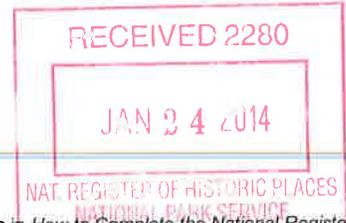


United States Department of the Interior
National Park Service



National Register of Historic Places
Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials and areas of significance, enter only categories and subcategories listed in the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Fort Monmouth Historic District

other names/site number _____

2. Location

street & number Oceanport Avenue not for publication

city or town Oceanport Borough vicinity

state New Jersey code 034 county Monmouth code 025 zip code 07703

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. I recommend that this property be considered significant nationally statewide locally. See continuation sheet for additional comments.

He Woepe 20140116
Signature of certifying official/Title Date

HQ Department of the Army, Pentagon, Washington, DC 20310
State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria. See continuation sheet for additional comments.

Signature of certifying official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that this property is:
 entered in the National Register. See continuation sheet.
 determined eligible for the National Register. See continuation sheet.
 determined not eligible for the National Register.
 removed from the National Register.
 other, (explain:) _____
Signature of the Keeper Lisa Belue Date of Action 3/12/14

Fort Monmouth Historic District

Name of Property

Monmouth, New Jersey

County and State

5. Classification**Ownership of Property**

(Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property

(Check only one box)

- building(s)
- District
- Site
- Structure
- Object

Number of Resources within Property

(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
93	12	buildings
1	0	sites
8	5	structures
0	0	objects
102	17	Total

Name of related multiple property listing

(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use**Historic Functions**

(Enter categories from instructions)

DOMESTIC/single dwelling

DOMESTIC/multiple dwelling

DOMESTIC/secondary structure

DOMESTIC/institutional housing

GOVERNMENT/fire station

GOVERNMENT/government office

RECREATION AND CULTURE/theater

HEALTHCARE/Hospital

Current Functions

(Enter categories from instructions)

DOMESTIC/single dwelling

DOMESTIC/multiple dwelling

DOMESTIC/secondary structure

DOMESTIC/institutional housing

GOVERNMENT/fire station

GOVERNMENT/government office

RECREATION AND CULTURE/museum

DEFENSE/military facility

7. Description**Architectural Classification**

(Enter categories from instructions)

LATE 19TH CENTURY AND 20TH CENTURY REVIVALS/
Colonial Revival

MODERN MOVEMENT/Art Deco

MODERN MOVEMENT/Stripped Classicism

Materials

(Enter categories from instructions)

foundation BRICK; CONCRETE

walls BRICK; WOOD; weatherboard
SYNTHETIC: vinyl

roof ASPHALT

other

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

Fort Monmouth Historic District

Name of Property

Monmouth, New Jersey

County and State

8 Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B** Property is associated with the lives of persons significant in our past.
- C** Property embodies the distinctive characteristics of a type, period or method of construction or represents the work of a master, or possesses High artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria considerations

(mark "x" in all the boxes that apply.)

Property is:

- A** owned by a religious institution or used for religious purposes.
- B** removed from its original location.
- C** a birthplace or grave.
- D** a cemetery.
- E** a reconstructed building, object or structure.
- F** a commemorative property.
- G** less than 50 years of age or achieved significance Within the past 50 years.

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____

Areas of Significance

(Enter categories from instructions)

ARCHITECTURE

MILITARY

Period of Significance

1927-1940

Significant Dates

1935

1936

Significant Person

(Complete if Criterion B is marked above)

Cultural Affiliation

N/A

Architect/Builder

Army Quartermaster Corps

Rodgers, Robert Perry

Poor, Alfred Easton

Sternfeld, Harry

Primary location of additional data

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository:

CECOM Historical Office, Aberdeen, Maryland

Fort Monmouth Historic District

Name of Property

Monmouth, New Jersey

County and State

10. Geographical DataAcreage of property 112 Acres**UTM References**

(Place additional UTM references on a continuation sheet.)

1	18	581070	4463330	3	18	582079	4463480
	Zone	Easting	Northing		Zone	Easting	Northing
2	18	581862	4463780	4	18	582216	4463230

 See continuation sheet**Verbal Boundary Description**

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared Byname/title Patti Kuhn and Sarah Groesbeck, Architectural HistoriansOrganization The Louis Berger Group, Inc. date December 2013street & number 1250 23rd Street, NW telephone 202-303-2665city or town Washington state DC zip code 20037**Additional Documentation**

Submit the following items with the completed form:

Continuation Sheets**Maps**A **USGS map** (7.5 or 15 minute series) indicating the property's location.A **Sketch map** for historic districts and properties having large acreage or numerous resources.**Photographs**Representative **black and white photographs** of the property.**Additional items**

(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name United States Army

street & number _____ telephone _____

city or town _____ state _____ zip code _____

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.470 *et seq.*)

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

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Continuation Sheet

Fort Monmouth Historic District
Monmouth County, NJ

Section number 7 Page 1

SUMMARY DESCRIPTION

The Fort Monmouth Historic District is located on the Main Post of Fort Monmouth in Monmouth County, New Jersey, 30 miles south of New York City. The historic district consists of the core buildings erected after World War I for the Signal Corps, which first established the military post in 1917 as Camp Alfred Vail. The buildings were built between 1927 and 1940 to the specifications established by the Army Quartermaster Corps for Army posts. The district consists of 118 buildings and structures, including institutional buildings constructed for Signal Corps activities as well as residential buildings for commissioned and non-commissioned officers. The buildings are situated around a large parade ground that is encircled by wide avenues. On the east end of the parade ground is Russel Hall, the command garrison headquarters built in 1936, which marked the end of the 10-year permanent construction program at Fort Monmouth. The officers' residences are situated in rows north and south of the parade ground, and a circle of larger barracks sits in the east corner of the district. Additional institutional buildings are located adjacent to the parade ground, emphasizing its purpose as the nucleus of the district. The symmetrical, orderly design of the campus, interspersed with open space, and mature landscaping and predominantly Colonial Revival-style architecture are illustrative of the design aesthetic of the Quartermaster Corps for the improvement of Army posts between World War I and World War II.

Only a small number of buildings have been added to the Fort Monmouth Historic District outside the period of significance (1927-1940). In addition, the overall plan and individual buildings and structures have undergone few changes, giving the district a high level of integrity. Of the 119 resources in the district, 102 are contributing and 17 are non-contributing.

DETAILED DESCRIPTION

LOCATION AND SETTING

Fort Monmouth is located in the coastal area of Monmouth County, New Jersey, approximately 30 miles south of New York City. The installation is flanked by two branches of the Shrewsbury River: Parker Creek on the north and Oceanport Creek on the south. The Fort Monmouth Historic District is located on the Main Post of the installation and is accessible from Oceanport Avenue. The section of the Main Post directly west of Oceanport Avenue is one of the oldest on the installation, and its landscape and architecture are emblematic of standardized designs for Army posts instituted by the Army Quartermaster Corps after World War I.

PLAN AND ROAD SYSTEM

The Fort Monmouth Historic District is arranged on a symmetrical east/west axis that accentuates its military use. Following the planning guidelines of the Quartermaster Corps, Fort Monmouth features areas defined by hierarchy and use that are interspersed with open space. Its plan is centered on a large rectangular parade ground that is the nucleus of the historic district.

Fronting the main entrance to the historic district off Oceanport Avenue is a triangular-shaped green known as Cowan Park that provides a direct view of Russel Hall, which stands prominently on the west side of the park on Sanger Avenue. Cowan Park is formed by Russel Avenue on the northeast, Hildreth Avenue on the southeast, and Sanger Avenue on the west. A flagpole stands in the center of the park and is encircled by a concrete sidewalk (Photo 1). A memorial plaque dedicated to Col. Arthur S. Cowan is located in front of the flagpole. Colonel Cowan has the sole distinction of serving as Commander at Fort Monmouth on two separate occasions, 1917-1918 and 1929-1937.

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Monmouth County, NJ

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Bordering Russel Hall on the west is the large parade ground, known as Greely Field. The parade ground is an open, grassy area that provides sweeping views of the historic district. It also marks the location of the nineteenth-century Monmouth Park Race Track, which stood on the property prior to the establishment of Camp Alfred Vail (now Fort Monmouth) in 1917. The parade ground not only serves as a functional area but also divides the district by use. Commissioned Officers' Quarters stand on the north side of the parade ground, and Non-Commissioned Officers' Quarters are located on the south side.

On the north side of the parade ground, the Commissioned Officers' Quarters line Russel Avenue and Allen Avenue. Between these two rows of houses is Voris Park, a narrow, rectangular green shaded by mature trees. The Commanding Officer's Quarters stands notably on the west end of the park, facing the rows of officers' houses. Four-family houses and the Bachelors Officers' Quarters are situated on the northeast corner of the parade ground along Housing Avenue and Carty Avenue. An alley separates the two rows of quarters and allows access to shared garages, located between the buildings. Northeast of the officers' housing area is Allison Hall, the former hospital, which stands at the end of Barton Avenue on the northeastern edge of the historic district. Squier Hall, formerly Squier Laboratory, stands west of the Commissioned Officers' Quarters on Sherrill Avenue and marks the northwestern edge of the historic district.

The Non-Commissioned Officers' Quarters flank Gosselin Avenue on the south side of the parade ground. East of the houses is Kaplan Hall (the former theater), the firehouse, and the Enlisted Men's Barracks. The firehouse and the Enlisted Men's Barracks are arranged in a circular configuration around Barker Circle.

Although the plan and road system of Fort Monmouth essentially remain intact, alterations have occurred since 1940 as the installation expanded. Between 1940 and 1941, wide avenues were erected to border the parade ground: Sherrill on the north, Saltzman on the south, Malterer on the west, and Wallington on the east. Prior to the construction of these roads, the parade ground was slightly larger on its western end and terminated perpendicular to Squier Hall. In 1952 a World War II memorial was erected on the north side of the parade ground along Sherrill Avenue. A Post Chapel and a Healthcare Building were constructed in 1962 and 1969, respectively, on the west end of the parade ground along Malterer Avenue. Several parking areas located in the historic district were built after 1940, including parking areas flanking Wallington Avenue west of Russel Hall, a parking area located along the west side of Kaplan Hall, and parking areas on the north side of the Post Chapel and Healthcare Building.

INSTITUTIONAL BUILDINGS

Following the guidelines of the Quartermaster Corps, the institutional or public buildings of Fort Monmouth were located near open spaces and had adequate parking. Russel Hall (Building 286), built as the command headquarters in 1936, serves as the centerpiece of the district and stands prominently facing the main entrance to the installation. Squier Laboratory (Building 283, now Squier Hall), built in 1935, is located on the northwest corner of the parade ground facing Sherrill Avenue. Both Russel Hall and Squier Laboratory were designed by architects in collaboration with the Quartermaster Corps. The construction of Russel Hall marked the end of the 10-year permanent construction program at Fort Monmouth.

Russel Hall

Russel Hall was built in 1936 as the command headquarters and classroom building for the Signal Corps School (Photo 2). Philadelphia architect Harry Sternfeld designed the building in collaboration with the Quartermaster Corps Office of Construction. The Art Deco building displays a shift from the Colonial Revival style that dominates the majority of the buildings built by the Quartermaster Corps on Fort Monmouth between 1927 and 1940. The building has a rectangular

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footprint with a four-story five-bay main block flanked by three-story wings and a flat parapet roof. It is of steel-frame construction with a limestone-clad raised basement and a five-course American-bond brick veneer. The main block projects slightly from the wings and features an Indiana limestone frontispiece. Flanking the main entrance, which is centered on the façade, are limestone reliefs depicting the Signal Corps in the Civil War and World War I. The frontispiece is pierced on the second and third stories by two rows of one-over-one metal-sash replacement windows. Above the windows is a limestone relief of the Great Seal of the United States. The wings are fenestrated by paired one-over-one metal sash replacement windows. Decorative brick spandrels separate the first, second, and third stories of the wings. A wide frieze of soldier bricks and a cornice of brick bands decorate the wings. Alterations to the building include enclosed brick stairwells that are located on the side elevation of the wings and the replacement of original windows. The building retains a high level of integrity.

Squier Laboratory

Squier Laboratory was completed in 1935 and designed by New York City architects Rodgers and Poor (Photo 4). The building originally consisted of two parts: the laboratory section and the shop section. These two sections consist of the south two-story main block and the north one-story wing. The building was expanded in 1947 with a two-story wing on the west. The main block and west wing of Squier Laboratory stand two stories tall and are constructed of structural steel with a brick veneer. The two sections are capped with flat roofs. The main block and wing are fenestrated by horizontal bands of metal-sash awning windows. The centered main entrance on the main block is distinguished by full-height concrete piers faced in brick. The one-story north laboratory wing is constructed of structural steel framing clad in brick. The laboratory wing is characterized by its sawtooth roof and large industrial windows. The original windows have been replaced, and stucco has been applied to the exterior brick between the first and second stories and on the cornice of the main block and wing. Regardless of these changes, the building retains a high level of integrity.

COMMUNITY SUPPORT BUILDINGS

The community support buildings—Allison Hall (Building 209), the former hospital; Kaplan Hall (Building 275), the former theater; the Fire Station and Guard House (Building 282); the Post Chapel (Building 500) (Photo 20); and the Healthcare Building (Building 501) (Photo 21)—are all located in prominent locations on the campus, facing the parade ground or large expanses of open space. All have ample adjacent parking. These characteristics, along with the building plans (except the Chapel and the Healthcare Building), were designed to the specifications of the Quartermaster Corps.

Allison Hall

The hospital, Allison Hall (Building 209), along with the enlisted men's barracks (Buildings 205-208), was one of the first buildings constructed on Fort Monmouth under the Army's permanent building campaign (Photo 3). Allison Hall faces south toward Signal Avenue and is a masonry building with an H-shaped footprint with a rear projecting wing. Typical of post hospitals built by the Quartermaster Corps, the building has a central administration main block with flanking ward wings. The building was constructed in two phases: the main block and the east wing were completed in April 1928, and the west wing and rear wing were completed in 1934. The building is two stories above a raised basement. The walls are constructed of five-course American-bond brick and are capped with cross-hipped asphalt-shingle roofs. Windows are one-over-one metal-sash replacement, each capped with a one-light awning window. The main entrance is centered on the façade and is sheltered by a concrete portico ornamented by paired Tuscan columns, an unadorned frieze, an ogee cornice, and a balustrade. Three-bay-wide projecting bays on the main (south) elevation of the wings and the east and west elevations of the wings originally featured two-story screened sun porches, which are typical of Quartermaster Corps-

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designed hospitals from this time period. The porches have since been enclosed and are clad in stucco and pierced by one-over-one metal-sash windows.

Kaplan Hall

Kaplan Hall (Building 275), the former theater and currently the Communications Museum, stands on the south side of Gosselin Avenue, east of the Non-Commissioned Officers' Quarters, and faces north (Photo 5). Typical of Army posts, the theater was located near the barracks, which stand directly east of the theater. Following the standardized plans of the Quartermaster Corps, the Colonial Revival-style two-story building is masonry construction of five-course American-bond brick and is capped with a front-gable asphalt-shingle roof. The main (north) elevation is ornamented by a wood ogee cornice with a closed pediment. The first story is pierced by two centered double-leaf wood doors separated by a wood panel, likely the original location of the ticket booth. Lettering on the awning's frieze reads "US Army Communications Museum Kaplan Hall." The center doors are flanked by single arched openings ornamented by keystones. The west opening holds a single-leaf six-light wood-paneled door capped with a fanlight. The east arched opening has been enclosed with brick. The second story of the main elevation has five six-over-six wood-sash windows with stone sills and jack-arched lintels decorated with keystones. A semicircular wood-sash multi-light window pierces the center of the pediment.

Fire Station and Guard House

The fire station and guard house (Building 282) faces northwest toward Hildreth Avenue and stands between Buildings 205 and 206 (Enlisted Men's Barracks) (Photo 6). Like most fire stations built by the Quartermaster Corps, the building also served as a guard house and was built in a prominent location that was accessible to the major roads on the installation. The masonry building sits on a solid concrete foundation and watertable and has a two-story main block with flanking one-story wings and a one-story rear ell. The main block, wings, and ell are all constructed of five-course American-bond brick. The main block is capped with a hipped asphalt-shingle roof with a wood frieze and ogee cornice. An intersecting pedimented bay projects slightly from the main (northwest) elevation and is ornamented by brick quoins. The first story of the main elevation is fenestrated by two segmental-arched openings outlined with double header course voussoirs and concrete impost blocks and keystones. The keystones are marked with the numbers two and three. The openings hold roll-up metal vehicular doors. A single-leaf wood door with a Colonial Revival-style wood surround is located south of the arched openings. The flanking one-story wings have flat parapet roofs and hold roll-up metal vehicular doors on the northwest elevation. The wings have a concrete belt course near the roofline, and the door openings have keystones marked with the numbers one and four. The wings have been expanded since the construction of the building. The building is further fenestrated on its remaining elevations by one-over-one metal-sash windows capped with transom windows. The windows have jack-arched lintels and concrete sills.

Chapel

The chapel (Building 500) (Photo 20) was built in 1962 on the west end of the parade ground. The building faces west on Malterer Avenue. It consists of the chapel and a classroom wing, which are connected by a hyphen. The chapel forms the north section of the building complex and stands two stories tall with exterior walls of stretcher-bond brick. The building is capped with a front-gable asphalt-shingle roof pierced by a steeple and a large interior chimney. The façade has an inset entry with full-height brick piers, a double-leaf metal door on the first story, and a large multi-light fixed window on the second story. The side elevations are lit by large stained-glass windows. The hyphen and the classroom wing are one-story and have walls of stretcher-bond brick with gable asphalt-shingle roofs. Windows are two-over-two vertical sash.

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Entrances to the classroom wing are located on its west and south elevations. The chapel was build outside the period of significance (1927-1940) of the historic district and is non-contributing.

Healthcare Building

The Healthcare Building (Building 501) (Photo 21) stands on the northeast corner of Salzman and Malterer avenues south of the chapel and is set back from the road. The one-story brick building has an L-shaped footprint and a cross-gable asphalt-shingle roof. The main (west) elevation is five bays wide with a centered double-leaf wood door lit by a six-light window and flanked by sidelights. A one-story flat-roofed porch shelters the main entrance and is supported by paired wood posts. The façade is further fenestrated by eight-over-eight vinyl-sash windows with louvered shutters. Single-leaf wood doors and eight-over-eight vinyl-sash windows with louvered shutters are located on the remaining elevations. The Healthcare Building was constructed in 1969, outside the district's period of significance (1927-1940), and is non-contributing.

RESIDENTIAL BUILDINGS

Officers' Housing Area

The officers' housing area at Fort Monmouth was constructed in two general areas. Dwellings for the field officers, company officers, and the commanding officers were built on Russel and Allen avenues on the north side of the parade ground. Student officers' quarters were built on a diagonal off the northeast corner of the parade ground. The bachelor officers' quarters (BOQ) were built northwest of the student officers' quarters facing Signal Avenue. All of the officers' dwellings were built to the standardized plans of the Quartermaster Corps with ample setbacks from the roads, five-course American-bond brick exterior walls, and Colonial Revival-style forms and architectural detailing.

Field, Company, and Commanding Officers' Quarters

The officers' dwellings on Russel and Allen avenues were built with the houses facing a central open space, Voris Park. Construction began in 1927 and ended in 1935. The houses consist of two types: single-family dwellings for field officers and the commanding officer, and two-family dwellings for company officers (Photos 12 and 13).

The two-family dwellings were built in three phases: Buildings 211-213 were completed in 1927; Buildings 214, 218, 219, and 225-228 in 1932; and Buildings 220, 222, and 223 in 1935. The identical buildings have symmetrical fenestration, a Colonial Revival-style pedimented door surround, gabled dormers, and rear sun porches. Two-car garages were built between the dwellings (Photo 14).

Four single-family houses for field officers were built between 1931 and 1934. Buildings 215 and 216 were completed in 1931 and are the smallest of the single-family types. They are two-story, three-bay dwellings with a square footprint and a central hall plan. The dwellings are capped with hipped roofs. Buildings 221 and 224, built in 1934, are substantially larger with rectangular footprints, two and one-half stories, and two flanking wings, one holding a garage. These larger houses also feature exterior-end brick chimneys, three gabled dormers, and a centered Colonial Revival-style portico.

The commanding officer's residence, built in 1936, was the final house to be constructed in the area (Photo 11). The dwelling stands on the west end of the park, giving it an imposing presence in the housing area. The single dwelling stands two and one-half stories above a solid concrete foundation and has a rectangular footprint with a one-and-a-half-story attached garage on its south side. The main block is seven bays wide, and the center three bays project slightly from

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the façade and are capped with a closed pediment. The façade is symmetrically fenestrated by six-over-six replacement windows ornamented by jack-arched lintels with keystones. The main entrance is a centered double-leaf wood-paneled door sheltered by a wood portico featuring paired Tuscan columns, a dentil cornice, and a wood balustrade. The rear elevation of the dwelling features a two-story wood-frame enclosed porch with wood pilasters.¹

Student Officers' Four-Family Apartment Buildings

Nine four-family apartment buildings for Commissioned Officers were built adjacent to Russel Hall between 1929 and 1932 for student officers (Photo 15). The location was ideal for the student officers who attended classes at Russel Hall. The houses are situated on two streets (Housing and Carty avenues) with a center service alley for access to the adjacent garages. The four-family dwellings appear as mirrored twin houses, but each side has two entrances with an apartment on each floor. The buildings have side-gable roofs, are symmetrically fenestrated, and feature enclosed sun porches on each side elevation. Four-car garages are located behind the apartments and are accessible from an alley (Photo 16).

Bachelor Officers' Quarters

The Bachelor Officers' Quarters (Buildings 270 and 271) stand on the south side of Signal Avenue (Photo 17). Building 270 is the larger of the two buildings and was built in 1929. Building 271 followed in 1931. The two-story buildings have H-shaped footprints and Building 270 has a rear one-story wing. The Colonial Revival-style buildings are constructed of concrete block clad in a five-course American-bond brick veneer and are capped by hipped asphalt-shingle roofs with overhanging eaves. Building 270 is distinguished by a one-story porch that lines the façade. The porch features brick Tuscan posts and a wood balustrade. A one-story porch with Tuscan brick posts and a wood balustrade also lines the façade of Building 271, but it has not been enclosed. The first floor of Building 270 contained a combined assembly and dining room with a lounge, an office for the Fort Monmouth Army Officers' Mess, a bar, a lady's retiring room, and four apartments. The second floor held 12 apartments, and the attic held quarters for two servants. The rear was designed for a kitchen and boiler room. Building 271 was similar in layout but with eight apartments.²

Enlisted Men's Barracks

The enlisted men's barracks marked the first phase of permanent construction at Fort Monmouth along with the hospital, Allison Hall (Building 209) (Photo 7). In 1927 the Quartermaster Corps constructed four barracks (Buildings 205-208) that followed the established standardized plans. The buildings are three stories and constructed of reinforced concrete framing, both common features of Quartermaster Corps-designed barracks. The barracks' walls are 8-inch hollow tile clad in a 4-inch brick veneer, furthering their fireproof quality. Each of the barracks has a three-story rear projecting wing, which were designed to hold the kitchens and lavatories. The overall rectangular form, side-gable roof, and red-brick veneer all evoke the Colonial Revival style; however, compared to Allison Hall and the subsequent housing constructed at Fort Monmouth, these buildings lack architectural ornamentation, suggesting their status as barracks. An additional barracks (Building 287) was built in 1940, following the same construction methods and appearance as the earlier barracks. The original multi-light metal casement windows and transoms have been replaced with one-over-one metal-sash capped with one-light transoms. Enclosed stairwells constructed of poured concrete have also been added to the side elevations of the buildings.

Non-Commissioned Officers' Housing Area

The non-commissioned housing area consists of 25 twin dwellings that line Gosselin Avenue on the south side of the parade ground (Photos 8 and 9). Six garages are interspersed between the houses and are accessible from Gosselin

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Avenue. The buildings are set back from the road; however, the setbacks are not as large as along Russel and Allen avenues in the commissioned officers' quarters area. Construction began on the dwellings in 1927 and continued through 1934. The first dwellings were built on the east end of Gosselin Avenue and progressed westward.

As stipulated by the Quartermaster Corps, Non-Commissioned Officers' Quarters were two-story twin houses, with a living room on the lower floor and two bedrooms and a bath on the second floor³. All of the buildings have the same rectangular footprints, five-course American-bond brick exterior walls, and symmetrical fenestration; however, the buildings are differentiated by varying Colonial Revival-style entrances and hipped or gable roofs. Each dwelling was built with a one- or two-story brick or frame screened-in porch on the side elevations that were later enclosed with windows. The majority of the original windows have been replaced with six-over-six vinyl sash, and the slate-shingle roofs have been replaced with asphalt shingles. The side porches appear to have been removed from Buildings 233 and 234, and Building 234 has been altered to be a single-family house. However, the Non-Commissioned Officers Quarters retain a high level of integrity, and the Colonial Revival Style form and details of the dwellings are illustrative of the standard plans of the Quartermaster Corps.

Wood-frame garages (Buildings 331-336) were built for the Non-Commissioned Officers' Quarters in 1934 (Photo 10). Four garages are located on the south side of Gosselin Avenue, one between every four houses. Two garages are located on the north side of the street, between Buildings 240 and 242 and between 248 and 250. The garages are set slightly back from the houses. The garages are one-story and are eight or 10 bays wide. They have been covered in vinyl siding and have vinyl roll-up doors. Because of alterations made to the buildings, the garages are non-contributing to the historic district.

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INVENTORY

The following is an inventory of resources located within the Fort Monmouth Historic District boundaries. The inventory consists of a table of all resources followed by detailed descriptions.

All resources have been considered either contributing or non-contributing based upon the areas of significance identified under Criteria A and C (Military and Architecture), and based upon the period of significance identified as 1927-1940. All non-contributing resources have therefore been noted as less than 50 years old, lacking significance, or having been significantly altered so that they no longer reflect their historical appearance or character.

BUILDING NO.	NAME/USE	TYPE	STATUS
115	World War II Memorial	Structure	Non-Contributing
145	Instruction Building	Building	Non-Contributing
205	Barracks	Building	Contributing
206	Barracks	Building	Contributing
207	Barracks	Building	Contributing
208	Barracks	Building	Contributing
209	Allison Hall	Building	Contributing
211	Quarters	Building	Contributing
212	Quarters	Building	Contributing
213	Quarters	Building	Contributing
214	Quarters	Building	Contributing
215	Quarters	Building	Contributing
216	Quarters	Building	Contributing
218	Quarters	Building	Contributing
219	Quarters	Building	Contributing
220	Quarters	Building	Contributing
221	Quarters	Building	Contributing
222	Quarters	Building	Contributing
223	Quarters	Building	Contributing
224	Quarters	Building	Contributing
225	Quarters	Building	Contributing
226	Quarters	Building	Contributing
227	Quarters	Building	Contributing
228	Quarters	Building	Contributing
229	Quarters	Building	Contributing
230	Quarters	Building	Contributing
233	Quarters	Building	Contributing
234	Quarters	Building	Contributing
235	Quarters	Building	Contributing

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236	Quarters	Building	Contributing
237	Quarters	Building	Contributing
238	Quarters	Building	Contributing
239	Quarters	Building	Contributing
240	Quarters	Building	Contributing
241	Quarters	Building	Contributing
242	Quarters	Building	Contributing
243	Quarters	Building	Contributing
244	Quarters	Building	Contributing
245	Quarters	Building	Contributing
246	Quarters	Building	Contributing
247	Quarters	Building	Contributing
248	Quarters	Building	Contributing
249	Quarters	Building	Contributing
250	Quarters	Building	Contributing
251	Quarters	Building	Contributing
252	Quarters	Building	Contributing
253	Quarters	Building	Contributing
254	Quarters	Building	Contributing
255	Quarters	Building	Contributing
256	Quarters	Building	Contributing
257	Utility Building	Building	Non-Contributing
258	Quarters	Building	Contributing
260	Sewage Lift Station	Building	Contributing
261	Quarters	Building	Contributing
262	Quarters	Building	Contributing
263	Quarters	Building	Contributing
264	Quarters	Building	Contributing
265	Quarters	Building	Contributing
266	Quarters	Building	Contributing
267	Quarters	Building	Contributing
268	Quarters	Building	Contributing
269	Quarters	Building	Contributing
270	Quarters	Building	Contributing
271	Quarters	Building	Contributing
275	Museum	Building	Contributing
282	Fire House	Building	Contributing
283	Squier Hall	Building	Contributing

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286	Russel Hall	Building	Contributing
287	Barracks	Building	Contributing
288	Administration Building	Building	Non-Contributing
301	Garage	Building	Contributing
302	Garage	Building	Contributing
303	Garage	Building	Contributing
304	Garage	Building	Contributing
305	Garage	Building	Contributing
306	Garage	Building	Contributing
307	Garage	Building	Contributing
308	Garage	Building	Contributing
309	Garage	Building	Contributing
310	Garage	Building	Contributing
312	Garage	Building	Contributing
313	Garage	Building	Contributing
314	Garage	Building	Contributing
315	Garage	Building	Contributing
316	Garage	Building	Contributing
317	Garage	Building	Contributing
318	Garage	Building	Contributing
319	Garage	Building	Contributing
320	Garage	Building	Contributing
321	Garage	Building	Contributing
322	Garage	Building	Contributing
323	Garage	Building	Contributing
324	Garage	Building	Contributing
325	Garage	Building	Contributing
326	Garage	Building	Contributing
327	Garage	Building	Contributing
328	Garage	Building	Contributing
331	Garage	Building	Non-Contributing
332	Garage	Building	Non-Contributing
333	Garage	Building	Non-Contributing
334	Garage	Building	Non-Contributing
335	Garage	Building	Non-Contributing
336	Garage	Building	Non-Contributing
500	Post Chapel	Building	Non-Contributing
501	Health Care Building	Building	Non-Contributing

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549	Power Plant	Building	Non-Contributing
	Parade Ground	Site	Contributing
	Russel Avenue	Structure	Contributing
	Hildreth Avenue	Structure	Contributing
	Gosselin Avenue	Structure	Contributing
	Allen/Signal Avenues	Structure	Contributing
	Sangar Avenue	Structure	Contributing
	Carty Avenue	Structure	Contributing
	Barton Avenue	Structure	Contributing
	Housing Avenue	Structure	Contributing
	First Avenue/Barker Circle	Structure	Non-Contributing
	Wallington Avenue	Structure	Non-Contributing
	Saltzman Avenue	Structure	Non-Contributing
	Sherrill Avenue	Structure	Non-Contributing

DETAILED INVENTORY

Building 115, World War II Memorial (Photo 18)

Resource Type/Number: Memorial/1 Non-Contributing Structure

Style: Streamline Moderne

Date/History: 1952

Architectural Description: Building 115 is a one-story memorial dedicated to the Signal Corps members who gave their lives during World War II. The structure consists of a central concave/convex section flanked by two rectangular wings that hold small utility rooms. The memorial sits on a solid foundation with a concrete watertable, and its walls are constructed of five-course American-bond brick. It has a flat roof ornamented by a wide concrete frieze. The convex (south) side of the monument is broken by six symmetrically placed concrete pilasters. In the center of the columns is a bronze plaque that reads "Rededicated on 11 November 1993 in Recognition of 50th Anniversary Celebrations of World War II." The frieze above the pilasters is inscribed with the words "Memory of Our Dead World War II." Between the words "World" and "War" is the Signal Corps insignia. Three horizontal marble belt courses ornament the rectangular wings on the north elevation.

The south elevations of the flanking wings are each ornamented with concrete pilasters that project from the building at a 30-degree angle and are further decorated by vertical ribbing. Three marble belt courses wrap the wings on their upper portions near the frieze. An inscription on the frieze reads "Valor – Fidelity" with the Signal Corps insignia placed between the two words. A concrete viewing platform projects from the south elevation and is lined with a five-course American brick wall and is accessed by concrete stairs. Small square one-light metal-sash windows with rowlock sills pierce the rectangular end wings on the south elevation and on their elevations that face inward toward the viewing platform. The outer elevations of each wing are pierced by a single-leaf metal door with a semi-circular enclosed transom. The structure was built outside the period of significance (1927-1940) and is therefore non-contributing to the Fort Monmouth Historic District.

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Building 145, Instruction Building

Resource Type/Number: Education Building/1 Non-Contributing Building

Style: Utilitarian

Date/History: 1941

Architectural Description: Building 145 stands on the north side of Building 288 and faces south. The one-story wood-frame building has a rectangular footprint and sits on a solid parged concrete foundation and has been clad in vinyl siding. The building is capped with a side-gable asphalt-shingle roof with slightly overhanging eaves. All windows are one-over-one metal-sash. The main elevation has two square and two standard window openings, a single-leaf metal door, and a double-leaf metal door. The east elevation has two standard window openings. The rear elevation is pierced by a single-leaf metal door. The west elevation is unfenestrated. A shed bay projects from the rear (north) elevation. The building was constructed outside the period of significance; therefore it is non-contributing.

Buildings 205-208, 287, Enlisted Men's Barracks (Photo 7)

Resource Type/Number: Military Housing/5 Contributing Buildings

Style: Colonial Revival

Date/History: 1927, 1940 (Building 287)

Architectural Description: Buildings 205-208 and 287 are arranged in a circular configuration along a circle drive (Barker Circle) on the southeast side of Hildreth Avenue and on the east side of First Avenue. The center of the circle drive creates an open area used as a recreation area for residents. The three-story masonry buildings have a T-shaped footprint formed from a rectangular main block and a rear projecting wing. The buildings sit on solid concrete foundations with concrete watertables, and the walls are constructed of concrete block clad in stretcher-bond brick. The original side-gable slate-shingle roofs are currently covered in asphalt shingles. An interior-end brick chimney is located on each of the rear wings of the buildings. Symmetrically placed windows hold three-light metal sash replacement windows. The upper sashes hold fixed panes and the lower sashes are awning. The window openings feature concrete sills and soldier brick lintels. Semicircular openings are located in the gable ends of the main block. The main entrances to the buildings are located on the primary façades and are double-leaf metal replacement doors with one-light sidelights and transoms. Three-story concrete porches front each of the buildings and are sheltered by the buildings' primary roof. The porches feature replacement metal balustrades. Concrete stairwells pierced by vertical one-light fixed windows flank the main blocks of the buildings and are not original features. Each building has a one-story rear shed porch with concrete posts and balustrades attached to the side elevation of the wing.

Building 205 (Contributing)

Building 205 is 14 bays wide. A centered concrete stair with a metal balustrade and railing leads to the main entrance on the northwest elevation. The rear (southeast) one-story porch is located on the north side of the rear wing.

Building 206 (Contributing)

Building 206 is 10 bays wide and one of the smaller barracks. A centered concrete stair with a metal balustrade and railing leads to the main entrance on the southwest elevation. The rear (northeast) one-story porch is located on the south elevation of the rear wing. A poured concrete ADA-accessible ramp leads to the porch along the southeast side of the main block. A poured concrete elevator shaft has been added to the building adjacent to the ramp and the porch.

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Building 207 (Contributing)

Building 207 is larger than the surrounding barracks and is 15 bays wide. It has two primary entrances on the main (east) elevation: one on the second bay and one on the tenth bay from the north. Poured concrete stairs with metal balustrades and railings lead to the entrances. A rear entrance with a single-leaf door and Colonial Revival-style door surround is located on the north end of the rear (west) elevation and is accessible by concrete stairs. The rear porch is located on the south elevation of the rear wing.

Building 208 (Contributing)

Building 208 is 12 bays wide. A centered concrete stair with a metal balustrade and railing leads to the main entrance on the southeast elevation. The rear porch is located on the southwest elevation of the rear (northwest) elevation.

Building 287 (Contributing)

Building 287 is nine bays wide. A centered concrete stair with a metal balustrade and railing leads to the main entrance on the northeast elevation. The rear porch is located on the northwest elevation of the rear (southwest) elevation. Building 287 was built in 1940 with the same design characteristics as the adjacent barracks (Buildings 205-208), built in 1927.

Building 209, Allison Hall (Photo 3)

Resource Type/Number: Hospital/1 Contributing Building

Style: Colonial Revival

Date: 1928

Architectural Description: Allison Hall, the former hospital, faces south toward Signal Avenue and is a masonry building with a barbell-shaped main block with a rear projecting wing. The building was constructed in two phases with the main block and the east wing completed in 1927 and the west wing and rear wing completed in 1934. The building sits on a solid parged concrete foundation and stands two stories above a raised basement. The walls are constructed of five-course American-bond brick and are capped with cross-hipped asphalt-shingle roofs with overhanging eaves. Windows are one-over-one metal-sash replacement, each capped with a one-light awning window. The windows have jack-arched brick lintels and concrete sills. The center of the 13-bay main (south) elevation projects slightly and is seven bays wide. The main entrance is centered on the façade and is sheltered by a concrete portico ornamented by paired Tuscan columns, an unadorned frieze, an ogee cornice, and a balustrade. The main entrance, consisting of a double-leaf metal door with a large transom, is accessed by concrete stairs. Three-bay-wide projecting bays on the main (south) elevation of the wings and the east and west elevations of the wings originally featured two-story screened porches. The porches have since been enclosed and are clad in stucco and pierced by one-over-one metal-sash windows.

Buildings 233-256, 258, Noncommissioned Officers' Two-Family Quarters (Photos 8 and 9)

Resource Type/Number: Military Housing/25 Contributing Buildings

Style: Colonial Revival

Date: 1927-1934

Architectural Description: These two-family dwellings stand along both sides of Gosselin Avenue. The dwellings are two-story four-bay masonry buildings that sit on solid poured concrete foundations that have been parged. They are covered with five-course American-bond brick veneer and capped with side-gable or hipped asphalt-shingle roofs. The main blocks of the houses are flanked by interior-end brick chimneys. The main elevation is symmetrically fenestrated by centered entrances and paired windows on the first story and single windows on the second story, all with stone sills. Above the doors and in the center of the second story are two narrow casement windows. The remaining elevations are

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symmetrically fenestrated. The majority of the windows have been replaced with one-over-one vinyl-sash windows with snap-in six-over-six muntins; however, some six-over-six wood-sash windows remain on the rear elevations. The dwellings are distinguished by varying center entrances with Colonial Revival-style door surrounds. The entrances are accessed by concrete stairs. The majority of the dwellings feature enclosed sun porches on the side elevations. These two-story porches are constructed of wood framing with corner pilasters. The walls of the porches have been covered in vinyl siding. A small number of the dwellings were built with one-story brick sun porches.

Building 233 (Contributing)

Building 233 has a hipped roof with overhanging eaves ornamented by wood brackets. The twin-house has been converted into a single-family residence. It has a central single-leaf door flanked by two large paneled sidelights with six-light windows. The sidelights are the location of the original doors. The wood door surround features Tuscan pilasters with a plain frieze and ogee cornice. The dwelling has no side porches.

Building 234 (Contributing)

Building 234 has a hipped roof and a wood ogee cornice. The main entrances to the dwellings are ornamented by Colonial Revival-style wood door surrounds with Tuscan pilasters, a plain frieze, and an ogee cornice. The house retains several of its original six-over-six wood-sash windows on the side and rear elevations. This twin dwelling has no side porches.

Building 235 (Contributing)

Building 235 has a side-gable roof with a wood ogee cornice. The main entrances each display a semicircular pediment with a sunburst motif in the tympanum. The house has flanking two-story wood-frame enclosed sun porches with six-over-six vinyl-sash windows.

Building 236 (Contributing)

Building 236 has a side-gable roof with a wood ogee cornice. The main entrances each have a semicircular pediment with a sunburst motif in the tympanum. The main block is flanked by one-story brick sun porches that have been enclosed with six-over-six vinyl-sash windows. One of the windows in the north sun porch has been enclosed with plywood.

Building 237 (Contributing)

Building 237 has a side-gable roof with a wood ogee cornice. The main entrances each display a semicircular pediment with a sunburst motif in the tympanum. The house has flanking two-story wood-frame enclosed sun porches with six-over-six vinyl-sash windows.

Building 238 (Contributing)

Building 238 has a side-gable roof with a wood ogee cornice. The main entrances each have a semicircular pediment with a sunburst motif in the tympanum. The main block is flanked by two-story sun porches that are brick on the first story and wood-frame and vinyl siding on the second story. The porches have been enclosed with six-over-six vinyl-sash windows.

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Building 239 (Contributing)

Building 239 has a hipped roof with a wood ogee cornice. The main entrances to the dwellings are ornamented by Colonial Revival-style wood door surrounds with Tuscan pilasters, a plain frieze, and an ogee cornice. The house has flanking two-story wood-frame enclosed sun porches with six-over-six vinyl-sash windows.

Building 240 (Contributing)

Building 240 has a hipped roof with a wood ogee cornice. The main entrances to the dwellings are ornamented by Colonial Revival-style wood door surrounds with Tuscan pilasters, a plain frieze, and an ogee cornice. The house has flanking two-story wood-frame enclosed sun porches with six-over-six vinyl-sash windows.

Building 241 (Contributing)

Building 241 has a side-gable roof with a wood ogee cornice. The main entrances each display a semicircular pediment with a sunburst motif in the tympanum. The house has flanking two-story wood-frame enclosed sun porches with six-over-six vinyl-sash windows.

Building 242 (Contributing)

Building 242 has a side-gable roof with a wood ogee cornice. The main entrances each display a semicircular pediment with a sunburst motif in the tympanum. The house has flanking two-story wood-frame enclosed sun porches with six-over-six vinyl-sash windows.

Building 243 (Contributing)

Building 243 has a side-gable roof with a wood ogee cornice. The main entrances each display a semicircular pediment with a sunburst motif in the tympanum. The house has flanking two-story wood-frame enclosed sun porches with six-over-six vinyl-sash windows.

Building 244 (Contributing)

Building 244 has a side-gable roof with a wood ogee cornice. The main entrances each display a semicircular pediment with a sunburst motif in the tympanum. The house has flanking two-story wood-frame enclosed sun porches with six-over-six vinyl-sash windows.

Buildings 245 and 246 (2 Contributing)

Buildings 245 and 246 each have a hipped roof with a wood ogee cornice. The main entrances to the dwellings are ornamented by Colonial Revival-style wood door surrounds with Tuscan pilasters, a plain frieze, and an ogee cornice. The houses have flanking two-story wood-frame enclosed sun porches with six-over-six vinyl-sash windows.

Building 247 (Contributing)

Building 247 has a hipped roof with a wood ogee cornice. A one-story two-bay wood-frame portico with a flat roof projects from the center of the dwelling and contains the main entrances to the dwellings. The portico features two six-

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over-six vinyl-sash windows on the main elevation and a single-leaf door on each of its side elevations. The bay is ornamented with Tuscan pilasters, a plain frieze, and an ogee cornice. The main block is flanked by two-story sun porches that are brick on the first story and wood frame and vinyl siding on the second story. The porches have been enclosed with six-over-six vinyl-sash windows.

Buildings 248, 249, and 250 (3 Contributing)

Buildings 248, 249, and 250 each have a hipped roof with a wood ogee cornice. A one-story two-bay wood-frame portico with a flat roof projects from the center of each dwelling and contains the main entrances to the dwellings. The portico features two six-over-six vinyl-sash windows on the main elevation and a single-leaf door on each of its side elevations. The bay is ornamented with Tuscan pilasters, a plain frieze, and an ogee cornice. The main block is flanked by two-story sun porches that are brick on the first story and wood frame and vinyl siding on the second story. The porches have been enclosed with six-over-six vinyl-sash windows.

Building 250 (Contributing)

Building 250 has a hipped roof with a wood ogee cornice. A one-story two-bay wood-frame portico with a flat roof projects from the center of the dwelling and contains the main entrances to the dwellings. The portico features two six-over-six vinyl-sash windows on the main elevation and a single-leaf door on each of its side elevations. The bay is ornamented with Tuscan pilasters, a plain frieze, and an ogee cornice. The main block is flanked by two-story sun porches that are brick on the first story and wood-frame and vinyl siding on the second story. The porches have been enclosed with six-over-six vinyl-sash windows.

Buildings 251, 252, 253, and 254 (4 Contributing)

Buildings 251, 252, 253, and 254 each have a hipped roof with a wood ogee cornice. A one-story two-bay brick portico with a flat roof projects from the center of each dwelling and contains the main entrances to the dwellings. The portico is pierced by two-double-leaf wood-paneled doors with eight lights on the main elevation and a single-leaf wood-paneled door on its side elevations. All four of the door openings are capped with semicircular-arched openings with fanlights. The main block is flanked by two-story sun porches that are brick on the first story and wood frame and vinyl siding on the second story. The porches have been enclosed with six-over-six vinyl-sash windows.

Buildings 255 and 256 (2 Contributing)

Buildings 255 and 256 each have a hipped roof with a wood ogee cornice. A one-story two-bay wood-frame portico with a flat roof projects from the center of each dwelling and contains the main entrances to the dwellings. The portico features two six-over-six vinyl-sash windows on the main elevation and a single-leaf door on each of its side elevations. The bay is ornamented with Tuscan pilasters, a plain frieze, and an ogee cornice. The main block is flanked by two-story sun porches that are brick on the first story and wood frame and vinyl siding on the second story. The porches have been enclosed with six-over-six vinyl-sash windows.

Building 258 (Contributing)

Building 258 has a hipped roof with a wood ogee cornice. A one-story two-bay brick portico with a flat roof projects from the center of the dwelling and contains the main entrances to the dwellings. The portico is pierced by two-double-leaf wood-paneled doors with eight lights on the main elevation and a single-leaf wood-paneled door on its side elevations. All

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four of the door openings are capped with semicircular-arched openings with fanlights. The main block is flanked by two-story sun porches that are brick on the first story and wood frame and vinyl siding on the second story. The porches have been enclosed with six-over-six vinyl-sash windows.

Buildings 211-216, 218-229, Field and Company Officers' Quarters (Photos 12 and 13)

Resource Type/Number: Military Housing/18 Contributing Buildings

Style: Colonial Revival

Date: 1927-1935

Architectural Description: These one- and two-family dwellings are located along Russel and Allen avenues around Voris Park. The buildings sit on solid concrete foundations, and their walls are constructed of five-course American-bond brick. The single dwellings are two stories and the twin dwellings are two and one-half stories. All of the dwellings are capped with hipped asphalt-shingle roofs. The twin dwellings are ornamented by ogee cornices, and the single dwellings have eaves decorated with carved wood brackets and feature exterior-side brick chimneys. The twin dwellings have a side-hall plan and the façades have symmetrical, mirrored fenestration. The single dwellings have central hall plans with symmetrically fenestrated façades. The entrances are single-leaf wood-paneled doors with wood pedimented door surrounds. Windows are six-over-six replacement sash with concrete sills and jack-arched lintels. The twin dwellings have pedimented dormers holding six-over-six replacement sash windows or louvered wood vents. Each single and twin dwelling has a side entrance covered by a wood-frame latticed porch with wood posts and a half-hipped roof.

Building 211 (Contributing)

Building 211 is a twin dwelling. The dormers on the east unit (Unit 4) hold louvered wood vents, and those on the west unit (Unit 6) hold 12-light vinyl-sash casement windows. The side porch of Unit 4 has a wood balustrade.

Building 212 (Contributing)

Building 212 is a twin dwelling. All of the dormers hold louvered wood vents.

Building 213 (Contributing)

Building 213 is a twin dwelling. The dormers in the east unit (Unit 12) hold 12-light vinyl-sash casement windows, and the dormers in the west unit (Unit 14) hold louvered wood vents.

Building 214 (Contributing)

Building 214 is a twin dwelling. All of the dormers hold 12-light vinyl-sash casement windows

Buildings 215 and 216 (2 Contributing)

Buildings 215 and 216 are each single-family dwellings that are three bays wide with a center hall plan. A latticed porch is located on the east elevation.

Buildings 218 and 219 (2 Contributing)

Buildings 218 and 219 are each twin dwellings. All of the dormers hold 12-light vinyl-sash casement windows.

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Building 220 (Contributing)

Building 220 is a twin dwelling. All of the dormers hold 12-light vinyl-sash casement windows. The entrance stairs on the west unit (Unit 34) have been removed and replaced with a wood-frame stoop with wood stairs. An ADA-accessible metal ramp leads to the stoop along the main elevation of the unit.

Building 221 (Contributing)

Building 221 is a single-family dwelling that is five bays wide with a central hall plan. The main entrance is sheltered by a pedimented portico supported by Tuscan columns. The main block is flanked by interior-end brick chimneys and one-story brick wings. The house has a side-gable roof with a wood cornice and is pierced by three pedimented dormers that hold 12-light vinyl casement windows. The east one-story wing is an attached garage. It has a side gable roof with a pedimented wall dormer. The dormer holds a 12-light vinyl casement window. The garage has a roll-up garage door and a single-leaf door on its main elevation. The west one-story wing is an enclosed porch. It has a side gable roof and 10-light vinyl-sash casement windows in the upper sash and one-light vinyl-sash awning windows in the lower sash.

Buildings 222 and 223 (2 Contributing)

Buildings 222 and 223 are each twin dwellings. All of the dormers hold 12-light vinyl-sash casement windows.

Building 224 (Contributing)

Building 224 is a single-family dwelling that is five bays wide with a central hall plan. The main entrance is sheltered by a pedimented portico supported by Tuscan columns. The main block is flanked by interior-end brick chimneys and one-story brick wings. The house has a side-gable roof with a wood cornice and is pierced by three pedimented dormers that hold 12-light vinyl casement windows. The west one-story wing is an attached garage. It has a side-gable roof with a pedimented wall dormer. The dormer holds a 12-light vinyl casement window. The garage has a roll-up garage door and a single-leaf door on its main elevation. The east one-story wing is an enclosed porch. It has a side-gable roof and 10-light vinyl-sash casement windows in the upper sash and one-light vinyl-sash awning windows in the lower sash.

Buildings 225, 226, 227, and 228 (4 Contributing)

Buildings 225, 226, 227, and 228 are each twin dwellings. All of the dormers hold 12-light vinyl-sash casement windows.

Building 229 (Contributing)

Building 229 is a single-family dwelling that is five bays wide with a central hall plan. The house has a side-gable roof with a wood cornice and is pierced by two pedimented dormers that hold 12-light vinyl casement windows. The main block of the house is flanked by interior-end brick chimneys. The centered main entrance is ornamented by a segmental arched pediment with Tuscan pilasters. A two-story enclosed porch is attached to the east elevation of the house. It is constructed of brick on the first story and wood frame on the second story. The first story of the porch is pierced by 10-light vinyl-sash casement windows in the upper sash and one-light vinyl-sash awning windows in the lower sash. The second story of the porch is ornamented by wood pilasters and panels and is lit by six-over-six vinyl-sash windows. A small one-story brick wing is located on the west elevation of the house. It has a single-leaf door on its west elevation.

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Building 230, Commanding Officer's Quarters (Photo 11)

Resource Type/Number: Single Dwelling/1 Contributing Building

Style: Colonial Revival

Date: 1936

Architectural Description: The Commanding Officer's Quarters faces east at the intersection of Allen and Russel avenues. The single dwelling stands two and one-half stories above a solid concrete foundation and has a rectangular footprint with a one-and-one-half-story attached garage on its south side. The exterior walls are constructed of concrete block clad in five-course American-bond brick, and the dwelling is capped with a side-gable asphalt-shingle roof with a dentil cornice. Four exterior-end brick chimneys with corbelled caps rise above the roofline. The main block is seven bays wide; the center three bays project slightly from the façade and are capped with a closed denticulated pediment. The projecting bays and the main block are ornamented with brick quoins. The façade is symmetrically fenestrated by six-over-six replacement windows ornamented by jack-arched lintels with keystones. The main entrance is a centered double-leaf wood-paneled door sheltered by a wood portico featuring paired Tuscan columns, a dentil cornice, and a wood balustrade. Two gabled dormers pierce the roof on the main elevation, and the pediment is lit by an oval casement window with a brick header surround and keystones. The rear elevation of the dwelling features a two-story wood-frame enclosed porch with wood pilasters. The porch features double-leaf French doors and sidelights on the first story and large one-light fixed windows on the second story. The first and second stories are separated by wood spandrels. The garage is faced in five-course American-bond brick and is fenestrated by six-over-six replacement windows and gabled wall dormers holding six-over-six replacement windows. A roll-up metal vehicular door is located on the south elevation of the garage.

Building 257, Utility Building

Resource Type/Number: Utility Building/1 Non-Contributing Building

Style: Utilitarian

Date: 1930

Architectural Description: Building 257 stands southeast of Building 275 (Kaplan Hall) and faces northwest. It is a one-story building and has a solid concrete foundation and a small rectangular footprint. The walls are covered in stucco and the building has a hipped asphalt-shingle roof. A single-leaf metal door and a metal louvered vent pierce the main (northwest) elevation. Metal louvered vents are located on the side elevations. An electric generator stands on the rear elevation of the building. As alterations have been made to the building, including the application of stucco and the replacement/addition of the door and vents, it no longer retains integrity.

Building 260, Sewage Lift Station

Resource Type/Number: Utility Building/1 Contributing Building

Style: Colonial Revival

Date: 1930

Architectural Description: Building 260 sits on the south side of First Avenue, southeast of Building 275 (Museum). An electrical substation is located along its southeast corner. The one-story one-bay building sits on a solid foundation and has a square footprint. The building is constructed of six-course American-bond brick and is capped with a hipped asphalt-shingle roof decorated by a wood ogee cornice. The north, east, and west elevations each have a six-over-six metal-sash window with a stone sill and a soldier lintel. A two-paneled single-leaf wood door with four lights pierces the south elevation. The door has a soldier lintel.

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Buildings 261-269, Four-Family Apartment Buildings (Photo 15)

Resource Type/Number: Military Housing/9 Contributing Buildings

Style: Colonial Revival

Date: 1929-1931

Architectural Description: Buildings 261-269 were built between 1929 and 1931 for commissioned officers. The buildings are arranged in two rows: Buildings 261-265 face southwest on Housing Avenue, and Buildings 266-269 face northeast on Cary Avenue. The buildings have rectangular footprints and rise two and one-half stories above solid concrete foundations. The exterior walls of the buildings are five-course American-bond brick capped with side-gable asphalt shingle roofs. The 10-bay-wide main elevations of the dwellings are symmetrically fenestrated and appear as double five-bay central-hall dwellings. An interior brick chimney is located in the center of the building. The entrances to the dwellings are located in the third and eighth bay and consist of paired single-leaf doors sheltered by a portico with brick Tuscan posts and a wood balustrade. Each portico has a brick foundation and a poured concrete floor and a concrete stair on each side. The stairs and porch are lined with a metal railings and balusters. The buildings are further fenestrated by six-over-six replacement windows with jack-arched brick lintels and concrete sills. Each building has six hipped dormers. The windows in the dormers alternate between six-over-six or one-light replacement windows and one-light casement windows. A two-story enclosed porch is located on the side elevations of the dwellings. The porches are constructed of brick and are enclosed with six-over-six replacement windows. Wood spandrels with a square and center diamond motif separate the windows on the first and second stories of the porches. All of the houses are identical.

Building 270, Bachelor Officers' Quarters

Resource Type/Number: Military Housing/1 Contributing Building

Style: Colonial Revival

Date: 1929-1931

Architectural Description: The Bachelor Officers' Quarters (Buildings 270 and 271) stand on the south side of Signal Avenue and face north. Building 270 is the larger of two similar buildings and was built in 1929. Building 271, located west of Building 270, was built in 1931 (see below). Building 270 has two stories with an H-shaped footprint and a rear one-story wing. The building is constructed of concrete block clad in a five-course American-bond brick veneer and is capped by a hipped asphalt-shingle roof with overhanging eaves. Windows are six-over-six vinyl-sash replacement with stone sills and jack-arched brick lintels, some with keystones. Three hipped dormers pierce the roof on the façade, and a shed dormer clad in wood shingles is located on the rear. Building 270 is distinguished by a one-story porch that lines the façade. The porch features brick Tuscan posts and a wood balustrade. A one-story one-bay portico projects from the center of the façade and has brick Tuscan posts supporting a flat roof with an ogee cornice. A one-story one-bay portico with brick Tuscan posts and a wood balustrade shelters secondary entrances on the east and west elevations of the building. Brick screen walls enclose the porticos on their side elevations. Above each of the porticos on the second story is a Palladian window with a segmental arch. The one-story rear wing has a rectangular footprint and is capped with a hipped asphalt-shingle roof. It has a larger interior brick chimney. A concrete loading dock lines the rear (south) elevation of the wing and is lined with a metal railing. The wing is pierced by six-over-six vinyl-sash windows.

Building 271 Bachelor Officers' Quarters (Photo 17)

Resource Type/Number: Military Housing/1 Contributing Building

Style: Colonial Revival

Date: 1929-1931

Architectural Description: The Bachelor Officers' Quarters (Buildings 270 and 271) stand on the south side of Signal Avenue and face north. Building 271 was built in 1931 and is the smaller of the two buildings. Building 270 was built in 1929 and stands east of Building 271 (see above). Building 271 has an H-shaped footprint and is constructed of concrete block clad in a five-course American-bond brick veneer. The two-story seven-bay building is capped by a hipped asphalt-

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shingle roof with overhanging eaves ornamented by wood brackets. Windows are six-over-six wood-sash with stone stills and jack-arched brick lintels, some with keystones. A hipped dormer is located on the façade and holds two four-light wood-sash casement windows. A rear dormer covered in wood shingles is located on the rear elevation and holds two six-over-six wood-sash windows. Both buildings have hipped dormers on the façade and a shed dormer on the rear. A one-story porch with Tuscan brick posts and a wood balustrade lines the center bays of the façade. The center bay of the porch projects slightly from the façade. The porch shelters the main entrance of the building that holds a double wood paneled door with six lights. Paneled sidelights with six lights flank the door and multi-light transoms are located above the sidelights and door. A one-story one-bay portico with brick Tuscan posts and a wood balustrade shelters secondary entrances on the east and west elevations of the building. Leading out to the roof of each portico is a single-leaf door with a segmental arched fanlight and three-light paneled sidelights.

Building 275, Communications Museum (former theater)/Kaplan Hall (Photo 5)

Resource Type/Number: Theater/1 Contributing Building

Style: Colonial Revival

Date: 1933

Architectural Description: Building 275, the former theater and currently the Communications Museum, stands on the south side of Gosselin Avenue, east of the Non-Commissioned Officers' Quarters, and faces north. The building stands two stories above a solid concrete foundation and has a concrete watertable lined with a soldier brick belt course. It is masonry construction of five-course American-bond brick and is capped with a front-gable asphalt-shingle roof. An offset exterior-end chimney is located on the rear of the building. The main (north) elevation is five bays wide and ornamented by a wood ogee cornice with a closed pediment. The first story is pierced by two centered double-leaf wood doors, each lit by a small, square window. The doors are separated by a wood panel, most likely the original location of the ticket booth. The doors are sheltered by a flat-roofed awning featuring a wood ogee cornice. Lettering on the awning's frieze reads "US Army Communications Museum Kaplan Hall." The center doors are flanked by single arched openings. The arches are soldier brick with concrete end and keystones. The west opening holds a single-leaf wood paneled door lit by six lights and capped with a fanlight. The east arched opening has been enclosed with brick. The second story of the main elevation has five six-over-six wood-sash windows with stone stills and jack-arched lintels decorated with keystones. A semicircular wood-sash multi-light window pierces the center of the pediment. The side elevations are broken by brick pilasters and single-leaf flush doors. The rear elevation has a one-story shed addition and is unfenestrated except for three louvered vents.

Building 282, Fire Station and Guard House (Photo 6)

Resource Type/Number: Support Building/1 Contributing Building

Style: Colonial Revival

Date: 1935

Architectural Description: Building 282, the firehouse, faces northwest toward Hildreth Avenue and stands between Buildings 205 and 206. The masonry building sits on a solid concrete foundation and watertable and has a two-story main block with flanking one-story wings and a one-story rear ell. The main block, wings, and ell are all constructed of five-course American-bond brick. The main block is capped with a hipped asphalt-shingle roof with a wood frieze and ogee cornice. An intersecting pedimented bay projects slightly from the main (northwest) elevation and is ornamented by brick quoins. The first story of the main elevation is fenestrated by two segmental-arched openings outlined with double header course voussoirs and concrete impost blocks and keystones. The keystones are marked with the numbers two and three. The openings hold roll-up metal vehicular doors. A single-leaf wood door with a Colonial Revival-style wood surround is located south of the arched openings. The flanking one-story wings have flat parapet roofs and hold roll-up metal vehicular doors on the northwest elevation. The wings have a concrete belt course near the roofline, and the door openings have keystones marked with the numbers one and four. The wings have been expanded since the construction of the

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building. The building is further fenestrated on its remaining elevations by one-over-one metal-sash windows capped with transom windows. The windows have jack-arched lintels and concrete sills.

Building 283, Squier Hall (Photo 4)

Resource Type/Number: Laboratory/1 Contributing Building

Style: Stripped Classicism

Date: 1935

Architectural Description: Squier Hall stands on the northwest corner of the parade ground and faces south toward Sherrill Avenue. In its original form the building had two sections: the main block, which housed the laboratory, and a rear wing, which held the shop. The building was expanded in 1947 with a two-story wing on the west. The main block and west wing of Squier Laboratory stand two stories tall and are constructed of structural steel with a brick veneer. The two sections are capped with flat roofs with metal coping. The main block and wing are fenestrated by horizontal bands of metal-sash awning windows in groups of 12. The centered main entrance on the south elevation is distinguished by full-height concrete piers faced in brick. The entrance has double glass and metal doors and is surrounded by a wall of large one-light fixed windows. The south laboratory wing is one story and constructed of structural steel framing clad in brick. The laboratory wing is characterized by its sawtooth roof and large industrial windows of one-light metal-sash fixed with metal panels in the transom above and one-light awning windows below. The original windows have been replaced, and concrete panels have been applied to the exterior brick between the first and second stories and the cornice of the main block and wing.

Building 286, Russel Hall (Photos 1 and 2)

Resource Type/Number: Headquarters/1 Contributing Building

Style: Art Deco

Date: 1936

Architectural Description: Russel Hall faces north on Sanger Avenue toward Cowan Park and the historic main entrance to Fort Monmouth. The building has a rectangular footprint with a four-story five-bay central pavilion flanked by three-story wings. It is steel-frame construction with a limestone-clad raised basement and a five-course American-bond brick veneer. The building is capped with a flat parapet roof. The main block projects slightly from the wings and is ornamented by an Indiana limestone frontispiece. Flanking the main entrance, which is centered on the façade, are limestone reliefs depicting the Signal Corps in the Civil War and in World War I. Granite steps lead up to the main entrance, which consists of two double-leaf polished metal doors. Above the doors is a large multi-light transom with two circular metal plaques bearing the insignia of the Signal Corps and the Signal Corps School. The frontispiece is pierced on the second and third stories by two rows of one-over-one metal-sash replacement windows. Above the windows is a limestone relief of Seal of the United States. The wings are fenestrated by paired one-over-one metal sash replacement windows. Decorative brick spandrels separate the first, second, and third stories of the wings. A wide frieze of solid bricks and a cornice of brick bands decorate the wings. Alterations to the building include enclosed brick stairwells that are located on the side elevation of the wings and the replacement of original windows.

Building 288, Administration Building (Photo 19)

Resource Type/Number: Laboratory/1 Non-Contributing Building

Style: Utilitarian

Date: 1941, as part of the Signal Corps General Development Laboratory

Architectural Description: Building 288 stands on the east side of Squier Hall (Building 283) and faces south toward Sherrill Avenue. The wood-frame building has a rectangular footprint and is one story above a solid concrete foundation. It is capped with a front-gable asphalt-single roof, and the exterior walls are covered in vinyl siding. The centered main entry on the primary (south) elevation is sheltered by a glass and metal vestibule. The façade is pierced by eight

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symmetrically placed windows, and the side elevations have paired and single windows, all one-over-one metal-sash replacement. The rear (north elevation) has an off-centered glass and metal entrance vestibule and six one-over-one metal sash replacement windows. Historically, the building was covered in weatherboard siding and had six-over-six wood-sash windows. The building was constructed outside the period of significance (1927-1940); therefore it is non-contributing.

Buildings 301-310, 312-319, Garages for Field and Company Officers' Quarters (Photo 14)

Resource Type/Number: Outbuildings/18 Contributing Buildings

Style: Colonial Revival

Date: 1927-1935

Architectural Description: These one-story buildings stand between the Field and Company Officers' Quarters on Russel and Allen avenues. They sit on solid concrete foundations and are constructed of concrete block with a five-course American-bond brick veneer. The buildings are capped with pyramidal asphalt-shingle roofs ornamented with wood friezes and ogee cornices. The main elevations are fenestrated by two metal roll-up vehicular doors. The rear elevations are pierced by six-over-six windows. All of the garages are identical.

Buildings 320-326, Garages for Four-Family Apartment Buildings (Photo 16)

Resource Type/Number: Outbuildings/7 Contributing Buildings

Style: Colonial Revival

Date: 1927-1931

Architectural Description: These one-story masonry structures line the alley in between Carty Avenue and Housing Avenue and serve the Four-Family Apartments. The garages are four bays wide and stand on solid concrete foundations. They are constructed of concrete block clad in five-course American-bond brick and are capped with hipped asphalt-shingle roofs with wood ogee cornices. Each façade is pierced by four openings that hold metal roll-up vehicular doors. The openings have soldier brick lintels. All of the buildings are identical.

Building 327, Garage

Resource Type/Number: Outbuildings/1 Contributing Building

Style: Colonial Revival

Date: 1934

Architectural Description: Building 327 is a one-story garage that stands southwest of Building 270. The one-story building has an L-shaped footprint and sits on a solid concrete foundation. Its exterior walls are five-course American-bond brick that are capped by a hipped asphalt-shingle roof with an intersecting gable on its northwestern bay. The roof is ornamented by a wood molded cornice, and the intersecting gable features a denticulated cornice and brick quoins. A metal ventilator stands atop the roof ridge. The north elevation is pierced by five garage bays and the east elevation has three garage bays, all with roll-up metal doors and soldier brick lintels. Windows on the east, west, and south elevations are six-over-six replacement vinyl sash distinguished by jack arched lintels with keystones.

Building 328, Garage

Resource Type/Number: Outbuildings/1 Contributing Building

Style: Colonial Revival

Date: 1937

Architectural Description: Building 328, a garage, sits on the west side of Housing Avenue, south of Building 271, and faces northwest. The garage stands one story above a solid concrete foundation and has a rectangular footprint. Its exterior walls are five-course American-bond brick. The side-gable asphalt-shingle roof has a metal ventilator on its ridge and intersecting gables on each end. The roof has a wood molded cornice, and the intersecting gables are ornamented by a denticulated cornice and brick quoins. Ten garage bays pierce the northwest elevation. The bays hold roll-up metal doors

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and feature soldier brick lintels. The remaining elevations are fenestrated by window openings that feature jack arched lintels with keystones. The windows have been covered with plywood.

Buildings 331-336, Garages for Noncommissioned Officers' Two-Family Quarters

Resource Type/Number: Outbuildings/6 Non-Contributing Buildings

Style: Colonial Revival

Date: 1934

Architectural Description: These six one-story wood-frame garages stand along Gosselin Avenue between the Non-Commissioned Officers' Quarters. The buildings have solid concrete foundations and are capped with hipped asphalt-shingle roofs featuring boxed cornices. The exterior walls have been clad in vinyl siding. Metal roll-up vehicular doors pierce the main elevations of the garages: eight doors pierce 331, 332, 333, 335, and 336; 10 doors pierce 334. The rear elevations are pierced by six-over-six vinyl-sash replacement windows. As alterations have been made to the buildings, including the application of vinyl siding and the replacement of the doors and windows, they are non-contributing.

Building 500, Post Chapel (Photo 20)

Resource Type/Number: Religious Building/1 Non-Contributing Building

Style: Modern

Date: 1962

Architectural Description: The chapel (Building 500) consists of the chapel and an office wing, which are connected by a hyphen. The chapel stands facing Malterer Avenue and forms the north section of the building complex. It stands two stories above a solid concrete foundation and has exterior walls of stretcher-bond brick. The building is capped with a front-gable asphalt-shingle roof with a steeple and a large interior chimney. Shed bays project from the side elevations of the chapel. The façade has an inset entry with full-height brick piers, a double-leaf metal door on the first story, and a large multi-light stained-glass window on the second story with a depiction of George Washington. The side elevations are pierced by large stained-glass windows. The hyphen and the office wing are one story and sit on solid concrete foundations. They have walls of stretcher-bond brick and are capped with gable asphalt-shingle roofs with overhanging eaves. Windows are two-over-two vertical sash. A double-leaf metal and glass door is located on the west elevation of the office wing, and a projecting gabled bay on the south elevation of the office wing has a secondary entrance with a double-leaf metal and glass door and an ADA-accessible ramp. The building was constructed outside the period of significance (1927-1940); therefore it is non-contributing.

Building 501, Healthcare Building (Photo 21)

Resource Type/Number: Community Support Building/1 Non-Contributing Building

Style: Colonial Revival

Date: 1969

Architectural Description: Building 501 stands on the northeast corner of Salzman and Malterer avenues and faces west. The building is set back from the road and is fronted by mature trees. The building is one story above a solid poured concrete foundation and has an L-shaped footprint. The building is clad in stretcher-bond brick and has a cross-gable asphalt-shingle roof with overhanging eaves and a boxed cornice. The main (west) elevation is five bays wide with a centered double-leaf wood door lit by a six-light window and flanked by sidelights. A one-story flat-roofed porch shelters the main entrance and is supported by paired wood posts. The façade is further fenestrated by eight-over-eight vinyl-sash windows with louvered shutters. Single-leaf wood doors and eight-over-eight vinyl-sash windows with louvered shutters are located on the remaining elevations. The building was constructed outside the period of significance (1927-1940); therefore it is non-contributing.

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Building 549, Power Plant Building, Standby Generator

Resource Type/Number: Utilitarian Building/1 Non-Contributing Building

Style: Utilitarian

Date: 1950

Architectural Description: Building 549 stands south of Russel Hall (Building 286). The one-story building has a solid concrete foundation and a small rectangular footprint. Its exterior walls are clad in stucco, and the building has a flat roof with metal coping. A single-leaf flush metal door is located on the east elevation of the building, and a double-leaf flush metal door is located on the west. Directly north of the building is a four-sided concrete-block screen that is used to hide mechanical equipment. The building was constructed outside the period of significance (1927-1940); therefore it is non-contributing.

Parade Ground

Resource Type/Number: Site/1 Contributing Site

Style: None

Date: 1927

Architectural Description: The parade ground is the centerpiece of historic plan of Fort Monmouth. It is a grassy, rectangular area bordered by Wallington Avenue on the east, Saltzman Avenue on the south, Malterer Avenue on the west, and Sherrill Avenue on the north.

Road System

Resource Type/Number: Roads/8 Contributing Structures, 4 Non-Contributing Structures

Style: None

Date: 1927-1941

Architectural Description: The road system of the Fort Monmouth Historic District for the most part exists as it was originally built between 1927 and 1940; however, roads have been added or altered as the installation expanded. The roads contain two traffic lanes and are approximately 30 feet wide. They are paved in asphalt and feature concrete curbing. Contributing roads were part of the original plan of Fort Monmouth; non-contributing roads were built outside the period of significance or lack integrity.

Russel Avenue (Contributing)

Russel Avenue forms the northeast side of Cowan Park and continues west through the Field and Company Officers' Quarters area, creating the southern boundary of Voris Park. Along with Gosselin and Hildreth avenues on the south side of the parade ground, Russel Avenue was designed as one of the primary thoroughfares during the permanent construction program at Fort Monmouth. Like Russel Hall, the road was named for Major General Edgar Russel, Chief Signal Officer, American Expeditionary Force during World War I.

Hildreth Avenue (Contributing)

Hildreth Avenue forms the southeast side of Cowan Park and was designed as one of the primary roads on Fort Monmouth. Historically, the road connected with Gosselin Avenue as the main route on the south side of the parade ground; however, it currently converges with Saltzman Avenue (constructed in 1941). Hildreth Avenue was named in honor of Corporal Hildreth, 4th Field Signal Battalion, who was wounded during World War I in the Battle of the Marne.

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Gosselin Avenue (Contributing)

Gosselin Avenue stands on the south side of the parade ground and was designed as the primary southern thoroughfare and part of the Noncommissioned Officers' Quarters area. On its eastern end it connects with First Avenue, west of the Enlisted Men's Barracks. Gosselin Avenue was named for First Sgt. Alexander Gosselin, 2nd Field Signal Battalion, who received the Distinguished Service Cross on December 4, 1918, for heroism during the Meuse-Argonne offensive.

Allen Avenue/Signal Avenue (Contributing)

Allen Avenue lines the north side of Voris Park and is part of the original design for the Field and Company Officers' Quarters area. The road continues northeast along the north side of the Bachelor Officers' Quarters (Buildings 270 and 271) and Allison Hall, where it becomes Signal Avenue. Brig. Gen. James Allen was Chief Signal Officer from 1906 to 1913 and established the Army Air Service.

Sanger Avenue (Contributing)

Sanger Avenue forms the southwest side of Cowan Park. The road was designed primarily to provide access to Russel Hall, which stands prominently on its southwest side. Sanger Avenue was named for Col. Donald B. Sanger, who became the Chaplain of the Signal Corps on November 5, 1917.

Carty Avenue (Contributing)

Carty Avenue travels northwest-southeast from Barton Avenue. Along its southwest side stands a row of four-family apartments that are a part of the Commissioned Officers' area. The road is named for Brig. Gen. John J. Carty, Signal Reserve, who served during World War I as director of Wire Communications for the Allied Expeditionary Forces.

Barton Avenue (Contributing)

Barton Avenue branches off Russel Avenue on the north side of Cowan Park and leads northwest to Allison Hall. Historically, the road was named Myer Avenue. It was renamed Barton Avenue for Lt. Col. David B. Barton (1901-1944), Assistant Director of Training Literature at Fort Monmouth in 1943.

Housing Avenue (Contributing)

Housing Avenue connects Russel Avenue with Allen Avenue in the Commissioned Officers' area and runs between the Bachelor Officers' Quarters. Although unnamed on maps of Fort Monmouth from the 1930s and 1940s, the road was named Housing Avenue since the housing office and guest housing accommodations were located here.

First Avenue/Barker Circle (Non-Contributing)

First Avenue and Barker Circle were originally built as part of the permanent construction program at Fort Monmouth and have been modified since 1940. First Avenue was originally a short spur road on the south side of Hildreth Avenue and east side of Kaplan Hall. It was extended after 1940 along the south side of the Enlisted Men's Barracks toward Oceanport Avenue. Barker Circle was built as a circle drive in the center of the Enlisted Men's Barracks. Historically Barker Circle was connected to Hildreth Avenue near the Oceanport Avenue entrance to Fort Monmouth. This connector was removed in the late twentieth or early twenty-first century and the road extended along the east side of Buildings 287 and 207

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where it connects with the extension of First Avenue. These roads are non-contributing since they were altered after the period of significance (1927-1940) and no longer retain integrity.

Wallington Avenue (Non-Contributing)

Wallington Avenue was built on the east side of the parade ground, west of Russel Hall, in 1941 as part of the expansion of Fort Monmouth in the years leading up to World War II. It is currently bordered by parking spaces. It receives its name from Col. Merton G. Wallington, Assistant Commandant of the Enlisted Men's Department, Eastern Signal Corps School, during World War II. General Orders Number 28, dated July 3, 1942, designated Wallington Avenue.

Saltzman Avenue (Non-Contributing)

Saltzman Avenue bounds the south side of the parade ground and was built in 1941 prior to World War II. The road serves to bypass Gosselin Avenue and the Noncommissioned Officers' Quarters. General Order 8, March 22, 1943, designated it Saltzman Avenue after Maj. Gen. Charles M. Saltzman, Chief Signal Officer from 1924 to 1928.

Sherrill Avenue (Non-Contributing)

Built in 1941, Sherrill Avenue bounds the north side of the parade ground, bypassing the Commissioned Officers' Quarters. It is named for Brig. Gen. Stephen H. Sherrill, Commandant of the Eastern Signal School and commanding General of the Eastern Signal Corps Training Center at Fort Monmouth from October 1944 to December 1945.⁴

¹ Building Technology Incorporated [BTI], "Historic Properties Report, Fort Monmouth, New Jersey, and Sub installations, Charles Wood Area and Evans Area, Final Report (Silver Spring, Maryland, 1984), 37.

² BTI, "Historic Properties Report, Fort Monmouth, New Jersey," 43.

³ H.B. Nurse, "The Planning of Army Posts," *The Quartermaster Review* (September-October 1928):11

⁴ CECOM Historical Office, *A History of Army Communications and Electronics at Fort Monmouth, New Jersey 1917-2007* (Fort Monmouth, N.J.: Office of the Deputy Chief of Staff for Operations and Plans, U.S. Army CECOM Life Cycle Management Command, 2008), 127-130.

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STATEMENT OF SIGNIFICANCE

SUMMARY

The United States Army established Fort Monmouth in 1917 as Camp Little Silver, later Camp Alfred Vail, as a training camp for the Signal Corps. The camp is located near Eatontown, New Jersey, approximately 30 miles from New York City and on the site of the former Monmouth Park Race Track, one of the foremost American horse racetracks of the late nineteenth century. Camp Alfred Vail's formation was a direct response to the United States' entry into World War I in 1917 and the need for troops trained in communications support provided by the Signal Corps. Those trained at Camp Vail provided crucial support to troops overseas during World War I. At that time the camp also became the location of the Radio Laboratory, devoted solely to problems of wireless communication. After World War I Fort Monmouth continued as the primary headquarters of the Signal Corps and was the site of the Signal Corps School and the Signal Corps Laboratories. In 1925 Camp Vail received permanent status and was renamed Fort Monmouth in honor of those who fought at nearby Monmouth Courthouse during the Revolutionary War. Its collection of Colonial Revival-style administrative and residential buildings erected during the installation's permanent construction program (1927-1940) illustrate its prominence as a military post, the permanent construction program of the U.S. Army, and the design aesthetic of the Army Quartermaster Corps between the World Wars. The Fort Monmouth Historic District is nationally significant under **Criterion A, military/communications**, for its initial role in the Army's development of radar, which is "rated among the four or five 'weapons systems' that made a difference in World War II."¹ The Fort Monmouth Historic District also possesses local significance under **Criterion C, architecture**, as it embodies the distinctive characteristics of the U.S. Army's permanent construction program and is a local manifestation of the standardized plans created by the Quartermaster Corps between the World Wars.

The plan, buildings, and structures within the Fort Monmouth Historic District strongly illustrate its growth and prominence as the headquarters of the Signal Corps, the location of the Signal Corps Laboratories, and the Army Quartermaster Corps' permanent construction program between World War I and World War II. Owing to the anticipation of World War II the permanent construction program at Fort Monmouth came to an end after the last barracks was built in 1940. In 1940-1941 Squier Laboratory was augmented by three ancillary field laboratories to supplement the increasing research efforts. Field Laboratory #1, the Camp Coles Signal Laboratory, Field Laboratory #2, the Eatontown Signal Laboratory, and Field Laboratory #3, the Signal Corps Radar Laboratory at Fort Hancock. The Fort Hancock laboratory was moved to Camp Evans in 1942 and redesignated the Camp Evans Signal Laboratory. Thus, the period of significance for the Fort Monmouth Historic District begins in 1927, when the first permanent construction began on the installation, and extends through 1940, when the Signal Corps Laboratories began to move to ancillary locations.

The Fort Monmouth Historic District exhibits a high level of integrity. Few alterations have been made to the buildings constructed by the Army Quartermaster Corps, and changes, for the most part, have been minor, such as replacement windows and siding. Although Fort Monmouth has expanded dramatically since its initial permanent construction period, obtrusions to the 1927-1940 core are few. The open green space, street layout, and deliberate division of buildings by use remain intact, and along with its collection of red-brick buildings, the Fort Monmouth Historic District continues to exemplify the distinctive characteristics of Army installations built to the standardized plans of the Army Quartermaster Corps between World War I and World War II.

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NARRATIVE

Criterion A, Military/Communications

As the home of the Signal Corps Laboratories, much of the communications equipment used by American forces during World War II was designed and developed at Fort Monmouth during the 1930s. Fort Monmouth and Squier Laboratory, built in 1935 to house the Signal Corps Laboratories, hold particular significance for their role in the development of radar (Radio Detection and Ranging technology) in the years leading up to World War II. Between 1935 and 1938 research, testing, and development at Fort Monmouth's Signal Corps Laboratories led to the development of the SCR-270 Army radar, which gave warning of the impending attack on Pearl Harbor on December 7, 1941.² This initial radar program at Fort Monmouth spearheaded additional developments and improvements in radar at the Camp Evans Signal Laboratory, a branch of Fort Monmouth's Signal Corps Laboratories, during World War II.³

The laboratories at Fort Monmouth first formed when the Signal Corps Electrical Laboratory, the Signal Corps Meteorological Laboratory, and the Signal Corps Laboratory at the Bureau of Standards were moved to the fort in 1929, creating the Signal Corps Laboratories. Under the direction of Colonel William R. Blair, who was distinguished in both the scientific and military fields, the Signal Corps Laboratories received a \$220,000 appropriation for a permanent, fireproof laboratory and shops in 1934. The new state-of-the-art building was named after General Squier, Chief Signal Officer from 1917 to 1923. Squier Laboratory consisted of two sections: a two-story main block and a rear one-story shop wing. The main section of the building housed the administration and technical sections and included individual laboratories, experimental rooms, a drafting room, and blueprint and photographic rooms, and the shop wing included an instrument shop and a wood-working shop. In the basement of the main block was a "Light Tunnel," a test area that ran the length of the building.⁴ When constructed in 1935 the mission of Squier Laboratory was "the design and development of communication equipment for the Army."⁵

An enthusiastic, if overly florid, description of radar described it as "[t]he greatest of all electronic military weapons, the weapon to which victory attached her wings, a device which saluted the atomic bomb, but did not bow to it — the fabulous scientific genie of World War II — RADAR."⁶ The origins of the Army's radar research date to World War I, when Blair, then head of the Signal Corps Meteorological Section in the Allied Expeditionary Force in Europe, conducted experiments in sound-ranging to locate enemy aircraft by the sound of their engines. His experiments did not lead to the development of any equipment but did result in Army Ordnance Corps tests related to heat detection on plane motors from 1926 to 1930. After Blair was named as the director of the Signal Corps Laboratories, the project was transferred to the labs at Fort Monmouth.

The Signal Corps program leading to the development of radar began in 1931 when "Project 88" was transferred from the Office of the Chief of Ordnance to Fort Monmouth. The project focused on the use of infrared, heat detection, radio, and pulse equipment. Infrared and heat detection were abandoned as less effective means of detection in 1932 and 1935. Tests at Navesink Lighthouse on July 30, 1935 verified that radio and pulse provided the best radar detection. This type of radar detection used waves of high-frequency radio pulse, which were reflected and dispersed by metallic objects. The returning pulses were received by an apparatus that could determine the position, speed, and direction of an object.⁷

The opening of the Squier Laboratory greatly improved laboratory conditions at Fort Monmouth, despite the laboratory's operation under a reduced staff due to Great Depression cutbacks. The turning point came in 1936 when pulse-echo detection of aerial and surface targets became a high priority and all Army detection development had been officially assigned to the Signal Corps. The laboratories at Fort Monmouth quickly began the development of the first Signal Corps pulse equipment and work on the "beat" (based on the Doppler effect) and pulse concept intensified.⁸

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As with other Signal Corps projects, this, too, was run on limited funding but with money siphoned off from other projects to subsidize its undersized budget. Additional engineers were soon working on the project, which was headed by Paul Watson, the civilian chief of the Radio Section. By the end of June 1936 engineers at the Signal Corps Laboratories developed a "bread-board model" of a portable, 74-watt transmitter. The construction of the model "marked the beginning of the development of the SCR-268 and SCR-270, the first Army radars."⁹ Initial tests of the equipment began on December 14, 1936 when the engineers successfully recorded echoes of pulses from flights arriving and departing from Newark Airport. Although the transmitter and receiver were located over a mile apart and the equipment tracked the planes for only seven miles, the engineers had successfully used radar technology.¹⁰

The new developments were put to the test when Fort Monmouth hosted the Secretary of War and other officials from Washington for a demonstration. The demonstration would determine any additional funding the project would receive, which was essential to future research. On the evening of May 26, 1937, a B-10 bomber, with all running lights extinguished, attempted to fly over Fort Monmouth in simulated "sneak raids." Radar success meant illuminating the bomber with searchlights in time for early artillery action. Time after time, the aircraft approached within range of the radar, its position was determined, and the searchlights escorted the bomber over the base. The Secretary of War was suitably impressed, writing that the tests "gave tangible evidence of the amazing scientific advances made by the Signal Corps in the development of technical equipment."¹¹ A special Congressional appropriation of approximately \$40,000 allowed expedited development of radar technology to continue.

The first radar set, used in the 1937 tests, was the SCR-268-TI, which had a radio detector unit, a thermo detector unit, and a searchlight. Its tracking, vacuum tubes, and antennas continued to be improved. After the set was successfully tested at Fort Monroe, Virginia, in 1938, it was formally accepted by the Army with the directions for further development and to set production requirements. Not only was the test a success, it also uncovered a new use for radar: navigation. Heavy cloud cover on the evening of the test resulted in the pilot unintentionally going off course over the ocean. Radar operators trained their set to the east and the test became a rescue operation in which the pilot was guided back to safety as visiting officials watched his progress on the oscilloscopes.

Money was no longer an obstacle as military interest reached a "feverish level." Airborne radar would follow, as would three types of radars: the SRC-268 for anti-aircraft situations and two early warning sets, the mobile SCR-270 and SCR-271 for fixed installations.¹² Radar work initially moved from Fort Monmouth to Fort Hancock for security reasons in 1938 and was moved later again to the old Marconi Radio Station in Wall Township, New Jersey in 1941-42 (later named Camp Evans Signal Laboratory). Since there was no school or system of instruction for early radar operators, early warning SCR-270 classes were conducted at Fort Monmouth in Squier Laboratory. Fire control and search light control SCR-268 classes were conducted at Fort Hancock at Sandy Hook, the first formal classes taking place in 1938. The sensitive nature of the instruction material meant that students could not take books or course materials home and had to complete all studying at school. By 1941 all three sets were in use as coastal defense and in such strategic military locations as Panama and Pearl Harbor, Hawaii.¹³

Anticipation of the nation's entry into World War II led to increased activity at the Signal Corps Laboratories. As a result three field laboratories on Fort Monmouth's ancillary areas were established in 1940 and 1941 to supplement the research efforts. These included Field Laboratory #1, later Camp Coles Signal Laboratory, and Field Laboratory #2, later Eatontown Signal Laboratory at the Charles Woods area (subsequently transferred to the Air Force). Along with Squier Laboratory these two laboratories became the Signal Corps General Development Laboratories (SCGDL). An additional laboratory was also established at Fort Hancock as Field Laboratory #3. Originally the Signal Corps Radar Laboratory, the Fort Hancock laboratory was moved to Camp Evans in 1942 and re-designated as the Camp Evans Signal Laboratory.¹⁴

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As the field laboratories began to assume research and development activities that were formerly on both the main post and at Squier Laboratory, the mission and activities at Squier Laboratory became more streamlined. At that time activities at the laboratory were focused on the testing of "small, so-called 'piece parts' of a larger "end item" such as a radio set, radar set, or telephone equipment so that the end item could be manufactured. The materials tested at Squier Hall included metals, plastics, ceramics, and crystalline materials.¹⁵ The Camp Evans Signal Laboratory went on to become one of the principal facilities for radar research, testing, and development during World War II.¹⁶

Criterion C, Architecture

The construction at Fort Monmouth followed the permanent building program of the U.S. Army after World War I when many Army installations across the country suffered from neglect and disrepair. Public Law No. 45, enacted by Congress in March 1926, facilitated permanent construction on Fort Monmouth and other military bases across the country. This program widely impacted Army and Air Corps installations retained after World War I and brought new construction as well as expansion. The new facilities at Fort Monmouth, which included a new headquarters building for the Signal Corps and the Signal Corps School, a modern laboratory, a hospital, and quarters, are illustrative of this permanent construction program and the importance of Ft. Monmouth as main installation of the Signal Corps.

Between 1927 and 1940, the Army Quartermaster Corps constructed over 100 permanent buildings on Fort Monmouth. Fort Monmouth's collection of buildings built between 1927 and 1940 are excellent examples of construction on military posts as part of the Army's permanent construction program after World War I. The arrangement of the buildings around a central parade ground, the grouping of buildings by their purpose, and the use of curvilinear streets and green space are all characteristic of planning methods advocated by the Quartermaster Corps. The Colonial Revival-style buildings that line the streets of the historic district were all built to the specifications of the Quartermaster Corps and illustrate the types of dwellings and community support buildings that were typical of the permanent construction program. Two of the most prominent buildings on the campus, Squier Hall (formerly Squier Laboratory) and Russel Hall, were designed by architects Robert Perry Rodgers and Alfred Easton Poor (Squier Hall) and Harry Sternfeld (Russel Hall) in conjunction with the Quartermaster Corps. These two buildings, designed in the stripped Classicism and Art Deco styles, are representative of federal buildings constructed during the 1930s. The new facilities at Fort Monmouth, which included a new headquarters building for the Signal Corps and the Signal Corps School, a modern laboratory, a hospital, and quarters, are illustrative of this permanent construction program and the importance of Ft. Monmouth as main installation of the Signal Corps.

After World War I, Army installations across the country generally suffered from neglect and Fort Monmouth was no exception. Although the Army retained a significant number of World War I cantonments, it lacked the funds for upkeep and therefore many fell into significant disrepair. The Secretary of War commented on this dire issue in the 1925 Annual Report and stated, "No graver problem faces the War Department to-day than that of providing adequate shelter. The officers commanding units in the field are in constant dread of the outbreak of conflagration in groups of temporary wooden buildings that are being used for housing purposes. . . ."¹⁷

Public Law No. 45, enacted by Congress in March 1926, facilitated permanent construction on Fort Monmouth and other military bases across the country. The design of the program specifically financed the housing and hospital needs of the Army. The estimated total expenditure was \$148 million allocated over 10 years. The program began modestly in 1927 with \$7 million appropriated for barracks and hospital construction.¹⁸ By the end of the first decade of the housing program, Congress had allocated approximately \$150 million for permanent construction. Although considerable improvements had been made, maintenance costs for the upkeep of temporary World War I buildings continued to be high

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and the Secretary of War urged additional funds. Between 1935 and 1940, congressional appropriations were supplemented by funding from the Public Works Administration.¹⁹ The appropriation of funds for permanent construction widely affected Army and Air Corps installations retained after World War I and brought new construction as well as expansion.

The task of designing and building the permanent construction and support facilities on Army installations went to the Army Quartermaster Corps Construction Division. Headed by Maj. Gen. Frank Cheatham, the construction division's staff of architects was well trained in the Beaux Arts tradition and followed the aesthetics of the City Beautiful Movement, which focused on the use of beautification of urban spaces through monumental buildings, green space, and controlled planning.²⁰ The Army recognized the growing field of city planning and the important role it would play in the design of Army posts, which were essentially functioning cities. The new bases were to be modern, and diverted from the "foursquare and austere" tradition of previous military installations.²¹ The five fundamental "laws" that that Quartermaster Corps considered in the planning of Army posts was unity, consistency in design, natural beauty, balance, and radiation.²² The Army wanted to stray from the building and planning mistakes of its past and build posts that were both well-designed and functional.

The Quartermaster Corps designs for the new bases called for main thoroughfares to be broad and direct with easy gradients and secondary streets following the natural topography. Allowing secondary streets to follow the natural contours of the land reduced grading costs and gave the streets a quality that was "distinctively domestic . . . cozier and more attractive."²³ The placement of roads also strengthened the separation of rank and functions within the posts.²⁴ Buildings were to be grouped by function — operation, administration, and housing — to create a hierarchy of space. Semi-public buildings, such as the post headquarters, post exchange, chapel, library, and theater, were to be located near open spaces and parking. Generally, the buildings on the post were to be situated to take advantage of the views provided by the large open green of the parade ground. Planners were also urged to also take advantage of the existing topography in the planning of the residential areas of the post, where the orientation of the buildings was important for good circulation and the presence of vegetation was to provide much-needed privacy.²⁵

Permanent construction at Fort Monmouth after World War I took place between 1927 and 1940. The planning of the post followed the primary principles of the Quartermaster Corps, featuring a large open green that functioned not only as a parade ground but also provided a central organizing feature to the post with sweeping views of the main buildings and residential areas. The headquarters building, Russel Hall, was situated at the front of the green facing the main entrance to the post; broad avenues bordered the green on the north and south. Administration buildings, a hospital, fire house, and theater were for the most part located near the main entrance to the post or adjacent to residential areas for accessibility. The residential areas were located in "neighborhoods" placed on the north and south sides of the green. Commissioned officers' quarters were built on the north side of the green, separated from the non-commissioned officer's quarters on the south. On the north side of the post in particular, the curvilinear streets with a central park emulated the ideals of the new Army posts of the post-World War I era. The permanent construction program also included a new quartermaster support area, which was separated from the residential and administration area by Oceanport Avenue. The quartermaster support area consisted of a warehouse/commissary, a bakery, a garage, a utility shop, and a blacksmith shop.²⁶ The plan and the buildings erected during the permanent construction program at Fort Monmouth remain extant, illustrating the lasting influence of the Quartermaster Corps.

When choosing a style to apply to the new permanent housing on military bases, the Quartermaster Corps primarily used the Colonial Revival style, which was then in the height of its popularity. The use of the style for government buildings in particular was favored as a nostalgic reference to buildings of the eighteenth century and the Revolutionary War, which had been awakened during the Philadelphia Centennial in 1876. The Quartermaster Corps found that the Colonial Revival

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style was a "suitable style in architecture" for a "building program as essentially national in its character. . . . [The style] should be one that has acquired some degree of national character and that has become familiar to and is understood by a majority of people."²⁷ Styles determined to fit these criteria were the Georgian, or Colonial, of the Mid-Atlantic and New England, characterized by red brick and white trim, and the Spanish Mission style of the Southwest, distinctive with stucco walls and red tile roofs. "Both these styles were brought over by the original foundations of the settlements in those respective sections, and, while they maintain a major popularity in their original zones, they have spread throughout the central and western states until they have covered the land."²⁸

The Quartermaster Corps used the Colonial Revival style in the majority of the buildings at Fort Monmouth as it was located in the Mid-Atlantic region. The rows of red brick, symmetrical buildings with white trim and classical motifs epitomize the Colonial Revival style of the early twentieth century. Out of approximately 90 permanent buildings constructed between 1927 and 1939, only two, Russel Hall and Squier Laboratory at Fort Monmouth were not designed in the Colonial Revival style.

HISTORICAL BACKGROUND

The Establishment of the Signal Corps and Camp Alfred Vail

The origins of the Army Signal Corps date to June 21, 1860, when the Army adopted the signaling system of Albert James Myer, an Army doctor. Myer joined the Army in 1854 as an assistant surgeon. While in Texas he developed a military signaling system based on his medical dissertation, "A New Sign Language for Deaf Mutes," in which telegraph code was transformed into a means of personal communication through tapping out words on a person's cheek, hand, or nearby object. The military signal system that came to be known as "wigwag" used a torch or flag. Along with the adopted signaling system, Myer was appointed signal officer with the rank of major. Although the Signal Corps was officially created in February 1863 only for the length of the "present rebellion," a small peacetime Signal Corps was authorized after the war ended.²⁹ In 1867 management of field electric telegraphs for active forces came under the direction of the Chief Signal Officer. When a national weather service was created in 1870, it was also assigned to the Chief Signal Officer.³⁰

What had been a small service during the nineteenth century and first decade of the twentieth century required rapid expansion during World War I. As the likelihood of United States' participation in the war increased, it became evident, with only 2,000 officers and enlisted men, that the Signal Corps did not have enough strength to provide support to the Army. The Signal Corps recruited from the employees of American Telephone and Telegraph, Western Union, and the Postal Telegraph Company and received 1,400 applicants for enlistment.³¹ With the addition of so many recruits, the Signal Corps began to establish training camps in 1917 at Fort Leavenworth, Kansas; Leon Springs, Texas; the Presidio of Monterey, California; and Little Silver, New Jersey.

As the only camp not using government-owned land, Little Silver was the exception. The Army leased 468 acres, with the option to buy, of land that was formerly the Monmouth Park Race Track (1870-1893), which had ceased operation in 1893 when New Jersey abolished horse racing. The land was in poor condition, with remains of the steel grandstand, a one-mile oval track, a one-and-a-half mile oval track, and one-mile straightaway track. The remainder of the land was largely overgrown and infested with poison ivy. But the advantage of location outweighed these factors, such as the proximity of rail lines and the station at Little Silver, good roads, and water access. On June 16, 1917, Lt. Col. Carl F. Hartmann announced the establishment of the camp, with recruiting campaigns in New York City, Philadelphia, Pittsburgh, and Rochester for telegraph battalions. Electricians, engineers, and telegraph operators were especially needed. Doubled pay for privates, increased pay for non-commissioned officers, and claims that "in no other branch are there

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better opportunities for character development and vocational training” and “a healthful life in the open is one of the most attractive offerings of this branch of the army” were offered as incentives for enlistment.³²

For the first three months of its existence, the camp was known only as Signal Corps Camp, Little Silver, New Jersey. The first personnel to arrive on site came in two Model T Ford trucks with tents and other equipment ordered by Lt. Colonel Hartmann; the next day a detachment of Depot Company H, Signal Corps began clearing and marking out the camp site. Lt. Colonel Hartmann arrived on June 17, 1917, as the camp’s first commanding officer, in time to greet the first troops, the First and Second Reserve Telegraph Battalions, who arrived the next day. Clearing land, repairing and extending roads, and digging drainage ditches continued throughout the summer, even after instruction of trainees began on July 23.³³

On September 15, 1917, the camp received a semi-permanent status — to be used for the duration of the war — and was redesignated Camp Alfred Vail in honor of Alfred E. Vail. Vail was an associate of Samuel F.B. Morse and contributed to the first experiments in telegraphy, devised the Morse alphabet of dots, dashes, and spaces, invented the finger key used for transmitting messages, and received the first successfully transmitted message in 1844. Naming the camp after Vail honored his contribution to communications technology that would eventually be used by the Signal Corps. A radio operator detachment was formed at the same time that the camp was renamed. During the previous months of instruction, trainees received instruction in subjects including cryptography, the heliograph, semaphore, wigwag, motor vehicle operation, physical training, dismounted drill, tent pitching, map reading, and camp sanitation, but no technical communications subjects. With the formation of the new detachment came intensive six-week training in radio (emphasis on foreign codes and languages) and a radio operator course.

The first units were dispatched from Camp Vail in October 1917 with the 11th Reserve Telegraph Battalion. By the end of the year, 2,416 enlisted men and 448 officers had been processed through the camp. Telegraph Battalions sent to Europe built over 1,700 miles of permanent pole lines and ran 23,000 miles of wire. Field signal battalions worked on the front lines connecting brigade and regimental headquarters. Telephone lines ran to each infantry battalion and between adjoining battalions. These lines were adapted to trench warfare, stringing wires on short 4-foot stakes or along trench walls. Major lines were placed in shallow trenches or buried underground to protect them from enemy shelling and foot and vehicle traffic. At division headquarters telephone switchboards were built in underground dugouts to withstand artillery bombardment. Forward from battalions to frontline companies the Signal Corps used earth telegraphy, which worked by driving poles in the ground that could pick up electrical currents. Though earth telegraphy was less secure from interception, it was less vulnerable to artillery fire. When other means were not available, communication resorted to visual signals such as wigwag.³⁴

The necessity for new laboratories devoted to the development of wireless communication provided a new mission for Camp Vail, that of adapting radio for aircraft use. Tank and aerial warfare, employed for the first time during World War I, presented a challenge for communications. Wireless sets were used during the war but were as yet an unreliable means of communication. Camp Vail was selected as the site for new Radio Laboratory, devoted solely to problems of wireless communication. Construction began in December 1917 on 43 semi-permanent laboratory buildings in the area of present-day Barker Circle. Two airfields and four hangars were built east of Oceanport Avenue for radio testing. Research focused on vacuum tubes, circuits, testing apparatus submitted by manufacturers, and the application of new inventions. Some 90 to 95 airplane flights each week were flown by the 504th and 122nd Aero Squadrons. Though the laboratory remained after the end of the war, the Aviation Section was moved from Camp Vail, but not before great progress had been made on the new technology.³⁵

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The end of the war on November 11, 1918, meant the end of wartime activities but not the end of the camp. In addition to the removal of the Aviation Section, the Radio Laboratory's activity was decreased for a time. The camp, which had been called the "best equipped Signal Corps camp ever established anywhere," had 129 semi-permanent structures, which included the laboratory, housing, a hospital, stables, and hard-surfaced roads. As such, in August 1919 the Chief Signal Officer requested that all Signal Corps schools be moved to Camp Alfred Vail. Instruction began on October 2, 1919, with an officers' division divided into radio engineering, telegraph engineering, telephone engineering, signal organization, and supply. Enlisted radio specialists had courses in radio electricity, photography, meteorology, gas engines, and motor vehicle operation. Courses were also available for telephone and telegraph electricians, operators, and clerical staff.³⁶

Post World War I and the Establishment of Fort Monmouth

During the early 1920s the Signal Corps School, the largest organization at Camp Alfred Vail, continued to grow as a result of the increasing demand for communications training. The school's name was officially changed to "The Signal School" in 1921 as it educated men from several branches of the Army, not only the Signal Corps. The name remained in place until a reorganization of the school in 1935, when its name reverted back to the Signal Corps School. During the 1920s the school consisted of four departments: Communications Engineering, Applied Communications, General Instruction (for all officers), and Enlisted Specialists. Instruction was also offered in meteorology, photography, and motion pictures. The training literature section formed in 1921 and supplied much-needed technical and field manuals for the operation and maintenance of Signal Corps equipment.

During the Great Depression the school experienced an acute shortage of trained personnel, particularly instructors. To provide trained personnel, courses for advanced students were created in Equipment Studies, Tactics and Technique of Signal Communications, Auxiliary Signal Services in the Theater of Operations, Signal Operating Instructions and Orders, Staff Relations, Training Management, War Plans, Expeditionary Forces, Signal Supply, Duties of Corps Area Signal Officers, Historical Studies, and Field Exercises. These courses provided a comprehensive education to prepare commissioned personnel for the problems facing a Staff Signal Officer. Concurrently the school was reorganized into three distinct divisions: the Officers' Department, the Enlisted Department, and the Department of Training Literature. Teaching in the Enlisted Department was converted from classroom to individual instruction, allowing more advanced students to progress at a faster pace. Finally, the school was run on a 12-month basis with students entering at various times of the year to accommodate more students with any given number of instructors.³⁷

In June 1924 the Signal Corps established the Signal Corps Board at Fort Monmouth. The board's purpose was to respond to problems related to organization, equipment, and tactical and technical procedure at Fort Monmouth, the central location of Signal Corps activities. The board, consisting of Signal Corps officers, could also delegate detailed studies, experimental work, or field tests. Typical activities of the board included Tables of Organization, allowances and equipment, efficiency reports, Signal Corps organizations, and Signal Corps transportation needs.³⁸

A new phase of development for Camp Vail began in 1925 when it was granted permanent status. The installation was renamed Fort Monmouth in honor of those who fought at nearby Monmouth Courthouse during the Revolutionary War. However great the growth of the Camp from its establishment in 1917 through the early 1920s, it was only a fraction of the development that would take place once it became a permanent establishment.

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Permanent Construction on Fort Monmouth

Public Law No. 45 and Permanent Construction

After World War I, Army installations across the country generally suffered from neglect. Although the army retained a significant number of World War I cantonments, it lacked the funds for upkeep and maintenance, and therefore many fell into significant disrepair. In addition, the temporary buildings constructed on the installations during wartime had outlived their usefulness and were easily being destroyed by fire, collapse, and storms.³⁹ Enacted by Congress in March 1926 Public Law No. 45 facilitated permanent construction on Fort Monmouth and other military installations across the country.

The new law authorized the Secretary of War to dispose of 43 military reservations, or portions of the reservations, and to deposit the money from the sales into a "Military Post Construction Fund." The design of the program specifically financed the housing and hospital needs of the Army.⁴⁰ By the end of the first decade of the housing program, Congress had allocated approximately \$150 million for permanent construction. Though considerable improvements had been made, maintenance costs for temporary World War I continued to be high and the Secretary of War urged further appropriations. Between 1935 and 1940, congressional appropriations were supplemented by funding from the Public Works Administration. By the end of the fiscal year 1939, the Secretary of War commented on the "marked betterment in housing facilities"; however, the Chief of Staff thought that the Army's housing situation had only been partially alleviated since the enlargement of the Army offset the new construction.⁴¹ Despite these differences, the appropriation of funds for permanent construction widely impacted Army and Air Corps installations retained after World War I and brought new construction as well as expansion.

Quartermaster Corps Standards of Architecture and Planning

The task of designing and building the permanent construction and support facilities on Army installations went to the Army Quartermaster Corps. Maj. Gen. Frank Cheatham headed the Quartermaster's Construction Service. Cheatham's staff of architects was well trained in the Beaux Arts tradition and followed the aesthetics of the City Beautiful Movement. His staff included Lt. Col. Francis B. Wheaton, formerly of the firm McKim, Mead, and White; Luther M. Leisenring, formerly an associate of architect Cass Gilbert; and 1st Lt. Howard B. Nurse, a graduate of Mechanics Institute and who had practiced in Rochester, New York. Cheatham also consulted with a number of civilian engineers, landscape architects, and urban planners, one of whom was George B. Ford, a city planning adviser for the War Department. A respected urban planner, Ford studied architecture at Harvard, MIT, and the Ecole des Beaux Arts. Ford was a proponent of the City Efficient movement, which strove to consider zoning and utilities, and involve civil engineers, lawyers, and public administrators in urban planning.⁴²

The Army recognized the growing field of city planning and the important role it would play in the design of Army posts, which were essentially functioning cities. As urban planner George B. Ford explained in *The Quartermaster Review* in 1929, when "the Quartermaster General found Congress was likely to authorize the expenditure of some \$215,000,000.00 in re-housing the Army he took cognizance of the fact that in recent years a new science and art had grown up in America known as 'city planning.' He determined that, if this new method of studying the layout of cities, towns, and subdivisions is proving so effective in civil life, why should the Army not profit by it in the new housing program."⁴³ In describing the layout of military posts, Ford stressed that they should be military yet also modern.⁴⁴ Thus, the new Army posts wanted to stray from the building and planning mistakes of its past and build well-designed as well as functional posts.

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The primary goal of planning the new Army posts, as explained by Lt. H.B. Nurse in 1929, was to be “one great social organism. The planning the developing must take such form as will secure healthful conditions, promote the scientific training of troops, and also furnish the means of social intercourse.”⁴⁵ Nurse outlined the five fundamental “laws” to be considered in the planning of Army posts: unity, consonance in design, natural beauty, balance, and radiation. Nurse stressed that every installation should have a comprehensive plan of development to “promote the orderly...development of a post and its environs along rational lines.”⁴⁶

The planning principles for the new Army posts considered the role of existing topography within the design of the post. Main thoroughfares were to be broad and direct with easy gradients, but secondary streets were to follow the natural topography. Allowing secondary streets to follow the natural contours of the land would reduce grading costs and give them a quality that was “distinctively domestic...cozier and more attractive.”⁴⁷ The placement of roads also strengthened the separation of rank and functions within the post.⁴⁸ Buildings were to be grouped by function — operation, administration, and housing — to create a hierarchy of space. Semi-public buildings, such as the post headquarters, post exchange, chapel, library, and theater, were to be located near open spaces and parking. In general, the buildings on the post were to be situated to take advantage of the views provided by the large open green of the parade ground. Planners were also urged to also take advantage of the existing topography in the planning of the residential areas of the post. Here, the orientation of the buildings was important for good circulation, and the presence of vegetation was to provide much-needed privacy.⁴⁹

When choosing a style to apply to the new permanent housing on military bases, the Quartermaster Corps primarily followed the popular taste of the nation. During the early decades of the twentieth century in particular, the Colonial Revival style was in the height of its popularity. The use of the style for government buildings in particular was favored as a nostalgic reference to buildings of the eighteenth century and the Revolutionary War, which had been awakened during the Philadelphia Centennial in 1876. As explained by Lt. Col. Francis B. Wheaton, the most “suitable style in architecture” for a “building program as essentially national in its character. . .should be one that has acquired some degree of national character and that has become familiar to and is understood by a majority of people.”⁵⁰ Styles determined to fit these criteria were the Georgian, or Colonial, of the Mid-Atlantic and New England, and Spanish Mission of the Southwest. “Both these styles were brought over by the original foundations of the settlements in those respective sections, and, while they maintain a major popularity in their original zones, they have spread throughout the central and western states until they have covered the land.”⁵¹ In particular, Wheaton admired the Colonial Revival for its “simple dignity, fine proportions, and exquisite detail.”⁵² Thus, the Quartermaster Corps chose these two styles for the permanent construction on Army posts during the decades before World War II, the Colonial Revival style for its posts in the Mid-Atlantic and New England and Spanish Mission for the West Coast and Southwest. The buildings at each post were often differentiated by regional variations.

Permanent Construction

Permanent construction at Fort Monmouth after World War I took place between 1927 and 1940. The planning of the post followed the primary principles of the Quartermaster Corps, featuring a large open green that functioned not only as a parade ground but provided a central feature to the post and sweeping views of the main buildings and residential areas. The headquarters building, Russel Hall, was situated at the front of the green, facing the main entrance to the post, and broad avenues bordered the green on the north and south. Administration buildings were for the most part located near the main entrance to the post or adjacent to residential areas for accessibility. The residential areas were located in “neighborhoods” placed on the north and south sides of the green. On the north side of the post in particular, the curvilinear streets with a central park emulated the ideals of the new Army posts of the post-World War I era. Furthering

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the Quartermaster Corps design principles was the use of the Colonial Revival style for the majority of the buildings on Fort Monmouth.

The final phase of the permanent construction building program was completed from 1934 to 1936 by the Reconstruction Finance Corporation (RFC) and later the Works Progress Administration (WPA). The RFC was an independent agency of the government created under the Hoover administration that, in addition to making loans to banks and businesses, was authorized to construct public works to increase employment under the 1932 Emergency Relief and Construction Act. The RFC was bogged down by bureaucracy and unable to fulfill projects, so a large number were turned over to the newly created Public Works Administration (PWA). Finally the WPA, another of the many "alphabet soup" New Deal agencies established in the 1930s by President Franklin D. Roosevelt's administration, completed the remaining buildings in 1936. Buildings constructed during this period include additional Non-Commissioned Officers' Quarters, Field and Company Officers' Quarters, the Hospital wing, Fire and Guard Station, the Signal Corps Laboratory (Squier Hall), Headquarters (Russel Hall), and the Commanding Officer's Quarters. Other work included roads, grading, sewer systems, grounds improvement, electrical systems, telephone construction, and building repairs.⁵³

Standardized Plans

Following the initial appropriation for housing and hospitals, the first permanent construction efforts at Fort Monmouth began in 1927 with the construction of barracks and a hospital. Construction began on the barracks in February 1927, and by October four barracks stood on the southeast side of the parade ground around what is now Baker Circle. The barracks varied slightly in size but were all three-story rectangular buildings following Quartermaster Corps plans (Photo 7). The Quartermaster Corps found that the three-story height was "not only economical in construction" but "convenient and easy of administration."⁵⁴ The buildings were designed to house one company each, with a combined capacity of 805 men. In 1934 Building 207 was enlarged on its north end to accommodate the Army band. A fifth barracks was added to the group in 1940 (Building 287) but is similar in design and construction to the 1927 barracks.

The hospital, Allison Hall (Building 209) (Photo 3), was built northeast of the parade ground facing south toward the main entrance to the installation. The building followed Quartermaster Corps standardized plans for hospitals as evidenced by its Colonial Revival two-story main block and flanking wing wards. The original sun porches on the wings, currently enclosed, are also typical features of Quartermaster Corps hospitals and evolved from the large verandas that characterized the Quartermaster Corps hospitals of the late nineteenth and early twentieth centuries. The building was completed in April 1928 and consisted of only the main block and the east wing. The north wing, which contained the medical detachment barracks, was also part of the 1928 construction and provided space for 35 beds and medical, surgical, dental, and other services for the hospital. The west wing and an addition to the north (rear) wing were completed in 1934. In this capacity the hospital held 56 beds and facilities for 26 enlisted men assigned to the medical detachment.⁵⁵

Construction on the officers' housing area on the north side of the parade ground began in 1927 and was completed by 1935. In the fall of 1927, the Quartermaster Corps surveyed junior officers' wives on what type of housing they preferred and found that the wives favored single-family dwellings and not a central mess. Though the construction of single-family houses was more expensive, the Quartermaster took this in consideration during the permanent construction phase, and the Army strove to provide single-family housing for both commissioned and non-commissioned officers at its Army bases. Instead of the former practice of situating housing to face the parade ground, the designs for housing at the new Army posts were arranged in neighborhoods of curvilinear streets around parks.⁵⁶

The officers' housing area provided two types of dwellings, single-family dwellings for field officers and the commanding officer and two-family dwellings for company officers (Photos 11-13). The officers' dwellings followed the stipulations

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of the Quartermaster Corps and where “sufficient ground area” was available, were two stories, with a “living room, dining room, kitchen, pantry, three bedrooms, and two bathrooms as a maid’s room and bath.”⁵⁷ An additional bedroom was often added in field officers’ quarters. The standards also provided double houses when less land was available and “at some of the army schools, buildings for four families, two on each floor but each provided with its own individual entrance and porch.”⁵⁸ The four-family dwellings were slightly smaller, offering only two bedrooms and one bathroom, “as they are for the use of student officers who tours of duty are relatively short.”⁵⁹ These four-family dwellings for student officers and their families were built adjacent to the field and company officers’ quarters between 1929 and 1932 (Photo 15). Shared garages were built between or behind the houses, emphasizing the importance of the automobile in the design of the new posts (Photo 16). The Bachelor Officers’ Quarters were built in 1929 and 1931 also as part of the officers’ quarters area. Non-Commissioned Officers’ Quarters were built on the south side of the parade ground between 1927 and 1934 (Photos 8 and 9). The two-story brick houses were similar to those of the Commissioned Officers’ quarters. The buildings followed the standardized plans, which called for “two story double houses, having a living room and kitchen on the lower floor and two bedrooms and a bathroom on the second floor.”⁶⁰

Community support buildings on the post were built facing the parade ground and were easily accessible to the residential areas and, in the case of the Fire Station and Guard House (1935) (Photo 6), near the main entrance to the post and accessible to the primary roads. Other community support buildings included the hospital (Allison Hall) and a theater, which was located adjacent to the enlisted men’s barracks (1933) (Photo 7).

Non-Standardized Plan Buildings

Although the majority of the buildings constructed as part of the Fort Monmouth campus in the 1920s and 1930s followed the standardized plans of the Army Quartermaster Corps, the two most prominent buildings were designed by architects. These two buildings strayed from the Colonial Revival style favored by the Quartermaster Corps.

Squier Laboratory, Rodgers and Poor

Prior to the construction of Squier Laboratory, the Signal Corps Laboratories at Fort Monmouth were housed in “long, narrow, one-story, unheated, roughly-built structures.”⁶¹ The mission of these laboratories was to develop radio equipment along with other equipment related to telephony, telegraphy, meteorology, batteries, and carrying vehicles. A major goal was the development of radios for aircraft; thus, four airplane hangars were adjacent to the laboratory buildings. During World War I the laboratories had a staff of 10 officers, 76 enlisted men, and 28 civilians. The laboratories were under the command of Col. (Dr.) George Owen Squier.

After the war ended, the staff decreased to two officers, four radio engineers, two civilians, and eight enlisted men in 1920. Between 1920 and 1930, the mission of the laboratories was primarily to design and test radio sets and some field wire equipment. To increase efficiency, three other Signal Corps laboratories, located in Washington, D.C., and New York, were consolidated at Fort Monmouth into the Signal Corps Laboratories in 1930. Until 1935 and the construction of Squier Laboratory, no physical changes had been made to the laboratory buildings. By that time personnel had increased to eight officers, 24 enlisted men, and 66 civilians.⁶²

As additional space was needed, Squier Laboratory (now Squier Hall) was built in 1935 at the northwest edge of the parade ground (Photo 4). The building consisted of an administration and laboratory section, housed in the main block, and a rear shop wing. After World War II the building was expanded in 1947 with a west wing. The building was designed by the New York City architectural firm of Rodgers and Poor in collaboration with the Quartermaster Corps Office of Construction. The two-story brick building was designed in a stripped classicism style distinguished by the lack

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of traditional Colonial Revival-style ornamentation from the majority of the buildings constructed at Fort Monmouth during the time of permanent construction. The horizontal nature of the building is emphasized by large bands of metal-frame windows that stretch across the main block. The design of Squier Hall illustrates the influence of the Ecole des Beaux Arts and Paul Cret in the classical symmetry and massing that reflects the Beaux Arts tradition; however, it lacks ostentatious ornamentation that is commonly associated with Beaux Arts designs. Cret was known for his civic buildings that followed the plan, flow, and symmetry of the Beaux Arts style, but displayed stripped classicism, or as Cret preferred to call it, "new classicism." Consequently, Rodgers and Poor, like Cret, chose to exhibit the fundamental principles of the Beaux Arts style yet omitted the embellishments of the style that had become "overly familiar and socially suspect."⁶³

Robert Perry Rodgers (1895-1934) was born in 1895 in Havre de Grace, Maryland, into a family with a long lineage of Naval heroes, including Commodore Matthew Perry and Commodore John Rodgers, his great-grandfathers. Rodgers received a degree in architecture from Harvard University and enlisted in the Navy at the onset of World War I. Rodgers was honorably discharged with the rank of ensign and continued his architectural studies at the Ecole des Beaux Arts in Paris. After earning a degree in 1920, he went to work for the New York City office of Bertram Goodhue and later partnered with architect Alfred Easton Poor to design the Wright Brothers Memorial at Kitty Hawk in 1931-1932. In June 1934 Rodgers died in Havre de Grace at the age of 38 from an internal hemorrhage and subsequent infection, while Squier Laboratory was under construction.⁶⁴

Alfred Easton Poor (1899-1988) was born in Baltimore in 1899 and received a degree in architecture from Harvard University and later from the University of Pennsylvania under Beaux Arts architect Paul P. Cret. Poor's architectural career spanned over half a century. In the 1930s Poor designed a number of country houses in Long Island and served as chief architect of the Red Hook housing project in New York. He partnered with Robert Perry Rodgers in 1931-1932 for the design of the Wright Brothers Memorial and shortly thereafter for the design of Squier Hall, which was completed in 1935. After World War II Poor went on to design dozens of office and government buildings, often in collaboration with associates. One of his most recognized designs was for the Jacob J. Javits Federal Office Building in Manhattan (1975-1977). He also served as the leading architect of the James Madison Memorial Building of the Library of Congress in Washington, D.C., which was designed in the mid-1960s and completed in 1982. From 1966 to 1977, Poor served as the president of the National Academy of Design in New York. He died in New York City in 1988 at the age of 88.⁶⁵

Both Rodgers and Poor are best known for their design of the Wright Brothers Memorial in Kitty Hawk, North Carolina. The architects won an international competition for their design of the memorial in 1930, and the wing-shaped monument was completed in 1932. The memorial was praised for its Art Deco design and motifs. In selecting the design, the jury stated that it was "not only the most original and impressive as seen from land, but would also be extremely effective as seen from the air. It strongly manifests the dominant motive suggested in the program, namely a memorial to the birth of human flight."⁶⁶

Russel Hall, Sternfeld

Russel Hall, the most prominent building in the Fort Monmouth Main Post Historic District, was built as the centerpiece of the Fort Monmouth installation in 1936 and served as the Headquarters building for the post (Photo 2). The Art Deco-style building originally contained the post library, the chaplain's office, telephone and switchboard rooms, a court martial room, a large map and war game room, and classrooms for the Signal Corps School.⁶⁷ Like Squier Laboratory, the building's Art Deco-style design contrasted with the Colonial Revival-style buildings built from the standardized plans of the Quartermaster Corps. The building paid tribute to the Signal Corps with its limestone reliefs of the Signal Corps in the Civil War and World War I that flank the main entrance to the building. The importance of the building is emphasized by

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its location facing the original main entrance to the post at the head of the parade ground. Its role as Headquarters is further underscored by its monumental quality provided by its four-story limestone frontispiece.

Harry Sternfeld (1888-1976) served as architect for Russel Hall. Sternfeld, a native Philadelphian, studied under Paul Cret at the University of Pennsylvania and received his bachelor's degree in architecture in 1911. He then went to work in the Montreal architectural office of Francis S. Swales, who was Beaux Arts trained. Sternfeld returned to the University of Pennsylvania in 1913 to work on his master's in Architecture. Sternfeld graduated in 1914 and received the Paris Prize; however, the onset of World War I prevented him from continuing his studies in Europe. Sternfeld accepted a faculty of architecture position at Carnegie Institute of Technology (now Carnegie Mellon University) in Pittsburgh. After the end of World War I, Sternfeld was able to travel to Europe, where he attended the Ecole des Beaux Arts and later the American Academy in Rome. After rising to the position of Head of the Department of Architecture, Sternfeld left Carnegie Tech in 1923 and joined the faculty at the University of Pennsylvania as a Professor of Design and concurrently began a long career as both architect and planner.⁶⁸

Growth of the Signal Corps Laboratories

Although the Signal School was the dominant activity at Fort Monmouth in the 1920s, the Radio Laboratory (renamed the Signal Corps Laboratories in 1929) was one of the most important facilities on the installation. After World War I the Signal Corps emphasized the need for research and development facilities for Army communications equipment, despite the reduction in staff and funding. Activities at the laboratory continued and made the most of the meager budget. In the decade after World War I, the laboratory focused its research and development activities on designing and testing radio sets and field wire equipment.

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One focus of the laboratories was on adapting and advancing radio technology for various military situations. Among the best-known developments of the period was the production of "walkie-talkie" radios. The problems inherent in front-line communication could not be solved by human or pigeon messengers, who were slow and didn't always make it to their destination. Telephone lines took time to lay and were easily destroyed by enemy fire. Radio transmitters offered a solution, if they could be built light enough to be easily carried, rugged enough to withstand outdoor exposure, and had sufficient frequencies to reach the combat team, artillery, and tanks.

The first sets were tested in 1934 (prior to the construction of Squier Laboratory) and improvements were made in 1935 and 1936, resulting in the SCR-194 and -195 models. Major General U. Birnie, Jr., Chief of Field Artillery in 1936, described the importance of the first walkie-talkies. "I consider," he said, "the production of this type of radio set to be the most notable achievement on the part of [the Signal Corps], constituting as it does the most far-reaching and important improvement in Field Artillery communications which has been made since the adaptation of the telephone to military needs. It provides almost certain and easily-carried-forward communication with the front line troops—a need which heretofore has presented problems well nigh insuperable." Walkie-talkies for use by foot soldiers, such as the SCR-194 and -195, were carried on the back with harness straps and a belt, and both a headset for the soldier carrying it and a handset that could be used by another soldier. The SCR-511, brought out in 1940, was designed for cavalry troops and allowed better communication than previous models. Its design, with a long pole that could be inserted into a stirrup, was not easily adaptable for foot soldiers and vehicles, and the pole was often broken. Newer models designed during and after World War II were lighter, had more frequencies, longer ranges, and longer battery life. The SCR-300 (and the AN/VRC-3 for tanks), developed in 1942, benefited from the use of FM (frequency modulation) and had a homing device that allowed the operator to tune into a friendly transmission and proceed to it.⁶⁹

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The development of FM allowed significant advances in radio technology. FM radio signals have a shorter range than amplitude modulation (AM) but are less susceptible to interference and outside noise. The internal combustion engines in tanks and airplanes interfered with radio reception and the friction of a tank's treads generated static. As a result tanks had previously communicated by flags and hand signals with infantry. Communication during World War I was limited to three basic symbols: (1) tank to infantry, using a red, white, and blue flag to signal "coming out of action"; (2) infantry to tanks and tanks to infantry, using red and yellow flags to signal "broken down"; (3) infantry to tanks, using a helmet on a bayonet to signal "tanks wanted here" after which, once the tank came over, an infantry officer attracted the attention of the Tank Commander by means of a bell at the rear of the tank and indicated what he required of the tank.⁷⁰ Using FM transceivers allowed clear radio communication in vehicles and eliminated the need for primitive signal communication. Quartz crystal controls (also developed by the Signal Corps at Fort Monmouth) were more dependable and allowed radios to be tuned with the push of a button rather than twirling dials.

Maj. Gen. Roger B. Colton, director of the Signal Corps Laboratories, was responsible for the decision to employ FM in military radio and for the switch to crystal controls. He commented on the decision after the war, "The Army had radio before they had crystals. Now the Army has communications. That's the difference. Crystals gave us communications."⁷¹ Signal Officer Colonel Grant Williams further clarified the importance of the developments brought about by General Colton: "I feel that every Soldier who lived through the war with an armored unit owes a debt he does not even realize to General Colton."⁷²

The Signal School

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The Signal School, like the Signal Corps Laboratories, lacked adequate resources during the Depression years. Signal services were needed for the Civilian Conservation Corps (CCC), a Great Depression program that provided manual labor jobs relating to the conservation and development of natural resources on government lands, and the Army Air Corps, which handled air mail. The school was unable to meet the needs for these services because of an acute shortage of trained personnel who could be instructors. In order to provide trained personnel, courses for advanced students were created in Equipment Studies, Tactics and Technique of Signal Communications, Auxiliary Signal Services in the Theater of Operations, Signal Operating Instructions and Orders, Staff Relations, Training Management, War Plans, Expeditionary Forces, Signal Supply, Duties of Corps Area Signal Officers, Historical Studies, and Field Exercises. These courses provided a comprehensive education to prepare commissioned personnel with the problems facing a Staff Signal Officer.

At the same time the school was reorganized into three distinct divisions: the Officers' Department, the Enlisted Department, and the Department of Training Literature. Teaching in the Enlisted Department was converted from classroom to individual instruction, allowing more advanced students to progress at a faster pace. Finally, the school was run on a 12-month basis with students entering at various times of the year in order to accommodate more students with any given number of instructors. From its inception in 1919 until 1940, 4,618 enlisted men graduated from the school, 2,443 from the Signal Corps and the remainder from other branches or services and from foreign nations.⁷³ The reorganization of the Signal School during the 1930s provided the school with a functioning organization that would be better equipped to handle the challenges of training during the impending war.

Preparation for War

In 1940 a barracks (Building 287) was completed, the last of pre-World War II permanent construction at Fort Monmouth. Construction at Fort Monmouth soon became focused on an influx of personnel as the Army prepared for entry into World War II. In 1941 the Signal Corps Replacement Center began operation on Fort Monmouth for the training of enlisted personnel. As the capacity for the center increased from 5,000 to 7,000 enlistees, the size of the post, approximately 440

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acres, was deemed insufficient. Consequently, The Army purchased three contiguous areas, increasing the size of the post to 637 acres, and built cantonments on any available space, except on the parade ground behind Russel Hall.⁷⁴ These temporary structures contrasted greatly with the buildings erected as part of the permanent construction program at Fort Monmouth and marked a new area of improvement and expansion of the post.

The formal outbreak of hostilities began after the Japanese attack on Pearl Harbor on December 7, 1941, but preparations for impending war had begun in September 1939 when President Roosevelt proclaimed a state of "limited emergency." Compulsory military service was introduced the following year, causing changes at Fort Monmouth's Signal Corps School. In July 1940 the school's curriculum was overhauled and plans were made to increase capacity by 67 percent. Three field laboratories in 1940 and 1941 would meet the needs of the expanding Signal Corps Laboratory. Over the course of World War II, the number of personnel at Fort Monmouth expanded dramatically. The Army, in conjunction with the Federal Public Housing Authority, constructed hundreds of homes in surrounding areas, such as Shrewsbury, Long Branch, and Asbury Park, to provide housing for the 35,000 military and 15,000 civilians working at the fort.

ADDITIONAL HISTORY

[Preparers note: The following additional history on Fort Monmouth was taken from Sarah Groesbeck and Patti Kuhn, Watchful for the County: A History of Fort Monmouth, New Jersey, prepared for the U.S. Army Corps of Engineers, Mobile District, by The Louis Berger Group, Inc., Washington, D.C., 2011.]

World War II and Fort Monmouth

The Replacement Training Center

After President Roosevelt's declaration of limited emergency and the passage of the Selective Training and Service Act a year later (requiring men between the ages of 21 and 35 to register with the draft board), post commander Brig. Gen. Olmstead established a Replacement Training Center at Fort Monmouth. The center opened in January 1941 and quickly grew beyond the capacity of the base. Several tracts of land were purchased two miles west of the main post to provide additional space for the training center. The land was named Camp Charles Woods (now known as the Charles Woods area).

The Signal Corps School During the War

The Signal Corps School at Fort Monmouth was described during the war as the "graduate school to the college of the Replacement Training Center."⁷⁵ The school had a student body of 3,000 officers and enlisted men in 1941 from all branches of the Army, as well as the Marine Corps and Coast Guard. The school was divided into the following departments: Officers, Officer Candidate, Enlisted Men, Aircraft Warning (Radar), and Training and Literature.⁷⁶ In 1942 the Signal Corps School was re-designated the Eastern Signal Corps School to differentiate it from similar installations at Camp Crowder, Missouri, and Camp Kohler, California. It became part of the Eastern Signal Corps Training Center, which included the Replacement Center and the School.

The New Signal units were headed by officers who were trained through the Officer Candidate Department at Fort Monmouth. The first class began on July 3, 1941, with 490 students. The brick barracks on Barker Circle, previously used to house the 1st Signal Company and the 51st Signal Battalion, became the home of the department. Courses included physical training, dismounted drill, military law, sanitation and first aid, military courtesy and customs, interior guard

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duty, defense against chemical attack, marksmanship, supply, administration, mess management, map reading, signal communications, motor transportation, inspections, and training methods. At the end of the three months' training, a total of 335 graduated. Subsequent classes averaged 250 men but grew to 1,100 by August 1942. When the Signal Corps School was re-designated the Eastern Signal Corps School, the Officer Candidate Department was renamed the Officer Candidate School.⁷⁷ As the Replacement Center training facilities moved to Camp Charles Woods, the Officer Candidate School moved into the vacated buildings on the main post.

Fifteen percent of soldiers from the Replacement Center, chosen on the basis of examinations and personal interviews, were sent to the School for advanced specialist training in the Enlisted Men's Department. The Radio Division offered training in radio repair and maintenance and in fixed station radio operation. The Wire division trained installer-repairmen, wire chiefs to supervise the maintenance of wire communications systems, switchboard-installers and cable splicers, telegraph printer (teletype) maintenance, and pole line construction. All students in the Enlisted Department were required to take basic courses in the principles of electricity and magnetism, followed by a short course in basic shopwork.

The Aircraft Warning Department was composed of both officers and enlisted men from various Aircraft Warning Companies, Signal Repair Companies, Signal Depot Companies, and qualified graduates of the Radio Repairman's Course in the Enlisted Men's Department. All instruction was practical, with only as much theory as was necessary for maintenance operations.⁷⁸ As facilities at Fort Monmouth began to be overtaxed once the war began, the department was moved to a new site on Hobe Sound in Florida that became Camp Murphy.⁷⁹ Radar training remained at Camp Murphy until it closed in 1944. For the duration of the war, the department was located at Camp Edison.⁸⁰

The Department of Training Literature prepared the extension course of the school, Signal Corps and signal communication field manuals, technical manuals for Signal Corps equipment, and examinations for the promotion of non-commissioned officers. The department also supervised the non-photographic phases of training film production on the Signal Corps and Signal communication.⁸¹

Signal Corps General Development Laboratories

Increase of personnel and research and development activities at Squier Laboratory necessitated the erection of supplemental buildings on the east and west sides of the laboratory. As the field laboratories began to assume research and development activities that were formerly on both the main post and at Squier Laboratory, the mission and activities at Squier Laboratory became more streamlined. World War II proved that much of the Army's signal equipment was heavy, fragile, difficult to operate and maintain, and did not operate well in different climates. Thus the research and development at Squier Laboratory became focused on making the components "smaller and lighter, much more rugged to withstand shocks of all matter or transportation on land, sea, and air, conditioned to withstand the rigors of the tropics, the Arctic, and the desert atmospheres, and capable of being mass-produced by many manufactures."⁸² Testing in simulated arctic and tropic climates began as early as 1942 and was enhanced by the research facilities at Squier and included Building 292 (1944), which served as the rainforest laboratory, and Building 293 (1943), which was the arctic laboratory.⁸³ Personnel also tested equipment in desert conditions. Test chambers could create conditions as cold as minus 85 degrees Fahrenheit to as hot as 190 degrees Fahrenheit and could simulate conditions of rain, heat, humidity, and cold. This research continued after World War II and into the Cold War.⁸⁴

The War Effort Winds Down

Fort Monmouth's wartime expansion came to an end in May 1943 when the Replacement Training Center was placed in inactive status. The Signal Corps School reduced its capacity, and the Enlisted Department was transferred to Camp

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Crowder, Missouri. Other reductions included the transfer of the Eatontown Signal Laboratory to the authority of the Commanding General of the Army Air Force in 1945. After the war in Europe ended, a Redeployment Branch was begun in May 1945 to retrain personnel before deployment to the Pacific theater. But the war with Japan ended in August, and the focus changed to Army discharges. As a result the Separation Center was established in September 1945, processing more than 1,000 men every day until January 31, 1946.⁸⁵

The advancements in communications technology and the training of Signal Corps personnel at Fort Monmouth were critical to the Allied victory in World War II. The communication systems so vital to victory could not have operated without the "low-tech" carrier pigeons that were trained at the installation or the "high-tech" advances in radar and radio technology; neither could have functioned without the training Signal Corps personnel received at Fort Monmouth. The end of the war marked a shift in mission for the base, but not a reduction in activity as had been experienced at the end of the first World War. The development and use of the atomic bomb dramatically marked the end of World War II, announcing to the world that the Atomic Age had begun. Fort Monmouth's role in communications research and development would continue in the atomic age.

The Cold War Race for Innovation

Even before World War II ended with the bombing of Hiroshima and Nagasaki, tensions were mounting between the United States and the Soviet Union. Mistrust between the two superpowers and their allies quickly grew into what came to be known as the Cold War. The U.S. Army played an important role during that time in containing the spread of communism throughout the world. In order to support their mission, the Army underwent significant reorganization, first in 1947 with the National Security Act and again in 1962 when its technical services were reorganized with the formation of the Army Materiel Command (AMC). The United States was increasingly dependent on sophisticated technology for communications, surveillance, logistics, guidance, and early warning systems to support its advanced weapons technology. As the key Army organization dealing with communications, electronic systems, and equipment, the Signal Corps (and later the AMC) played a crucial role during the Cold War and the major military conflicts during that era.⁸⁶

Because of its vital role in providing technological research and development, Fort Monmouth was not closed after the end of World War II. Leading up to the Korean War, the Signal Corps Center was established at Fort Monmouth in August 1949. It consolidated the Signal Corps Engineering Laboratories, the Signal Corps Board, the Signal School, the Signal Corps Publication Agency, the Signal Corps Intelligence Unit, the Pigeon Breeding and Training Center, the Army portion of the Armed Services Electro Standards Agency, and all Signal Corps troop units stationed at Fort Monmouth. At the same time Fort Monmouth was re-designated "the Signal Corps Center and Fort Monmouth." The consolidation came as part of increasing the capacity of all activities on base to support the Army's worldwide commitments.⁸⁷ As the personnel increased at Fort Monmouth, the physical facilities on base were improved to support Cold War activities.

Signal Corps Engineering Laboratories

At the end of World War II, laboratory sites at Fort Monmouth were based at Squier Laboratory, the Coles Signal Laboratory, the Charles Woods Area, and the Evans Signal Laboratory. The most important areas of research taking place were communications systems, radar, electron tube research, and component improvement. Other areas of research included meteorology, proximity fuses, and photography.⁸⁸

Through the early Cold War research and development continued at Squier Laboratory, which was enlarged in 1947 with a two-story western wing. Personnel at Squier were responsible for the design and development of internal combustion engine-driven power units, batteries, battery chargers, battery substitutes, and dynamotors. The laboratory was also

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responsible for communications equipment, including public address systems, loudspeakers, microphones and receivers, and head and chest sets as well as van bodies, trailers, and automotive-type shelters for Signal Corps equipment. Squier Laboratory developed substitutes for critical materials and finishes, component parts, and continued its research on biological equipment problems from service and transport conditions. It also tested all components and equipment developed in the other Signal Corps Engineering Laboratories and was responsible for design, development, and standardization of all test equipment.⁸⁹

In 1951 the laboratories at Fort Monmouth developed a new miniaturized radar beacon, carried into the atmosphere by a rocket, which aided in the observation of weather. One of the biggest successes occurred between 1950 and 1953 with the introduction of the AN/TPQ-3 and AN/TPQ-10 Automatic Artillery and Mortar Location Radars, both used in the Korean War.⁹⁰ The accelerated research and development program at Fort Monmouth during the early 1950s resulted in research laboratories that were immensely overcrowded. By 1952 the planned strength of personnel at the Signal Corps Research and Development Laboratories was 5,100; however, the existing laboratories had a maximum capacity of only 4,074 personnel.⁹¹ A new laboratory was planned to consolidate all laboratory activities and to provide space for the growing program. The building was to be constructed in at least four phases by three funding increments, similar to the funding program used for the Pentagon in Arlington, Virginia. The Army chose the Philadelphia architectural firm of Ballinger Co. to design the massive building. The Charles Woods Area was the chosen location for the new laboratory. The building, designed in the shape of a hexagon, was intended to become the largest facility of its kind in the United States. The laboratories located in Squier Laboratory moved to the new building, named the Albert J. Myer Center (colloquially as the Hexagon), in 1954.

The Signal School

In the early postwar years, the Signal School consisted of the Officer School, the Officer Candidate School, the Enlisted Men's School, Radar School, Extension Course Department, and the Signal Training Regiment. The demand for training through the Signal School decreased temporarily after the end of World War II, but soon student enrollment increased in all classes at the school, and night classes were established for some enlisted classes, particularly in the field of radar. The Radar School moved from Camp Edison to the 900 area of the Main Post in 1946. Building 915 held the AN/TPQ-3 and AN/TPQ-2 radar sets, and Building 911 held SO-type radar equipment.⁹² The demand for increased training was also met through the Extension Course Department, established in 1946, later renamed the Nonresident Instruction Department in 1952. Free extension courses were available to all officers, enlisted personnel, and qualified Department of Defense civilian employees in technical, tactical, logistical, and administrative subjects.⁹³

During the late 1940s a general improvement plan for Fort Monmouth was created. The largest components of the plan on the Main Post was the construction of a new Signal School complex, including the administration building, Myer Hall, for the Enlisted Department and six new 500-man permanent barracks on the northern side of the Avenue of Memories near the west gate of Fort Monmouth.⁹⁴ The main wing of the administration building was dedicated a few months later, in September 1953, in honor of the first Chief Signal Officer, Albert J. Myer, although the entire Myer Hall complex did not open officially until 1955. In 1955 the headquarters of the Signal School was moved from Russel Hall to the newly constructed Myer Hall, which provided more space and a central location for the school's administration.

Reorganization

Secretary of Defense Robert McNamara dramatically altered Fort Monmouth when the Army was reorganized in 1962. Fort Monmouth had housed the Signal Research and Development Labs, the Army Signal School, the Signal Radio Propagation Agency, and the Signal Materiel Support Agency for most of its history. McNamara's modernization plan

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aimed to increase efficiency and reduce unnecessary overlap or duplication of effort. The result was the Army Materiel Command (AMC), created to oversee logistical work and research for the Army. Most of the functions of the old Signal Corps, Signal Corps laboratories, and the Office of the Chief Signal Officer were taken by an AMC subordinate, the U.S. Army Electronics Command (ECOM) based at Fort Monmouth.⁹⁵

The next major reorganization took effect in January 1978, splitting all research and development from materiel readiness functions. As a result ECOM was divided into three new organizations: ERADCOM (Electronics Research and Development Command) to handle electronics, CORADCOM (Communications Research and Development Command) for communications and automatic data processing, and AVRADA (Avionics Research and Development Activity) to deal with aviation matters. Materiel readiness was taken over by Communications Electronics Materiel Readiness Command (CERCOM). CERCOM and CORADCOM were headquartered at Fort Monmouth along with elements of ERADCOM, mostly at the Evans and Charles Woods areas. But by 1981 splitting materiel readiness and research and development was viewed as a mistake; CERCOM and CORADCOM were combined to form Communications-Electronics Command (CECOM) that year, with Fort Monmouth as headquarters.⁹⁶

In 1984 Squier Hall became the home of the U.S. Army Information Systems Management Activity (ISMA), which was a project management office of the Army Materiel Command, handling the acquisition and fielding of a variety of information and telecommunications systems. The activity improved the modernizing of communications systems not just for the Army, Navy, and Air Force, but also supported the State and Commerce departments, the National Security Agency, the Federal Aviation Administration, and foreign allied governments.⁹⁷

"Force Modernization"

By the 1980s activities at Fort Monmouth had evolved from the early years of the Cold War. Dr. Richard Bingham, Former CECOM/Fort Monmouth command historian, summed up the activity during the decade:

If a single phrase could be invoked to characterize research and development activities of the 1980s, it would be "Force Modernization" — the acquisition and fielding of powerful new weapon systems, largely based on technologies developed the previous decade. With automatic data processing systems, such as the Tactical Fire Direction System (TACFIRE), the All Source Analysis System (ASAS), and the Maneuver Control System (MCS), CECOM gave the American Soldier battlefield capabilities no other Army possessed. So did several new surveillance systems, including... GUARDRAIL....⁹⁸

The TACFIRE system "automated selected field artillery command and control functions to provide efficient management of fire support resources." New secure communications systems, including the Single Channel Ground and Air Radio System (SINCGARS), provided combat net radio communications with Electronic Countermeasures, or frequency hopping, and digital date capability. ASAS, an automated tactical intelligence system, correlated intelligence to commanders at the levels of division, corps, and above. Maneuver Control System (MCS) was a collection of computer equipment that provided battlefield information by "collecting, processing, and displaying data generated within air/land combat environment. Using this system, a commander could improve the timeliness of his or her decisions and allocate resources accordingly." GUARDRAIL/Common Sensor (GR/CS) was sent to Korea in 1988 to provide "a corps level airborne signals intelligence (SIGINT) collection/location system, providing near real time SIGINT and targeting information to tactical commanders throughout the corps area with emphasis on Deep Battle and Follow on Forces Attack support."⁹⁹

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United States military emphasis shifted with the end of the Cold War in 1991. The end of the decades-long conflict led to a decrease in the size of armed forces, which had already begun during the late 1980s. The coming decade would bring new challenges to Fort Monmouth as it adapted to the challenges of continuing communications innovation with a smaller work force.

Digitizing the Battlefield and Realignment (1991-2011)

The Gulf War

As the United States Army began its air strikes against Iraq on January 17, 1991, marking the beginning of the Gulf War, CECOM struggled to ensure that Army forces had the communications and electronics equipment needed to liberate Kuwait. Although a number of units possessed up-to-date equipment, most had some incomplete or damaged systems. CECOM's Emergency Operations Center (EOC) had begun to operate 24 hours a day, seven days a week prior to the first strikes, beginning August 7, 1990. EOC served as the focal point for CECOM's efforts to supply soldiers with the equipment they needed during the fight. CECOM also fielded 1,318 personnel between July 1990 and February 1991 to equip units and provide them with operator and maintenance support training.

Among the first civilians to arrive in the war zone were the CECOM Logistics Assistance Representatives (LARs), who provided technical assistance to soldiers whenever they needed it. LARs lived in tents, eating, sleeping, and working alongside soldiers and participating in all the life support activities of their units. The role LAR played was a vital one, especially during the first days of Desert Shield/Desert Storm, when new troops arrived daily. They were to help off-load equipment, inspect it, and move it to holding or assigned areas. The task proved difficult because before one unit could be made fully operational, another would arrive and require immediate assistance. In the days leading up to the ground offensive, CECOM LAR worked tirelessly to prepare. In the 48 hours prior to the offensive, four LARs worked day and night to complete the installation of 47 SINCGARS radios in 1st Cavalry Division vehicles.

Keeping a sufficient supply of batteries during the Gulf War presented a major challenge for CECOM. Not only did wartime demands exceed peacetime stocks, the problem was worsened by the desert heat, which quickly sapped battery power. Battery producers worked round the clock through the conclusion of the ground war in March to produce more batteries. When supplies of the BA-3517 battery were critically short, a CECOM production engineer at Fort Monmouth developed a cable that allowed the M8 chemical alarm to use a vehicular power source. The cable was rushed into production, and 10,000 450-foot cables were produced by Federal Prison Industries in five weeks. Similarly, engineers created a cable used to provide power from vehicle batteries for GPS receivers. Eight hundred of these cables were assembled in five days by volunteers working 12 to 14 hours a day from the Center and the Concurrent Engineering Directorate at Fort Monmouth.

Digitizing the Battlefield

Although operations Desert Shield and Desert Storm were viewed, overall, as a success, they demonstrated the need for enhanced communications, more integration on the battlefield, and a better logistics infrastructure. The experience shaped a shift in military strategy in the coming years toward information dominance rather than overwhelming force.¹⁰⁰

The Army Chief of Staff defined the Army's role and mission to ensure victory: "to own the spectrum, to own the night, to know the enemy, and to digitize the battlefield."¹⁰¹ During the 1990s Fort Monmouth and CECOM played a vital role in meeting these goals. It did so with an overall loss of staff during the first five years of the decade, its military force dropping from 1,826 to 761 and civilians assigned at Fort Monmouth decreasing from 7,732 to 6,385. During 1994-1995

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CECOM managed half of the Army's Advanced Technology Demonstrations, participating in a large number of the remaining half; owned nearly a quarter of all the Army's approved Science and Technology Objectives; and had the Army's most active Independent Research and Development programs.

Changes during the 1990s came, in part, from Base Realignment and Closure (BRAC), the goal of which was to balance forces and infrastructure. The first round of BRAC took place in 1988; Fort Monmouth was affected in 1991 when the Electronics Technology and Devices Lab of the Army Research Lab was moved from Fort Monmouth to Adelphi, Maryland. Further changes came with BRAC 1993, when the decision was made to realign activities at Fort Monmouth, disestablish Belvoir RDEC, and close the Vint Hill Farms Station (VHFS) in Virginia. Disestablishment of Belvoir RDEC meant that six business areas were moved to CECOM: Countermines, Low Cost Low Observables, Physical Security, Battlefield Deception, Electric Power, and Environmental Controls. The Chaplain Center and School was moved from Fort Monmouth to Fort Jackson, South Carolina. The Evans Area was closed and its occupants relocated to the Main Post and the Charles Woods Area.¹⁰²

As the twentieth century was coming to a close, the Army was deciding what its forces would look like in the new century. At the center was "digitization," the use of computers and digital transmission technologies to "link all an army's soldiers and equipment, giving commanders the ability to assess the disposition of friendly and enemy forces quickly with a glance at a flat-panel display, whether at headquarters or a forward command post." Army Acquisitions Executive Gilbert F. Decker explained the digitization effort and expected results:

The ability to dominate the battlefield or to conduct operations other than war efficiently will depend completely on having the pertinent information in the right hands at the right time. In military terms, this is often summarized as situation awareness. It seems clear to warfighters and technologists alike that if commanders and decision makers at every echelon of the Army are completely aware of their total situation at all times, they will react with a course of action that will place them inside the opposing forces' decision cycle. Thus, with numerically inferior forces, one can achieve combat leverage dominance.¹⁰³

The culmination of early battlefield digitization efforts was the Task Force XXI Advanced Warfighting Experiment, a project designed to turn the 4th Infantry Division into a prototype of the Force XXI Army, testing systems created in the 1990s in a "real world" environment. Two heavy battalions tested systems during exercises held at the National Training Center at Fort Irwin, California, in an attempt both to assess the technical aspects and understand how they would perform when used by soldiers in combat. CECOM made the project possible by solving technical problems as they were discovered and by supplying troops with equipment and software. Through Force XXI and digitization efforts, CECOM's products were a part of every army system. Its most important contribution was integrating Army communications by creating a set of "building code" standards for all new systems.

Among the many technical achievements of CECOM was the state-of-the-art wideband receiver/downconverter for communications intercept. It delivered five times the performance with one-hundredth the size and one-thirtieth the weight of previous technology. Others included a Guardrail/Common Sensor system together with a Grounded Tethered Satellite Relay, which detected enemy radar and radio signals, tracked the signals to their source, and relayed the information to commanders on the battlefield; a Close-in Manportable Mine Detector ATD (Advanced Technology Demonstration); a Radar Deception and Jamming ATD; and the Asynchronous Transfer Mode (ATM), which could be integrated into a division's Mobile Subscriber Equipment (MSE) network to provide video teleconferencing and multi-media capability.¹⁰⁴

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Joint Endeavor

Prior to U.S. troop deployment to Bosnia for Joint Endeavor, CECOM had been involved for two and a half years planning for and supporting military operations in the Balkans. It prepared estimates of communications equipment needed to rearm Bosnian Muslim forces for Operation Able Sentry and was involved in advanced planning for large-force operations in Bosnia and Croatia. New mine detection and destruction technology was developed to deal with the vast number of mines in Bosnia. Countermine systems included ground-penetrating radar that was mounted on the front of a vehicle and could detect buried, on-road, anti-personnel, and anti-vehicular mines. A remote-controlled, vehicle-mounted mine detection system prototype was developed for Bosnia that consisted of a metal detector, an infrared camera, and the ability to transmit video to a control vehicle.

During Joint Endeavor CECOM worked to overcome compatibility problems between U.S. and Coalition forces' communications, creating, for example, a communications controller that acted as a "handshake" between U.S. and British systems.¹⁰⁵ As the trend toward coalition warfare continued into the twenty-first century, CECOM worked to ensure that communications systems could work with those of coalition forces. A Joint Contingency Force Advanced Warfighting Experiment held at Fort Polk, Louisiana, in September 2000 established how digitization of light forces would increase lethality, survivability, and operation tempo. CECOM was heavily involved, especially in the aircraft testing of its En-route Mission Planning and Rehearsal System, which allowed troops to retain situational awareness while in the air. It "provided a template for airborne soldiers not just to change any aspect of their upcoming operation but to 'rehearse it' and determine how likely these alterations would be to affect the success of the mission."¹⁰⁶

A New Century

In the wake of the September 11, 2001 terrorist attacks, the first direct attack on American soil since Pearl Harbor, Fort Monmouth assumed a new role in the recovery and the resulting new military climate. The change was visible at the base, as gates were closed and access limited in response to the new threat level. Employees volunteered to check identification cards at the gates until reservists were activated as part of homeland defense Operation Noble Eagle. CECOM was brought in to help with the rescue and recovery efforts at the World Trade Center site: the world's smallest infrared camera, developed by CECOM, was attached to a PVC pipe and used to search through rubble; a laser Doppler vibrometer was used to judge the structural stability of buildings; and electronic listening devices were used to detect 911 distress calls made from cellular phones. At the Pentagon CECOM deployed a task force to install a communications infrastructure for 4,500 displaced workers and coordinated with the Pentagon renovation office to provide engineering and renovation support for Pentagon Rebuild (the Phoenix Project).

Beyond the immediate after-effects of the attacks, homeland security was one of CECOM's top objectives in the following months, ensuring better communications, more integrated response plans, and quicker response times. As part of Operation Enduring Freedom in Afghanistan and the Global War on Terror, Fort Monmouth deployed military and civilian personnel. Items in high demand included lithium batteries, Firefinder radars, and night vision equipment. CECOM's "phraselator," developed at Fort Monmouth in cooperation with DARPA, translated English voices into Dari, Pashto, Arabic, and other languages using fixed phrases from force protection and medical domains. The phraselator proved critical as there were not enough trained linguists to meet translating needs.¹⁰⁷

Preparations for military operations in Iraq began in October 2002 by forming the Anticipatory Logistics Cell (ACL) to identify potential spare and repair part shortfalls. Fort Monmouth fielded and maintained a variety of equipment, managing half of the nationally stock-numbered items in Army inventory, including frequency hopping tactical radios, satellite-linked computers inside vehicles, sophisticated sensors, and electronic jamming systems. As in other armed

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conflicts, technology was provided to improve communications. Blue Force Tracking and the Force XXI Battle Command Brigade and Below Command Control System virtually eliminated friendly fire incidents by giving commanders increased situational awareness on the battlefield and enabling them to synchronize their forces. The Lightweight Counter Mortar Radar-Army, developed in 2004, provided 360 degrees of coverage and was used to detect, locate, and report locations of enemy indirect firing systems.¹⁰⁸

CECOM was once again realigned when a memorandum of agreement was signed on August 2, 2004, to formally establish the Life Cycle Management Initiative. The initiative enabled a closer relationship between AMC; Major Subordinate Commands that direct the activities of numerous depots, arsenals, ammunition plants, laboratories, test activities, and procurement operations; and Program Executive Officers. AMC systems-oriented major subordinate commands such as CECOM were aligned with the Program Executive Offices with whom they worked, resulting in the formation of the Communications-Electronics Life Cycle Management Command. Its name changed in 2007 to CECOM Life Cycle Management Command (CECOM LCMC). The change aimed to create a unified vision across the acquisition, research, development, and sustainment communities.

BRAC 2005, the End of an Era at Fort Monmouth

BRAC 2005, authorized in the National Defense Authorization Act for fiscal year 2002, marked the beginning of the end for Fort Monmouth. Despite aggressive state and local lobbying, the BRAC Commission approved the Department of Defense recommendation to close Fort Monmouth and realign CECOM LCMC elements at Fort Monmouth to Aberdeen Proving Ground, Maryland. The transition of the workforce was to take place by 2011.¹⁰⁹

Seventy-five years after the completion of Russel Hall and the end of the permanent construction program at Fort Monmouth, the residences, administrative, and support buildings from that period continued to define the Main Post and were still in use until 2010-2011. Up until the closure of the base, Russel Hall served as the Garrison Headquarters for Fort Monmouth and Squier Hall housed the Program Executive Office for Enterprise Information systems (PEO EIS) and the Defense Information Systems Agency (DISA).

To facilitate the transition of Fort Monmouth land back into the community, the Fort Monmouth Economic Revitalization and Planning Authority was created. The final plan called for a variety of new uses for the land. The Charles Woods Area would include mixed-income housing, a conference hotel and golf course, the Myer Center as a mixed-use technology and research and development facility, and a town center for Tinton Falls. The Main Post plan would become mixed-income housing and retail and office space.

Fort Monmouth's closing, although the end a century-long chapter in the history of Oceanport, New Jersey, does not mean that its legacy will be lost or forgotten. Although the contributions made at Fort Monmouth during that time are too numerous to recount in full, they were instrumental in the success of the nation in almost every major twentieth-century military campaign. The hard work, dedication, and inventiveness of its employees have saved countless lives and enriched the lives of Americans as their innovations have become part of mainstream consumer technology and everyday life.

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UTM References (Cont.)

5	18	581497	4462940	6	18	581273	4463260
	<i>Zone</i>	<i>Easting</i>	<i>Northing</i>		<i>Zone</i>	<i>Easting</i>	<i>Northing</i>

BOUNDARY DESCRIPTION

Beginning at the southeast corner of Oceanport Avenue and Riverside Avenue, the boundary of the Fort Monmouth Historic District travels southwest behind the enlisted men's barracks (Building 208) and the non-commissioned officers' quarters. Southwest of Building 334 (Garage) the boundary extends north and then west along the south side of Saltzman Avenue. At the junction of Saltzman Avenue and Malterer Avenue, the boundary continues north along the east side of Malterer Avenue. At the intersection of Malterer and Sherrill avenues, the boundary extends west along the south side of Sherrill Avenue and then north along the west elevation of Building 283 (Squier Hall). The boundary then travels east along the shore of Parker Creek and behind the commissioned officers' quarters on Allen Avenue. It continues east along the north side of Signal Avenue until its intersection with Carty Avenue. Here the boundary travels south and then southeast along the east and northeast sides of Carty Avenue. At the intersection of Carty Avenue and Baron Avenue, the boundary extends north to surround Building 209 (Allison Hall). In front of Allison Hall, the boundary continues south on the east side of Barton Avenue, southeast on Sherrill Avenue, and then south on Oceanport Avenue to the starting point of the boundary.

BOUNDARY JUSTIFICATION

The boundaries of the Fort Monmouth Historic District comprise the permanent installation, as it was designed and built by the Quartermaster Corps between 1927 and 1940 for the Signal Corps. The boundary was drawn to include all of the extant resources that were built as part of the permanent construction program and exclude those that were erected after 1940. Malterer Avenue, which forms the west boundary of the district, was chosen as a line of convenience to incorporate the greatest extent of the original parade ground and to exclude additional non-contributing resources.

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Name of Property: Fort Monmouth Historic District
City or Vicinity: Fort Monmouth
County: Monmouth
State: NJ
Name of Photographer: Patti Kuhn and Sarah Groesbeck
Date of Photographs: December 2010 and February 2011
Location of Original Digital Files: The Louis Berger Group, Inc., Washington, D.C.

- Photo 1: (NJ_Monmouth County_Fort Monmouth Historic District_0001)
Flagpole and Russel Hall (Building 286), looking southwest.
- Photo 2: (NJ_Monmouth County_Fort Monmouth Historic District_0002)
Russel Hall (Building 286), looking southwest.
- Photo 3: (NJ_Monmouth County_Fort Monmouth Historic District_0003)
Allison Hall (Building 209), looking northwest.
- Photo 4: (NJ_Monmouth County_Fort Monmouth Historic District_0004)
Squier Hall (Building 286), looking northwest.
- Photo 5: (NJ_Monmouth County_Fort Monmouth Historic District_0005)
Kaplan Hall (Building 275), looking southeast.
- Photo 6: (NJ_Monmouth County_Fort Monmouth Historic District_0006)
Firehouse and Guardhouse (Building 282), looking east.
- Photo 7: (NJ_Monmouth County_Fort Monmouth Historic District_0007)
Barracks, Building 206, looking northwest.
- Photo 8: (NJ_Monmouth County_Fort Monmouth Historic District_0008)
Non-commissioned officers' quarters, northeast end of Gosselin Avenue, looking southwest.
- Photo 9: (NJ_Monmouth County_Fort Monmouth Historic District_0009)
Non-commissioned officers' quarters, Building 237, looking southeast.
- Photo 10: (NJ_Monmouth County_Fort Monmouth Historic District_0010)
Non-commissioned officers' quarters garage, Building 335, looking northwest.
- Photo 11: (NJ_Monmouth County_Fort Monmouth Historic District_0011)
Commanding Officer's residence (Building 230), looking west.
- Photo 12: (NJ_Monmouth County_Fort Monmouth Historic District_0012)
Commissioned officer's quarters, Building 221, looking south.
- Photo 13: (NJ_Monmouth County_Fort Monmouth Historic District_0013)
Commissioned officers' quarters, Building 228, looking north.
- Photo 14: (NJ_Monmouth County_Fort Monmouth Historic District_0014)
Commissioned officers' quarters garage, Building 315, looking north.

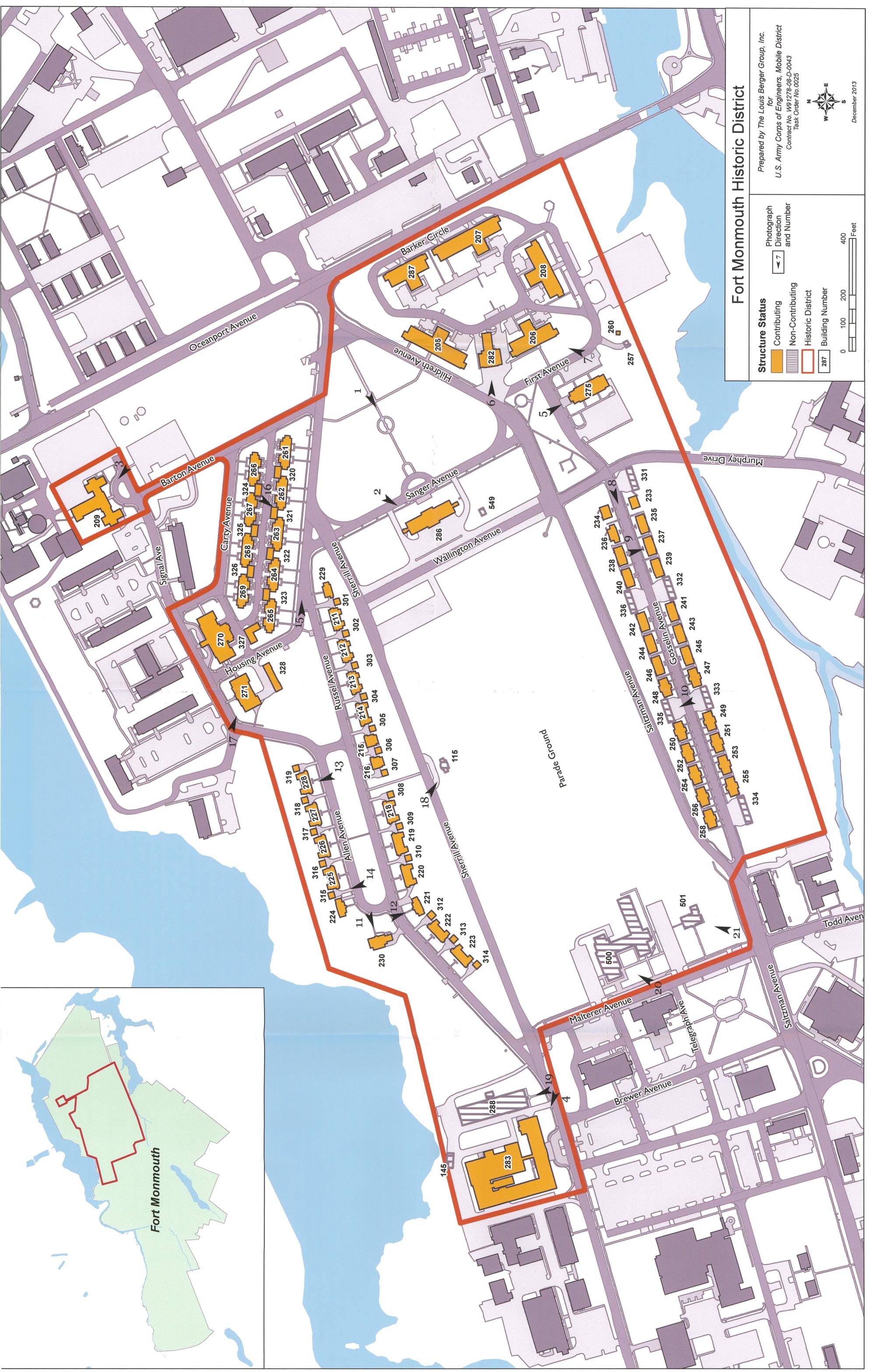
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- Photo 15: (NJ_Monmouth County_Fort Monmouth Historic District _0015)
Commissioned officers' apartments, looking east on Housing Avenue.
- Photo 16: (NJ_Monmouth County_Fort Monmouth Historic District _0016)
Commissioned officers' apartments garage (Building 321), looking southwest.
- Photo 17: (NJ_Monmouth County_Fort Monmouth Historic District _0017)
Bachelor officers' quarters (Building 271), looking southeast.
- Photo 18: (NJ_Monmouth County_Fort Monmouth Historic District _0018)
World War II Memorial (Building 115), looking southeast.
- Photo 19: (NJ_Monmouth County_Fort Monmouth Historic District _0019)
Building 288 (Administration Building), looking north.
- Photo 20: (NJ_Monmouth County_Fort Monmouth Historic District _0020)
Post Chapel (Building 500), looking northeast.
- Photo 21: (NJ_Monmouth County_Fort Monmouth Historic District _0021)
Healthcare Building (Building 501), looking northeast.



Fort Monmouth Historic District

Prepared by The Louis Berger Group, Inc.
for
U.S. Army Corps of Engineers, Mobile District
Contract No. W91278-08-D-0043
Task Order No. 0025

Structure Status

- Contributing
- Non-Contributing
- Historic District
- Building Number

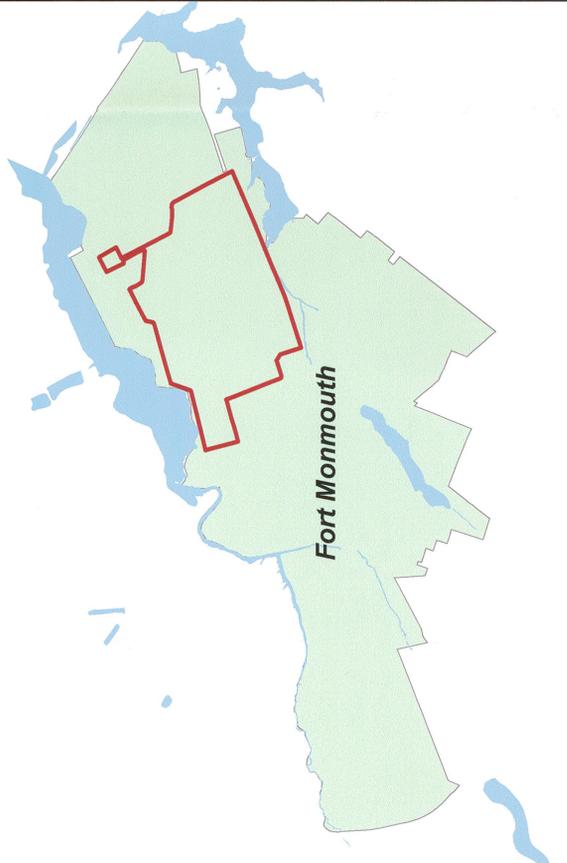
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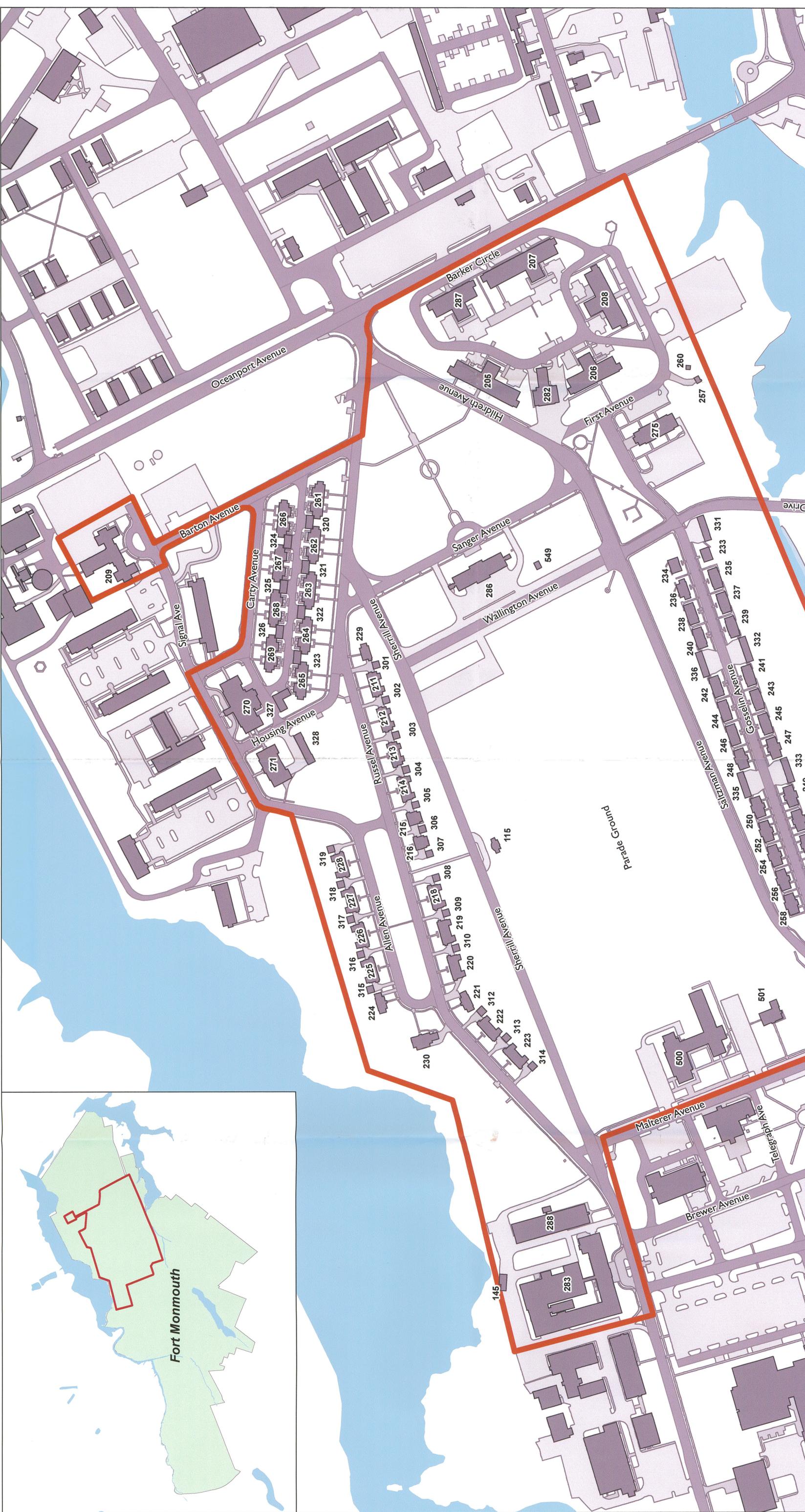
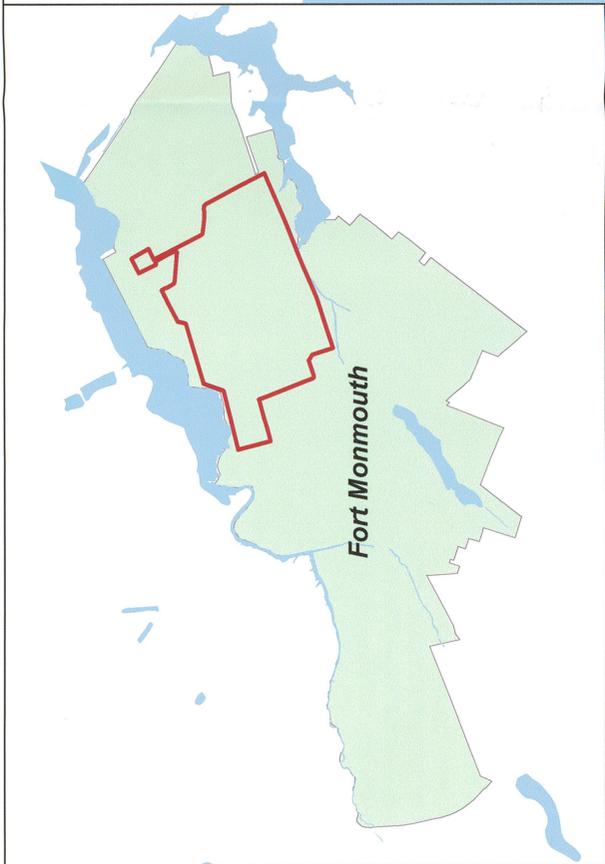
7

Scale: 0 100 200 400 Feet

North Arrow: N, S, E, W

December 2013





Fort Monmouth Historic District

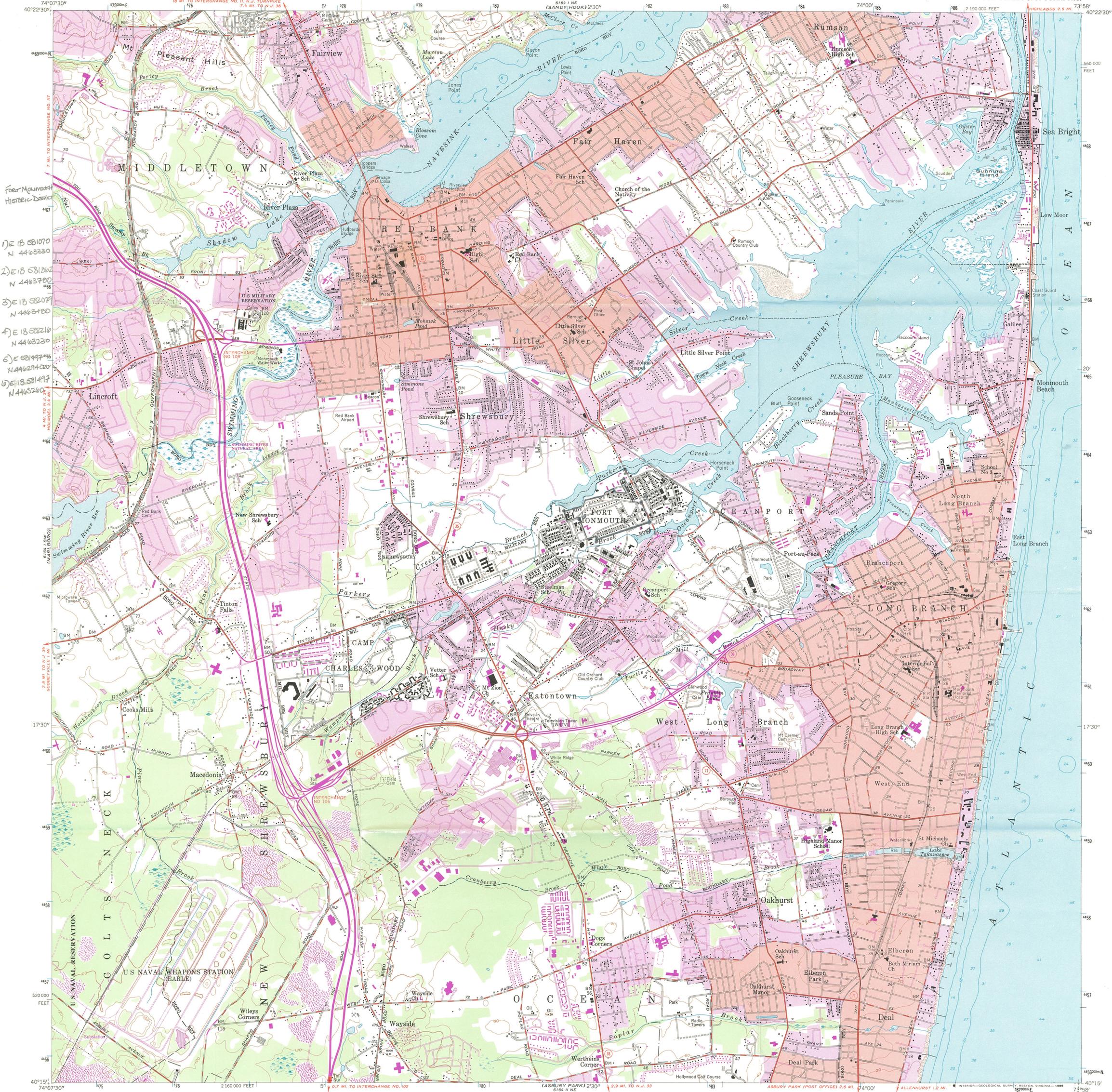
Prepared by The Louis Berger Group, Inc.
for
U.S. Army Corps of Engineers, Mobile District
Contract No. W91278-08-D-0043,
Task Order No. 0025

December 2013

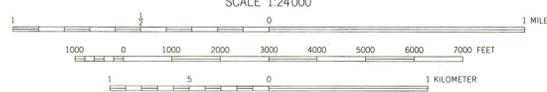
Structures
Historic District
287 Building Number

0 100 200 400 Feet

A north arrow pointing up and a scale bar showing 0, 100, 200, and 400 feet.



Mapped by the Defense Mapping Agency
Edited and published by the Geological Survey
Control by USGS, USCE, and New Jersey Geodetic Survey
Culture and drainage in part compiled from aerial photographs
taken 1941. Topography by planimetric surveys 1944. Culture
revised by the Geological Survey 1954
Hydrography compiled from NOS chart 824 (1953)
This information is not intended for navigational purposes
Polyconic projection. 10,000-foot grid ticks based on New Jersey coordinate
system. 1000-meter Universal Transverse Mercator grid ticks, zone 18,
shown in blue. 1927 North American Datum. To place on the predicted
North American Datum 1983 move the projection lines 6 meters south
and 35 meters west as shown by dashed corner ticks
Red tint indicates area in which only landmark buildings are shown
There may be private inholdings within the boundaries
of the National or State reservations shown on this map



CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS 4.4 FEET ALONG THE OCEAN
3 FEET AT RED BANK, AND 1.7 FEET IN SHREWSBURY RIVER

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



LONG BRANCH, N. J.
40073-CB-TF-024
1954
PHOTOREVISED 1981
DMA 6164 1 SE—SERIES V822











US ARMY COMMUNICATIONS ELECTRONICS MUSEUM
KAPLAN HALL



FORT MONMOUTH
FIRE DEPARTMENT
HEADQUARTERS





























MAIN POST CHAPEL

CATHOLIC MASS SAT 1700
CATHOLIC MASS SUN 0930
PROTESTANT SUN 1100
WEEKDAY MASS 1200

