National Park Service
U.S.Department of the Interior

Historic Architecture Program
Northeast Region

BUILDING 32
QUARTERMASTER'S STOREHOUSE

Fort Hancock, New Jersey
Sandy Hook Unit, Gateway National Recreation Area

Historic Structure Report

BUILDING 32
QUARTERMASTER'S STOREHOUSE
FORT HANCOCK

HISTORIC STRUCTURE REPORT

SANDY HOOK UNIT
GATEWAY NATIONAL RECREATION AREA

By

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Lowell, Massachusetts

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FOREWORD

A number of organizational changes have occurred since this report was written in 1993. At that time, the author–Judith A. Quinn–was an employee of the Building Conservation Branch (BCB) of the Cultural Resources Center (CRC), part of the North Atlantic Region (NAR), National Park Service (NPS). The North Atlantic Region was later incorporated into a new Northeast Region (NER); the former North Atlantic Regional Office became the Boston Support Office (BOSO), and the name of the CRC was changed to the Northeast Cultural Resources Center (NCRC). A NER realignment in 2003 disbanded the NCRC; part of its staff became the Historic Architecture Program of the Northeast Region. In addition, Ms. Quinn married, causing her name to change to Judith Q. Sullivan. The terminology in this report has been updated to reflect these current conditions.

~ The Editor

I. INTRODUCTION

BRIEF ARCHITECTURAL DESCRIPTION

Building 32 is a two- story, timber and brick building with a full basement and attic. The building measures 114 feet long by 32 feet wide. The building is oriented north/south, with the principal entry at the approximate mid- point of the west- side elevation. It was constructed of buff brick with limestone details and a foundation of "trap rock" obtained from the Hudson Palisades. It displays a long, narrow, gable- ended, rectangular form. The moderately pitched roof is covered with asphalt shingles and features two conical galvanized- steel ventilators, two corbelled brick chimneys, and a distinctive terra- cotta capped parapet (firewall). The two- dimensional flatness of the walls is punctuated by the simplicity of segmentally arched doorway and window openings. An attempt was made to impose symmetry and balance on a configuration dictated by the functional use of the interior. This resulted in a somewhat irregular spacing of doorways and windows. Decorative treatments are limited to a simple corbelled belt course and matching cornice.

Stylistically, Building 32 exhibits classic Colonial Revival characteristics while maintaining a utilitarianism appropriate to a military storehouse. The spare lines, exaggerated cornice returns, corbelled brick chimneys, belt course, six- over- six- light window sashes, soldier- brick doorway and window arches, and the yellow color of the brick can all be interpreted as Colonial Revival features.

The organization of the interior space of Building 32 is dominated by the division of the building into nearly equal halves by the brick fire wall. Both the cellar and the attic consist of two undivided spaces on either side of the fire wall. Both the first and second stories, however, have a cluster of small rooms around the fire wall and larger rooms toward the ends. Circulation between rooms and stories is limited.

The longitudinal axis of the building is divided into 10 bays. Some of the bays are partitioned off, but generally they are defined by the exposed structural system. The structural system consists of load- bearing masonry walls; brick piers in the cellar, supporting the first- story floor joists; and wood posts in the first and second stories, supporting the second- floor and attic- floor joists, respectively. A common- rafter system frames the roof. Both the second- story and roof framing systems are augmented with substantial wooden bracing systems.

The following historic structure report (HSR) uses a system of schedules in order to facilitate the discussion of specific architectural elements. All windows have been assigned a number that includes a designation of the level where they are located. Thus, cellar windows are W 0- *n;* first-story windows are W 1- *n*; second- story windows are W 2- *n*; and attic windows are W 3- *n*. Doorways are numbered D- 0 through D- 32, beginning with exterior doorways and then moving from north to south on each interior level. Rooms are numbered from north to south in each story. Structural bays, as defined by framing elements, are likewise numbered from north to south on each story. There are 10 bays on each story.

The photographs and plans immediately following are annotated to provide a visual guide to the scheduled number designations of doorways, windows, rooms, and structural bays of Building 32 as referenced throughout this HSR.

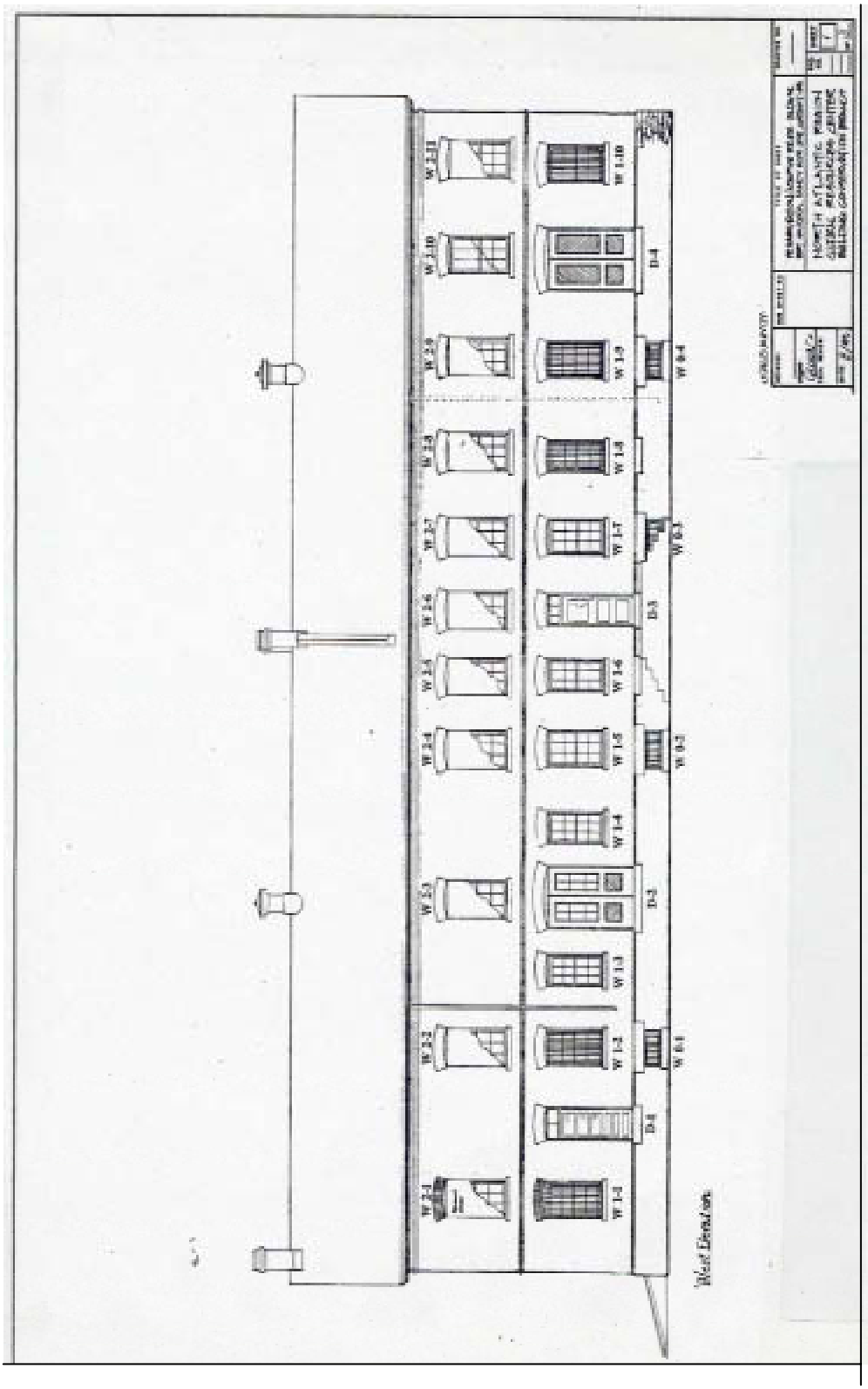

Figure 1. West elevation of Building 32, showing scheduled doorway and window assignations [1993].

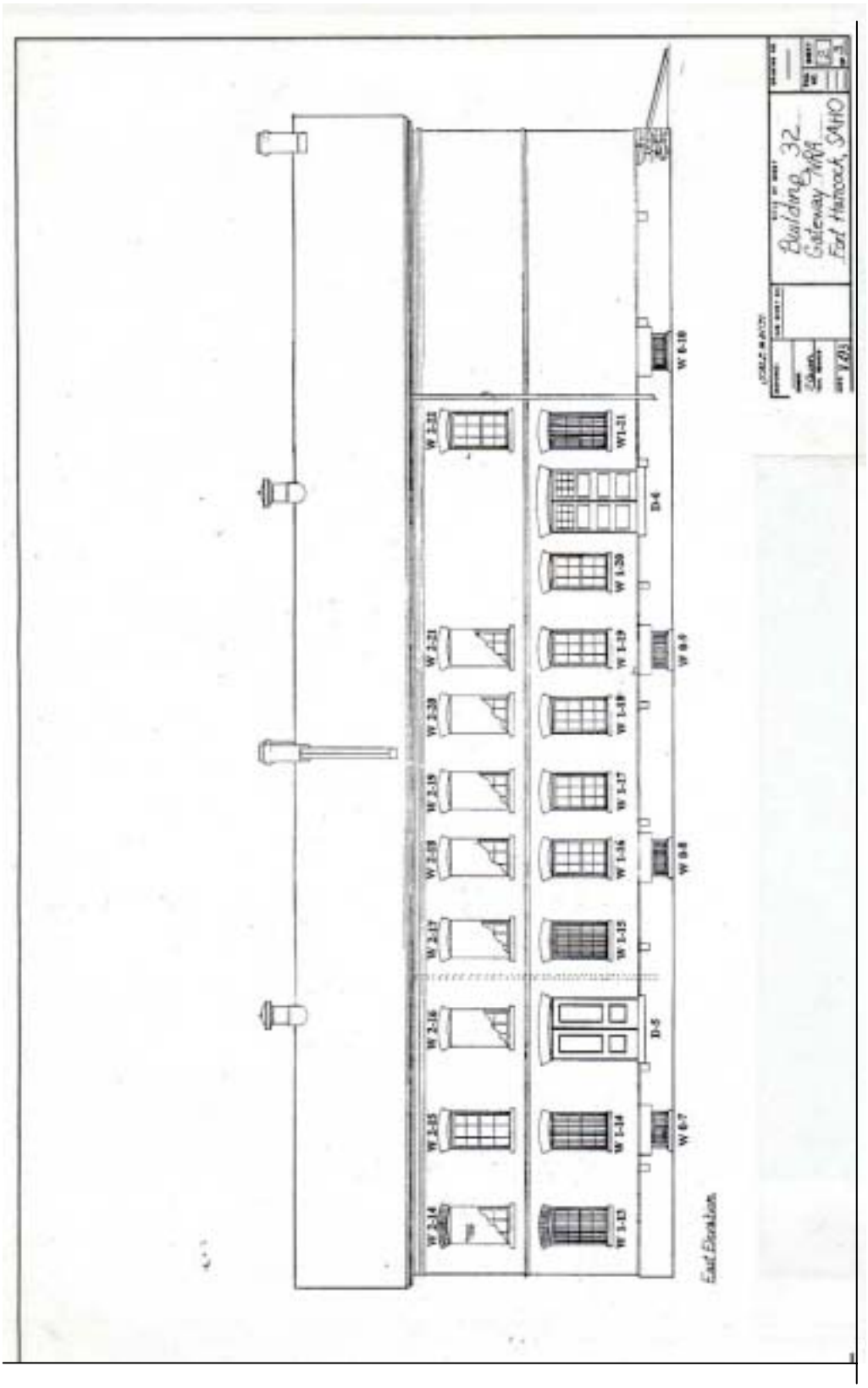

Figure 2. East elevation of Building 32, showing scheduled doorway and window assignations [1993].

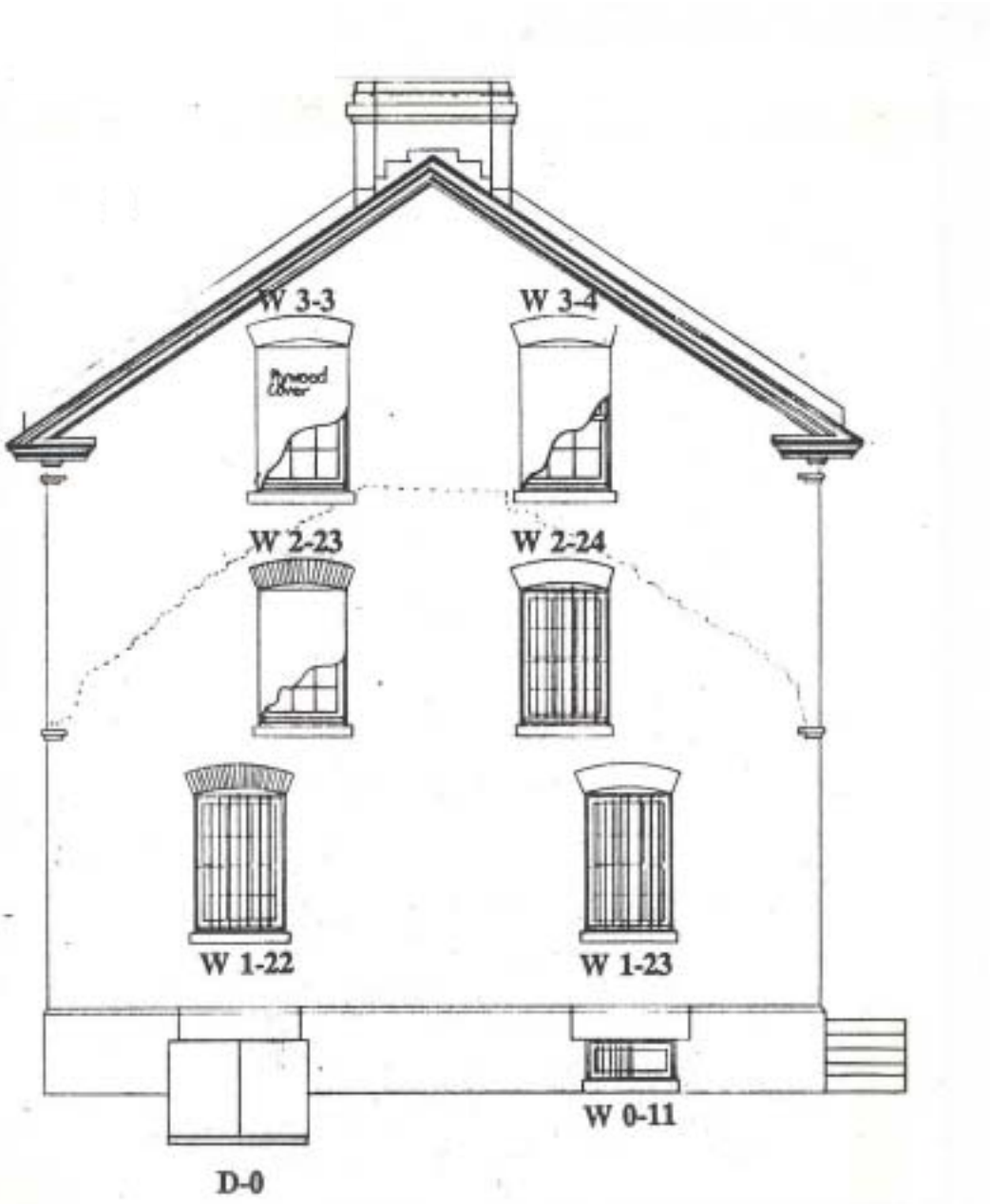

Figure 3. North elevation of Building 32, showing scheduled window assignations [1993].

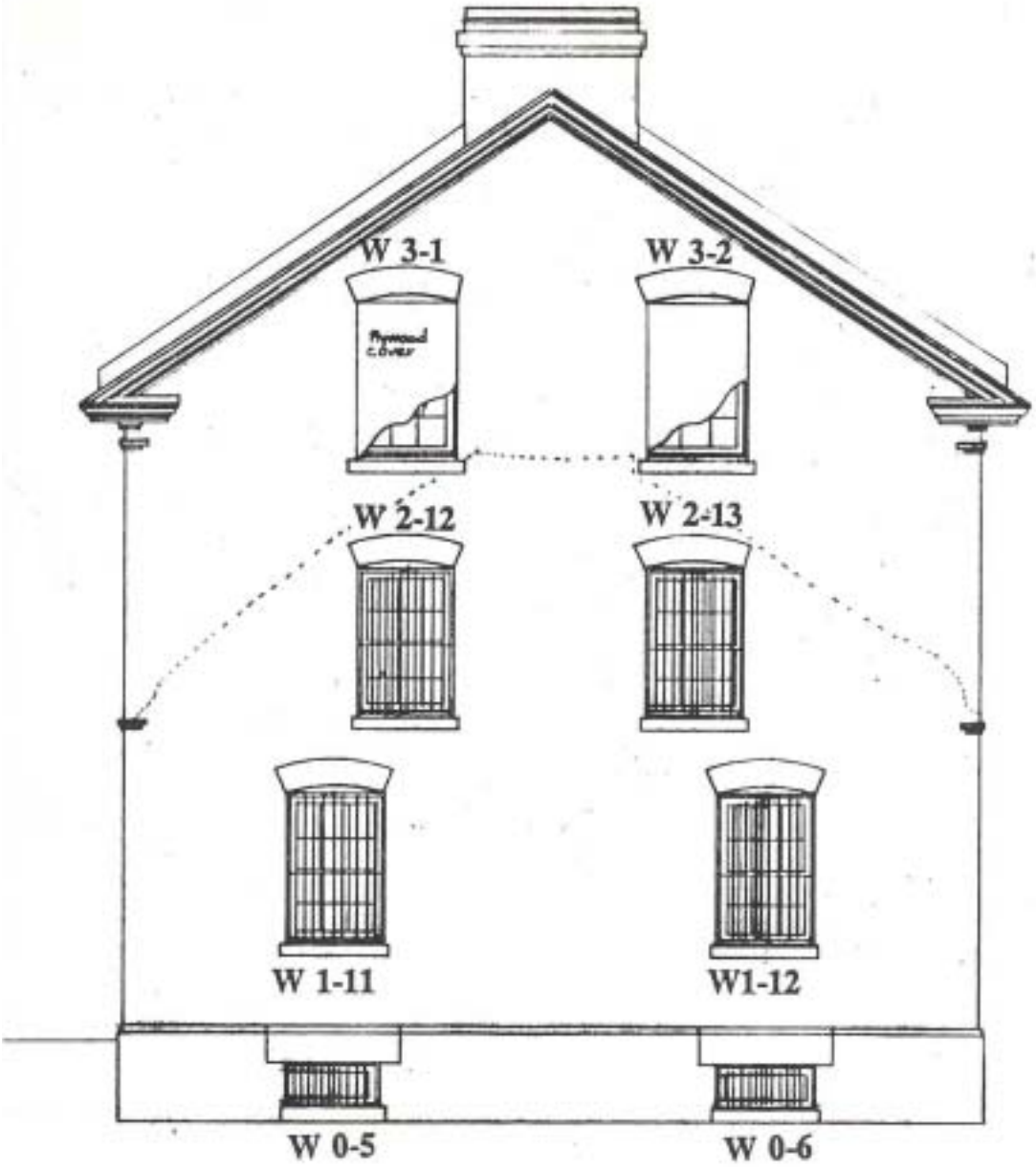

Figure 4. South elevation of Building 32, showing scheduled window assignations [1993].

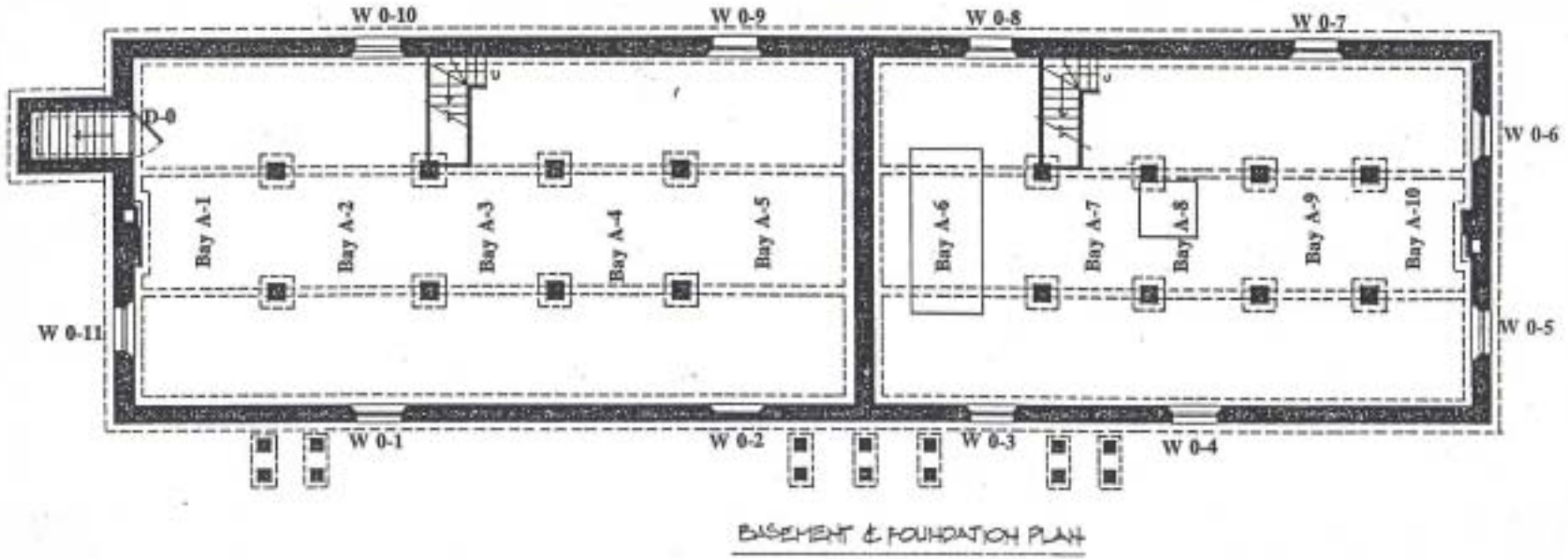

Figure 5. Basement plan of Building 32, showing scheduled rooms and openings. [1988- 1989].

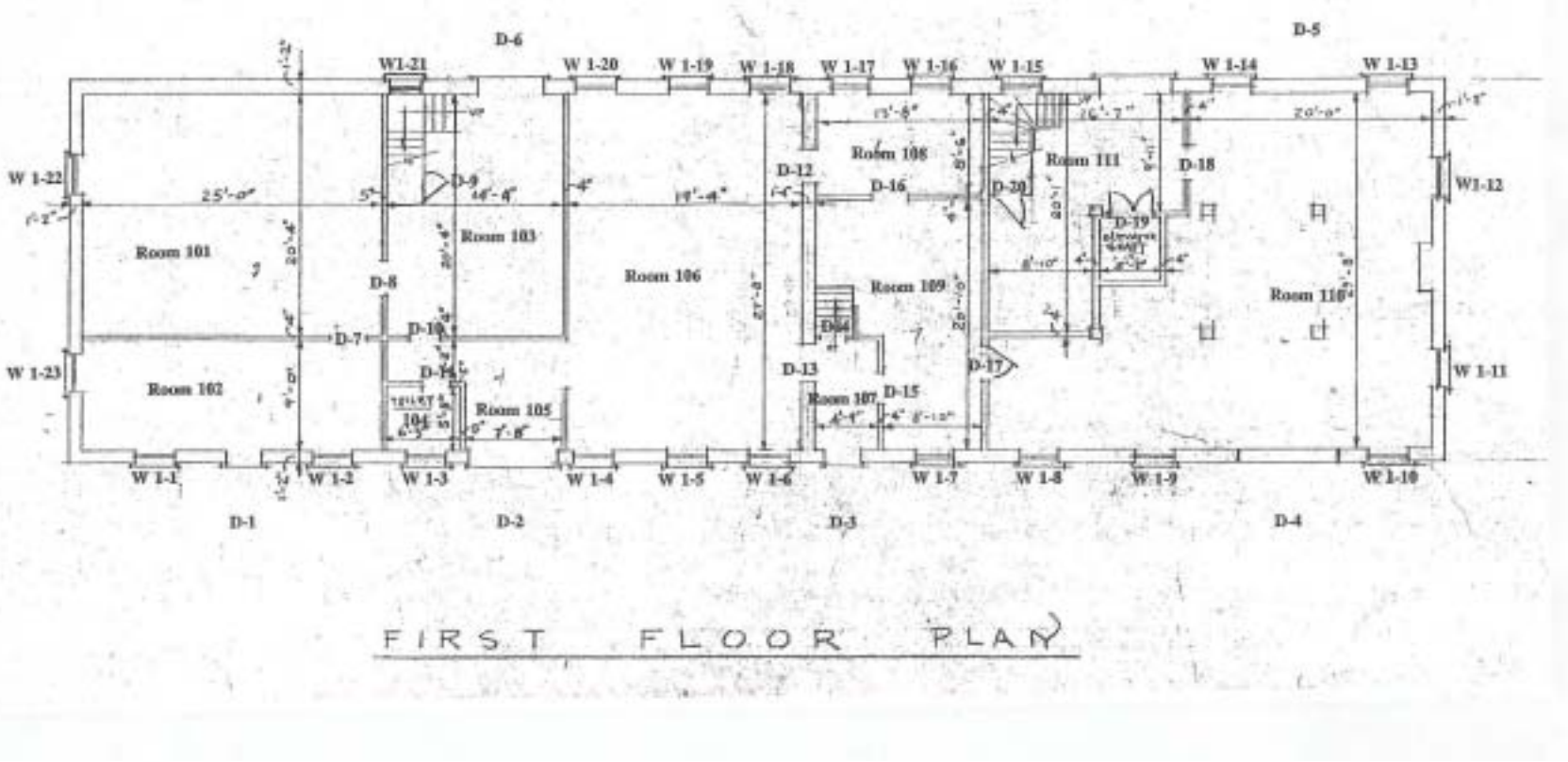

Figure 6. First- floor plan of Building 32, showing scheduled rooms and openings [1960; annotated 1993].

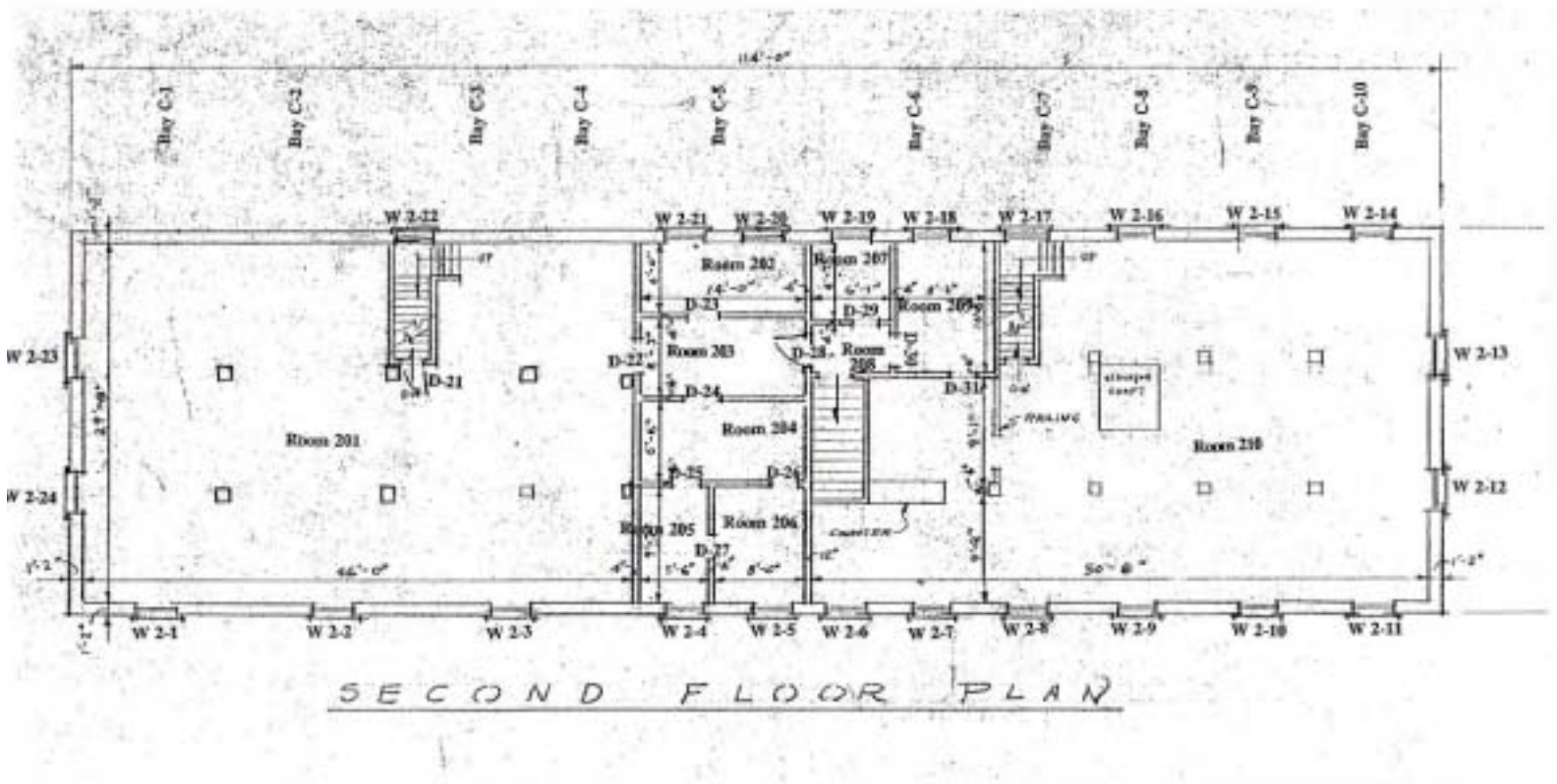

Figure 7. Second- floor plan of Building 32, showing scheduled rooms and openings [1960; annotated 1993].

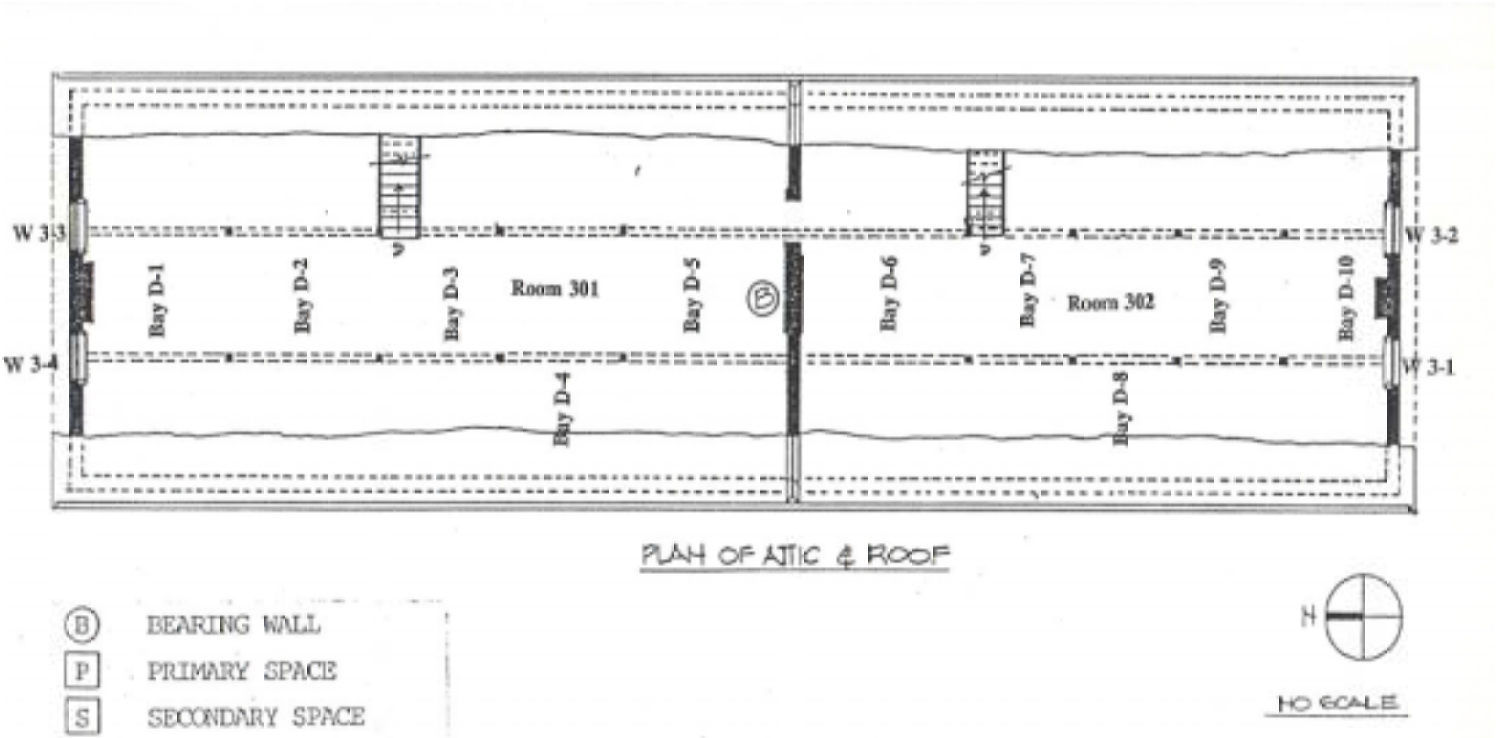

Figure 8. Attic plan of Building 32, showing scheduled rooms and openings [1988, annotated 1993].

EXECUTIVE SUMMARY

This historic structure report (HSR) was written preparatory to the rehabilitation of Building 32 by the Sandy Hook Unit of Gateway National Recreation Area (NRA) to accommodate several of the park's functions. Rehabilitation work was completed in June 1996. As a result, the current (2004) interior appearance of the structure differs greatly from that described in this report. A more detailed account of the work performed can be found in the appendix of this report.

It was determined that this historic structure report would be a Level- B report, which required only secondary- source research and nondestructive investigation of Building 32. The research tasks included the review of all existing reports and documents located at the Northeast Cultural Resources Center, at the Boston Support Office, and in the park archives. All historical documents, photographs, and maps available in the park archives were also examined.

Research findings were limited to the broad outlines of the evolution of Building 32 within the larger context of the development and growth of the site. The building was designed in 1894, begun in 1898, and completed in 1899. The only major alteration to the structure was the addition of a second story in 1910 that increased the building height from one and one- half stories to two and one- half stories. The interior partitioning of the rooms was changed in 1960 to accommodate new functions such as a post office and nursery. The original roof slates were removed and replaced with asphalt shingles in 1973.

Major issues identified in the task directive are addressed in this HSR. The goals of the project were: (a) to document the existing architectural conditions; (b) to determine the basic structural evolution and history of the building; (c) to identify the character- defining features; and (d) to provide a written report of the investigative findings.

The recommended treatment for Building 32 is rehabilitation. The 1993 draft of *NPS- 28: Cultural Resource Management Guideline* (hereafter *D.O.- 28*) defines the selected treatment as follows:

> Rehabilitation improves the utility or function of a historic structure, through repair or alteration, to make possible a compatible contemporary use while preserving those portions or features that are important in defining its significance.[1]

Rehabilitation efforts should minimize any adverse effects on the character- defining features of the building. Character- defining features (CDFs) are those elements or treatments that give a structure its distinction and character, and without which the architectural or historical integrity would be diminished or lost. CDFs can date to original construction or to later alterations. The investigation conducted for this HSR identified the CDFs for Building 32. Exterior CDFs include exterior masonry materials and details, and exterior fenestration and doorways. Interior CDFs include beaded- board partition walls and ceilings, manual hoists, exposed brick walls, and exposed structural and floor framing. The CDFs of Building 32 are described in detail later in this report. Specific recommendations in the report relate only to work that would affect the CDFs identified here.

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[1] *NPS- 28: Cultural Resource Management Guideline*, Release No. 4 Draft. Washington, D.C.: U.S. Department of the Interior, National Park Service, February 1993, p. 142.

The amendment to the general management plan (GMP) for the Sandy Hook Unit of Gateway National Recreation Area (NRA) was drafted in January 1990. It recommends adaptive use of Building 32 as administrative offices to support park functions.[2] Use of the building as park offices is compatible with the structure.

Existing conditions will be determined and included in the upcoming design package to be developed by an architectural and engineering firm and the Building Conservation Branch of the Northeast Cultural Resources Center. Recommendations related to maintenance concerns will evolve from that assessment.

ADMINISTRATIVE DATA

Building 32 is located at Fort Hancock, Sandy Hook, New Jersey, and is one of the structures of the Fort Hancock and the Proving Ground National Historic Landmark District in the Sandy Hook Unit of Gateway NRA. The building is one of the original buildings constructed along the east side of the northern parade area. It is oriented north/south along the east side of Kearney Road, with the west (front) elevation facing the road, and the east (back) elevation facing the former railroad bed. This area originally contained many of the fort's support structures, such as the bakery, fuel sheds, and stables.

Building 32 was constructed as the Quartermaster's office and storehouse. It retained this function well into the 20th century. The National Park Service acquired the building in 1975 as a part of the creation of Gateway NRA.

The proposed treatment of Building 32 is rehabilitation, including the preservation of the exterior appearance and the adaptive use of the interior. The proposed use of the building is to house park offices. The Protection Division and Resources Management Division of the park will be the new tenants in the structure.

The proposed treatment and adaptive use of Building 32 are in agreement with available planning documents regarding the management of the cultural resources of the Sandy Hook Unit of Gateway NRA. The General Management Plan (GMP) amendment of 1990 states that the management objective is to

> Preserve the historic character of the fort through a joint public/private venture involving adaptive reuse *[sic]* of as many structures as possible.[3]

A further goal is to "retain the integrity of the historic scene and to provide adaptive use through rehabilitation of historic structures."[4]

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[2] *General Management Plan Amendment: Development Concept Plan and Interpretive Prospectus: Sandy Hook Unit, Gateway National Recreation Area, New York/New Jersey* (NPS, January 1990).

[3] *GMP Amendment*, p. 8.

[4] *GMP Amendment*, p. 9.

Proposed treatment and use likewise accord with information in the List of Classified Structures (LCS). The LCS identifies Building 32 as a "historic" structure in the "Should Be Preserved" management category, with "adaptive restoration" proposed for its ultimate treatment. The LCS also recommends that the building be documented with an HSR.

The significance of Building 32 is determined by its relationship to Fort Hancock. As one of the original buildings designed and constructed at Fort Hancock, it helps to define the original appearance of–and garrison experience at–the post.

The significance of Fort Hancock (and by inference, Building 32) is discussed and described in a variety of documents, including a National Register nomination, a National Landmark nomination, a historic resources study, a historic structure report, and the park's general management plan. Dates of significance vary in the documents. The documents (and their various periods of significance) are discussed subsequently in chronological order.

The first National Register nomination for the "Fort Hancock and Sandy Hook Proving Ground Historic District" was submitted in 1978 and accepted April 24, 1980. The historic district includes approximately 380 acres and 90 significant historic buildings dating from 1878 to 1945. Of the 90 buildings included in the nomination, 57 were Fort Hancock structures. Building 32 is one of the 32 buildings that made up the original Fort Hancock (1898- 1899). The structures reflect the "history of the U.S. Army's Ordnance Department Proving Ground and Fort Hancock Military Reservation."

The National Register nomination includes a "Statement of Significance" that identifies the period of significance for the Fort Hancock Historic District (and thus Building 32) broadly as the era beginning with the Spanish- American War and continuing through the Cold War, i.e., 1898 to the 1960s. The actual statement reads:

> The Federal reservation at Sandy Hook, New Jersey, has played a double role in United States military history, as the site of both the Army Ordnance Board's Proving Ground from 1874 to 1919, and Fort Hancock, the chief unit in the defense of New York Harbor from the Spanish- American War through the Cold War.[5]

NPS Historian Edwin Bearss included a "Statement of Significance" in his historic resource study completed in 1981. He linked the significance of the Fort Hancock structures to the role they played in the defense of New York Harbor. He wrote,

> The defenses of Sandy Hook from the 1890s through World War II had a key mission in the protection of America's largest metropolitan area and most important harbor against amphibious attack.[6]

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[5] Richard E. Greenwood, National Register of Historic Places nomination, "Fort Hancock and the Sandy Hook Proving Ground Historic District," June 28, 1976.

[6] Edwin C. Bearss, *Historic Resource Study, Fort Hancock, 1895- 1948, Gateway National Recreation Area, New York/New Jersey* (Denver: U.S. Department of the Interior, National Park Service, May 1981), p. 1. Hereinafter *HRS, 1895- 1948*.

> The extant masonry structures, along with representative examples of frame temporary buildings pertaining to military architecture, constitute an outstanding resource for interpreting the changing coastal defense system that guarded the vital New York Harbor area from the Civil War until the 1960s. These structures…form an ensemble, each of which constituted a part of the military community.[7]

Therefore, the years of significance–according to Bearss–run from the Civil War through the 1960s.

The National Historic Landmark nomination was completed in 1982. It lists Building 32 as one of the structures that "contribute to the architectural and historical character of the District." The nomination identifies the years 1895- 1949 as the specific dates of significance for the Fort Hancock buildings.[8]

A historic structure report completed in 1988 defined the historical significance of Fort Hancock as follows:

> The historical significance of Fort Hancock lies in the history of coastal defense structures in the United States, with other significant structures remaining associated with the first official United States Army proving ground, the first United States life saving service station, and the oldest working lighthouse in the United States.[9]

Sulam recommended rehabilitation of the structures at Fort Hancock, including adaptive use of the interiors.

The 1990 GMP amendment for the Sandy Hook Unit of Gateway NRA, like the National Register nomination, identifies the "original buff- brick buildings surrounding both parade grounds" as some of Fort Hancock's most significant cultural resources. Building 32 is one of the "original buff- brick buildings," and is therefore one of the site's most significant cultural resources.

The amendment includes concepts for management, development, and use of the Fort Hancock buildings that focus on preserving the historic character of the fort through the adaptive use of as many structures as possible.[10] The cultural and architectural significance of the Fort Hancock buildings can be interpreted through two (of the eight) themes identified in the GMP amendment: "Military Presence and Garrison Life" and "Coastal Defense."[11] A period of significance for the buildings of Fort Hancock is not specifically identified in the amendment, although it

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[7] *HRS, 1895- 1948*, p. 4.

[8] Harry Butowsky, National Historic Landmarks nomination, "Fort Hancock and the Sandy Hook Proving Ground Historic District," June 20, 1982, Section 7, p. 1, and Section 8, p. 1.

[9] Barry Sulam and John B. Marsh, *Historic Structure Report, Architectural Data Section (Vol. IV), The Sandy Hook Proving Ground, 1874- 1919, Sandy Hook Unit, Gateway National Recreation Area, New Jersey* (Denver: U.S. Department of the Interior, National Park Service, Denver Service Center, Aug. 1988), p. 10.

[10] *GMP Amendment*, p. 8.

[11] *GMP Amendment*, pp. 23- 24.

recognizes that the "historic structures" date from "the last quarter of the 19th through the first half of the 20th century."[12]

This HSR recognizes the years 1895- 1960 as the broad period of significance for Building 32. A primary period of significance defined by the dates of construction–i.e., 1895- 1945–should be considered for the Fort Hancock buildings.

Extant studies that examine Building 32 include the following:

Edwin C. Bearss, Historic Resource Study, Fort Hancock, 1895- 1948, Gateway National Recreation Area, New York/New Jersey (Denver: U.S. Department of the Interior, National Park Service, May 1981).

General Management Plan Amendment: Development Concept Plan and Interpretive Prospectus: Sandy Hook Unit, Gateway National Recreation Area, New York/New Jersey (NPS, January 1990).

Richard E. Greenwood, National Register of Historic Places nomination, "Fort Hancock and the Sandy Hook Proving Ground Historic District," June 28, 1976.

Center for Architectural Conservation, Historic Structure Assessment Report, Fort Hancock–Building 32, Quartermaster's Office, Gateway National Recreation Area, Sandy Hook Unit (Atlanta: Georgia Institute of Technology, College of Architecture, 1988- 1989).

Douglas S. Walter, Barry Sulam, and Susan Simpson, Architectural Data Section, Historic Structures Report, Part One, Fort Hancock Parade Ground Structures, 1896- 1899, Sandy Hook Unit, Gateway National Recreation Area (Denver: U.S. Department of the Interior, National Park Service, Denver Service Center, Feb. 1979).

Douglas S. Walter, Barry Sulam, Susan Simpson, and John B. Marsh, *Historic Structure Report, Architectural Data Section (Vol. II), Fort Hancock Quartermaster Structures, 1900- 1918* (Denver: U.S. Department of the Interior, National Park Service, Denver Service Center, Aug. 1988.

The research materials gathered during the production of this report will be filed at the Historic Architecture Program (HAP) offices in Lowell, MA. Copies of any new research material obtained will be sent to the park. Original photographs, drawings, and text will remain at the HAP for the purposes of report publication and reprinting. Copies of the final unpublished report will be kept at the park and the HAP. Copies of the published report, when they become available, will be kept at park, the HAP, and the Denver Service Center's Technical Information Center.

[12] *GMP Amendment*, p. 4.

II. HISTORICAL DATA

BACKGROUND

The military importance of the Sandy Hook peninsula has been recognized since at least the 18th century. A lighthouse was erected in 1764. In 1776, a British invasion fleet transporting an army used the Sandy Hook lighthouse as a navigational landmark to enter New York Harbor. This was followed by an attack on New York City, which succeeded in capturing the city. Two years later, the British fortified the north end of Sandy Hook to repel an expected attack by a French fleet. The United States first fortified Sandy Hook in 1812 by means of temporary structures and stationed troops. A plan was devised during the 1850s for a permanent, five- bastioned fort on Sandy Hook intended to serve as the outer defenses for New York City.[1] A system of jetties and seawalls was constructed to protect the site from tidal erosion. Construction of the fort progressed from 1857 until 1868, when work stopped and the garrison was withdrawn. This was due to the fact that technological innovations in warfare were changing the nature of defense. The advent of ironclad ships and long- range breach- loading rifled guns had made the bastioned masonry fort obsolete.[2]

In order to stay abreast of innovations in defense, the U.S. Army established a proof battery and proving ground on Sandy Hook in 1874 for testing new weaponry. Around 1884 the U.S. Congress began to authorize larger expenditures for the armament program, and in 1886 an influential review board appointed by President Cleveland (the "Endicott Board") called for a comprehensive defense system to protect primary U.S. ports from naval attack.[3] The comprehensive defense systems installed at Sandy Hook by the Endicott Board included high- powered guns and mortars in concrete emplacements, underwater mine fields and rapid- fire guns to protect them, floating batteries, and torpedo guns.[4] Following the Endicott System improvements, Sandy Hook became the most important complex guarding the New York harbor.

It was during the period 1890- 1910 that most of the batteries on Sandy Hook were constructed and put into operation. Batteries Reynolds and McCook, Alexander, Bloomfield, Richardson, Granger, Halleck, and Arrowsmith were emplaced, as was the first and only lift- gun battery, Battery Potter. In addition, the rapid- fire batteries Engle, Urmston, Peck, Morris, and Gunnison were emplaced to protect the minefield.[5] Two Endicott batteries were completed on Sandy Hook by 1895, representing the first emplacements of the modern U.S. coastal defense system. On October 30, 1895, the Secretary of War signed a general order designating the fortifications on Sandy Hook as Fort Hancock. Fort Hancock was named after Major General Winfield Scott Hancock (1824- 1886), a contemporary military figure best known for his leadership during the Civil War.[6]

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[1] Edwin C. Bearss, NPS memorandum, February 20, 1976, p. 1. NER Archives.

[2] Bearss, NPS memorandum, p. 6.

[3] Bearss, NPS memorandum, p. 2.

[4] Bearss, NPS memorandum, p. 4.

[5] Bearss, NPS memorandum, pp. 5- 7.

[6] Douglas S. Walter, Barry Sulam, and Susan Simpson, *Architectural Data Section, Historic Structures Report, Part One, Fort Hancock Parade Ground Structures, 1896- 1899, Sandy Hook Unit, Gateway National Recreation Area* (Denver: U.S. Department of the Interior, National Park Service, Denver Service Center, Feb. 1979), p. 15. Hereinafter *HSR*, Vol. I.

PLANNING THE FORT

On March 27, 1896, the Commander of the Department of the East–Major General Thomas Ruger–suggested in a letter to the War Department that facilities for a garrison be built at Fort Hancock. The Office of the Quartermaster General was charged with providing plans and specifications for the fort. Captain Arthur Murray, an Artillery Officer, drew up a master plan for the site and plans for post buildings. Colonel Charles Sawtelle, the Chief Quartermaster of the Department of the East, prepared construction estimates for General Ruger.[7]

The military post was to share Sandy Hook with the already- established proving ground located on the northeast portion of the peninsula. The proving ground operated under the direction of the Ordnance Department. The military post would operate under the direction of the U.S. Artillery Corps/Department of the Army. To avoid friction between the branches, the proving ground and the military post were to be run by separate commanding officers. Also occupying the north end of Sandy Hook were the U.S. Army Corps of Engineers, the U.S. Life- Saving Service, and an office of the Western Union Telegraph Company.[8]

A site southwest of the proving ground was chosen by Captain Murray for Fort Hancock. The site selection was confirmed by the Quartermaster General's Office in May 1896. On August 5, 1896, the U.S. Congress authorized and appropriated funds for the construction of a permanent four- battery military post to quarter soldiers assigned to the vital Sandy Hook defenses.[9] Secretary of War Lamont approved $339,600 for site preparation and the construction of 32 buildings at the post. Facilities for the new garrison were to include permanent barracks, officers' quarters, storehouses, a hospital, a guardhouse, and an administration building.[10]

The site plan developed by Captain Murray was based on the juxtaposition of two parade grounds, a central and a secondary parade. The central and secondary parades were set on a north/south axis with the buildings organized around the perimeters of the parades. The central parade was semicircular, with the arc facing east. A row of officers' quarters defined the western perimeter of the central and secondary parades and faced Sandy Hook Bay. Four enlisted- men's barracks were planned for the eastern arc of the central parade facing the parade. The post hospital anchored the southern bound of the central parade.

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[7] *HSR,* Vol. I, p. 18.

[8] Edwin C. Bearss, *Historic Resource Study, Fort Hancock, 1895- 1948, Gateway National Recreation Area, New York/New Jersey* (Denver: U.S. Department of the Interior, National Park Service, May 1981), p. 18. Hereinafter *HRS, 1895- 1948.*

[9] *HRS*, *1895- 1948*, p. 26.

[10] Barry Sulam and John B. Marsh, *Historic Structure Report, Architectural Data Section (Volume IV), The Sandy Hook Proving Ground, 1874- 1919, Sandy Hook Unit, Gateway National Recreation Area, New Jersey* (Denver: U.S. Department of the Interior, National Park Service, Denver Service Center, Aug. 1988), p. 18.

The secondary parade adjoined the central parade on the north. It was long and triangular, with its apex to the north. Like the central parade, its western perimeter was defined by a rank of officers' quarters facing Sandy Hook Bay. The east leg of the parade triangle was occupied by utilitarian and service- related buildings essential to the efficient operation of the fort. Among the buildings planned for the east leg of the secondary parade were the stables, wagon shed, workshops, bakery, storehouses, fuel shed, and guardhouse. Anchoring the south boundary of the secondary parade was a bachelor officer's quarters and the administration building.

Murray's plan was submitted for approval to Secretary of War Lamont on September 14, 1896, and it was approved the same month.[11] This original plan remains the core of Fort Hancock today.

BUILDING THE FORT

Murray's designs for the buildings were influenced by his consultations with the architectural firm of John M. Carrere and Thomas Hastings (personal friends of Murray's), as well as by existing precedents at similar military installations. The key post structures were to be governed by "utility, comfort, beauty of architecture" and "cost of construction," and were to be "devoid of gingerbread work" that would require continual maintenance.[12]

Some of the structures were modeled after buildings at Fort Ethan Allen in Vermont.[13] For example, 11 of the 22 buildings included in Sawtelle's list of estimates were to be "similar to that at Ethan Allen." Photographs taken by Barry Sulam in 1980 at Fort Ethan Allen illustrate that the buildings at Fort Hancock are nearly identical to those at Fort Ethan Allen. Buildings at Fort Columbus, NY, and David's Island, NY, were also copied.[14]

The construction estimates of Colonel Sawtelle that accompanied Captain Murray's plan provide a brief description of 22 of the original 32 buildings erected at Fort Hancock. The estimate is included here in full.

Two double sets of two- company barracks, similar to those constructed at Fort Ethan Allen, Vermont, $40,000 each	$80,000
Five double sets of officers' quarters, similar to those at Fort Columbus, New York, $16,500 each	$82,500

[11] *HRS*, *1895- 1948*, p. 26.

[12] *HRS*, *1895- 1948*, pp. 18- 19.

[13] Buildings copied included two double sets of two- company barracks, an administration building, a guardhouse, a quartermaster storehouse, a hospital, one double set of NCO quarters, a fuel storehouse, a quartermaster stable, a wagon shed, a blacksmith shop, and a shop building.

[14] *HRS*, *1895- 1948*, p. 10.

One structure with five sets of bachelor officers' quarters, similar to the one at David's Island, New York	$26,000
Administration building, similar to that at Fort Ethan Allen	$13,000
Guardhouse, similar to that at Fort Ethan Allen	$ 8,000
Quartermaster and commissary storehouse, similar to that at Fort Ethan Allen	$ 8,500
Hospital, similar to that at Fort Ethan Allen	$18,000
Hospital steward's quarters	$ 2,000
One double set of noncommissioned officers' quarters, similar to those at Fort Ethan Allen	$ 4,200
Fuel storehouse, similar to that at Fort Ethan Allen	$ 2,200
Quartermaster stable, similar to that at Fort Ethan Allen	$ 5,400
Wagon shed, similar to that at Fort Ethan Allen	$ 2,300
Blacksmith shop, similar to that at Fort Ethan Allen	$ 2,200
Shop building- mechanic shops, similar to those at Fort Ethan Allen	$ 3,000
Bakery	$4,875
Oilhouse	$ 200
Scale house	$ 500
TOTAL	$262,825[15]

[15] *HRS, 1895- 1948*, pp. 10- 11.

Name of building	No. of Plan	Construction	Plumbing	Heating	Gas
1 administration bldg.	84	$7,500.00	$ 700.00	$ 800.00	$ 50.00
1 guardhouse	30	$7,500.00	$ 750.00	$1,000.00	$ 50.00
1 quartermaster's storehouse	91	$8,000.00	X	X	X
1 fuel storehouse	67E	$2,500.00	X	X	X
1 shop (carpenter and plumbing)	59C	$2,500.00	X	X	X
1 bakery	49A	$2,000.00	$ 125.00	X	X
1 stable	54	$5,000.00	$ 250.00	X	X
1 wagon shed	60A	$2,000.00	X	X	X
2 double sets of noncommissioned officers' quarters	82A	$7,000.00	$ 800.00	X	$ 75.00
4 barracks	107	$79,000.00	$6,000.00	$6,500.00	$ 600.00
1 commanding officer's quarters	108	$12,000.00	$ 600.00	$ 800.00	$ 50.00
6 captains' quarters	109	$63,000.00	$3,300.00	$4,200.00	$300.00
11 lieutenants' quarters	110	$101,750.00	$5,500.00	$6,600.00	$550.00
TOTAL		$300,000.00	$18,025	$19,900	$1,675.00

HRS, 1895- 1948, p. 26.

Once the plans were approved and monies appropriated, the construction of Fort Hancock began in earnest. Colonel James M. Moore of the Quartermaster Department was assigned the job of preparing the site, but he delegated much of the responsibility to his assistant, Captain Carroll A. Devol.[16]

The first necessary tasks were to: (1) clear the grounds of underbrush; (2) grade the area, which had "hills and hollows varying from 3 to 15 feet in depth and extending from 50 to 300 feet in length"; (3) build roads; (4) construct a railroad spur from the ordnance railroad to run behind the storehouses along the eastern bound of the secondary parade; and (5) drill wells.[17] A standard- gauge 2,200- foot railroad spur was completed in January 1897. The grading and leveling contract was completed in the spring of 1897.[18]

As for the buildings themselves, Captain Devol advertised for bids on 32 buildings and a bake oven on October 31, 1896, and received 39 proposals. The low bid of Thomas J. Regan, of Newark, New Jersey, was accepted. The bid was for $287,115, and called for the use of buff pressed brick with limestone trimmings, all buildings to be built according to the plans and specifications in the Constructing Quartermaster's Office. Regan signed the contract on December 15, 1896. Work was scheduled to begin March 1, 1897, after clearing and grading was complete.[19]

However, Regan abandoned his contract before work began, and the contract was inherited by the bondsmen for Regan: Krueger, Mullin, and Burne. Krueger, Mullin, and Burne sublet all the work to other contractors, who in turn subcontracted to still others.[20] This was only the first of many calamities that plagued the building of Fort Hancock. There seems to have been constant delays and difficulties in receiving materials, and a consistent concern with the quality of workmanship. Weather conditions and the nature of the sandy topography likewise conspired to create difficult working conditions.[21] Despite the adverse climate, and the labor and materials concerns, Captain Devol was able to press ahead. However, by the time of his departure in May 1898 for active duty in the Spanish- American War, the project was eight months overdue, with not a single building completed.[22]

Devol's successors as Constructing Quartermaster were Lieutenant Edward McGlackin for a brief period, and then Captain George G. Bailey, who saw the project to completion.

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[16] *HRS, 1895- 1948*, p. 37.

[17] *HRS, 1895- 1948*, p. 33.

[18] *HRS, 1895- 1948*, pp. 41- 43.

[19] *HRS, 1895- 1948*, pp. 48- 49.

[20] *HRS, 1895- 1948,* p. 57.

[21] *HRS, 1895- 1948*, p. 79.

[22] *HRS, 1895- 1948*, p. 93.

Seven buildings (of the contracted 32) were finally completed by August 11 and officially accepted on September 27, 1898. They were two double sets of NCO officers' quarters, the coal shed, the quartermaster and commissary storehouse [Building 32], the bake house and ovens, the workshop, and the wagon shed.[23] By January 25, 1899, 16 buildings were complete (Bldgs. 1- 6, 24, 25, 29, 30, 31, 32, 33, 34, 35, and 36). Seven were near completion, and nine were about half finished.[24] Finally, in late September 1899, the last of the 32 structures originally contracted to Thomas Regan were accepted by Captain Bailey and turned over to the post commander. By this date, completion of the buildings was 23 months overdue.[25]

AUXILIARY ELEMENTS OF THE HISTORICAL SETTING

Additional concerns for the Constructing Quartermasters at Fort Hancock were the installation of sewage and lighting systems, and landscaping. The sewer system was completed (wells drilled, pumping plant erected, water tanks in place, pump connections made, and boilers installed) by April 30, 1899.[26] The fort was originally lighted with gas; however, all gas lighting was converted to electric light in 1902. A coal- fueled powerhouse was installed, ducts and cables were laid, and 36 structures were wired for electricity. Building 32 may have been wired at this time.[27]

Landscaping was an ongoing struggle in the shifting sands of Sandy Hook. Efforts began in September 1898 when $33,133.30 was allotted for constructing roads, curbs and walks, and putting down topsoil.[28] However, in 1900 the post commander wrote that the parade ground and areas around the buildings were "a waste of loose sand." Thousands of tons of drift sand had blown over the macadamized roads and brick walks during the winter. Some of the dunes were level with the tops of the lampposts. In other areas "the former surface had been cut out and swept away to a depth of from two to five feet."[29] A second landscaping effort of the main parade ground and areas around staff noncommissioned officers' quarters, the guardhouse, and barracks was begun in August 1901; it included grading, application of top soil, and reseeding. In addition, many gravel walks were replaced with flagstone, concrete walkways were laid, and macadam roadways constructed over former sand trails.[30]

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[23] *HRS, 1895- 1948*, pp. 95, 106.

[24] *HRS, 1895- 1948*, p. 131.

[25] *HRS, 1895- 1948,* p. 134.

[26] *HRS, 1895- 1948*, p. 138.

[27] *HRS, 1895- 1948*, pp. 224- 225.

[28] *HRS, 1895- 1948*, p. 141.

[29] *HRS, 1895- 1948*, p. 210.

[30] *HRS, 1895- 1948*, pp. 218- 221.

USE OF FORT HANCOCK, 1899- 1974

By 1898, Fort Hancock was occupied by four batteries of the Fifth and Sixth U.S. Artillery, whose job it was to man the mortar and gun batteries of the New York Harbor defenses. A U.S. Engineer Battalion, two Third New Jersey Volunteer Infantry battalions, the Ordnance Department, and the U.S. Corps of Engineers were also present at Fort Hancock in 1898- 1899.

Fort Hancock became an important post between 1900 and 1914, garrisoned by four to six companies of the U.S. Coast Artillery, whose mission was the "care and use of the fixed and movable elements of land and coast fortifications, including the submarine mine and torpedo defenses."[31] In addition, the Coast Artillery and the National Guard held training, practice, drills, and exercises at the post.[32] Some 25 permanent buildings were added to the post during this period, as evidenced by a 1908 site plan *(fig. 16)*. Among the new buildings were the Saw Mill (48), Ordnance Storehouse (50), Fire House (51), NCO Quarters duplex (52), Mess Halls (55- 58), Hothouse (59), Icehouse (60), Civilian Employee Bldg. (63), Firemen's Quarters (64), Ordnance Storehouse (65), Civilian Quarters (66), Trestle Guardhouse (67), Quarantine Stables (68), New Crematory (69), NCO Quarters (71- 72), Artillery Barracks (74), NCO Quarters duplex (75), Fire Station (76), Firemen's Quarters (77), Oil and Paint Storehouse (79), Civilian Barracks (80), YMCA Building (40), Post Exchange Building (53), and Gymnasium and Bowling Alley (70).[33]

During World War I the forces assigned to Sandy Hook were strengthened. In addition, Fort Hancock served as a training base for artillery units before they were sent to France.[34] Temporary cantonments (barracks, mess halls, quarters, and latrines) were constructed to house the swelling population. At the height of the war 4,043 officers and men were stationed there, excluding the proving- ground and ordnance- supply personnel.[35] That number fell to 2,324 by November 1918 (Armistice Day), and Fort Hancock became an entry post for returning troops to demobilize.[36] Demobilization was rapid, and by June 1919 the force assigned to the Sandy Hook defenses had been reduced to eight officers and 362 men (four companies).[37] Temporary cantonment buildings were slowly salvaged, demolished, razed, or destroyed by fire.[38]

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[31] *HRS, 1895- 1948*, p. 176.

[32] *HRS, 1895- 1948*, p. 189.

[33] *HRS*, *1895- 1948*, pp. 266, 283.

[34] Bearss, NPS memorandum, p. 6.

[35] *HRS*, *1895- 1948*, p. 365.

[36] *HRS*, *1895- 1948*, p. 399.

[37] *HRS*, *1895- 1948*, p. 403- 404.

[38] *HRS*, *1895- 1948*, pp. 474- 480.

America after World War I was strongly isolationistic, and military policy focused on a small army, a reserve force, and a large navy. As a result, activity at Sandy Hook slowed considerably, and the force of the garrison fluctuated from 300 to 700 men throughout the 1920s and 1930s. During this time, Fort Hancock hosted summer encampments and training for the National Guard, the Citizen Military Training Camp (CMTC), and the Army Reserve.[39] The fort also participated in Army- Navy war games, maneuvers, and communication exercises. Only six or seven permanent buildings were added to the post in the 1920s. During the 1930s (especially after the New Deal's public works programs began) more structures were built, and many existing structures were repaired and improved.

During World War II Fort Hancock played a "vital role in the coastal and anti- aircraft defense of America's most important port and metropolitan area…."[40] Fort Hancock was part of a Joint Defense Plan, under which it had the mission of

> maintaining a close surveillance of all beaches, resisting hostile landings, providing antiaircraft defense, and establishing a liaison between all elements of the command–the navy and units in adjacent subsectors.[41]

Fort Hancock also served as a training base and staging area for units being readied for service overseas. Throughout the war, a number of Army units used the post as a staging area prior to being sent to different campaign theaters of operations around the world, primarily the European theater. As Edwin Bearss writes:

> In 1943, the modernization program being rushed to completion, the New York subsector and the harbor defenses reached their apogee of strength and efficiency.[42]

The number of military and civilian personnel stationed at Fort Hancock during 1942- 1943 fluctuated from 7,000 to more than 12,000.[43] A vast construction program was carried out to service the greatly expanded population. More than 200 temporary structures were erected, including barracks, mess halls, latrines, recreation halls, infirmaries, nurses' quarters, garages, and warehouses.[44] However, by March 1944, Allied successes and the need to reinforce troops in combat led to a reduction in the personnel of the harbor defenses of New York. The command was pared to 71 officers, 22 warrant officers, and 1,917 enlisted men.[45]

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[39] *HRS*, *1895- 1948*, pp. 433- 437.

[40] *HRS*, *1895- 1948*, p. 573.

[41] *HRS*, *1895- 1948*, p. 534.

[42] *HRS*, *1895- 1948*, p. 549.

[43] According to NPS historian Thomas Hoffman (March 2004), the Fort Hancock garrison during World War II consisted of Army, Navy, and Coast Guard personnel, and a large staff of civilian employees particularly involved with radar development and testing. However, Hoffman believes that the estimated post population of more than 12,000 is far too high.

[44] *HRS*, *1895- 1948*, p. 598.

[45] *HRS*, *1895- 1948*, p. 560.

The immediate postwar years saw the United States drastically reduce its defense spending. The atomic bomb, missiles, and innovations in radar and air power rendered the big guns of the coastal defense obsolete. Fort Hancock was designated a post surplus to the country's needs until the autumn of 1947, when it was given a mission in the National Guard and Army reserves program. Once again, training and outdoor exercises for the Coast Artillery Reserve and National Guard harbor defense units were held at Sandy Hook.[46] However, the fort became increasingly inactive. The residency of the 1225th Army Service Unit, Second Service Command, ended on December 31, 1949.[47] (This unit had been organized at Sandy Hook in 1941 to provide administrative and logistical support to tactical commands.[48]) On June 25, 1950, the facility was deactivated.[49] The only inhabitants thereafter were the crew of the Sandy Hook Coast Guard Station and the keepers of the Sandy Hook Lighthouse.[50]

The advent of the Korean War caused the fort to be reactivated on April 10, 1951, to provide anti- aircraft defense for the New York City area, and to serve as a staging center for anti- aircraft units.[51] The 1225th Army Service Unit was reorganized,[52] and a limited rehabilitation was undertaken of the buildings and grounds.[53] Near the end of the war Fort Hancock was deactivated again, on May 1, 1953.[54] However, it continued to be occupied by the 1225th, which provided logistical and administrative support to the radar and antiaircraft installations on Sandy Hook. Between 1953 and 1956, the average population of the post was 914, and approximately half of the troop quarters were occupied.[55]

Beginning in 1954, the antiaircraft guns at Sandy Hook were replaced by Nike- Ajax surface-to- air missiles. These were designed to defend U.S. air space from Soviet long- range bombers.[56] This type of weapon became increasingly important to the Defense Department as a means of protecting metropolitan centers such as New York City. The need to support the missile launching

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[46] *HRS, 1895- 1948*, p. 613.

[47] Edwin C. Bearss, *Historic Resource Study, Fort Hancock: 1948- 1974, Sandy Hook Unit, Gateway National Recreation Area, Monmouth County, New Jersey* (Denver: U.S. Department of the Interior, National Park Service, Denver Service Center, Historic Preservation Division, Nov. 1982), p. 3. Hereinafter *HRS, 1948- 1974*.

[48] *HRS, 1948- 1974*, p. 3.

[49] *HRS, 1948- 1974*, p. 18.

[50] *HRS, 1948- 1974*, pp. 22- 23.

[51] *HRS, 1948- 1974*, pp. 21- 23.

[52] *HRS, 1948- 1974*, p. 24.

[53] *HRS, 1948- 1974*, p. 25.

[54] *HRS, 1948- 1974*, p. 29.

[55] *HRS, 1948- 1974*, p. 29, 53.

[56] Bearss, NPS memorandum, p. 7.

and tracking facilities at Sandy Hook caused Fort Hancock to be reactivated yet again, on July 1, 1956.[57] In 1958- 1959 the Nike- Ajax missiles were replaced by nuclear- armed Nike- Hercules missiles, a "vital element in supersonic weaponry."[58] This missile system remained in active use until August 1974, although it was largely obsolete by the late 1960s.

Throughout the 1950s military personnel housed at Fort Hancock included antiaircraft artillery missile battalions, military police, radar signal detachments, and the 1225th Army Service Unit. In June 1956 the number of soldiers was 1,375.[59] The type of units at Fort Hancock during the 1960s and early 1970's remained generally the same, but the number of soldiers was smaller—well under 1,000.[60]

On October 27, 1972, President Nixon signed into law legislation authorizing the establishment of Gateway National Recreational Area. At that time, Fort Hancock was still providing facilities for:

- tactical positions for NIKE missiles
- family housing
- a U.S. Army Reserve Center
- the First U.S. Army Recreation Area
- the Fort Monmouth Officers' Club beach.[61]

[57] *HRS, 1948- 1974*, p. 54.

[58] *HRS, 1948- 1974*, p. v.

[59] *HRS, 1948- 1974*, p. 56.

[60] Hoffman, March 2004.

[61] *HRS, 1948- 1974*, p. 161.

Tenants at Fort Hancock included the U.S. Coast Guard, the U.S. Navy Reserve, a First Army Recreation Area, the U.S. Department of Commerce, and the Electronics Support Command.[62] The population at the fort was 1,687, including military personnel and dependents. The total number of buildings in use was 230, including 13 buildings for Administration, 40 buildings for storage, 43 buildings for family housing, 18 buildings for troop housing, and 116 buildings for miscellaneous use.[63]

On August 15, 1974, a deactivation ceremony took place for four Army units that were part of the 16th Air Defense Artillery Group—the last units manning the Nike- Hercules missiles and radar in the New York and Philadelphia area. The post was then transferred to the jurisdiction of the Department of the Interior on January 1, 1975.

[62] *HRS*, *1948- 1974*, p. 161.

[63] *HRS*, *1948- 1974*, p. 161.

III. ARCHITECTURAL HISTORY OF BUILDING 32

ORIGINAL APPEARANCE

Building 32 was one of the original buildings designed and constructed at Fort Hancock. It was designed as a quartermaster's and commissary storehouse. It was located at the apex of the triangle of the secondary parade ground on the east side of Kearney Road. The junction of Kearney Road and Kessler Road (an access road parallel to Hartshorne Drive running behind the row of Officers' Quarters) lay directly in front (west) of Building 32. A railroad spur ran along the back (east) side of the building for deliveries and loading of supplies *(see figs. 16, 17, and 22*). It must be noted that the original construction drawings do not exactly match the as- built conditions: the features on the east and west elevations were reversed.

Exterior Elements

Walls

As built, Building 32 was one and one- half stories (28 feet) high, and 32 feet wide by 114 feet long. It had walls of pressed buff brick, limestone trimmings, and a foundation of dark "trap rock" from the Hudson Palisades. The foundation was 10 feet high–3 feet 7 inches above grade and 6 feet 5 inches below grade–and 1 foot 9 inches thick. The trap rock was ashlar- cut and random coursed. Below the foundation walls were concrete footings.

Exterior walls were three wythes thick. The exterior wythe was buff face brick laid in stretcher bond with narrow joints. The two interior wythes were a larger red brick laid in a stretcher bond with intermittent rowlock joints. The exterior wall surface featured a corbelled cornice two bricks wide along the eaves of the west and east sides. The cornice returned 10 inches onto the north and south end walls.

Doorway and Window Openings

The original exterior walls were pierced by a number of doorway and window openings. Fenestration was neither symmetrical nor evenly spaced. All doorways (except for the basement bulkhead) had sills of light- colored, smooth- planed Indiana limestone, and were headed by a segmental brick arch of soldier bricks. Arches over double doorways had 36 bricks, while arches over single doorways contained 20 bricks. Double doorway openings featured double- leaf, two-panel, wood doors. Each panel was made of diagonally oriented boards. Single doorway openings featured five- panel wood doors topped with three- light transoms.

All window openings had limestone sills similar to those of the doorways; all but the basement windows were headed by similar segmental brick arches, all of which were 23 bricks wide. The basement windows had lintels of dressed blue Indiana limestone. Sills were sloped at a slight angle and tooled on the underside with a drip channel to help shed rainwater.

Window openings were generally 3 feet 8 inches wide and 5 feet 8 inches tall. They were fitted with wooden frames and double- hung sashes having six- over- six lights. All windows (including those of the basement) were equipped with iron grills of 10 bars measuring three- quarters of an inch set into the masonry.

West (Front) Elevation

The first story of the west (front) elevation contained six doorways: two double doorways (D- 2, D- 4) and four single doorways (D- 1 and D- 3, and two doorways later converted to W 1- 6 and W 1- 8). The two double doorways had no steps or platforms, since they were loading doorways. The four single doorways were accessed by three separate sets of steps. D- 3 and W 1- 6 shared a 12- foot- wide platform and steps approximately centered on the elevation. D- 1 and W 1- 8 each had a set of steps measuring 5 feet 6 inches wide. The elevation also had four basement windows and eight first- story windows.

East Elevation

The east wall had four basement windows distributed fairly evenly on the elevation. However, openings in the first story were offset to the south, because the northern 29 feet of wall were solid brick, corresponded to the "clothing and issue room." First- story openings included two double doorways (D- 5 and D- 6) and nine windows. The two double doorways opened onto a platform extending nearly the length of the elevation. The platform had no steps. A railroad spur ran parallel to the east side of the building approximately 10 feet from the loading platform. The railroad originated at the Ordnance and Quartermaster Docks and terminated behind Building 47 further south on Kearney Road. On a 1908 site plan *(fig.16)* the railroad spur is labeled the "Q.M.D. & Sub. Dept. Storehouse Track"; it was 2,631 feet long.

South and North Elevations

The south elevation contained two basement windows, two first- story windows, and two attic windows. The north elevation contained one basement window to the west and one basement entry with grill door and bulkhead to the east, two first- story windows, and two attic windows.

The 1894 and 1897 drawings of the building do not reflect the as- built solutions for entry into the basement. The 1894 plans show two bulkheads on the east elevation, entering the north and south portions of the basement, respectively. The 1897 revised plan shows a bulkhead on both the north and south gable ends of the building, similarly entering the north and south portions of the basement. However, only the north- end bulkhead on the 1897 plan was actually built, leaving the south portion of the basement without exterior access.

Roof and Gutter System

The roof of the storehouse was slate with a built- in, tinned gutter system. A brick fire wall with a terra- cotta ridge cap projected some 8 inches above the plane of the roof and divided it into a 62- foot section on the north and a 52- foot section on the south. Roof features included a galvanized iron ridge, two 20- inch galvanized iron ventilators–one in the middle of the north and one in the middle of the south roof sections–and three brick chimneys, one at each end and one at the fire wall.

The gutter system was built into the eaves along the east and west slopes of the roof, and was supported by the box cornice. Two downspouts 4 inches in diameter carried the rainwater run- off from each gutter. Downspouts terminated at stone splash blocks at grade. A molded wooden cornice piece of ovolo profile was affixed to the outside wall of the gutters, forming a molded box cornice along the east and west elevations *(see fig. 81)*. This molded box cornice returned onto the north and south end walls for a distance of 3 feet 2 inches. The rake of the roof on the gable ends

featured a rake board with a 5- inch crown molding matching the cornice molding along the east and west elevations.

Interior Elements

The plan of Building 32 was designed for the maximum use of the building as a storage and commissary facility. The foremost issues addressed in the design of the building included sufficient open and designated spaces for equipment and supplies, and limited access to ensure the security of the stores from theft.

Basement

The basement consisted of two large open spaces, one north and one south of the brick fire wall. Each portion was visually divided into five bays by four pairs of brick piers. Only the north portion had exterior access, via a doorway to a bulkhead on the north wall. The matching bulkhead shown on the south wall in the revised basement plan of 1897 *(see fig. 35)* was apparently never built, and there is no doorway in the fire wall to permit passage between the north and south portions of the basement. However, each portion was connected to the first story by a stairway on the east wall.

Each portion was also serviced by a manual, rope- and- pulley hoist that provided vertical circulation of stores and goods. The revised basement plan of 1897 shows the locations of the hoists in both portions.

The 1894 plan included a 6- by- 14- foot "bacon box" against the south side of the fire wall, in the south portion of the basement. The 1897 revised plan eliminated the "bacon box"; instead, the south end of the basement was partitioned off, to a depth of 17 feet 6 inches, as a "meat room." No evidence has survived for either treatment, and it is not known if a meat storage area was included in the basement during construction.

First Story

Plan

The large spaces north and south of the fire wall in the first story were also delineated into five bays by four pairs of supports—in this instance, cased wooden posts positioned directly above the brick piers in the basement. Three east/west stud partition walls were built at the locations of the posts, emphasizing the bay demarcation. Two of these partitions divided the larger north portion into three spaces, and one divided the south portion into two spaces. The spaces on either side of the fire wall were each further subdivided by a north/south partition wall to create two small offices on the west side of the building. Thus, there were a total of seven rooms in the first story. Rooms were (from north to south) a clothing and issue room, a storeroom, the quartermaster clerk's office, the quartermaster's office, a commissary office, a sales and issue room, and another storeroom.

All public access to the rooms was through doorways in the west wall of the building. No halls or vestibules were included in the arrangement. Circulation through the building ran on a north/south axis, with only a single interior doorway accessing each room. The communication between rooms was strictly lineal, and intentionally designed to limit access to most of the areas,

especially the storerooms. Counters blocked general access completely inside D- 1 and W 1- 8 (formerly a doorway): fort personnel were served by the quartermaster's staff over the counters.

Walls and Ceilings

The interior walls of the first story were either finished or unfinished, depending on the function of each room. Built- in closets, shelves, and cupboards lined the walls of the clothing and issue room, the north storeroom, and the sales and issue room. Wall areas in the clothing and issue room and the north storeroom not covered by storage units were exposed brick. Wall areas in the sales and issue room not covered by storage units were sheathed with beaded- board paneling. The same type of paneling was used on the walls of the quartermaster clerk's office, the quartermaster's office, and the commissary office. The walls of the large south storeroom were exposed brick with no shelving or cupboard units. Exposed brick in the first story was probably painted.

The ceilings of the quartermaster clerk's office, the quartermaster's office, the commissary office, and the sales and issue room were finished with beaded- board paneling to match the wall sheathing. The ceilings of the other rooms were the unfinished, exposed framing of the floor above.

Doorways and Windows

There were originally eight interior doorways in the first story. Doorways to rooms measured 3 by 7 feet. Doorways to the basement stairways measured 2 feet 6 inches by 7 feet. All original interior doorways (except for the fire doorway) were designed with a transom. The appearance of the doors in these doorways is unknown, although several may have been reused as part of current doorway configurations.

Window treatment in the interior differed according to the surrounding wall treatment. Walls covered with beaded- board paneling featured finished windows with a molded architrave and stool. Exposed brick walls featured unfinished windows with a flat frame and no stool *(see fig. 32)*. All windows were designed to be fitted with interior screens and interior folding shutters. The screens were from Sears and Roebuck, and had wire mesh with holes seven- eighths of an inch square.[1]

Staircases and Hoists

The floor plans of 1894 and 1897 indicate that Building 32 had two staircases against its east wall, one in the north and one in the south portions of the building. Each staircase included a stairway with winders (rather than landings) between the basement and the first story. In the first story, the north stairway occupied the northeast corner of the north storeroom; the south stairway was located in the northeast corner of the south storeroom. The north staircase also included a stairway from the first story to the attic. It is not clear if the south staircase did, as well. The 1894 attic plan does not show a stairway in the south portion of the building, but the 1894 and 1895 first-floor plans do seem to show such a stairway. The original locations of both hoists in the first story are clearly seen in figure 35.

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[1] Screens were installed May 1, 1899, to combat mosquitoes [Edwin C. Bearss, *Historic Resource Study, Fort Hancock, 1895- 1948, Gateway National Recreation Area, New York/New Jersey* (Denver: U.S. Department of the Interior, National Park Service, May 1981), p. 128]. However, no documentary or physical evidence exists for the installation of shutters. Shutters may have been deleted in the final construction.

Attic

The attic, like the basement, consisted of two open spaces divided by the brick fire wall. Pairs of 6- inch- square wooden posts divided the space visually into 10 bays–five bays on either side of the fire wall. One doorway with a fireproof door in the fire wall east of the chimney connected the north and south portions of the attic. The west side of the north portion was equipped with five open- ended stalls for "tent storage." The attic was illuminated by four windows, two in the north wall and two in the south wall.

The hoist in the north portion of the building originally extended into the attic. Evidence for this is a rectangular cutout in today's second floor (original attic floor), where the hoist was initially located–in the north storeroom, against the south partition wall *(see fig. 32)*.[2] It is not known if the hoist in the south portion of the building originally extended into the attic. The original 1894 plan *(see fig. 32)* does not show it in the attic, but that plan does not necessarily reflect as- built conditions. (For example, the plan shows the south hoist built against the west wall in the basement and first stories, but the device was actually built in the center of the space–see the revised 1897 plan, fig. 35.) Since the hoist now extends into the attic, and since it has always been in the same location, there is no cutout evidence available for it, as there is for the north hoist.

Structural Elements

The original wall, floor, and roof framing is believed to be wholly extant today. Physical evidence and comparison with original drawings suggest that the second story was added without dismembering the roof. The additional story was therefore inserted between the original first and attic stories in 1910. The insertion of the new story was accomplished by jacking up the roof and building up the exterior walls and the fire wall, as well as adding the posts now supporting the attic-floor framing.[3] Because the original structural framing of Building 32 has remained largely unaltered, it is discussed in the "Architectural Description" section of this report.

Utility Systems

Available evidence suggests that Building 32 was constructed without heating, plumbing, or lighting systems. The August 1896 breakdown of costs for the building specified no funds for plumbing, heating, or gas.[4] The 1894 and revised 1897 drawings likewise include no specific indication of utility systems. No bathroom is included anywhere on the plans, and no furnace or furnace room is indicated in the basement. Only the chimneys, with their "vents" and "flues," suggest that some sort of heating system was intended for the building. Some rooms may have been warmed by stoves set in removable sandboxes, which would have left no evidence.

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[2] The hoist is (today) located slightly north of the stairway. It was probably moved when the second story was added in 1910.

[3] The framing illustrated in the 1894 drawings is extant in the attic today. It does not appear to have been taken apart and reassembled, as one might expect when adding to the height of a building.

[4] *HRS, 1895- 1948,* p. 26.

CONSTRUCTION HISTORY

The quartermaster and commissary storehouse is one of the original buildings planned for Fort Hancock. The quartermaster storehouse was included in the earliest estimates for "barracks and other necessary buildings" to be erected at Fort Hancock. The estimate, dated March 1896, called for 22 buildings, including a "Quartermaster and commissary storehouse, similar to that at Fort Ethan Allen…$8,500."[5] The estimate is included in full on pages 22- 23.

Captain Arthur Murray was detailed to prepare a site plan and drawings for the proposed post. Technicians in the Quartermaster General's office prepared a revised site plan and final drawings from Murray's plan and conceptual drawings. On August 5, 1896, Secretary of War Lamont approved the expenditure of $339,600 for the construction of 32 key post buildings as identified and designed by Murray and the Quartermaster General's office.[6] Included in the 32 key post buildings was "1 quartermaster's storehouse - No. of Plan, 91." The list of key post buildings and the anticipated breakdown of their cost is included on page 23.[7]

On September 14, 1896, plans for 14 (of the 32) structures were forwarded to the Secretary of War and promptly approved. Included in these first 14 structures was the "quartermaster and subsistence storehouse (plan 91)."[8]

Captain Carroll A. Devol of the Quartermaster General's staff became the superintendent of the Fort Hancock project, and on October 31, 1896, he advertised for bids for erecting 32 buildings and a bake oven. Devol received 39 proposals. The low bid of $218,115 was offered by Thomas J. Regan of Newark, New Jersey. On December 15, 1896, Regan signed a contract that included the construction of a quartermaster and commissary storehouse for $10,175.[9]

The quartermaster's storehouse was to be located with the "other outbuildings" on the low ground south of the mortar battery–an area near enough to the other buildings for convenience, "yet far enough away to prevent any odor from the stables or garbage cremator [sic] from proving a nuisance."[10]

Two sets of drawings are extant for the original construction of Building 32. The two sets are nearly identical, and are included as figures 30- 36. They are both labeled "Plan 91 - Quartermaster and Commissary Storehouse." The first set is dated 1894 and was probably drawn in anticipation of the construction of a quartermaster and commissary storehouse at Fort Ethan Allen, Vermont. The 1894 date corresponds to construction at Fort Ethan Allen, and is too early for construction at Fort

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[5] *HRS*, *1895- 1948*, p. 10.

[6] *HRS*, *1895- 1948*, p. 25.

[7] *HRS*, *1895- 1948*, p. 26.

[8] *HRS*, *1895- 1948*, p. 30.

[9] *HRS*, *1895- 1948*, p. 49.

[10] *HRS*, *1895- 1948*, p. 16.

Hancock. In addition, the construction estimates for Fort Hancock dated March 1896 specify that the quartermaster and commissary storehouse was to be "similar to that at Fort Ethan Allen."[11]

The second set of drawings is labeled "No. 91 - Revised 1897." This set differs primarily in the addition of a platform along the illustrated elevation. Also, the location of the hoist in the south portion of the building has been changed from the west wall to the center of the space. The second set of drawings was probably used in the construction of Building 32, since the date coincides with the initial construction at Fort Hancock.

Work was slated to begin on March 1, 1897. However, Thomas Regan–the builder awarded the construction contract in December 1896–abandoned the contract in March 1897. The contract was inherited by his bondsmen: local businessmen Gottfried Krueger, M.A. Mullin, and Martin Burne. After some renegotiations, work began in April.

Materials used in Building 32 included a buff brick from the Clearfield Brick Company of Clearfield, Pennsylvania. Buff brick was chosen as the face brick despite the fact that it cost $32 per 1,000 for brick, mortar, and labor, as opposed to $22 per 1,000 for red brick. The $10 difference was largely "because better quality brick necessitated more careful workmanship."[12] The buff brick would become problematic, however, since the Constructing Quartermaster had trouble getting consistent color and quality in the buff brick. He eventually had to go out to the kiln in Pennsylvania to supervise the selection of the face brick.[13] The brick was to be laid with rowlock joints. Sand from Sandy Hook beaches was employed in the common mortars used in the masonry construction.[14]

The foundation was "trap rock" from the Hudson Palisades.[15] The original design called for light- colored limestone classed as marble. However, the quarry intended to supply the limestone (located on the upper part of Manhattan Island near King's Bridge) did not have enough to supply all the buildings. The foundation and underpinning material was changed to the Hudson Palisade trap rock.[16] Doorway and window lintels and sills ("trimmings") were to be of limestone described as "a dark or colored stone classed as blue."[17]

Slate was to be Brownsville roofing slate measuring 14 by 10 inches, 14 by 12 inches, 16 by 12 inches, or 16 by 11 inches. The slate actually employed in Building 32 is believed to have been Peach Bottom (PA. S- 2).[18]

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[11] *HRS*, *1895- 1948*, p. 10.

[12] *HRS*, *1895- 1948*, p. 23.

[13] *HRS*, *1895- 1948*, p. 68.

[14] *HRS*, *1895- 1948*, p. 65.

[15] *Webster's New Collegiate Dictionary* defines trap rock as "any various dark- colored fine- grained igneous rocks used esp. in road making."

[16] *HRS*, *1895- 1948*, p. 54.

[17] *HRS*, *1895- 1948*, p. 54.

[18] *HRS*, *1895- 1948*, p. 56. Peach Bottom (PA. S- 2) slate is the type found on all of the Fort Hancock buildings examined or treated thus far.

Woodwork and finished lumber such as the window frames were furnished by the Chapin Hall Lumber Co. of Newark, New Jersey. The workmanship and the materials were both considered to be of high quality.[19]

An inspection of the site on June 14, 1897, revealed that while Krueger, Mullin, and Burne were behind schedule on many structures, the work on Building 32 was well underway. The basement of the "Quartermaster and Commissary Storehouse" was dug, the foundation laid, and the brick walls of the first story nearly done.[20] An inspection two months later, in mid- August of 1897, revealed that Building 32 was now closed in, with half its roof slated.

Although used for several months before its formal opening, the building was not ready for a final inspection until July 21, 1898. On August 11, 1898, it was reported that the quartermaster and commissary storehouse was "pretty well" filled with supplies of the post quartermaster.[21] On September 27, 1898, Building 32 (along with Buildings 29, 30, 33, 34, 35, 21, and 27) was accepted by the Constructing Quartermaster, and payment in full was made for these to Krueger, Mullin, and Burne.[22] One year later, in September 1899, the last 12 (of the original 32) buildings passed their final inspection and were officially accepted by the Constructing Quartermaster. The initial stage of construction at Fort Hancock was complete.

During the summer of 1901, bluestone flagging from the terreplein of Battery Potter was salvaged and positioned as walkways behind the barracks, around the bake house, and around the quartermaster and commissary storehouse.[23]

ALTERATIONS

The primary alteration to the quartermaster and commissary storehouse was the addition of a second story to the original structure, to create a building two and one- half stories high. As early as 1899 there were complaints that the storehouse was too small. A letter to the Quartermaster General claimed there was "insufficient space for both departments, and flour was stored in a room assigned to the post quartermaster."[24] In 1900 a subsistence storehouse was constructed to relieve the overcrowded storage conditions for awhile. This was Building 47, the Post Commissary.

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[19] *HRS*, *1895- 1948*, p. 55.

[20] *HRS*, *1895- 1948*, p. 62.

[21] *HRS*, *1895- 1948*, p. 96.

[22] *HRS*, *1895- 1948*, p. 106.

[23] *HRS*, *1895- 1948*, p. 216.

[24] *HRS*, *1895- 1948*, p. 256.

In 1907, however, it was rumored that Fort Hancock's garrison was to be increased from four to six companies.[25] The post quartermaster was again concerned that the storehouse was too small. He recommended building an office adjoining the present building, allowing him to convert the existing office area to additional storage space.[26] However, Army Quartermaster General Aleshire had a more radical idea: to add a second story to Building 32. Constructing Quartermaster Goodier prepared a set of plans and specifications for a second story. Plans were approved and funds secured by December 17, 1909.[27]

The Constructing Quartermaster advertised for proposals beginning on January 15, 1910. The low bid was $5,700 from Edward Fay and Son. A contract was approved and signed February 10, 1910. The new second story was to include:

two storerooms -	29 feet 10 inches by 50 feet 4 ½ inches 29 feet 10 inches by 45 feet 10 ½ inches
office -	20 feet 10 inches by 14 feet 2 inches
hall and stairway -	3 feet 0 inches by 9 feet 6 inches
latrine -	6 feet 6 inches by 6 feet 6 inches

Work was to be complete by May 20, 1910. The addition was completed and accepted by mid- July 1910.[28]

Few elements of the design were changed during the alteration. Physical evidence and comparison of the existing building with the original, 1894 drawings suggests that the new second story was inserted between the first and attic stories, leaving the roof framing intact. The added masonry walls matched the originals in materials and construction.

The new windows were slightly larger than original window openings, being 45 ½ inches wide (vs. the original 44 ¼ inches) and 70 (vs. 68) inches tall. Sills of the new windows were 52 inches (vs. 48) long. The segmental arches of the new windows had 20 bricks instead of 23. The new windows were not barred. Also, these windows were installed in a slightly different manner than the original windows. (See the discussion of types of window treatment in the subsequent section "Architectural Description.")

The basement and first story remained largely unchanged in plan, except for a new center stairway rising from first to second stories along the south side of the brick fire wall in the former commissary office and sales and issue room. The stairway was a straight run located directly in front of D- 3.

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[25] *HRS, 1895- 1948*, p. 293.

[26] *HRS, 1895- 1948*, p. 330.

[27] *HRS, 1895- 1948*, p. 330.

[28] *HRS, 1895- 1948*, p. 331.

Both existing stairways were extended to run from basement to the new attic. The hoist located in the north portion of the building was moved some 20 feet to its present location, north of the east- wall stairway, and extended from basement to attic. The hoist in the south portion of the building was retained in place, and–if it didn't run as far as the attic originally–was extended to that level.

Later alterations to Building 32 were less dramatic and generally involved the reorganization of interior space, maintenance, and repairs. For example, Bearss reports that on April 2, 1913, the post commander submitted a proposal for altering the first- floor plan of the quartermaster storehouse.

> These changes would provide a rectangular office and more storage space. The door from the room to the quartermaster's private office would be fireproof.[29]

The changes purportedly were approved and carried out by post labor with materials that were available on the post. The exact nature of the changes is unknown. No drawings or written descriptions of the work have been found.

A record book kept by the quartermaster's office provides brief entries concerning work on the building during fiscal years 1923- 1941. The following are some of the items recorded:[30]

March 1923 -	Steam heater plant installed under contract Installing and altering new chimneys and altering elevator shafts
June 1925 -	New heater purchased
Nov. 1934 -	Electric service line from pole to main switch renewed
Sept. 1936 -	Sign "Fort Hancock" on roof repainted
FY 1938 -	Carpenter repairs to interior and exterior woodwork. Enclosed Finance Office porch, tore out steps on front platform and reset. Repaired and replaced locks on front doors. Installed and extended concrete curbing and walks in front of Finance Office and on south side of building. Repaired roof, gutters, downspouts and leaders. Laid linoleum in Quartermaster's office. Painted steps, platform and enclosed porch. Installed faucet in basement, took out radiator and cap pipe. (Works Project Administration)
Jan. 1939 -	Installed 1 switchbox complete w/switching key
March 1939 -	Installed 15 window shades (Replacement)
Sept. 1939 -	Installed 1 cabinet, medicine, white
June 1941 -	Installed 5 fluorescent desk lights and 2 fluorescent floor lights

[29] *HRS, 1895- 1948*, p. 334.

[30] *Q.M.C. Form No. 117, Record Book*, Fort Hancock, New Jersey, Quartermaster Office & Stores, pp. 167- 170. Gateway NRA, Sandy Hook Archives.

Aug. 1941 - Installed 1 Bowl, toilet

Jan. 1942 - Installed 9 electric fluorescent fixtures

March 1942 - Enlarging and Painting Quartermaster Office
Installed new Ladies toilet on 2nd floor.

No further details of any of these projects were provided, so many questions remain. These include the location of plumbing, heating, and electric installations; the type of "steam heater plant" installed in 1923; the nature of alterations to "new chimneys" and "elevator shafts" (undoubtedly the shafts for the hoists) in 1923; and the work to roof and gutters in 1938.

The first available plan of the building postdating its construction is a schematic pencil sketch on graph paper dating to 1957 that shows the first and second stories *(fig. 37)*. This sketch shows that the original arrangement of rooms in the first story had been changed by that time. From north to south, the original clothing and issue room at the north end is now seen to be divided into two rooms by a north/south partition wall. The north hoist once located in this area is not included on the plan, and may have been eliminated from the first story (and, by inference, the basement) at this time. (It remains only in the second story and attic today.) The adjacent original storeroom is seen to be divided into three areas, including a "supply room" with the stairway on the east side (Room 103), and a lavatory (Room 104) and hall area (Room 105) on the west side.

The original partition wall between this original storeroom and the offices to the south was moved north approximately 6 feet at some time, narrowing the storeroom's dimensions and expanding the width of the original office spaces. The original quartermaster's and quartermaster clerk's offices were then wider, but they were also one open space (Room 106).

The original sales and issue room and commissary office against the south side of the fire wall is now occupied by a stairwell, an enclosed vestibule (Room 107), a public waiting area (Room 108), and a glass- enclosed office (Room 109). The original storeroom at the south end of the building is still largely open (Room 110); the northeast corner of the room has been partitioned off around the walls of the south hoist housing to form an "Exit & Elev. Pit" (Room 111).[31] Although this reorganization of space may have been done earlier, the 1957 plan is the first hard evidence of the changes. No alterations have been made to the first story since 1957, so that layout remains extant today.

The 1957 drawing also represents the first documentation of the second- floor plan after the raising of the roof in 1910. The original open areas of the loft, as constructed in 1897, are seen to be partitioned into an arrangement of seven rooms (Rooms 202- 209) flanked by two large open areas at the north and south ends (Rooms 201 and 210, respectively). It is thought that the 1957 plan represents the room configuration as built in 1910.

This room arrangement has not been altered since 1957, so the 1957 plan reflects the appearance of the second story today, with one exception: it does not show the north hoist. As mentioned previously, the hoist's absence from the 1957 first- floor plan suggests that the device was removed from the first story in 1910. However, since the north hoist remains in the second story and attic today, it must have been extant at least on those two levels in 1957.

[31] On this drawing, the location of the hoist is labeled "Elev. Pit," so apparently the "elevator shaft" referenced in the 1923- 1941 record book was actually the hoist.

First- and second- floor plans similar to those of 1957 were drawn by a post draftsman in 1960 *(figs. 38- 39)*. These plans are rendered in more detail: they include doorway openings, wall widths, and floor framing posts. No alterations are apparent.

A plan for "Rehabilitating Building 32" was drawn by K. Jones on March 8, 1966; it illustrated alterations to accommodate a number of craft working areas in the building, including a wood- and leather- working shop and a ceramic shop. The following alterations were detailed:

- a ladies' room was to be installed in Room 105, adjoining the existing toilet on the south (Room 104)
- a new service sink was to be installed in Room 110 just inside D- 17 (NW corner)
- a kiln was to be installed against D- 4 on the west wall in Room 110
- the south stairway (Room 111) was to be enclosed in the first and second stories with 2 by 4 studs sheathed in half- inch gypsum board to create a fire- stop wall
- the existing partition between Rooms 207 and 209 was to be removed, and a new partition erected to create a new west wall of the enlarged room
- the second- story hall was to be extended to the south
- a service sink was to be installed in northwest corner of Room 210.

It appears that none of these alterations were carried out.

A major modification to the building occurred in 1973 when the slate roof was removed and replaced with asphalt shingles. The U.S. Army performed the work.[32] Although no documentation of the project was found, it is surmised that the slate roof was in disrepair.

Several other alterations extant today were made to Building 32. However, no documentation for these changes has been found, so their dates and details are unknown. For example, two of the original single doorways on the west (front) elevation were partially bricked up and converted to windows W 1- 6 and W 1- 8. W 1- 6 was converted by ca. 1940, as seen in the earliest clear photograph of the west elevation. This may have been part of the WPA work carried out in 1938 *(see fig. 20)*. W 1- 8 was converted sometime after ca. 1940, since the same photograph shows the original doorway still intact.

Platforms and porches on the west elevation have changed over the years. Originally, the single, public- access doorways were equipped with a set of wooden steps and a small platform supported by brick piers with stone caps. Double, loading doorways had no platform or steps *(see fig. 19)*. An aerial view *(fig. 22)* of the post taken ca. 1919 indicates that this arrangement was still extant at that time. By ca. 1940, the platforms and porches were altered. A long concrete platform on brick piers served the three single doorways clustered near the center of the elevation, while D- 1 at the north end of the elevation had a small stoop of its own. The double doorways still had no

[32] Center for Architectural Conservation, *Historic Structure Assessment Report, Fort Hancock- Building 32, Quartermaster's Office* (Atlanta: Georgia Institute of Technology, College of Architecture, 1988- 1989), p. 4.

platforms *(see fig. 28)*. By the time of the 1988 investigation of the building: (a) two of the three center single doorways had been converted to windows (W 1- 6 and W 1- 8); (b) the concrete platform had been rebuilt on a smaller scale, centered only on D- 3; and (c) a metal stairway with a railing was installed at D- 1. Today, the metal stairway is gone; only the concrete platform centered on D- 3 is extant.

On the interior a significant alteration was the replacement of much of the original beaded-board sheathing with painted or varnished plywood accented with baseboards, chair rails, and cornice moldings. Painted and varnished plywood is found in Rooms 103- 111. See the discussion of wall treatments in the subsequent section "Architectural Description."

Original exposed wood floors of the first story have been covered with various types of coverings. Linoleum was introduced in 1938; today much of the floor is covered with an asbestos-impregnated tile. Wooden floors remain exposed on the second and attic stories.

FUNCTION AND USE

Building 32 was constructed to house the quartermaster's office as well as storage and distribution areas for goods and materials under the jurisdiction of the Department of the Quartermaster. The Quartermaster Department was in charge of designing and constructing all barracks, quarters, storehouses, and related facilities for the Army. The department also distributed all required clothing and issue items such as towels, bedding, and mess- kit gear.

A clerk for the quartermaster was charged with maintaining a running inventory of all goods delivered, stored, and distributed at the quartermaster's storehouse. Following its construction, Building 32 contained an office for the quartermaster, an office for the clerk, a commissary office, two storerooms, and two rooms equipped for distribution in the first story. Four large open storage areas were also available, two each in the attic and basement.

A railroad spur from the ordnance and quartermaster docks ran along the east/back side of Building 32 (and the other storehouses situated along the secondary parade). The earliest documentation for the railroad spur is the ca.- 1900 site plan *(fig. 14)*. A loading platform constructed along the east elevation allowed goods to be transferred directly from the adjacent railroad spur into the storerooms in the first story through two double doorways. On the west (front) elevation, two double doorways similarly accessed the storerooms. Wagons arrived at the storehouse along Kearney Drive and were off- loaded directly into the building through these double doorways.

Records of usage are scant, but several excerpts from letters to the Quartermaster General reveal some of the materials stored in the building. In 1899, complaints were made that the building was too small because "Part of the flour was in the corner of the quartermaster storeroom which had been reserved for clothing and equipage…."[33]

[33] *HRS, 1895- 1948*, p. 256.

In 1908, before the building was enlarged, it was badly overcrowded. Bearss describes the situation as follows:

> The south end of the first floor and loft were used for storage of clothing, but the space was inadequate. The south end of the basement was filled with articles awaiting survey. The first- floor storeroom at the opposite end of the warehouse was crammed with miscellaneous gear, such as crockery, hardware, and camp and garrison equipage. The basement below was used for storage of items such as range parts, kitchen utensils, glass, paints and oils, and wagon parts. The loft was filled with large "individual machines." Consequently, it was almost impossible to get at some of the stores to fill requisitions.[34]

Similar objects were found in the building after expansion. A letter in 1912 listed the contents of the building as including clothing, tents, camp and garrison equipage, reserve tools of all types, and valuable plumbing supplies.[35]

Building 32 served as the quartermaster storehouse from construction in 1898 until ca. 1960 with only slight variances in the function of the rooms. The commissary function of the building was removed when a new commissary (Building 47) was constructed in 1900.[36] As early as 1909, correspondence regarding Building 32 refers simply to the quartermaster storehouse; the "commissary" designation was dropped.[37]

The pattern of use at the building fluctuated with the general intensity of activity and the size of the population at the post. Certainly the building would have been used greatly during the years 1900- 1914, with the extensive, ongoing building campaign and ever- increasing troop occupation. It is during this period that the building was doubled in size. Additional periods of peak activity for Building 32, and for the entire post, occurred during World War I and World War II. Throughout these years, the quartermaster's storehouse was a vital part of garrison life. Between the wars, Building 32 may have served in part as some type of bursar's office. A reference to the "Finance Office" and "enclosed Finance Office porch" at Building 32 was noted in a record book covering expenditures for the years 1923- 1941. The same record book refers to the quartermaster's office in Building 32. The photograph of the building in the record book reveals a large sign above D- 3 reading "POST QUARTERMASTER."[38]

The post- war and Cold War years were generally a time of reduction at Fort Hancock. Most of the temporary buildings hastily erected during World War II were salvaged or demolished, and original buildings assigned new duties.

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[34] *HRS, 1895- 1948*, pp. 329- 330.

[35] *HRS, 1895- 1948*, p. 334.

[36] *HRS, 1895- 1948*, pp. 255- 257.

[37] *HRS, 1895- 1948*, p. 329.

[38] *Q.M.C. Form No. 117, Record Book,* p. 169.

The schematic plan of Building 32 dating to 1957 identifies several rooms, including an office, a supply room, a work room, a vestibule, and two toilets. The principal function of the building was probably still storage *(see fig. 37)*. In 1960, however, plans drawn by K. Jones reveal that the first story was now occupied by a post office and a nursery for the children of Fort Hancock personnel. (The Post Office operated in Building 32 until 1974, when it moved first to Building 74 and then to Building 40.) The second story and attic were probably office and storage space. The title block of the drawing reads "Permanent Building, Office Building, Building No. 32" *(see figs. 30- 31)*.

In 1996 Building 32 was converted to a craft center. Drawings for the rehabilitation show a lapidary (art of cutting, polishing, and engraving precious stones) and leather- working shop in the former first- floor nursery. The post office was to be maintained in the north end of the building. A ceramic shop was to replace the storeroom at the south end of the building. In the second story, a woodworking shop was planned for the storeroom at the south end *(see fig. 40)*. As stated previously, it appears that none of these alterations were ever executed.

A photography laboratory, still in evidence, was created in the small partitioned rooms on the west side of the building in the second story at some time. Building 32 served as the branch post office and family housing office during the late 1960s until 1975, when the fort was turned over to the National Park Service.

Building 32 became a nonfunctioning building in 1974 when electrical, heating, and plumbing systems were discontinued. It was used as a storage area[39] until the ca.- 1995 renovation as office space for the Division of Visitor Protection.

[39] *Historic Structure Assessment Report,* p. 5.

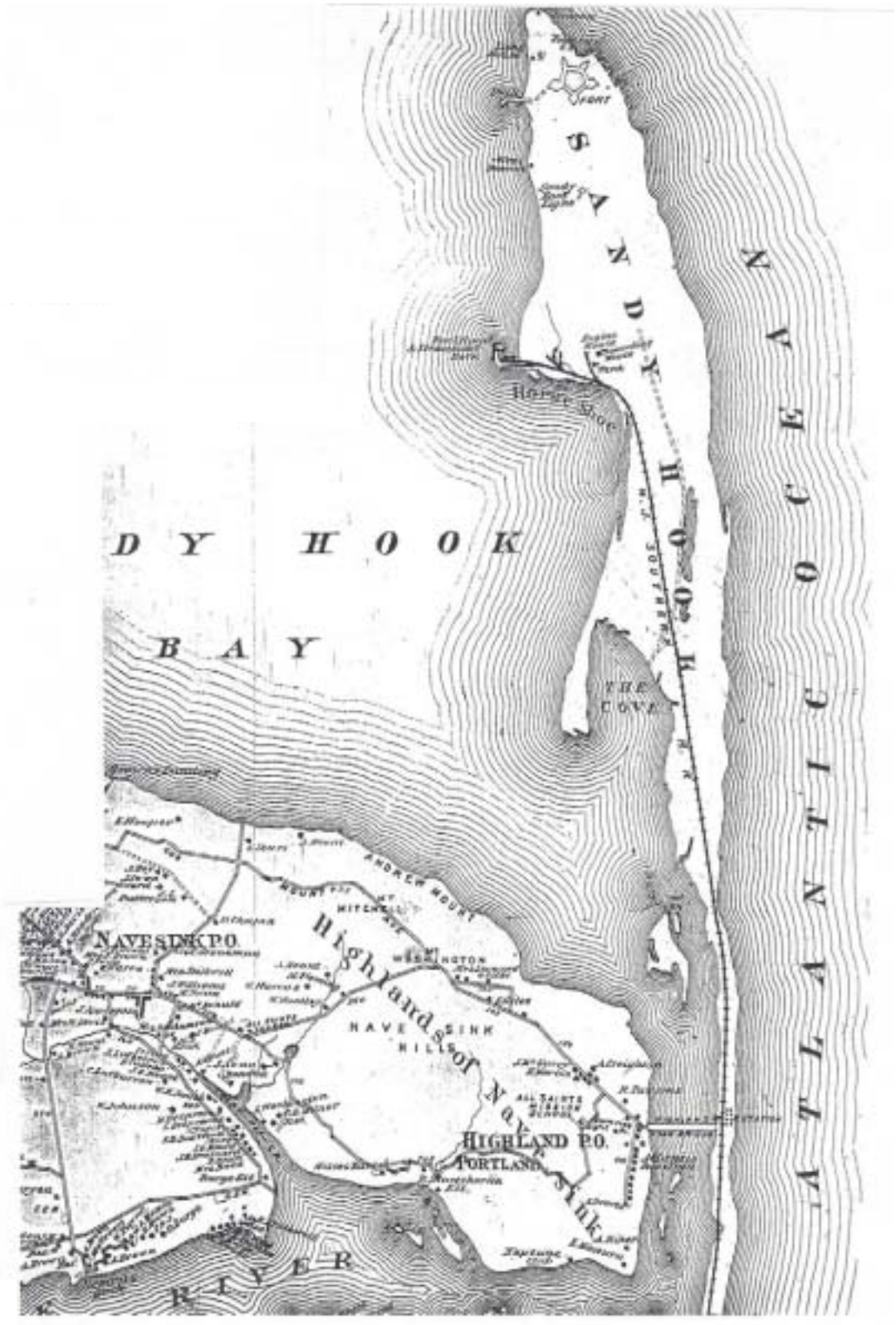

Figure 9. Map of Sandy Hook [1873]. Note fort, lighthouse, and railroad line.

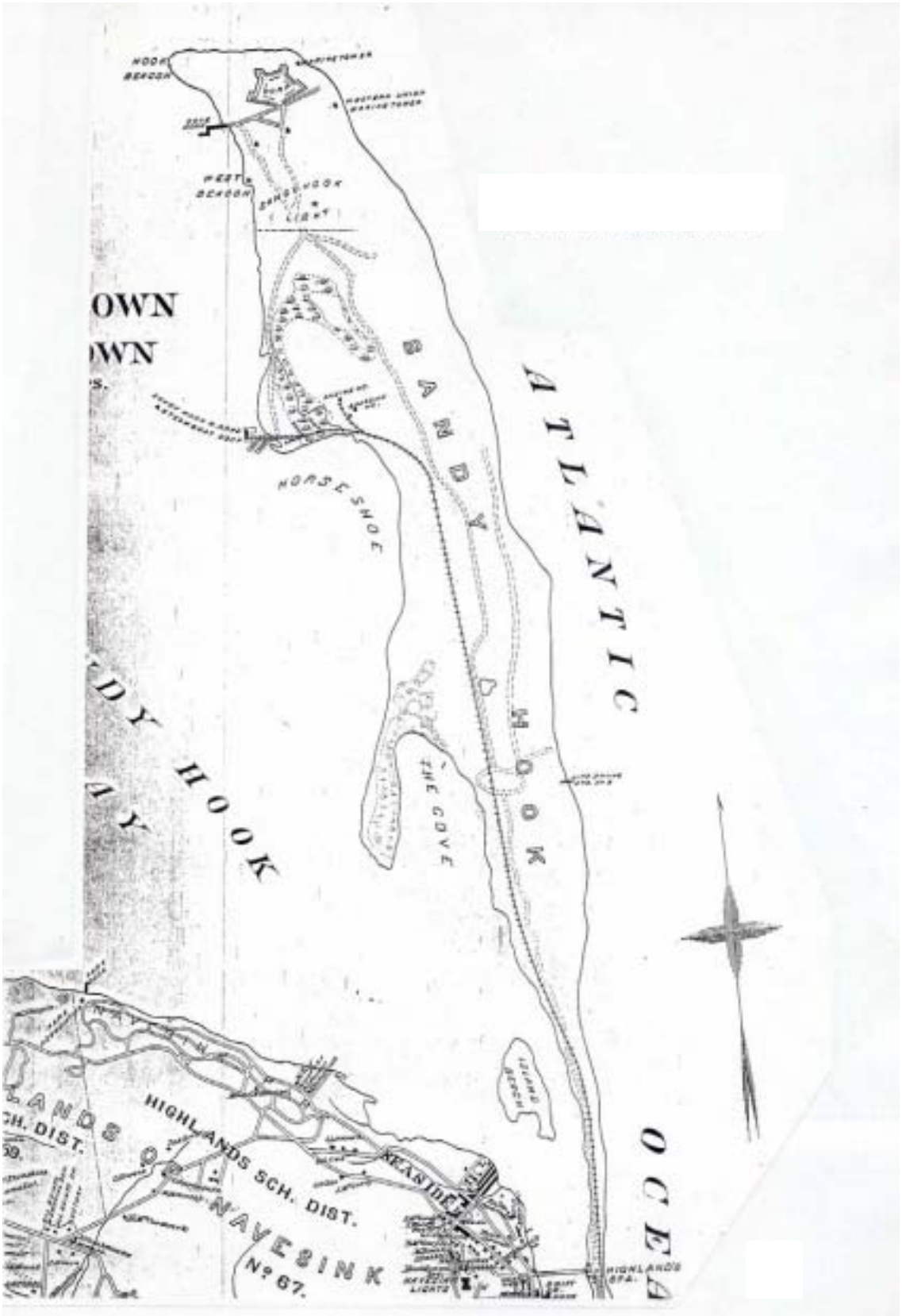

Figure 10. Map of Sandy Hook [1889]. Note roads, railroads, and structures.

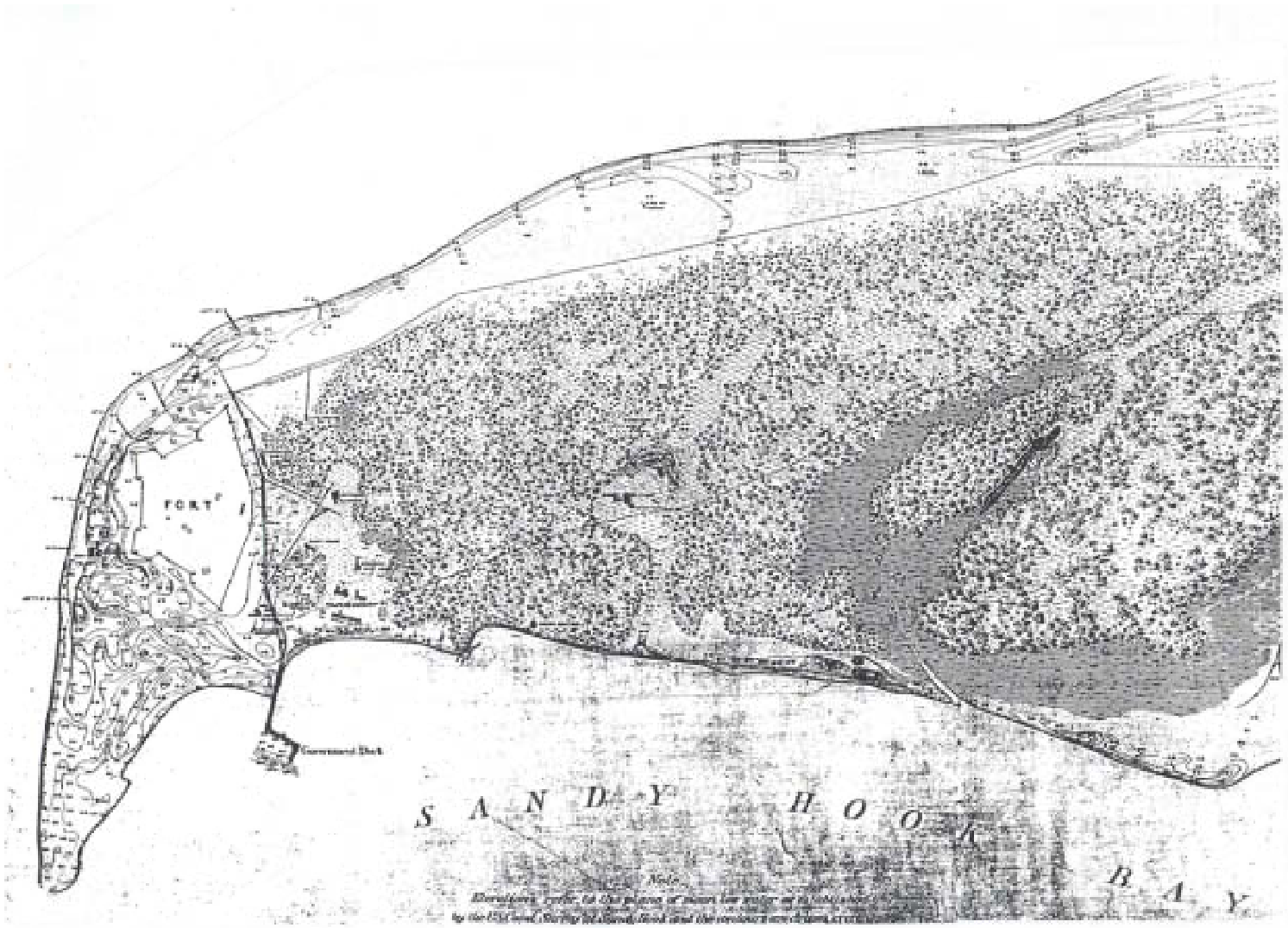

Figure 11. Map of Sandy Hook [1889].

Figure 12. Map of Sandy Hook [1892]. Detail of "Map of Sandy Hook, N.J.," Corps of Engineers, USA, June 30, 1892, "showing location of Gun Lift Battery and Mortar Battery and Track- connection with dock for hauling material."

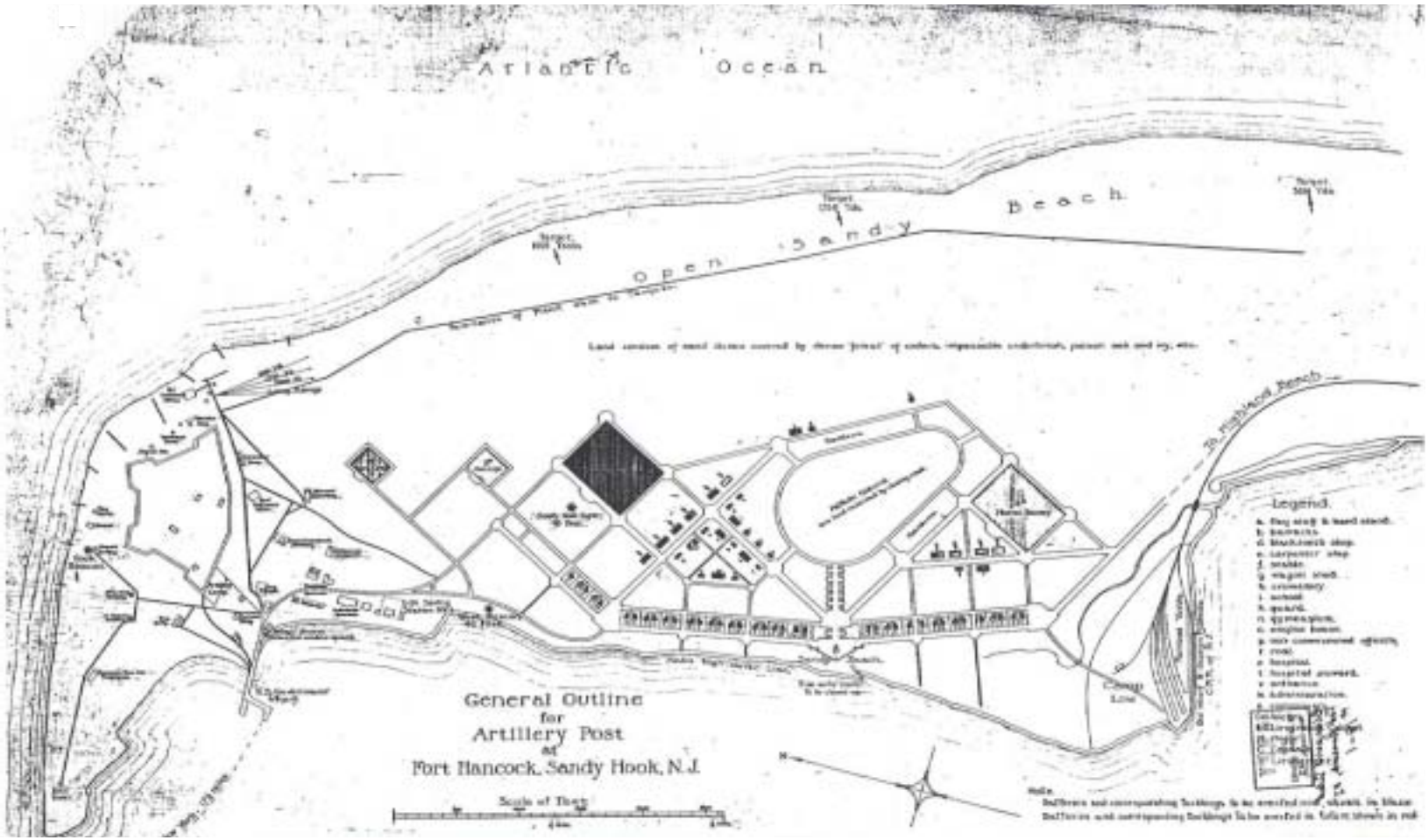

Figure 13. "General Outline for Artillery Post, Fort Hancock, Sandy Hook, NJ." Scheme No. 1, ca. 1896 (not constructed).

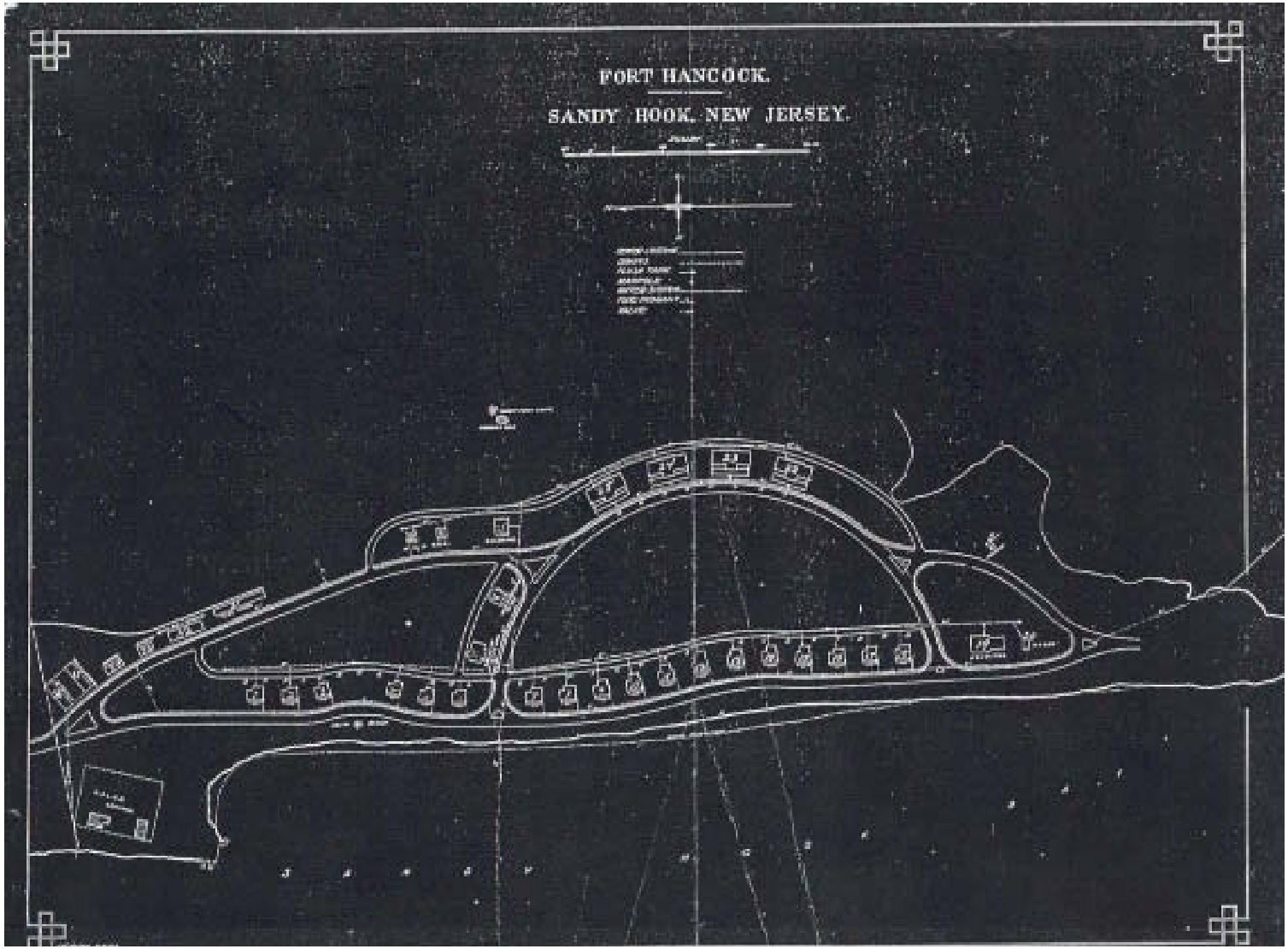

Figure 14. "Fort Hancock, Sandy Hook, New Jersey" [ca. 1900].

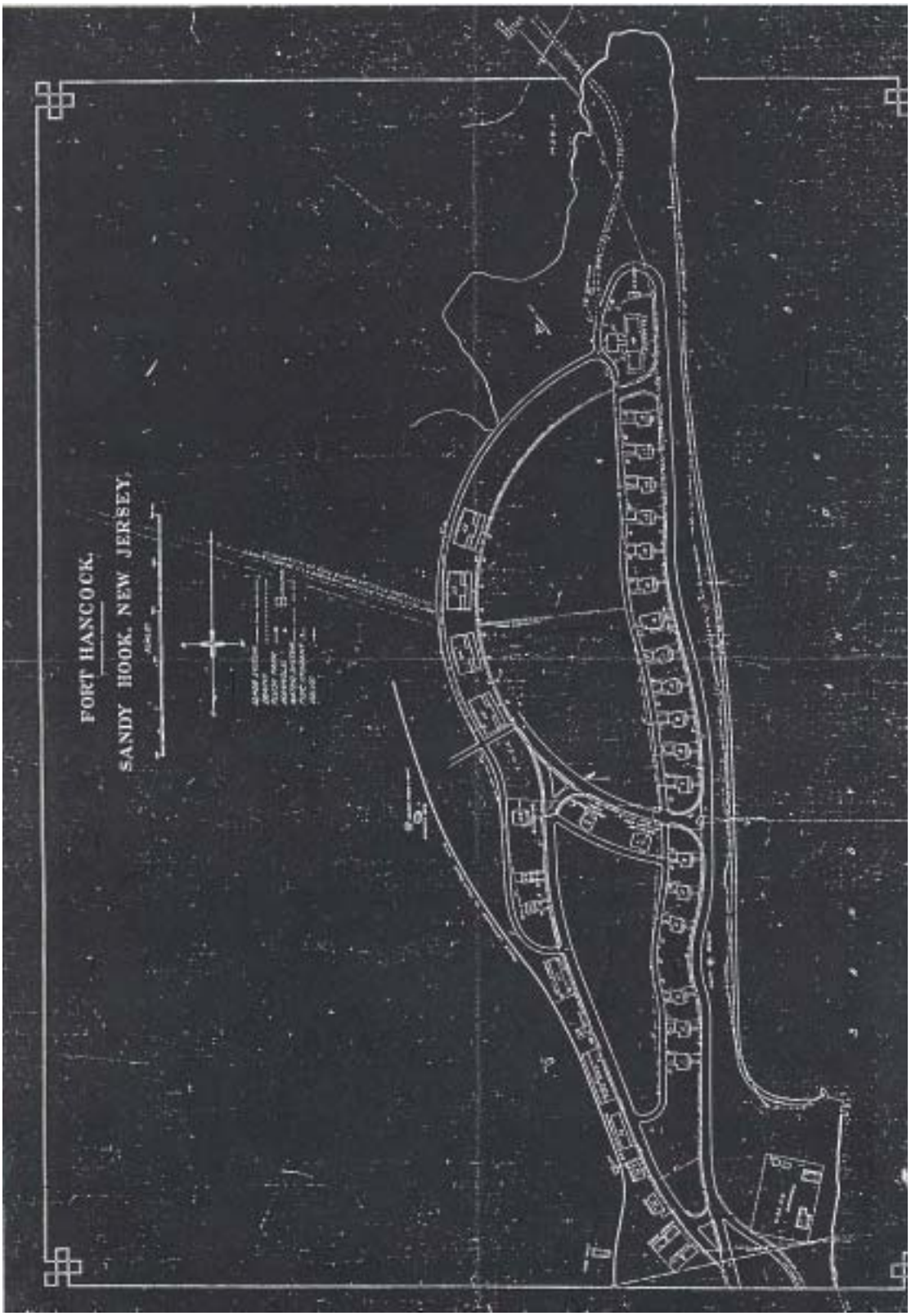

Figure 15. "Fort Hancock, Sandy Hook, New Jersey" [ca. 1902].

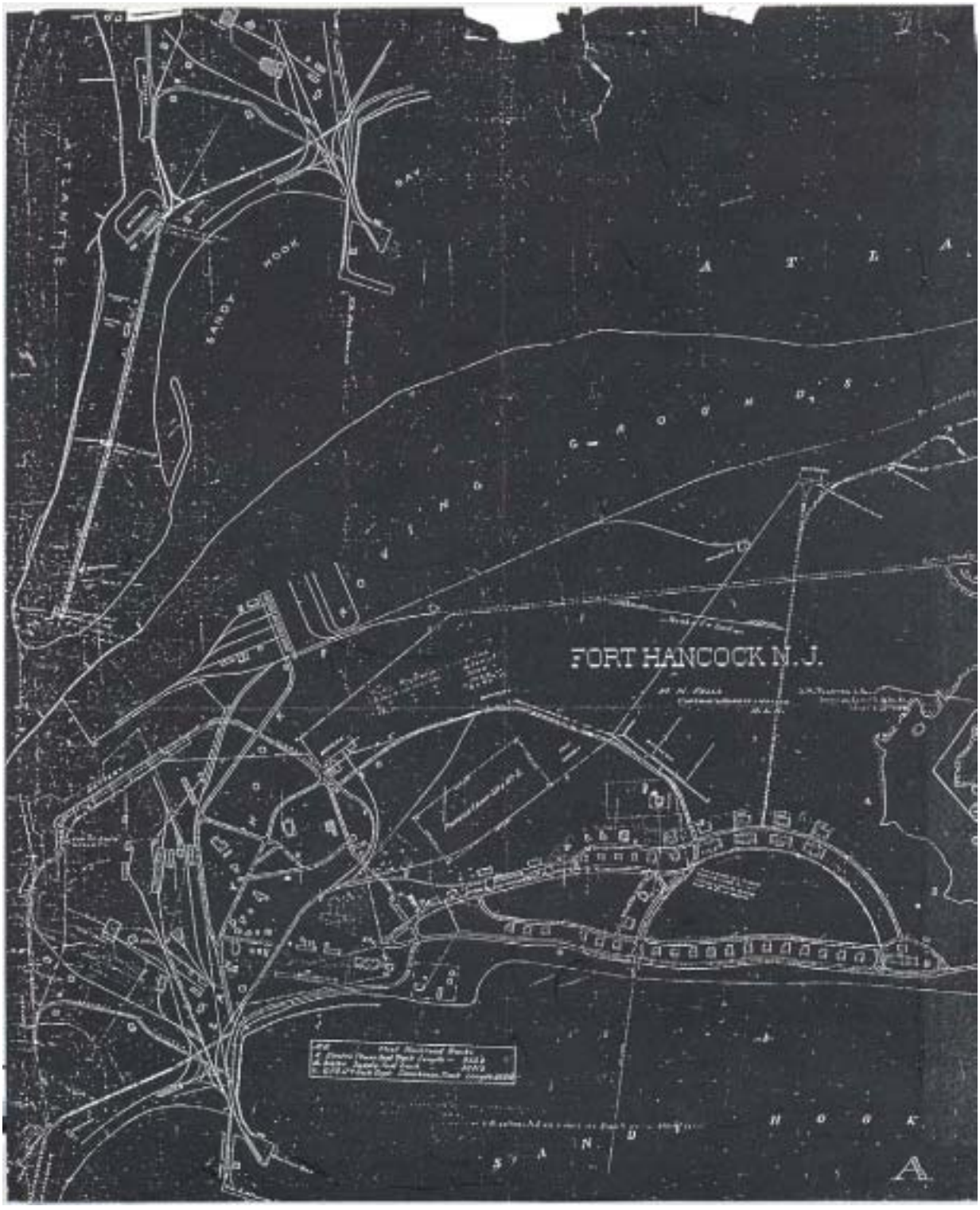

Figure 16. "Fort Hancock, New Jersey" [March 21, 1908].

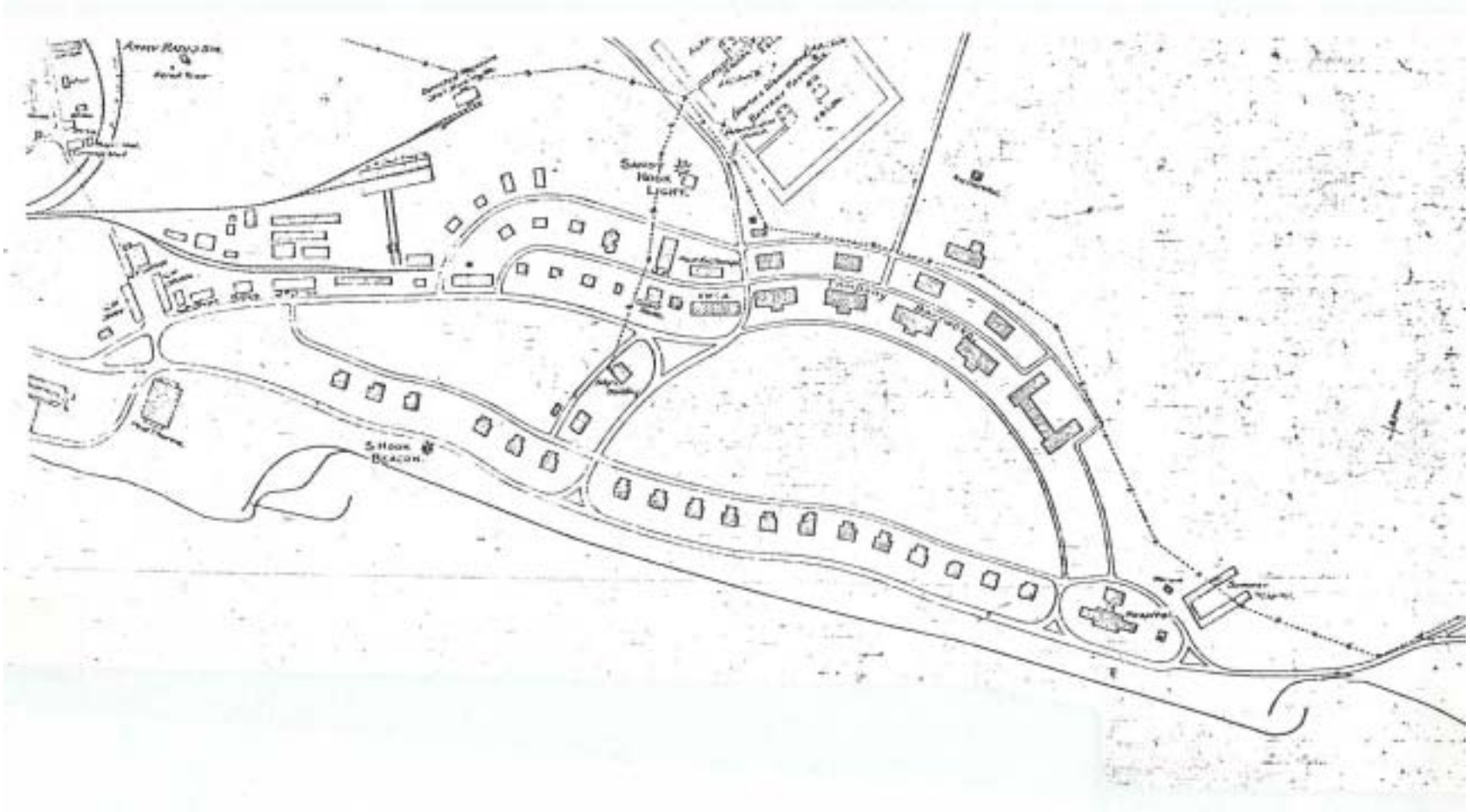

Figure 17. "U.S. Military Reservation, Fort Hancock, Sandy Hook and Vicinity of Highlands, New Jersey" [May 31, 1927].

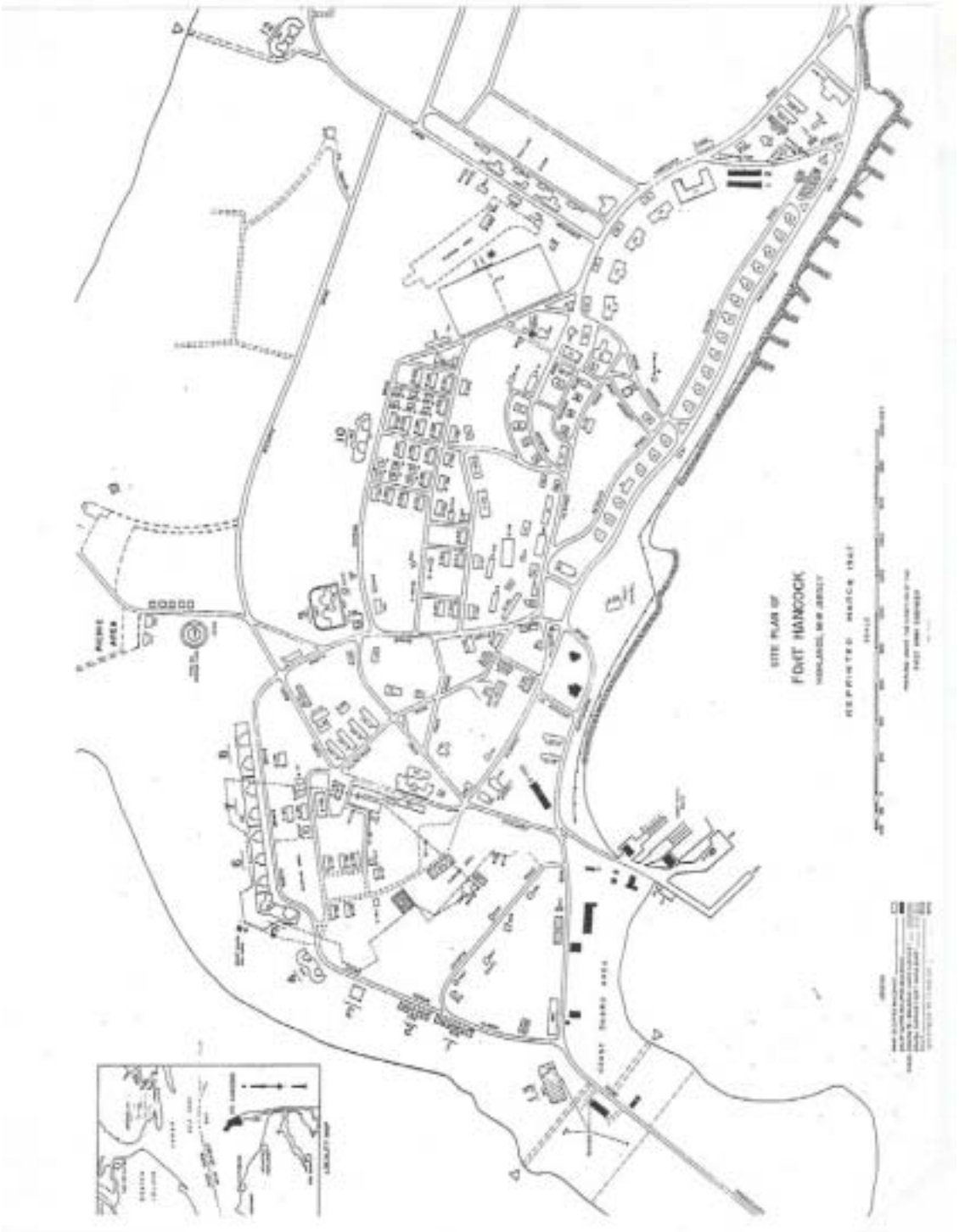

Figure 18. "Site Plan of Fort Hancock, Highlands, New Jersey" [reprinted March 1967].

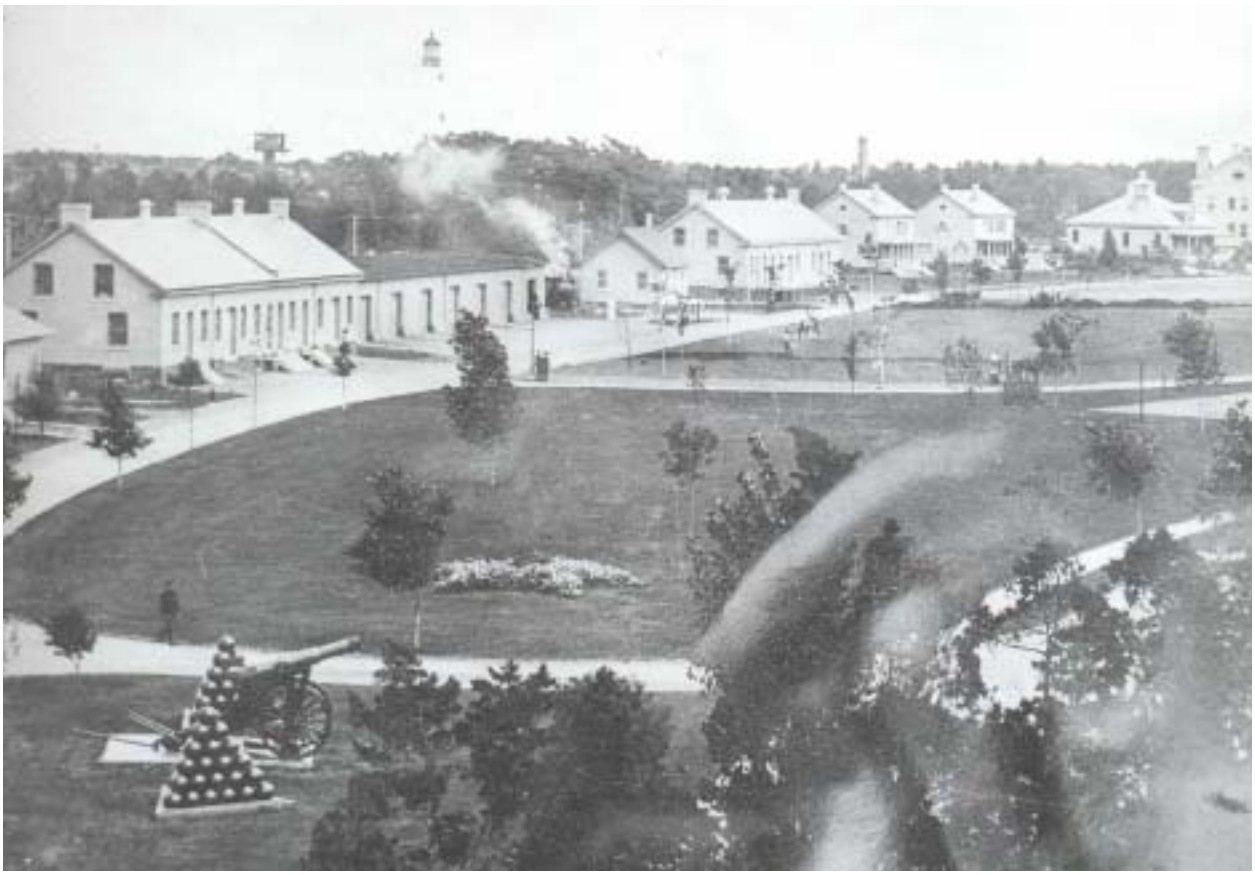

Figure 19. Northeast section of the parade ground, Kearney Road and Building 32 on the left [ca. 1901- 1902].

Figure 20. Northeast section of the parade ground, Kearney Road and Building 32 on the left [ca. 1901- 1902].

Figure 21. View of Fort Hancock looking south [ca. 1910- 1913].

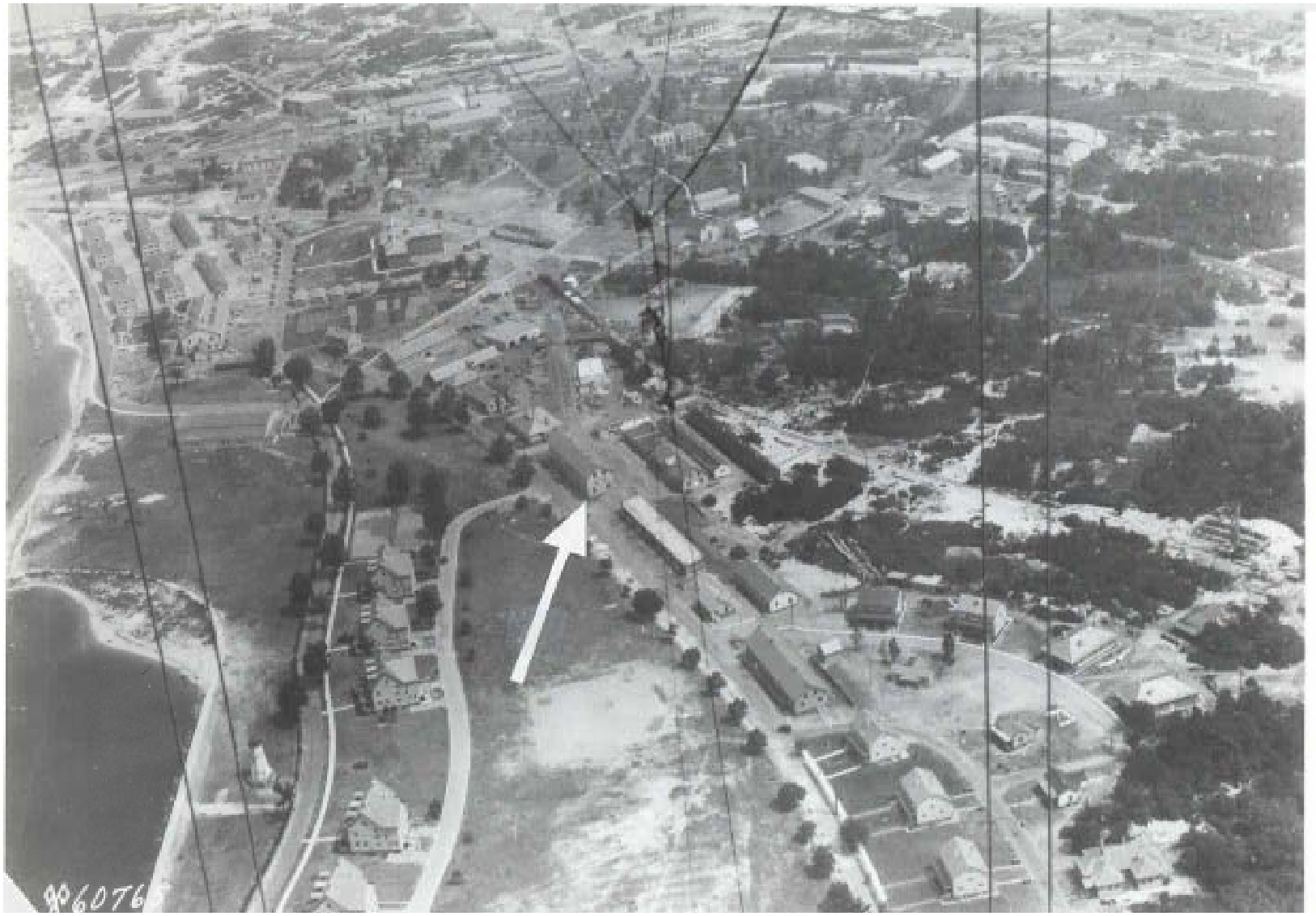

Figure 22. Aerial view of the northern section of Fort Hancock [June 20, 1919].

Figure 23. View of Fort Hancock looking north from the lighthouse [ca. 1921- 1925].

Figure 24. Detail of figure 23.

Figure 25. Dog patrol on the north parade ground [ca. 1943].

Figure 26. Detail of figure 25. Building 32 is in center background.

Figure 27. View of Fort Hancock looking north from lighthouse [ca. 1941].

Figure 28. West (front) elevation of Building 32, looking northeast [ca. 1941].

Figure 29. Meteorological test balloon on Battery Potter, looking west [1940].

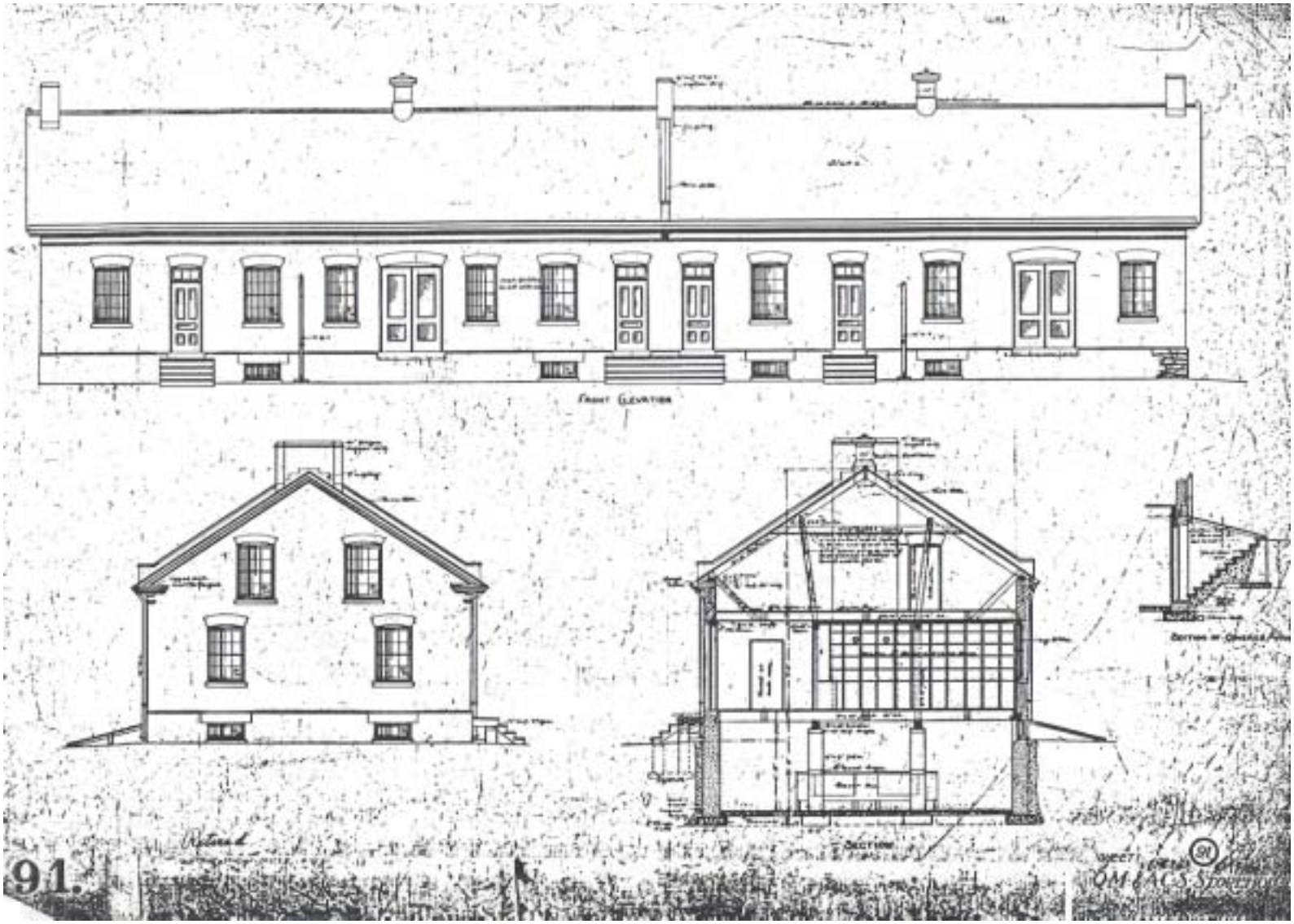

Figure 30. Elevation and section, Quartermaster and Subsistence Storehouse, Plan no. 91, June 1894 [sheet 1 of 4].

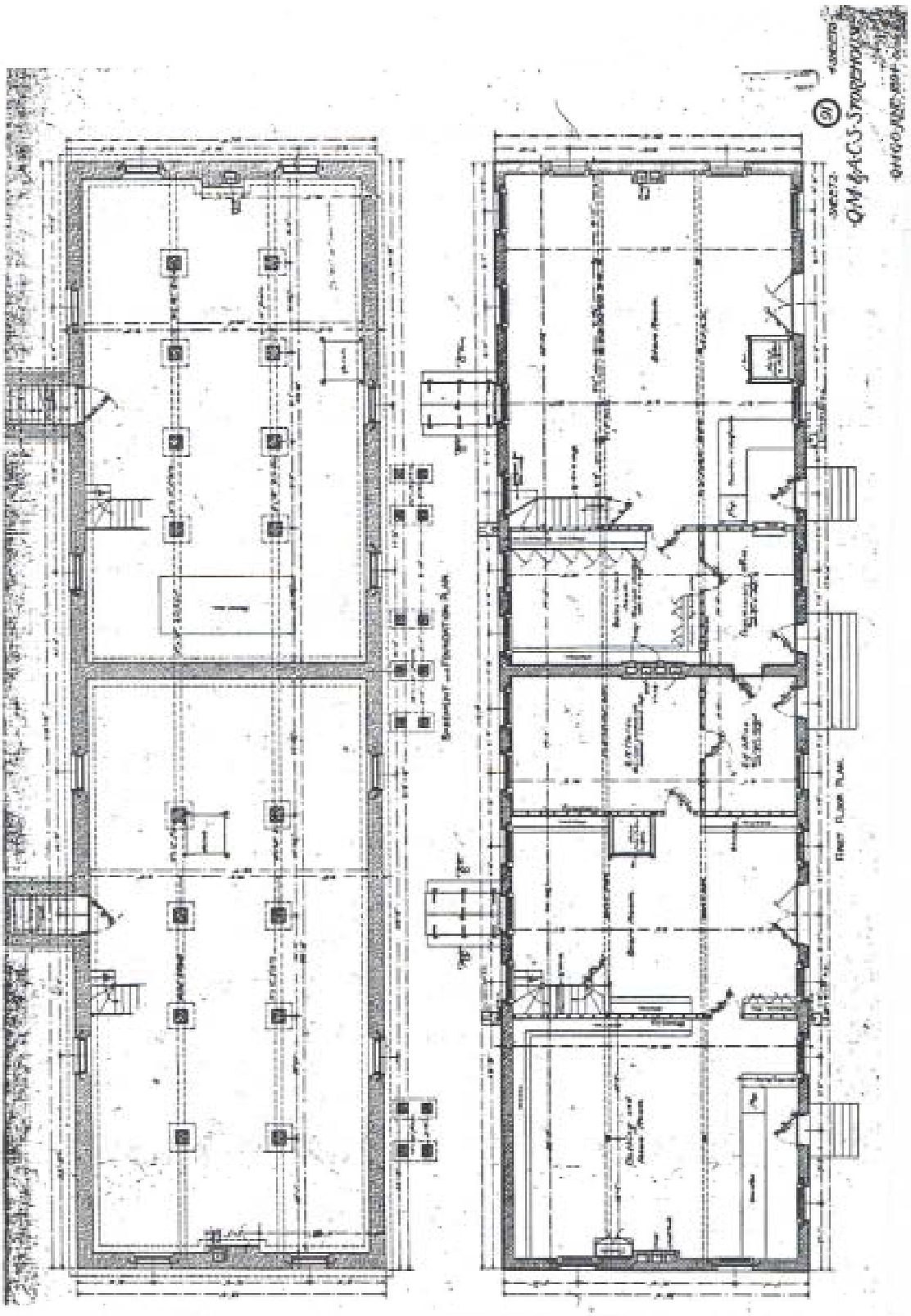

Figure 31. Plans, Quartermaster and Subsistence Storehouse, Plan no. 91, June 1894 [sheet 2 of 4].

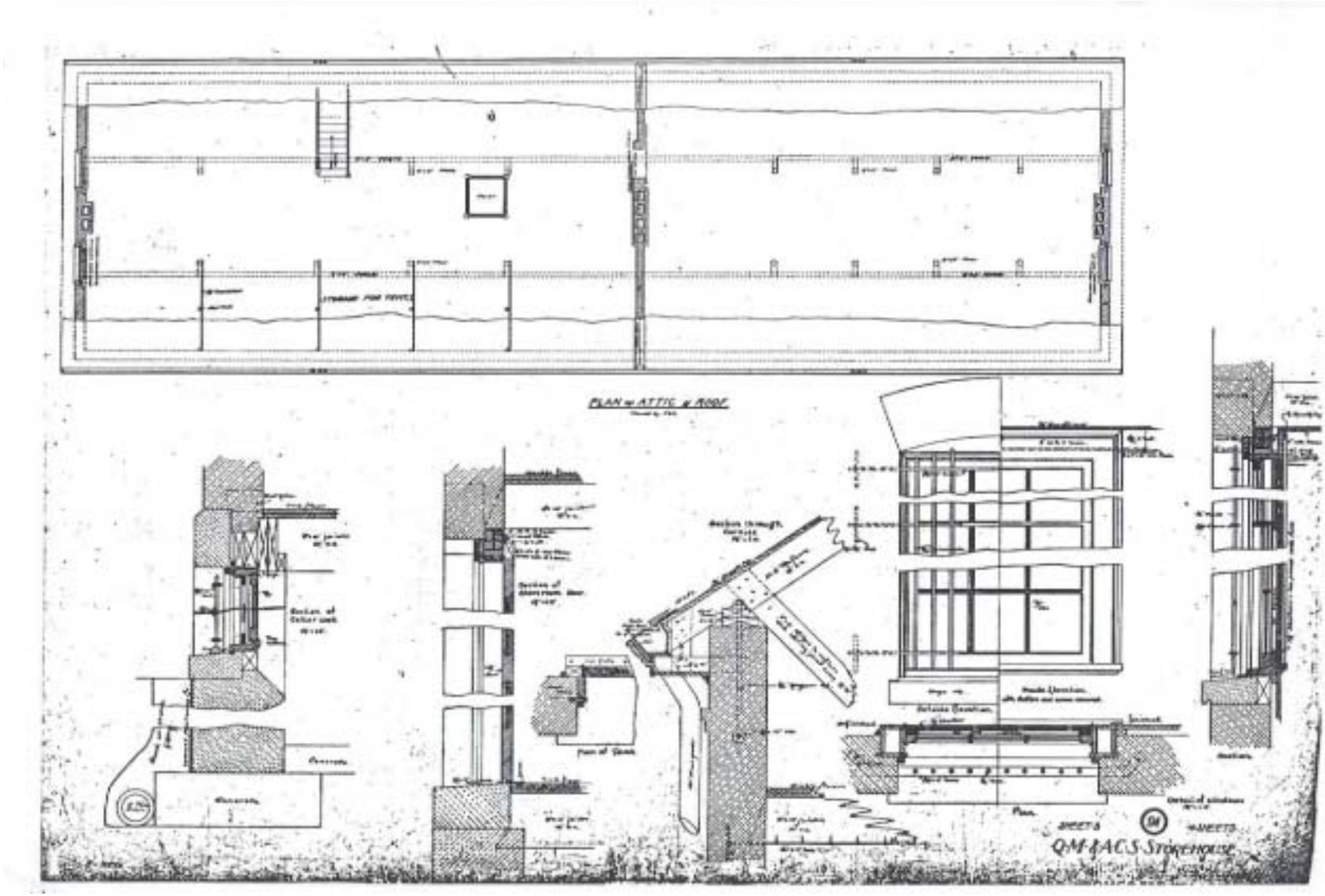

Figure 32. Details, Quartermaster and Subsistence Storehouse, Plan no. 91, June 1894 [sheet 3 of 4].

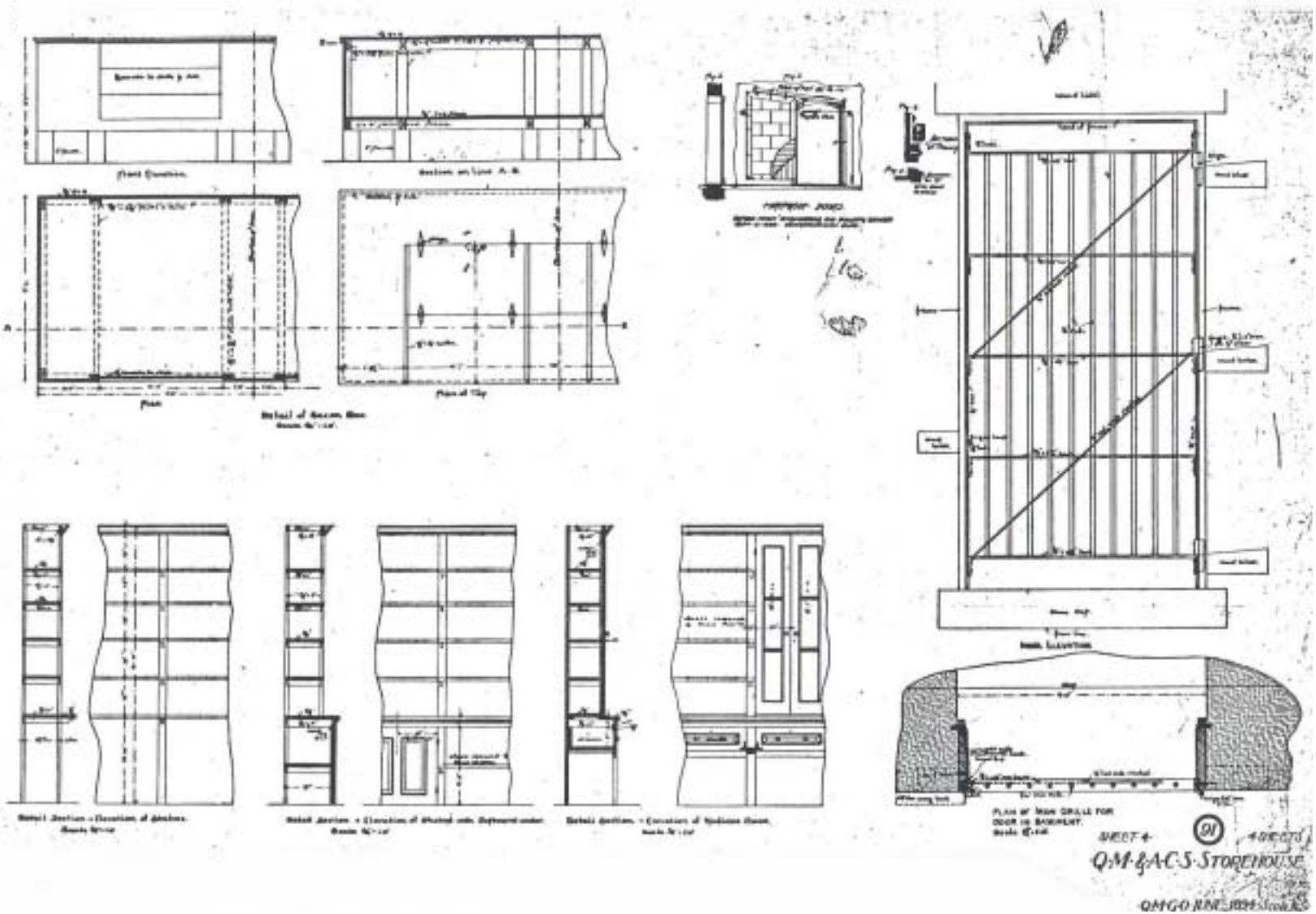

Figure 33. Details, Quartermaster and Subsistence Storehouse, Plan no. 91, June 1894 [sheet 4 of 4].

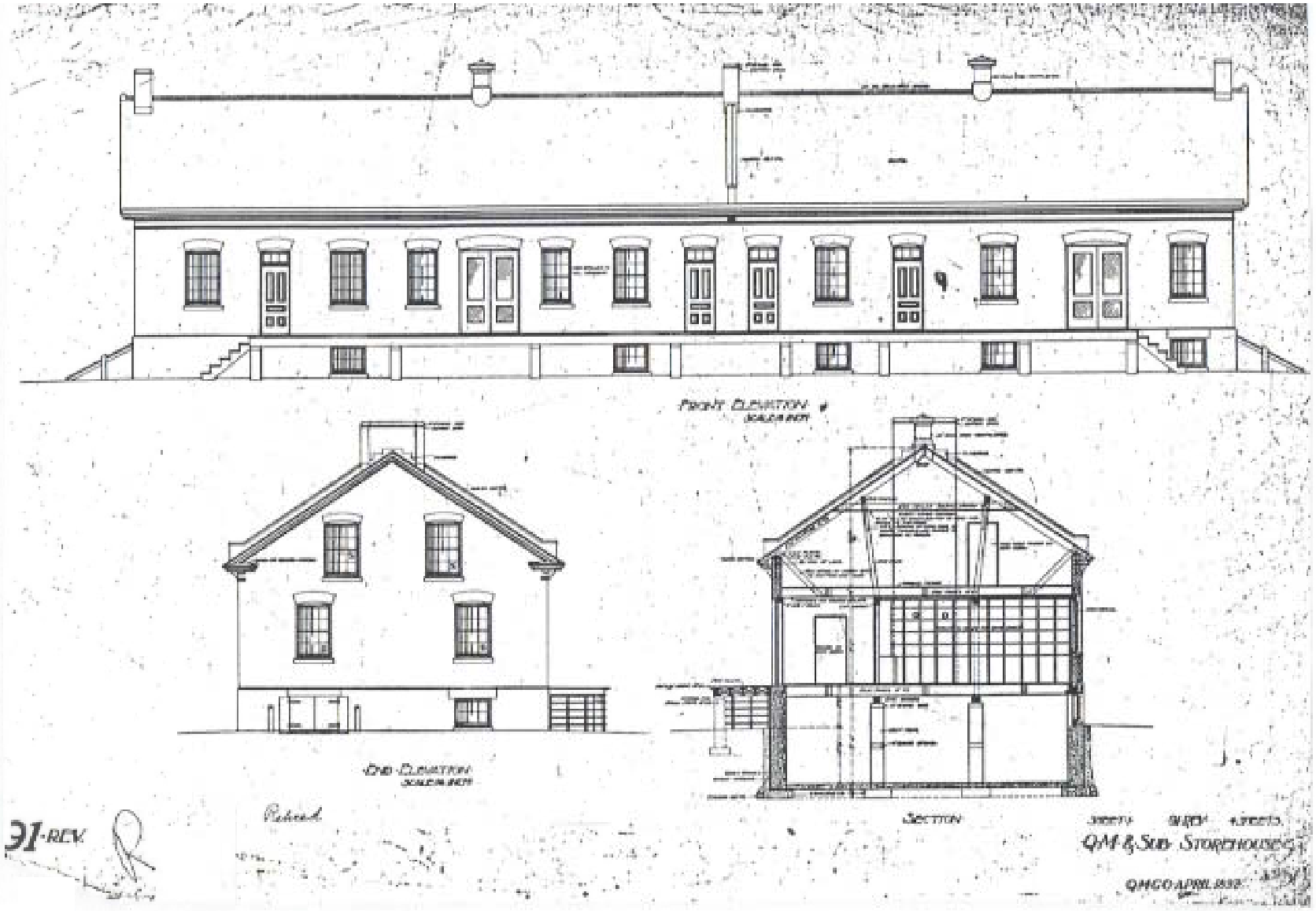

Figure 34. Elevations and section, Quartermaster and Subsistence Storehouse, Plan no. 91 (revised and as built), April 1897 [sheet 1 of 4].

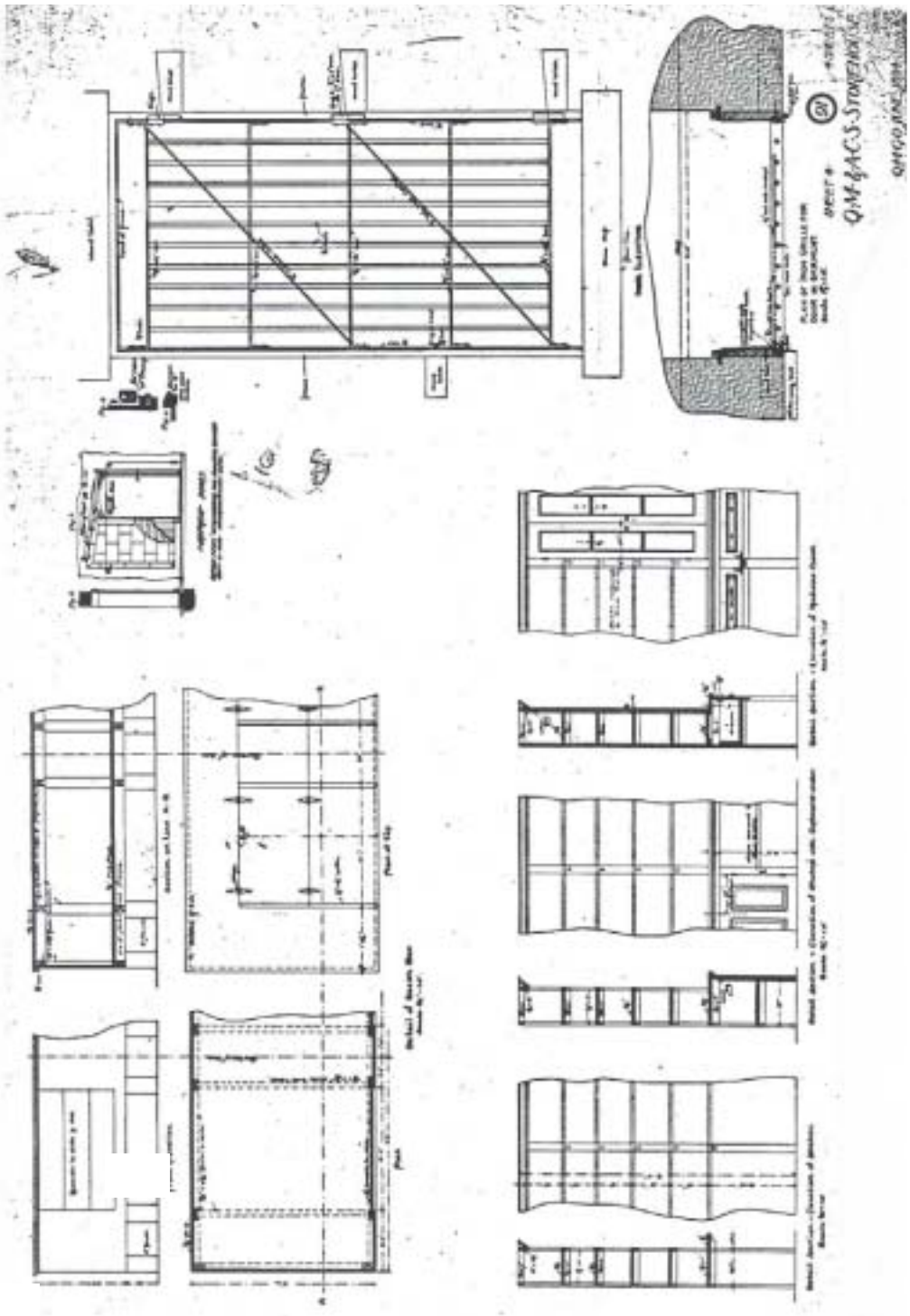

Figure 35. Plans, Quartermaster and Subsistence Storehouse, Plan no. 91 (revised and as built), April 1897 [sheet 2 of 4].

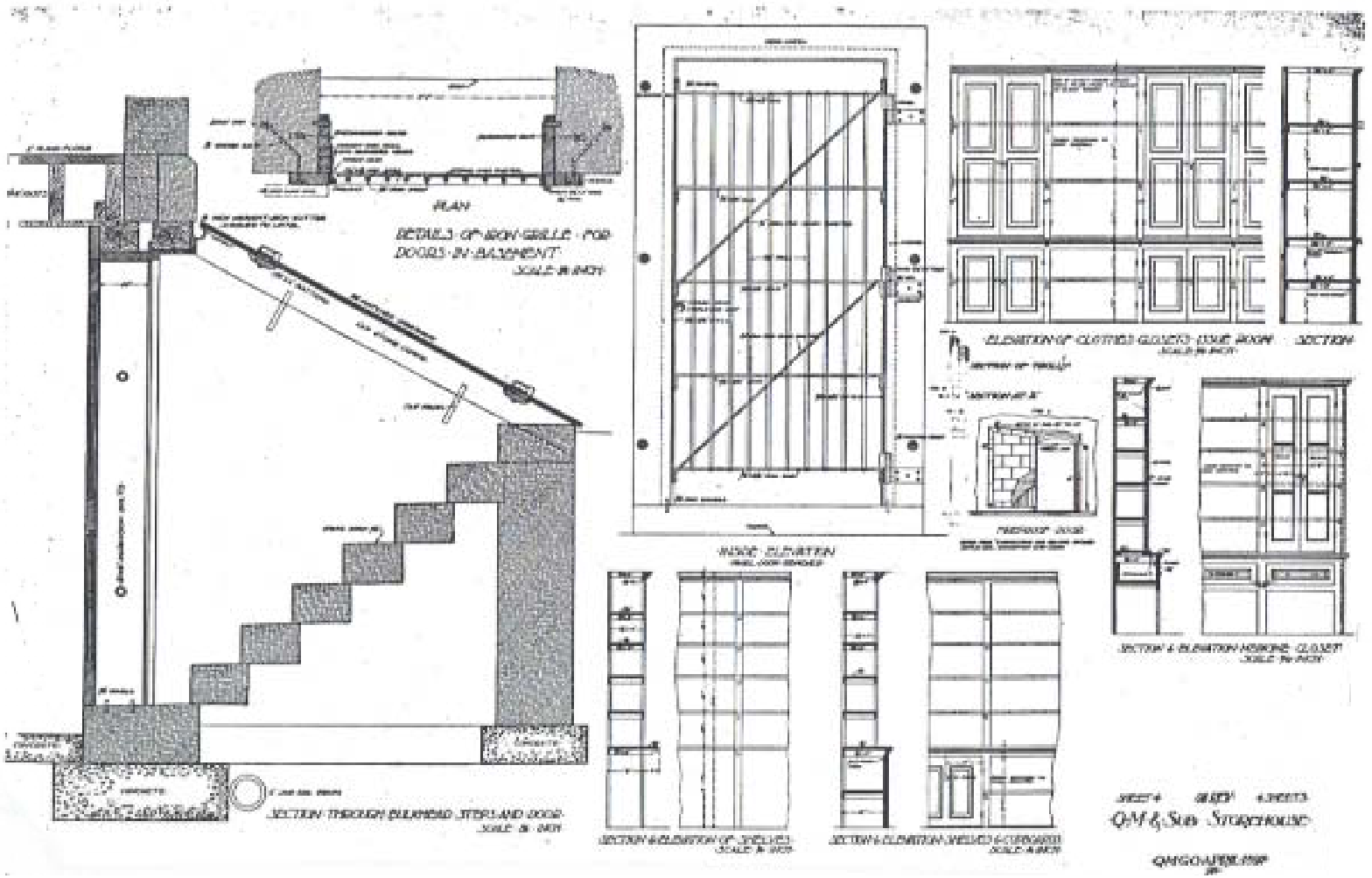

Figure 36. Details, Quartermaster and Subsistence Storehouse, Plan no. 91 (revised and as built), April 1897 [sheet 4 of 4].

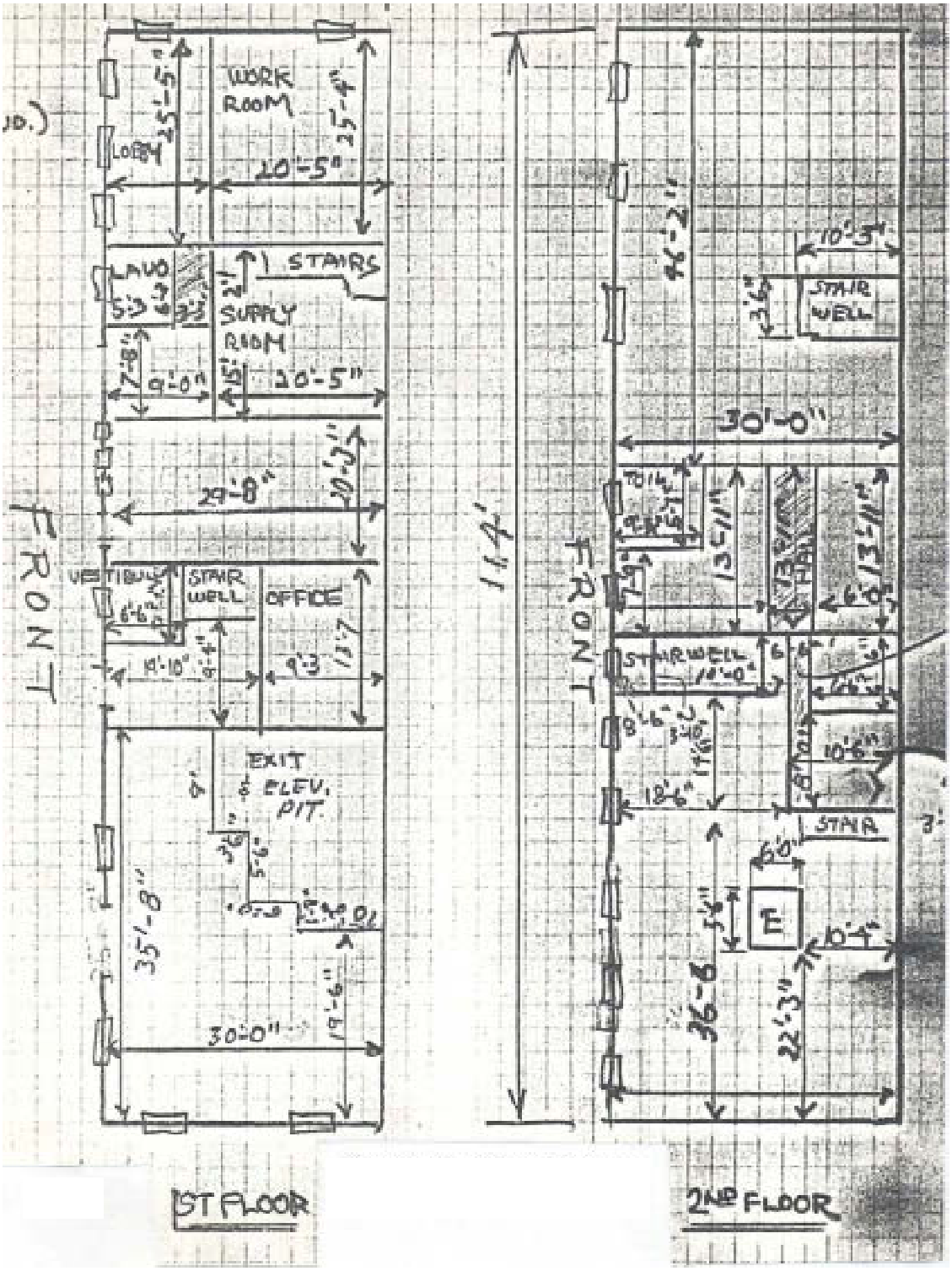

Figure 37. First- and second- floor plans [September 16, 1957].

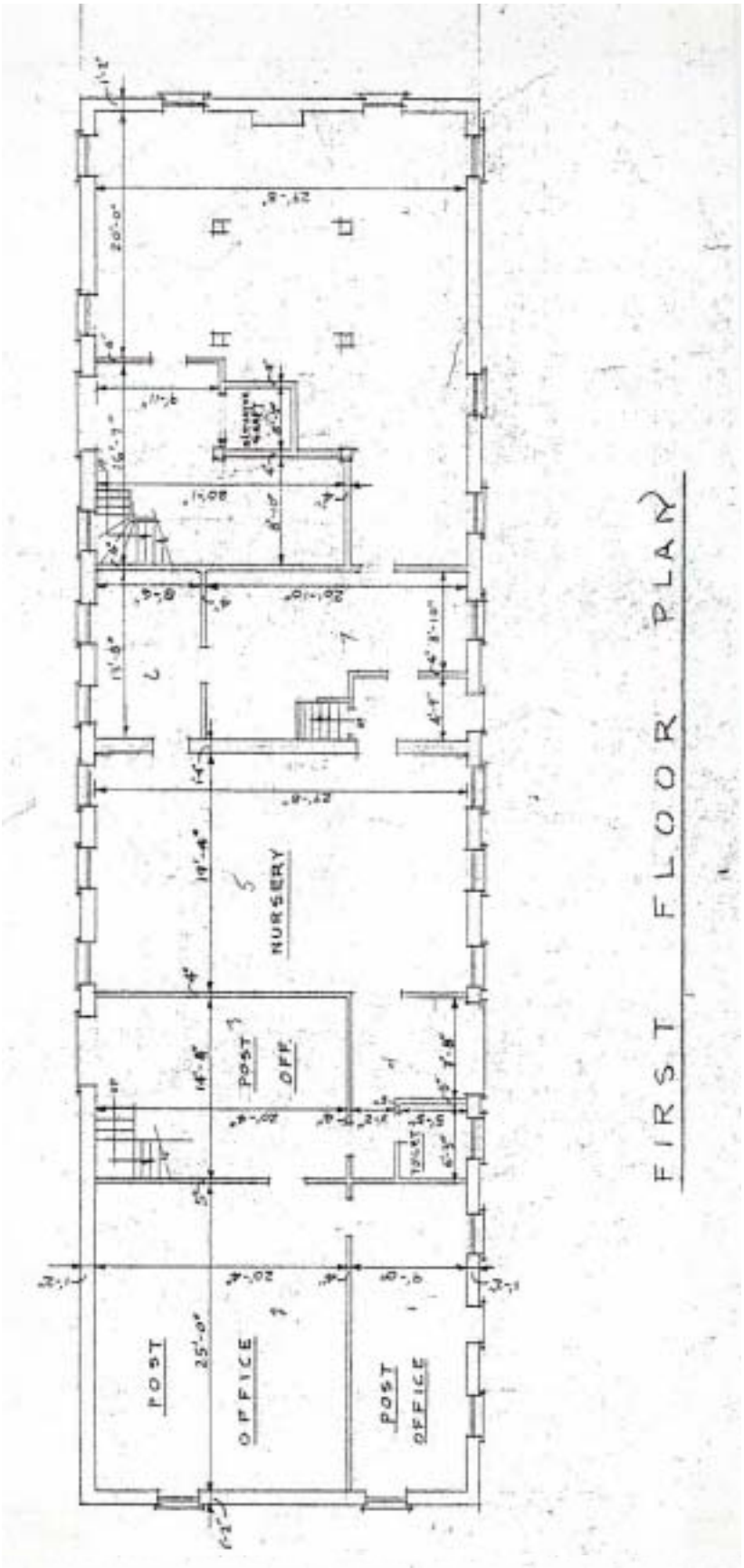

Figure 38. First-floor plan [June 20, 1960].

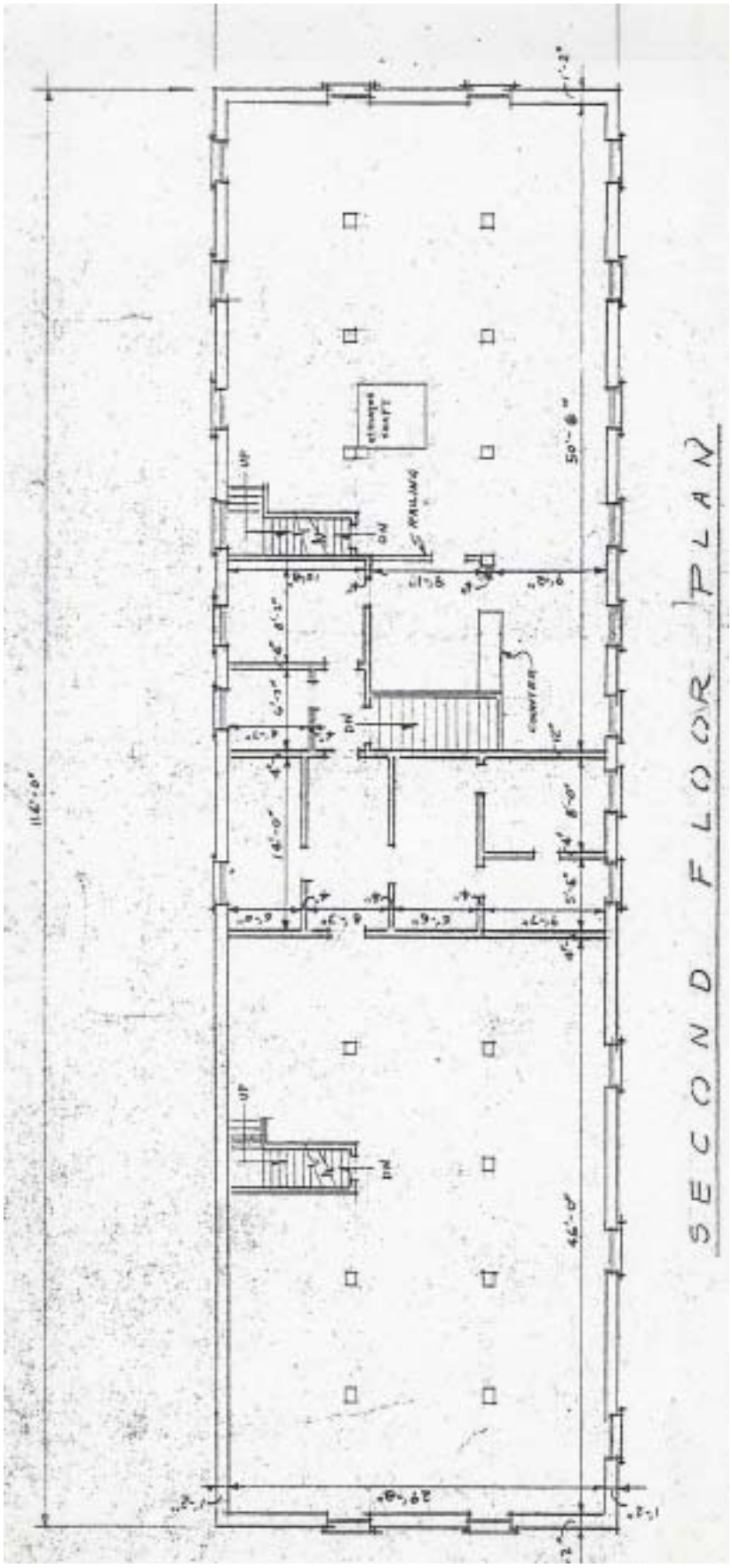

Figure 39. Second- floor plan [June 20, 1960].

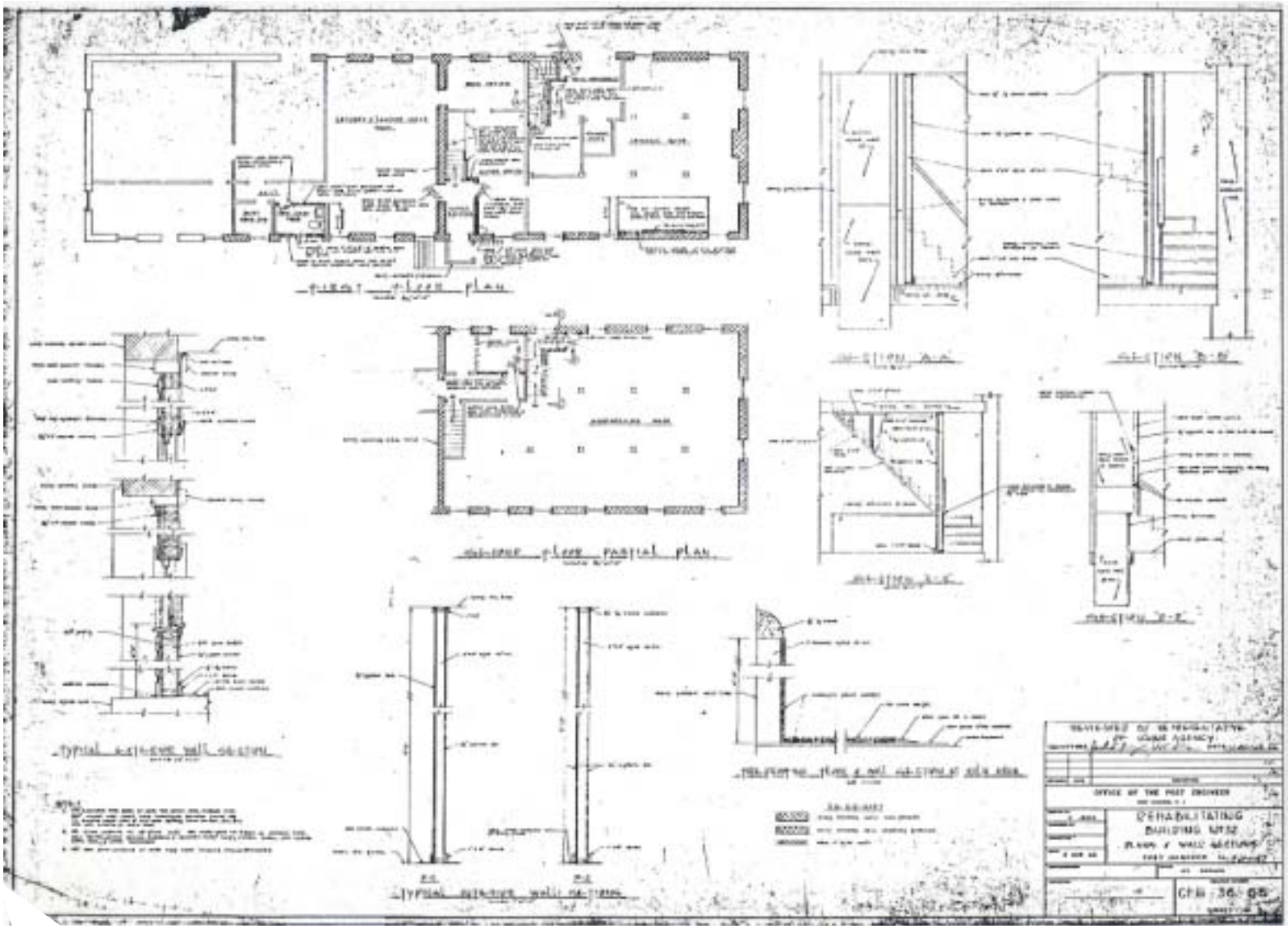

Figure 40. "Rehabilitating Building No. 32, Plumbing, Fort Hancock," March 11, 1966 [sheet 1 of 3].

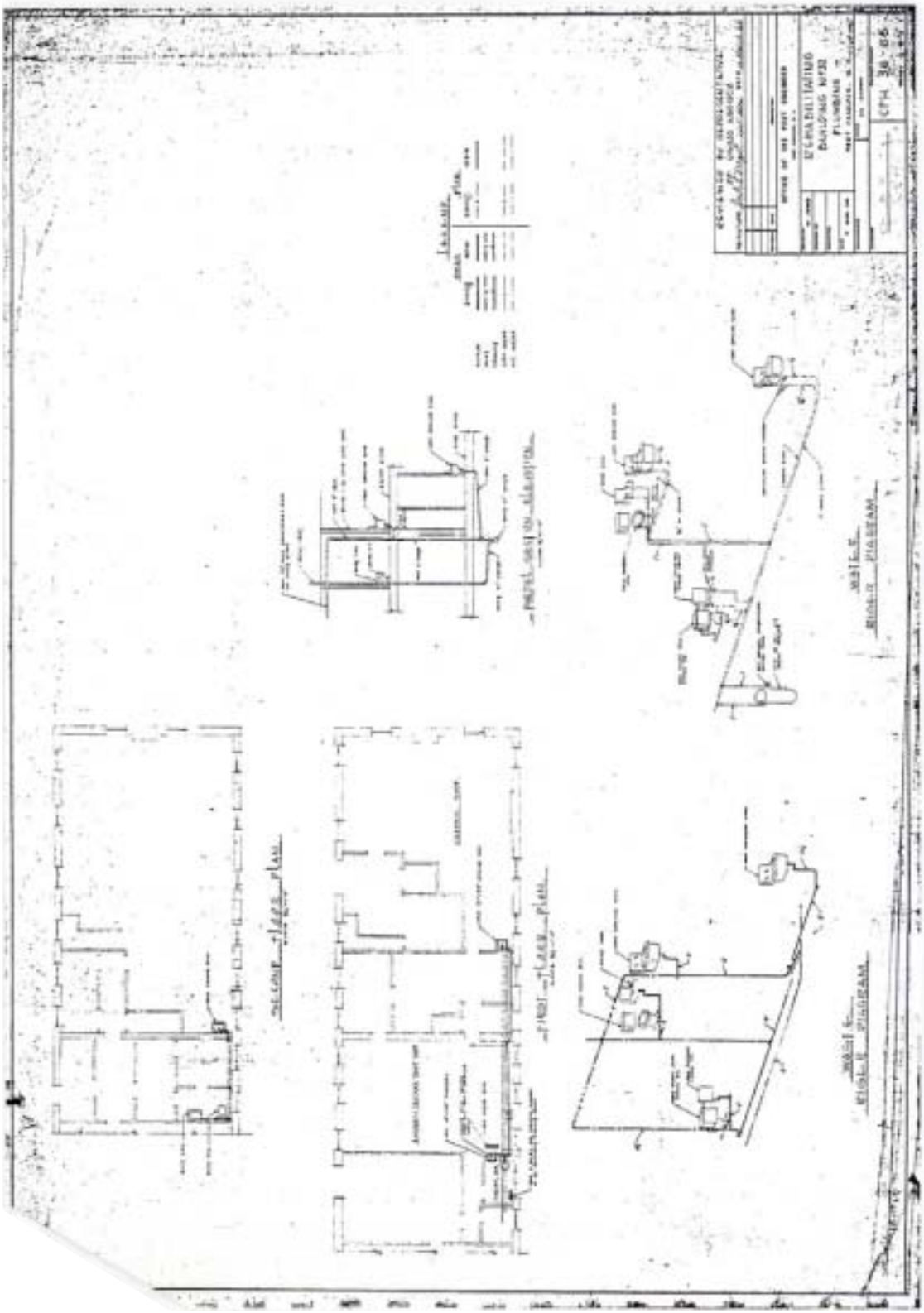

Figure 41. "Rehabilitating Building No. 32, Plumbing, Fort Hancock," March 11, 1966.[sheet 2 of 3].

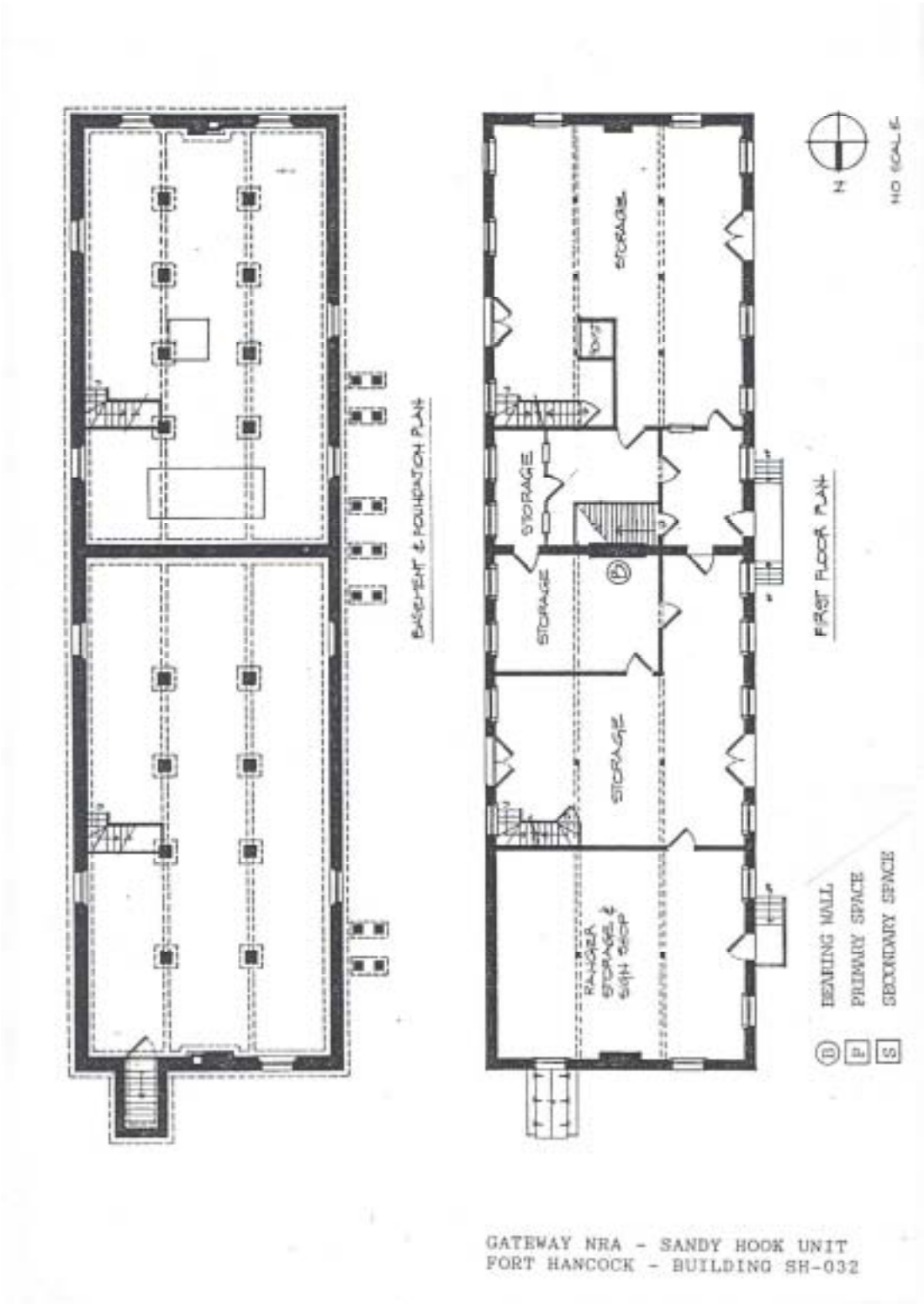

Figure 42. Basement and first- floor plans [1988- 1989].

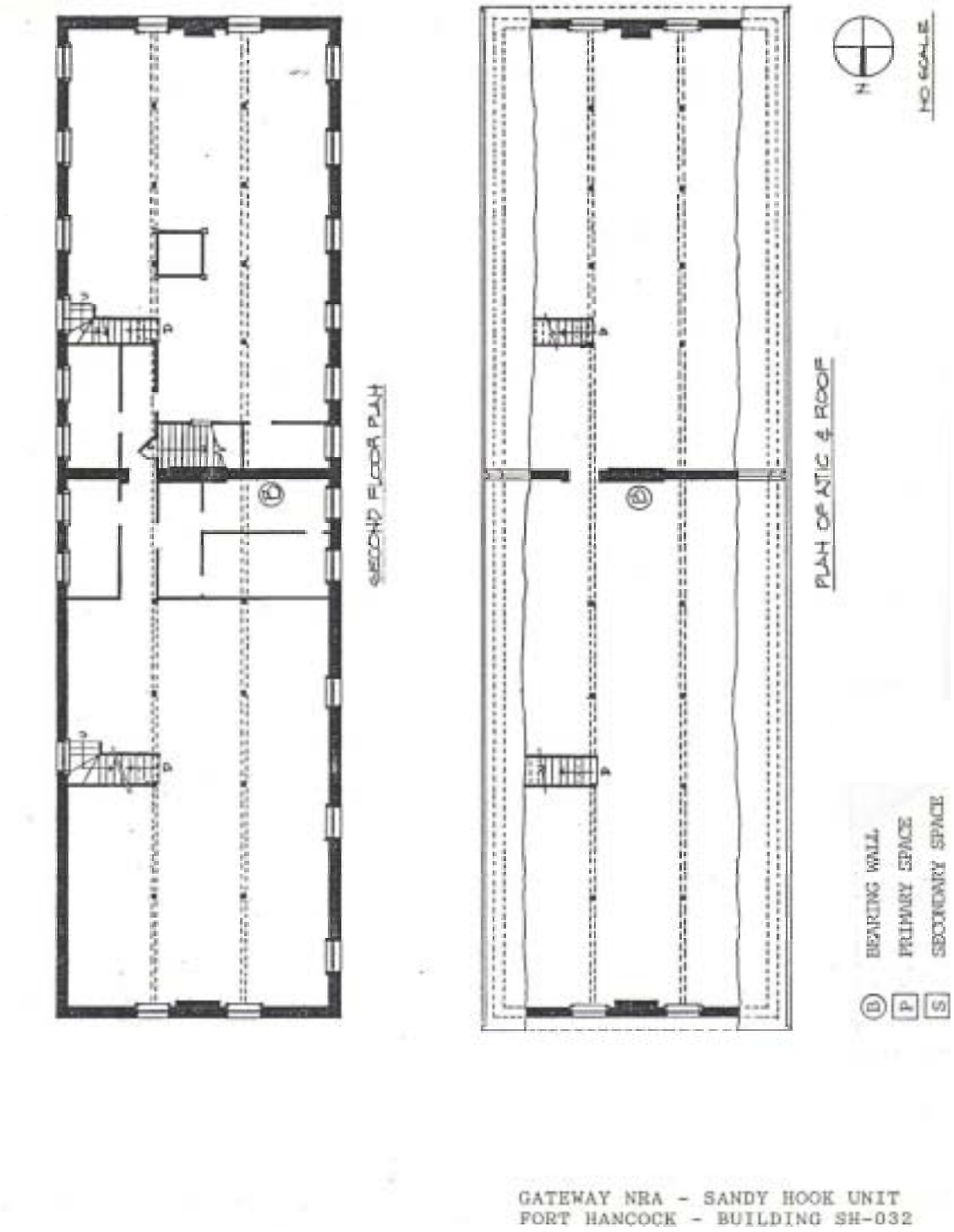

Figure 43. Second- and attic- floor plans [1988-1989].

IV. ARCHITECTURAL DESCRIPTION

As of 1993

EXTERIOR ELEMENTS

Foundation

The foundation (*see figs. 44- 47)* is constructed of trap rock resting on a continuous concrete footing 1 foot thick and 2 feet wide. The foundation is 10 feet high and 1 foot 9 inches thick. Some 3 feet 7 inches of the foundation is above grade, while 6 feet 5 inches is below grade.

The trap rock above grade is random- cut ashlar with joints measuring one- half to three-quarters of an inch. Original joints are tooled with a quarter- inch raised bead. Some patching and repointing is evident. Dimensions of the above- grade rocks vary considerably. There are approximately four courses of random- laid rocks topped by a fifth course of more regularly sized rectangular rocks laid end to end in a continuous line. The top course of the foundation features a 3- inch water table tooled into the rock on the north, south, and west elevations to deflect run- off. On the east elevation, the water table was cut out (or never tooled) in order to accommodate a platform along most of the elevation. Nine pockets 8 inches square were cut into the top of the foundation to receive the platform beams, beginning 12 feet in from the southeast corner and continuing approximately 12 feet on center to the northeast corner.

The trap rock below grade is likewise random- laid ashlar blocks. Joints are thick, flat, and raised, representing a repointing campaign. The interior face of the wall has been treated with a thin cementitious coating. The exterior face of the below- grade foundation wall was parged with a 1-inch- thick coat of cement. This original parging is extant and is exposed for several inches along the east elevation due to erosion of the grade.

The foundation has several features inset into it at various locations. These include basement windows, which have limestone lintels and sills. There are four windows in both the east and west foundation walls, two in the south wall, and one in the north wall. The lintels of the basement windows measure 5 feet long, 16 ½ inches high, and 8 inches deep; they exhibit a rock- faced finish. Sills measure 4 feet long, 5 inches high, and 10 inches deep, with a planed finish. Each masonry window opening has an iron grill of 10 round bars measuring three- quarters of an inch; the bars are held in place by two flat metal bars set into the foundation masonry. A three- light wood window is fitted into each opening behind the iron grill.

A bulkhead at the northeast corner of the foundation accesses a basement doorway. The bulkhead is 9 feet 8 inches long and 5 feet 9 inches wide, with nine concrete steps descending to the doorway. This doorway (D- 0) is the only exterior entrance into the basement.

Inset into the top course of the foundation are limestone sills for all original first- story doorways. There are six sills inset into the foundation on the west elevation and two on the east elevation. The doorway sills are planed smooth.

Walls

The exterior walls (*see figs. 48- 53)* are 1 foot thick. They consist of three wythes of brick: an exterior wythe of buff face bricks laid in stretcher bond with narrow joints, and two interior wythes of larger, red backing bricks. The face bricks are buff- colored bricks consistently measuring 8 by 2 ¼ by 4 inches. They are laid in stretcher bond with narrow (one- eighth- inch) flush joints. The backing bricks are low- fired red bricks generally measuring 2¼ by 7 7/8 by 3½ inches. They are laid in

an irregular stretcher (common) bond with header courses at uneven intervals; joints are flush and three- eighths of an inch wide. It is believed that the face and backing brickwork is joined together only by the mortar filling, not supplemented by any interlocking mechanism of the brick itself. This is an insufficient method for joining the two sections, and numerous stress cracks and lost mortar is visible on the exterior and interior.

The dominant characteristic of the exterior walls is the flat, continuous appearance of the surface. The smoothness of the wall planes is emphasized by the appearance of the building materials, and by the limited number of protruding features. The pressed buff face brick is dense, compact, and exhibits a very smooth finish. It exhibits an almost ceramic quality that is emphasized by the narrow joints.

The only protrusions from the flat plane of the walls are a projecting belt course on the east and west elevations, a cornice on all four elevations, and the sills of the windows. The belt course, located between first and second levels, returns onto the north and south gable ends; it is the remnant of the 1898 cornice. Both the belt course and the cornice consist of two brick courses; the top course is corbeled 2 inches out from the wall, and the bottom course is corbeled out 1 inch from the wall. The window sills protrude 2 inches from the wall. Made of Indiana limestone, their white color contrasts with the buff brick. However, their minimal projection and smooth finish do not significantly interrupt the plane of the wall.

The surface of the walls is ornamented somewhat by segmental arches above all doorway and window openings. The arches are flush with the wall plane, and comprised of bricks that match the brick of the wall. Therefore, the arches do not detract from the overall flat treatment of the exterior walls. On the east and west elevations, the bricks of the first- story segmental arches are tapered; the bricks of the second- story segmental arches are not tapered. On the north and south elevations, tapered bricks are used for the first- and second- story arches, but not for the attic- story arches.

The limestone lintels and the flush brick arches are the only decorative details associated with openings in the walls; no wooden frames or shutters soften the edges of window and doorway openings in the wall plane.

The composition of the exterior walls is determined more by functional than aesthetic or decorative considerations. The fenestration generally reflects the interior spatial arrangement, being located as needed; there is no repeating rhythm of window and doorway openings. Nevertheless, the building does display a fairly regular composition; there is a consciousness of spacing, and there was an evident attempt to balance the placement of first- and second- story windows and doorways when the second story was added in 1910. (First- story openings are generally matched by a corresponding opening above.)

The east and west walls are two stories high and 14 bays wide. All 14 bays of the front, west side of the building are occupied by a doorway or window opening. Only 11 bays of the back, east side of the building have openings: the three northernmost bays are blank, i.e., a solid wall. The north and south gable- end walls are two and one- half stories high and two bays wide. Each bay contains one window at each level (first, second, and attic).

The change in brickwork from original to 1910 construction is clearly evident on the north and south gable end walls, where the original outline of the roof pitch is visible. The change in brick is less evident on the east and west elevations. However, close examination reveals that the present belt course was originally the top of the wall.

Elements affixed to walls include one surviving downspout on the east elevation and one surviving downspout on the west elevation. Two electrical conduit pipes are extant along the north elevation. A transformer bracket is also extant on the north elevation. All metal elements have caused rust stains on the adjoining brick.

Doorways

Exterior doorways *(see figs. 54- 64)* are numbered in a clockwise direction beginning with the basement doorway on the north elevation and moving to the west (front) elevation of the building. Seven exterior doorways are extant, D- 1 to D- 7.

There are two types of doorways in Building 32, single doorways measuring 3 feet 2 inches wide by 8 feet 6 inches high, and double doorways measuring 6 feet 6 inches wide by 8 feet 6 inches high. All doorways were constructed with limestone sills set into the foundation and flush with the face of the foundation. Brickwork at doorway openings includes alternating headers and stretchers along the jambs to create a tight bond for the opening. The heads of all exterior doorways feature segmental soldier- brick arches. Single doorway arches are 20 bricks wide, while double doorway arches are 36 bricks wide.

The west (front) side of the building features two single doorways (D- 1 and D- 3) and two double doorways (D- 2 and D- 4). The west elevation originally featured two additional single doorways. These have been converted to windows (W 1- 6 and W 1- 8). The placement of the doorways is not symmetrical or consciously balanced, but rather follows the needs dictated by the interior spaces behind them.

The east (back) side of the building features two double doorways (D- 5 and D- 6). Again, the doorways are placed at uneven intervals on the elevation as determined by the interior storage spaces behind them.

All single doorways were originally accessed by a set of steps and a platform or porch deck. Currently only D- 3 is accessible. D- 3 is now equipped with a ca.- 1940 steel- reinforced concrete platform with five concrete steps at each end. The platform and step unit is centered on D- 3.

Double doorways on the west elevation were originally designed without access steps or platforms. The double doorways generally lead into the storage rooms of the building, so delivery wagons or trucks would have backed right up to the doorways to unload. Also, general access to the storage rooms was not desirable, and the absence of steps or a platform discouraged entry through the double doorways on this elevation.

Double doorways on the east elevation originally opened out onto a loading platform that extended along much of the wall. Most of the heavy loading and supply delivery was done here from the adjacent railroad spur, which ran parallel to the east side of the building. The platform is no longer extant. Evidence of the platform consists of nine pockets cut into the foundation approximately every 12 feet. The pockets held the ends of the beams that supported the platform.

Doorways feature a number of different door styles. All openings have a simple wooden frame that fits snugly into the opening, including a curved head to accommodate the segmental arches. There are two extant original single doorways. Doorway D- 1 has a two- light transom and a wooden door with three horizontal panels below three horizontal lights. Doorway D- 2 has a three-

light transom and a wooden door with two horizontal panels below one square light. Neither door is original.

The double doorways do not have transoms. All are hung with two inward- opening wooden doors. The doorways on the west elevation (D- 2 and D- 4) have doors with a small square panel below a tall rectangular panel, both fitted with flush diagonal boards. The boards of the square panels were set at the opposite diagonal from those of the rectangular panels, creating a diamond pattern when viewed alongside the other leaf of the doorway. This was the original treatment of both double doorways on the west elevation. D- 2 contains its original doors, but the tall rectangular panels have been replaced with four- light windows and infilled with wood slats. D- 4 retains its original double doors in their original configuration.

Double doorways on the east (back) side of the building contain wooden doors of unknown origin. These may be original doors that have been altered over the years. The two leaves of D- 5 each have a small square panel below a tall rectangular panel; it thus resembles the original doors on the west side, but the exterior face of D- 5 is largely obscured behind plywood panels. The two leaves of D- 6 do not resemble any other doors: they each feature three horizontal panels below a six- over- six- light window. The wood of the panels has largely been replaced with plywood, and all glass is missing from the window.

Windows

Exterior window openings *(see figs. 65- 74)* are numbered by story in a clockwise direction. All numbering begins at the north corner of the west elevation. The 11 basement windows are numbered 0- 1 through 0- 11. (These have been discussed as an element of the foundation.) There are 23 first- story windows, numbered 1- 1 through 1- 23, and 22 second- story windows, numbered 2- 1 through 2- 22. Four attic- level windows are numbered 3- 1 through 3- 4.

The heads of all exterior window openings feature segmental brick arches. Original (1898) window arches are 23 bricks wide and are found on the first story, and on the second story of the north and south walls. The bricks in these arches taper one- quarter of an inch to accommodate the curve. Later (1910) window arches are 20 bricks wide; they are found on the second story of the west and east walls, and in the north and south gable ends. The bricks in these arches do not taper; extra mortar is used to accommodate the curve.

The dimensions of the window openings vary primarily by date of construction. All original (1898) windows measure 5 feet 8 inches high. These windows include all of the windows on the first story, and also the second- story windows on the north and south walls (originally gable- end windows). Most of the original windows are 3 feet 8 inches wide. The two west- wall windows flanking the north double doorway (D- 2) are 3 feet 2 inches wide; the reason for this slight variation is not known. The two west- wall windows that were converted from doorways (W 1- 6 and W 1- 8) are 3 feet 2 inches wide. The windows installed with second story in 1910 measure 3 feet 9 inches wide by 6 feet high. They include all of the second- story windows on the east and west sides, and the attic windows in the north and south gable ends.

Structural elements include a 5- inch, 10- pound I- beam that runs across the top of each window opening. The concave sides of the I- beams are infilled with wood to simulate a wooden lintel; a bolt through either end of the beam fastens the wood fillers to the beam. The ends of the beam extend 6 inches beyond the window opening. The ends of the beam also bear on two iron plates set into the inner wythe of masonry, one at each top corner of the window opening. The plates measure 4 inches wide, 8 inches long, and half an inch thick. Like the I- beam, the ends of the iron plate extend 6 inches beyond the window opening. The head of the window frame is let into the bottom of the I- beam "lintel" for the entire width of the window. Those floor joists entering the interior masonry above window openings have their ends resting on the I- beams.

All window openings were constructed with limestone sills set into the wall. Original sills are 48 inches long and 5 inches high. Later (1910) sills measure 52 inches wide and are 4 3/4 inches high. All sills are planed smooth, slanted to deflect water, and provided with a machine- cut drip channel on the underside to deflect water run- off from the brick face of the building.

All 1898 windows were originally fitted with iron grills for security purposes. Currently, all 11 basement windows, nine first- story windows, and three second- story windows retain their grills. Each grill consists of 10 round bars three- quarters of an inch thick held in place with a metal plate at the top, middle, and bottom of the bars. The bars run through the plates and are held rigid by them. The top ends of the bars are pointed. The plates are set several inches into the masonry at either side of the window. The later (1910) windows were not equipped with iron grilles. Aluminum storm windows are found on some of the first and second- story windows; they are in poor condition.

Windows openings are treated with simple wooden boxed frames that fit snugly within the segmentally arched opening. Frames are butted and nailed together. Sashes are double- hung with six- over- six lights. Sash weights are concealed within the boxed frame. Window treatments will be discussed further in connection with interior elements.

Roof and Chimneys

The roof covering and associated features *(see figs. 75- 81)* were surveyed from the ground, except for the roof sheathing, which was surveyed from inside the attic. Details of construction, in some instances, were not recorded due to the lack of close- up observation.

The discussion that follows describes those aspects of the roof covering that are designed to cover the roof and keep it weather- tight: the asphalt shingles and flashing. Also included are related features such as ventilators, chimneys, the fire wall, gutters, and downspouts.

The roof was raised in 1910 to accommodate the addition of a second story. It is thought that the original roof structure was retained at that time and jacked up to permit the second story to be constructed under it. The total area of the roof is 5,074 square feet. The perimeter length is 293 long feet.

The gable roof displays a medium pitch with a simple molded box cornice and corner returns. Slopes of the roof are continuous planes, interrupted by the brick fire wall that projects beyond the roof surface at the mid- point of the building, and by the chimneys at the north end and at the fire wall.

Currently, the east and west slopes of the roof are covered with asphalt shingles installed in 1973 to replace the original slates.[1] The shingles are varying shades of gray and are laid 46 courses per slope. The vertical seams of every other course are generally aligned. The asphalt shingles are laid on tar paper and fastened with wire roofing nails to the sheathing below. A ridge cap of asphalt shingles is folded over the ridge along the entire length of the roof peak.

The box cornice is an original element of the roof. This cornice includes (from top to bottom) a cyma recta crown molding, a fascia, a soffit, and a bed molding. Elements were formed in wood and flashed with galvanized metal. The cornice extends 1 foot out from the building. A simple ovolo bed molding is used against the underside of the soffit. A built- in tinned gutter rests upon the soffit, faced with the cornice molding. Gable ends feature cornice returns 38 inches long. These are counter- flashed with galvanized steel.

The brick fire wall projects 8 inches above the roof surface and divides the roof visually into north and south sections. The section of roof north of the fire wall measures 62 feet long; the section south of the fire wall measures 52 feet long. The fire wall at this location is 9 inches wide with a flat top. It is currently capped with galvanized steel flashing; the original terra- cotta capping may remain underneath.

The fire wall includes a brick chimney at the peak of the roof. A second chimney is located on the north gable end of the building.[2] Each chimney measures approximately 6 feet 3 inches by 1 foot 4 inches, and features a cap of three corbeled courses of brick surmounted by a 4- inch stone top. Both chimneys are constructed of buff brick. The juncture of chimney and roof is flashed with galvanized steel. The chimneys initially served coal stoves and later a central furnace. They are currently not functioning.

Two 20- inch galvanized- iron ventilators are also located at the peak of the roof. The ventilators straddle the roof ridge, at an equal distance north and south of the projecting fire wall. The ventilators are cylindrical in shape, with domed caps. They are installed directly above the hoists formerly servicing the north and south sides of the building.

The water- collection system is now defunct, but it formerly consisted of a built- in tinned gutter in the cornice with two 4- inch downspouts on both the front (west) and back (east) sides of the building. The gutter is square in shape. Downspouts connected with the gutters at the eave line and extended to the ground. One downspout facilitated water run- off for the north half of an elevation and the other for the south half. Deteriorated and incomplete pieces of downspout are extant today at the north ends of both the east and west elevations.

There is no evidence that a lightning- protection system was ever installed. There is also no system of snow guards. One plumbing vent pipe projects through the roof on the north end of the west roof slope. This pipe serves bathrooms on the first and second stories, installed during the 1960s and now defunct.

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[1] Center for Architectural Conservation, *Historic Structure Assessment Report, Fort Hancock- Building 32, Quartermaster's Office* (Atlanta: Georgia Institute of Technology, College of Architecture, 1988- 1989), p. 4.

[2] Originally a third chimney was located on the south gable end of the building.

Figure 44. Foundation, south gable end [1993].

Figure 45. Foundation, north corner of east wall, showing former location of platform [1993].

Figure 46. Foundation, east elevation, sill of doorway D-4 inset into foundation [1993].

Figure 47. Foundation, west wall, mortise of former platform framing support [1993].

Figure 48. North and west elevations, showing change in brickwork of north gable- end wall [1993].

Figure 49. South and east elevations, showing change in brickwork of south gable- end wall [1993].

Figure 50. North and west elevations [1993].

Figure 51. South elevation [1993].

Figure 52. West (front) elevation, north end of building [1993].

Figure 53. West (front) elevation, south end of building [1993].

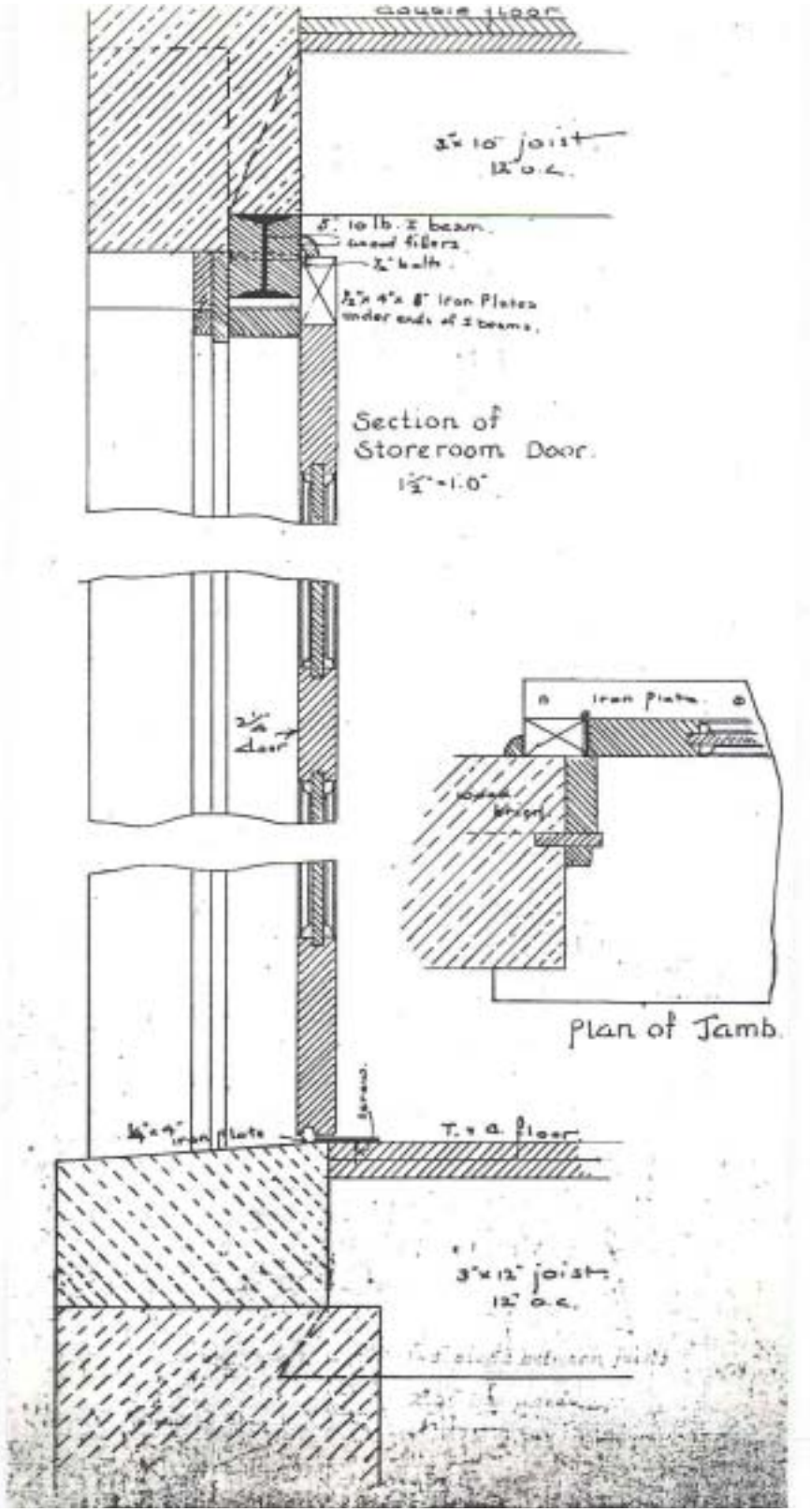

Figure 54. Section of exterior doorway opening and plan of jamb, as designed on original 1894 drawings.

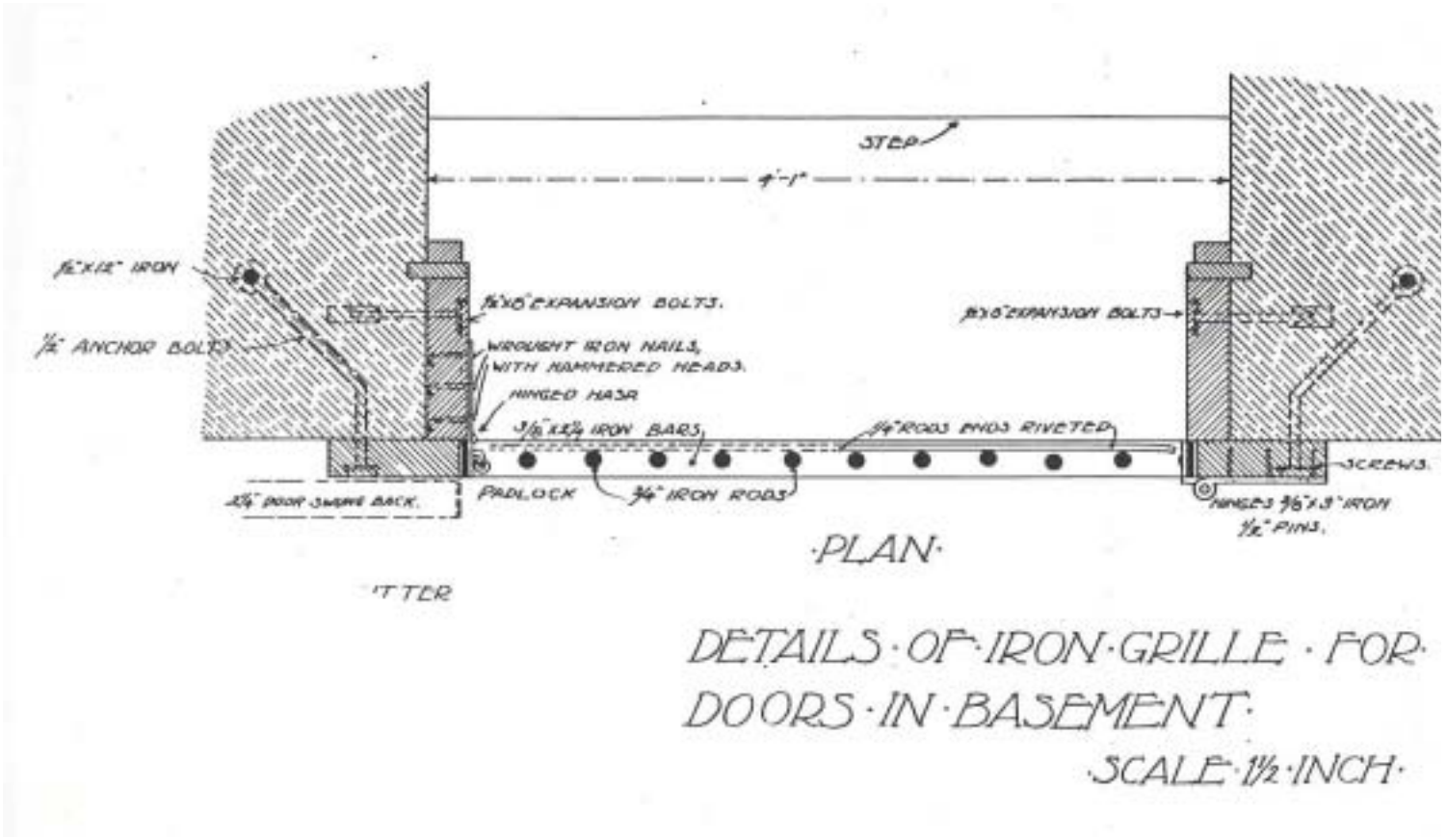

Figure 55. Plan of opening and iron grille for basement doorway (D- 0), as designed on original 1894 drawings.

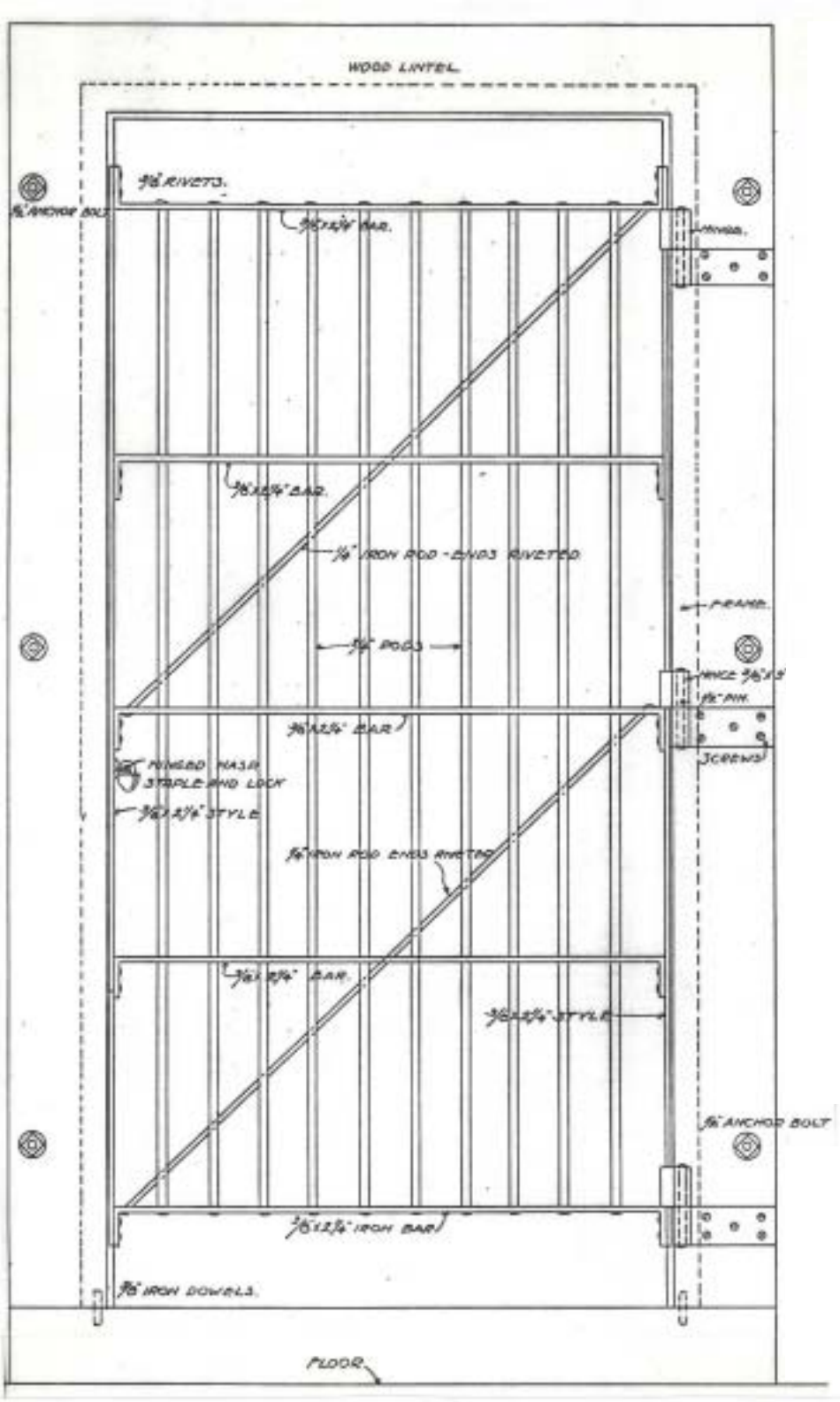

Figure 56. Inside elevation of iron grille door for basement doorway (D- 0), as designed on original 1894 drawings.

Figure 57. North elevation, bulkhead to basement doorway (D- 0) [1993].

Figure 58. Northeast corner of building, showing bulkhead to doorway D- 0 on north elevation [1993].

Figure 59. West elevation, doorway D- 1 [1993].

Figure 60. West elevation, doorway D- 2 [1993].

Figure 61. West elevation, doorway D- 3 [1993].

Figure 62. West elevation, doorway D- 4 [1993].

Figure 63. East elevation, doorway D- 5 [1993].

Figure 64. East elevation, doorway D- 6 [1993].

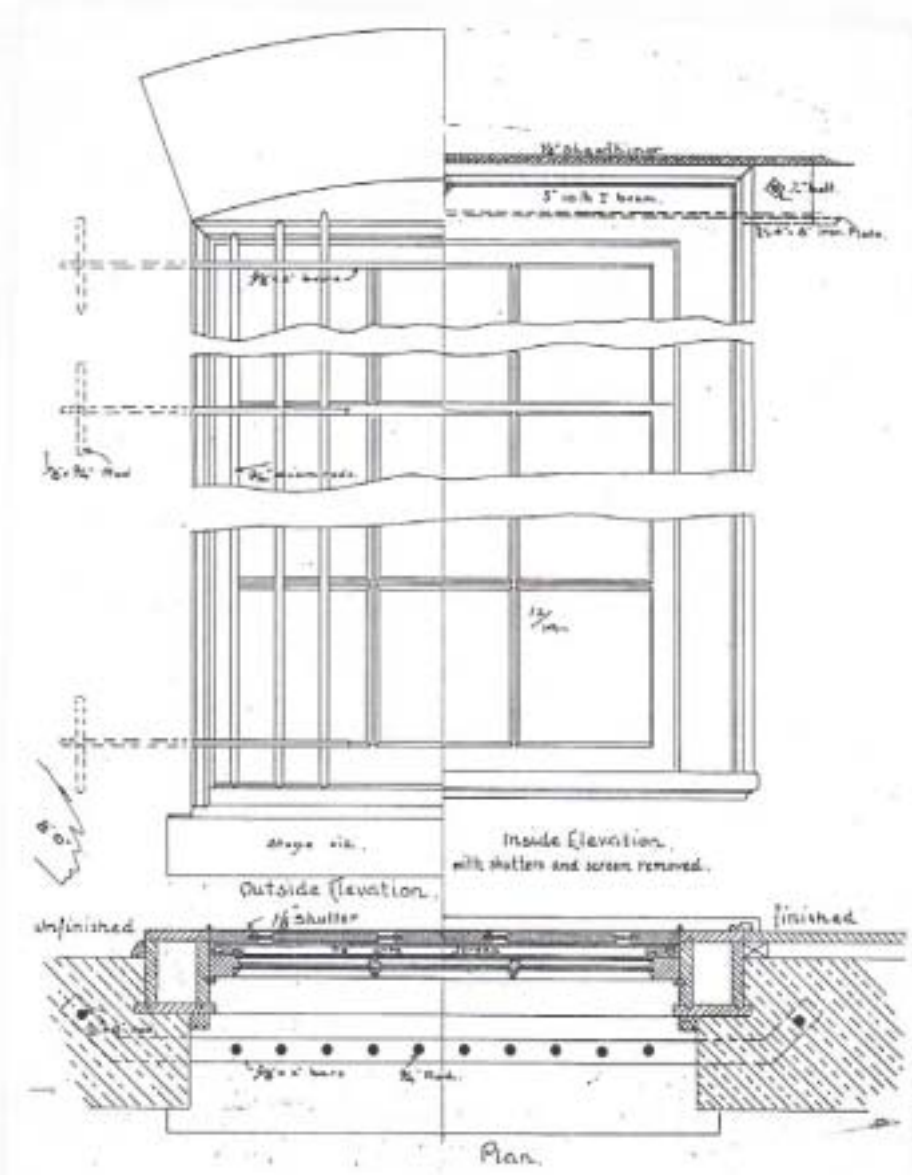

Figure 65. Elevation and plan of window, as designed in original 1894 drawings and constructed in 1898.

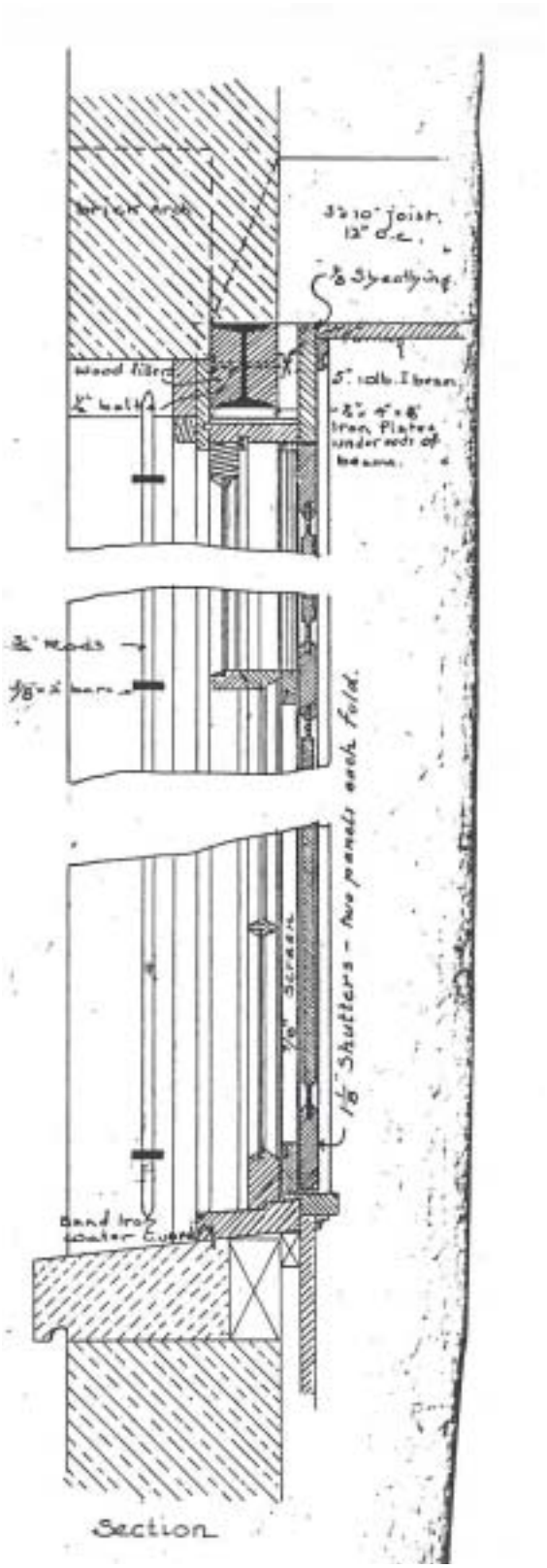

Figure 66. Section of first- story window, as designed in original 1894 drawings and constructed in 1898.

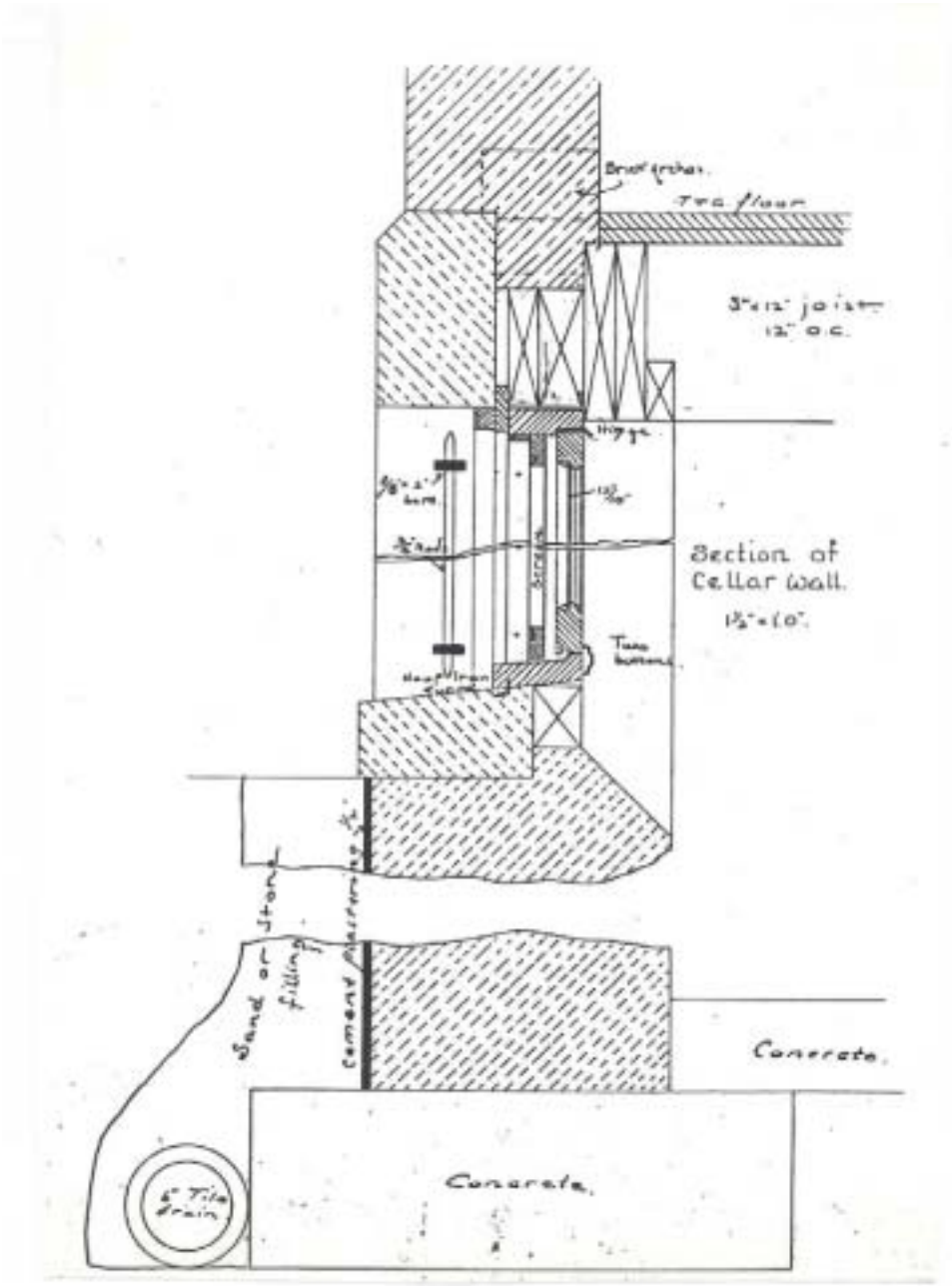

Figure 67. Section of basement window, as designed in original 1894 drawings and constructed in 1898.

Figure 68. West elevation, basement window (W 0- 4) [1993].

Figure 69. West elevation, original window (W 1- 3) [1993].

Figure 70. West elevation, former doorway converted to window (W 1- 6) [1993].

Figure 71. West elevation, former doorway converted to window (W 1- 8) [1993].

Figure 72. West elevation, original window (W 1- 10) [1993].

Figure 73.

East elevation, original window (W 1- 13) [(1993]).

Figure 74. East elevation, second- story windows W 2- 18, 2- 19, 2- 20, and 2- 21, added in 1910 [(1993]).

Figure 75. West slope of roof, at fire wall and middle chimney [1993].

Figure 76. Northeast corner of building, showing cornice return, rake, and chimney [1993].

Figure 77. Southwest corner of roof, showing cornice return, soffit, and rake [1993].

Figure 78. West elevation, deteriorated cornice between windows W 2- 14 and 2- 15 [1993].

Figure 79. West slope of the roof at the fire wall and middle chimney [1993].

Figure 80. West slope of roof, south roof vent [1993].

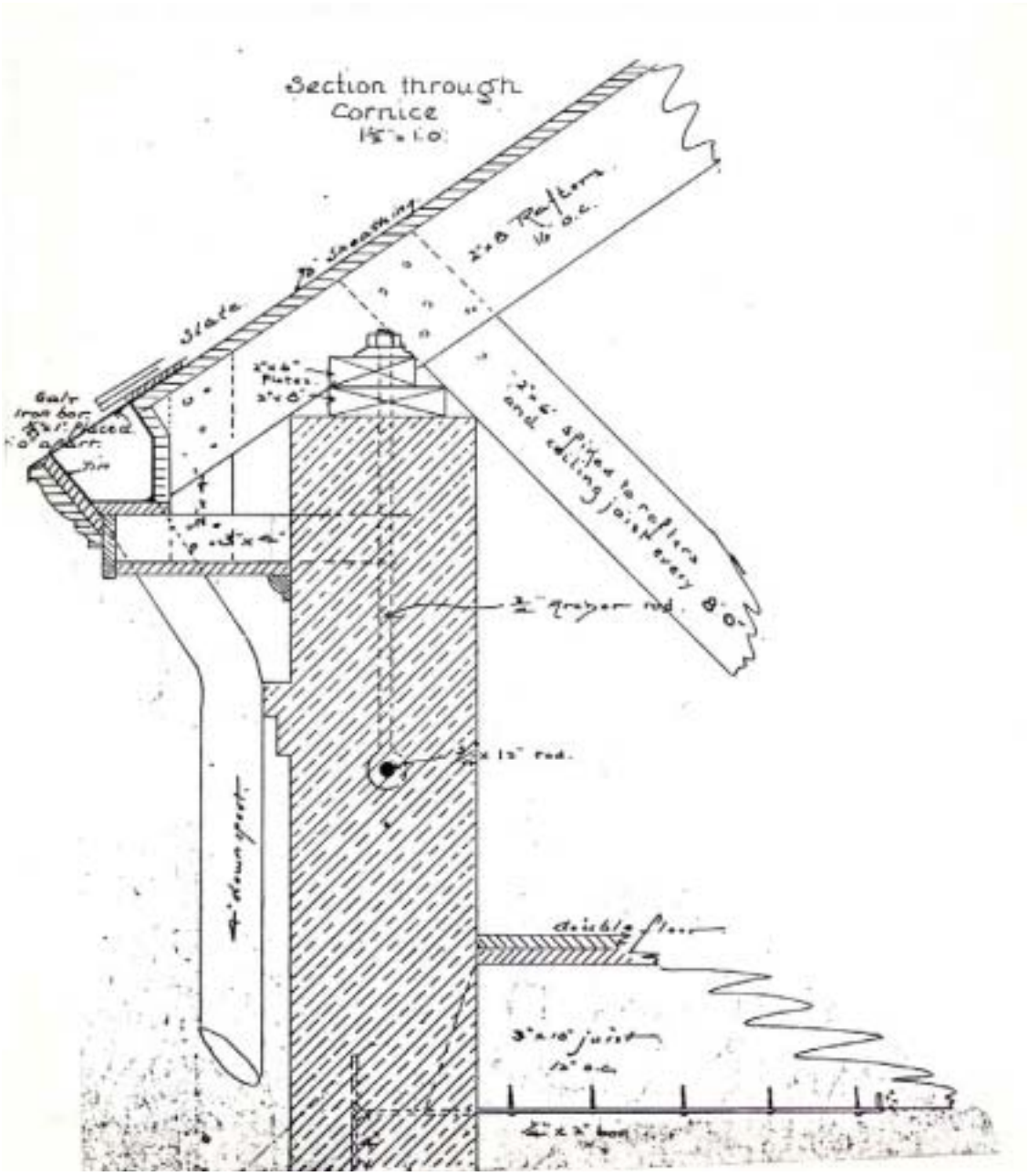

Figure 81. Section through the cornice as designed on original 1894 drawings (same configuration used when roof raised in 1910), showing built- in gutter, soffit, and molded fascia.

INTERIOR ELEMENTS

General Information

The plan of Building 32 has undergone significant changes, including the addition of a second story in 1910, the relocation of partition walls, and the introduction of a new central stairway. *(See figs. 5- 8, 31, 35, 42- 43, and 82- 83).* The gross floor area of the building is 9,585 square feet.

A labeling system of the bays of each story as defined by the structural framing is used in this report to facilitate discussion of the interior elements. Each story is assigned a letter (A- basement, B- first story, C- second story, D- attic), and the bays of each story are numbered from north to south. Therefore, Bay A1 is the northernmost bay in the basement, and so forth.

A constant in all four stories is the original brick fire wall that runs through the building, at approximately its mid- point, from the basement through the roof. This means that all four stories are divided into two nearly equal halves by this fire wall. Also extending from the basement to the attic are the two staircases against the east wall *(see figs. 84- 89).* One staircase serves the north portion of the building, while the other staircase serves the south portion. These staircases are original features made necessary by the division of the building in two by the brick fire wall. They were both extended from the basement to the attic when the second story was added in 1910.

Another original feature serving multiple stories is a pair of manual rope- and- pulley hoists, one in the north and one in the south portions of the building *(see figs. 90- 92).* These hoists are original features that were modified when the second story was added in 1910.

Both the stairways and the hoists will be described in greater deal in the subsequent section "Staircases/Vertical Circulation."

Basement

The fire wall is 20 inches thick in the basement. The portion of basement north of the fire wall is 59 feet 8 inches long, while the portion to the south is 49 feet 8 inches long–10 feet smaller than the north part. The total basement area is 3,080 square feet. Both north and south portions are open and unpartitioned. Each portion features four pairs of brick piers that divide the space visually into five bays. The bays are approximately 10 feet wide in the north portion and 9 feet wide in the south portion. The entire basement, therefore, is 10 bays long. The bays have been numbered 1- 10 from north to south.

Access to the north side of the basement is via a bulkhead stairway at the east end of the north wall. As explained previously, there is no bulkhead for the south side, and no doorway in the fire wall to allow passage into that space from the north side.

The two stairways to the first story are located in Bay A3 (for the north portion) and Bay A7 (for the south portion). Each is an L- shaped wooden stairway. The hoist for the north portion is not evident: as explained previously, it was probably removed from this level prior to 1957. The hoist for the south portion is extant in Bay A8.

First Story

The fire wall in the first story is 16 inches thick. The north portion of the first story measures 60 feet 8 inches long, while the south portion measures 50 feet 8 inches. The total area of the first story is 3,195 square feet. As in the basement, the first story is divided visually into 10 bays by structural framing. Each portion of the story features four pairs of 6- inch- square posts, dividing it into five bays, for a total of 10 bays in the whole story. The bays stretch the width of the building.

Unlike the basement, the first story is partitioned into a number of rooms. Therefore, the bays are not as evident as they are in the open basement spaces. The bays in the first story are somewhat redefined and subdivided by partition walls. The first story now contains 11 rooms, which have been designated Rooms 101- 111. The current partitioning has the effect of emphasizing five spaces, as follows:

Bays B1- 2
Bay B3
Bays B4- 5
Bay B6
Bays B7- 10

These five areas are further subdivided. Bays B1- 2 contains Rooms 101 and 102. Bay B3 contains Rooms 103, 104, and 105. Bays B4- 5 contain Room 106. Bay B6 contains Rooms 107, 108, and 109. Bays B7- 10 contain Rooms 110 and 111.

Exterior access to the first story was originally possible through eight doorways: six on the west elevation and two on the east elevation. Today, four doorways remain on the west elevation, and two on the east. However, only one doorway (D- 3), on the west elevation, is currently operational.

The first- floor plan includes no halls, no conscious symmetry of design, and no pattern of circulation. It represents a very closed and random plan. There is limited communication between rooms. A circuitous route leads from room to room and from one end of the building to the other. Furthermore, the original staircases linking the stories are located on the back wall of the building. The one serving the north side of the building is located in Bay B3 (Room 103); that serving the south side is in Bay B7 (Room 111).

An attempt to impose a center- hall orientation was made when the second story was added in 1910. Exterior access was restricted to the single doorway in the middle of the west elevation (doorway D- 3), behind which was built a small foyer (Room 107) and a straight- run "central" stairway leading to the second story.

Again, the hoist for the north portion of the building is not evident at this level. Figure 37 indicates that it was removed from the first story before 1957. The hoist for the south portion is extant in Bay B7 (Room 111).

Second Story

The fire wall in the second story measures 12 inches thick. As in the first story, the area north of the fire wall measures 60 feet 8 inches, while the area to the south measures 50 feet 8 inches. The

total area of the second story is approximately 3,100 square feet. Like the basement and first story, the second story displays a bay system determined by the structural framing.

Four pairs of 6- inch- square posts create five bays to the north of the fire wall and five bays to the south. The second story is therefore 10 bays long. The bay on either side of the fire wall is 14 feet wide. The remaining four bays on the north side are 10 feet wide. The remaining four bays on the south side are 9 feet wide.

The overall plan of the second story consists of a large open area on the north and south ends, with a core of small, subdivided rooms in the middle flanking the fire wall. The second story contains 10 rooms, Rooms 201- 210. Bays C1- 4 are one large open room at the north end (Room 201). The space is interrupted only by three pairs of 6- inch- square posts, the shaft for the north hoist (in the center of Bay C2), and the stairway against the east wall (in Bay C3).

Bay C5 (the 14- foot bay just north of the fire wall) contains a cluster of very small rooms, including Rooms 202, 203, 204, 205, and 206. Room 203 is a hall- like space running north/south through the bay. It accesses Room 202, to the east, and Room 204, to the west. Rooms 205 and 206 are west of, and accessed from, Room 204. Rooms 204- 206 were once a photographic lab, with Room 205 being the film room and 206 the darkroom.

Bay C6 (the 14- foot bay against the south side of the fire wall) contains a cluster of small rooms at its east end (Rooms 207, 208, and 209). Room 208 is at the top of the central stairway from the first story; it connects to Room 203 by a doorway through the fire wall. Room 207 lies east of Room 208, while Room 209 is south of it. The west side of Bay C6 is relatively open, containing only the central stairway's enclosure and the northwest corner of Room 210. This latter space retains evidence of a counter and railing closing off a 9- foot- square area, perhaps for distribution or inventory purposes.

Bays C7- 10 (like Bays C1- 4) are one large open space interrupted only by three pairs of 6- inch- square posts, the shaft for the south hoist (in Bay C8), and the east- wall stairway (in Bay C7).

Attic

The fire wall in the attic measures 12 inches thick. The total area of the attic is approximately 3,100 square feet. Eight pairs of 6- inch- square posts further divide the space into 10 bays matching those in the lower stories. Communication between north and south portions of the attic is through a single fire doorway in the east and of the fire wall.

A system of raised pallets allowed air to circulate around stored equipment and objects. These pallets survive along the east and west sides of both the north and south ends of the attic. They are slatted wood decks raised approximately 8 inches off the floor. Two pallets in the north end measure 22 feet 9 inches by 7 feet 6 inches (east) and 33 feet 1 inches by 3 feet 10 inches (west). Four pallets in the south end measure 13 feet 2 inches by 3 feet 4 inches (east), 26 feet 6 inches by 3 feet 4 inches (east), 19 feet 4 inches by 3 feet 5 inches (west), and 17 feet 10 inches by 11 feet 5 inches (west). The pallets are nailed in place.

As in the other stories, there are two stairways on the east wall of the attic. The stairway that serves the north portion of the attic is located in Bay D3; the one that serves the south portion is located in Bay D7. Both north and south hoists are evident at this level, in the center of Bays D3 and D8, respectively.

Vertical Circulation

As explained previously, Building 32 is now equipped with three staircases and two manual rope pulley hoists that provide vertical circulation throughout the building. Because the building is divided in half by the brick fire wall, with little communication between the halves, one staircase and one hoist were originally included in each end of the building. Both of the original staircases and the hoists were extended when the second story was added in 1910. The third staircase is centrally located and was added in 1910.

Staircases

North End

The staircase serving the north end of the building is located in Bay 3, next to the east wall. It consist of three L- shaped stairways with winder steps instead of landings: one from the basement to the first story,[3] one from the first to the second stories, and one from the second story to the attic. The staircase is illuminated by two windows in the east wall–W 1- 21 in the first story, and W 2- 22 in the second story.

The bottom two or three steps of each stairway are open, while the straight run is enclosed with vertical beaded- board sheathing. In the basement, the straight run of the stairway is enclosed from the carriage to the ceiling, as shown in figure 84. In the first and second stories and the attic, the straight run is enclosed from floor to ceiling *(see figs. 88 and 103)*. However, variation in the width of the beaded boards suggests that these stairways were formerly more open, having solid, beaded-board balustrades but no filler in between. This configuration can still be seen in the second- story and attic stairways in the south end of the building *(e.g., see fig. 86)*.

On each story this staircase includes a square newel at the bottom of each stairway. At the first and second- story levels there is also a newel at each corner, and one at the top of each stairway. A simple turned handrail survives in the first and second stories.

South End

The staircase serving the south end of the building is located in Bay 7, next to the east wall. It also consists of three L- shaped stairways with winder steps instead of landings: one from the basement to the first story, one from the first to the second stories, and one from the second story to the attic. The staircase is illuminated by two windows in the east wall–W 1- 15 in the first story, and W 2- 17 in the second story.

The stairway from the basement to the first story *(see fig. 84)* is similar to that in the north end of the building. The bottom two or three steps of the stairway are open, while the straight run is enclosed with vertical beaded- board sheathing from the carriage to the ceiling. In the first and second stories and the attic, however, the south- end stairways differ from their north- end counterparts. The first- story stairway is enclosed from floor to ceiling with beaded boards of equal width *(see fig. 85)*. Based on the design of the other stairways, this paneling is a later addition. The stairway probably resembled the second- story stairway above it, which is open except for its solid, beaded- board balustrades *(see fig. 86)*. The attic stairway likewise remains open.

[3] The cellar stairway also has winder steps at its top, such that it is more nearly C- shaped.

On each story this staircase includes a square newel at the base of each stairway. At the first and second- story levels there is also a square newel at the L- turn of the stairways, and at the top of the stairways. A simple turned handrail survives at the first- and second- story and attic levels.

Center

The later, central stairway is located in Bay B6 just inside D- 3 (currently the only entry to the building). The stairway is a straight run of 14 steps constructed against the south face of the brick fire wall. The fire wall is sheathed with vertical beaded boards to the top of the stairwell, and the south side of the stairwell is also enclosed with vertical paneling. The stairway rises from the first floor and terminates at the second floor; it does not access the basement or the attic. There is no handrail.

Hoists

Building 32 retains both of its original hoists and their shafts, albeit with some modifications. Both are manual, rope- and- pulley hoists that have mechanical gear systems located in the attic. They were manufactured by the Morse Elevator Works of Philadelphia. The one serving the north end of the building is located in Bay 2; it formerly extended from basement to attic, but is extant today only in the second and attic stories. The hoist serving the south end of the building is located in Bay 8; it still extends from basement to attic, and is even in working order.

Flooring

The existing floor coverings in Building 32 vary from basement to attic and from room to room. Generally, the original flooring remains *in situ,* with later treatments installed on top.

Basement

The basement retains the original poured concrete floor.

First Story

The first story generally retains its original sub- floors and finish floors. The sub- floor boards are edge- grain, tongue- and- groove boards measuring 1 3/4 inches thick by 5 ½ inches wide and running east/west. The finish floor consists of tongue- and- groove boards measuring seven- eighths of an inch thick by 2 ¼ inches wide and laid north/south. Original flooring is exposed only in Room 111. Modern coverings include:

- 12- inch- square linoleum tiles over asphalt- impregnated paper (in Rooms 101, 102, 104, 105, 106, 107, 108, and 109)
- laminated plywood over asphalt- impregnated paper (Room 110)
- fir tongue- and- groove boards measuring seven- eighths of an inch thick by 3 ¼ inches wide (Room 103)

Second Story

The second story retains its original sub- floor and finish floor. The sub- flooring consists of tongue- and- groove pine boards measuring seven- eighths of an inch thick by 6 inches wide and beaded on the bottom. The boards are laid diagonally, from the northeast to the southwest corners of the rooms. The finish floor consists of tongue- and- groove edge- grain boards measuring seven-eighths of an inch thick by 3 ½ inches wide; these are laid north/south. The original flooring is extant throughout the second story, although it has been covered with rubber- like carpet pads (three-sixteenths of an inch thick) in Rooms 202, 203, 205, and 206.

Attic

The flooring in the attic is identical to that in the second story. The original flooring is extant and exposed throughout the attic.

Walls

Construction

The interior walls of the building *(see figs. 93- 104)* include the load- bearing perimeter brick walls, the brick fire wall, and partition walls of various materials. As discussed previously in connection with exterior elements, the perimeter walls consist of an exterior wythe of buff- colored facing brick and two inner wythes of red backing brick. The latter are laid similar to American bond, with a header bond course at irregular intervals (usually every five courses). Floor joists of the first- , second- , and attic floors are let into pockets in the brickwork of the east and west walls. In addition, beams running north/south are let into the north and south end walls at each level.

Window openings are a conspicuous feature of the perimeter walls. Interior window openings correspond to exterior window openings, except that they are rectangular, without the distinctive segmentally arched heads found on the exterior. The interior window openings on the north and south elevations do feature segmental arches, but these are constructed differently than the exterior arches. They consist of three full courses of header brick (20 bricks per course) and an abbreviated course of tapered header bricks infilling the area between the top of the window opening and the bottom of the arch. All doorway and window openings feature a metal I- beam lintel let into the brick of the masonry openings.

Interior walls include the brick fire wall and frame partition walls. The fire wall is laid in common bond with flush joints measuring three- eighths of an inch. The dimensions of fire- wall bricks match those of the backing bricks of the perimeter walls, measuring 2 ¼ by 7 $^{7}/_{8}$ by 3 ½ inches. The fire wall tapers slightly in thickness, being 20 inches thick in the basement, 13 inches thick in the first story, 12 inches thick in the second story, and 12 inches thick in the attic. Structural framing members running north/south are framed into the brick of the fire wall.

Partition walls are generally of 2 by 4 stud construction and sheathed with a variety of materials. In the first story, portions of original east- west partition walls survive between Rooms 101 and 103, and between the entry foyer area (Rooms 107, 108, 109) and Room 110. All other partition walls are later additions. In the second story, all partition walls date to 1910, when the second story was added.

Finishes

Thirteen interior wall treatments have been identified, as follows:

1) Exposed brick - painted

Location			Date
First Story	Room 103	east	
Second Story	Room 201	east, west, north	
	Room 203	south	
	Room 210	east, west, south	

2) Exposed brick - unpainted

Location			Date
Attic	Room 301	east, west, north, south	
	Room 302	east, west, north, south	

3) Beaded boards, oriented vertically

Narrow, matched, tongue- and- groove boards are used for wall sheathing in a number of rooms. Depending upon location, the boards are either 3 ½ or 5 ¼ inches wide and three- quarters of an inch thick, with a quarter- inch bead. Boards are generally nailed to 2 by 4 studs. Figures showing this wall treatment include nos. 85- 89, 99, 100, and 103. It is difficult to determine what, if anything, represents original 1898 material and what was installed during later alterations. The 1894 drawings specified seven- eighths- inch matched and beaded board. None of the extant board is seven- eighths of an inch thick. However, it is possible that sheathing of seven- eighths-inch matched and beaded board may not actually have been installed. Different dimensions for the sheathing may have been used during construction. Probable dates have been noted where possible.

Location			Date
First Story	Room 103	north wall of stairwell, 5 ¼ inches wide	possibly 1898, since wall is 1898
	Room 110	portions of east partition walls, 5 ¼ inches wide	after 1898, since east partition walls after 1898
	Room 110	north partition wall around D- 18, 5 ¼ inches wide	after 1898, since wall around D-18 after 1898
	Room 110	hoist housing, 3 ½ inches wide	1910, when the second story was added, or 1923, when "elevator shafts" were altered
	Room 111	north wall of stairwell, 3 ½ inches wide	possibly 1898, since wall is 1898

First Story (con't.)	Room 111	hoist housing, 3 ½ inches wide	1910, when the second story was added, or 1923, when "elevator shafts" were altered
	Room 111	stairway housing, 5 ¼ inches wide	possibly 1898, since stairway is 1898
	Room 107	south stairway wall, 3 ½ inches wide	1910, when stairway was created
Second Story	Room 201	stairway enclosure, 3 ½ inches wide	1910, when second story was added
	Room 210	stair housing and east end of north wall	1910, when second story was added

4) Matched and beaded board – oriented horizontally

The beaded boards are generally 3 ½ inches wide and three- quarters of an inch thick, with a quarter- inch bead. On frame walls, the boards are nailed to 2 by 4 studs; the studs are visible on the back sides of some of these walls *(see figs. 101- 102)*. It is not known how the boards are attached to brick wall surfaces. The method may resemble that used for the plywood, in which the boards are nailed to furring strips measuring 1 ¾ inches by three- quarters of an inch, nailed to the brickwork.

Location			**Date**
Second Story	Room 201	hoist housing	1910, when second story was added, or 1923, when "elevator shafts" were altered
	Room 202	east, north, south	1910
	Room 203	north	1910
	Room 204	north and south	1910
	Room 205	west and north	1910
	Room 206	west and south	1910
	Room 207	east, west, north	1910
	Room 208	east, west, north, south	1910
	Room 209	east, west, north, south	1910
	Room 210	west half of north wall	

5) Varnished or painted quarter- inch plywood with flat battens and baseboard

On brick walls, plywood is nailed to furring strips measuring 1 ¾ inches by three- quarters of an inch, nailed to the brickwork. On frame walls, the plywood is nailed to 2 by 4 studs. Flat battens measuring 2 1/8 inches by one- quarter inch are nailed on top of the plywood sheets to cover the seams. A baseboard measuring 5 ¼ inches by 1 inch is nailed over the plywood at the bottom.

Location			**Date**
First Story	Room 110	extant on west wall; furring frame only on east and south walls (fig. 98)	
Second Story	Room 203	east and west	
	Room 204	east and west	
	Room 205	east and south	
	Room 206	east and north	

6) Painted quarter- inch plywood with a rounded chair rail, baseboard, and cornice

On brick walls, plywood is nailed to furring strips measuring 1 ¾ inches by three- quarters of an inch, nailed to the brickwork. On frame walls, the plywood is nailed to 2 by 4 studs. The plywood is decorated with a chair rail (5 ¼ inches wide) with rounded edges, a baseboard (6 ¾ inches by three- quarters of an inch), and a half- round molding strip (seven- eighths of an inch) at the cornice *(see fig. 97)*. Battens measuring 3 ½ inches by half an inch with rounded edges are nailed on top of the plywood sheets to cover the seams.

Location			**Date**
First Story	Room 108	east, west, north, south	
	Room 109	east, north, south, west	
	Room 110	north (around D- 17)	

7) Painted quarter- inch plywood with a plain chair rail

Plywood is nailed to 2 by 4 studs and decorated with a plain- board chair rail (3 ¾ inches wide), a plain baseboard (6 ¼ inches wide), and a half- round cornice molding (half an inch wide). No battens used with this treatment.

Location			**Date**
First Story	Room 106	portion of north wall	

8) Painted three- quarter- inch plywood with beaded chair rail, baseboard, and cornice

This is the most decorative wall treatment in Building 32. It consists of the following: a three-piece beaded chair rail (5 5/8 inches wide); a two- piece cornice molding (a flat band 2 3/8 inches wide with a quarter- round molding strip below); a two- piece baseboard (a flat board 6 ¼ inches wide with quarter- round molding strip at the base); and battens with rounded edges (3 ¼ inches wide) covering the seams of the plywood sheets. Figures 95- 96 show this treatment. A dark varnish finish is visible beneath the current paint.

Location			**Date**
First Story	Room 106	parts of east, west, north, south walls	

9) Varnished three- quarter- inch plywood with rounded chair rail only

On brick walls, plywood is nailed to furring strips measuring 1 ¾ inches by three- quarters of an inch, nailed to the brickwork. On frame walls, the plywood is nailed to 2 by 4 studs. Decoration includes a three- piece beaded chair rail (5 5/8 inches wide) and three- piece molded battens (5 inches wide) covering the seams of the plywood sheets. The chair rail is the same as that used for treatment no. 8.

Location			**Date**
First Story	Room 103	north	
	Room 105	west and south	

10) Exposed partition framing (studs)

See figure 93 for an example of this treatment.

Location			**Date**
First Story	Room 101	west (open with wire mesh)	
	Room 102	east (open with wire mesh – see fig. 93)	
	Room 103	west and south	
Second Story	Room 201	north stair wall (back side of vertical beaded boarding)	
	Room 201	south wall (back side of horizontal beaded boarding- see fig. 102)	
	Room 202	west wall (back side of plywood)	
	Room 207	south wall (back side of horizontal beaded boarding- see fig. 101)	

11) Plasterboard

Location			Date
First Story	Room 111	west and south	

12) Masonite panels

See figure 94 for an example of this treatment.

Location			Date
First Story	Room 101	east, north, and south	
	Room 103	west	

13) Cellulose board

Location			Date
First Story	Room 102	west, north, and south	

Records concerning changes to Building 32 in the 20th century are scarce. It is thus impossible to determine when many of the previously described wall treatments were introduced. Plywood wall coverings were probably introduced sometime in the second half of the 20th century, perhaps ca. 1960 when a new floor plan for the building was designed. It is not expected that current wall treatments will be retained during rehabilitation. However, the matched and beaded- board paneling has been identified as a "Character- Defining Feature," and an attempt should be made to retain some of this historic wall treatment in the new design. (See Chapter VI, "Character- Defining Features.")

Doorways

Building 32 has 26 interior doorways *(see figs. 105- 116)*, i.e., those that communicate between rooms. There are 14 on the first story, 11 on the second story, and one the attic. Doorways in the first story have been assigned the numbers D- 7 through D- 20. Second- story doorways have been assigned the numbers D- 21 through D- 31. The doorway in the attic is identified as D- 32. Eight of the first- story interior doorways are original; only one of the second- story doorways (the doorway in the fire wall) is original. The doorways are hung with a variety of doors, mostly raised- panel wood doors of various configurations.

First- Story Doorways

The first- story doorways generally feature machine- milled trim. Most of the trim was installed at the same time as the plywood sheathing of the interior walls. The trim consists of a flat architrave with quarter- round moldings at the jamb edges. The head of the architrave is plain and rectangular. D- 18, between Rooms 110 and 111, had a transom originally; today, the transom area is filled with painted plywood.

Types of doors hanging in doorways on the first story include the following:

D- 7	none
D- 8	plywood door
D- 9	raised- panel wood door: two vertical panels at top and two at bottom, separated by one horizontal panel in the middle
D- 10	none
D- 11	raised- panel wood door: five horizontal panels
D- 12	glazed and raised- panel wood door: two vertical lights (glass) over three horizontal panels
D- 13	glazed and raised- panel wood door: two vertical lights (glass) over three horizontal panels
D- 14	raised- panel wood door: originally four horizontal panels; now top two replaced with glass
D- 15	glazed and raised- panel wood door: four square lights over three horizontal panels
D- 16	glazed and raised- panel wood door: originally two vertical panels at top and two at bottom, separated by one horizontal panel in the middle; now upper two vertical panels replaced with four glass panes
D- 17	plywood door
D- 18	three- panel wood door: one horizontal/rectangular panel at top and one at bottom, separated by one square panel in the middle
D- 19	double wood doors: two vertical panels per leaf; only one leaf is extant, with original hardware
D- 20	raised- panel wood door: five horizontal panels

It is difficult to determine the dates of these doors. It appears that the only first- story interior doors still in their original locations are D- 9 and D- 20, the two doors at the heads of the two stairways to the basement. Although original drawings specify a tin- clad fire door at D- 13, no door is currently in this location.

Second- Story Doorways

The second- story doorways are generally quite plain. Doorways D- 23, 24, 29, 30, and 31 feature flat architraves of 2 by 4 boards. All other second- story doorways feature no trim. The doorway in the fire wall (D- 28) features a three- course arch of header bricks. Doorways original to 1910 construction include D- 21 at the head of the stairway, D- 22 between Rooms 201 and 203, and the fire door, D- 28.

Types of doors hanging in doorways on the second story include:

D- 21	board door: beaded horizontal match- boarding nailed to 2 by 4 frame; original hardware
D- 22	board- and- batten door: vertical boards with three battens, two horizontal and one diagonal
D- 23	none
D- 24	raised- panel wood door: originally two vertical panels over two horizontal panels; now top two panels replaced with glass
D- 25	none
D- 26	none
D- 27	raised- panel wood door: two vertical panels over two smaller vertical panels
D- 28	tin- clad wood fire door, 2 inches thick; original hardware
D- 29	raised- panel wood door: two vertical panels at top, horizontal panel in the middle, and two smaller vertical panels below
D- 30	board door: beaded vertical match- boarding 3 ½ inches wide
D- 31	raised- panel wood door: five horizontal panels

Attic Doorway

The attic includes only one interior doorway–the one in the fire wall connecting the north and south portions of the attic. The doorway features a three- course arch of header bricks and is hung with a tin- clad wood door matching the fire door on the second story. The door hangs on wood jambs affixed to the south face of the doorway opening.

Windows

Of the interior window openings *(see figs. 117- 124)*, only the eight on the north and south ends of the building display the same segmentally arched heads as the exterior window openings. These are windows W 1- 11, 1- 12, 1- 22, 1- 23, 2- 12, 2- 13, 2- 23, and 2- 24. All other windows feature rectangular openings.

Window openings are generally fitted with wood box frames equipped with six- over- six, double- hung sashes. The window frames consist of a head, boxed jambs, and a sill, all set directly into the masonry opening. The boxed jambs consist of four boards dovetailed together to form a box to house the sash weights. Jambs measure 7 inches wide by 5 inches deep. The head is likewise a hollow element measuring 7 inches wide and 5 inches deep. The head runs between the jamb pieces of original windows, but runs across and rests upon the jamb pieces of 1910 windows. Wood sills are 4 feet 7 inches long, 3 ½ inches deep, and 1 ¼ inches thick. Glass lights in the six- over- six sashes measure 12 by 14 inches. Muntins are five- eighths of an inch wide, with a simple profile.

Two types of interior window treatments are evident, finished and unfinished. The finished treatment is found only in rooms designed with finished interior walls, including Rooms 106, 108, and 109. The windows in these rooms (W 1- 4, 1- 5, 1- 6, 1- 7, 1- 16, 1- 17, 1- 18, 1- 19, and 1- 20) are finished. The unfinished window treatment is found in rooms with unfinished interior walls, including Rooms 101, 102, 103, 104, 110, and 111; the second story; and the entire attic.

The finished window treatment consists of the boxed frame described previously, ornamented with a 2- inch molding strip applied to the outer edge of the header and jambs. The jambs rest directly on a sill measuring 3 1/3 by 1¼ inches. A three- quarter- inch ogee molding strip is nailed under the lip of the sill. Interior wall and ceiling sheathing (originally beaded board) 1 inch thick butts the window frame and sill on all sides. The finished windows therefore appear flush with the wall treatment.

The unfinished window treatment consists of the boxed frame described previously, including head, jambs, and sill. Jambs feature a quarter- inch bead and a quarter- round molding piece on their inside edges. The outer edges of the frame feature no trim, and there are no decorative sills. The whole frame projects 2 ½ inches from the exposed brick of the interior wall.

Ceilings

As with the interior window treatment, Building 32 has both finished and unfinished ceiling treatments. Currently, the basement ceiling is unfinished; the framing of the first floor above is exposed.

All first- story rooms currently have finished ceiling treatments that conceal the framing of the second floor. Rooms 106, 107, 108, and 109 retain their original matched and beaded- board ceilings, which feature boards 3 ½ inches wide nailed to the underside of the floor joists. Rooms 101 and 102 have ceilings of acoustical tiles made of a cellulose material. Ceilings in Rooms 103, 104, 105, 110, and 111 consist of fiberboard panels (resembling "Homasote") attached with thin, flat, 3- inch wood battens nailed to the underside of the floor joists.

The second- story rooms display a combination of finished and unfinished ceiling treatments. The group of small rooms flanking the fire wall (Rooms 202, 203, 204, 205, 206, 207, 208, and 209) retain original 1910 beaded- board ceilings that match the beaded- board partitions. Beaded- board ceilings are nailed to the underside of the floor joists. All other rooms in the second story have unfinished ceilings. However, the narrow tongue- and- groove boards of the attic sub-floor are planed smooth and laid diagonally, suggesting a desire to make even the unfinished ceilings somewhat attractive. In addition, there is extensive cross- bridge bracing between the attic floor joists that creates an interesting design at the second- story ceiling level.

The ceiling of the attic is the underside of the roof, and so is not finished.

Chimneys

Although only two of the three chimney stacks originally in Building 32 are visible on the exterior, the shafts of all three are extant on the interior. They are located against the north and south gable end walls, and against the north side of the fire wall. The north and south chimneys sit on concrete footings in the basement and extend through the attic. The base of the center chimney rests on the top of the fire wall in the basement. Chimney breasts project 12 inches into the rooms. The interior outline of the north chimney is 58 inches wide; that of the south chimney is 43 inches wide. The middle chimney's outline is 75 inches wide, with a 20- inch flue on the north side of the chimney. The brick of the chimneys matches the brick of the exposed interior walls.

The chimneys were designed to accommodate wood- or coal- burning stoves. The north chimney has one vent in the basement, three vents in the first story, two vents in the second story, and two vents in the attic. The south chimney has one vent in the basement, two vents in the first story, three vents in the second story, and two vents in the attic. The middle chimney has no vents in the basement, four vents in the first story, four vents in the second story, and four vents in the attic. Thus, the chimneys would probably have serviced two stoves in the basement (one at either end), four stoves in the first story, and four stoves in the second story; the attic would have been unheated. The chimneys are currently not working.

The north chimney is concealed in the first story because it is boxed in by the cellulose-board wall treatment; it is visible in all other stories. The south chimney is exposed in all stories. The middle chimney is concealed in the first story by boxed- out plywood sheathing; it is exposed in the second story and attic.

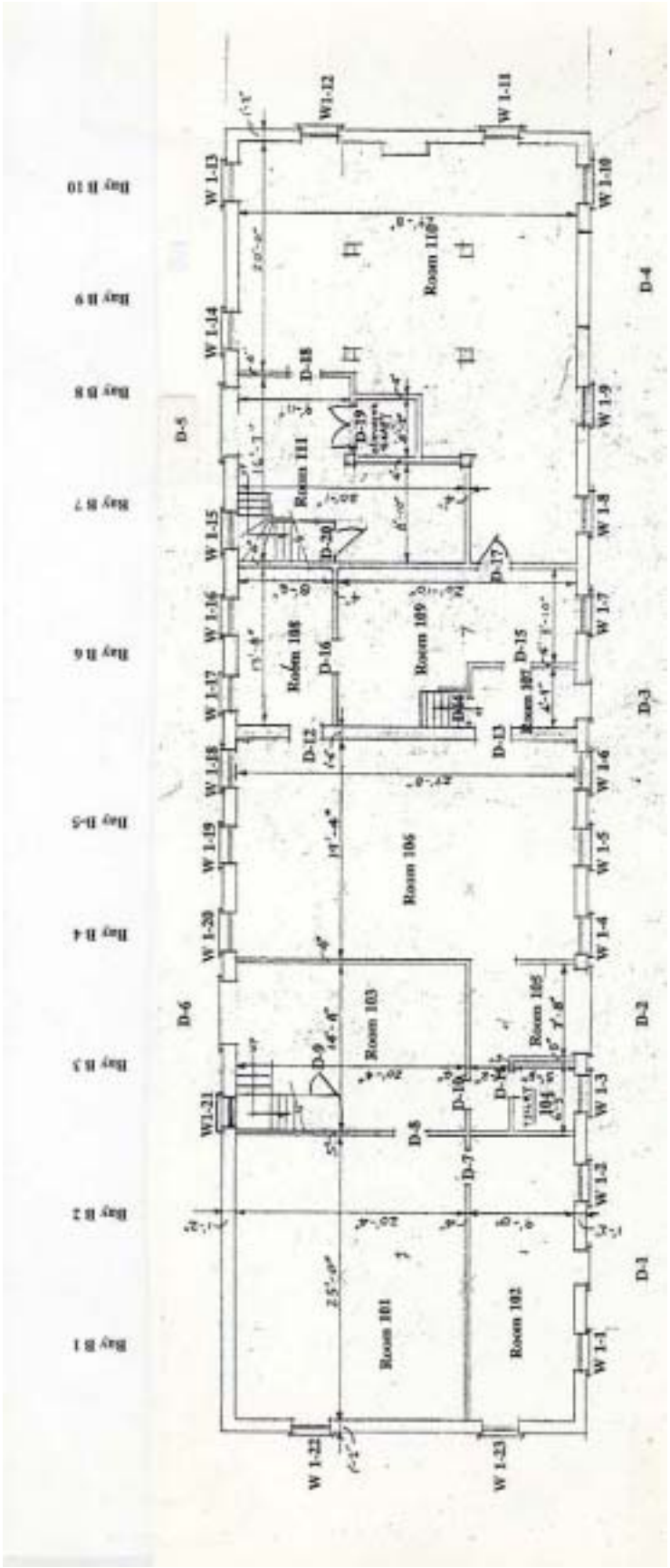

Figure 82. Plan of the first story with architectural features and spaces labeled [1993].

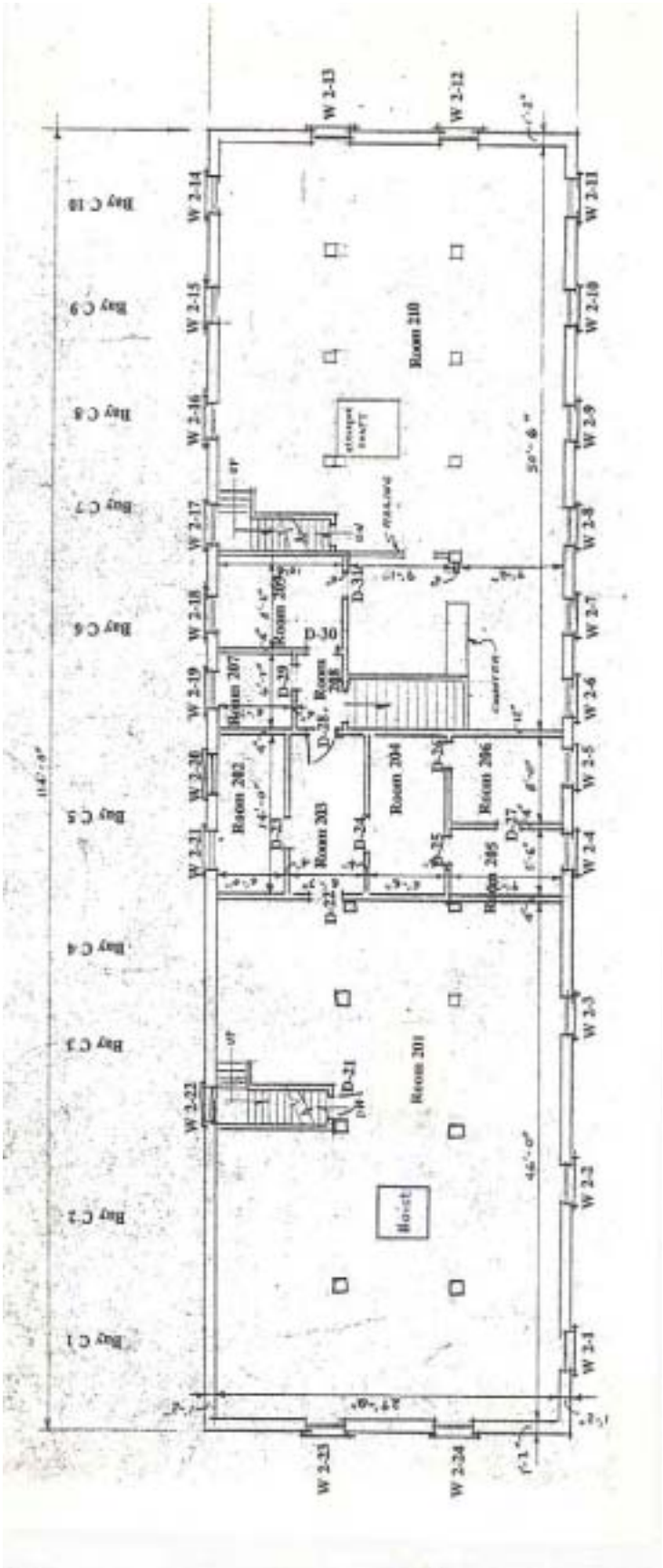

Figure 83. Plan of the second story with architectural features and spaces labeled [1993].

Figure 84. Basement, Bay 7: stairway [1993].

Figure 85. Room 111: stairway, looking northeast [1993].

Figure 86.

Room 210: stairway, looking east [1993].

Figure 87. Room 210: stairway, looking north [1993].

Figure 88. Room 201: stairway, looking north [1993].

Figure 89. Room 201: stairway, looking northeast [1993].

Figure 90. Attic, Bay 2: manual hoist in north part of building [1993].

Figure 91. Attic, Bay 7/8: manual hoist in south part of building [1993].

Figure 92. Room 210: manual hoist in south part of building [1993].

Figure 93. Room 102: east wall: stud and wire- mesh partition wall [1993].

Figure 94. Room 101, east and south walls: masonite panels [1993].

Figure 95.

Room 106, south wall: painted plywood with baseboard, chair rail, and ceiling molding sheathing chimney and fire wall [1993].

Figure 96. Detail of figure 95 [1993].

Figure 97. Room 109, southwest corner: painted plywood with simple baseboard, chair rail, and cornice [1993].

Figure 98. Room 110, south wall: bare brickwork with furring grid for plywood sheathing (now removed) [1993].

Figure 99. Room 110, center north area: beaded- board housing of manual hoist, looking northeast [1993].

Figure 100. Room 111: beaded- board stairway enclosure [1993].

Figure 101. Room 207, south wall: back (stud) side of partition sheathed with horizontal beaded boards [1993].

Figure 102. Room 201, south wall: back (stud) side of partition sheathed with horizontal beaded boards, and doorway D- 22 [1993].

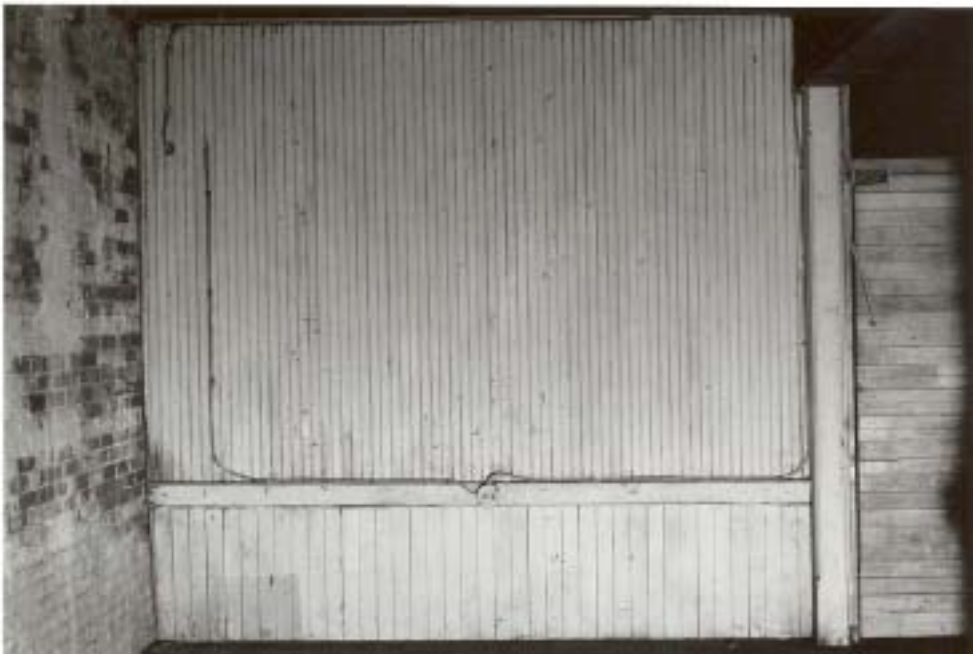

Figure 103. Room 201: north wall of stairway enclosure, sheathed with two widths of vertical beaded boards [1993].

Figure 104. Room 109, north wall: glass panels inset into wall, with vestibule immediately beyond [(1993]).

Figure 105. Room 111, east wall: double doorway to exterior (D- 5) [1993].

Figure 106. Room 103, north wall: plywood door in doorway D- 8 [1993].

Figure 107. Room 103: paneled door in doorway D- 9, leading to basement stairway [1993].

Figure 108. Room 105: paneled door in doorway D- 11, leading to Room 104 (toilet) [1993].

Figure 109. Room 106: glazed and paneled door in doorway D- 13, leading to Room 107 (vestibule) [1993].

Figure 110. Room 107: paneled door with glass inserts in doorway D- 14, leading to 1910 central stairway [1993].

Figure 111. Room 201: room side of beaded- board door in doorway D- 21, at top of stairway [1993].

Figure 112. Room 201: stair side of beaded- board door in doorway D- 21, at top of stairway [1993].

Figure 113. Room 201, south wall: vertical- plank door in doorway D- 22, leading to Room 203 (hall) [1993].

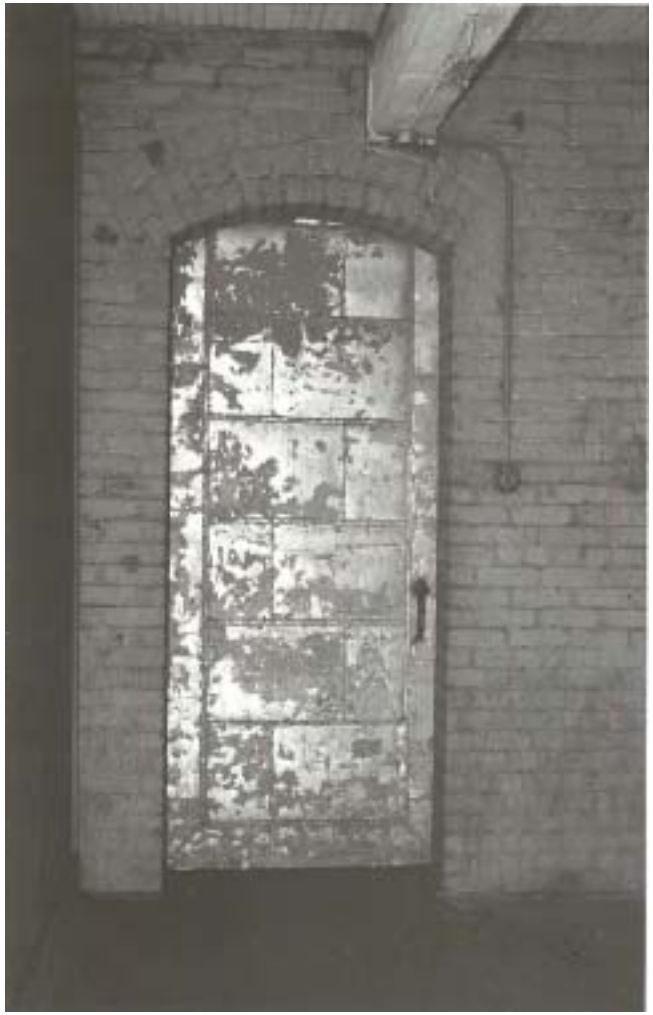

Figure 114. Room 208, north wall: fire door in doorway D- 28, leading to Room 203 (hall) [1993].

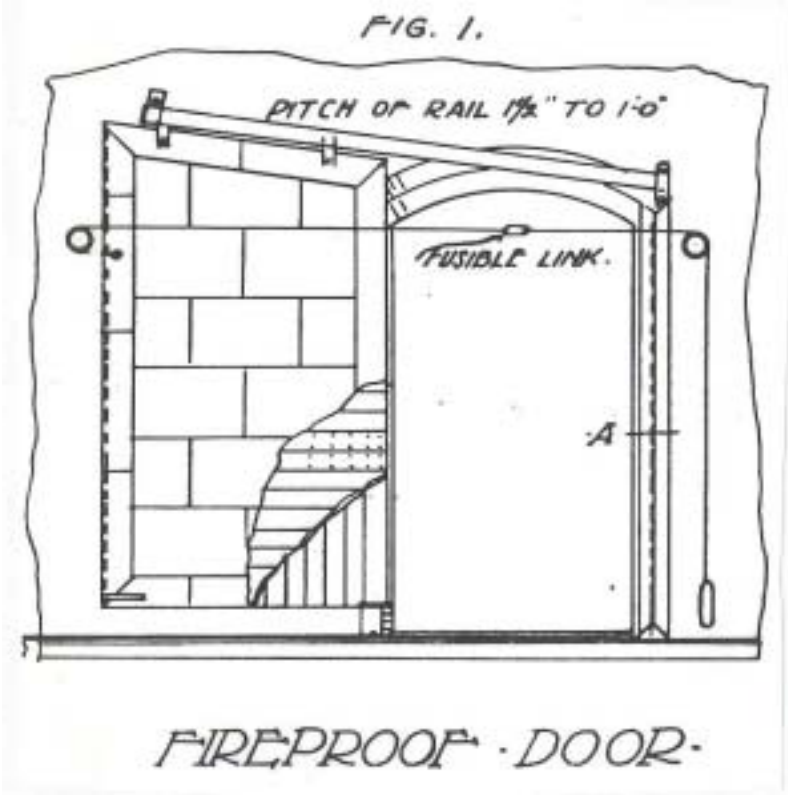

Figure 115. Design of fireproof door as included in original 1894 drawings. Pulley system was never installed [1894].

Figure 116. View south from Room 201, through doorway D- 22 into Room 203, and beyond to doorway D- 28 in fire wall [1993].

Figure 117.

Room 106: window with finished treatment (W 1- 4) [1993].

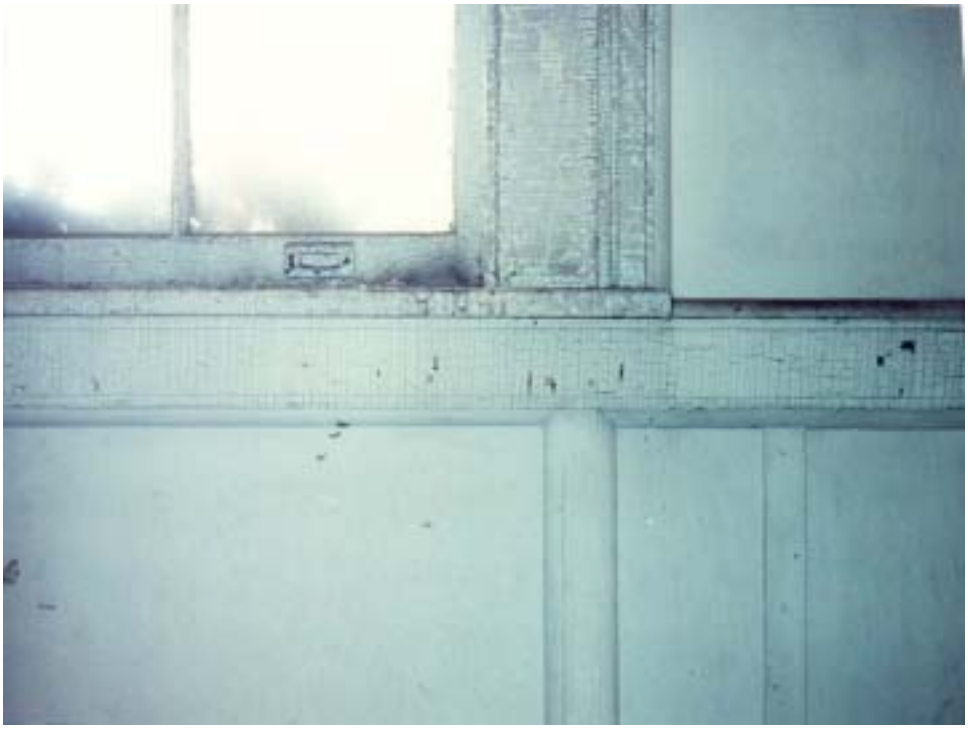

Figure 118. Detail of W 1- 4 [1993].

Figure 119.

Room 201, west wall: window with unfinished treatment (W 2- 1) [1993].

Figure 120. Detail of W 2- 1, showing treatment of header [1993].

Figure 121. Room 201, north gable end: window with brick header arch (W 2- 23) [1993].

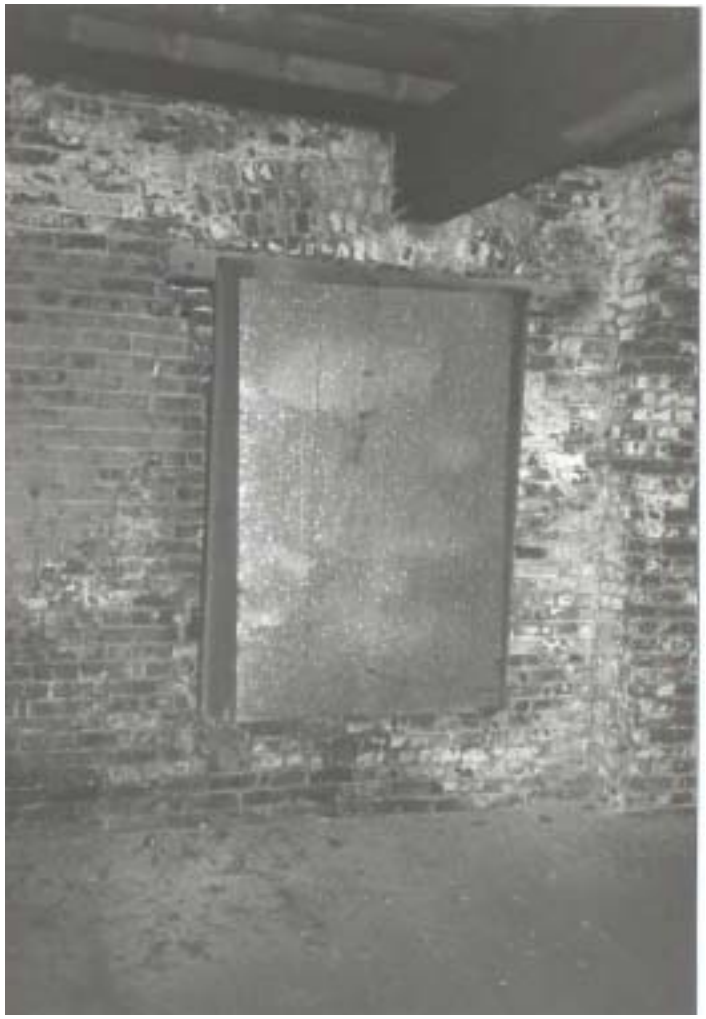

Figure 122. Room 210, south gable end: window with brick header arch (W 2- 13) [1993].

Figure 123. Detail of gable- end window construction (W 2- 13) [1993].

Figure 124.

Room 111, east wall: detail of window at stairway landing (W 1- 15) [1993].

STRUCTURAL ELEMENTS

Wall Framing

The only load- bearing walls in Building 32 are the brick perimeter walls and the brick fire wall. All floor- and roof- framing elements are set into the brick perimeter and fire walls, a system that provides lateral support and a means of tying the exterior walls together. The beams are also supported in the interior of the building by the previously described system of piers and posts (*see fig. 125)*.

The lower brick walls appear to be unchanged from their construction in 1898, based on the original design drawings and physical evidence. The upper portions of the brick walls date to the 1910 creation of the second story. These portions appear to have been constructed by simply heightening the existing walls in the same manner of construction *(see figs. 126- 127)*. The plates on top of the west and east walls today display the same design shown in the original drawings. They thus were either saved and reused in 1910, or else reconstructed at that time to match the original design. The plates consist of two planks–a 2 by 6 plank on top of a 2 by 8 plank. The planks are secured to the tops of the walls by three- quarter- inch iron anchor rods 30 inches long that are embedded in the masonry. The roof framing rests on these plates.

Floor Framing

The floor framing of the building largely defines the interior spaces. Each story contains 16 vertical supports—eight in the north side of the building, and eight in the south side. They are arranged in two parallel lines running north/south near the middle of each story for the entire length of the building. However, it is more useful to consider the supports as pairs of supports. When viewed as pairs, the vertical supports divide each story into bays of approximately equal size–five bays to the north of the fire wall, and five to the south.

First- Story Floor

In the basement, the vertical supports are square brick piers that measure 17 inches square *(see fig. 128)*. Each pier has a 4- inch stone band inserted in its middle to prevent spreading, and a 4- inch stone cap at the top. Resting on top of the piers are timber beams that support the joists of the first floor *(see fig. 129)*. These beams measure 8 by 10 inches and run north/south. In both the north and south parts of the basement, a single beam spans the entire line of piers nearest the east wall, and a single beam spans the line nearest the west wall. The outer ends of the beams are set into the north and south foundation walls. The inner ends are set into the fire wall, where they butt ends with their counterparts on the opposite part of the basement. This creates the illusion that the beams run continuously through the fire wall.

The beams support the first- floor joists, which run east/west from the foundation walls to the beams, and between the beams. The joists are vertically sawn; they measure 3 by 12 inches, and are located 12 inches on center. The ends of the joists are fire- cut and set 6 inches into the foundation walls *(see fig. 130)*. The area between the joists features three north/south rows of cross- bridging that brace the joists at mid- spans. The cross- bridging consists of two pieces, measuring 1 ¼ by 3 inches, forming a cross toe- nailed to the inner faces of the joists.

Second- Story Floor

The second- floor framing is similar to that of the first floor, except that the vertical supports here are square wooden posts, rather than brick piers. The posts are positioned directly above the piers in the basement, and extend down through the floor to rest directly on the floor- framing beams below. The posts measure 6 inches square. They are located approximately 9 feet on center, with the two bays flanking the fire wall measuring 14 feet wide.

The posts in Rooms 101, 102, 103, 110, and 111–the original open storage areas–are reinforced by up- braces *(see fig. 131)*. Each post features one up- brace on each of its north and south sides. The tops of the up- braces are notched into a wood filler block that stretches between opposing braces and is bolted in three places to the underside of the beam *(see fig. 132)*. These blocks restrain the lateral thrust of the braces. The bottom ends of the braces butt against the posts, resting on boards attached to the north and south sides of the post to support them *(see fig. 133)*. These boards measure on 1 ¾ inches thick by 5 3/8 inches wide. A trapezoidal wood gusset adds strength to the V- juncture joint of post and brace. Both the board supports and the gussets restrain the downward loads of the braces. This manner of bracing allowed for extraordinary strength and support. Since the space was designed for storage, it was of primary concern that the building be able to withstand heavy weight loads.

The posts in other rooms do not feature such extra bracing, since they were initially office spaces. These areas are currently Rooms 106, 107, 108, and 109. To effect a more finished appearance, the posts were cased and given a decorative molded cap and base *(see fig. 134)*.

As with the first- floor framing, timber beams measuring 8 by 10 inches run north/south on top of the posts. Although the beams appear to be continuous, they actually consist of three separate lengths in each half of the building. The outer ends of the beams are set into the north and south brick walls; the inner ends are set into the fire wall in the middle of the building. The beams are cased in all first- story rooms.

The beams support the second- floor joists, which run east/west from the brick walls to the beams, and between the beams. The outer ends of the joists are let into the masonry of the west and east walls approximately 6 inches. The joists measure 3 by 10 inches and are placed 12 inches on center. As with the first- floor framing, the area between the joists features three north/south rows of cross- bridging that brace the joists at mid- spans. The cross- bridging consists of two pieces, measuring 1 ¼ by 3 inches, forming a cross toe- nailed to the inner faces of the joists.

The framing of the second floor is obscured by dropped ceilings.

Attic Floor

The attic- floor framing is very similar to that of the second floor, although it dates to 1910, when the roof was jacked up and a second story added to the building. The vertical supports are 6- inch- square wooden posts arranged in two parallel rows running north/south through the second story. The posts are located approximately 9 feet on center; they extend down through the floor to rest directly on the floor- framing beams below. The top and bottom of each post is square. All four edges have a three- quarter- inch chamfer with a lamb's tongue detail at each end, 7 ¼ inches from the top and 12 inches from the bottom. The effect gives each post the appearance of a squared cap and base with a slimmer shaft *(see fig. 135)*.

Timber beams measuring 8 by 13 inches run north/south and rest on top of the posts. The ends of the beams are set into the brickwork of the north and south end walls, and into the fire wall in the middle of the building. The beams are cased with horizontal beaded boards *(see fig. 135)*. They support the attic- floor joists, which run east/west. The ends of the joists are let into the masonry of the east and west walls to a depth of approximately 6 inches. The joists measure 3 by 10 inches and are located 12 inches on center. The area between the joists features three north/south rows of cross- bridging bracing the joist spans *(see figs. 136- 137)*. Cross- bridging consists of two pieces, measuring 1 ¾ inches by 3 inches, that form an "X" toe- nailed to the inner faces of the joists.

Roof Framing

Although a second story was added to Building 32 in 1910, it is believed that the current roof framing is original. It appears that the roof and its framing were simply jacked up in place to allow a second story to be built between the existing first story and the roof.

The roof framing is a simple rafter system, notched into the plate and reinforced with struts, posts, purlins, and collar- tie beams *(see fig. 125)*.

In the attic, the brick west and east side walls extend 37 ½ inches above the attic flooring *(see fig. 138)*. Rafters measuring 2 by 8 inches are notched into the wood plate at the top of these walls; their ends overhang the exterior of the walls by 12 inches. Rafters are spaced every 16 inches on center. There are 47 rafters in the north part of the attic and 42 rafters in the south part. The tops of the rafters are toe- nailed to a 2- by- 10- inch ridge board at the peak of the roof.

One line of purlins halfway up the east and west roof slopes supports the middle of the rafters. The rafters are notched over the purlins *(see fig. 139)*, which measure 6 by 8 inches. The ends of the lines of purlins are let into the masonry of the fire wall and the gable ends.

The purlins are supported by 16 posts positioned directly over the 16 posts in the second story: four pairs of posts in each side of the building. The posts are spaced approximately 9 feet on center; they measure 6 inches square and are angled slightly outward *(see fig. 140)*. The bottom ends of the posts pierce the floor to rest directly on the beams below; their top ends are tenoned into the purlins. The posts are reinforced with diagonal up- braces running between the underside of the purlins and the north and south faces of the posts *(see fig. 141)*. Each post has two braces. Braces are mortised and tenoned into the post and purlins, and are secured by toe- nailing.

A 2- by- 10- inch collar tie is used at each pair of posts. The ties are secured by being spiked to the rafters and bolted to the posts. A 2- by- 8- inch collar tie beam is also spiked to every other rafter. The collar ties help to keep the rafters from spreading apart. There are 21 collar ties in the north part of the attic, and 18 in the south part.

Struts measuring 2 by 6 inches prevent the top of the brick wall from kicking out (due to roof forces) by tying the walls to the floor *(see fig. 142)*. Struts are located approximately every 8 feet. Their top ends are spiked to the rafters; their bottom ends pierce the floor and are spiked to the south faces of the joists below.

The roof sheathing is original material apparently reused in 1910. It consists of tongue- and-groove pine boards laid horizontally along the east and west slopes of the roof rafters from peak to eave. The boards are vertically sawn and smooth- planed. Those on the west slope generally measure 6 inches wide. Those on the east slope display two different dimensions: 5 inches wide on the south part of the building, and 5 ½ inches wide on the north part. The sheathing is butt- jointed and attached to the rafters with cut nails. The sheathing assists in maintaining the rigidity of the roof structure.

The timbers bear milling marks that indicate they were vertically sawn. Hardware includes iron anchor rods three- quarters of an inch in diameter and 30 inches long; steel anchor plates measuring seven- eighths of an inch thick and either 2 by 6 inches or 2 by 8 inches in size; 3 ½- inch steel washers to secure anchor rods; and common steel wire nails, cut nails, and common steel framing spikes.

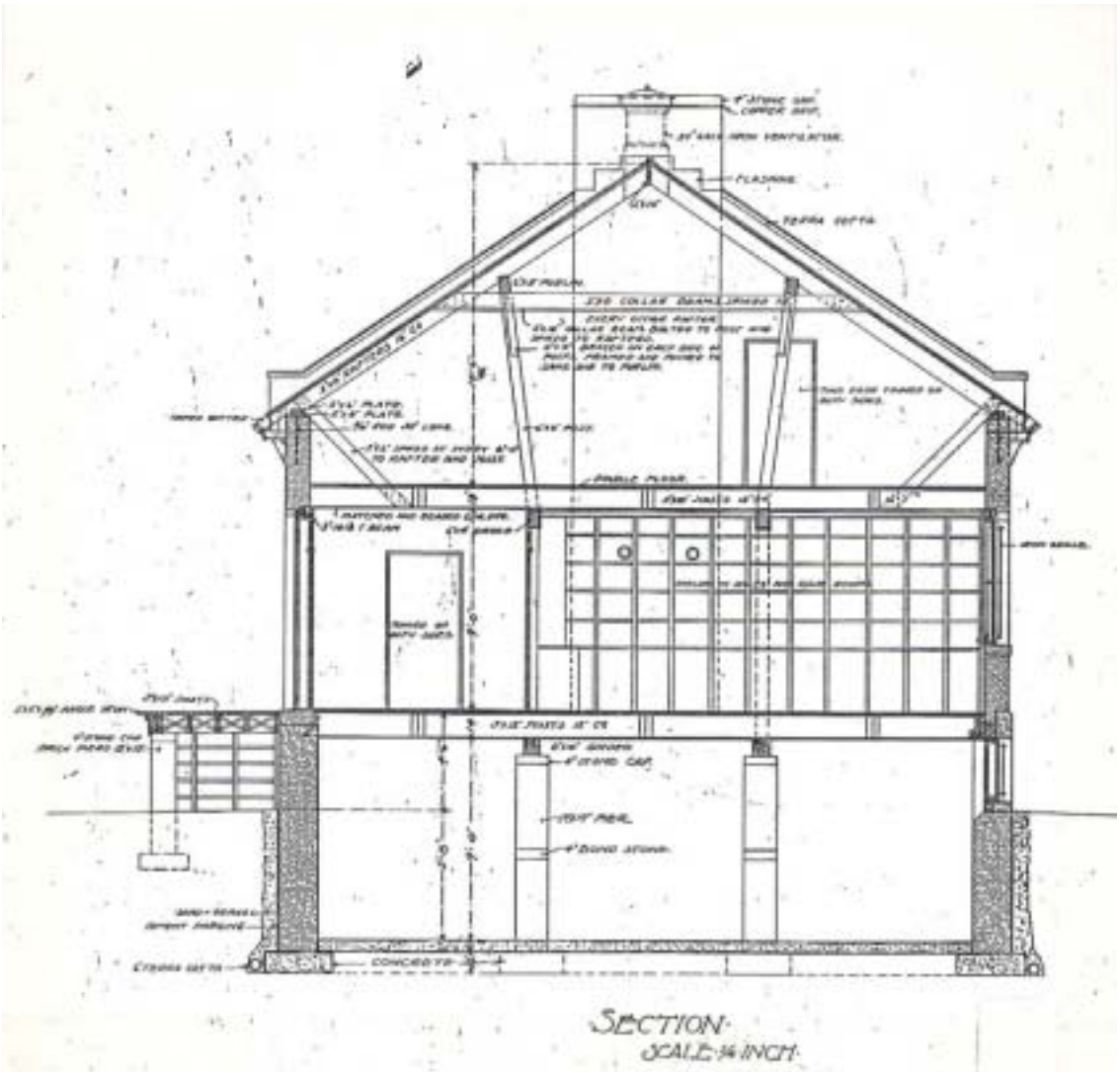

Figure 125. Section looking north, as illustrated on revised drawings, 1897. Framing shown is extant today, along with a later second story.

Figure 126. North part of attic, looking southeast toward fire wall; shows doorway D- 31 and chimney [1993].

Figure 127. North part of attic, looking southwest toward fire wall; shows chimney [1993].

Figure 128.

South part of basement, view of brick pier on east side of building, with south wall in background [1993].

Figure 129. South part of basement, looking northwest: brick piers, beams, and floor joists [1993].

Figure 130. South part of basement: first- floor joists fire- cut and set into east foundation wall [1993].

Figure 131.

Room 110, looking northeast at posts and bracing supporting beam; hoist housing seen in right background [1993].

Figure 132. Room 110, looking east at detail of second- floor framing (brace support on underside of beam) [1993].

Figure 133. Room 110, looking south at framing of second floor, showing posts and bracing supporting beam [1993].

Figure 134. Room 106, looking northeast at second-floor framing (cased post and beam) [1993].

Figure 135. Room 210, looking northwest at attic-floor framing (cased post and beam) [1993].

Figure 136. Room 201, west wall: attic- floor framing (joists and cross-bridging) and diagonally laid floorboards [1993].

Figure 137. Room 210, looking west at attic- floor framing (joists, cross- bridging, and beam) [1993].

Figure 138. Room 302 (south part of attic), looking south along west wall at roof framing [1993].

Figure 139. Room 302 (south part of attic), looking south along west wall at roof framing [1993].

Figure 140. Room 301 (north part of attic), southwest corner: roof framing (angled post and braces) [1993].

Figure 141. Room 301 (north part of attic), west side: roof framing (posts and braces supporting purlin) [1993].

Figure 142. Room 302 (south part of attic), looking south along west wall at roof framing (wall plate, struts, and rafters) [1993].

UTILITY SYSTEMS

Heating System

Building 32 does not now have a working heating system. However, components of former heating systems remain in place. An asbestos- wrapped pipe is suspended from the first- floor framing in the basement. The pipe begins in the southeast corner, runs along the south and west walls of the south room, passes through the fire wall, and continues along the west and north walls of the north room. The origin of the pipe is unknown.

Also extant in the basement is an oil- fired boiler–a model 1946, no. 24 Mills water tube boiler manufactured by the H.B. Smith Co., Inc. The 1988 condition assessment listed this boiler and said that it had a 14- inch galvanized steel flue. Also cited in the assessment was a 1,000- gallon steel storage tank for fuel oil.

Freestanding radiators from a former single- pipe steam- heating system remain in the first and second stories. There are nine radiators in the first story *(fig. 143)*; these are ornate cast- iron radiators probably dating to ca. 1925, when a new heater was purchased for the building. There are nine modern "ARCO" coil radiators in the second story.

Finally, two of the three chimneys in the original design remain in place *(fig. 144)*. These served an original heating system consisting of stoves. The section and first- floor plan included in the 1894 and 1897 design drawings show stovepipe holes leading from the chimney into first- story rooms. When the second story was added in 1910, the chimneys were retained and heightened to extend through the new level *(fig. 145)*. This suggests that stoves were still being used to heat the building at that time.

Ventilation System

Two original roof ventilators are positioned over the hoist shafts. Each would have created an updraft that would have pulled fresh air in through open windows, and which would have drawn stale air up the shafts and out through the ventilators.

Plumbing System

The water system in Building 32 is now disconnected, so the one surviving bathroom (Room 104) is not working. The water supply formerly entered the building below grade on the west side of the north foundation wall. Sewage was formerly piped out below grade through the east wall of the south part of the basement. The septic system is connected to the NPS sewage treatment plant.

Electrical System

The electrical service is also now disconnected. It formerly entered the building below grade along the east wall at the stairway serving the north part of the building. Wires were run in armored cable. Electrical outlets and switches include duplex receptacles and toggle switches. Light fixtures include incandescent and fluorescent lights.

Figure 143. Room 110, west wall: cast- iron radiator under window W 1- 9 [1993].

Figure 144. Room 110, south wall: projecting chimney breast with furring strips for former plywood sheathing [1993].

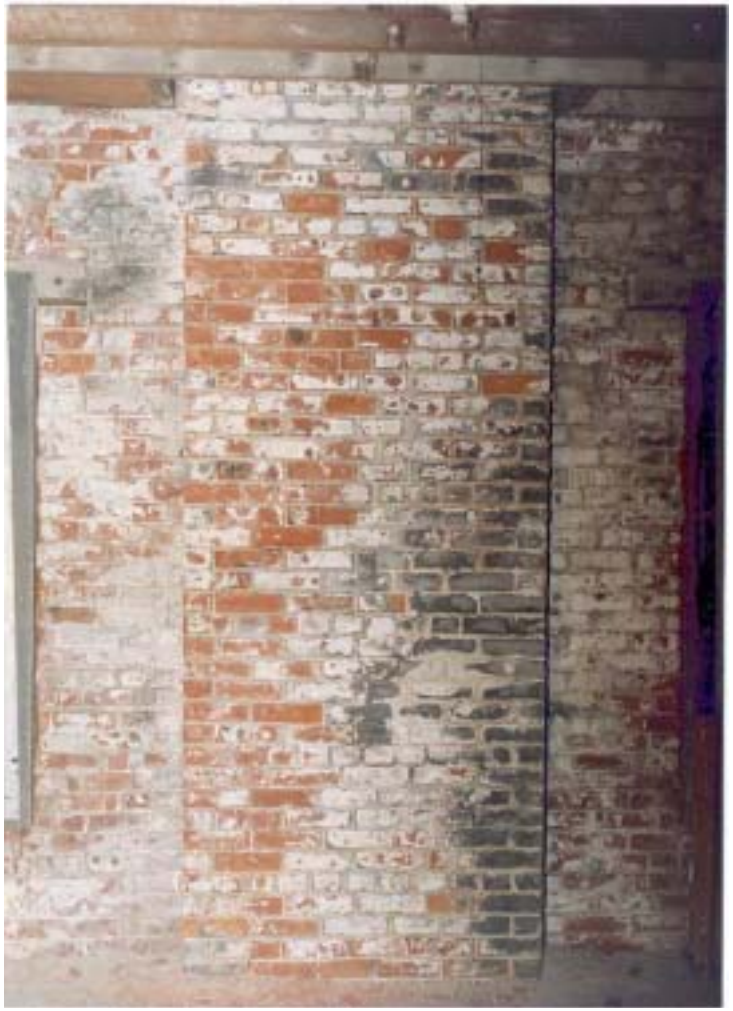

Figure 145. Room 210, south wall: projecting chimney breast [1993]

V. CHARACTER- DEFINING FEATURES AND RECOMMENDATIONS

INTRODUCTION

The philosophical and practical foundation for the following discussion on character-defining features (CDFs) is based on several documents. These are:

The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Washington, D.C.: U.S. Department of the Interior, National Park Service, Preservation Assistance Division, rev. 1990).

The Secretary of the Interior's Standards for the Treatment of Historic Properties (Washington, D.C.: U.S. Department of the Interior, National Park Service, Preservation Assistance Division, rev. 1992).

Lee H. Nelson, Preservation Briefs 17 - Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character (Washington, D.C.: U.S. Department of the Interior, National Park Service, Preservation Assistance Division, 1988).

H. Ward Jandl, *Preservation Briefs 18 - Rehabilitating Interiors in Historic Buildings: Identifying and Preserving Character- defining Elements* (Washington, D.C.: U.S. Department of the Interior, National Park Service, Preservation Assistance Division, 1988).

Familiarity with these documents should be a prerequisite for all those participating in any decision- making concerning the rehabilitation and preservation of Building 32.[118]

* * *

The proposed treatment for Building 32 is rehabilitation. According to the *Secretary of the Interior's Standards for the Treatment of Historic Properties,* rehabilitation is defined as

> ...the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.[119]

[118] This discussion of CDFs was drawn largely from a similar discussion by Carole L. Perrault, included in the "Building 19 Historic Structure Report, Springfield Armory National Historic Site" (National Park Service, Northeast Cultural Resources Center, 1991), pp. 213- 216.

[119] *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (Washington, D.C.: U.S. Department of the Interior, National Park Service, Preservation Assistance Division, rev. 1992).

Standards 1, 3, and 5 specifically address the issue of character- defining features. The standards are as follows:

> #1 A property shall be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
>
> #3 The historic character of a historic structure shall be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property shall be avoided.
>
> #5 Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.[120]

Therefore, an assessment and definition of the significant CDFs during the project planning stages is critical for the rehabilitation of any structure under the Secretary of the Interior's standards and guidelines. Each CDF becomes a dynamic entity in any future planning or actuated work on the structure. A primary goal of this HSR has been the definition of the structure's CDFs.

A CDF of a historic structure can be described as an element or treatment that imparts a certain quality or distinction to the structure, and without which the architectural or historical integrity of that structure would be diminished or lost. According to *Preservation Briefs 17*, a CDF may relate to the structure's shape, materials, craftsmanship, decorative details, interior spaces, or features, as well as to various aspects of its site and environment. CDFs may be solely of an architectural in nature, or may represent a historical association with a particular event, person, or complex/district. A CDF may date to initial construction or to a later alteration.

One of the primary reasons for identifying the CDFs of a building is to protect these features from alteration or demolition. The CDFs determined for Building 32, and listed subsequently, should be carefully considered during the planning and construction phases of the project.

[120] Secretary of the Interior's Standards.

EXTERIOR ELEMENTS

Style

CDFs

- ∉ Functional, plain, simplified, military interpretation of the Colonial Revival
- ∉ Similarity to other original buff brick buildings of the fort – part of an ensemble of buildings

Recommendation

- ∉ Preserve the elements (original and unoriginal) that contribute to the simple military functionalism of the building
- ∉ Preserve the elements (original and unoriginal) that contribute to the building belonging to the initial group of structures

Shape/Scale

CDFs

- ∉ The long, narrow length and gable- end design
- ∉ The flat, smooth, two- dimensional quality of the walls' exterior surface
- ∉ The lack of significant projections from the wall elevations, except for the current concrete platform on the west and former loading platform on the east
- ∉ The simple lines of the corbeled brick belt course and cornice, which accentuate the length of the building
- ∉ The wood cornice returns ornamenting the gable ends

Recommendations

- ∉ Retain the essentially two- dimensional character of the wall elevations
- ∉ Repair and rehabilitate the concrete platform on the west elevation
- ∉ Rebuild the concrete loading platform along the east elevation for handicap access to the building

Doorways and Windows

CDFs

- ∉ Organization/placement of doorways and windows to maximize utility of interior spaces
- ∉ Pattern of openings – slightly irregular, following functional needs rather than purely aesthetic considerations
- ∉ Exterior wall opening profiles
- ∉ Segmental arches above doorways and windows
- ∉ Original limestone sills at doorways and windows
- ∉ Double- hung, six- over- six window sashes in plain wood frames
- ∉ Original iron security grilles on windows
- ∉ Original double doorways at loading areas

Recommendations

- ∉ Maintain the existing configuration of openings, including any brick infill
- ∉ Repair and repoint the masonry at doorway and window openings where necessary
- ∉ Repair in kind all doorway and window frames and window sashes as necessary; replace in kind where missing, with all replacements matching original designs
- ∉ Clean all limestone sills; remove rust stains, and make repairs where necessary
- ∉ Rehabilitate iron security grilles on all first- story and gable- end windows

Roof and Roof Features

CDFs

- ∉ Brick fire wall with terra- cotta cap dividing the roof approximately in half
- ∉ Two modern ventilators situated approximately in the middle of the north and south halves of the roof (over the two hoist shafts), to promote air circulation within the building
- ∉ Two chimneys with corbeled caps, one on the north gable end and one at the mid- point of the roof

- Built- in gutter system
- Expanse of uniformly colored slate roof prior to removal in 1973

Recommendations

- Repair and reflash parapet wall; replace terra- cotta cap (in kind) if necessary
- Rehabilitate and reflash ventilators
- Repoint and reflash chimneys
- Rebuild missing chimney on south gable end
- Recreate the historic water- shedding system, installing gutter and downspouts in known historic locations
- Replace variegated gray asphalt shingles with shingles of a single color approximating the original color of the slate roof

Materials

CDFs

- Buff brick walls and cornice
- Trap rock foundation
- Smooth- planed limestone doorway and window sills
- Rough- face limestone basement window lintels
- Wooden details (doorway and window frames, doors, window sashes)
- Iron (security grilles)

Recommendations

- Historic materials, identified as CDFs, should not be replaced; repair in kind
- Monitor, evaluate, and repair brick deterioration caused by moisture penetration, weathering, and wind loads
- Monitor, evaluate, and repair mortar- joint deterioration caused by moisture penetration and weathering

∉ Monitor, evaluate, and replace or repair deteriorated or damaged limestone

∉ Monitor, evaluate, and replace or repair deteriorated and damaged trap rock

∉ Replace broken, mechanically damaged, or spalled brick in kind

∉ Clean, scrape, and apply rust- protective coating to iron security grilles

INTERIOR ELEMENTS

Plan

CDFs

∉ Fire wall dividing plan into two nearly equal halves, north and south, at all levels

∉ Bay divisions – space defined by exposed structural system

∉ Limited egress

Recommendations

∉ Retain the two major sections of the building, defined by the original masonry fire wall

∉ Preserve the rhythm of the structural bay system when repartitioning the space for adaptive use

Exposed Structure

CDFs

∉ Exposed structural system

∉ Heavy bracing of second- floor framing posts

∉ Common- rafter roof framing system

∉ Exposed load- bearing brick walls, with rectangular window openings

Recommendations

- ∉ Maintain exposed structural system as a prominent component of the interior; if rehabilitation requires suspended ceilings, furred walls or raised floors, these features should be installed with minimal impact on the existing surfaces
- ∉ Retain all existing load- bearing masonry walls and historically identified features
- ∉ Retain common- rafter roof framing system
- ∉ Survey, evaluate, and repair any structural weaknesses

Interior Walls

CDFs

- ∉ Matched, beaded- board sheathing – used on partition walls, stairway housings, and ceilings
- ∉ Window openings
- ∉ Finished and unfinished treatments of window openings
- ∉ Painted finish of exposed brick

Recommendations

- ∉ Replace in kind the matched, beaded- board sheathing when adapting the interior
- ∉ Use matched, beaded- board sheathing replicating the original for new partition walls, ceilings, and stairway housings as often as possible
- ∉ Survey and evaluate the condition of window openings and treatments
- ∉ Rehabilitate structural masonry, wood and metal of window openings
- ∉ Preserve extant window sills and trim, and replace in kind where missing
- ∉ Insure that the openings are maintained and visible on the interior; i.e. they should not be obscured with suspended ceilings or by other modern features
- ∉ Monitor, evaluate, and repair brick deterioration caused by moisture penetration (backing brick) and window loads
- ∉ Replace broken and spalled backing brick in kind
- ∉ Repaint exposed brick walls as determined by paint analysis after rehabilitating

Circulation

CDFs

- ∉ Manual rope hoists
- ∉ Staircases in Bays 3 and 7 (the original north and south staircases), and stairway in Bay 6 (1910)

Recommendations

- ∉ Use location of hoists for modern elevators if necessary
- ∉ Retain the hoist mechanism of the south hoist in the attic as an example of the original system
- ∉ Retain location of original staircases
- ∉ Retain the simple utilitarian lines and the use of wood in new stairway construction

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VII. APPENDIX

REHABILITATION OF BUILDING 32

The rehabilitation of Building 32 took place from September 1994 to June 1996. The work was done primarily in- house; it was supervised by Facilities Manager Lou Hansen, with park architect David Crotty acting as Project Manager. The project cost approximately $449,600. Building 32 now houses the park's protection facilities (offices, a booking area, and a jail), offices for the park's natural resources specialists, and a storage area for a portion of the park's museum collections. New electrical and plumbing systems were installed, as well as a new HVAC system whose ductwork was run in the cellar and attic, to avoid impacting the appearance of the first and second stories.

Many of the early architectural elements were retained in the rehabilitation and are still visible in situ. These elements include the following:

- the distinctive exterior doors, and the few early interior doors that survived;
- the window trim and sashes, which were rehabilitated and fitted with interior storm windows;
- areas of exposed brick walls;
- the heavy cross- bracing at ceiling level;
- the south hoist shaft in the cellar, and
- the south hoist itself, preserved in the attic.

Other early elements were retained but are not visible. For example, the south hoist shaft in the first and second stories was boxed in as a possible future location for an elevator. The early finish floor was stripped of later coverings and given an underlayment of plywood, over which vinyl tile and carpeting were laid on the first and second floors, respectively.

Plasterboard measuring five- eighths of an inch thick was installed on most walls and ceilings. The most notable features that were removed during the rehabilitation were the three early stairways and their matchboard sheathing. These stairways were the two staircases located on the rear, east wall, and the one in the center of the building.