs. Their existence or significance is often determined through interviews with knowledgeable persons. Because TCPs may relate to sensitive information which a cultural group does not wish to publicize or share widely, identification can be difficult.

3.6.1.3 Historic Context

The means by which a specific occurrence, property or site is understood and its meaning, and ultimately its significance, within prehistory or history is made clear is through its historic context. Generally speaking, historic context is comprised of the interrelated conditions in which something exists or occurs. For NRHP purposes, historic context is information about historic trends and properties grouped by an important theme in the prehistory or history of a community, state, or nation during a particular period of time. These are organized by theme, place, and time. Historians, architectural historians, folklorists, archeologists, and anthropologists use different words to describe historic context (e.g., trend, pattern, theme, cultural affiliation), but they are all refer to the same concept. A premise fundamental to all these approaches to historic context is that resources, properties, and events in history do not occur in a vacuum but are part of larger trends or patterns.

To evaluate a property within its historic context it is necessary to determine the following:

- the facet of local, state, or national prehistory or history represented;
- whether that facet is significant;
- whether the property has relevance and importance in illustrating the historic context;
- how the property illustrates that historic context; and
- whether the property possesses the physical features necessary to convey the aspect of prehistory or history with which it is associated.

A property qualifies for the NRHP if it has physical integrity and is evaluated as representing an important aspect of prehistory or history.

3.6.2 Standards for Evaluating Archeological Sites

Physical integrity and research value are two important aspects for evaluating the significance of archeological sites.

3.6.2.1 Physical Integrity

For both prehistoric and historic archeological sites, integrity is essential. Archeologists are interested not only in archeological materials, but also the relationship or association among them. As noted above, integrity generally means that the site contains evidence which can provide important information about prehistory or history. In practice, archaeologists assess integrity by the level of disturbance to ground by natural processes, such as erosion, or by human activity, such as construction or earth moving. If both horizontal and vertical movement of the soil has disrupted the natural stratigraphy or the stratigraphy which resulted from historic use of a site, little information can be extracted.

3.6.2.2 Research Value

Research value is more difficult to measure. Unlike popular expectations of what makes an archeological site interesting or important, no single factor (size, age, quantity of artifacts present, or even uniqueness) predominates in determining its overall research value. These factors are relevant only in relation to the historic context of the site and the particular research questions which are developed from the historic context by investigators.

In this CRMP, two sets of research issues are presented as standards for evaluating the significance of archeological sites. These research issues are drawn from the historic contexts which have been developed for prehistoric and historic New Jersey, and they are the basis for specific research questions which can be formulated when a given site is to be investigated. The first set of research issues are the fundamental questions archeologists must ask to define a site. If these

basic questions about a site are answered, then an investigator can address a second set of research issues which are more specific to the culture history of the region or are focused on processes of past human behavior.

3.6.2.3 Research Issues for Archeological Sites in General

For a prehistoric or historic archeological site, the following five general research issues must be addressed to evaluate its significance or as a basis for further research.

1) **Site location, boundaries, and size.** Where is the site, what is the extent of the site, what topography and environment are included, does it border or overlap with other sites, what is its configuration and spatial organization, what is its depth, what is its physical condition, can estimates of the population of the site be made, how is the site related to other sites in the region?

2) **Site chronology**. When was the site occupied, was it occupied once or repeatedly, was it occupied seasonally, what modifications took place over time, how has the site be affected by natural processes since occupation, is there archeological material which can be dated by chronometric methods (e.g., radiocarbon dating)?

3) **Site function.** What did people do here, is there evidence of particular activities in certain portions of the site, how did people use the location or resources of the site for their purposes, was the site used for a single activity or was it more generalized, how do the activities which were done here relate to what is known about the way of life of people in the past?

4) **Cultural affiliation.** What cultural group occupied the site, can archeological materials reveal information about the way of life of the occupants which is specific to members of a particular group (e.g., ethnic group, regional population, social class, profession, gender), is there evidence of occupation by more than one cultural group, is there evidence of trade with or travel to other regions?

5) **Environment.** What was the environment when the site was occupied, is there evidence of modification of or adaptation to the environment by the occupants, what resources could have been used by the occupants for their subsistence or other purposes, is there evidence relating to the health and population structure of the occupants?

Historic sites have the additional advantage of having been produced by people who either left records about the site or information which can place the site into a broader picture. Part of research at historic archeological sites includes examining primary and secondary documentary sources and, if possible, interviewing persons knowledgeable about the site.

3.6.2.4 Research Issues for Prehistoric Sites

The research issues which relate to the significance of prehistoric sites are derived from archeologists working in New Jersey, especially the authors of the volume edited by Chesler (1982). The research issues are presented by cultural period.

- ***Paleoindian Period.*** For the Paleoindian period, Marshall (1982) is the principal basis for these issues. The following five issues are priorities in Paleoindian studies:

  1) Paleoenvironmental reconstruction. Sites with a Paleoindian component which can contribute to the recognition of overall environmental changes and microenvironmental zones are significant. A particular concern is the transition from the Paleoindian to the Early Archaic and the nature of the environment. The possibility of a site containing pollen samples which can yield data on plant species which lived during the Paleoindian period would make a Paleoindian site very

significant. Another topic in paleoenvironment is the reconstruction of drainage systems in prehistory. Knowledge of this topic can contribute to understanding the distribution of Paleoindian sites throughout New Jersey.

2) Environmental variables in Paleoindian sites. Intersite comparisons of environmental variables can lead to predicting site locations and determining site utilization. For example, sources of lithics or habitat for game animals may be correlated with Paleoindian site location. Data related to environment and site function are valuable for this issue.

3) Paleoindian cultural chronology. Better chronological control is necessary to make inferences about human occupation of New Jersey in post glacial times. Changes in subsistence and settlement can be definitively understood only if chronology is unambiguous. The delineation of the sequences of lithic technologies can address the issue of the Paleoindian-Early Archaic transition. Any Paleoindian site which has the potential for contributing to chronological refinement (i.e., has archeological material which can be chronometrically dated) is very significant.

4) Lithic source identification. Where Paleoindians acquired lithic raw materials for tools is a question which can be addressed through knowledge of geology, lithic analysis, and trace element analyses. Every Paleoindian site which contains lithic materials is valuable in contributing data points in this effort.

5) Continental Shelf. Little data have been collected from the Continental Shelf relating to the Paleoindian period. If and when data (e.g., pollen cores, magnetic anomalies, artifacts) are recovered from underwater areas, on-shore sites will provide the points of comparison. Since Fort Monmouth is so near the ocean, any data on Paleoindian sites will be useful for this purpose.

- ***Archaic Period.*** For the Archaic period, the following seven issues are presented for evaluating significance of sites. They are mainly derived from Kraft and Mounier (1982a):

1) Archaic cultural sequences and chronology. Much of the work on which the cultural sequences and chronology of the Archaic in New Jersey is based on research done elsewhere in eastern North America. Any site which contributes to development of sequences and chronologies derived from locally-derived data is significant.

2) Reconstruction of early post glacial environments. What the environment was like after the end of the last glaciation is an important question for Archaic studies. Pollen samples, riverine alluviation, and other environmental data can address this. Sites with the potential to contribute such data are significant.

3) Distribution and character of Archaic populations within and across physiographic provinces. Any data which can provide direct or indirect evidence of population size and density is significant for the distribution in the various physiographic provinces. Other data (e.g., site layout, distribution of artifacts across the site, any mortuary related material, storage and food processing areas) can contribute to the discussion of the occupants' social organization, settlement, and subsistence.

4) Development of site and artifact typologies. Sites which contain well-dated artifacts can contribute to the development of these typologies.

5) Implications of culture change. Is there any evidence of cultural change reflected in the archeological record? If such change can be well dated, it may be possible to correlate it with environmental variables and other factors, such as site size or location.

6) Resource utilization. Evidence of resource use, particularly intensive use of a specialized resource such as shellfish or waterfowl, or indirect evidence of selective plant tending (e.g., storage facilities), can refine our understanding of adaptation and subsistence in the Archaic.

7) Late Archaic mortuary practices. Any sign of mortuary practices similar to those found elsewhere in the northeast in the Late Archaic would be very interesting. Similarly, any connection to southeastern mortuary ritual might provide a link between what is know to the northeast and to the south of New Jersey.

- ***Woodland Period.*** For the Woodland Period, the following issues are presented for evaluating the significance of sites. The main sources are Williams and Thomas (1982) and Kraft and Mounier (1982b).

1) Environmental factors. Delineating environmental factors which may be specific to the mid-Atlantic or New Jersey could contribute to understanding why the Woodland Period developed as it did in these places. Another topic is the rise of conditions favorable for plant cultivation. Also, evidence relative to sea-level changes can provide data on the availability of resources for populations in this period.

2) Settlement and cultural association. Any site with Meadowood material or cremation burials has the potential to contribute to determining settlement patterns associated with the cultural complexes of the Woodland Period.

3) Ceramic traditions. How did the presence of two ceramic traditions in New Jersey come about, and how did these traditions change? A site with ceramics, especially identifiable styles of ceramics, is a significant archeological resource for addressing Northeastern pottery. It is also important for developing a local chronology of prehistoric pottery for Monmouth County.

4) Cultural distinctiveness and contact with other regions. In the Late Woodland Period there was an elaboration of cultural complexes which differ from those in other parts of the Northeast. What factors brought about changes in the regional interaction which was apparently taking place during the Early/Middle Woodland? If the differentiation of New Jersey cultural groups during the Late Woodland reflects territoriality and boundary maintenance, there may have been increasing social and political complexity correlated with this process. Sites which exhibit evidence of such complexity are valuable for addressing this issue.

5) Plant cultivation. Any site which contains botanical remains, evidence of storage facilities, or an assemblage related to plant cultivation or processing can provide data for this research issue. Pottery may be suitable for plant residue analysis. This is an important issue in the Northeast, and any site with well-preserved remains is significant. Correlating the presence of botanical remains in sites to other aspects of the archeological record (e.g., site size or setting, trade goods) can increase our understanding of the impact of horticulture on native populations.

6) House and village patterns. No Late Woodland coastal sites have been investigated which provide data on house or village patterns. There is no information on house size, shape, or

construction before European contact. Any data related to these topics would be extremely valuable, not only in themselves, but also as a point of comparison with other Native American cultural groups (e.g., the Iroquois to the north or other Algonquian-speakers in the Chesapeake area to the south).

7) Coastal adaptations. How and to what extent late prehistoric people used the resources of the ocean and estuaries is not known. Questions of nutrition, seasonality, and the technology employed to acquire maritime resources could be addressed by archeological remains. A site with a shell midden may provide such information; a site with evidence of specialized maritime technology would be extremely valuable.

8) Evidence of European contact. The presence of European trade goods is a marker of contact. Many goods can be dated or sourced fairly accurately. Finding trade goods in a well-dated context, in association with other archeological features (e.g., burials) or artifacts (e.g., native pottery using European vessel forms) can help elucidate the nature of contact and its impact on Native American cultural groups. Gunflints, gun parts, and metal knives are also important for determining when European technology had an influence on the hunting of animals, especially for the fur trade. Sites containing contact-period material can also trace the process of acculturation which New Jersey's Native American cultural groups experienced.

3.6.2.5 Research Issues for Historic Period Sites

The research issues which relate to the significance of historic sites are derived from both archeological and historical sources. Again, Chesler, editor (1982), provides a starting point for the discussion.

Fortunately, it is possible to date historic sites more accurately than prehistoric sites because of the nature of the artifacts found. Goods can be dated by style, and mass-produced articles are often very precisely datable. Furthermore, documents provide information on many activities and areas of settlement, giving the researcher more data to use. Any site which can be documented through primary sources has a great potential for addressing specific research issues.

- ***Colonial/Federal Periods.*** For the Colonial and Federal Periods, the following research issues can be used to evaluate a site's significance:

  1) Early European exploration and settlement. The earliest European presence in New Jersey may have been short-term visits by fishermen. Swedish, Finnish, and Dutch settlers established only footholds in New Jersey. Evidence of occupation, use, and trade or other interaction with Native American cultural groups in the seventeenth century or even earlier would be important. Given the paucity of such archeological evidence, a site with the potential for containing such data would be extremely valuable.

  2) English and Dutch settlement. The patterns of settlement in New Jersey differ from the nucleated villages of New England and the riverside plantations of the South. A site which can provide information on the use of the landscape (e.g., size and location of structures, position of farmsteads in relation to roads, favored topographic features) is a source of comparative information for the region. New Jersey is particularly interesting in that it is at the junction of several regional traditions. Patterns associated with New England, New York, Pennsylvania, or the Chesapeake region may be expressed or show evidence of modification in the archeological record. Any site with structural footprints, architectural

fragments, or building debris can be significant for this topic.

3) Relationship to waterways. How small creeks and inlets were used is not clear. Parkers Creek, for instance, may have been the site of landings for small boats for either coastal trade or fishing. Although it is not likely that many features would have survived, the margins of waterways have the potential for containing sites relevant to this research issue.

- ***Industrial Period.*** In the Industrial Period, Fort Monmouth did not experience the industrial activity found to the north, in urban areas of New Jersey. Industrial research issues relate mostly to rural industry and crafts and changes in agriculture:

  1) Rural industry and crafts. Small streams could have been used for water-power. A mill was located in Eatontown during the Colonial Period, and, despite the low gradient of streams, some power would have been available for grist or saw milling. Tidal mills may have been constructed, and no tidal mill has been adequately investigated archeologically. Although it is not likely that machinery or finished goods would be located at the site of a rural industrial activity, it is possible to find foundations and millraces. A site with evidence of milling or crafts (e.g., blacksmithing) is germane to this research issue.

  2) Changes in agriculture. The nineteenth and twentieth centuries saw improvements in and mechanization of agriculture. Access to better transportation led to the development of commercialized and specialized farming in New Jersey. By their nature, agricultural sites tend to be shallow, with a light distribution of artifacts. Sites in the Fort Monmouth vicinity which may provide data on this research issue would probably be more likely to contain the remains of structures (e.g., poultry barns, irrigation systems for flooding cranberry bogs, dairy facilities) which illustrate this trend in agriculture.

  3) Changes in transportation. Regional improvements in transportation include roads and railroads for market goods or for access to the Monmouth Park Racetrack, and steamboat facilities. Fort Monmouth is likely to have evidence of the first two. In themselves, roads and railroad grades have little archeological potential other than as locations of transportation routes. Some industrial remains, such as railroad technology, may be located in transportation sites, but the data potential is probably not very high. Unless a site contains an unusual concentration of transportation-related technological features (e.g., railroad switching or maintenance facilities), the historical record is probably a more efficient approach to this research issue.

  4) Household life in rural New Jersey. Historical records can provide information on the quantifiable aspects of life in a community. What is not always accessible from documentary sources is the precise nature of material culture of rural residents. The amount of manufactured goods as opposed to home-made articles, the cost of articles, the types of food used (e.g., cuts of meat as evidenced by bones with butchering marks, canned goods), and the presence of mechanical innovations are specific questions which can be addressed through the archeological record. Sites which contain household remains or trash deposits have research potential for this topic.

- ***Military Period.*** As for the military history of Fort Monmouth, it is possible that the construction, occupation, and demolition of structures may have left traces in the archeological record. Reconstructing the way

of life of military personnel at the Signal School, the laboratories, or other facilities could potentially add to the unwritten record of the period. In particular, the paucity of archeological sites related to WW I in this country makes any site from that time a valuable resource. Fort Monmouth's unique aspects, such as the use of pigeons or early aviation for experiments in radio transmission, may have remains specifically related to them which are significant.

3.6.3 Criteria for Evaluating Buildings and Structures

Buildings and structures may meet NR eligibility criteria for their ability to convey significant information about events or patterns of events contributing to the understanding of American history, their association with the lives of significant persons in our past, and/or their distinctive architectural characteristics. A building, as identified in *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*, is any construction that was primarily created to shelter human activities. The term "building" may also refer to a "historically and functionally related unit, such as a courthouse and jail or house and barn" (U.S. Department of the Interior 1990:4). The term "structure" is distinguished from a building by its functional construction which is usually intended for a purpose rather than a shelter. For a building or structure to be eligible for the NRHP, not only must it be significant for at least one of the criteria for evaluation identified previously (see Section 3.6.1), it must also retain its basic structural elements and overall historic appearance. Buildings and structures that fail to include all of their fundamental building elements are considered to be ruins and are classified as "sites."

3.6.3.1 Architectural Significance

Buildings and structures that are eligible for NR listing because of their architectural significance meet NRHP Criterion "c" (Design/Construction). A property's significance relates to its association with the historic context in which the property is being evaluated (see Section 3.6.1.3). It is necessary to develop historic contexts for properties prior to evaluating their NR significance. Once one or more contexts is developed, resources may be evaluated using the four criteria described in Section 3.6.1. Eligible properties meeting Criterion "c" may personify distinctive visual characteristics that relate to a specific type, era, or mode of construction; may represent the work of a master architect or craftsman; and/or may possess unique artistic significance. To be eligible under Criterion "c," a property must retain at least one of the above characteristics. The only exception to this rule are properties included in a NR district nominated under Criterion "c." Resources within the district are considered eligible if they portray a "significant and distinguishable entity." They need not be eligible on an individual basis. All NR properties, whether they are in a district or not, must retain integrity as discussed previously in Section 3.6.1.

Buildings and structures at Fort Monmouth that appear eligible for NR listing under Criterion "c" include those within the proposed Main Post district, of which there are a total of 90. These properties meet NR Criterion "c" because they represent a specific type and era of construction. Buildings within the Main Post district retain a high degree of integrity associated with their Colonial Revival design. Also eligible under Criterion "c" are buildings and structures within the Charles Wood proposed district. These properties also portray a specific type and era of construction. The main building within the Charles Wood district is an outstanding example of Tudor Revival-style architecture. Although remaining properties within the Charles Wood district fail to meet NR eligibility on an individual basis, they do contribute to the visual aspect of the district which is a necessary element of the site's integrity.

Also eligible under Criterion "c" are DDUs located at the Main Post and Charles Wood Area. These metal prefabricated buildings not only

display characteristics of a unique architectural design, but they are also associated with the work of a master architect, R. Buckminster Fuller (see Figure 3.13).

Building 2700 (the Hexagon) appears to meet NR Criterion "c" for its unique architectural design. Because this facility is less than 50 years of age, it must also meet NR Criterion "g" (see Section 3.6.3.4 below).

3.6.3.2 Historical Significance

Buildings and structures that are eligible for NRHP listing because of their historical significance meet Criterion "a" (event). Again, it is necessary to develop historic contexts for properties prior to evaluating their NR significance and applying the four criteria for evaluation. Properties are eligible under Criterion "a" if they can be directly associated with an event or pattern of events that made significant contributions to the broad patterns or trends of American history. Eligible properties must also be associated with one or more event(s) outlined in the historic context(s). As with all NR Criteria, Criterion "a" requires that eligible properties retain historic integrity. Because Criterion "a" evaluates properties based on their "associative" value, it is necessary to determine the nature and origin of resources as well as their historic context(s) and individual histories. It is also important to note that "mere association" with historic events and/or trends is not enough to nominate a property solely under Criterion "a." The property must be considered important for its "specific" association.

Only one property at Fort Monmouth appears eligible for NR listing based solely on Criterion "a" evaluation. Building 283, Squier Laboratory, appears to meet NR Criterion "a" for its specific association with Fort Monmouth's pre- and post-WW II missions related to communications research and development activities. Squier Hall served as the main headquarters for all Main Post and Charles Wood research activities between 1935 and 1955, and is linked to distinct communications research developments. Because this property has lost architectural integrity of design, it is no longer eligible for inclusion under Criterion "c."

In addition, all district properties at the Main Post and Charles Wood Area described previously also appear to meet NR Criterion "a." Main Post district properties meet Criterion "a" for their specific association with the U.S. Army's post WW I building program. Charles Wood District properties meet Criterion "a" for their unique association with the social development of Tinton Falls/Eatontown areas during the 1920s-1930s.

Also eligible under Criterion "a" are the DDUs at the Main Post and Charles Wood Area and Building 2700 (the Hexagon). The DDUs meet Criterion "a" for their association with WW II-era specialized buildings. The Hexagon meets Criterion "a" for its specific association with post-1955 communications research and development activities.

3.6.3.3 World War II-Era Temporary Buildings and Structures

Fort Monmouth retains a number of WW II-era temporary buildings and structures constructed between 1941-1945. These properties were constructed using standardized plans issued during WW II. Erected under emergency war-time conditions, the buildings and structures were not meant to last although their designs have allowed them to be used continuously since origination. Rapid increases in military personnel and defense missions associated with WW II necessitated the need for housing, administrative, educational, training, and support facilities, for which temporary plan buildings and structures were constructed.

Following a 1983 Programmatic Memorandum of Agreement (PMOA) issued between the DOD and the ACHP, demolition and/or transfer of WW II-era temporary buildings and structures is excluded from Section 106 review (see Appendix C). An exception is WW II-era buildings that are contributing members to an historic district.

Undertakings excluded from the PMOA were rehabilitation, renovation, and relocation. The PMOA provided a working agreement between DOD and ACHP in which examples of major property types for temporary buildings and structures were documented and/or preserved according to HABS/HAER recordation and ACHP preservation standards. According to the PMOA, DOD's recordation of temporary historic properties meets the ACHP's consultation requirements for WW II-era temporary buildings and structures.

Many of Fort Monmouth's Main Post and Charles Wood Area WW II-era buildings and structures have undergone demolition and renovation. Most temporary buildings and structures still in use are located at the south and east sections of the Main Post. Renovations include the addition of synthetic siding, replacement of original roofs, windows, and doors, and interior modifications such as added floor and wall coverings.

Perhaps most significant of these temporary facilities are the radar antenna shelters which were constructed in 1941-1942. These buildings were constructed utilizing standardized warehouse plans that were re-designed by architect, John T. Rowland. Rowland modified the Army's standardized designs to suit the needs at Fort Monmouth by replacing original interior supports with exterior side-facade "flying buttresses" (Figure 3.14). The flying buttresses provided additional interior space necessary to house radar antennas.

Absent the PMOA, Fort Monmouth's radar antenna facilities (Buildings 900, 905, 2532, and 2533) would ordinarily be considered eligible for NR listing under Criteria "a" and "c" because of their specific association with Fort Monmouth's WW II-era communications missions and incomparable structural design. However, because of the PMOA, demolition of the properties does not require SHPO review. Responsible stewardship of these cultural resources would also include voluntary consultation with the NJ SHPO regarding any undertakings that may affect them. It is recommended (although not required) that Fort Monmouth record remaining antenna shelter buildings according to HABS/HAER standards and preserve at least one example of this unique property type.

3.6.3.4 Cold War-Era Structures of "Exceptional Significance"

Properties less than 50 years old (those built after 1946) at Fort Monmouth must exhibit qualities of "exceptional significance" associated with Criterion "g." The 50 year guideline provided by the Secretary of the Interior generally ensures that listed properties are truly "historic." That is, they are not listed merely because of an association with passing modern issues. For a property to be listed under Criterion "g," it must have achieved "exceptional significance" within the last 50 years (NR Bulletin 22:3). "Exceptional significance" means that the eligible property must exhibit "deliberate [and] distinct justification" of its extraordinary importance. In addition, eligible properties less than 50 years of age must meet one of the four evaluation criteria discussed previously in Section 3.6.1.

Many Cold War-era military properties may be categorized as having "exceptional" significance provided that sufficient integrity remains intact. Therefore, it is necessary to provide stricter guidelines for evaluation of properties possibly eligible for their association with this broad historic context. Eligible properties relating to the Cold War-era may reflect the themes of strategy/policy, weapons deployment, and/or research/development. It is not enough that a potentially eligible Cold War-era property be "unique" or "one of a kind." The resource must also portray a strong association with a specific military endeavor in a manner that is recognized by the general public (Lewis et al. 1995, 8-11).

The 1996 inventory at Fort Monmouth's Main Post and Charles Wood Area (Nichols 1996) identified one resource that appears to meet Criterion "g" in the context of the Cold War-era. Building 2700, the "Hexagon," located at the

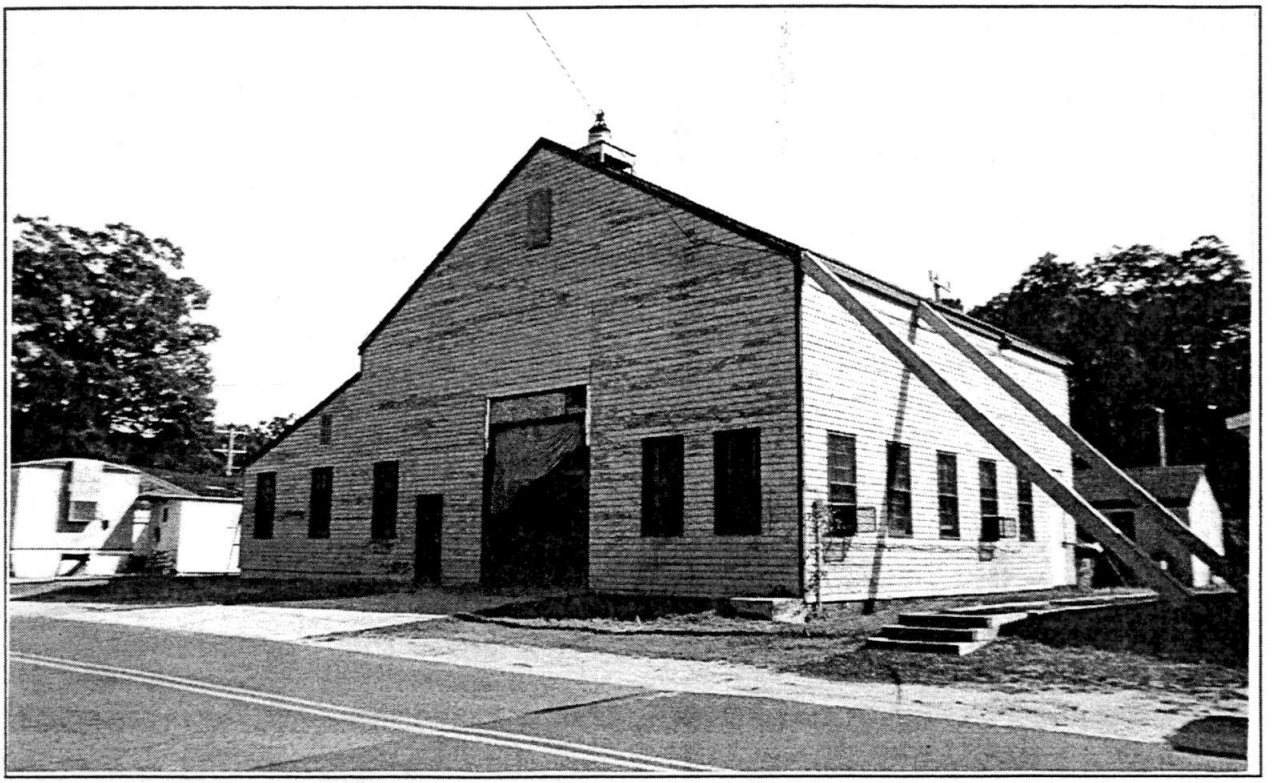


Figure 3.14 World War II-Era Buttressed Wooden Radar Building, 1996.

Charles Wood Area is potentially eligible for its direct association with specific activities instrumental to the U.S. Army's Cold War-era defense activities between 1955-1989. Constructed in 1955, the Hexagon was designed especially for use as a research laboratory headquarters. Going beyond its obvious appearance as a "unique" and "one-of-a-kind" facility, the building is linked to key developments in military communications electronics essential to the Army's Cold War national defense objectives. In addition, the 1996 inventory identified eight properties that were suspected of possessing exceptional significance in the context of the Cold War. These include Building 2705 (the Electronics Warfare Laboratory) and Buildings 2707-2713 (the Pulse Power Center). These could not be adequately assessed for their Cold War significance due to high security measures and a lack of unclassified information concerning specific activities associated with the buildings.

4.0 PROTECTION PLAN

This Protection Plan is comprised of four parts:

- *a description of undertakings* at Fort Monmouth that have the potential to affect historic properties;
- *a set of general policies* that will assist Fort Monmouth in ensuring compliance with historic preservation requirements;
- *Standard Operating Procedures* that identify specific actions to be taken; and
- *a 5-year plan* that identifies key compliance objectives and the budget and schedule resources necessary to achieve these objectives.

4.1 UNDERTAKINGS AFFECTING CULTURAL RESOURCES

Today, Fort Monmouth is an urban, "built," environment with very little undeveloped acreage. Mission activities include research and development, education, and administration and exclude readiness training activities which have the potential to alter undeveloped landscape. Undertakings generally consist of the construction of new buildings, the maintenance, repair, alteration, and demolition of existing buildings, and the development and repair of infra-structure. A second tier of undertakings includes the removal of underground storage tanks (USTs), limited physical landscaping, and boundary changes.

4.1.1 Construction of New Buildings

The construction of new buildings (including the expansion of existing buildings) has the potential to affect historic properties. At Fort Monmouth, structural support footings must generally be excavated about 4 ft below ground which can affect buried archeological sites. New buildings can also interfere with the viewscapes of historic districts.

4.1.2 Maintenance, Repair, and Alteration of Existing Buildings

The maintenance, repair, and alteration (including renovation and/or rehabilitation) of existing buildings have the potential to affect historic properties. These undertakings can involve a variety of alterations to the interior and/or exterior of a building, ranging from minor to major. Alterations include: installation of access ramps and/or elevators in compliance with the American With Disabilities Act of 1990 (42 U.S.C. 12101); alteration of interior floorplans and interior finishing; moving and/or closure of door and window openings; installation of new windows; installation of new exterior hardware; new roofing; installation and/or upgrading of heating/air conditioning systems; installation and/or upgrading of insulation and weather-stripping; installation and/or upgrading of electrical systems; and installation and/or upgrading of plumbing systems. Many of these alterations have the potential to affect the architectural integrity of historic buildings.

4.1.3 Demolition of Buildings

The demolition of an existing historic property is always an adverse effect.

4.1.4 Development and Repair of Infra-structure

The installation, replacement, and maintenance of infrastructure can be an effect to historic properties. Infrastructure components include right-of-way easements for roads, bridges, water pipes, sewer lines, gas pipes, and buried and above ground electric lines, buried and above ground communication lines (e.g., telephone, fiber optic, cable). Where these components are below ground, the potential effect is to archeological sites. Depth of burial is often between 3 and 4 ft below ground, and gravity flow sanitary lines may be buried up to 12 to 15 ft below the ground surface. Above ground infrastructure components can affect historic districts and historic landscapes.

4.1.5 Underground Storage Tanks

The installation or removal of USTs can effect to historic properties, especially buried archeological sites. Also, the detection, monitoring, and remediation of hazardous waste can be an effect. Activities involved with these undertakings include core borings, monitor wells, and extensive earth-moving.

4.1.6 Physical Landscaping

The changing of existing land contours or drainage systems through blading, excavation, borrowing, and filling can affect to archeological sites.

4.1.7 Boundary Changes

Transference of real property to a non-federal agency, or to another federal agency, can result in

effects to historic properties. The Evans Area, currently part of Fort Monmouth, was identified by the BRAC Commission for transference from Fort Monmouth, and is excluded from consideration in this CRMP.

4.2 POLICIES

Prior to 1996, Fort Monmouth has not fully complied with many federal cultural resource laws. There has been little or no consultation with the SHPO, most undertakings have not been reviewed for their effect on historic properties, and there has been little attempt to complete the inventory and evaluation of cultural resources. These deficiencies are not a conscious attempt to short-circuit the Army's policies for cultural resource management, but rather, they may be attributed to the following general conditions at Fort Monmouth:

- the *lack of knowledge* and understanding of the compliance process;
- the lack of a CRM having *responsibility and authority* for cultural resource review and compliance;
- the *lack of appropriate training* for the CRM; and
- the *lack of programmed funding* to support compliance requirements.

The general policies outlined below are designed to address and correct these deficiencies. These policies must be implemented in order for the SOPs to work effectively.

4.2.1 Point of Review

- As required by AR 200-4, Fort Monmouth must have a single point of review to coordinate all cultural resource compliance activities. This person, referred to by AR 200-4 as the CRM, must be designated by the Commanding Officer and must receive appropriate training, especially in Section 106 compliance procedures. Fort Monmouth must notify the Major U.S. Army Command (MACOM) and HQDA (AEC) of such designation.
- The CRM must coordinate with other installation staff elements, tenants, the SHPO, and others early in the planning of projects and must apply the criteria of effect and adverse effect to determine whether Army undertakings at Fort Monmouth will affect historic properties. Fort Monmouth DPW must ensure that the CRM is involved in the planning of projects so as to avoid or lessen any potential adverse effects on historic properties. Planning such projects may proceed with the understanding that SHPO consultation may require project redesign or relocation.
- The CRM must develop budget requirements for compliance with this CRMP and applicable PAs and/or MOAs and use the A106 budgeting process to program these requirements through Army channels.
- The CRM must ensure that all procedures of this CRMP and stipulations of applicable PAs and/or MOAs are implemented.
- Because there are no significant Native American issues at Fort Monmouth, a Native American Coordinator is not warranted, but the CRM must initiate all consultation with Native American groups as may be warranted.

4.2.2 Compliance

- As required by AR 200-4, Fort Monmouth must comply with all applicable federal laws and regulations concerning cultural resources, and must program funds to facilitate compliance.
- The Fort Monmouth CRM must consult in a timely manner with the New Jersey SHPO concerning all undertakings that have the potential to affect historic properties not otherwise excluded by this CRMP or a PA/MOA. The Army may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of

both the SHPO and the ACHP. If the SHPO and the ACHP both indicate that the property is significant and the effects of the undertaking on the property are serious, then the Army shall make reasonable efforts to minimize harm to the property until such time as the Section 106 process is completed.

- As required by AR 200-4, Fort Monmouth must ensure that a current CRMP is operational at all times.

4.2.3 Review, Monitoring, and Reporting

- Copies of all documents pertaining to cultural resource management at Fort Monmouth must be kept on file by the CRM, including but not limited to correspondence, memoranda to file, published and unpublished technical reports, annual compliance reports, maps, site records, and lists of properties.

- The CRM must report the status of cultural resource compliance as requested, but no less frequently than annually, to the Commanding Officer, the SHPO, and as requested to the ACHP.

- As indicated by specific SOPs and as required by AR 200-4, the CRM must coordinate activities and reports with HQDA, USAMC, and CECOM.

4.3 STANDARD OPERATING PROCEDURES

This section presents eight Standard Operating Procedures (SOPs) designed to ensure regular and systematic compliance with cultural resource laws and regulations. Each SOP is a set of rules that outlines responsibilities and identifies specific actions the Army must take to ensure compliance. Each SOP is triggered by a specific kind of undertaking (e.g., the proposed re-roofing of a building), an occurrence (e.g., the discovery of human bones in a backhoe trench), or a compliance goal (e.g., completion of the mandated inventory). Topics for the eight SOPs are:

(1) The maintenance, repair, alteration, and demolition of existing buildings;

(2) The construction of new buildings;

(3) Ground disturbing undertakings;

(4) Emergency discovery of archeological deposits;

(5) Preventing vandalism to cultural resources;

(6) Treatment of human remains and funerary/sacred objects;

(7) Identification and nomination of eligible properties to the NRHP; and

(8) Review and monitoring of compliance.

Each SOP is targeted at ensuring compliance with a specific law or regulation. For example, SOP #5 is designed to ensure compliance with the Archeological Resource Protection Act, and SOP #6 is designed to ensure compliance with NAGPRA. Table 4.1 cross-links the SOPs to specific laws and regulations. Because the NHPA is a key and complex cultural resource protection law, full compliance with it is by means of four separate procedures (SOPs #1 through 4).

Broadly, each SOP treats different classes of cultural resource. For example, historic buildings are treated by SOPs #1 and #2, while archeological sites are treated mainly by SOPs #3, #4, and #5. As a organizational aid, Table 4.2 cross-links the SOPs to several different classes of cultural resource.

Each SOP is prefaced by an introduction which is followed by a policy statement(s). The procedures themselves are presented in an "if-then" outline format and are accompanied by a flow chart that summarizes the decision process involved in compliance.

Table 4.1 Standard Operating Procedures, Keyed to Laws and Regulations.

Relevant Operating Procedure	LAW OR REGULATION							
	Antiquities Act	NHPA	NEPA	ARPA	AIRFA	NAGPRA	EO11593	AR 200-4
SOP #1		●	●					●
SOP #2		●	●					●
SOP #3		●	●			○		●
SOP #4		●	●			○		●
SOP #5		○		●	○			●
SOP #6	○					●		●
SOP #7		○					●	●
SOP #8	○	●	●	●	○	●	●	●

● primary importance
○ secondary importance

Table 4.2 Standard Operating Procedures, Keyed to Types of Cultural Resources.

Relevant Operating Procedure	TYPE OF CULTURAL RESOURCE				
	Historic Buildings and Structures	Historic Districts	Known Archeological Sites	Unknown Archeological Sites	Funerary Remains, Sacred Objects
SOP #1	●	●			
SOP #2		●		○	
SOP #3	○	○	●	●	○
SOP #4				●	○
SOP #5			●		
SOP #6			○	○	●
SOP #7	●	●	●	●	
SOP #8	●	●	●	●	●

● primary importance
○ secondary importance

STANDARD OPERATING PROCEDURE #1:
Maintenance, Repair, Alteration, and Demolition of Historic Buildings

The maintenance, alteration, renovation, and demolition of buildings can result in adverse effects to historic properties. Reducing or withdrawing maintenance from a historic building is considered an adverse effect. In compliance with Section 106 of the NHPA and its implementing regulations, this SOP specifies procedures to implement in planning such undertakings. Figure 4.1 summarizes the compliance process.

Policy

- The avoidance of adverse effects to NRHP eligible historic buildings at Fort Monmouth shall be proactively incorporated into the design and planning process.
- Until such time as the SHPO has determined an historic building to be not eligible for inclusion to the NRHP, or has concurred with a recommendation that an historic building is not eligible, all buildings will be treated as potentially eligible.
- All buildings and structures listed on or considered potentially eligible for inclusion to the NRHP shall receive priority and regular maintenance to prevent deterioration through neglect.
- Maintenance, repair, alterations, and demolition of historic buildings must comply with the Secretary of the Interior's standards and guidelines for building rehabilitation.
- The procedures covered herein apply to both in-house work as well as contracted work.

Procedure

All planned undertakings which may result in adverse effects to historic buildings shall be reviewed by the Fort Monmouth CRM, including plans, specifications, and work orders, specifications for maintenance, repair, alterations, and demolition to any building or structure.

I. If the proposed undertaking is listed in Appendix D as categorically excluded from SHPO review, then the CRM will prepare a memorandum for record, to be included in the annual report as specified by SOP #8, and the undertaking may proceed.

II. If the undertaking is not categorically excluded, then the CRM will consult maps, lists, and other records as may be appropriate to determine the NRHP eligibility status of the property that may be affected.
   A. If the building is covered by the PA for WW II-era buildings, then the CRM may allow the action to proceed without further action.
   B. If the building or structure has *not been evaluated* as to eligibility for inclusion to the NRHP, then the CRM shall ensure that an evaluation is completed by a professional architectural historian. Further planning of the undertaking may proceed with the understanding that the determination of eligibility may require design changes or Section 106 consultation.

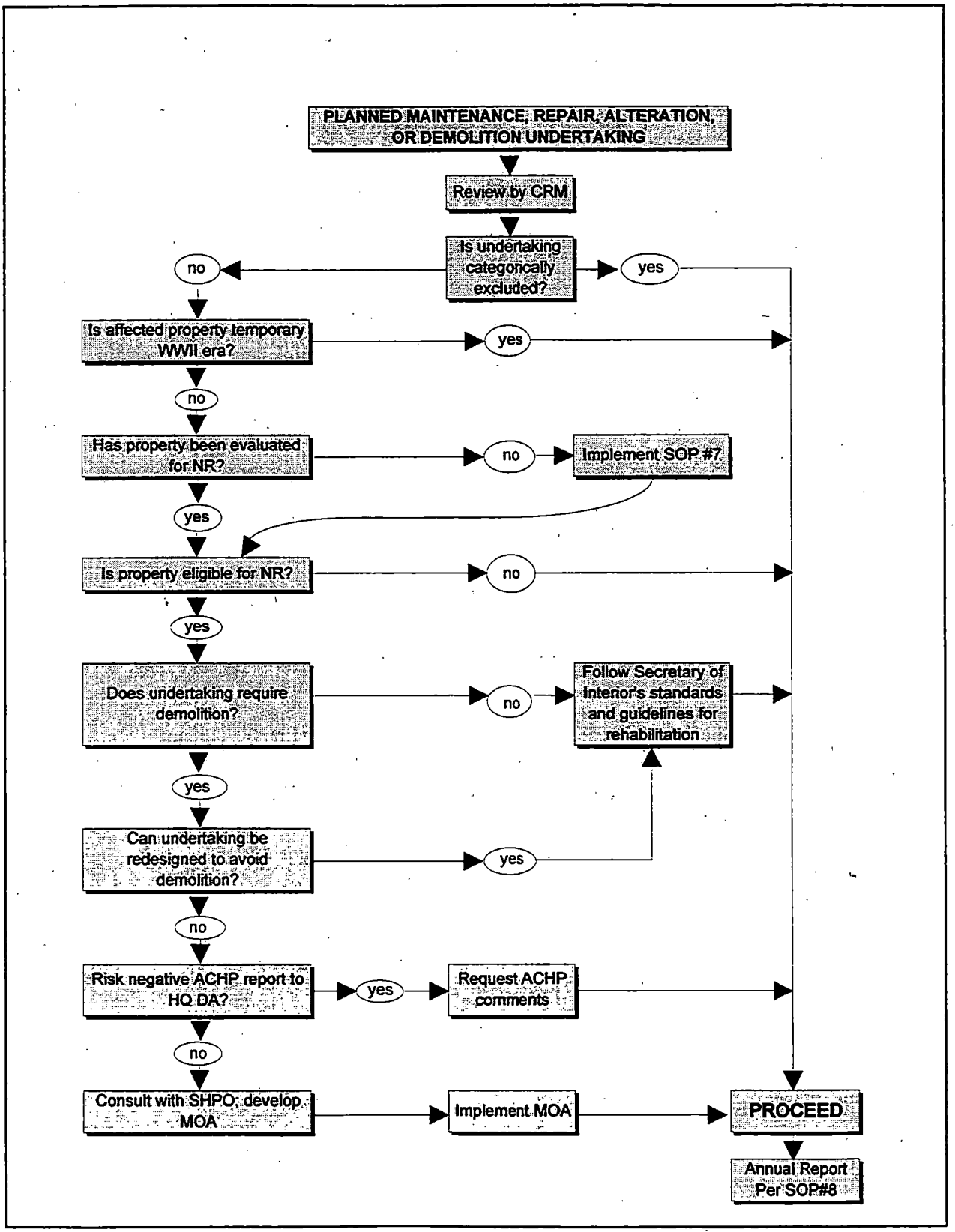


Figure 4.1 Flow Chart for Standard Operating Procedure #1.

C. If the building or structure has been evaluated as *not eligible* for inclusion to the NRHP, and if the SHPO has previously concurred with this determination, then the CRM may allow the action to proceed without further action.

D. If the building has been evaluated as *eligible* for inclusion to the NRHP, either individually, as a member of a thematically based district, or as a contributing member of a geographically based district, the following stipulations are applicable.

1. Maintenance operations and materials must be sympathetic to the historic fabric of the structure.
2. Repairs should be made with materials of like kind (i.e., color, texture, hardness, style) that do not detract from the historic integrity of the building or structure.
3. Alterations shall follow the Secretary of the Interior's standards and guidelines for building rehabilitation, and should adhere to the following:
   a) Massing shall be of similar setbacks and rhythm of the original building.
   b) Volume shall be consistent with the original building.
   c) Profiles and facade setbacks shall be complementary to the original building.
   d) Windows and doors shall be of similar openings and style to that of the original.
   e) Materials and units assemblies shall be of similar color, texture, and style to those utilized in the original.
4. Demolition of an NRHP eligible or listed historic building or structure requires the preparation of a MOA between Fort Monmouth, the SHPO and the ACHP, as specified under III-B below.

III. If the adverse effect of any undertaking on a historic building or structure can not be avoided through the above procedures, the Army shall implement one of the following alternative actions, depending on the urgency of the undertaking being planned.

A. The Army may redesign the project to avoid adverse effect.

B. The Army may proceed with a mitigation plan.

1. Where mitigation is limited and amenable to informal coordination among the Army, the SHPO, and the Principal Investigator for the mitigation effort, a negotiated MOA is not needed, but all agreements shall be documented by memoranda to file.
2. In other cases, the Army shall develop a MOA with the SHPO, specifying the scope and level of effort required to mitigate the adverse impact of the project on the property in question. One possible mitigation measure will be recordation of the property to HABS/HAER standards.
3. Mitigation plans shall take into account cost and mission requirements and shall be based on an balancing of economics and public interest.

C. The Army may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of both the SHPO and the ACHP. If the SHPO and the ACHP both indicate that the property is significant and the effects of the undertaking on the property are serious, then the Army shall make reasonable efforts to minimize harm to the property until such time as the Section 106 process is completed.

IV. Fort Monmouth shall proactively protect and preserve NRHP eligible historic buildings and structures.

A. The CRM shall periodically inspect the condition of all NRHP eligible buildings and structures to monitor the compliance of undertakings and to ensure that deterioration through neglect has not adversely affected the properties. Non-compliance and deterioration will be documented in writing and photographically and will be reported to the New Jersey SHPO as provided under SOP #8.

B. The CRM will publish brief notices reviewing the historic character of selected buildings and structures on post and prohibited actions thereto, at least once a year in Fort Monmouth periodicals or newsletters.

V. The activities, status, and results of all compliance actions taken under this SOP will be reported annually as outlined in SOP #8.

STANDARD OPERATING PROCEDURE #2:
Construction of New Buildings

The construction of new buildings can have adverse effects on historic properties through the disturbance of buried archeological deposits or through interference with the integrity of existing NRHP districts. Interference may result from use of building materials or architectural elements or styles that are incompatible with the character and feeling of the district. This SOP outlines procedure to be used to ensure compliance with Section 106 of the NHPA and its implementing regulations. Figure 4.2 summarizes the compliance process.

Policy

- The avoidance of adverse effects to NRHP districts or proposed districts at Fort Monmouth shall be proactively incorporated into the design and planning process.
- New construction within the boundaries of NRHP districts shall complement the style, character, and feeling of those aspects of the district that determine its eligibility.
- The procedures covered herein apply to both in-house work as well as contracted work.

Procedure

All planned new construction shall be reviewed by the Fort Monmouth CRM for possible adverse effects to historic properties, including preliminary plans, architectural drawings, and specifications. The CRM shall review plans to determine whether the proposed new construction is within an existing or proposed NRHP district.

I. If the new construction is not within a NRHP district, and the new construction will not disturb the ground surface (including foundations, gas and water pipes, and utility lines), then the CRM shall prepare a memorandum to file and the undertaking may proceed.
II. If the new construction is not within a NRHP district, but the new construction will disturb the ground surface, then the CRM shall implement SOP #3.
III. If the new construction is within a NRHP district, the CRM shall consult with DPW staff and other planners to determine whether the undertaking can be relocated.
    A. If the undertaking can be relocated, then the CRM shall prepare a memorandum to file and the undertaking may proceed, subject to SOP #3.
    B. If the undertaking can not be relocated, then the CRM shall consult with DPW staff and other planners to determine whether the undertaking can be designed to complement the character, style, materials, and feeling of the contributing members of the NRHP district.
        1. If the undertaking can be designed to complement the NRHP district, then the CRM shall consult with the SHPO, and develop an MOA to mitigate adverse effect on the NRHP district.
        2. If the adverse effect on the NRHP district can not be avoided through the above procedures, the Army shall implement one of the following alternative actions,

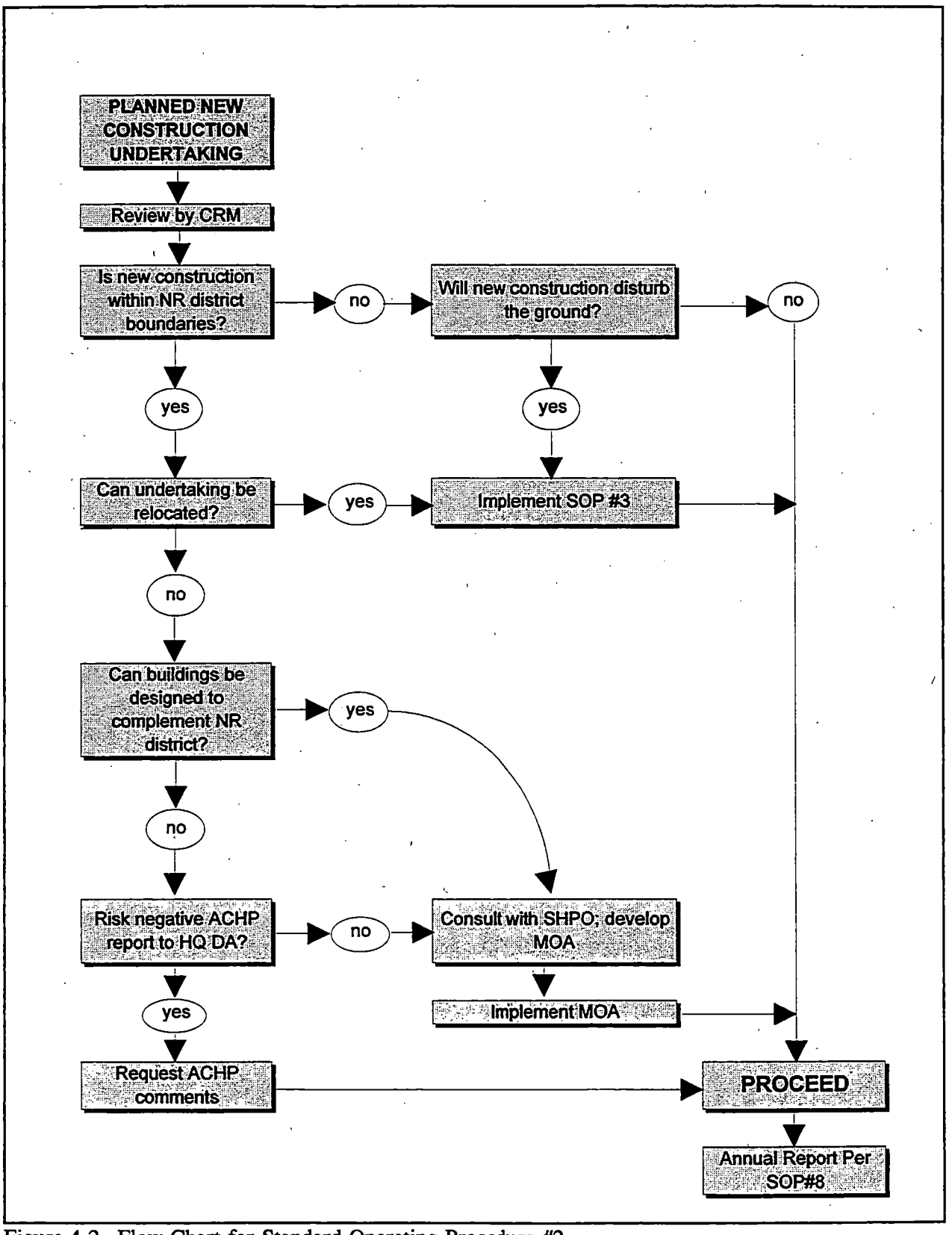


Figure 4.2 Flow Chart for Standard Operating Procedure #2.

depending on the urgency of the undertaking being planned.

a) The Army may redesign the project to avoid adverse effect.
b) The Army may proceed with a mitigation plan under a MOA with the SHPO. The MOA shall specify the procedures and parameters required to mitigate the adverse impact of the project on the NRHP district.
c) The Army may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of both the SHPO and the ACHP. If the SHPO and the ACHP both indicate that the effects of the undertaking on the NRHP district are serious, then the Army shall make reasonable efforts to minimize adverse effect to the district until such time as the Section 106 process is completed.

IV. The activities, status, and results of all compliance actions taken under this SOP will be reported annually as outlined in SOP #8.

STANDARD OPERATING PROCEDURE #3:
Ground Disturbing Undertakings

Every undertaking which disturbs the ground surface has the potential to adversely affect known archeological deposits. In compliance with Section 106 of the NRHP and its implementing regulations, this SOP outlines the policies and procedures to be followed in planning such undertakings. Figure 4.3 summarizes the compliance process.

Policy

- The avoidance or mitigation of adverse impacts to NRHP eligible sites shall be proactively incorporated into the design and planning process rather than deferred until archeological deposits may be discovered during actual construction.
- All machine aided excavations or other earth moving projects shall be designed to avoid damage to archeological sites or other historic properties which may be eligible for inclusion to the NRHP.
- Until such time as the SHPO has determined an archeological site to be not eligible or has concurred with a recommendation that an archeological site is not eligible, all known sites will be treated as potentially eligible and will be avoided wherever possible.

Procedure

All planned construction projects which may result in disturbance to the ground surface shall be reviewed by the CRM.

I. If the proposed undertaking is listed in Appendix D as categorically excluded from SHPO review, then the CRM will prepare a memorandum for record, to be included in the annual report as specified by SOP #8, and the undertaking may proceed.

II. If the proposed undertaking has not been categorically excluded, then the CRM will consult maps to determine whether the Area of Potential Effect (APE) has been archeologically inventoried and accepted by SHPO.

   A. If an archeological inventory has not been completed and accepted by the SHPO for the APE, the CRM shall ensure that an inventory is completed by professional archeologists and accepted by the SHPO. Further planning of the undertaking may proceed with the understanding that the discovery of eligible archeological sites may require Section 106 consultation.

   B. If an archeological inventory has been completed and accepted by the SHPO for the APE, the CRM shall examine archeological maps and records to determine whether the undertaking will affect a known archeological site.

      1. If no archeological site has been recorded within the APE, or if all archeological sites which may be affected by the undertaking have been determined by the SHPO to be not eligible for inclusion to the NRHP, then the CRM may allow the excavation to

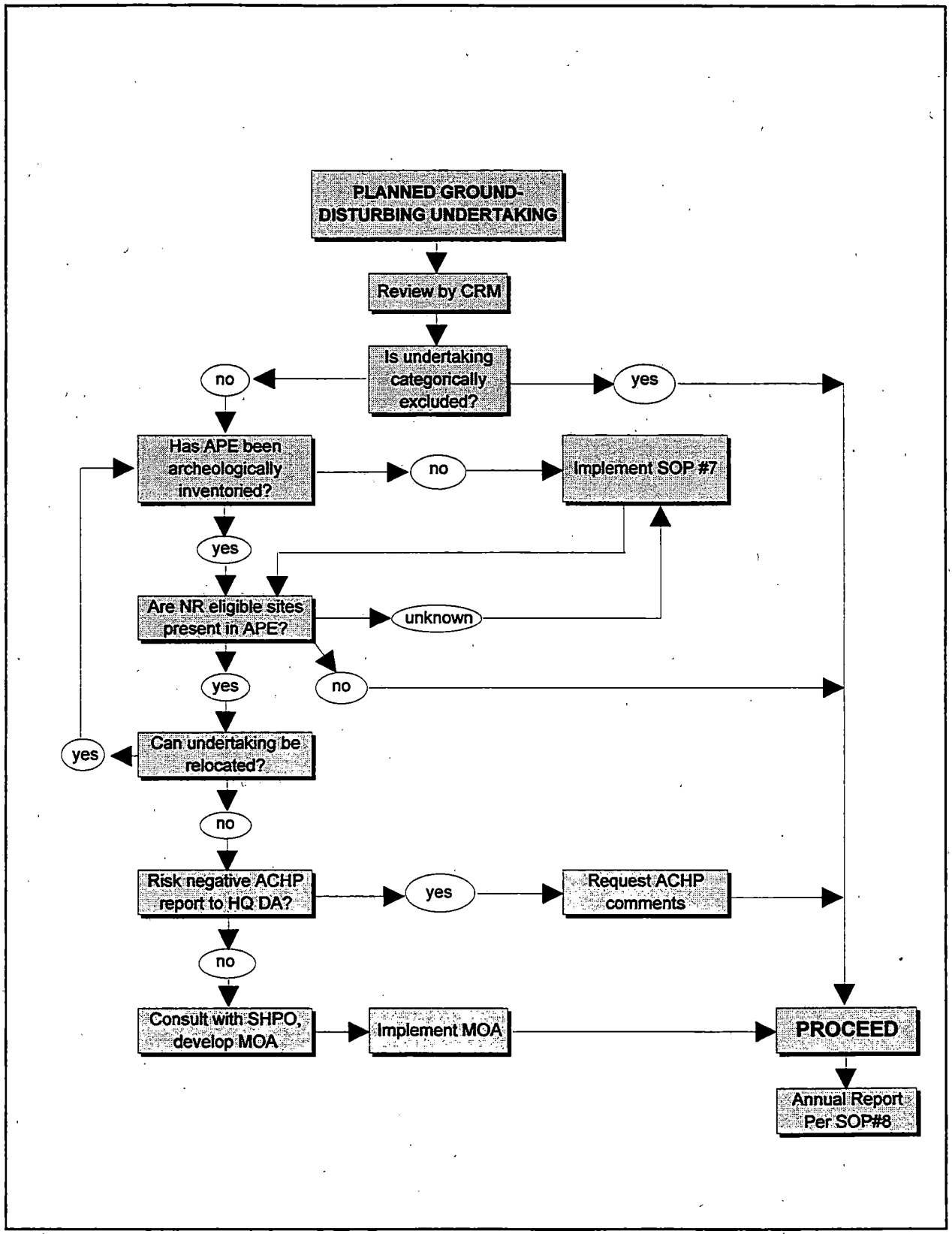


Figure 4.3 Flow Chart for Standard Operating Procedure #3.

proceed without further action, except as provided for under SOP #4.

2. If, in the opinion of either the Army or the SHPO, the existing information for any site deemed insufficient to make a determination of eligibility, then a testing plan will be developed by the Army and coordinated with the SHPO. Excavation and other disturbance in the vicinity of the site will be suspended until an agreed testing procedure has been carried out and sufficient data has been gathered to allow a determination of eligibility.
3. If any archeological sites which may be affected by the undertaking have been determined by the SHPO to be eligible for inclusion to the NRHP, then the CRM shall coordinate with DPW to determine if the undertaking can be redesigned to avoid adverse impact to historic properties.
   a) If the undertaking can be redesigned to avoid adverse impacts, the CRM may allow the undertaking to proceed without further action, except as provided for under SOP #4.
   b) If the undertaking can not be redesigned, the Army shall implement one of the following alternative actions, depending on the urgency of the undertaking being planned.
      (1) The Army may relocate the project to avoid adverse effect. New locations shall also be inventoried and tested for eligible properties under SOP #3.
      (2) The Army may proceed with a data recovery plan under a MOA with the SHPO. The MOA shall specify the scope and level of effort of data recovery required to mitigate the adverse impact of the project on the site in question.
      (3) The Army may proceed with a data recovery plan without negotiating a MOA where data recovery is expected to be limited and straightforward and amenable to informal coordination among the Army, the SHPO, and the Principal Investigator for the data recovery effort.
      (4) When the recovery of human remains or funerary objects is deemed likely, the Army may initiate excavation in compliance with NAGPRA. Such excavations shall be coordinated with the SHPO, and if Native American remains are found, coordinated with interested Native American tribal groups.
   c) The Army may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of both the SHPO and the ACHP. If the SHPO and the ACHP both indicate that the property is significant and the effects of the undertaking on the property are serious, then the Army shall make reasonable efforts to minimize harm to the property until such time as the Section 106 process is completed.

III. The activities, status, and results of all compliance actions taken under this SOP will be reported annually as outlined in SOP #8.

STANDARD OPERATING PROCEDURE #4:
Emergency Discovery of Archeological Deposits

Regardless of whether a surface inventory has been completed or not, and regardless of whether a planned undertaking has been assessed for its effect on *known* historic properties, every undertaking which disturbs the ground surface has the potential to discover buried and previously unknown archeological deposits. This SOP outlines the policies and procedures to be followed in such cases. Figure 4.4 summarizes the compliance process.

Policy

- Archeological deposits which are newly discovered in the construction of any undertaking shall be evaluated for their NRHP eligibility.
- Until such time as the SHPO has determined an archeological site to be not eligible or has concurred with a recommendation that an archeological site is not eligible, all known sites will be treated as potentially eligible and will be avoided insofar as possible.
- Nothing in Section 106 or other federal regulations requires the Army to stop work on an undertaking. However, if the SHPO indicates that the property is significant and the effects of the undertaking on the property are serious, then the Army shall make reasonable efforts to minimize harm to the property until such time as the Section 106 process is completed.

Procedure

When notified of the possible discovery of unexpected buried archeological material, the CRM will arrange to have a professional archeologist visit the excavation as soon as possible, but within 48 hours, to examine and evaluate the recovered material and any in situ deposits.

I. If the recovered material are fossils, natural stones, concretions, or other such items that are sometimes mistaken for archeological materials, then the CRM may allow the excavation to proceed without further action.

II. If, upon examination of the recovered material, the materials are clearly of human origin, the archeologist must make a field evaluation of the primary context of the deposit and its probable age and significance, recording the findings in writing and documenting the materials with photographs and drawings as warranted.

   A. If disturbances to the deposit have been slight and the excavation can be relocated to avoid the buried site, the CRM shall file site forms with the SHPO in a routine manner, having avoided adverse impact through relocation of the excavation.

   B. If the excavation can not be relocated, the CRM shall telephone the office of the SHPO to report the discovery and to initiate emergency consultation with the SHPO.

      1. If both the SHPO (or SHPO's representative) and the Army concur that the deposits are not eligible for inclusion to the NRHP, then the Army will prepare a memorandum for record, to be included in the site record. The Army may allow the

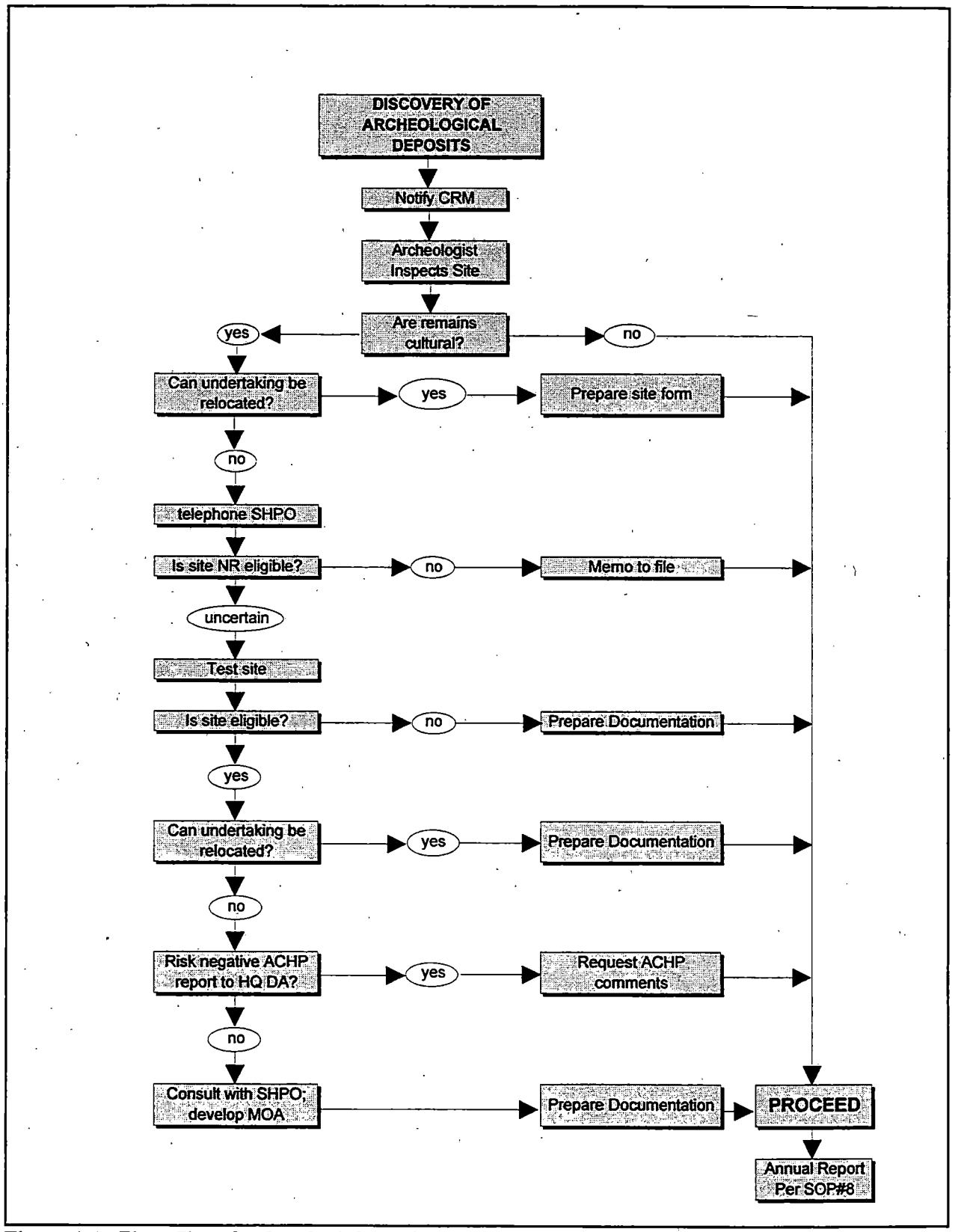


Figure 4.4 Flow Chart for Standard Operating Procedure #4.

excavation to proceed, but the excavations must be monitored by a professional archeologist for other deposits which may be eligible.

2. If, in the opinion of either the Army or the SHPO, the existing information is deemed insufficient to make a determination of eligibility, then an emergency testing plan will be developed by the Army and coordinated with the SHPO. Further excavation in the vicinity of the site will be suspended until an agreed testing procedure has been carried out and sufficient data has been gathered to allow a determination of eligibility.
   a) If the SHPO and the Army agree after testing that the site is not eligible for inclusion to the NRHP, then work on the project may resume.
   b) If the site appears to be eligible for inclusion to the NRHP, or if the Army and the SHPO can not agree on the question of eligibility, then the Army shall implement the following alternative actions, depending on the urgency of the action being delayed by the discovery of cultural material.
      (1) The Army may relocate the project to avoid adverse effect.
      (2) The Army may proceed with a data recovery plan under a MOA with the SHPO. The MOA shall specify the scope and level of effort of data recovery required to mitigate the adverse impact of the project on the site in question. Where data recovery is expected to be limited in scope and amenable to informal coordination among the Army, the SHPO, and the Principal Investigator, the Army may proceed with a data recovery plan without negotiating a MOA.
      (3) The Army may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of both the SHPO and the ACHP. Interim comments must be provided to the Army with 48 hours and final comments within 30 days.

III. The activities, status, and results of all compliance actions taken under this SOP will be reported annually as outlined in SOP #8.

STANDARD OPERATING PROCEDURE #5:
Preventing Vandalism to Archeological Sites

The ARPA of 1979 makes it a felony for persons to excavate, remove, damage, or otherwise deface any archeological resource or paleontological remain located on federal lands. Exceptions to the law require a specific federal permit. The ACE issues permits for ARPA related work on military controlled lands. This SOP implements the law and the implementing regulations issued by the DOD (32 CFR Part 229). Figure 4.5 summarizes the compliance process.

Policy

- The excavation or removal of archeological artifacts or paleontological remains is prohibited, except as conducted under a valid permit (for example, by a university archeological field school).
- The use of metal detectors on Post is prohibited, except by permit.
- The Post Provost Marshall will vigorously enforce the law prohibiting vandalism of archeological sites.
- The CRM will proactively preserve and protect all known archeological sites.

Procedure

I. An ARPA permit is not required for activities that are conducted exclusively for purposes other than the excavation and/or removal of archeological or paleontological remains, even when such activities may result in the disturbance of such remains. However, in such cases, Fort Monmouth must comply with the requirements for Section 106 consultation.

II. Applications for permits must be submitted to Fort Monmouth DPW CRM.
   A. Upon review and approval by the CRM, applications must be forwarded for review and approval by the Fort Monmouth Major Command (CECOM).
   B. Applications will be forwarded to the New York District, ACE.
      1. Technical review of the application must be done by a qualified archeologist appointed by the ACE District Commander.
      2. Applications must include a clearly written proposal that documents the information required under 32 CFR 229.6 and 32 CFR 229.8.
   C. The District Real Estate Office is responsible for coordination and issuance of permits.
      1. Copies of approved permits will be provided to the Fort Monmouth DPW CRM.
      2. A permit may be denied for reasons of technical inadequacy or incompatibility with military programs.
         a) The applicant must be advised of the reason for the denial.
         b) If the denial is for technical reasons, the applicant must be advised of the right to resubmit the application.

III. The CRM shall monitor work conducted under ARPA permits to ensure compliance with the terms of the permit.

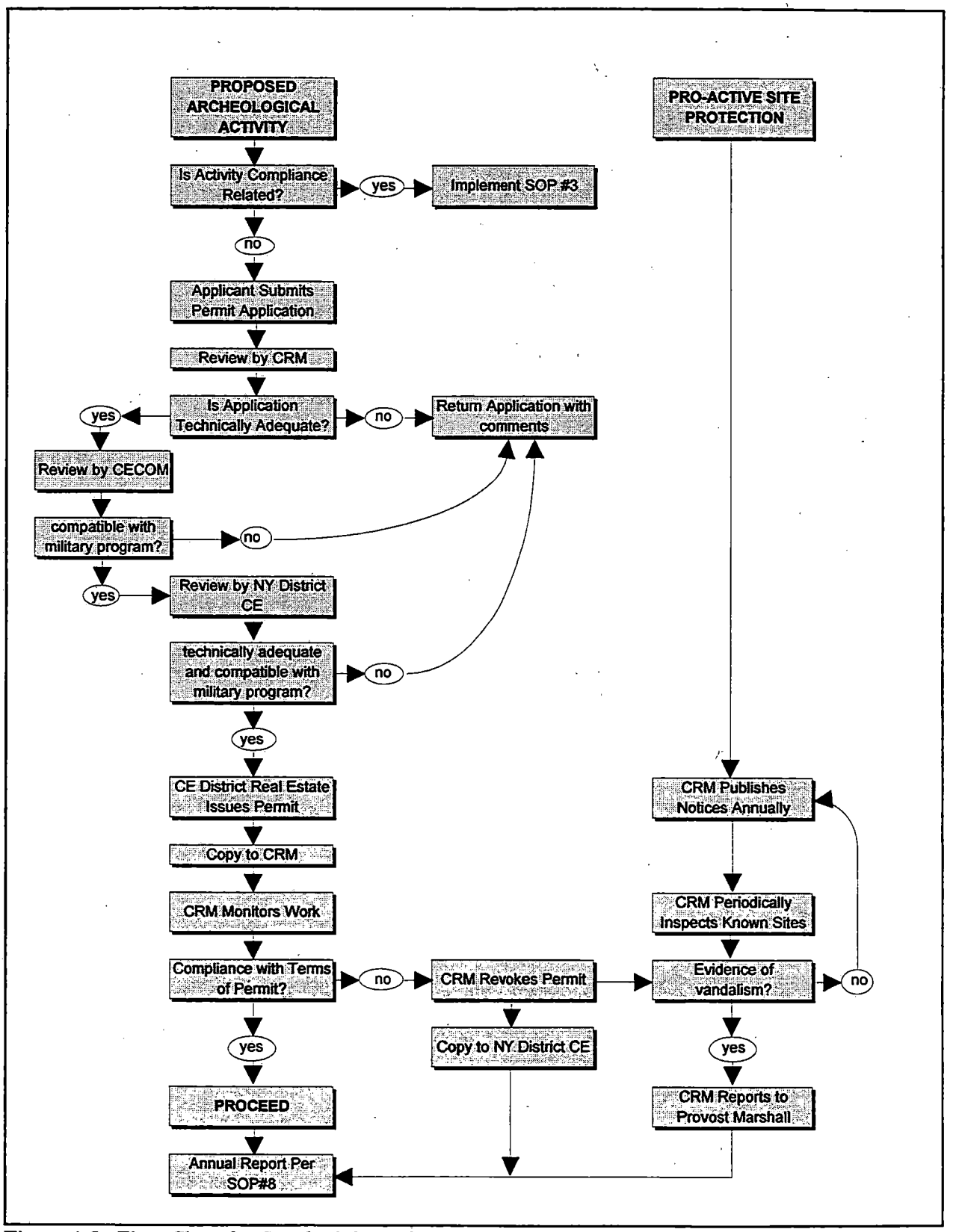


Figure 4.5 Flow Chart for Standard Operating Procedure #5.

A. A permit may be revoked if it is determined:
   1. The applicant has not complied with the terms of the permit.
   2. The applicant has misrepresented the work to be accomplished.
   3. Continuance of the work is a hazard to public health or safety, or
   4. Continuation of the work impairs any military function.

B. Appeals will be forwarded to the Installation Commander for review by the CRM. The Determination of Appeal will be signed by the Commander.

IV. Fort Monmouth shall proactively protect and preserve archeological sites.

A. The CRM will periodically monitor the condition of known archeological sites for evidence of vandalism.
   1. ARPA violations will be reported for investigation and prosecution to the Post Provost Marshall.
   2. ARPA violations will be reported to the New Jersey SHPO as provided under SOP #8.

B. The CRM will publish brief notices outlining actions prohibited under ARPA and the criminal penalties, at least once a year in Fort Monmouth periodicals or newsletters.

V. The activities, status, and results of all compliance actions taken under this SOP will be reported annually as outlined in SOP #8.

STANDARD OPERATING PROCEDURE #6:
Treatment of Human Remains and Funerary/Sacred Objects

NAGPRA requires the inventory of human remains and funerary and sacred objects recovered from federal lands which may be subject to claim by Native American tribal groups, and the active consultation with such groups to determine the disposition of such remains and objects. No such remains or objects from Fort Monmouth are currently known to exist. This SOP outlines the policies and procedures to be followed to ensure future compliance. Figure 4.6 summarizes the compliance process.

Policy

- No Native American human remains, funerary objects, or sacred objects from Fort Monmouth will be knowingly kept in government possession without initiating consultation.
- Consultation regarding the disposition of Native American human remains, funerary objects, or sacred objects shall be initiated as soon as feasible.

Procedure

The CRM will review in advance all archeological permits, research designs, and scopes of work to ensure that archeological investigations at Fort Monmouth comply with NAGPRA requirements and the implementing regulations (43 CFR Part 10).

I. The CRM will review all records to determine whether any human remains, funerary objects, or sacred objects originating from Fort Monmouth are known to exist.
   A. If no such objects are known to exist, no consultation is required.
   B. If any such objects are known to exist, the CRM will prepare an inventory of all such objects and will initiate consultation procedures with the Delaware Tribe of Western Oklahoma, and with other tribes as may be recognized under NAGPRA definitions. Consultation will be in accordance with the April 1994 Presidential Memorandum regarding Government to Government Relations.
      1. POC for the Delaware Tribe of Western Oklahoma is the President of the Delaware Executive Committee, P.O. Box 825, Anadarko, OK, 73005; telephone (405) 247-2448; facsimile (405) 247-9393.
      2. Information on additional tribes that may be recognized in the future is available from the Archeological Assistance Division, National Park Service, Box 37127, Washington D.C., 20013; telephone (202) 343-4101; facsimile (202) 523-1547.

II. If human remains or artifacts that are currently not in government possession but that are suspected to be from Fort Monmouth are returned to the government, the CRM will arrange to have a professional archeologist examine and evaluate the recovered material.
   A. If the remains are not of human origin, then no further action is necessary by the CRM.

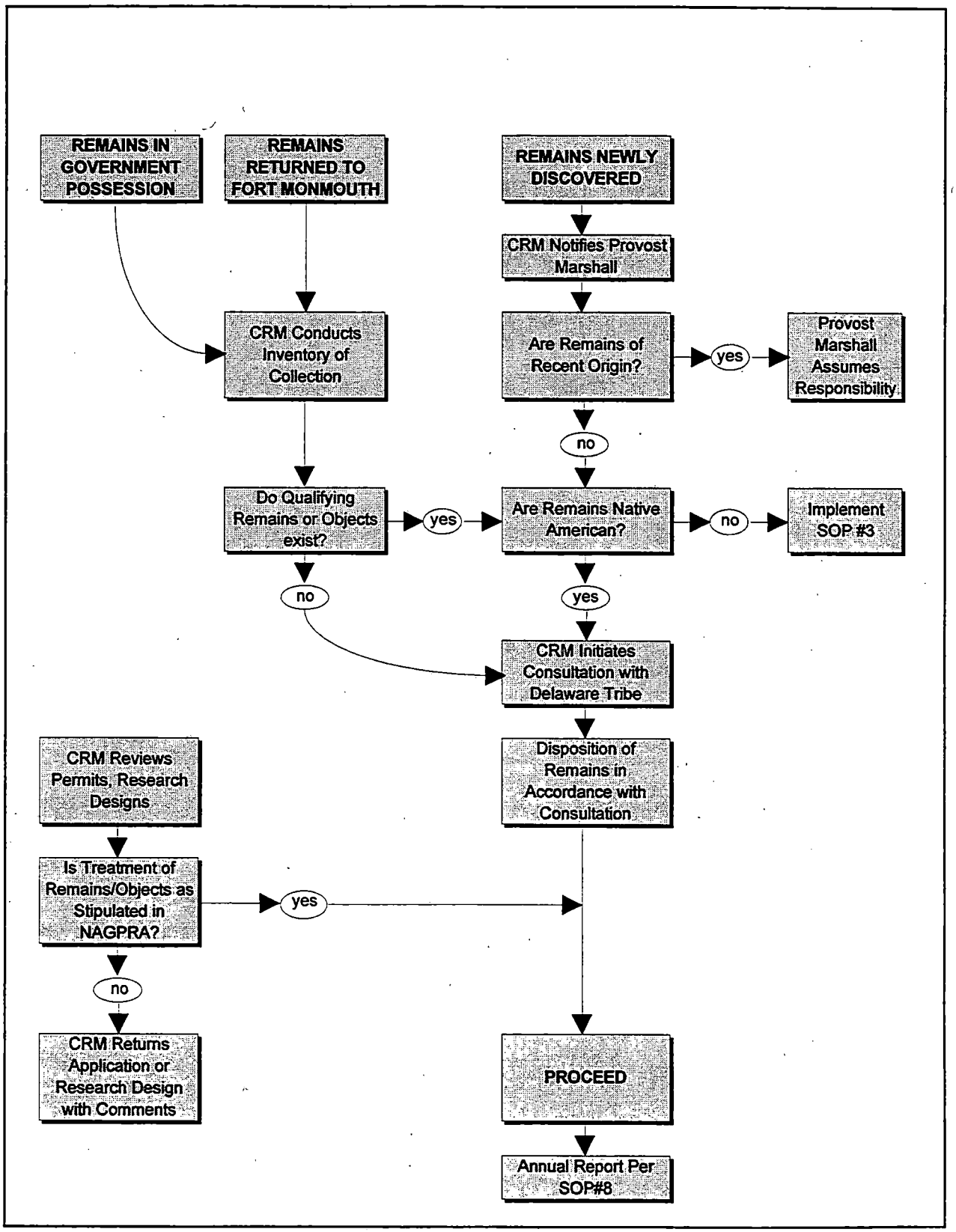


Figure 4.6 Flow Chart for Standard Operating Procedure #6.

B. If the remains are not of Native American origin, then the remains will be documented and prepared for curation as stipulated under SOP #6.
C. If the remains are of Native American origin, then the CRM will prepare an inventory of the remains and will initiate consultation procedures with the Delaware Tribe of Western Oklahoma, and with other tribes as may be recognized under NAGPRA definitions.

III. If human remains are discovered during the course of any undertaking, the following procedures will apply.
A. Work will immediately cease in the vicinity of the human remains.
B. The site supervisor will immediately notify the Post Provost Marshall and the CRM.
1. If the Post Provost Marshall, or his operative, determines that the remains are of recent origin, then no further action is necessary by the CRM and the undertaking may proceed.
2. If the remains are not recent, the CRM will arrange to have a professional archeologist visit the site as soon as possible, but within 48 hours, to examine and evaluate the recovered material.
a) If the remains are not of human origin, then no further action is necessary by the CRM and the undertaking may proceed.
b) If the remains are not of Native American origin, then the site will be treated as stipulated under SOP #3.
c) If the remains are of Native American origin, then further work in the vicinity will be suspended for 30 days to allow for consultation, as required by NAGPRA. Prior to removal of any remains, the CRM will prepare an inventory of the remains and will immediately initiate emergency consultation procedures with the Delaware Tribe of Western Oklahoma, and with other tribes as may be recognized under NAGPRA definitions. Otherwise the CRM will cause the site to be treated as stipulated under SOP #3.
(1) If consultation allows the remains to be removed, then the CRM will cause the remains to be treated and disposed in accordance with the consultation.
(2) If consultation does not allow the remains to be removed, then no further work may proceed in the vicinity of the remains.
(3) Notwithstanding the results of consultation, the CRM will cause the site to be treated as stipulated under SOP #3.

IV. The activities, status, and results of all compliance actions taken under this SOP will be reported annually as outlined in SOP #8.

STANDARD OPERATING PROCEDURE #7:
Identification and Nomination of Eligible Properties to the National Register

Section 110 of the NHPA and EO 11593 direct federal agencies to locate, inventory, and nominate all potentially eligible sites, buildings, districts, and objects under their control to the Secretary of the Interior for listing on the NRHP. This SOP implements the law and the implementing regulations. Figure 4.7 summarizes the compliance process.

Policy

- All cultural resources at Fort Monmouth shall be inventoried and evaluated.
- All inventory, evaluation, and nomination activities shall be conducted by persons meeting the Secretary of the Interior's guidelines for professional qualifications (36 CFR Part 61, Appendix A).
- All cultural resources determined to be eligible for inclusion to the NRHP will be nominated to the Keeper of the Register.
- Until such time as the inventory of Fort Monmouth's cultural resources is completed, scheduling and funding priorities will be given to inventory as opposed to testing or nomination. However, setting of priorities because of funding availability does not relieve the Army of its Section 110 compliance responsibilities.

Procedure

The CRM shall annually review the status of inventory, testing, and nomination and shall develop priorities for these programs based on integration with Section 106 responsibilities and funding availability.

I. Archeological Inventories shall be conducted under a research design and shall be designed as a good faith effort (1) to locate 100% of cultural resources and (2) to fully evaluate as many cultural resources as may be practicable using standard survey methods.
   A. In zones designated by this CRMP as having low potential for intact archeological deposits, no inventory is required.
   B. In zones designated by this CRMP as high and medium potential for intact archeological deposits, archaeological survey shall be designed to ensure 100% coverage of the ground surface.
      1. In landscaped areas, pedestrian survey may be replaced by shovel testing at 16 tests per acre.
      2. In wooded and undisturbed areas, pedestrian survey must be accompanied by shovel testing at 32 tests per acre.
      3. Shovel tests shall be 40 cm x 40 cm and shall be dug to culturally sterile fill or a minimum of 50 cm below ground surface.
   C. Archaeological inventories shall be professionally documented.
      1. All shovel tests will be documented and plotted on maps.

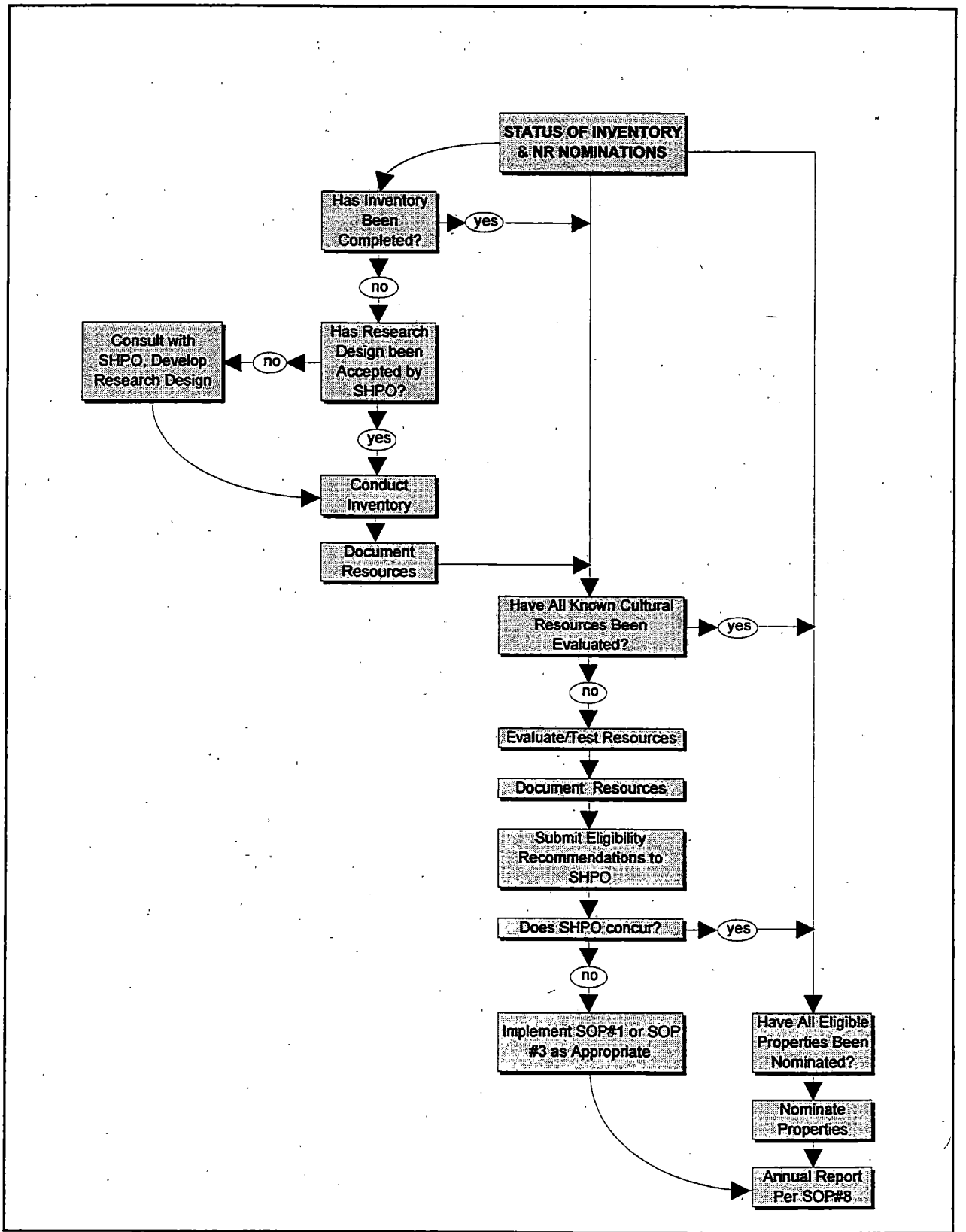


Figure 4.7 Flow Chart for Standard Operating Procedure #7.

2. All sites will be documented, photographed, and plotted on maps using forms that meet or exceed the data content required by the New Jersey SHPO.
   a) Trinomial site numbers shall be obtained from the State Museum in Trenton, New Jersey.
   b) Copies of completed site forms and other primary documentation shall be submitted to the SHPO.
3. All subsurface artifacts, historic and prehistoric, will be collected for analysis and curation.
4. A technical report conforming to the Secretary of the Interiors standards and guidelines and to those of the New Jersey Historic Preservation Office (State of New Jersey 1994) will be prepared and submitted for SHPO review pursuant to SOP #8.

D. Each archeological site shall be evaluated with regards to its eligibility for inclusion to the NRHP, according to the significance criteria outlined in Chapter 3 of this CRMP.
   1. Sites that meet or exceed the significance standards will be recommended as eligible for inclusion.
   2. Sites that do not meet the significance standards will be recommended as not eligible for inclusion.
   3. Sites which can not be fully evaluated because of insufficient information will be recommended for further investigation and eligibility testing.

II. Architectural Inventories shall be designed to ensure collection of sufficient architectural and historical information with which to make a determination of eligibility for inclusion to the NRHP, according to the significance criteria outlined in Chapter 3 of this CRMP.
   A. Buildings and structures that meet or exceed the significance standards will be recommended as eligible for inclusion.
   B. Buildings and structures that do not meet the significance standards will be recommended as not eligible for inclusion.
   C. A technical report conforming to the Secretary of the Interiors standards and guidelines will be prepared and submitted for SHPO review pursuant to SOP #8.

III. All cultural resources not fully evaluated at the conclusion of the inventory shall be further investigated to conclusively determine eligibility. Archeological significance testing shall be conducted under a scientific research design and shall be designed to fully evaluate 100% of known sites.
   A. Subsurface excavation shall be conducted to determine horizontal and vertical site boundaries, to assess integrity of deposits, and to recover a representative sample of cultural remains.
      1. Mechanical excavations may be used to assess site stratigraphy and limits.
      2. Manual excavations shall be in arbitrary 10 cm levels, unless finer natural or cultural stratigraphy can be defined.
      3. Manually excavated fill shall be screened through mesh of 1/4 inch or less.
      4. All recovered artifacts will be collected for analysis and curation.
      5. Photographs and drawn profiles of all excavation units and exposures shall be made in the field.
   B. When it can confidently be determined that the site is eligible for inclusion to the NRHP, further testing will cease.

C. Each archeological site shall be evaluated with regards to its eligibility for inclusion to the NRHP, according to the significance criteria outlined in Chapter 3 of this CRMP.
   1. Sites that meet or exceed the significance standards will be recommended as eligible for inclusion.
   2. Sites that do not meet the significance standards will be recommended as not eligible for inclusion.

D. A technical report conforming to the Secretary of the Interiors standards and guidelines and to those of the New Jersey Historic Preservation Office (State of New Jersey 1994) will be prepared and submitted for SHPO review pursuant to SOP #8.

IV. For each cultural resource inventoried and evaluated, the CRM shall seek the concurrence of the SHPO.

V. For each historic property recommended, and concurred by SHPO, as eligible for inclusion to the NRHP, the CRM will ensure that NRHP nomination forms are prepared and submitted to the Keeper of the Register. Nominations will follow the guidelines and format requirements specified in NR Bulletin 16A - *Guidelines for Completing National Register of Historic Places Nomination Forms.*

VI. The activities, status, and results of all compliance actions taken under this SOP will be reported annually as outlined in SOP #8.

STANDARD OPERATING PROCEDURE #8:
Review and Monitoring of Compliance

Coordination and consultation with SHPO and with others is a key aspect of cultural resource compliance. Technical information regarding undertakings and cultural resources must be provided to the SHPO in a timely manner to prevent foreclosure of the SHPOs opportunity to comment. Figure 4.8 summarizes the compliance process.

Policy

- In requesting the SHPO consultation, Fort Monmouth shall provide technical information regarding undertakings and cultural resources to the SHPO in a timely manner.
- The Fort Monmouth CRM will routinely monitor the compliance of Fort Monmouth with applicable cultural resource laws and regulations and shall regularly report the status of such compliance to the SHPO.
- Where the Army, the SHPO, and/or the ACHP disagree about the recommendations for eligibility or any other portion of a compliance document, the Army shall take steps to ensure the protection and preservation of affected properties until the consultation process is complete.

Procedure

I. Contracted compliance projects will be reported to the SHPO through the submission of a draft technical report. Survey and testing reports will contain recommendations of NRHP eligibility for all cultural resources.
   A. The confidentiality of all site locations will be preserved.
   B. Where the SHPO concurs on the recommendation of eligibility, the final report will reflect that concurrence.
   C. Where the SHPO does not concur with the recommendation, the Army will continue to protect sites until the provisions of SOP #7 have been implemented as establishing the status of the site(s) as not eligible for the NRHP.
      1. Where agreement cannot be reached, the procedures outlined in SOP #1 and/or SOP #3, as may be appropriate, will be implemented and the disagreement will be so noted in the final report.
   D. The SHPO will have 30 days from receipt of a draft report to comment. If no comments are received, the concurrence of the SHPO is assumed.
   E. Final reports will be printed in sufficient quantities and shall be distributed to interested libraries, museums, institutions, organization, and individuals so as to encourage research and scholarship.

II. An annual compliance report will be prepared by the CRM and submitted to the SHPO. The report will cover one fiscal year, 01 October through 30 September, and will be submitted no later than 01 December following the close of the fiscal year.

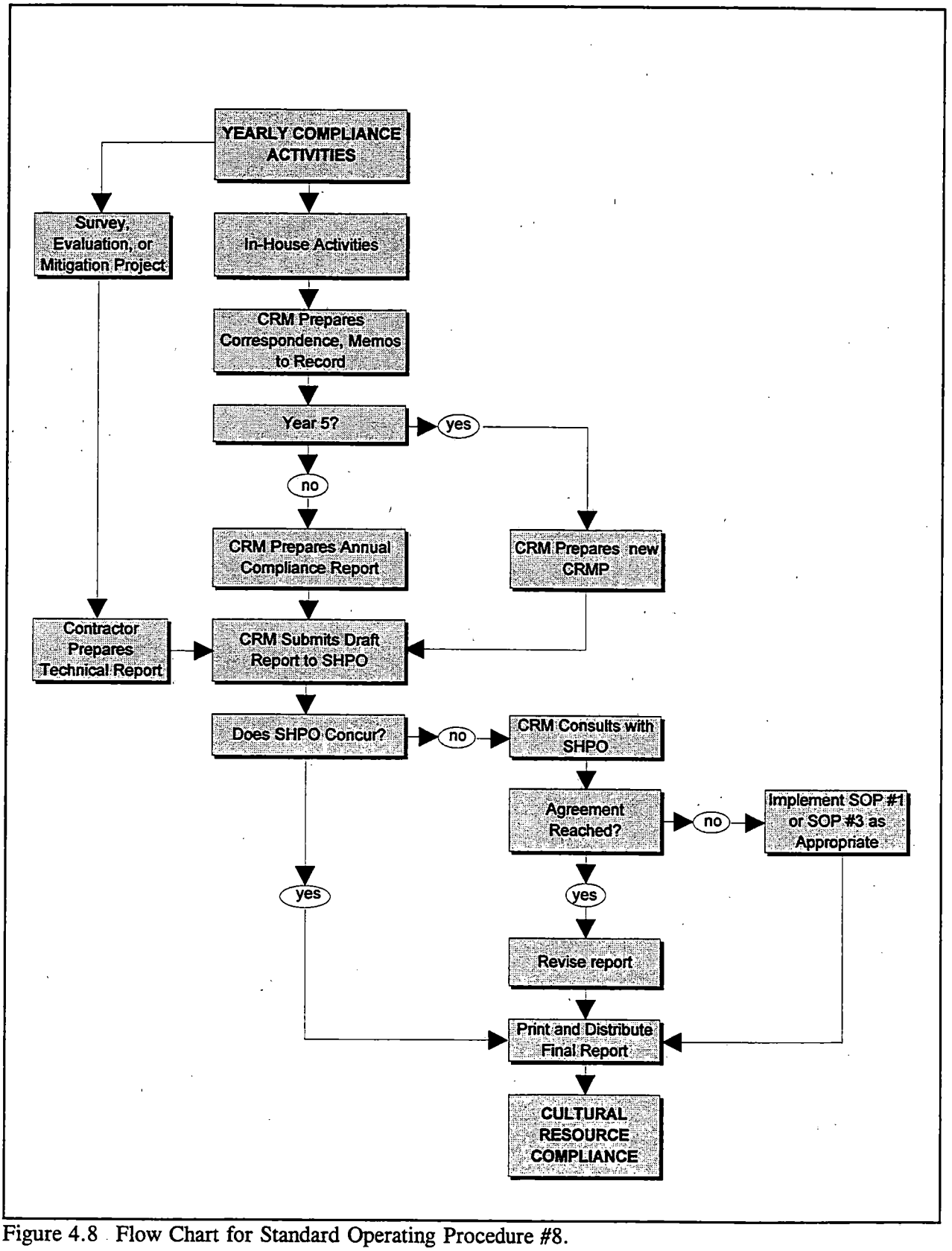


Figure 4.8 Flow Chart for Standard Operating Procedure #8.

A. Contents of the compliance report shall include the following.
   1. A summary of compliance actions taken under each SOP, including copies of relevant correspondence and memoranda to record.
   2. A summary of known undertakings planned for the coming year.
   3. A summary of progress in implementing the current 5-year plan, including status of each objective, funding availability, and schedule maintenance.
      a) Where progress is less than projected, the Army shall assess effects on the overall 5-year plan, and shall realistically address the prospects for restoration of the schedule.
      b) Where prospects for restoration of the schedule are not favorable, the Army shall develop a revised schedule and address its effects on overall compliance.

B. The SHPO will have 30 days from receipt of the technical compliance report to comment.
   1. If no comments are received within 30 days, the concurrence of the SHPO is assumed.
   2. If the SHPO disagrees with any aspect of the report, the CRM shall initiate informal consultation with the SHPO to resolve the dispute. If the dispute can be resolved, a revised report will be submitted by the Army.
   3. If a dispute can not be resolved, the Army may request comments from the ACHP. The Army may develop and implement actions that take into account the effects of any undertaking and the comments of both the SHPO and the ACHP. The Army shall make reasonable efforts to minimize harm to eligible properties until such time as the consultation process is completed.

C. In lieu of the annual compliance report, the Army may choose to prepare and submit a new CRMP.

4.4 FIVE-YEAR PLAN

4.4.1 Planned Undertakings

- ***New Construction.*** In recent years, Fort Monmouth has initiated construction on several new buildings in response to the realignment and closure of the Evans Area (U.S. Army 1994). Currently, the Intelligence and Electronic Warfare Directorate Complex is under construction on the Main Post west of Dunwoody Park. This 113,000 square ft complex includes administration facilities, laboratories, and a storage warehouse. Additional major developments planned for the near future include: a calibration laboratory and a "high bay" facility next to the Electronic Warfare Laboratory (Building 2705) in the Charles Wood Area; a new commissary; a new fire station in the Charles Wood Area; an addition to the youth center; additions to the child development center in the Charles Wood Area; expansion of banqueting facilities at the Officers Club; and additions to Building 1210.

- ***Building Renovation.*** Several major programs of rehabilitation are currently planned at Fort Monmouth for the near future. These include: renovation of the residential structures in the historic district, renovation of the barracks in the 1200 area, renovation of portions of the Myer Center, and renovation of the Megill and Hemphill housing structures in the Charles Wood Area.

- ***Building Demolition.*** Most of the early buildings on the post have been demolished. In the past 5 years (1992-1996), Fort Monmouth has demolished 64 buildings totaling 167,373 square ft. This includes many WW II-era temporary buildings - as is permitted by a PMOA. The demolition of an additional 23 structures, totaling 85,945 square ft is anticipated in the near future, depending on funding availability. The buildings scheduled for demolition include 18 WW II-era temporary buildings, two semi-permanent and one permanent WW II-era buildings, and two temporary buildings constructed in the 1950s. These last five buildings include a youth center, a heating plant, two general purpose storage structures, and a general purpose administrative building.

- ***Infrastructure.*** Fort Monmouth has had, and is expected to continue, an active program of infrastructure development, especially in connection with the construction of new buildings and the renovation of existing buildings.

- ***Underground Storage Tanks.*** No new UST's are planned at Fort Monmouth, but in recent years the post has implemented an active program of UST removal to address concerns of environmental protection and human health and safety. This program is expected to continue in the near future.

- ***Landscaping.*** Fort Monmouth DPW anticipates no landscaping or other major earthmoving undertakings not directly associated with a new construction project.

- ***Boundary Changes.*** The Master Planning Division of DPW anticipates no boundary changes in the next 5 years (other than the Evans Area, which this CRMP considers to be excluded).

4.4.2 Key Objectives

This 5-year plan identifies nine key objectives:

1) training of personnel;

2) development and implementation of a PA;

3) programming funds for completion of the 5-year plan;

4) initiation of SHPO consultation for in-progress and currently planned undertakings;

5) completion of NRHP evaluations for buildings requiring Secret clearance;

6) completion of the NRHP district nominations;

7) completion of archeological inventory and significance testing;

8) recordation and significance testing of locations with potential historic sites; and

9) update of the CRMP.

4.4.2.1 Training of Personnel

The first objective is to ensure that the Fort Monmouth CRM (and other personnel who may have cultural responsibilities possibly including program oversight) receive formal training in cultural resource management and administrative procedures, with special emphasis on Section 106 compliance. Such training is regularly offered by the Army.

4.4.2.2 Development and Implementation of Programmatic Agreement

The second objective is the development and implementation of a PA between the Army, the ACHP, and the New Jersey SHPO for the operation, maintenance, and development at Fort Monmouth. Such an agreement is required by AR 200-4 and will serve to streamline the Section 106 consultation process. The implementation of an agreement is critical and will facilitate many of the remaining objectives.

4.4.2.3 Initiation of Consultation for In-Progress and Currently Planned Undertakings

The third objective in the 5-year plan is to review all current undertakings at Fort Monmouth for their effect on historic properties. This is necessary to avoid foreclosure of the opportunity of the SHPO and/or ACHP to comment on the undertakings. Each undertaking currently in progress, and not previously so reviewed, must be reviewed by the CRM according to the criteria of effect and adverse effect, and absent any PA stipulation to the contrary, the comments of the SHPO must be sought. For each undertaking, the CRM should present information on project design and should summarize the expected effect on all known and unknown historic properties.

It is very likely that many or most of these undertakings will be found to have no effect on historic properties. Others will likely be found to have an effect on historic properties but will not diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, association, or information content. It is also possible that some undertakings currently in progress may be determined to have adverse effects on historic properties. Consultation with the SHPO should be immediately initiated concerning these undertakings. Pro-active consultation with SHPO in such cases, even if delayed by the previous absence of a CRMP, will increase the probability that agreements, either programmatic or informal memoranda to file, can be reached between Fort Monmouth and the SHPO concerning the affected properties that will serve to avoid foreclosure.

Concurrently, or immediately following the completion of this objective, the consultation process should be fully integrated into the DPW planning process and should be implemented for all undertakings currently planned but not yet finalized, and to be planned in the future SOPs #1, #2, and #3 outline the procedures to be taken to ensure compliance with Section 106.

4.4.2.4 Programming Funds Necessary for Compliance

The fourth objective in the 5-year plan is planning and programming funds for supporting the compliance plan. Fort Monmouth, via the CRM, needs to develop estimates of funding support and submit these through the chain of command according to the A106 (previously 1383) process. The A106 budget projections need to be coordinated though the DPW Environmental

Coordinator. This should be an on-going objective.

4.4.2.5 National Register Evaluations of Buildings Requiring "Secret" Clearance

The fifth objective in the 5-year plan is completing the NRHP evaluation for two Cold War-era buildings in the Charles Wood Area, the Pulse Power Center and the Electronic Warfare Building. Full NRHP evaluation of these buildings will involve access to classified files, requiring a government secret clearance. While these two buildings are not remarkable architecturally, available information that is unclassified suggests that their mission may be related to Cold War research and development. These two buildings may be eligible for inclusion to the NRHP as "exceptionally significant" under criterion "g."

4.4.2.6 Completion of National Register District Nominations

The sixth objective in the 5-year plan is to complete NRHP nomination forms for all eligible but unlisted properties, including the proposed historic districts as well as eligible buildings not in the district. In 1989 a draft nomination form for the Main Post historic district was developed and submitted for SHPO review, but the comments on the draft form were not addressed and the nomination process was never completed. This nomination should be completed, using a thematic grouping which excludes non-contributing elements within the district boundaries. The other NRHP eligible properties, identified in Chapter 3 of this CRMP, should also be nominated.

4.4.2.7 Recordation and Significance Testing of Locations with Potential Historic Sites

The seventh objective in the 5-year plan is to verify the presence of, and then formally document, the localities of potential historic archeological sites. A 1984 study of Fort Monmouth used historic maps to identify the 204 localities of potential historic archeological sites (Klein, Bianchi, and Williams 1984:4-6 to 4-18). These include 176 localities on the Main Post and 28 localities in the Charles Wood Area. None of the 204 localities have been verified or formally recorded.

The 204 localities should be investigated with a multi-step research program. First, all localities should be subjected to further archival research including verification of locational coordinates. The functions of specific buildings and structures should be identified where possible. Second, ground truthing of pre-military localities and of military localities with high archeological potential should be conducted. This inventory task should be conducted in accordance with SOP #7. The goal of inventory should be to fully evaluate as many of these locations as possible with regards to their NRHP eligibility.

If any sites can not be fully assessed using archival research, shovel testing, or other cost-effective techniques, they should be afforded protected status until such time as their eligibility can be adequately tested using additional, more intensive tactics. Such additional testing is not an element of this 5-year plan, but may be a component of the subsequent 5-year plan.

4.4.2.8 Completion of the Archeological Inventory

The eighth objective in the 5-year plan is the completion of the archeological inventory. With the exception of about 30 acres in the Charles Wood Area (Reed et al. 1996), no systematic archeological inventory has ever been attempted at Fort Monmouth. The six prehistoric sites on record were defined on the basis of an interview with an amateur archeologist and have never been ground-truthed.

The zones designated as high potential (see Figures 3.1 and 3.2) should be given first priority in conducting the inventory. The zones designated as medium potential should be given second priority. The zones designated as low potential are not targeted for inventory at this time. Based on the results of inventory in the high and medium

potential zones, inventory may or may not be warranted in the future.

Inventory should be conducted in accordance with SOP #7. The goal of inventory should be to find all surface and buried sites, and, should any sites be discovered, to evaluate as many of these as possible with regards to their NRHP eligibility.

If any sites can not be fully assessed using shovel testing and other cost-effective survey techniques, they should be afforded protected status until such time as their eligibility can be adequately tested using additional, more intensive tactics. Such additional testing is not an element of this 5-year plan, but may be a component of the subsequent 5-year plan.

4.4.2.9 Update of the CRMP

The final objective of the 5-year plan is revising and updating this CRMP. This CRMP is purposefully designed to expire in the year 2001, and as required by AR 200-4, Fort Monmouth must develop a replacement CRMP.

Within 5 years, the mission of Fort Monmouth and/or the nature of it's undertakings may have changed. Cultural resource laws and regulations may have changed. It is possible that not all of the objectives may have been fully achieved. As a result of implementing Objectives #6 and #7, much new information about Fort Monmouth's cultural resources will likely be available. In any event, the new CRMP should review the nature of undertakings, re-evaluate all known cultural resources, and develop a new plan for the years 2001 through 2006.

4.4.3 Schedule for Implementation

A schedule for initiating and completing the key objectives (KOs) is diagrammed in Table 4.3. Several objectives will take longer than 1 year to complete while others are on-going.

- ***1996-1997.*** Four objectives are scheduled for the first year of the plan. Training of personnel should be initiated under KO #1. The PA should be negotiated and implemented under KO #2, while the CRM should begin review of in-progress undertakings under KO #3. To permit implementation of this 5-year plan, work must also begin on programming funds for cultural resource compliance, under KO #4. While this objective recurs annually, most of the effort will occur during the initial effort. The objective is diagrammed on Table 4.3 as occurring in the first year of the plan.

- ***1997-1998.*** Three objectives are scheduled. The review of planned undertakings should be continued as normal practice under KO #3. The two classified buildings on the Charles Wood Area should be evaluated for NRHP eligibility under KO #5. The NRHP district nominations should be completed under KO #6.

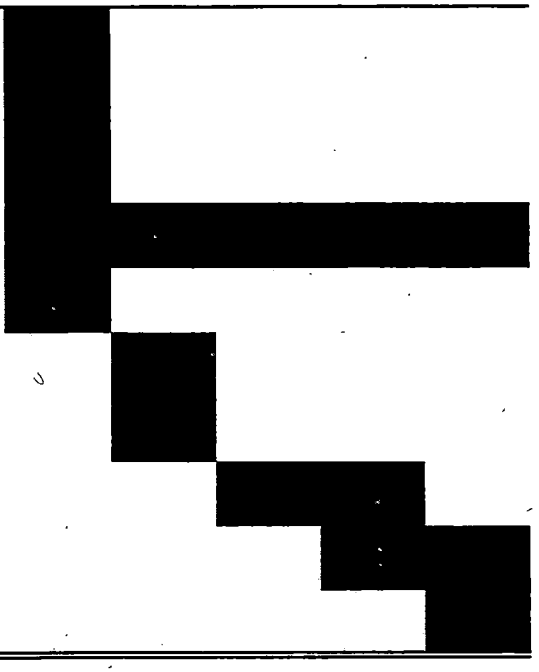
- ***1998-1999.*** Two objectives are scheduled. The review of planned undertakings should be continued as normal practice under KO #3 and the recordation of historic site localities should be begun under KO #7.

- ***1999-2000.*** Three objectives are scheduled. The review of planned undertakings should be continued as normal practice under KO #3, the recordation of historic site localities under KO #7 should be completed, and archeological inventory should be initiated under KO #8.

- ***2000-2001.*** During the final year of the 5-year plan, three objectives are scheduled. The archeological inventory should be completed under KO #8. This information should be incorporated into the development of a new CRMP under KO #9. In addition, review of all undertakings should continue as normal practice under KO #3.

Table 4.3 Schedule for Implementation of 5-Year Plan, 1996-2001, by Key Objective.

KEY OBJECTIVE	DESCRIPTION	Fiscal Year 1996-1997	1997-1998	1998-1999	1999-2000	2000-2001
1	Training of Personnel					
2	Development and Implementation of Programmatic Agreement					
3a	Review and Consultation for in-Progress Undertakings					
3b	Review and Consultation for Planned Undertakings					
4	Programming of Compliance Funds					
5	Complete NR Evaluation of Pulse Power Center & Electronic Warfare Building					
6	Completion of NR District Nominations					
7	Recordation and Significance Testing of Locations of Potential Historic Sites					
8	Completion of Archeological Inventory and Significance Testing					
9	Update of CRMP					



4.4.4 Estimate of Resources Needed

4.4.4.1 Staff Resources

AR 200-4 requires designation of an installation CRM. Because of the small size of Fort Monmouth (1.8 square miles) and the limited archeological resources (both known and expected), a full-time staff archeologist is not warranted. By contrast, a staff historian or architect is warranted because of the many NRHP eligible historic buildings. It is likely that either the CECOM Command Historian or an architect currently assigned to DPW can fulfill the undertaking review and SHPO coordination requirements of the CRM.

Moreover, it is expected that, with a professional background in architecture or history and with specialized compliance training, the CRM will be able to achieve six of the nine objectives (KO #1, #2, #3, #4, #6, and #9), including all of those scheduled for the first year of the plan.

As summarized in Table 4.4, fulfilling these objectives, plus providing management support as needed to contractor personnel will require less than one full-time-equivalent (FTE). No additional personnel resources are thus required to complete these objectives. However, total job responsibilities of the person designated as the CRM should be reviewed to ensure that no more than 1.0 FTE are allocated, including other non-CRM responsibilities.

4.4.4.2 Supplementary Resources

Beginning in the second year of the plan, supplementary expertise in architectural history, and historic and prehistoric archeology will be necessary to achieve KOs #5, #7, and #8. Expertise in these disciplines is not available

Table 4.4 Personnel Resources Needed for 5-Year Plan, 1996-2001, by Key Objective and Source of Personnel.

KEY OBJECTIVE	DESCRIPTION	Fiscal Year 1996-1997		1997-1998		1998-1999		1999-2000		2000-2001		TOTAL	
		in-house	contract	in-house	contract	in-house	contract	in-house	contract	in-house	contract	in-house	contract
1	Training of Personnel	-	-	-	-	-	-	-	-	-	-	-	-
2	Development and Implementation of Programmatic Agreement	0.1	-	-	-	-	-	-	-	-	-	0.1	-
3a	Review and Consultation for in-Progress Undertakings	0.3	-	-	-	-	-	-	-	-	-	0.3	-
3b	Review and Consultation for Planned Undertakings	0.2	-	0.2	-	0.2	-	0.2	-	0.2	-	1.0	-
4	Programming of Compliance Funds	0.1	-	0.1	-	0.1	-	0.1	-	0.1	-	0.5	-
5	Complete NR Evaluation of Pulse Power Center & Electronic Warfare Building	-	-	0.1	0.3	-	-	-	-	-	-	0.1	0.3
6	Completion of NR District Nominations	-	-	0.2	-	-	-	-	-	-	-	0.2	-
7	Recordation and Significance Testing of Locations of Potential Historic Sites	-	-	-	-	0.2	1.4	0.1	0.6	-	-	0.3	2.0
8	Completion of Archeological Inventory and Significance Testing	-	-	-	-	-	-	0.2	2.8	0.1	1.8	0.3	4.6
9	Update of CRMP	-	-	-	-	-	-	-	-	0.3	-	0.3	-
TOTAL	**In house personnel**	0.7		0.6		0.5		0.6		0.7		3.1	
	Contract personnel		-		0.3		1.4		3.4		1.8		6.9

within the in-house staff of Fort Monmouth and must be hired or procured through contract. Because these resources are not required until the third year of the plan (fiscal 1998-1999) and because the need for these specialties is not expected to continue beyond this 5-year plan, hiring in-house specialists may not be the preferred option for Fort Monmouth.

Completion of KO #5, the evaluation of two Cold War-era research buildings in the Charles Wood Area, will require expertise in architectural history and historic preservation by a person with U.S. Government Secret clearance. This effort is estimated at 0.3 FTE person years. At $80,000 per contractor person-year, cost of this project is estimated at $25,000.

Completion of KO #7 (the recordation of localities of possible historic sites) will require a significant effort involving expertise in archival research, historic archeology, and possibly oral history. Assuming that preliminary archival research finds that approximately one-third of the 204 localities are not significant, then field ground-truthing and site recordation may be required on about 135 localities. Conservatively assuming two person days per locality for field work and two person days for documentation, up to 540 person days may be required to complete the project, or approximately 2.0 FTE person years. At $80,000 per contractor person-year, cost of this project is estimated at $160,000. Note that this project does not include formal NRHP eligibility testing.

Completion of KO #8, the archeological inventory, will also require a significant effort involving expertise in historic and prehistoric archeology. Assuming that 50% of the installation is in the low potential archeological zone and will not require inventory (see Chapter 3.0), then up to 600 acres may need inventory in the high potential or medium potential zones. Conservatively assuming eight hours per acre to complete the survey, dig subsurface shovel tests, and fully document any sites, and a similar amount of labor for data analysis and report development, then up to 1,200 person days may be required to complete the project, or approximately 4.6 FTE person years. At $80,000 per contractor person-year, cost of this project is estimated at $368,000. Note that this project does not include formal NRHP eligibility testing.

4.5 PLAN SUMMARY

- ***DESIGNATE a Point-of-Review.*** Fort Monmouth needs to designate a point of review as the installation CRM. This person needs to receive formal Section 106 training, needs the authority to review all planned undertakings, and needs the authority to consult with the New Jersey SHPO and the ACHP as necessary.

- ***REVIEW all Undertakings.*** The CRM needs to review undertakings with the potential to affect historic properties. Most of these are repairs and alterations to existing buildings and construction related earth-moving.

- ***NEGOTIATE a Programmatic Agreement.*** Fort Monmouth needs to negotiate a PA to streamline the Section 106 process.

- ***COMPLETE the Inventory.*** Fort Monmouth needs to complete the inventory of cultural resources and needs to complete the nomination of all eligible properties. Inventory is especially needed of potential archeological properties.

- ***DEVELOP Annual Reports.*** The CRM needs to develop an annual report on the status of compliance activities to be submitted to the Headquarters, Department of the Army/Army Environmental Center (HQDA/AEC) Commanding Officer, the New Jersey SHPO, and if requested to the ACHP.

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APPENDIX A

Glossary

GLOSSARY

This appendix gives brief explanations of several key terms and concepts common to cultural resource laws and regulations that are used in this CRMP. Other terms and concepts are also applicable and are defined in the relevant laws and regulations.

Adverse Effect: An undertaking has an adverse effect on a historic property when it diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, association, or information content. Adverse effects include:

- Physical destruction, damage, or alteration to all or part of the property;
- Isolation of the property from its setting;
- Introduction of elements that alter the setting or that are out of character;
- neglect of a property resulting in its deterioration or destruction; and
- transfer, sale, or lease of a property.

Advisory Council for Historic Preservation (ACHP): Established by the NHPA of 1966 to advise the President and Congress, to encourage private and public interest in historic preservation, and to comment on Federal agency action under Section 106 of the NHPA.

Area of Potential Effect (APE): The geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist there. This area always includes the actual site of the undertaking, but may also include other areas where the undertaking will cause changes in land use, traffic patterns, or other aspects that could affect historic properties.

Council Comment: The ACHP participates in the Section 106 review process by signing an MOA, by reviewing and commenting on an MOA, or, rarely, if no agreement can be reached and consultation is terminated, by issuing comments directly to the agency head (during the 3 year period 1991-1993, only 14 of 5,958 ACHP cases were terminated).

Criteria of Effect: An undertaking has an effect on a historic property when it alters characteristics of the property that qualify the property for inclusion to the NRHP. These characteristics may include a property's location, setting, or use (see Adverse Effect).

Cultural Resource: A cultural resource is any place, site, building, or object, or collection of these, that was built or fashioned by people. Fossils and naturally occurring geological specimens are not cultural resources. Ordinarily, cultural resources are defined as more than 50 years old. Not all cultural resources are considered to be significant under the NHPA (see Historic Property). Cultural resources include the following types.

- A ***district*** is a geographically definable area with a concentration of cultural resource properties that are united by past events, or aesthetically by plan or physical development.
- A ***site*** is the location of a prehistoric or historic event or occupation, or a structure that contains historical or archeological value.
- A ***building*** is a structure created to shelter human activities such as a house, jail, church, barn, or factory.

- A ***structure*** is an engineering edifice designed to aid human activities, such as a road, bridge, or canal.
- An ***object*** is a moveable artifact of functional, aesthetic, cultural, historic, or scientific value, such as a cannon, a church bell, or a prehistoric basket.

Cultural Resource Manager (CRM): As defined by AR 200-4, the Commanding Officer of each Army installation must designate a CRM to coordinate the installation's management of cultural resources. The CRM must coordinate with other installation staff early in the planning of projects and activities that may affect cultural resources. Specific duties are defined by the installation's CRMP and/or by PA and Memoranda of Agreement.

Determination of Eligibility: Under the NHPA, a property is evaluated for eligibility for inclusion to the NRHP by determining if it:

- is associated with significant historical events;
- is associated with significant historical persons;
- embodies the distinctive characteristics of a type, period, or method of construction, or is the work of a master, or has high artistic values; or
- has yielded, or is likely to yield, important information about history or prehistory.

Eligibility must be determined solely on the historical, architectural, cultural, or scientific importance of a property. Management issues and mission requirements may not be considered.

Ordinarily, properties that have achieved significance within the last 50 years are not eligible, unless it is of "exceptional importance." Importantly, an "eligible" property is treated as if it were already listed on the NRHP, and is afforded the same protection as a listed property.

Historic Property: As defined by the NHPA, a historic property is any district, site, building, structure, or object that is included in the NRHP or is eligible for inclusion in the NRHP. Historic properties may be associated with either the prehistoric and/or the historic time periods. Historic properties include those already listed on the NRHP, *as well as those not yet listed but determined to be eligible.*

Keeper of the Register: The individual who has been delegated authority by the National Park Service, on behalf of the Secretary of the Interior, to list properties and to determine their eligibility for the NRHP.

Memorandum of Agreement (MOA): A formal agreement containing the results of discussions between the federal agency, the SHPO, the ACHP, and sometimes interested persons. It documents mutual agreement of facts, intentions, procedures, and parameters for future agency actions.

Mitigation: Lessening the adverse effects an undertaking may cause to historic properties. The procedures and parameters for mitigation are stipulated in a MOA and can include:

- avoiding the effect altogether by not taking an action or by relocating the action;
- reducing or eliminating the effect over time by preservation and maintenance;
- limiting the magnitude of the undertaking;
- repairing, rehabilitating, or restoring the property;
- recovering and recording information from properties that may be destroyed or damaged;
- compensating for effect by providing substitute resources.

National Register Nomination Form: A legal document submitted to the Keeper of the Register and prepared following the technical requirements of the National Park Service. The form includes data, text maps, and photographs and must be prepared according to standards generally accepted by academic historians, architectural historians, and archeologists.

National Register of Historic Places (NRHP): Created by the NHPA, the NRHP is the master inventory of the nation's known historic properties, maintained by the National Park Service on behalf of the Secretary of the Interior. Listings include buildings, districts, structures, sites, objects those posses historic, architectural, engineering, archeological, or cultural significance.

Programmatic Agreement (PA): A formal agreement between the federal agency, the SHPO, and sometimes the ACHP to modify and/or replace the Section 106 Consultation process for numerous undertakings in a large or ongoing program.

Section 106 Consultation: The procedure for compliance with the NHPA in which the federal agency requests the comments of the SHPO and/or the ACHP when an undertaking may affect a historic property.

State Historic Preservation Officer (SHPO): Appointed by the Governor, the SHPO is an official who represents state interests in Section 106 review. In New Jersey, the SHPO is attached to the Department of Environmental Protection, Division of Parks and Forestry, Historic Preservation Office.

Undertaking: As defined by the NHPA, an undertaking is any project, action, activity, or program (any elements of these) that is under the direct or indirect jurisdiction of a Federal agency and that has the potential to have an effect on a historic property. Included are construction, rehabilitation, repair projects, demolition, planning, licenses, permits, loans, loan guarantees, grants, Federal property transfers, and many other federal activities.

APPENDIX B

Site Location Maps (from Klein et al. 1984:Appendix A)

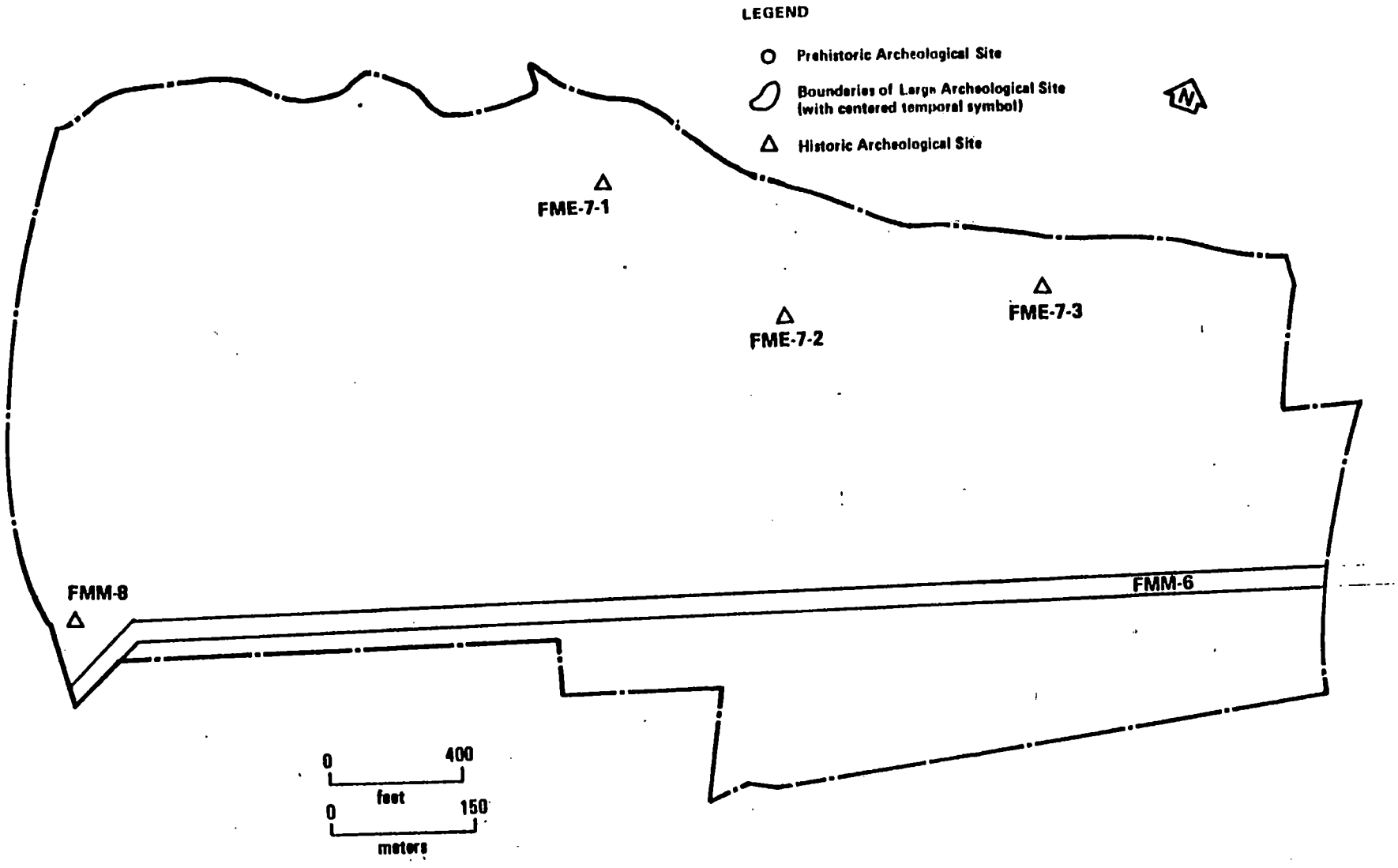

Figure A-1a. MAP OF POTENTIAL ARCHEOLOGICAL RESOURCES ON FORT MONMOUTH (MAIN POST), SUBAREA A

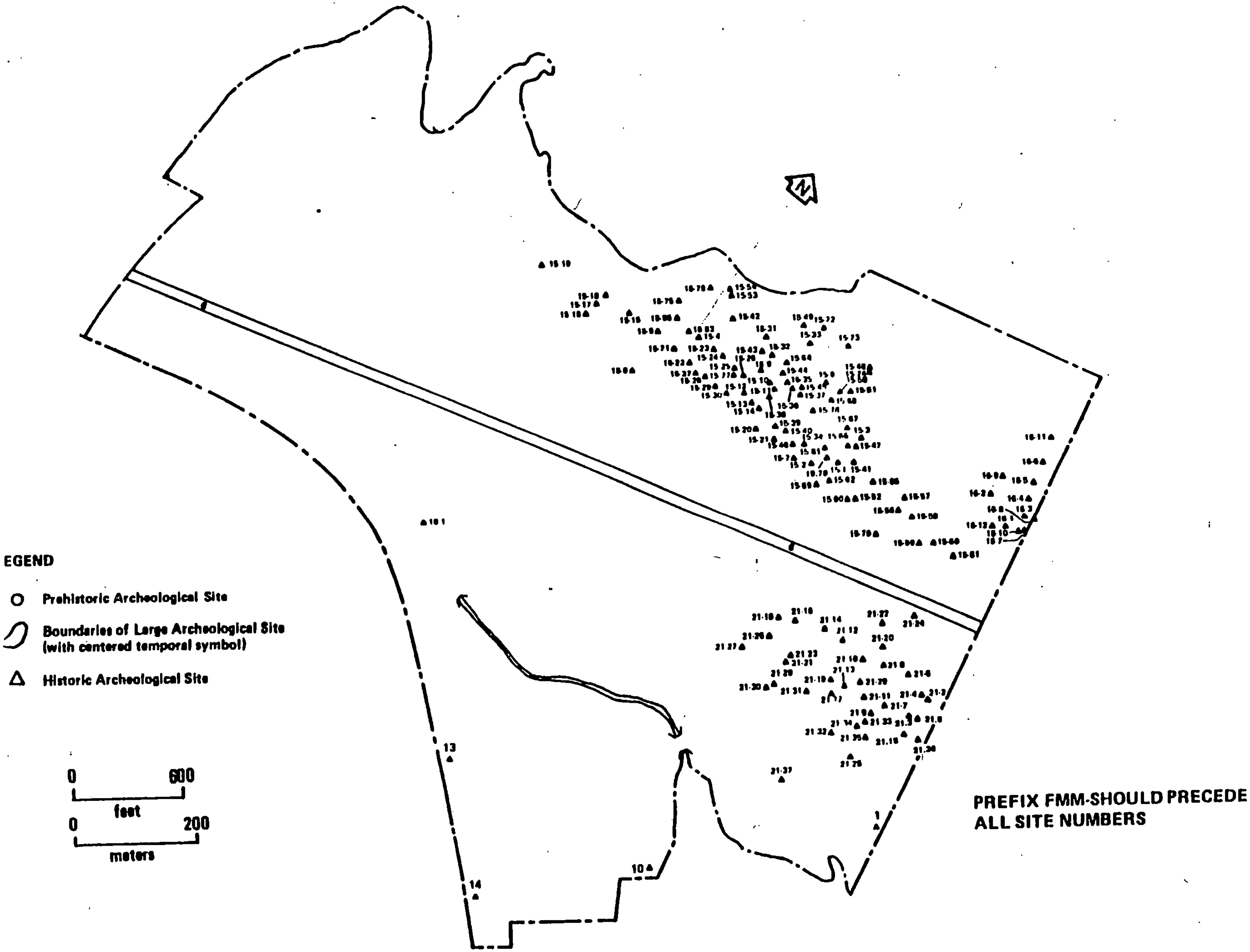

Figure A-1b. MAP OF POTENTIA' ARCHEOLOGICAL RESOURCES
[illegible]

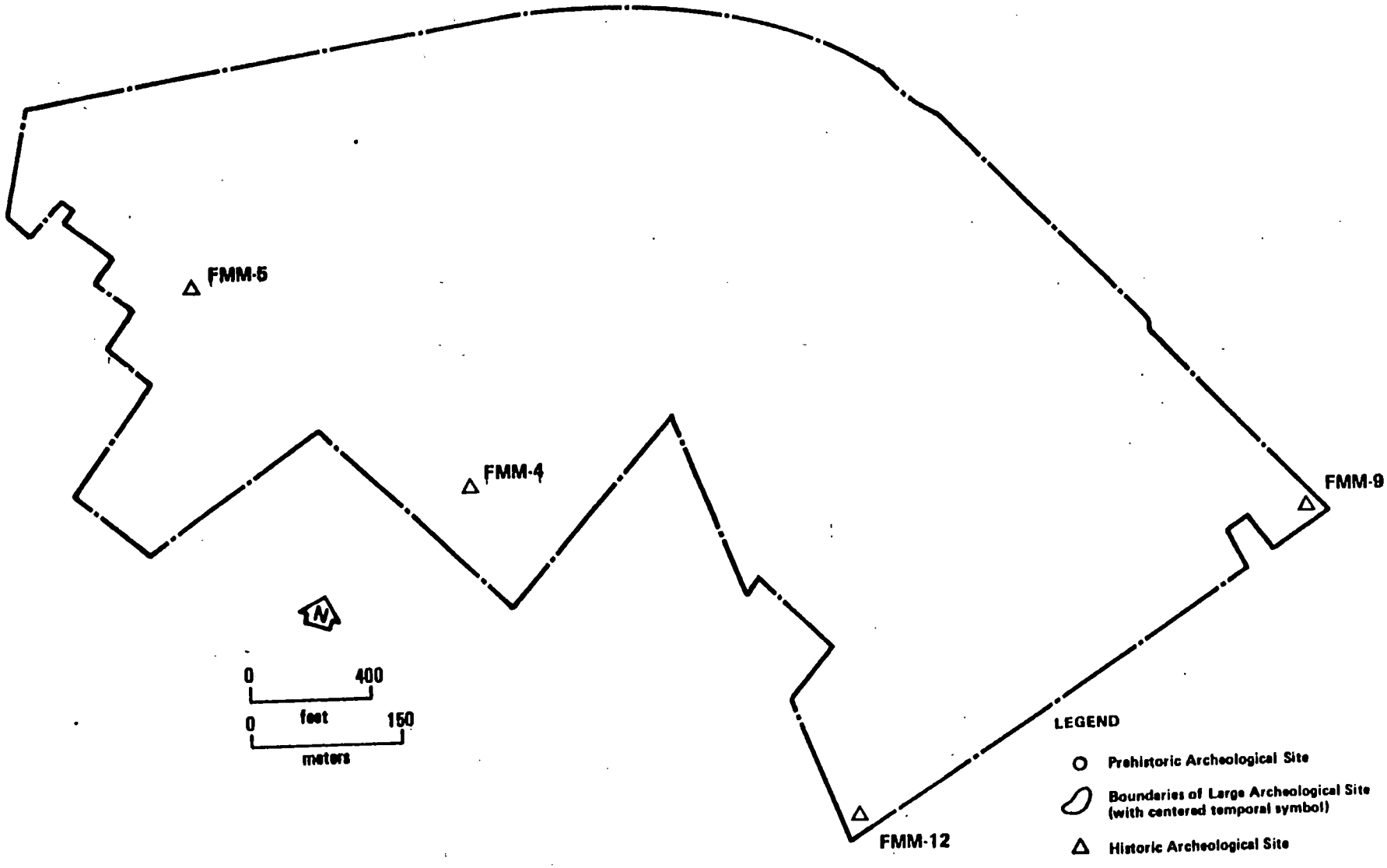

Figure A-1c. MAP OF POTENTIAL ARCHEOLOGICAL RESOURCES ON FORT MONMOUTH (MAIN POST), SUBAREA C

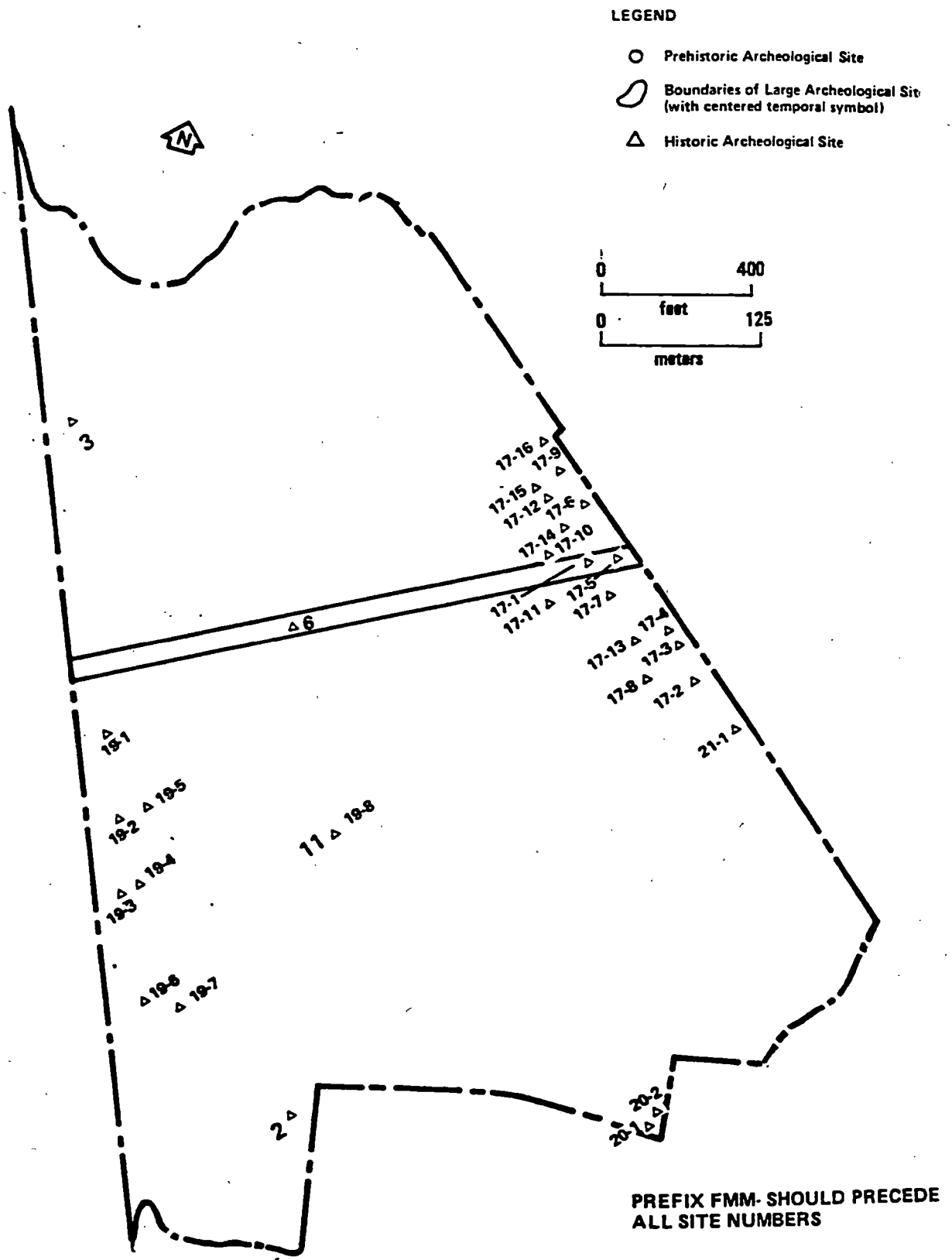

Figure A-1d. MAP OF POTENTIAL ARCHEOLOGICAL RESOURCES ON FORT MONMOUTH (MAIN POST), SUBAREA D

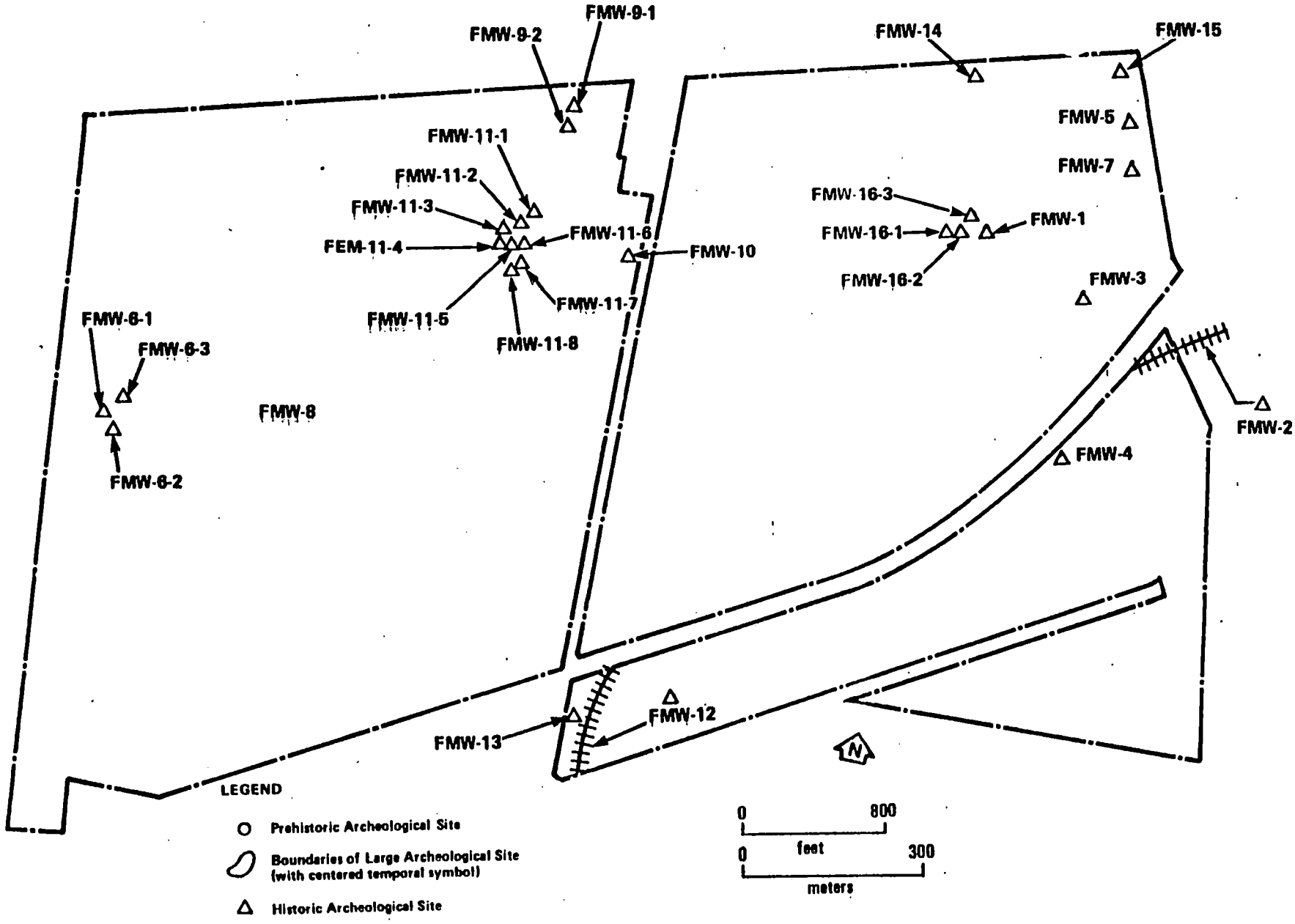

Figure A-2. MAP OF POTENTIAL ARCHEOLOGICAL RESOURCES ON FORT MONMOUTH (CAMP CHARLES WOOD)

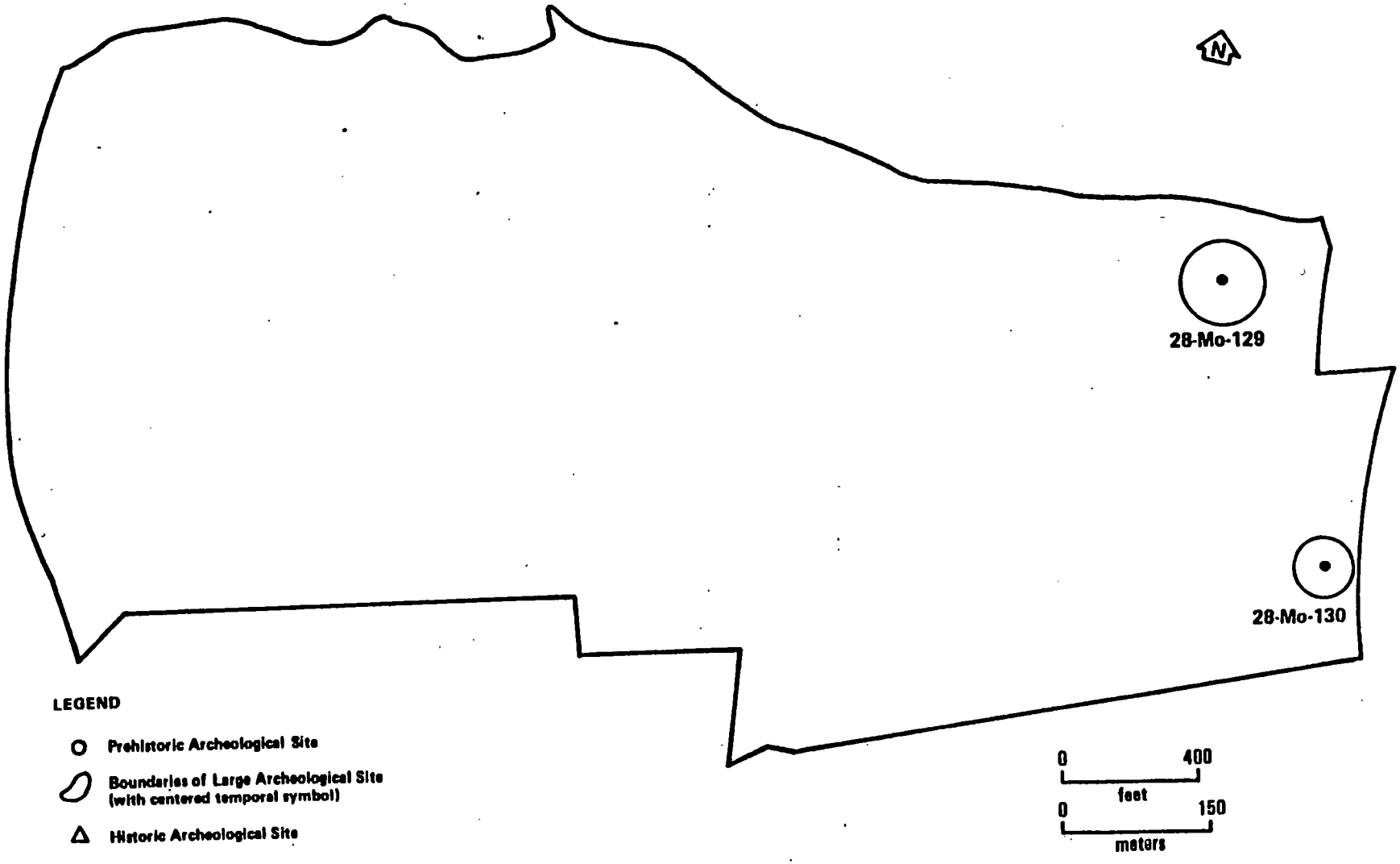

Figure A-4a. MAP OF KNOWN ARCHEOLOGICAL RESOURCES ON FORT MONMOUTH (MAIN POST), SUBAREA A

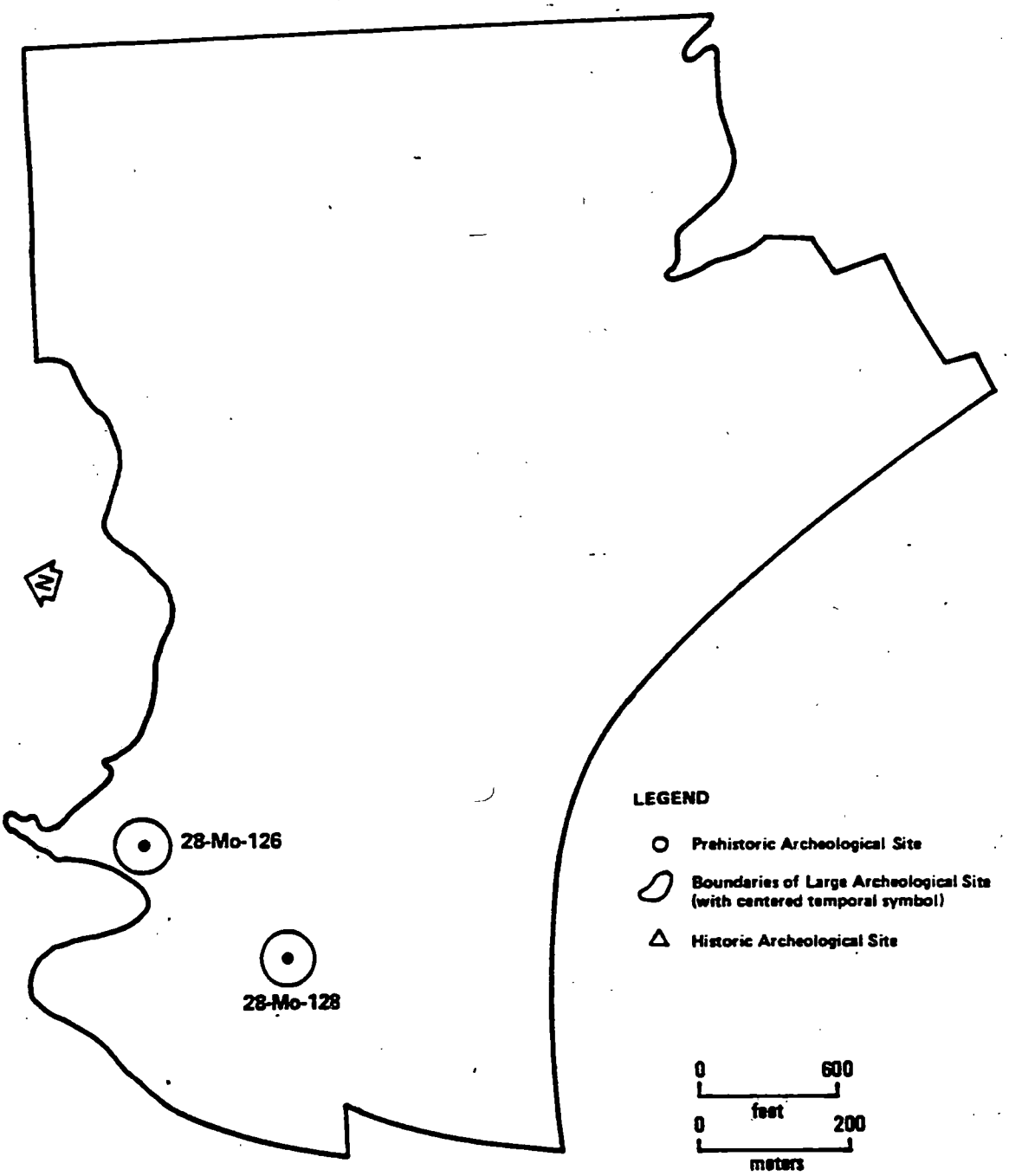

Figure A-4b. MAP OF KNOWN ARCHEOLOGICAL RESOURCES ON FORT MONMOUTH (MAIN POST), SUBAREA B

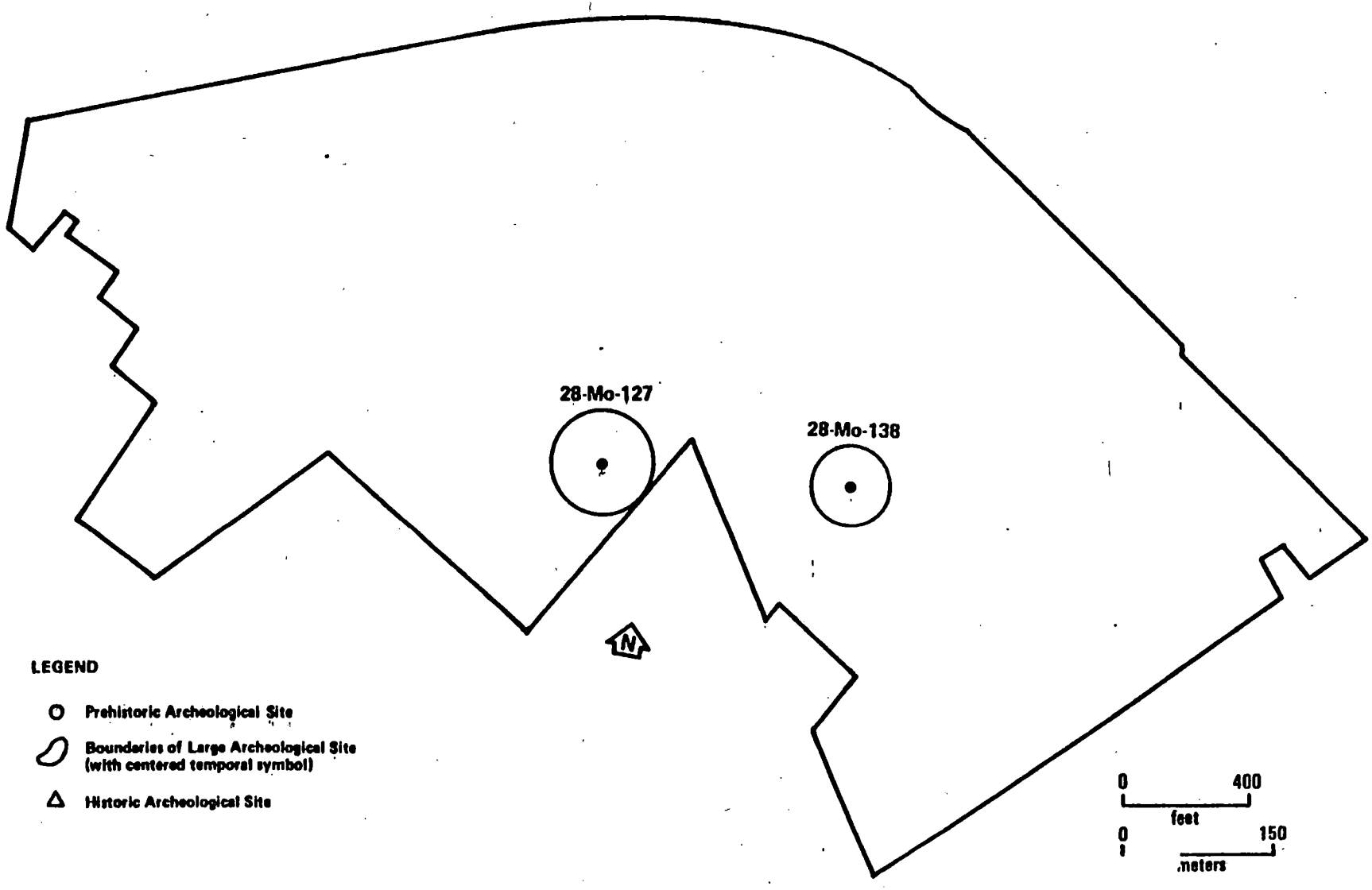

Figure A-4c. MAP OF KNOWN ARCHEOLOGICAL RESOURCES ON FORT MONMOUTH (MAIN POST), SUBAREA C

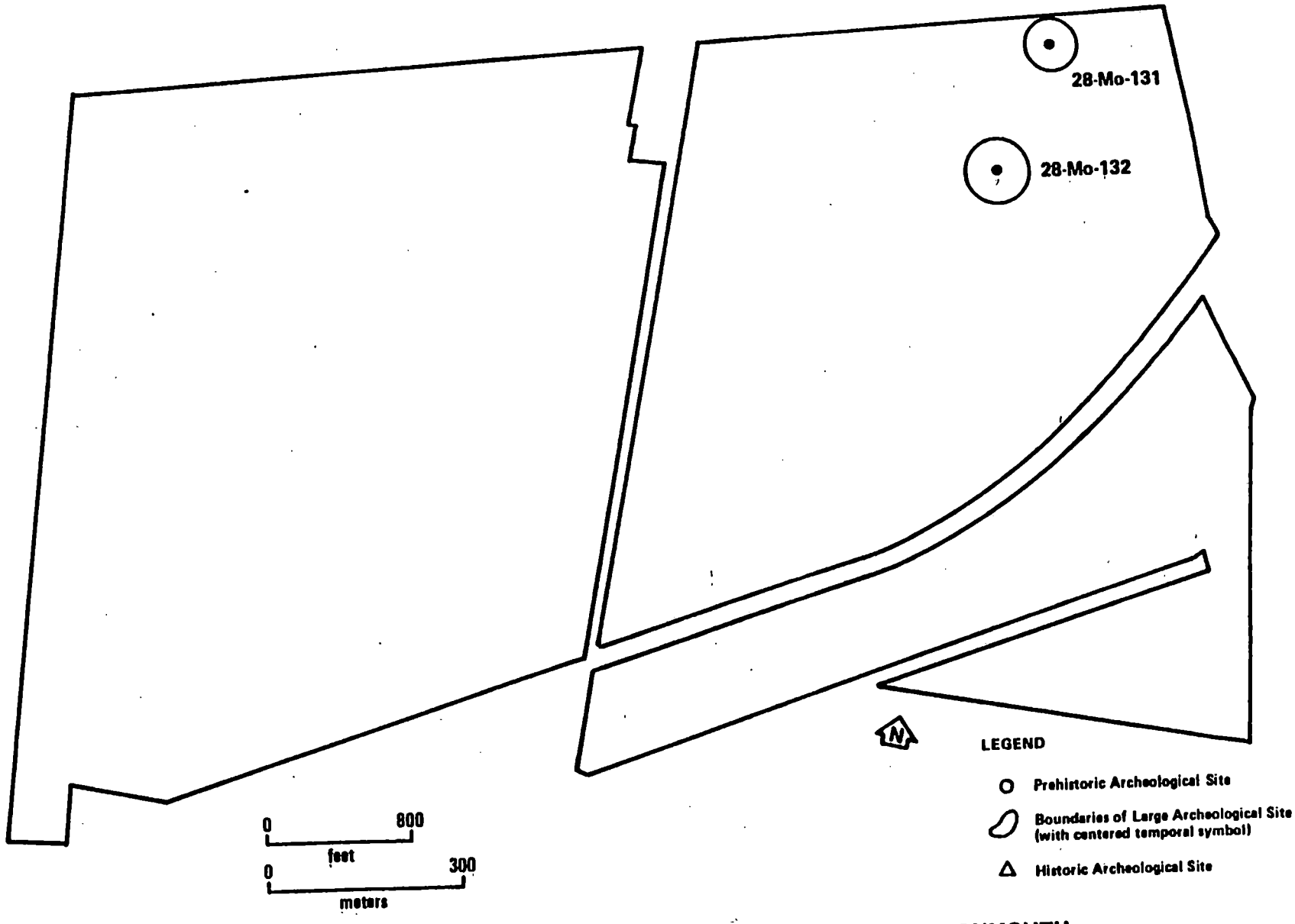

Figure A-5. MAP OF KNOWN ARCHEOLOGICAL RESOURCES ON FORT MONMOUTH (CAMP CHARLES WOOD)

APPENDIX C

Programmatic Memorandum of Agreement for Temporary World War II Structures

PROGRAMMATIC MEMORANDUM OF AGREEMENT AMONG THE UNITED STATES DEPARTMENT OF DEFENSE, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND THE NATIONAL CONFERENCE OF STATE HISTORIC PRESERVATION OFFICERS, AS AMENDED

Summary

This Programmatic Memorandum of Agreement is a working agreement that establishes procedures to be followed before temporary World War II buildings are demolished, as instructed by the United States Senate Armed Services Committee Report 97-440 to the Military Construction Authorization Bill for 1983.

The agreement states that studies will be completed in general by the Department of Defense to establish a historical context around the construction of these temporary buildings. Also, studies will be undertaken at individual installations to identify that installation's World War II development. One example of each major property type will be recorded in full. Finally, some examples of property types will be treated and preserved in accordance with Historic Preservation Plans developed by the Department of Defense and approved by the Advisory Council on Historic Preservation.

Once the stipulations of this agreement are carried out, the Department of Defense has met its requirement to consult with the Advisory Council on Historic Preservation on the treatment of all World War II temporary buildings.

PROGRAMMATIC MEMORANDUM OF AGREEMENT

AMONG

THE UNITED STATES DEPARTMENT OF DEFENSE

THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

AND THE

NATIONAL CONFERENCE OF STATE HISTORIC PRESERVATION OFFICERS

WHEREAS, the Department of Defense (DoD) has been directed by United States Senate Armed Services Committee Report 97-440 to the Military Construction Authorization Bill for 1983 to demolish World War II (1939-1946) temporary buildings (buildings); and

WHEREAS, these buildings were not constructed to be permanent facilities and were intended to be demolished; and

WHEREAS, DoD has determined that these buildings may meet the criteria of the National Register of Historic Places; and

WHEREAS, DoD has determined that its program of demolition of these buildings (program) may have an effect on their qualities of significance and has requested the comments of the Advisory Council on Historic Preservation (Council) pursuant to Section 106 of the National Historic Preservation Act, as amended, (16 U.S.C. 470f) and its implementing regulations, "Protection of Historic and Cultural Properties" (36 CFR part 800).

NOW, THEREFORE, DoD, the National Conference of State Historic Preservation Officers (NCSHPO), and the Council agree that the program will be carried out in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

I. DoD will ensure that the following are carried out:

A. In consultation with the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) (National Park Service, Washington, DC), DoD will develop documentation that includes:

1. A narrative overview of WW II military construction establishing the overall historical context and construction characteristics of each major type of building and including:

a. Explanation of the origins and derivations of the construction techniques and designs.

b. Chronology that summarizes the political and military decisions that affected scheduling, locations, quantity, design, and construction techniques. Photocopies shall be made of all military manuals used to guide significant aspects of design or construction.

c. Summary statements of major installations' WW II development including site plans, lists of buildings, photocopies of appropriate photographs, and evaluations of the significance of the various building types and groups.

2. Documentation of one example of all major building types that includes: drawings (title sheet, floor plans, sections, elevations, and isometrics of framing systems and other pertinent construction details), photographs (perspective corrected, large format negative and contact print), and appropriate explanatory data. All documentation shall meet HABS/HAER Standards for format and archival stability.

3. Submission of the above documentation to HABS/HAER, for deposit in the Library of Congress, not later than three years from the date of this agreement.

4. Development of the above documentation will be undertaken with periodic reviews by HABS/HAER to ensure that completed documents will meet HABS/HAER Standards.

B. In consultation with the Council and the NCSHPO, DoD will select some examples of building types or groups to treat in accordance with historic preservation plans (HPP), until such time as demolished or removed from DoD control. The HPPs will be submitted to the Council and the NCSHPO within three years from the date of this agreement. Work done in accordance with the HPPs will require no further review by a SHPO or the Council.

C. All buildings that are identified within sixty days of the Federal Register publication of this Agreement by organizations and individuals will be considered by DoD in its selection of examples to be documented and/or treated in accordance with Stipulations A and B above.

D. Until the documentation program is completed and HPPs have been developed for the representative sample of building types and groups, DoD will continue its current program of building demolition with caution, avoiding disposal of obviously unique and well-preserved, original buildings that are not documented.

II. NCSHPO agrees to:

A. Assist the appropriate SHPO in informing DoD within sixty days of the Federal Register publication of this agreement of buildings that they wish to have considered in the selection of examples to be documented and/or treated in accordance with Stipulations I.A. and I.B.

B. Represent all SHPOs in the consultation on a selection of examples of buildings to be treated in accordance with Stipulation I.B.

III. If any of the signatories to this Agreement determines that the terms of the Agreement cannot be met or believes that a change is necessary, the signatory will immediately request an amendment or addendum to the Agreement. Such an amendment or addendum will be executed in the same manner as the original Agreement.

EXECUTION of this Agreement evidences that DoD has afforded the Council a reasonable opportunity to comment on its program of disposal of temporary WW II buildings and that DoD has taken into account the effects of this program on historic resources.

Executive Director, Advisory Council on Historic Preservation	Department of Defense
Chairman, Advisory Council on Historic Preservation	Department of Army
President, National Conference of State Historic Preservation Officers	Department of Navy
Historic American Building Survey/ Historic American Engineering Record	U.S. Marine Corps
	Department of Air Force

Advisory
Council on
Historic
Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

AMENDMENT to the
PROGRAMMATIC MEMORANDUM OF AGREEMENT
among
THE UNITED STATES DEPARTMENT OF DEFENSE,
THE ADVISORY COUNCIL OF HISTORIC PRESERVATION,
NATIONAL CONFERENCE OF STATE HISTORIC PRESERVATION OFFICERS, and the
HISTORIC AMERICAN BUILDINGS SURVEY/ HISTORIC AMERICAN ENGINEERING RECORD, regarding
DEMOLITION OF WORLD WAR II TEMPORARY BUILDINGS

WHEREAS, the Department of Defense (DoD), the Advisory Council on Historic Preservation (Council) and the National Conference of State Historic Preservation (NCSHPO), and Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) entered into a Programmatic Memorandum of Agreement (PMOA) under Section 106 of the National Historic Preservation Act, which became effective on June 7, 1988, regarding the demolition of World War II temporary (buildings);

WHEREAS, DoD has determined that some stipulations of the PMOA cannot be met and require modification;

WHEREAS, the parties to the PMOA have consulted regarding such modifications;

NOW, THEREFORE, it is mutually agreed that the PMOA is amended as follows:

A new stipulation I.A 1.d is added, to read as follows:

d. Identification of topics for further research, and plans for the conduct of research.

Stipulation I.A.3 is amended to read as follows:

3. Submission of the above documentation to the HABS/HAER Regional Coordinators, not later than December 31, 1992.

Stipulation I.B is amended by changing its second sentence to read as follows:

The HPPs will be submitted to the Council and the NCSHPO no later than December 31, 1992.

A new stipulation IV is added to, read as follows:

A. The signatories to this Agreement will undertake to ensure that relevant research activities carried out under Memoranda of Agreement, Programmatic Agreements, and other Instruments executed pursuant

to 36 CFR Part 800 are coordinated with Implementation of this Agreement. In order to allow their results to be integrated with the development of documentation under stipulation I.

B. The signatories to this Agreement will cooperate with the National Building Museum in its development, if feasible, of a major exhibition concerning architecture and engineering in World War II, and will make information produced by research activities pursuant to this and other Agreements available to the National Building Museum for use in preparing such an exhibition. DoD will provide materials from this study to the National Building Museum for development of the exhibit.

Advisory Council on Historic Preservation

_____ _____

Executive Director Date

National Conference of State Historic Preservation Officers

_____ _____

President Date

Historic American Buildings Survey/
Historic American Engineering Record

_____ _____

Chief, HABS/HAER Date

Department of Defense

_____ _____

Deputy Assistant Secretary of Defense (Environment) Date

CULTURAL RESOURCE GUIDANCE ON WORLD WAR II TEMPORARY BUILDINGS

In 1984, Congress directed DoD in the Senate Armed Services Committee Report 97-440 to Military Construction Authorization Bill for 1983 to demolish World War II (WWII) (1939-1946) temporary buildings. Since the preservation community recognized that many such buildings would eventually be eligible for listing on the National Register of Historic Places, DoD and its component services executed a Programmatic Memorandum of Agreement (PMOA) with the Advisory Council on Historic Preservation (Council) and the National Conference of State Historic Preservation Officers (NCSHPO). The PMOA was executed by the Chairman of the Council on July 7, 1986. Under this PMOA, DoD may demolish and remove WWII temporary buildings without project-specific review under 36 CFR 800, provided DoD completes a comprehensive documentary study of the buildings, including narrative overview, drawing, photographs, and explanatory data of all major building types, and submission to the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER). An amendments to the PMOA was executed in 1990-91 by all parties.

The stipulations in the original PMOA have been fulfilled by DoD through a project conducted by the Army's Construction Engineering Research laboratory (CERL). The stipulations added in 1991 do not change the overall impact of the recordation program. On November 18, 1992, the Air Force Civil Engineer stated in a memorandum to Air Force major commands that because of the fulfillment of the PMOA stipulations, "installation commanders may now demolish or alter World War II temporary buildings without consulting with the SHPO or Advisory Council." Two exceptions were noted, one where WWII temporary buildings were contributing properties in historic districts, and one involving recordation at a National Guard base.

Some State Historic Preservation Officers (SHPOs) objected to implementation of this PMOA, arguing that it does not address the state and local significance of such buildings. The program was further clouded when, in an internal memorandum dated February 14, 1993, the Air Force Assistant for Closures and Inactivations (SAF/MIQ) directed that base closure actions must consider the potential historical significance of WWII temporary buildings based on their association with a significant event and/or person.

The PMOA does contain provisions for the consulting parties to request amendments. Until such time as amendments are executed, the existing PMOA remains in force for Section 106 compliance. Therefore, DoD activities may routinely demolish WWII temporary buildings in accordance with the PMOA, without review under 36 CFR 800, except for the Air Force closure actions noted above. Unfortunately, the PMOA does not explicitly address treatments other than demolition, since at the time it was executed Congress had simply directed DoD to remove all WWII temporary buildings and it was understood that this would occur. Actions such as rehabilitation, relocation, and renovation of WWII temporary buildings technically may not be covered. The following table illustrates which actions are/are not covered under the PMOA:

COVERED

- Demolition prior to transfer
- Demolition as a condition of transfer
- Demolition in connection with realignment
- Deferred maintenance, such that a building is "demolished by neglect"
- Transfer without any provision for treatment, in effect allowing the recipient to treat the property as it chooses.

NOT COVERED

- Rehabilitation
- Renovation
- Relocation
- Requiring rehabilitation, renovation, relocation, or preservation as a condition of transfer

APPENDIX D

Undertakings Not Requiring SHPO Review

UNDERTAKINGS NOT REQUIRING SHPO REVIEW

1. Maintenance work in existing features such as roads, fire lanes, mowed areas, ponds, and man-made ditches and berms when no new ground disturbance is proposed.

2. Planting/replanting trees and shrubs, and other gardening in previously disturbed areas.

3. Paving and repair of streets and driveways as they now exist.

4. Installation of traffic signs and the in-kind replacement of signs in NRHP districts.

5. Replacement of sidewalks, curbing, and walls in existing locations, except within NRHP districts.

6. Repair and replacement of existing electrical, cable, and telephone lines and poles, water, sewer and natural gas lines in their present configurations, alignments and depths.

7. Repair and the in-kind replacement of not more than two doors per NRHP eligible building or structure.

8. Repair and replacement of window frames and sash in NRHP eligible buildings or structures by patching, splicing, consolidating, or otherwise reinforcing or replacing deteriorated parts which do not visually detract from the interior or exterior appearance of windows.

9. Replacement of window glass within NRHP eligible buildings or structures with clear glass of the same thickness, and reglazing of windows with compatible materials.

10. Replacement of window screens.

11. Repair and minor in-kind replacement of existing trim, stairs, cabinetwork, flooring, joists, and other architectural elements for NRHP eligible buildings and structures.

12. In-kind replacement of flooring and carpeting.

13. Installation of fire, smoke and security detectors.

14. Modifications to heating, ventilation/air conditioning control systems.

15. Insulation of roofs, crawl spaces, attics, ceilings, walls, floors, and around pipes and ducts, except with materials that induce, retain, or introduce moisture.

16. Caulking and weather stripping, provided that the color of these materials is consistent with the historic character.

17. In-kind replacement of lighting fixtures.

18. Repair and replacement of existing electrical, plumbing fixtures, wiring, pipes, and the heating and cooling plants and duct work in NRHP eligible buildings and structures.

19. Installation of historically accurate hardware in the buildings within NRHP districts.