

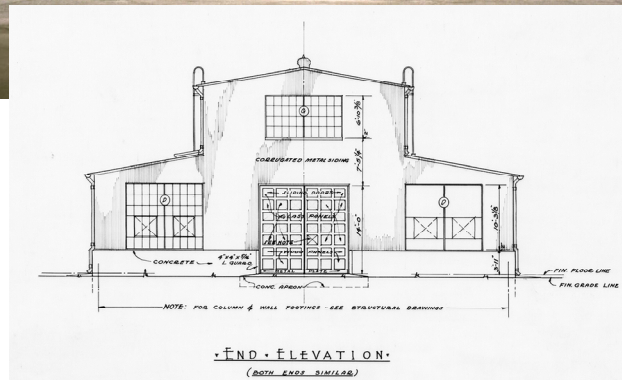
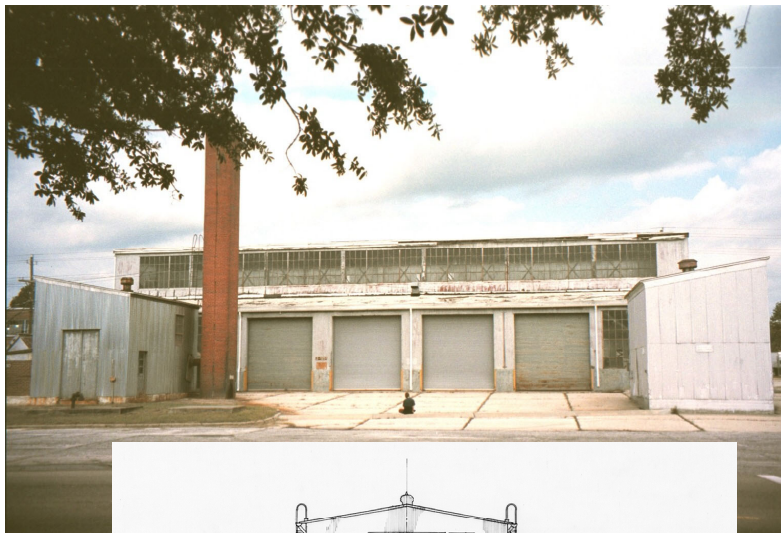
US Army Corps
of Engineers®
Engineer Research and
Development Center

Historic American Buildings Survey

Ordnance/Motor Repair Shop Fort Bragg, North Carolina

Adam Smith, Martin Stupich, Christella Lai,
and Elizabeth Campbell

August 2003



Historic American Buildings Survey Ordnance/Motor Repair Shop Fort Bragg, North Carolina

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Final Report

Approved for public release; distribution is unlimited.

Prepared for Public Works Business Center
Fort Bragg, North Carolina 28307-5000



ABSTRACT: The Ordnance/Motor Repair Shop area at Fort Bragg, NC, is a contributing part of the Old Post historic district, which is eligible for the National Register of Historic Places. This paper presents Historic American Buildings Survey (HABS) documentation of the Ordnance/Motor Repair Shop Area (Buildings 2-1251, 2-1150, and 2-1152). The original archival records, designated HABS Nos. NC-398, NC-399, and NC-400, are on file at the Library of Congress.

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Preface

This study was conducted for the U.S. Army Public Works Business Center (PWBC), Fort Bragg, NC, under Project FF00025-2, “HABS II Documentation of Historic Structures on Ft. Bragg.” Funding was provided by Military Interdepartmental Purchase Request 21/2020/220/A/MIPR2LCER6K201/PO dated 26 August 2002. The PWBC Technical Monitor was Cris Armstrong, Preservation Specialist.

The work was performed by the Land and Heritage Conservation Branch (CN-C) of the Installations Division (CN), Construction Engineering Research Laboratory (CERL). The CERL Principal Investigator was Adam Smith. Dr. Lucy A. Whalley is Branch Chief (CN-C), and Dr. John Bandy is Division Chief (CN). The Director of CERL is Dr. Alan W. Moore.

CERL is an element of the U.S. Army Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers. The Director of ERDC is Dr. James R. Houston.

HISTORIC AMERICAN BUILDINGS SURVEY

Fort Bragg, Ordnance/Motor Repair Shop

HABS Nos. NC-398, NC-399, and NC-400

- Location: Northwest corner of Macomb Street & Sturgis Street, Fort Bragg,
Cumberland County, North Carolina
- USGS Manchester, North Carolina, United States Quadrangle
- Universal Transverse Mercator Coordinates: Zone 17
- Northing 3891371
- Easting 683294
- Present Owner: Department of Defense
- Department of the Army
- Fort Bragg
- Original Use: Ordnance/Motor Repair Shop, Boiler House, and Oil Storage Building
- Present Use: Vacant
- Significance: The Ordnance/Motor Repair Shop area at Fort Bragg is a contributing part of an eligible Fort Bragg historic district for the National Register of Historic Places. The Ordnance/Motor Repair Shop (Fort Bragg, Building No. 2-1251) and Boiler House (Fort Bragg, Building No. 2-1150) were built July 29, 1941, and the Oil Storage Building (Fort Bragg, Building No. 2-1152) was built March 5, 1948; the buildings served the Quartermaster Corps at Fort Bragg. The Ordnance/Motor Repair Shop area was at the eastern edge of the Quartermaster Corps/Guard Compound as identified in the Fort Bragg Military Reservation Eligibility Report, May 2001.

FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of Erection: 1941 and 1948
2. Architect: Office of the Quartermaster General
3. Original and Subsequent Owners: Department of the Army, Fort Bragg
4. Builder, contractor, suppliers: T.A. Loving & Company, Goldsboro, North Carolina
5. Original plans and construction: The actual construction plans for the three buildings could not be located during the research investigation. The plans for the mass-produced ordnance repair shop and boiler house were found. In addition, one subsequent maintenance and renovation plan for the Ordnance/Motor Repair Shop was located. Neither mass-produced oil storage building plans, nor maintenance and renovation plans for the Oil Storage Building were found.
6. Alterations and additions: The three buildings have had little alteration to their fabric since construction. The Ordnance/Motor Repair Shop, Building 2-1252 (originally numbered 583), had its gutters and downspouts replaced at an undetermined time. The Boiler House, Building 2-1150 (originally numbered 583-A) had corrugated galvanized iron siding placed over its original corrugated galvanized iron siding, and a large brick chimney replaced the original galvanized metal chimney in 1955. The Boiler House also had its original boiler replaced at least once. The Oil Storage Building, Building 2-1152 (originally numbered T-583-B) windows were replaced by plywood at some point.

B. Historical Context: Ordnance/Motor Repair Shop Area:

1. Introduction:¹

The Fort Bragg Old Post Historic District is the administrative center of Fort Bragg, located about ten miles northwest of Fayetteville in the Sandhills of eastern North Carolina. Fort Bragg contains approximately 140,000 acres located principally in Cumberland and Hoke counties. The Old Post Historic District, containing approximately 556 acres in Cumberland County, lies at the eastern edge of the base where level terrain was suitable for buildings and parade grounds. Fort Bragg was initially established as a National Army Camp in 1918 in response to World War I. When Camp Bragg was designated a permanent installation in 1922 the Old Post Historic District developed as a planned community and was built from 1927 to 1939. It accommodated the field artillery training program between the two world wars. The

¹ Sections 1-2b taken and adapted from M. Ruth Little, *Historic Architectural Resources Eligibility Report: Fort Bragg Military Reservation* (Raleigh, NC: Longleaf Historic Resources prepared for Public Works Business Center, Fort Bragg, NC, May 2001).

FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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historic district contains administrative, family housing, community, and recreational facilities interspersed with open, green spaces giving it the appearance of a campus. The 1918 and 1926 Beaux Arts landscape plan is composed of Spanish Eclectic and Georgian Revival-style buildings unified by the use of stucco and brick materials. Of 301 contributing resources, 298 are permanent buildings. Two sites are planned recreational landscapes: the Ryder golf course and Polo Field Nos. 1 and 2, and a statue commemorating the airborne trooper. Seventy-nine resources do not contribute, as they are temporary World War II buildings or post-1951 construction, or have lost architectural integrity.

The district is a cohesive, intact, representative example of Army planning and permanent construction during the period between World War I and World War II. Monumental architecture, tree-lined streets, and plaza-like parade ground and polo field are set in a Beaux Arts plan. The overall layout of the district is rectangular and oriented along the east-west axis of Randolph Street, which extends from Bragg Boulevard (the historic connector to Fayetteville) to the traffic circle where the airborne trooper statue "Iron Mike" stands. The traffic circle provides intermediary focus while uniting Randolph, Armistead, Dyer, Adams, and Dragonway streets and forms the point of the stylized "chevron" design. The parade ground area, known as the "civic center," was designed in 1918 for the original World War I camp. The Main Post Chapel (1-1510) serves as a ceremonial anchor for the cross-axis of the parade. The officer's housing area, known as Normandy Heights, is arranged along geometric streets around the parade ground, with one and two-story Spanish Eclectic-style houses set in mature landscaping of oak, maple, and magnolia. A picturesque Spanish Eclectic-style Officers Club (1-4930) and golf course forms the southern boundary of the officers' area. The noncommissioned officers' (NCO) housing, known as Bastogne Gables, is a geometric grouping of approximately one hundred Spanish Eclectic bungalows arranged around a central park in the northeastern section of the district one block north of Macomb Street. Only three World War I period buildings remain: a gymnasium (2-1705) and two warehouses (8-3201 and 8-3502).

The administrative zone extends in a linear grid along Macomb Street. At its heart, at the junction of Armistead and Macomb streets, the Post Hospital (1-1326) and Post Headquarters (1-1333) face one another diagonally across the intersection. Five large three-story barracks (2-1105, 2-1120, 2-1127, 2-1133, and 2-1138) stand along the north side of Macomb Street, two barracks units along both sides of Armistead Street (2-1728 and 2-1731), and one barracks unit (1-1242) on the east side of Hamilton Street. Other significant buildings that make up the original permanent post are the Theater (1-1202), Guard House (2-1143), Finance and Quartermaster Corps Office (2-1148), Telephone Exchange (2-1114), Red Cross (1-1139), Commissary (2-1256), and Ordnance/Motor Repair Shop (2-1252) along Macomb Street, with a Heavy Gun Shop (2-1549) and warehouses on adjacent streets.

FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS Nos. NC-398, NC-399, and NC-400 (page 3)

2. Fort Bragg Historical Background:

a. Camp Bragg: 1918-1922:

In April 1917 the United States entered World War I, which had been devastating Europe since August 1914. Camp Bragg, the predecessor of Fort Bragg, was not one of the original sixteen temporary World War I cantonments established across the United States at this time, but was established during the second round of post openings, when specialized training posts were set up.² In late 1917, an advance scout for the U.S. Army began searching for land for a new field artillery range and camp, and one of the sites visited was the Fayetteville area. In June 1918 an investigative team was sent out from Washington with the following site parameters: a location in the northern area of the southeastern United States where the climate permitted year-round training, level topography, adequate water supply, access to railroad lines, and land that was not productive farm land. When they arrived in the Sandhills section of North Carolina's coastal plain, in Hoke County, they found what they were looking for and began to lease land for the camp. The new camp was named Camp Bragg in honor of General Braxton Bragg, of Warrenton, North Carolina, a captain in the Mexican War and subsequently a general in the Confederate Army.

The original master plan of Camp Bragg was prepared in 1918 by Lieutenant Colonel D.H. Sawner of the U.S. Army Quartermaster Corps, C.F. Pilat, camp planner, and J.E. Serrine, supervising engineer.³ Pilat and Serrine were apparently local Camp Bragg personnel, while Sawner was at the Quartermaster Corps Office in Washington. The 1918 plan of Camp Bragg by Sawner, Pilat, and Serrine was a dramatic Beaux-Arts plan, which Fort Bragg still retains today: Reilly Road serves as the north-south axis avenue and parallel blocks progress east from its boundary. Randolph Street, the long entrance avenue serving as a secondary east-west axis avenue, extends west from Bragg Boulevard. It terminates at a point where streets extend diagonally out and around the so-called "civic center," containing the parade ground. A temporary officers club, the theatre, officers' quarters, and the golf course then bordered the civic center. North of Randolph Street extends a grid of streets intersecting at right angles to form blocks of varying sizes.⁴ The 1919 Corps of Engineers U.S. Army Special Military Map, Field Artillery Training Center Sheet No. 1 (see Figure 1), exemplifies the guidelines for the construction of army cantonments that W.G. Kilner and A.J. MacElroy set out in their *Cantonment Manual* of 1918. The typical cantonment plan can be one of two types: a u-shaped promenade or a linear configuration set along an exterior axis.

² Cannan, Deborah et al., *National Historic Context for Department of Defense Installations, 1790-1940*. (Frederick, MD: R. Christopher Goodwin and Associates prepared for US Army Corps of Engineers, Baltimore District, August 1995), v. 1, 52. The following specific information about Fort Bragg is synthesized from these main sources: Roy Parker Jr., *Cumberland County, A Brief History* (Raleigh, NC: North Carolina Department of Cultural Resources, 1990), 114-117, 133-138; "Camp Bragg and Fayetteville NC," 1919, North Carolina Collection, University of North Carolina, Chapel Hill; "History of Fort Bragg 1918-1967," typescript, XVIII Airborne Corps Headquarters, Fort Bragg, NC, 1967 [hereinafter "History," 1967]; Office of Public Relations, Fort Bragg, typescript history, 1941, 9 pages, in collection of Main Post Library, Fort Bragg.

³ "Camp Bragg and Fayetteville, NC," 13.

⁴ Ibid.

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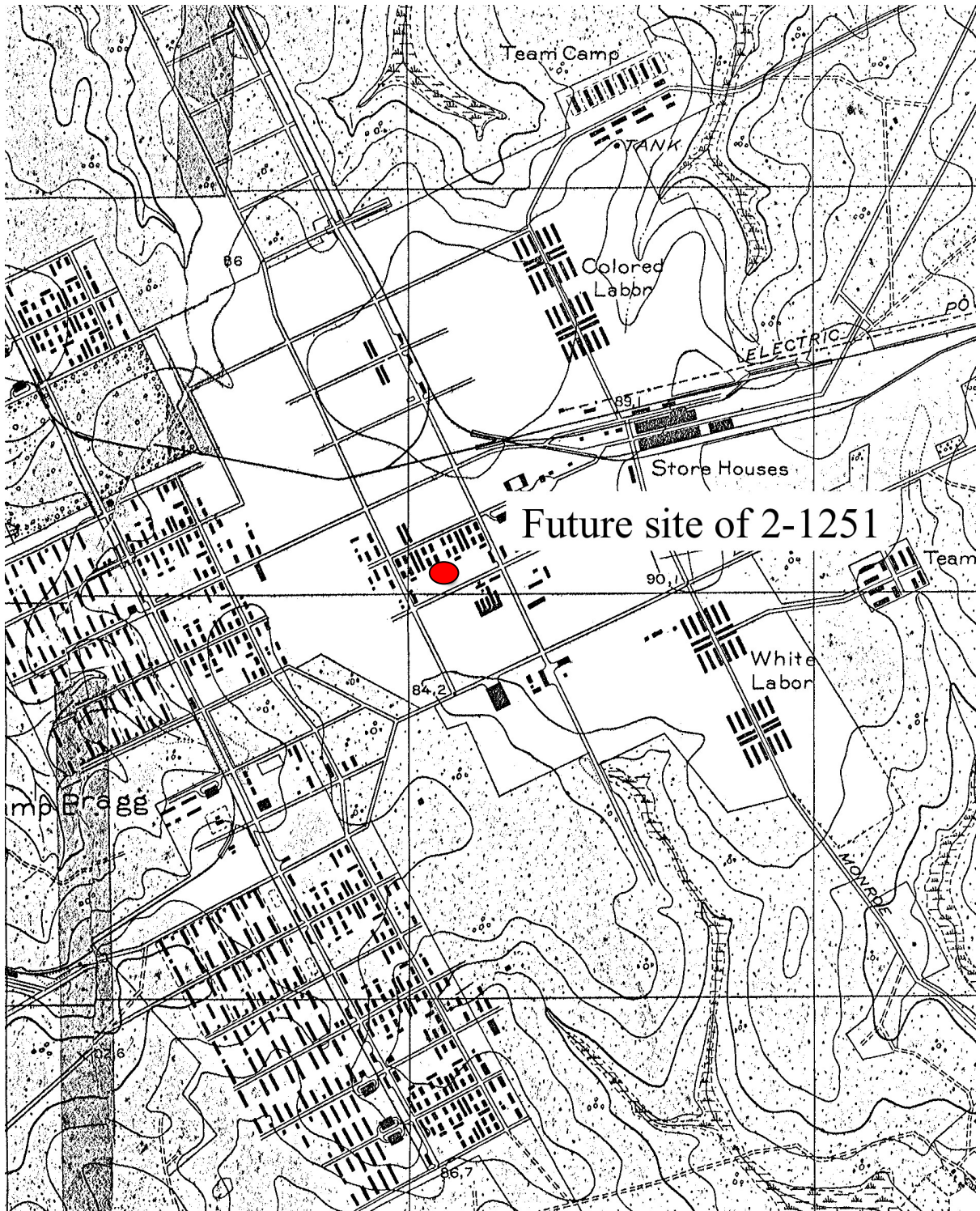


Figure 1: 1919 Topographic Map (courtesy Public Works Business Center [PWBC], Fort Bragg, NC).

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Camp Bragg was officially established on September 4, 1918. Leases were obtained on approximately 50,000 acres of land in Cumberland and Hoke Counties. On September 18, 1918, an army of ditch-diggers and carpenters began to build roads, water and waste systems, and hundreds of wooden buildings at a total cost of \$7 million.⁵ In spring 1919, the camp was ready to accommodate 16,000 soldiers. The war ended on November 11, 1918; therefore, the new quarters were not occupied during wartime. The Army intended the post to become a permanent artillery post, and stationed 1200 troops there in 1919 and 1920. In 1921, the government began buying the land, ultimately paying almost \$1 million for 50,711 acres.

b. Fort Bragg Between the Wars: 1922-1939:

The forty-some World War I cantonments in the United States were neglected during the initial post-war years, and installations fell into disrepair. In August 1921, even though they were in the midst of acquiring title to the Camp Bragg land, the War Department decided to close Camp Bragg, along with many other temporary World War I cantonments. Camp Commander Albert J. Bowley, convinced that it was too valuable a training post to abandon, lobbied influential politicians and brought Secretary of War John W. Weeks for an inspection visit. In September 1921, the abandonment orders were revoked, but Camp Bragg was still only a permanent camp, not a permanent post, and was still subject to closure. Construction in 1921-1922 of the first rail line to connect Fayetteville directly to the post improved accessibility. Because Camp Bragg was the only reservation in the United States large enough for long-range artillery weapons testing, the Field Artillery Board, an agency devoted to researching and testing new artillery weapons, was transferred to Camp Bragg from Fort Sill, Oklahoma in February 1922.

In April 1922, the War Department established the installation as a permanent post, and on September 30, 1922, Camp Bragg became Fort Bragg.⁶ By 1922, the post had a total acreage of 120,211 acres. The mid-1920s were years of valuable training for artillery regiments, with the Field Artillery Board making Fort Bragg a laboratory of experimentation in types of vehicles, weapons, and equipment.

Fort Bragg was one of five World War I temporary cantonments to be authorized for conversion into permanent school and home posts for the five branches of the Army. These posts were Fort Benning, Georgia (Infantry); Fort Belvoir, Virginia (Engineers); Fort Monmouth, New Jersey (Signal Corps); Fort Eustis, Virginia (Railway Artillery); and Fort Bragg (Field Artillery, east of the Mississippi).⁷ A number of other posts were also improved during these

⁵ "Camp Bragg and Fayetteville, NC," 15-17.

⁶ "History of Fort Bragg 1918-1967," XVIII Airborne Corps Headquarters, Fort Bragg, NC.

⁷ Muriel Zimm Ray, "The Well Planned Post" (George Washington University masters' thesis, 1994), 9.

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years, including Fort Knox, Kentucky, Fort Devens, Massachusetts, Fort Lewis, Washington, Fort McClellan, Alabama, and Fort Sam Houston, Texas.⁸

In 1925, the Secretary of War noted in his *Annual Report* that the problem of providing adequate shelter was the gravest challenge of the War Department, and that officers dreaded fire in the temporary wooden barracks and in the hospitals. In 1926, to address these problems, Congress enacted Public Law 45 that authorized the Secretary of War to dispose of forty-three military reservations and create a “Military Post Construction Fund” to finance housing and hospital needs. In 1927, the first \$7 million became available, and Fort Bragg was one of the first recipients.

In 1926, the 1918 plan for Camp Bragg was reworked into a new master plan for the permanent post (see Figure 2). The planners, consisting of the Quartermaster Corps, post commander Brigadier General Albert J. Bowley, and consultant planner George B. Ford, artfully retained the original civic center containing the parade ground and axial street plan, and planned permanent buildings on the sites of the temporary frame World War I buildings.

The five World War I posts, which were substantially designed or redesigned by the Quartermaster Corps in the 1920s and 1930s, have a unique architectural unity, for they evolved over a short period of time, unlike most posts that grew over nearly a century.⁹ At this time the Quartermaster Corps, which oversaw planning, design, and construction of permanent facilities, switched from a single-building emphasis to the planning of overall installations. Military posts were self-contained communities and were the products of a large-scale planning effort to illustrate contemporary planning theories. The Quartermaster Corps gave each existing post a complete study in order to develop an overall post design that would plan for the addition of all required permanent structures and to enable future expansion. Major General B. Frank Cheatham, Quartermaster Corps head, assembled a distinguished staff of architects, including First Lieutenant Howard B. Nurse. Cheatham consulted with civilian engineers, landscape architects, and city planners, most notably George B. Ford, one of the first professional city planners, who reviewed all proposed post plans for functionality, aesthetic appearance, cost effectiveness, and appropriateness for climate and culture.¹⁰ The new urban planning concepts of the “garden city” and “city beautiful” movements were applied to the redesign of existing World War I cantonments. These movements were a product of the Beaux-Arts approach to design that was transferred from France to the United States in the late nineteenth century. This approach emphasized monumentality, symmetry, classical ornamentation, and hierarchy supporting civic institutions.

⁸ Katherine Grandine, Fort Monmouth Cantonment Historic District National Register Nomination, 1993, Section 8, 4.

⁹ Ray, 231.

¹⁰ Goodwin, v. 1, 77 and 172.

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Nurse, chief of the design branch of the Quartermaster Corps, was called to create “one great social organization,” which would provide healthful conditions, positive social interaction, and proper soldier training. Nurse advocated careful consideration of the local topography and distinction between main thoroughfares and local streets. The grouping of buildings, especially public buildings, around expanses of open spaces presents a dramatic effect, coupled with the abundant use of recreation areas and private areas of quarters through street plan and landscaping.¹¹

George B. Ford, city planning advisor to the War Department, wanted the new post to have “all the charm that the best modern subdivisions have and yet at the same time the new field should function with great efficiency.”¹² He advocated post plans that presented pleasing “mosaics” or patterns from the air, with a combination of formal areas and informal areas, officers quarters arranged in charming subdivisions adjoining recreational facilities, garages grouped along rear alleys, crescent-shaped parade grounds with the chapel at one end and administration buildings at the other, and the grouping of service buildings along the periphery. By the late 1920s, the role of the parade ground as the central feature of the post, with the most important buildings arranged around the perimeter, and mustering the garrison in formation was discontinued. Parade grounds now served as landscape elements within the overall master plan. Often boulevards and vistas linked multiple parade grounds, serving different functions.

Older posts presented numerous problems of integration of existing buildings with new buildings. For all five temporary cantonments that became permanent specialized posts in the 1920s, the main streets were already in place when the Quartermaster Corps began to develop official layouts in 1926, and the new posts were planned around them.¹³ In a 1926 hearing before the United States Congress Committee on Military Affairs, Quartermaster General Cheatham stated that the first step was to develop a plan, with “complete layouts to the last buildings” for each post.¹⁴

This is exemplified in the proposed post plan, dated November 1926, following collaboration between Brigadier General Bowley and the Quartermaster Corps. The administrative focus was shifted to the intersection of Armistead and Macomb streets, while the barracks were arranged linearly along Macomb and Armistead streets. Ford modified the plan by remaking the elegant chevron design into officers’ quarters around semi-elliptical or horseshoe-shaped plazas (see Figure 2). The Quartermaster Compound, with guardhouse, bakery, and warehouses, is shown in its present location at the eastern edge of the main post along the railroad tracks. The 1929 plan, updated in 1931, shows modifications to the plan made in 1928 and

¹¹ 1st Lt. H.B. Nurse, “The Planning of Army Posts,” *The Quartermaster Review* (Sept.-Oct. 1928): 14-16.

¹² George B. Ford, “New Army Posts for Old,” *The Quartermaster Review* (Nov.-Dec. 1929): 20.

¹³ Ray, 118.

¹⁴ Maj. Gen BF Cheatham, Quartermaster General United States Army, US House Committee on Military Affairs, “Housing Program of the Army” (69-2), 1926, H454, 23-25.

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early 1929 to incorporate revisions that were being made as construction continued. This showed the additional officers' housing set with a plaza south of the parade and the location of the new hospital on Macomb Street. Another change in plan is the addition of Bastogne Gables NCO housing around a similar elliptical plaza at the northeast corner of the main post (site of the old World War I hospital area). Between 1928 and 1930, all occupied temporary buildings from the World War I building period were painted and most of the unoccupied structures were torn down. The first phase of permanent construction, which took place from 1927 to 1931, consisted of a number of three-story barracks, one and two-story officers' housing in Normandy Heights, and one-story NCO housing in Bastogne Gables. The end of 1931 saw more than \$3 million spent on permanent construction at Fort Bragg. In 1934, the Post Headquarters (1-1333) was built opposite the Post Hospital (1-1326) on Macomb Street, and the Post Chapel (1-1510) was built facing the parade. A map, dated February 1, 1935, indicates completed new construction, proposed new construction and temporary construction on Fort Bragg (see Figure 3). Thus, the 1926 main post plan underwent constant refinement during the construction phase.

During the 1930s, the Works Progress Administration and Public Works Administration financed continued post construction. In 1938, Congress approved a million-dollar appropriation for Fort Bragg. From 1934 to 1940, barracks, officers' housing, and NCO housing continued to be built along with major public buildings such as the Theatre (1-1202), Federal Artillery Board (1-1554), Post Ordnance Shops (2-1549), Commissary (2-1256), Quartermaster Office (2-1148), Guard House (2-1143), and Signal (telephone) Offices (2-1114). Necessary industrial and infrastructure construction, including ammunition magazines, motor and material sheds, and a modern water supply system with cast iron mains and storm and sanitary sewers, took place as well.

c. Fort Bragg During World War II: 1940-1945:

The third building program, the Defense Preparation Program for World War II, took place from September 1940 to August 1941, an eleven-month period. With the increasing aggression of the fascist governments in Europe, Fort Bragg's activities accelerated. Involvement in a world war appeared inevitable, and Fort Bragg, because it was the largest field artillery range in the country, assumed a leading role in preparations for war.¹⁵ The expansion of the post for World War II involved a construction force of some 31,000 men, daily payroll of more than \$100,000, and lumber supplied by some 700 lumber mills. By August 1941, the expansion was largely complete, with 2,739 buildings constructed at a cost of \$44 million, making Fort Bragg North Carolina's third largest city.¹⁶ The Constructing Quartermaster at Fort Bragg in 1940-1941 was Lawrence Lee Simpson, who had been involved in construction of some of the permanent buildings on the post in the 1930s.¹⁷

¹⁵ *Army Navy Register*, April 12, 1941, 6.

¹⁶ Office of Public Relations, Ft. Bragg, typescript, 1941. Collection of Main Post Library, Ft. Bragg, NC.

¹⁷ Historical Display at Directorate Public Works and Environment, Ft. Bragg, November 1995.

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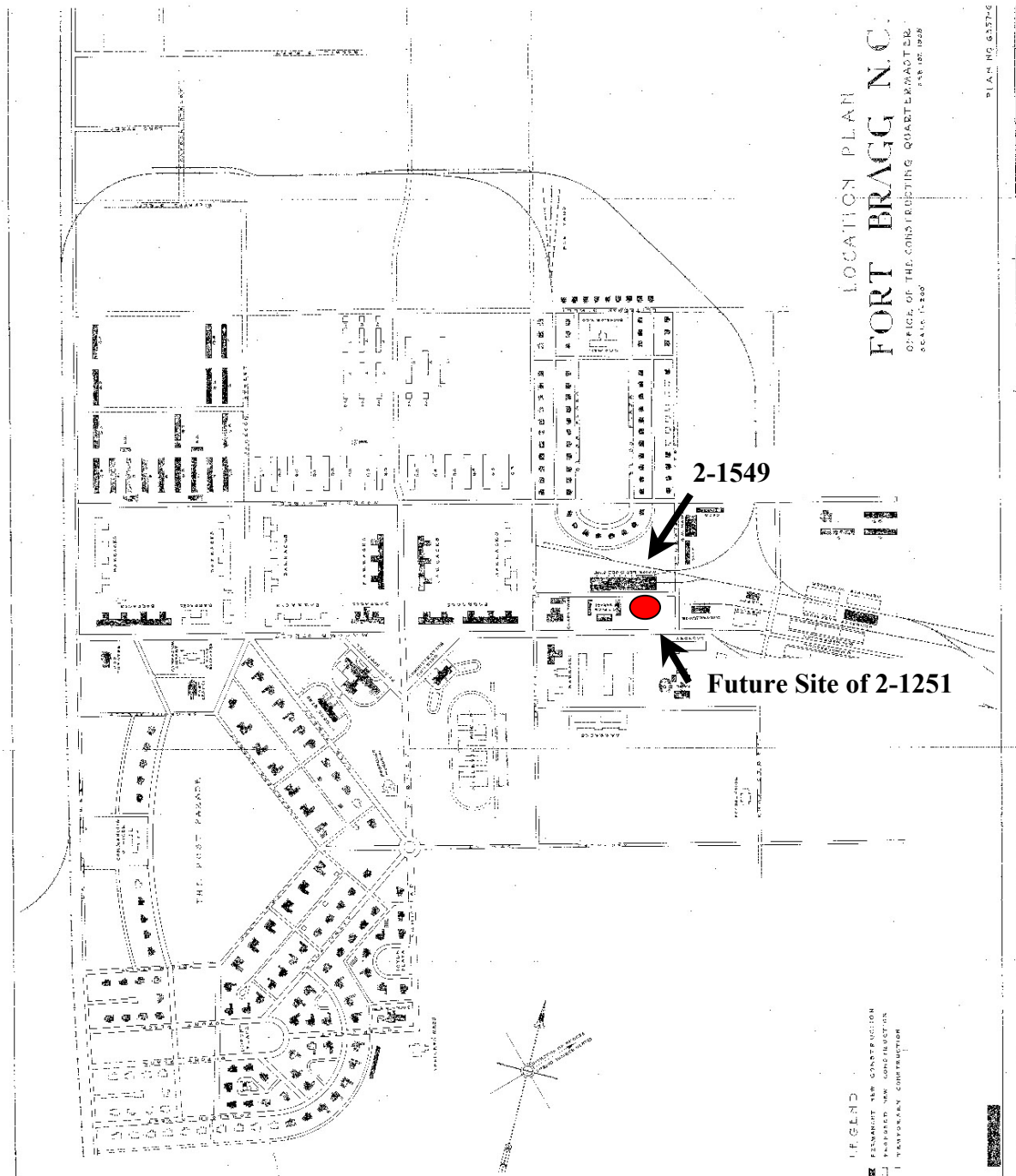


Figure 3: Fort Bragg February 1935 plan (courtesy PWBC, Fort Bragg).

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An account written at the time reveals the feverish activity generated by the National Defense Program:

Seven days a week, twenty-four hours a day, these thousands of men, most of whom lived within a radius of ninety miles, worked steadily at the big program. Day and night huge trucks laden with building materials crept along the highways, which were already clogged by thousands of vehicles of every description. The two railroads that serviced the Post, the Cape Fear and the Atlantic Coast Line, delivered an average of 65 carloads of supplies daily. The timely procurement and delivery of building material contributed largely to the phenomenal speed with which the work was completed.

For nine months, the work of expanding Fort Bragg's housing facilities had continued unabated. Everywhere workmen were pushing roads through pine forests and, at one period during the project, buildings were erected at the rate of one building every 32 minutes. Sights of soldiers in training, carpenters working, guns and construction equipment, crowds, and general upheaval all presented a crazy patchwork of pictures. But there was method in this madness because, by August 1941, 2,739 new buildings were in use and several field units had progressed rapidly with the mobilization training.¹⁸

As of January 1, 1941, 20,000 personnel were stationed there. By July 1941, personnel reached 67,000, making Fort Bragg the largest single encampment of soldiers in the United States. Fort Bragg's "fine rolling terrain, light sandy soil and moderate climate" made it the perfect location for tactical maneuvers and other training exercises during World War II. Over 300,000 men had been processed at Fort Bragg's induction center by the end of the war in 1945.¹⁹

3. Design Context:

a. Military Post Architecture:

The architecture of the Old Post Historic District, which is predominantly Spanish Eclectic and Georgian Revival in style, is similar to that of other permanent posts in the southern United States developed during the 1920s and 1930s. Standardized building designs for all building types necessary for army posts had been part of the Army operating system since the late eighteenth century, but became the practice in the 1890s. Sometimes architect-designed buildings built at particular Army posts were incorporated into standardized plans, other times talented Constructing Quartermasters who work at a particular post contributed designs. By using these plans, the Army centralized building design. The Washington office

¹⁸ "History of Ft. Bragg 1918-1967," typescript, 1967, 88. XVIII Airborne Corps Headquarters, Ft. Bragg, NC.

¹⁹ *Army Navy Register*, April 12, 1941, 6; "History of Ft. Bragg 1918-1967," typescript, 1967, 88. XVIII Airborne Corps Headquarters, Ft. Bragg, NC.

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sent building plans to the Constructing Quartermaster, who, instead of overseeing actual building construction using troop labor as in the nineteenth century, adopted the role of contracting officer as described in *Federal Emergency Administration Of Public Works Bulletin No. 15*, overseeing the work of local contractors. The contract was offered in a bid and awarded through the *U.S. Government Combined Form No. O.K. 50*, an itemized contract of work, materials, and costs. The bid and contract process were standardized by the *War Department's Specifications for Construction*, which detailed the materials and construction methods of every building to be constructed.

The Quartermaster Corps introduced the concept of regional architectural styles into the standardized plans during the mid-1920s. Military construction had always tended to be simplified versions of nationally popular architectural styles, but now, in a radical departure from previous formal Army architecture, designs were tailored for local climate conditions and to reflect local architectural history. An early attempt, the erection of Dutch Colonial Revival style officers' housing at Fort Benning, Georgia around 1924, was criticized as unsuitable for the hot Georgia summers.²⁰ The Army selected two primary styles, which they called the "Colonial" of the Atlantic seaboard and the "Spanish Mission" of the American Southwest, and standardized them for use throughout the country.²¹ The Colonial style, featuring buildings with brick exteriors and slate roofs, was built from New England south to Virginia, and is now known as Georgian Revival. Along the Mexican border, at posts in Texas and California, the Spanish Mission style prevailed.²² In this report it is known as Spanish Eclectic.

During the inter-war years, industrial buildings continued to follow functional, industrial designs, a pattern established about World War I, in contrast to the revivalist tradition for industrial structures common in the nineteenth century. By the late 1930s, military architects designed and built buildings that deviated from the standard revivalist mode, such as streamlined, Art Deco-influenced buildings. An example of this at Fort Bragg is the Heavy Gun Shop (2-1549) located in the Quartermaster Support Area, a steel and brick building with International detailing, built in 1934 (see Figure 4). A further example is the Ordnance/Motor Repair Shop (2-1251) constructed in 1941 (see Figure 5).

b. Landscape:

Landscaping became a priority of the Quartermaster Corps by 1931, when landscape architects were incorporated into the permanent staff of the Construction Divisions of the Corps. Careful tree planting to assure future shade, and the arrangement of trees and shrubbery to enhance the charm of simple quarters was emphasized at posts throughout the country (probably accomplished by the Civilian Conservation Corps whose district headquarters was

²⁰ "National Historic Context for Department of Defense Installations, 1790-1940," prepared for U.S. Army Corps of Engineers, Baltimore District, August 1995. v. I, 207.

²¹ "The Well Planned Post," Muriel Zimm Ray. George Washington University Master's Thesis, 1994, 9.

²² "Housing the Army," *Quartermaster Review* 10, March-April 1931, 11-13

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Figure 4: Building 2-1549 (courtesy PWBC, Fort Bragg).

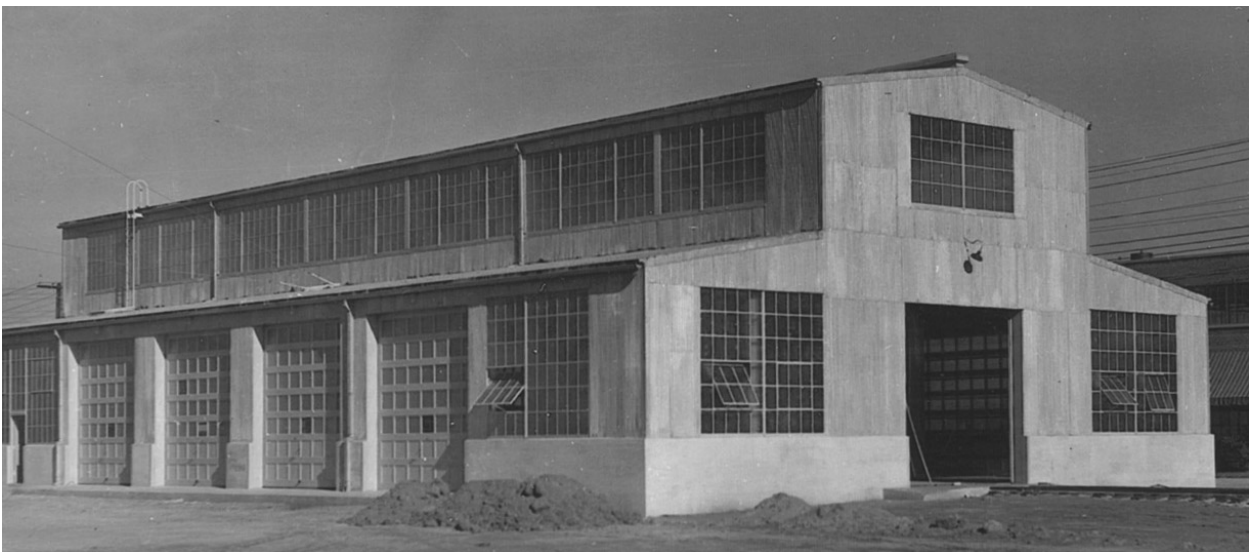


Figure 5: Building 2-1251 (courtesy of the National Archives).

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located at Fort Bragg at this time).²³ In few locations around the country would the mature tree cover and shrubbery have a greater impact than at Fort Bragg's Main Post, which, thanks to the 1920s and 1930s landscaping, is a verdant oasis in the midst of the barren scrub oak and pine landscape of the Sandhills region.

c. Buildings:

From 1926 to 1939, the master plan was gradually completed with brick and stuccoed tile housing, civic, medical and office buildings (see Figure 3). Domestic buildings, including housing, the officers' club, and the chapel, are stuccoed Spanish Eclectic style, with barrel-shaped terra cotta tile roofs. The administrative buildings, hospital, and barracks are Georgian Revival style brick buildings with one exception: the Telephone Exchange (2-1114) is a simple Moderne style executed in stucco. Warehouses, repair buildings, and storage sheds are of standard industrial design and built of wood or steel frame with brick or metal cladding.

The archives of the Quartermasters Office at Fort Bragg contain individual record sheets for every permanent building in the district, generally with a photograph taken soon after construction. These sheets give the date of construction, square footage, construction materials, and specifications. No architects' names appear in any of these records. Various architects of the Quartermaster General's Office produced the original plans and blueprints for each structure. Area contractors constructed all of Fort Bragg's buildings, and the names of some of them appear on their completion reports.

The public buildings in the Old Post Historic District, the 1934 Post Headquarters (1-1333), the 1932 Post Hospital (1-1326), and the 1933 Theatre (1-1202), occupy prominent positions on Macomb Street, while the 1934 Post Chapel (1-1510) stands nearby, facing the parade ground. The 1934 Federal Artillery Board Building (1-1554) faces the Polo Field on Scott Street and has a Georgian Revival design, with a central pedimented pavilion with stone entrance and balcony. The Macomb Street buildings are of Georgian Revival design, with red brick walls and white stone, concrete, and wooden trim. The most impressive building, the Post Hospital, has a three-story central block, set on a raised basement, accessed by the grand stone staircase with heavy turned balusters and paneled posts leading to the main stone-trimmed Doric entrance. To the rear, the original Nurses' Quarters (1-1621) exhibit a less formal stuccoed Spanish Eclectic design, featuring an ornate stonework arched entrance with pedimented window and corner urns. The Main Post Chapel (1-1510), designed by the Atlanta firm of Hentz, Adler, and Schutze, exhibits such Spanish Eclectic features as the dramatically carved doors, large focal window, stuccoed walls, tiled roof and square tower.

At the east end of the Old Post Historic District, served by a network of rail spurs, stands the Quartermaster Support Area, containing the Quartermaster Office Building (2-1148), Quartermaster Maintenance Building (2-2055), Commissary (2-1256), Bakery (2-1361), Heavy Gun Shop (2-1549), and Ordnance Warehouse (8-3710), all constructed of brick in functional

²³ "Landscaping the Army Post," E. Mack Hallauer, *Quartermaster Review* 19, (July-August 1939), 28-31.

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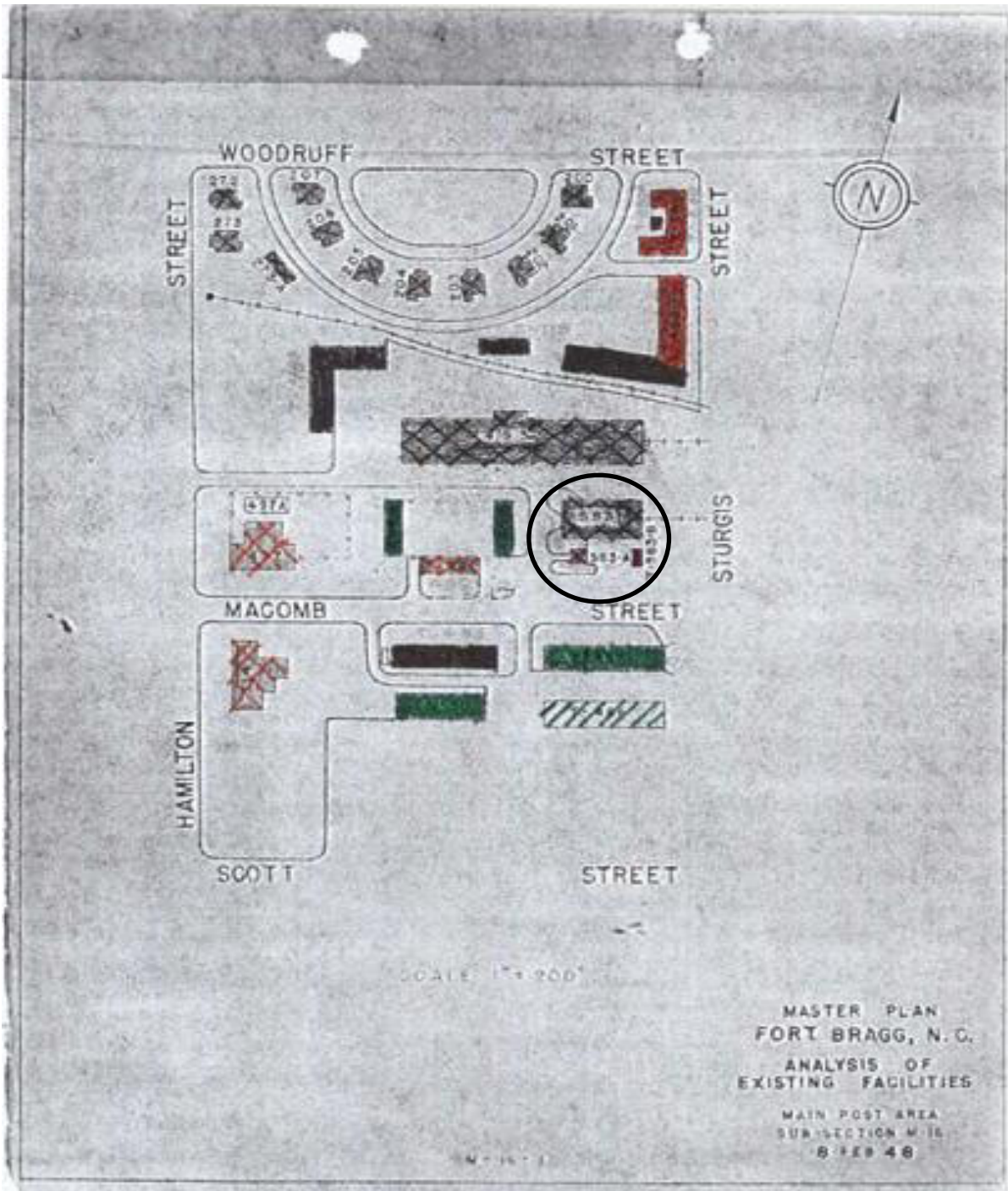


Figure 6: Portion of 1948 Master Plan with building in center right (courtesy PWBC, Fort Bragg).

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Georgian Revival, Moderne style, or utilitarian industrial design. Included in this area are the Ordnance/Motor Repair Shop (2-1251) and Boiler House (2-1150) constructed out of steel framing and sided by corrugated galvanized iron, and the Oil Storage Building (2-1152) constructed of wood framing and sided by corrugated galvanized iron. The 1948 master plan shows the Ordnance/Motor Repair Shop (2-1251) in its context (see Figure 6).

4. Ordnance/Motor Repair Shop Area:

The Ordnance/Motor Repair Shop (originally numbered 583 and currently 2-1251) was necessary as the expanded post outgrew the Heavy Gun Shop (originally numbered 493 and currently 2-1549) with the war preparation construction in 1940 and 1941.

The ordnance officer for the Army's IV Corps area, headquartered in Atlanta, received a radiogram from an unspecified Army agency (likely the War Department Ordnance Office in Washington DC) asking:

TO COORDINATE PLANS FOR THE CONSTRUCTION OF ORDNANCE FACILITIES AT REPLACEMENT CENTERS IT IS REQUESTED THAT YOU SUBMIT TO THIS OFFICE AT THE EARLIEST POSSIBLE TIME YOUR RECOMMENDATION ON REQUIRED ORDNANCE FACILITIES AT EACH CENTER ALLOCATED TO YOUR CORPS AREA PERIOD YOUR RECOMMENDATIONS SHOULD BE BASED ON THE USE OF THE STANDARD TYPES OF CONSTRUCTION NOW IN USE IN CONNECTION WITH THE CANTONMENT PROGRAM COMMA FOR EXAMPLE THE STEEL IGLOO TYPE MAGAZINES COMMA THE NEW TYPE ORDNANCE REPAIR SHOPS COMMA THE STANDARD TWENTY FIVE FOOT BY SIXTY FIVE FOOT WAREHOUSES AND THE TEN FOOT BY TWELVE FOOT INFLAMMABLE STORAGE BUILDING PERIOD ANY PREVIOUS RECOMMENDATIONS SHOULD BE RESUBMITTED ON BASIS OF USE AT TYPE BUILDINGS NOTED ABOVE

This was sent on to the Fort Bragg ordnance officer in a memo dated February 25, 1941 asking:

It is requested that your recommendations for any new construction required on account of the Field Artillery Replacement Center be submitted to this office with the least practicable delay. [Signed] L.J. Meyns, Lt. Col. Ord. Dept., Ordnance Officer.²⁴

²⁴ Adjutant General (AG) 600.12 Fort Bragg; Memos re: Record Group (RG) 407; National Archives at College Park (NACP), MD.

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The response on March 5, 1941 from the Fort Bragg ordnance officer, through the Fort Bragg chain of command, to the ordnance officer for the IV Corps area was:

1. A complete study has been made of the requirements for construction of Ordnance Facilities at Fort Bragg to properly house the Ordnance activities required to furnish Ordnance service for the combat troops as well as for the Field Artillery Replacement Center and Corps Area Service Command.
2. The study has been condensed under the title of "Defense and Justification for New Construction of Ordnance Facilities at Fort Bragg." and is attached hereto.²⁵
3. Based on the minimum necessary requirements supported by the detailed justification enclosed, it is recommended that immediate construction of the following additional Ordnance facilities be authorized for Fort Bragg, N.C.:
 - a. 8 each Standard Ordnance Repair Shops, Type B, 65' x 126', with 10-ton craneway running entire length of shop; with concrete floor at ground level, having at least two (2) automotive service pits; doors to be at least 12' wide and 14' high, Dwg. 652-407.
 - b. 8 each Buildings for storage of general Ordnance supplies, 25' x 65', with concrete floor at ground level, Dwg. 700-1480.
 - c. 6 each Magazines, 40'4" x 20', Dwg. 652-354.

[Signed] H.N. Rising, Lt. Col., Ord. Dept., Ordnance Officer.²⁶

The enclosure memo from Fort Bragg commanding officer Major General Jacob L. Devers states, "It is planned to located the Ordnance Shops in a central area convenient to the units to be served."²⁷

²⁵ "Defense and Justification for New Construction of Ordnance Facilities at Fort Bragg." was not attached to the above memo in the National Archives. It could not be found at either the National Archives or at Fort Bragg.

²⁶ AG 600.12 Fort Bragg; Memos re; RG 407; NACP

²⁷ Ibid.

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The War Department, Ordnance Office in Washington, DC responded to the Quartermaster General on April 2, 1941 with:

1. It is recommended that the following additional ordnance facilities be constructed at Fort Bragg, N.C.
 - a. Six (6) steel igloo-type magazines, 20' x 40'4"
 - b. One (1) Type C. Ordnance Repair Shop, 65" x 180'
 - c. Storage Warehouse, having 4875 sq.ft. of floor space.

[Signed] Raymond G. Curtin, Major, Ord. Dept., Assistant²⁸

The April 12, 1941 response from the Quartermaster General to the Adjutant General was:

1. The estimated cost of the construction recommended in the preceding [illegible] is as follows:

6 Portable steel Igloos, 20'x40'4",	
Plan No. 652-354.....	\$26,784
1 Ordnance Repair Shop 65'x180',	
Plan No. 652-402.....	\$76,904
3 Warehouse, 25'x65', Plan No. 700-1480....	
.....	\$27,027
Total.....	..\$130,715

2. The construction funds are available to this office for this work. It is recommended that this construction be approved and that funds be allotted from Budget "K" for the accomplishment of the work.²⁹

The War Department signed off on the Adjutant General's recommendations for Ordnance Facilities on May 7, 1941.³⁰

²⁸ AG 600.12 Fort Bragg; Memos re;; RG 407; NACP

²⁹ Ibid.

³⁰ Ibid.

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What was built versus what was approved, through the chain of command, is not consistent. Fort Bragg, on March 4, 1941, had asked for eight Type B Ordnance Repair Shops, each measuring 65'x126' to be built utilizing Office of the Quartermaster General (OQMG) plan 652-407. The War Department approved one Type C Ordnance Repair Shop measuring 65'x180' utilizing OQMG plan 652-402 instead.³¹ The Ordnance Repair Shop (Buildings 583 and 583a) was completed on July 29, 1941 for a total cost of \$82,006. Building 583 measured 133'-8"x67'-6" and utilized OQMG plans 652-411, 438, 442, 443, 444, 445, 446, 504, 506, 507, 508, 529, 530, 532, and specifications No. 1692-E.³² The second property record card has the same OQMG plans as the original property record card (see Figure 7); however, further work was still needed in the building and completed in 1942. The bathroom in the southwest corner of 583 was not finished until March 3, 1942, when a ceiling fan with motor (see Figure 8), a Bradley wash fountain, three commodes, one laundry tub, and three urinals (see Figure 9) were installed for an unspecified cost.³³ On September 2, 1942, an exhaust fan was installed at each gable end of the building at a total cost of \$599.10 (see Figure 10).

The original property record card and completion photographs for the Ordnance Repair Shop and its Boiler House can be found in the "Construction & Completion of Cantonment & Replacement Center and Utilities & Appurtenances Thereto at Fort Bragg, N.C., Project P-4-6357-41-1, Completion Report, [illegible signature], Captain Q.M.C. Constructing Quartermaster, Date Submitted February 23, 1942."³⁴ The contractor for the Ordnance Repair Shop was never named; however, only T.A. Loving & Company, Goldsboro, NC operated as the fixed fee general contractor during the period of construction for the Ordnance Repair Shop. They were awarded a contract on September 11, 1940 to supply housing and accommodations at Fort Bragg for "approximately 66,000 troops, providing for one Triangular Division, Corps, Army and GHQ Artillery, Field Artillery Replacement Center, Recruit Reception Center, Additional Station Complements and Miscellaneous Arms, Branches, and Services."³⁵

³¹ Research found that this same building was constructed at Pine Camp (now Fort Drum), NY and Fort Leonard Wood, MO. In both cases, only one Ordnance Repair Shop was built.

³² Ft. Bragg-10, Original Property Record Card; Records of the Office of the Chief of Engineers; RG 77; NACP.

³³ Second Property Record Card located at the XVIII Airborne Corps History Office.

³⁴ Ft. Bragg-10, Completion Report; Records of the Office of the Chief of Engineers; RG 77; NACP.

³⁵ Ft. Bragg-10, Completion Report, Book One, p 2; Records of the Office of the Chief of Engineers; RG 77; NACP.

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Specifications No. 1692-F
 Post Plan No. 583
 652-411, 436, 441, 442, 445, 444, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Fort Bragg, North Carolina
 Designation of building: Ordnance Shop (with Motor)
 Total cost, \$ 22,006.00 Date completed July 29, 1941
 Material: Walls: Corrugated Iron on Structure Foundation Concrete walls
 Roof: 5 ply built up on wood decking Floors Concrete
 Total floor area above basement, square feet 8,000 sq. ft.
 Size: Main building 65'0" x 128'0" Wings None
 a. Heating Plant (Coal fired) None
 Height of first floor above ground Slab on grade fill
 b. Steam generation (by blowers) None
 How lighted Electricity
 Water connections 2"
 Sewer connections 6"
 Gas connections None
 c. None (Type of domestic hot water heater)
 REFRIGERATORS INSTALLED METERS INSTALLED
 (Give quantity and size) (Give quantity and capacity)
 COOKING RANGES INSTALLED Gas Electric
 (Give quantity and size) (Give quantity and capacity)
 Coal Gas
 Electric Oil
 Ice Steam
 Water
 Approval of Secretary of War as required by A. R. 30-1435 (Give date and File Number)
 ADDITIONS AND INSTALLATIONS (Below enter chronologically all modifications, additions, introductions of water, sewer, light, heating, etc.)
 ORIGINAL INSTALLATION
 5-2-42 (1) Ceiling Fans (with Motor)
 (2) Wash Machines "Freight"
 (3) COMMERCIAL
 (1) Laundry Tub
 (3) Urinals
 9-2-42 INSTALLED: 2 Fans, Size 42H-45 Wing Scruplex without safety guard, equipped with 1/2 HP motor arranged for 2-speed operation complete with speed controller for operation on 220 V, 3 phase 60 cycle A. C. Ser. #1's 61736 & 61735 \$299.85 ea., S.T. #958.
 \$599.10
 Photograph 4" x 5"

DATE	DESCRIPTION	COST	DATE	COST
5-2-42	(1) Ceiling Fans (with Motor)			
	(2) Wash Machines "Freight"			
	(3) COMMERCIAL			
	(1) Laundry Tub			
	(3) Urinals			
9-2-42	INSTALLED: 2 Fans, Size 42H-45 Wing Scruplex without safety guard, equipped with 1/2 HP motor arranged for 2-speed operation complete with speed controller for operation on 220 V, 3 phase 60 cycle A. C. Ser. #1's 61736 & 61735 \$299.85 ea., S.T. #958.	\$599.10		

See reverse side of form.

INSTRUCTIONS: - "a" State whether heated from central heating or by individual heating plants, stoves, furnaces, or fireplaces.
 - "b" State whether steam, vapor, hot water, or hot air.
 - "c" State whether gas, coal, oil, or central heating plant.

Figure 7: Property Record Card Number 2 for Ordnance Shop (courtesy XVIII Airborne Corps History Office).

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Figure 8: Ceiling fan in bathroom (ERDC/CERL).



Figure 9: Bathroom fixtures, including the Bradley Wash Fountain (ERDC/CERL).

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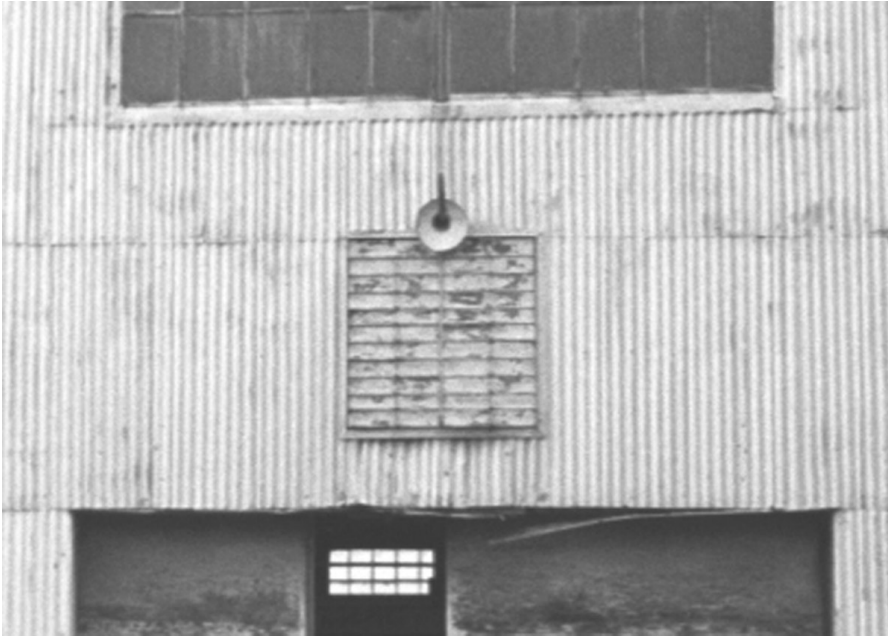


Figure 10: West gable exhaust fan (ERDC/CERL).

There are four additional construction authorizations to the original contract to Loving that might have contained the money authorized in the May 8, 1941 memo from the War Department:

C.O.	#F	5/14/41	1,668,824.00	Addition and deletion of certain specific types of buildings.
C.O.	#G	5/14/41	104,016.00	Additional construction authorized.
C.O.	#H	6/25/41	457,188.00	Deletion of two 63 man barracks and addition of several special buildings.
C.O.	#J	6/25/41	253,088.00	Additional building construction funds. ³⁶

Loving completed its work on July 31, 1941 at a cost of approximately \$40,700,000³⁷, two days after the official completion date for the Ordnance Repair Shop.

³⁶ Ft. Bragg-10, Completion Report, Book Three, p 1; Records of the Office of the Chief of Engineers; RG 77; NACP.

³⁷ Ft. Bragg-10, Completion Report, Book One, p 4; Records of the Office of the Chief of Engineers; RG 77; NACP.

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The Ordnance Repair Shop (2-1251) is a classic example of the International Style with its monitor roof, steel-framed windows, and corrugated galvanized iron siding (see Figure 5). The building, although purely utilitarian in scope, has design elements such as the break between the wood panels and glass panels on the service bay doors corresponds to the height of the concrete foundation wall. This provides for the illusion of a complete band of windows on the north and south elevations. This element repeats on the north and south elevations of the central bay. The symmetrically aligned gable facades are exacting in their placement of fenestration and doors.

The Boiler House (2-1150) follows the adage of “form follows function,” with its service area constructed of brick and the boiler room constructed of steel covered by corrugated galvanized iron siding (see Figure 11). The boiler’s chimney was a simple galvanized metal tube sitting upon a concrete pad. Guy wires supported the height of the chimney with one set placed in the parking area, another connected to the roof of the Boiler House, and the third connected to the Ordnance Repair Shop. This original chimney was replaced August 9, 1955 with a brick chimney 47' high at a cost of \$2,634.67 (see Figure 12).



Figure 11: Building 2-1150 (courtesy of the National Archives).

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An Oil Storage Building (2-1152) was added to the Ordnance Repair Shop area on March 5, 1948. No construction plans could be found for this building; however, the dimensions of it correspond to the dimensions of the boiler room portion of the Boiler House, although window and door placement are dissimilar. The Oil Storage Building is southeast of the Ordnance Repair Shop, creating a symmetrical frame for the Shop (see Figure 13). The building is constructed out of wood framing covered by corrugated galvanized iron siding. The interior consists of two floors with a wooden staircase.

The Ordnance Repair Shop has a floor space of 8,000 square feet, only one quarter of which was occupied by non-repair space. A restroom was in the southwest corner, and one office each in the northwest and northeast corners. Seemingly, no machines were installed in the building; only work benches and tables being necessary to do the work. The building had sufficient equipment to take care of the dismantling, rebuilding, polishing, and greasing of small arms and vehicles. This equipment included venting mechanisms to exhaust noxious fumes from the work area. The air handlers were in the northwest and southeast corners of the building. The building is also equipped with two electric 10-ton cranes to facilitate the handling of extra heavy work. Each crane had a hoist capable of lifting 20,000 pounds. The Chisholm-Moore Corporation in Tonawanda, New York manufactured the cranes. The third property record card indicates a change in its category code from Ordnance Repair Shop to Motor Repair Shop in September 1995.



Figure 13: Ordnance Repair Shop with Boiler House on the left and Oil Storage Building on the right (ERDC/CERL).

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The boiler room in the Boiler House has a floor space of approximately 400 square feet, the coal storage area has 130 square feet, and the pump pit has 80 square feet (although the floor of this room is 8'5" below the floor of the boiler room). The boiler was originally coal fired, replaced by an oil-burning boiler at an undetermined date, and subsequently by a gas fired boiler. The heated water left the boiler via a 4" insulated pipe that entered the pump pit on the east and exited on the west wall. It then connected to the Ordnance/Motor Repair Shop heating system by a tunnel. The condensate returned from the Ordnance/Motor Repair Shop by the same tunnel in a 1½" uninsulated pipe that then connected back to the boiler where the water would be reheated.

The Oil Storage Building has floor space of approximately 400 square feet on the first floor and approximately 350 square feet on the second floor. A system of shelves on the west and south sides of the second floor would have contained storage space for the repair of ordnance and subsequently vehicles.

The buildings have a high level of integrity both in fabric and context. The Ordnance/Motor Repair Shop and Boiler House retained all of their original windows. The original corrugated galvanized iron siding is in place on the Ordnance/Motor Repair Shop, and is beneath the current corrugated siding on the Boiler House. The Boiler House and Oil Storage Building have their original doors. The interiors have seen little change since the buildings were built in 1941. The Quartermaster Support Area in which the buildings are situated also retains most buildings that were located there when the buildings were built in 1941 (see Figures 14-16).

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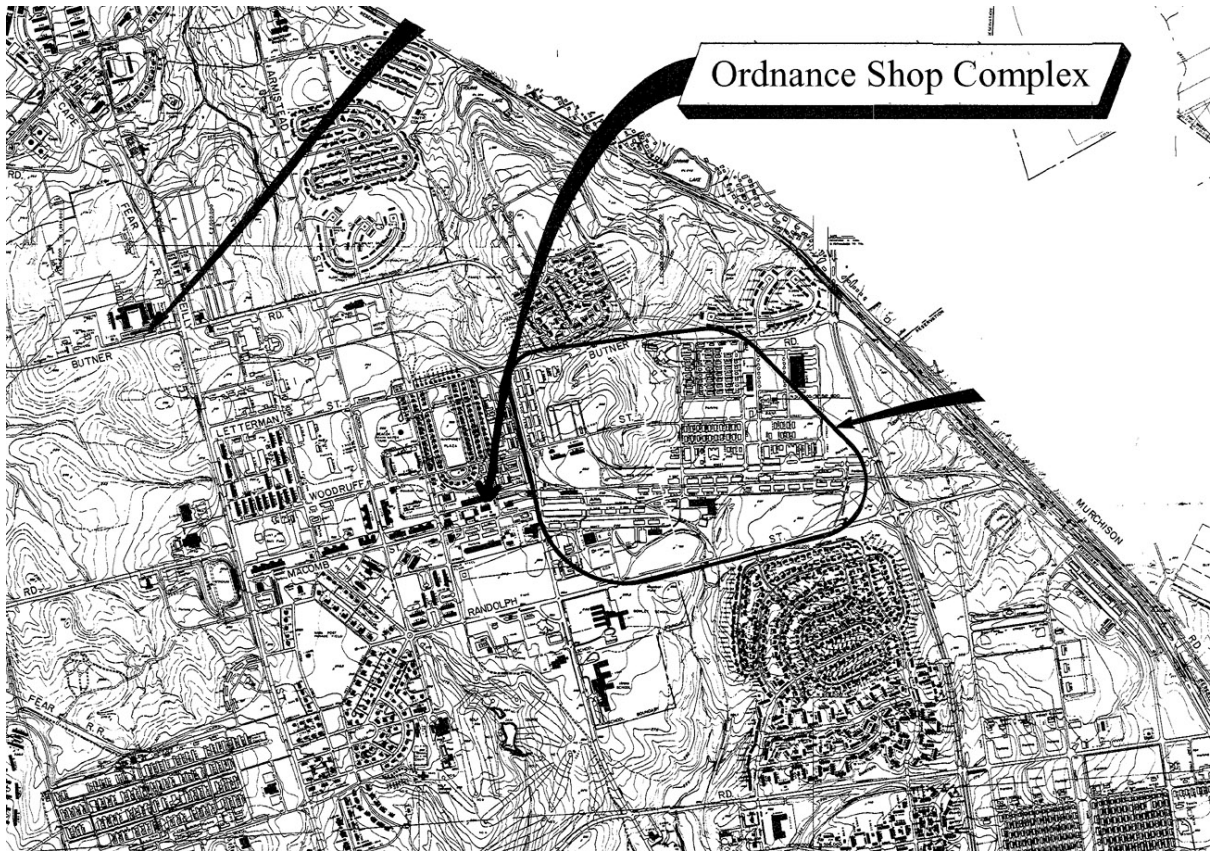


Figure 14: Location of Ordnance Repair area in the cantonment of Fort Bragg (courtesy PWBC, Fort Bragg).

PART II. ARCHITECTURAL STATEMENT

A. General Statement:

1. Architectural Character:

This is a U.S. Army military installation facility that was occupied from 1941 to 2001 at Fort Bragg, Fayetteville, North Carolina. The area includes an Ordnance/Motor Repair Shop, Boiler House, and Oil Storage Building (see photographic documentation HABS No. NC-398-1 through NC-398-4). The Ordnance/Motor Repair Shop is a rectangular mass oriented east-west with a large central bay with monitor roof. Large roll-up metal garage doors on the north and south elevations provided access for the vehicles needing maintenance. A small, galvanized metal awning protected the one entry door. The east and west elevations have large wooden sliding doors to allow access into the central bay. The east facade door was once utilized for access by a train car. The windows are steel fixed-paned with portions that have an awning-style window. The Boiler House, built for the boiler to heat the Ordnance/Motor Repair Shop, has a rectangular mass oriented north-south and located approximately 20'-2" to the south of the Ordnance/Motor Repair Shop. The massing consists of a low rectangular mass at the west side and a high rectangular mass at the east side with a brick chimney located approximately 3' to the east of the building. The lower mass has a roof hatch with two metal-covered wood doors. The hatch allowed access to the Boiler House coal room. The south elevation of the upper mass has large wooden doors and the east elevation has a regular wooden door as an entrance to the building. The windows are steel-paned awning windows at the upper mass and a wooden frame window opening at the lower mass. The Oil Storage Building has a rectangular mass oriented north-south located approximately 19'-11" to the south of the Ordnance/Motor Repair Shop and approximately 100' to the east of the Boiler House. It is a two-story building. A regular wooden entrance door is at the north elevation. Plywood has been placed over all of the window openings.

2. Condition of the Fabric:

Ordnance/Motor Repair Shop: The corrugated galvanized iron sheeting utilized as siding has ten percent global discoloration. Bolts and washers holding the exterior siding to the interior wallboard are corroding. The interior pressboard walls are cracking and spalling. Isolated evidence of physical denting, warping, and surface abrasion is obvious at the sides and corners of the building. Hardware corrosion is most apparent on the east facade and most channel corrosion (the channel located to either side of the building opening) is seen on the north and east facades. The siding on the upper part of the north and south sides of the Ordnance/Motor Repair Shop shows thirty percent red discoloration with tar on the metal surface in some places.

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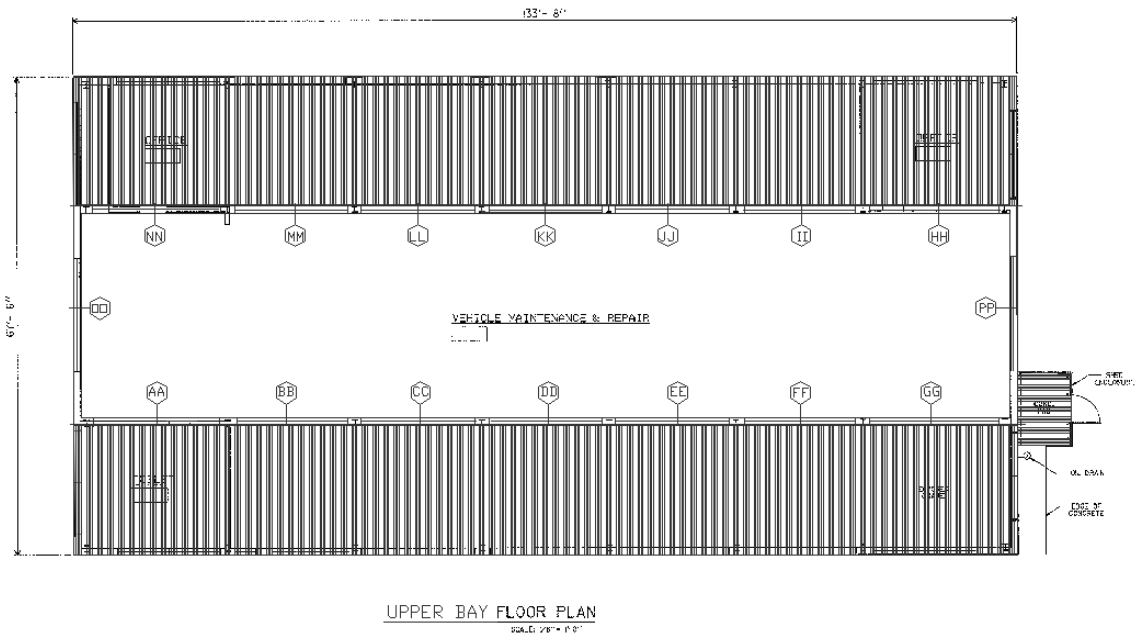
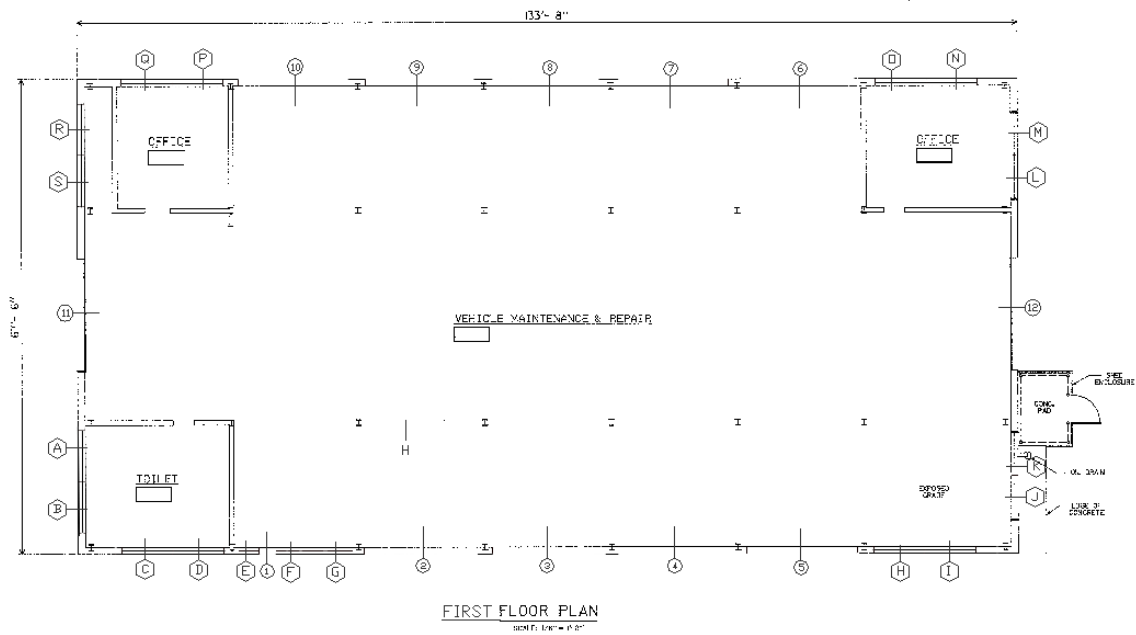


Figure 17: Door/window location numbers for Building 2-1251.

There are locations where the exterior corrugated galvanized iron sheeting has been punctured. Paint is delaminating from the concrete in patches, with about fifty percent of the surface exposed. Paint delamination from the concrete on the interior southern wall is severe, covering about eighty percent of the surface. The walls of the upper central bay are constructed of wallboard with rust discoloration that has migrated from the exterior galvanized iron sheeting.

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Doors 2, 5, 6, 7, 9, and 10 are painted white on the top two-thirds and gray on the lower one-third (see Figure 17). The paint is peeling off in large areas that have already delaminated from the steel garage doors. Slight corrosion is visible in the form of discoloration on the lower lip of each of the curved corrugated links that make up the garage doors. Most doorframes exhibit expansive corrosion locally and discoloration locally. Most frames are painted and crazing with rust discoloration at the cracks. The doorframe of door 1 is corroding, shedding its latest paint layer. Door 12 is missing an angle on the left door and is weathered at the bottom, exposing several layers of plywood that are peeling apart. Most paint has delaminated from the plywood surface of door 12. Metal framing and hardware on door 12 shows discoloration under the paint and on the painted surface (where paint remains). Paint has chipped off as a result of moisture intake over time. Weathering has occurred due to repeated drying. Painted nails fasten the door to the interior bracing and show rust discoloration through the paint. Doors 10, 9, 7, and 6: Rust discoloration is occurring globally, while expansive corrosion is occurring locally. Some links in the bottom of door 6 have been replaced. Door framing hardware is corroding. Door 8: An angle is corroding at the bottom of galvanized iron door. Door 11: Most paint delamination is occurring due to weathering and erosion. Hardware is painted, showing rust discoloration through crazed cracks. Bolts at the bottom of the door are rusting and rust discoloration is visible on the nail heads holding the plywood sheeting to the exterior frame bracing. Angles holding the weather stripping in place are also corroding. Doors 2, 5: These doors show a 20 percent light discoloration due to rust. Corrosion is on the lower part of the doors. Deterioration is less evident higher up on the doors. Doors 3,4: door in excellent condition, though the angle at the bottom of the door is corroding.

The insulation covering the heating pipes is cracking and splitting open to expose the pipe, which is undergoing extensive corrosion beneath. The insulation is saturated with water. The pipe insulation is discolored due to rust stains that have migrated from the pipe.

The structural members of the warehouse show paint delamination, resulting from the extensive corrosion of the structural members. Delamination appears in the form of surface bubbling, cracking, and missing paint, exposing the structural steel. The upper parts of the columns show severe delamination. The undersides of the I-beams that are supported by the columns are exhibiting surface corrosion. Though there is evidence of corrosion, the structural cross section of these members has been unaffected. These members retain their structural capacity. Most surface damage is seen along the flange and underside of the rafters.

The paint on the gable-end sliding doors has alligatored from the upper middle to the bottom of the doors. The galvanized iron corrugated sheeting that comprises the interior finish of the walls at the central bay elevation exhibits surface corrosion. The interior surfaces of the sheeting were never painted. They are attached to the structure with bolted connections.

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The floor is composed of concrete. The southwest area, east of the southwest interior room, is undergoing severe delamination due to surface wear and extensive water exposure.

The roof structure is timber and it is deteriorating due to moisture damage. The roof is composed of 5-ply rolled roofing with tar and stones on top. The stones and pebbles, which were once secured by tar, fall off in storms. The gutters on the north and south sides have fallen off. In some cases, one side of a gutter is hanging down, still attached on one side, but not the other. The gutters are hanging from the fascia of the lower roof on the north side. Tar is spilled over the edge onto the fascia in some places. At one time, the wood fascia was covered with a steel fascia. The steel fascia is missing in some places. All gutters are missing on the south side. Paint delamination is apparent above the fascia, and some of the fascia is missing, exposing the sides of the wood and rolled roofing. Most of the gravel is missing from the tar and gravel roof on the north and south lean-tos. Steel siding appears mangled in areas near the upper roofing section of the lean-tos. The roof of the upper bay is finished with three-tab asphalt shingles. The vents on the east and west facades are painted and show 30 percent delamination with no visible corrosion. The gutter and fascia are damaged on the north facade. The ladder on the north and south facades leading from the roof of the lean-to to the roof of the upper bay is showing visible expansive corrosion.

The metal windows are rusting and paint/putty are delaminating and crumbling from the metal frame and glass panes. Corrosion is occurring on all window frames. Corrosion is more advanced on the lower part of the frames, with expansive bubbling becoming less noticeable, higher up on the frames. The glass panes are wire-embedded. The original wire-embedded panes resemble chicken wire, while the more recent replacements have thinner wire diameter and crisscross directly. The awnings are still operable and some of the panes have been replaced with clear glass panes. Five percent of the total glass panes are broken or cracked. Original panes were smoky white; however, this film is fading from a lot of the windows. One pane on window K is cracked, and another is broken. One pane on window OO is broken. One pane on window L is cracked and three panes on window I are cracked. Window D has one broken pane and window G has one cracked pane. Window A has three cracked panes and silver paint delamination from the other windowpanes. Window B has two cracked panes and has silver paint delamination on the interior. The windows on the south facade appear to be in the best condition of all the facades.

Boiler House: The concrete forming the foundation wall has paint peeling off revealing a rust infested concrete surface below. The metal window frames and muntins are exhibiting expansive corrosion on the interior, while their exterior appears to be in good condition. The corrugated galvanized iron sheeting is beginning to exhibit slight discoloration. Metal utility boxes and pipes attached to the building exterior are undergoing severe corrosion. The wooden door on the east facade has a missing pane that is braced with unfinished plywood. The plywood is undergoing the effects of weathering, chipping, and deteriorating at the bottom end grain. The brick shows

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stair-step delamination between the brick and mortar. The brick on the north facade was painted at one time, and forty percent of the surface remains painted. The roof was tarred, but has few tar bubbles. Concrete rust discoloration below the crust of the concrete and ninety percent of the surface is spalling. Some pebbles remain. The roofing consists of five-ply rolled roofing, tar, and gravel pebbles. The roof stack exhibits corrosion.

A kerosene storage drum manufactured by Marsh Dunkirk is located next to the north facade. Brick is exhibiting efflorescence on the north and northwest parts of the building. In four different locations, entire horizontal joints are missing from the facade for three to five horizontal brick lengths.

The concrete beneath the corrugated galvanized iron sheeting shows the most corrosion. Slight discoloration is visible on the exterior, but this is due to corrosion discoloration transfer from the corroded original siding beneath. The concrete foundation, on which the siding rests, is discolored due to water transfer of the rust from the siding to the concrete. Paint delamination on the concrete surface is due to the expansive metal oxides that are transported from the metal siding.

The wood decking on the interior is in good condition. The lean-to on the west facade has a concrete slab roof with a corroding steel fascia. The metal doors of the coal chute on the lean-to roof show severe rust discoloration, but no loss of mass. The frame of the wood door on the west facade is weathered from exposure to the elements. The concrete surrounding the Boiler House has seventy percent exposed aggregate as a result of weathering. The west drive has eighty percent aggregate exposure.

Chimney: A large corroded metal horizontal stack leads from the boiler inside the boiler house to a 5'x5', single-standing chimney spaced 3' from the building on the east side. Some efflorescence is visible on the top of the south side of the chimney. The base shows dark discoloration below a Dewey Brothers 10"x12" fire ash hatch door. The ash within has darkened the exterior and rust has migrated from the door unit, down the wall, across the concrete drive on the south side of the building, to the drain. The drain is rusted. A concrete patch is located three courses above the ash trap door. There is a concrete lintel atop the chimneystack. The brick on the northeast side of the chimney has spalled off at the lower corner. There are dark patches below oxidizing metal hardware on the lower part of the north facade of the chimney. The pipe connecting the chimney to the boiler house shows signs of corrosion. Moisture from the pipe, running down along the lower west facade of the chimney wall, has caused rust discoloration on the brick wall. There is a concrete patch where the pipe comes in contact with the chimney and seven courses above. There is minimal spalling on the lower northwest corner of the chimney.

Water-oil treatment unit: The metal doors to the oil chamber, oil separator, and the water outlet are all exhibiting corrosion.

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Oil Storage Building: The concrete shows paint delamination at the foundation wall. The building was originally painted white, followed by silver gray to match the color of the corrugated galvanized iron sheeting. The sheeting is dented and punctured in places on the lower story of the facade on all sides due to physical damage. The upper story is in excellent condition. There is no sign of chemical decomposition on the exterior.

The north facade has two windows; one centered on the lower story and one centered on the upper story, boarded over with plywood from the interior. The interior wood framing is in excellent condition. All original windows are missing. The roof is in good condition with little/no damage to the roof structure or galvanized iron details. A double wood door has silver paint delamination and a concrete threshold in good condition.

The upper window on the east side is not boarded up, but is open to the elements. Nails attaching the siding to the wood frame are showing signs of rust discoloration. The roof stack shows reddish discoloration, similar to the horizontal stack of the Boiler House.

B. Site:

1. General Setting:

The Ordnance/Motor Repair Shop buildings are located on Fort Bragg, North Carolina. The Shop faces east with its long axis perpendicular to Sturgis Street. A set of train tracks curves from Sturgis Street and runs into the east end of the building. The Boiler House faces south with its long axis perpendicular to Macomb Street and is approximately 20'-2" south of the Ordnance/Motor Repair Shop. The Oil Storage Building is oriented the same way and is located approximately 19'-11" to the south of the Ordnance/Motor Repair Shop and approximately 100' to the east of the Boiler House. Large concrete parking lots are to the east and south of the Ordnance/Motor Repair Shop. The interior parking lot has an oil runoff protection system (see photographic documentation HABS No. NC-398-13 and NC-398-14). The site is predominately flat but has a very slight slope down to the southeast.

2. Buildings:

The buildings include the Ordnance/Motor Repair Shop (HABS No. NC-398-7), the Boiler House with a low rectangular mass (HABS No. NC-399-1) and an Oil Storage Building (HABS No. NC-400-3).

3. Landscaping, Enclosures:

The site on which the buildings are located consists of crabgrass growing thickly on sandy soil and paved drives on all sides. There are no trees on the site. The surface of the concrete around the three buildings is abraded, exposing the aggregate on ninety

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percent of the area. A single railroad track extends from the interior of the Ordnance/Motor Repair Shop to the chain link fence at the boundary of the east yard.

All fencing is chain link with three strings of barbed wire at the top, angled away from the site. The fence that surrounds the east yard is 9'-2" tall. Another fence links the southwest corner of the Ordnance/Motor Repair Shop to Building 2-1249 on the west.

The only sidewalk leads from the south paved area, westward along the south side of the Ordnance/Motor Repair Shop, to a single door on its south facade.

The north yard is paved up to the west facade of the building, where crabgrass grows into the west yard. The west yard has grass areas within the curbs, and a paved drive up to the west door. A paved area runs between the Ordnance/Motor Repair Shop and the Heavy Gun Shop (2-1549) to the north, but a fence blocks the road. A smaller second drive with grassy areas to either side leads up to the west facade of the Ordnance/Motor Repair Shop.

Access to the south garage doors is impeded by a large concrete berm that prevents Privately Owned Vehicles (POVs) from entering the building from the south. The berm runs directly from the grass area south of the Boiler House to the foundation on the west side of the Oil Storage Building. The foundation of the Oil Storage Building is used in lieu of the berm, until the north edge of the foundation where the berm begins again. This part of the berm connects to the concrete wall foundation of the Ordnance/Motor Repair Shop. The berm is used to guide water and oil from the Ordnance/Motor Repair Shop operations to the drain on the north side of the berm near the southeast corner of the Boiler House. The south yard of the Boiler House consists of grass surrounding a concrete slab with access to the oil separator, oil chamber, and water outlet manufactured by the Neenah Foundry Company, Neenah, Wisconsin. The south yard slopes to the southwest down to the drain and beyond the berm to Macomb Street.

The Oil Storage Building is surrounded by concrete on all sides, set back from Sturgis Street by 94'-6" and 65'-5" from Macomb Street.

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C. Building No. 2-1251 (HABS No. NC-398):

1. History:

The Ordnance/Motor Repair Shop (originally numbered 583 and currently 2-1251) was necessary as the expanded post outgrew the Heavy Gun Shop (originally numbered 493 and currently 2-1549) with the war preparation construction in 1940 and 1941. Fort Bragg requested the funds for this building on March 5, 1941 and the funds were approved by the War Department on May 7, 1941. The building was utilized for Ordnance Repair until September 1995, when its official category was changed to Motor Repair Shop.

2. Architectural Character:

The Ordnance/Motor Repair Shop (2-1251) is a classic example of the International Style with its monitor roof, steel-framed windows, and corrugated galvanized iron siding. The building, although purely utilitarian in scope, has high-design elements such as the break between the wood panels and glass panels on the service bay doors that corresponds to the height of the concrete foundation wall. This forms the illusion of a complete band of windows on the north and south elevations. This element repeats on the north and south elevations of the central bay. The symmetrically aligned gable facades are exacting in their placement of fenestration and doors. The building has a high level of architectural integrity. Few items were changed on this building through the years except for the replacement of the overhead doors.

3. Description of Exterior:

a. Overall Dimensions:

The Ordnance/Motor Repair Shop is composed of one large mass measuring 133'-8"x67'-6" with an east-west orientation. There is an 8'-5" by 11'-0" extension on the east facade that shelters a compressor. The entire building sits on a concrete wall foundation with a concrete slab floor. The ridge height for the center bay is 29'-10³/₄" above grade and the north and south bay are 18'-0" above grade. Although differences in roof height, window, and door placement produce distinct elevations for all facades, the uniformity of this building is remarkable and is a classic representation of International Style.

The north elevation (Photo NC-398-7, Photocopy NC-398-26) is marked by matching garage doors and windows symmetrically placed on either side of the central axis of the facade. The clerestory windows, above the lower half-gable roof, run along the length of the north elevation. This central axis runs through the middle of the garage door on this facade. An exterior ladder leads from the lower half-gable roof to the central gable roof.

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The east elevation (Photo NC-398-8, Photocopies NC-398-23 and NC-398-26) is composed of double wooden doors and matching windows placed on both sides of the central axis. A 3'-10"x3'-10" fan, a later addition, is 1' above the double door aligned with the central axis. A fenced shelter containing a compressor is to the left of the central axis. The central axis runs through the middle of the east facade double doors.

The south elevation (Photos NC-398-7 and NC-398-8, Photocopies NC-398-23 and NC-398-26) has asymmetric windows, door, and four garage doors, which are not aligned with the central axis at the south bay facade. The clerestory windows, above the lower half-gable roof, spread across the entire length of the central bay. An awning is above the door to the east of the central axis (Photo NC-398-10). There are three 4"x3" downspouts at this facade. An exterior ladder leads from the lower half gable roof to the central gable roof.

The west elevation (Photo NC-398-9, Photocopy NC-398-26) is composed of double wooden doors and matching windows placed on both sides of the central axis. A 3'-10"x3'-10" fan, a later addition, is 1' above the double door aligned with the central axis. An awning is above the window to the north of the central axis. The central axis runs through the middle of the west facade double doors.

b. Foundations:

The foundation is concrete wall with an undetermined thickness concrete slab poured over compacted soil. No crawl space is extant.

c. Wall Construction:

The perimeter walls are composed of 3'-6" concrete walls and standard 12" steel channels on each side of the garage door with insulating pressboard in between. The insulating pressboard is attached to the concrete wall with a steel angle atop the concrete wall. The angle rests on the concrete wall and fastens to the pressboard behind for additional support. The north and south standard channels are 11'-8" high. On the exterior, corrugated galvanized iron sheeting is attached to the pressboard using screws and wide washers and secured with a bolt. The screws are placed every 18". For the termination of the walls between the garage door openings, a 4" vertical galvanized metal end cap is inserted at each end. The corrugated galvanized iron sheeting at the north and south facade do not have horizontal seams. A 4" galvanized metal top cap is around the perimeter of the building above the corrugated galvanized iron sheeting (Photo NC-398-12, Photocopies NC-398-26 through NC-398-29).

d. Structural System, Framing:

The roof platform is composed of six 8"x4" beams resting on eight 16" I-beams running north-south from each side of the building. The 16" I-beams connect to the sixteen main steel "H" columns which measure 12"x10" and 29'-2" high from the floor. The lower roof beams connect from the exterior columns to the main columns at

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18'-9" from the floor. The north and south exterior columns are 15'-2" high. The concrete wall rises from a thick lip that encompasses the lower part of the steel column. The lip is sloped down toward the interior. Atop the concrete lip is an 8"x 6½" steel "H" exterior column which sits on a 9"x9"x¾" steel plate on top of a 9¾" wide concrete pad extending 1½" from the flange. The exterior column is located in front of the wall that rests on the top of the concrete wall. The concrete lip is 5½" high and 8" deep with the concrete wall rising 40" from the top of the lip. The plate on which the column is supported is embedded in the concrete wall. Extending north and south across the top of the exterior column is an I-beam leading to the middle column of the building. The main 14"x10" steel "H" column sits upon a 16"x12" steel plate which is on top of a 16"x12½"x1½" concrete pad which sits upon an 18"x18" concrete pad level with the grade. The roof deck is composed of 1½"x5½" wood running north-south. The cross bracing for the roofs is constructed of two 2½" equal leg angles, which is the same for the window curtain wall system at the central bay (Photos NC-398-15 through 17, and 19, Photocopies NC-398-27 and NC-398-28).

e. Porches, Balconies:

The east porch does not appear in the standardized plans for the building, nor in the 1941 completion photograph; however, it cannot be determined if it is original to the building. It measures 8'-5"x 11' and 8'-10½" high at its peak. The structure rests on top of a 2½" high concrete pad the same dimension as the roof, which in turn sits on a 12'-9"x10'-5" concrete pad. The concrete slab is the same grade as Sturgis Street (Photo NC-398-8, Photocopy NC-398-30). The porch is supported by 3" diameter posts with 10"x3" steel plates at each end for anchoring to the concrete pad and the roof beam above. The posts are 7' high at the front and 8'-10½" at the back of the porch. The roof beams are composed of a top and bottom piece of 2"x4" with two 2"x6" nailed vertical with ½" plywood in between.

f. Chimneys:

There are none.

g. Openings:

(1) Doorways and Doors: There are twelve entrances to the building. The north facade has five steel overhead garage doors, which replaced the original wooden overhead doors with wood and glass panel inserts (Photo NC-398-7, Photocopy NC-398-29). The 14'-4"x14'-6" openings have a 12" channel at each side which sits on a 2" exposed concrete base. Above the channels is a 2"x3'-8" metal trim with a 1¼" exposed angle above the metal trim.

The east facade has double wooden sliding doors (Photo NC-398-8). This opening is 14'-4½"x14'-2". The doors are made of three 3'-7"x6'-3" panels divided by 2"x6"s with diagonal 2"x4"s nailed to both exterior and interior panels. The top of the door is a 2"x8" and the bottom of the door is a 2"x6", which has a 2"x2" steel angle attached.

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A galvanized metal plate is attached vertically to the right door that overlaps the left door. A 1½"x1½" steel angle is attached to the outer edge of the 2"x6"s. These doors are not as designed in the original standardized plans (Photocopy NC-398-26); however, it cannot be determined if they are replacements or original to the building.

The south facade has a single steel door and four steel overhead garage doors (Photos NC-398-10 and NC-398-19, Photocopies NC-398-23 and NC-398-26). The 3'-6½"x7'1" opening has a 2"x3'-8" metal trim attached to another piece of 1½"x3'-8" metal trim with 1¼" of exposed angle above the metal trim. The 14'-4"x14'-6" garage door openings have a 12" channel at each side which sits on a 2" exposed concrete base. Above the channels is 2"x3'-8" metal trim with 1¼" of exposed angle above the metal trim (Photos NC-398-10 and NC-398-11).

The west facade has double wooden sliding doors with a 14'-4½"x14'-2" opening (Photo NC-398-9). The left door consists of two 3'-3"x6'-3" panels on the top and two panels at the bottom, one 2'-4½"x5'-2¼" and one 3'-2½"x5'-2¼". Each panel is divided by 2"x6"s with diagonal 2"x4"s nailed to both exterior and interior panels. To the right of the two bottom panels is a 2' opening for a small wooden door. The right door is made of four 3'-6½"x6'-3" panels divided by 2"x6"s with diagonal 2"x4"s nailed to both exterior and interior panels. A 4'-6"x11" section of plywood is nailed on the interior side of the second panel from the bottom. The top of the doors is a 2"x8" and the bottom of the door is a 2"x6" that has a 2"x2" steel angle attached. A galvanized metal plate is attached vertically to the right door, which overlaps the left door. These doors are not as designed in the original standardized plans (Photocopy NC-398-26); however, it cannot be determined if they are original to the building or replacements.

(2) Windows: The original windows are all steel commercial projected windows. The windows units are either fixed or have pivoted vent section (Photos NC-398-10 and NC-398-12, Photocopy NC-398-26).

The lower level windows on the north facade have a combination of a thirty-six paned window with no pivoted vent and a twenty-four paned window with an eight paned vent placed one row from the bottom of the window. The combination window is set into a 12'-3½"x10'-3 3/8" opening. There are two of these sets of windows on each side of the lower part of the facade. The upper level windows consist of a combination of a twenty-four paned window with no pivoted vent and a twelve paned window with no pivoted vent. This combination window is set into an opening of 12'-3½"x6'-10 3/8". There are two of these sets of windows on each end of the upper part of the facade. In between are five sets of windows that consist of two twelve paned sections surrounding a twenty-four paned section. These sets of windows are placed in a 17'-3 7/8"x6'-10 3/8" opening.

The lower level windows on the east and west facades are thirty-paned windows with an operable six-paned vent placed one row from the bottom of the window. They are

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each set into a 6'-1 $\frac{3}{4}$ "x10'-3 $\frac{1}{8}$ " opening. The upper level windows on the east and west facades are twenty-paned windows with no operable segments. They are each set into a 6'-1 $\frac{3}{4}$ "x6'-10 $\frac{3}{8}$ " opening.

The lower level windows on the south facade have a combination of a thirty-six paned window with no pivoted vent and a twenty-four paned window with an eight paned vent placed one row from the bottom of the window. The combination window is set into a 12'-3 $\frac{1}{2}$ "x10'-3 $\frac{3}{8}$ " opening. There are two of these sets of windows on each side of the lower part of the facade. To the east of the left window is a combination of steel commercial projected windows and the entry door. This set of windows consist of a thirty paned window with a six paned pivot vent placed one row from the top of the window, a twelve paned window placed atop the door opening, and a thirty-six paned window with an eight paned pivot vent placed one row from the top. The upper level windows follow the same pattern as on the upper portion of the north facade. This set of windows is placed in a 17'-3 $\frac{7}{8}$ "x6'-10 $\frac{3}{8}$ " opening.

All of the window openings have a metal lintel spanning the top of the opening. The windows are fastened directly to the structural columns by bolting 4"x3" equal leg angles.

h. Roof:

(1) Shape, Covering: The main roof over the central bay originally had a roof vent extending the length of the building along the ridge (Photocopies NC-398-23 and NC-398-26). The main roof is a gable and the lower roofs at the north and south bays are half-gables. The two lower roofs are supported by 8"x4" steel I-beam rafters that run east and west with a roof deck composed of 1 $\frac{1}{2}$ "x5 $\frac{1}{2}$ " wood running north-south. The central bay roof is constructed in a similar fashion except that the rafters are 8"x16". Triangular support composed of two 8 $\frac{1}{2}$ "x10 $\frac{3}{4}$ " angles back to back with vertical and horizontal angles bolted to vertical columns and angular beam. Roofing material consists of layers of roofing felt and rolled asphalt shingles.

(2) Cornice, Eaves: The cornice on the roof of the Ordnance/Motor Repair Shop is constructed of 12" galvanized iron nailed to the bottom of the roof deck and to the side of the corrugated galvanized iron siding. There are 4"x3" gutters on the lower parts of the building. (Photo NC-398-12).

(3) Dormers, Cupolas, Towers: There are none, although a long horizontal roof vent was removed at some undetermined date.

(4) Ladders: There are two steel ladders at the central bay that lead from the lower half-gable roofs to the central gable roof from the north and south elevation. The steel ladders are located at the second set of windows either from the east side of the building at the south facade or from the west side of the building at the north elevation.

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4. Description of Interior:

a. Floor Plans:

The original floor plan was an open plan with an enclosed area at the southwest corner as a restroom. The floor plan measures 66'-2"x132'-4". The current floor plan has an additional two enclosed offices at the northeast and northwest corners (Photocopies NC-398-24, NC-398-25, and NC-398-30). The three rooms can be accessed from the central area. The garage doors open directly into the central area. The railroad track enters the east side of the building through the large sliding doors.

The bathroom, measuring 17'-3¼"x18'-5¼", is located at the southwest corner with the entrance on the east wall opening into the south bay of the building. On the north wall is a utility sink 2" from the east wall, three urinals, and three stalls. The stalls are 9'-5½" from the east wall and extend 9'-0" to the west wall. The stalls are 2'-11¼" wide, 4'-5" deep, and 7' high, and the doors are 2'-4½"x5' and 1'-½" high from grade.

The northeast office measures 18'-5"x18'-6" and the entrance is on the south wall opening into the central bay (Photo NC-398-20). There is a 2'-11"x18'-5" and 2'-0" deep wooden bookcase, painted gray, at the north wall. The first shelf is 2½" above grade and the second shelf is 1'-6" above grade. The trim consists of 1" quarter rounds. There is a 1'-9"x18'-6" wooden shelf at the south wall that is 7'-0" above grade.

The northwest office measures 11'-9½"x18'-1", and the entrance is on the south wall opening into the central bay of the building.

b. Stairways and Ladders:

There are two steel ladders leading up to the crane on the east and west walls, one to the right side of the east sliding door and one to the right side of the west sliding door.

c. Flooring:

The floor is gray painted concrete.

d. Wall and Ceiling Finish:

The bathroom walls are brick painted gray and white on top. The northeast office wall is constructed out of 2"x4" wood studs and 26" on center with exposed plywood at the west and south walls and gypsum wallboard and 4"x1" baseboard on the other walls. The inside walls of the northwest office are covered by gypsum wallboard, 4"x1" baseboard, 7"x1" top board, and 3½"x1" corner board.

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The ceilings in the bathroom and the northeast office are open to the ceilings of the south and north bays. The wood-framing of the ceilings is exposed. The ceiling in the northwest office is gypsum wallboard (Photo NC-398-20).

e. Openings:

(1) Openings:

Northeast Office—There are two 2"x4" framed openings on the south wall. The left opening is 1'-6"x2'-2½" and is located 5'-6" from west wall and 3'-11" above ground. The right opening is 4'-5"x8'-0" and is located 19'-6" from the west wall. There are two openings on the east wall. One opening is 1'-6"x2'-2½" and 5'-6" from south wall and 3'-11" from the floor. The other opening is 4'-5"x8'-0" and 19'-6" from the south wall.

(2) Doorways and Doors:

Bathroom—There is an original doorway on the east wall of the bathroom. The doorway is 3'-5"x7'-2½" and is located 4'-7" from the south wall. It allows access to the bathroom from the south bay. It consists of wood framing surrounded by bricks. It has an original horizontal 5-panel door. The swinging doors for the bathroom stalls are painted plywood (Photo NC-398-21).

Northeast Office—There is an original doorway for the office. It utilizes a 2"x4" framed opening. The Dutch door consisted of plywood. The left side is 2'-11"x8' and the right side is 1'-5¼". The top of the door measures 4'-3½" high and the bottom has a 2'-11"x7½" shelf (Photo NC-398-20).

Northwest Office—There is one original doorway for the office utilizing a 2"x4" framed opening. The door is composed of four glass panes measuring 15½"x13¾", on top of three wood panels measuring 8¼"x28" (Photo NC-398-16).

(3) Windows: An interior window is 5'-6" from the west wall and 3'-11" above ground at the south wall of the northwest office. It has a 3½"x1" frame surrounding the glass.

f. Decorative Features and Trim:

A ½"x ¾" trim piece is around the glass at the window in the northwest office.

g. Hardware:

The brass knobs, locksets, and hinges are the only original hardware left in the Ordnance/Motor Repair Shop; no date of manufacture or company was found.

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h. Mechanical Equipment:

(1) Heating, Air Conditioning, Ventilation: There are seven heaters in the Ordnance/Motor Repair Shop. There is a heater to the right of each of the four garage doors on the south wall. They are positioned 7'-6" from the ground. The manufacturer for the heaters is unknown. A pipe that rises from the ground enters the heater and another one exits at the top, which runs along the corresponding rafters. In the southeast corner, there is a vent structure with three stacks coming out of the top (Photo NC-398-17). On the southeast side near the interior column of the central bay, there is a heater to the southwest that is square with rounded edges. The manufacturer for the heater is unknown. The heater is hanging from horizontally oriented cross bracing.

The boiler in the Boiler House heats water that enters the northwest room of the Boiler House, which is connected by underground pipes to the bathroom of the Ordnance/Motor Repair Shop. Then the heated water travels through an insulated piping system connecting all of the suspended heaters in the building and also the three stack heaters at the northwest and southeast corners (Photocopy NC-398-24). The condensate then returns through piping to the bathroom and through the utility tunnel to be reheated in the Boiler House.

An air pollution control system for carbon monoxide removal, welding fumes exhaust, or small particulate filtration is located at the south bay. The manufacturer is Car-Mon Products, Inc. in Elgin, Illinois (Photos NC-398-16 and NC-398-17).

(2) Lighting: Original light fixtures exist in the bathroom. Existing light fixtures have metal hoods with a single bulb. There are four fixtures per bay. The central bay has incandescent lighting that is not original and the manufacturer could not be determined. The north and south bays have two fixtures per bay and the central bay has one fixture per bay (Photo NC-398-15).

(3) Plumbing: The plumbing starts out with a 3½" diameter pipe that branches off to a 2" diameter pipe to the utility sink and a 2¼" pipe horizontally to the left. A 2" pipe connects to the 2¼" pipe and branches off to the 1¼" pipe from the urinals on each side. The 2¼" pipe connects to a vertical 2" pipe that continues to the floor.

(4) Fixtures: The utility sink measures 24"x 20½" and 11½" deep and 2'-3" above grade. The manufacturer of the sink is Standard Faucets. There is one original urinal, manufacturer unknown, and two replacements made by American Standard that were placed in the bathroom at an undetermined date. There is a water fountain, measuring 4'-6" in diameter and 2'-3" above grade, located 6'-¾" from the north wall and 6'-1" from the west wall. The manufacturer for the water fountain is Bradley Corporation. The manufacturer for the toilets is unknown. No dates were stamped on any of the plumbing fixtures (Photo NC-398-21).

(5) Crane: There are two electric cranes in the central bay. Each crane lists a 10-ton limit and is manufactured by the Chisholm-Moore Hoist Corporation in Tonawanda,

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New York. Both cranes also have an electric hoist/hook supported by six wires listed as holding 20,000 pounds. The cranes operate on tracks held up by steel brackets bolted to the structural columns of the central bay (Photos NC-398-17 through NC-398-19).

i. Original Furnishings:

There are no original furnishings.

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5. HABS No. 398 Index To Photographs

Martin Stupich, Photographer October 2002

NC-398-1 GENERAL VIEW TO NORTHWEST SHOWING BUILDINGS IN SETTING

NC-398-2 GENERAL VIEW TO NORTHEAST SHOWING BUILDING 2-1150 IN RELATION TO BUILDING 2-1251

NC-398-3 GENERAL VIEW TO NORTHWEST SHOWING BUILDING 2-1152 IN RELATION TO BUILDING 2-1251

NC-398-4 OBLIQUE VIEW TO SOUTHEAST SHOWING BUILDING 2-1251

United States Army Corps of Engineers, Savannah District November 1959

NC-398-5 Photocopy of existing photograph (original print located Archives, Artifact Curation Facility, Cultural Resources Program, Fort Bragg).

AERIAL (ALT 4000') VIEW TO NORTH WITH BUILDINGS IN CENTER

United States Army Corps of Engineers, Savannah District November 1968

NC-398-6 Photocopy of existing photograph (original print located Archives, Artifact Curation Facility, Cultural Resources Program, Fort Bragg).

AERIAL (ALT 4000') VIEW TO SOUTH WITH BUILDINGS IN CENTER

Martin Stupich, Photographer October 2002

NC-398-7 VIEW OF NORTH ELEVATION

NC-398-8 VIEW OF EAST ELEVATION

NC-398-9 VIEW OF WEST ELEVATION

NC-398-10 DETAIL, SOUTH DOOR; VIEW TO NORTH

NC-398-11 DETAIL, SOUTH ENTRANCE BAYS; VIEW TO NORTH

NC-398-12 DETAIL, EAST FACADE RIGHT WINDOW; VIEW TO WEST

NC-398-13 DETAIL OF OIL RUNOFF SYSTEM BERMS; VIEW TO NORTHEAST

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- NC-398-14 DETAIL OF OIL AND WATER STORAGE ACCESS HATCHES
FOR OIL RUNOFF SYSTEM; VIEW TO NORTHEAST
- NC-398-15 INTERIOR, CENTER BAY; VIEW TO EAST
- NC-398-16 INTERIOR, SOUTH BAY; VIEW TO WEST
- NC-398-17 DETAIL OF TYPICAL COLUMN WITH CONNECTOR HOLDING
UP CRANE TRACK; VIEW TO EAST
- NC-398-18 DETAIL OF CRANE HOOK AND CRANE MOTOR; VIEW TO
NORTHEAST
- NC-398-19 INTERIOR, ROOF BEAMS AND BRACING; VIEW TO EAST
- NC-398-20 INTERIOR, NORTHEAST OFFICE; VIEW TO NORTHEAST
- NC-398-21 DETAIL OF BRADLEY WASH FOUNTAIN IN SOUTHWEST
BATHROOM; VIEW TO NORTH
- NC-398-22 DETAIL OF AIR COMPRESSOR ON EAST FACADE; VIEW TO
WEST

United States Army Quartermaster Corps

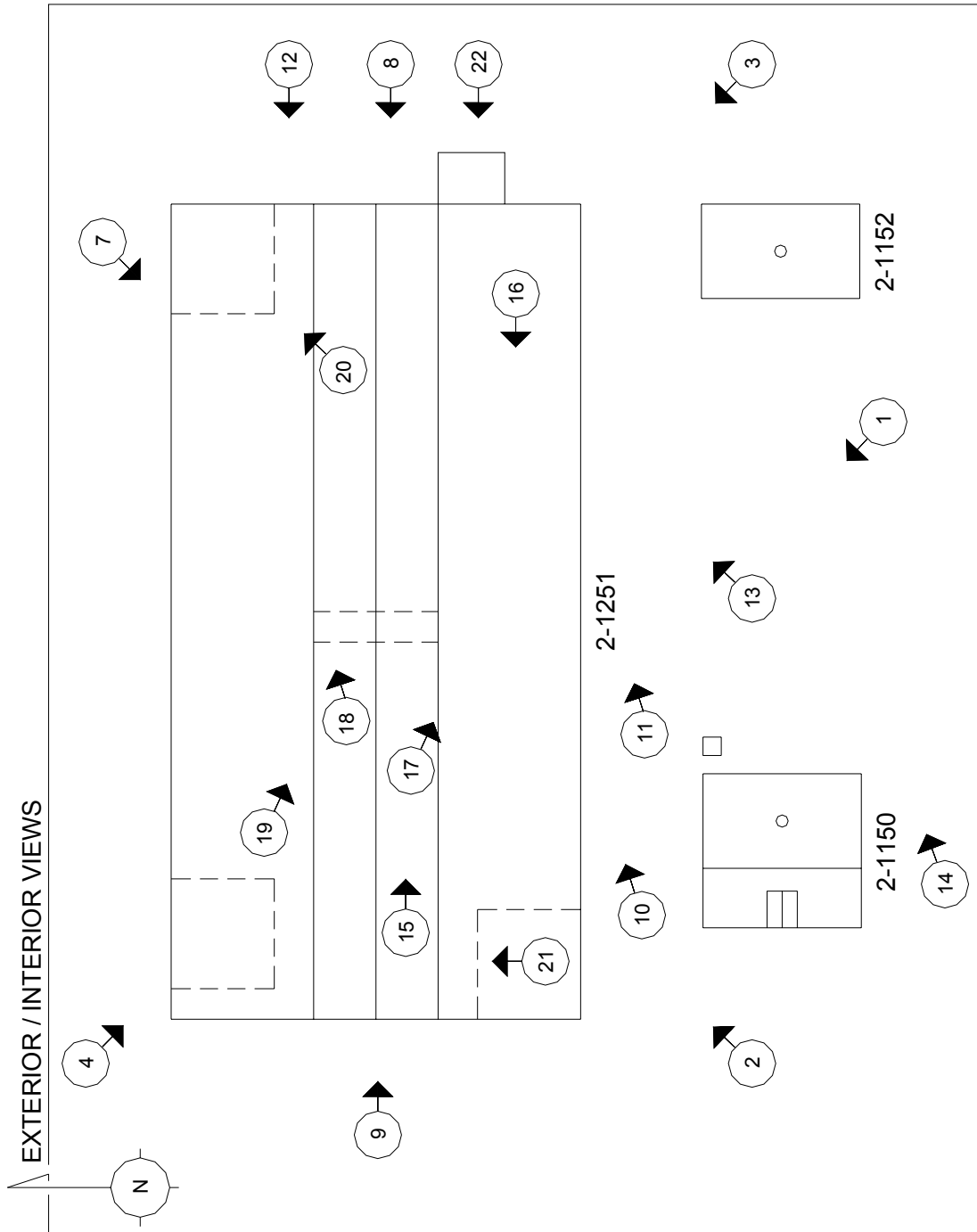
August 14, 1941

- NC-398-23 Photocopy of existing photograph (original print located at National
Archives at College Park, MD).
GENERAL VIEW OF ORDNANCE SHOP; VIEW TO WEST.
- NC-398-24 Photocopy of existing drawing (this photograph is an 8"x10" enlarge-
ment from a 4"x5" negative; dated November 30, 1940, with last revi-
sion dated February 5, 1941, drawn by Klonin for the War Depart-
ment, Office of the Chief of Engineers-Construction Division,
Washington, DC; original negative located at Archives, Office of His-
tory, US Army Corps of Engineers).
HEATING PLAN DEPICTING ORDNANCE SHOP AND BOILER
HOUSE
- NC-398-25 Photocopy of existing drawing (this photograph is an 8"x10" enlarge-
ment from a 4"x5" negative; dated February 21, 1941, drawn by
Jaques S. Segal for the War Department, Office of the Chief of Engi-
neers-Construction Division, Washington, DC; original negative lo-
cated at Archives, Office of History, US Army Corps of Engineers).
FLOOR PLAN FOR FIRST FLOOR AND CRANE TRACK

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- NC-398-26 Photocopy of existing drawing (this photograph is an 8"x10" enlargement from a 4"x5" negative; dated February 21, 1941, drawn by Harris for the War Department, Office of the Chief of Engineers-Construction Division, Washington, DC; original negative located at Archives, Office of History, US Army Corps of Engineers).
SIDE ELEVATIONS, SECTION, END ELEVATION
- NC-398-27 Photocopy of existing drawing (this photograph is an 8"x10" enlargement from a 4"x5" negative; dated February 21, 1941, drawn by Loehler for the War Department, Office of the Chief of Engineers-Construction Division, Washington, DC; original negative located at Archives, Office of History, US Army Corps of Engineers).
FRAMING PLANS
- NC-398-28 Photocopy of existing drawing (this photograph is an 8"x10" enlargement from a 4"x5" negative; dated November 20, 1940, drawn by Loehler, Burkholder, McHenry, Shure for the War Department, Office of the Chief of Engineers-Construction Division, Washington, DC; original negative located at Archives, Office of History, US Army Corps of Engineers).
STRUCTURAL STEEL DETAILS
- NC-398-29 Photocopy of existing drawing (this photograph is an 8"x10" enlargement from a 4"x5" negative; dated February 21, 1941, drawn by C.L. Kinder for the War Department, Office of the Chief of Engineers-Construction Division, Washington, DC; original negative located at Archives, Office of History, US Army Corps of Engineers).
DETAILS OF OVERHEAD TYPE DOORS
- NC-398-30 Photocopy of existing photograph (this photograph is an 8"x10" enlargement from a 4"x5" negative; no date, drawn by unknown for Directorate of Engineering and Housing, Fort Bragg, NC; the original drawing is located Archives, Artifact Curation Facility, Cultural Resources Program, Fort Bragg).
FLOOR PLAN

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Photograph Locations

FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HISTORIC AMERICAN BUILDINGS SURVEY
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HABS No. NC-398-1



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HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-2



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-3



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-4



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS Nos. NC-398, NC-399, and NC-400 (page 53)

HISTORIC AMERICAN BUILDINGS SURVEY
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

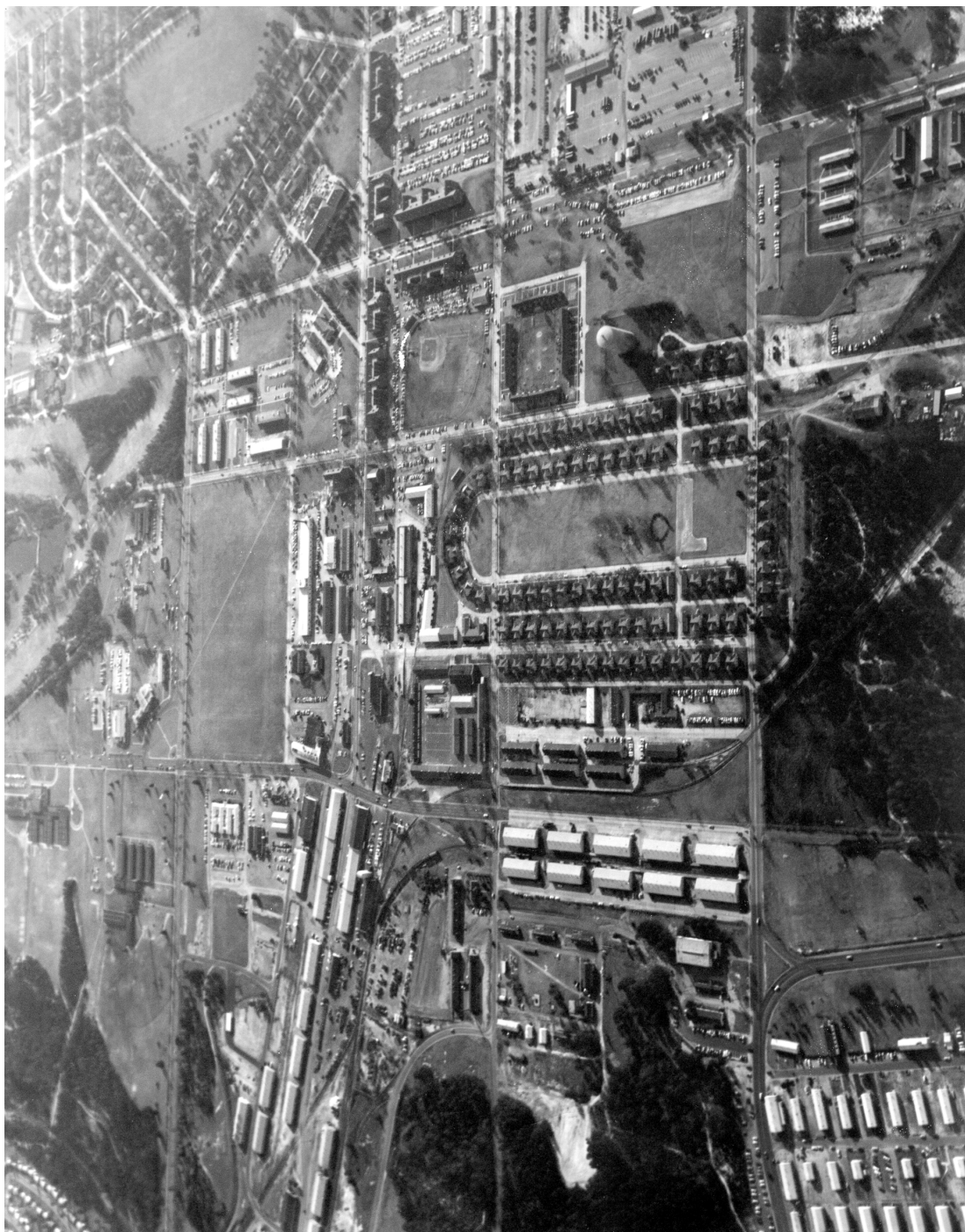
HABS No. NC-398-5
(see verso)



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-6
(see verso)



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS Nos. NC-398, NC-399, and NC-400 (page 55)

HISTORIC AMERICAN BUILDINGS SURVEY SEE
INDEX TO PHOTOGRAPHS FOR CAPTION

HABS No. NC-398-7



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-8



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-9



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS No. NC-398-10



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS No. NC-398-11



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-12



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS No. NC-398-13



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HABS No. NC-398-14



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-15



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS No. NC-398-16



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HISTORIC AMERICAN BUILDINGS SURVEY
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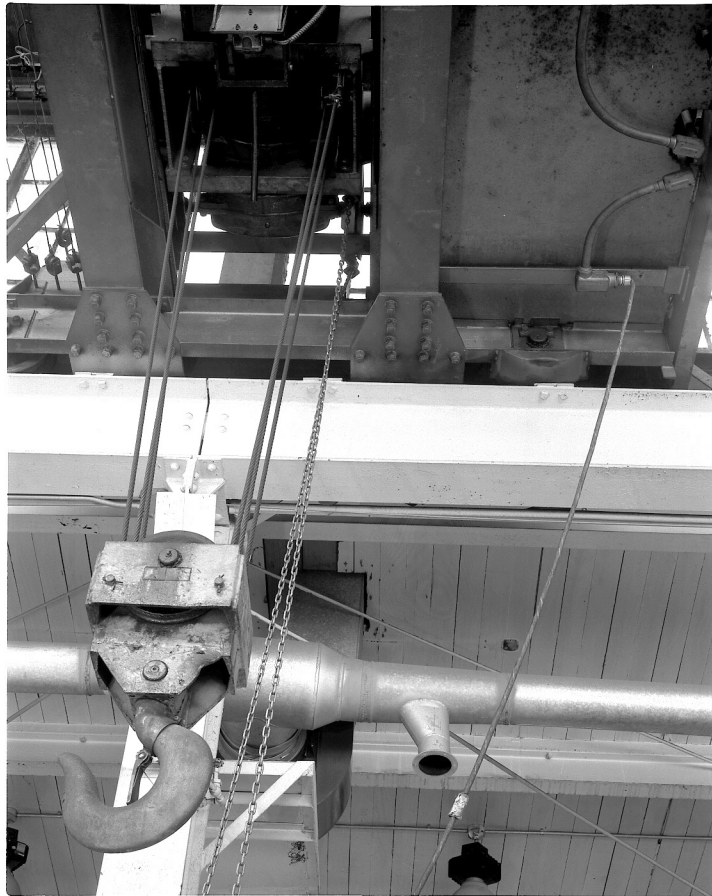
HABS No. NC-398-17



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
(BUILDING Nos. 2-1251, 2-1150, and 2-1152)
HABS Nos. NC-398, NC-399, and NC-400 (page 66)

HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-18



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS No. NC-398-19



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS No. NC-398-20



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS Nos. NC-398, NC-399, and NC-400 (page 69)

HISTORIC AMERICAN BUILDINGS SURVEY
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

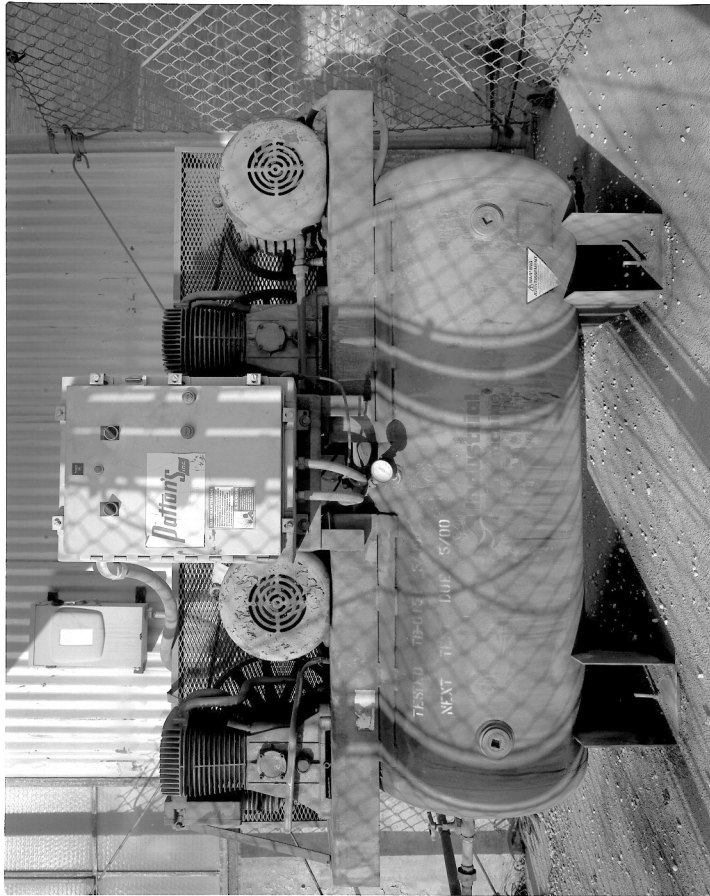
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FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
(BUILDING Nos. 2-1251, 2-1150, and 2-1152)
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HISTORIC AMERICAN BUILDINGS SURVEY
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HABS No. NC-398-22



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS Nos. NC-398, NC-399, and NC-400 (page 71)

HISTORIC AMERICAN BUILDINGS SURVEY
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

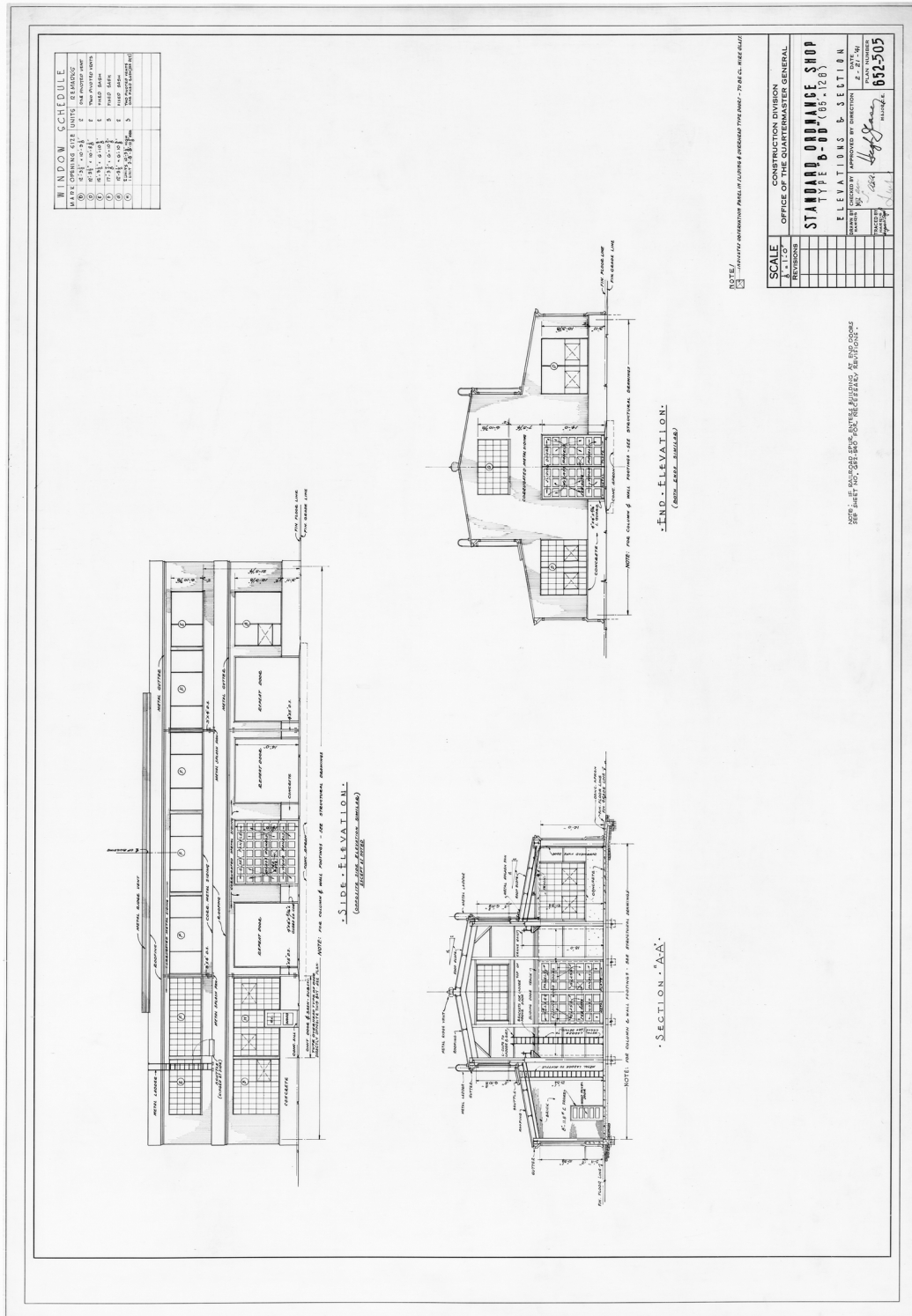
HABS No. NC-398-23
(see verso)



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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 HABS Nos. NC-398, NC-399, and NC-400 (page 74)

HISTORIC AMERICAN BUILDINGS SURVEY
 SEE INDEX TO PHOTOGRAPHS FOR CAPTION

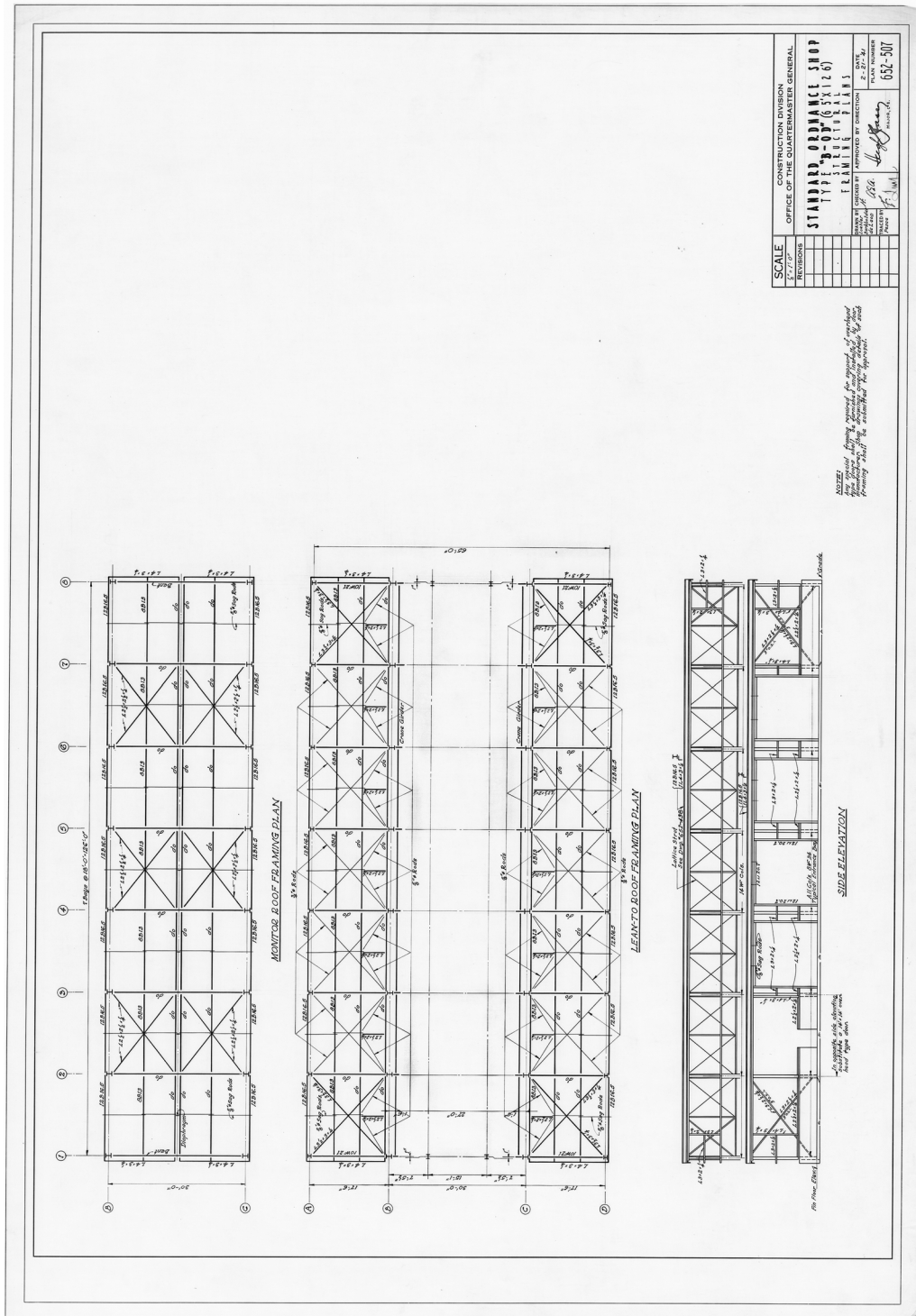
HABS No. NC-398-26
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FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS No. NC-398-27
 (see verso)



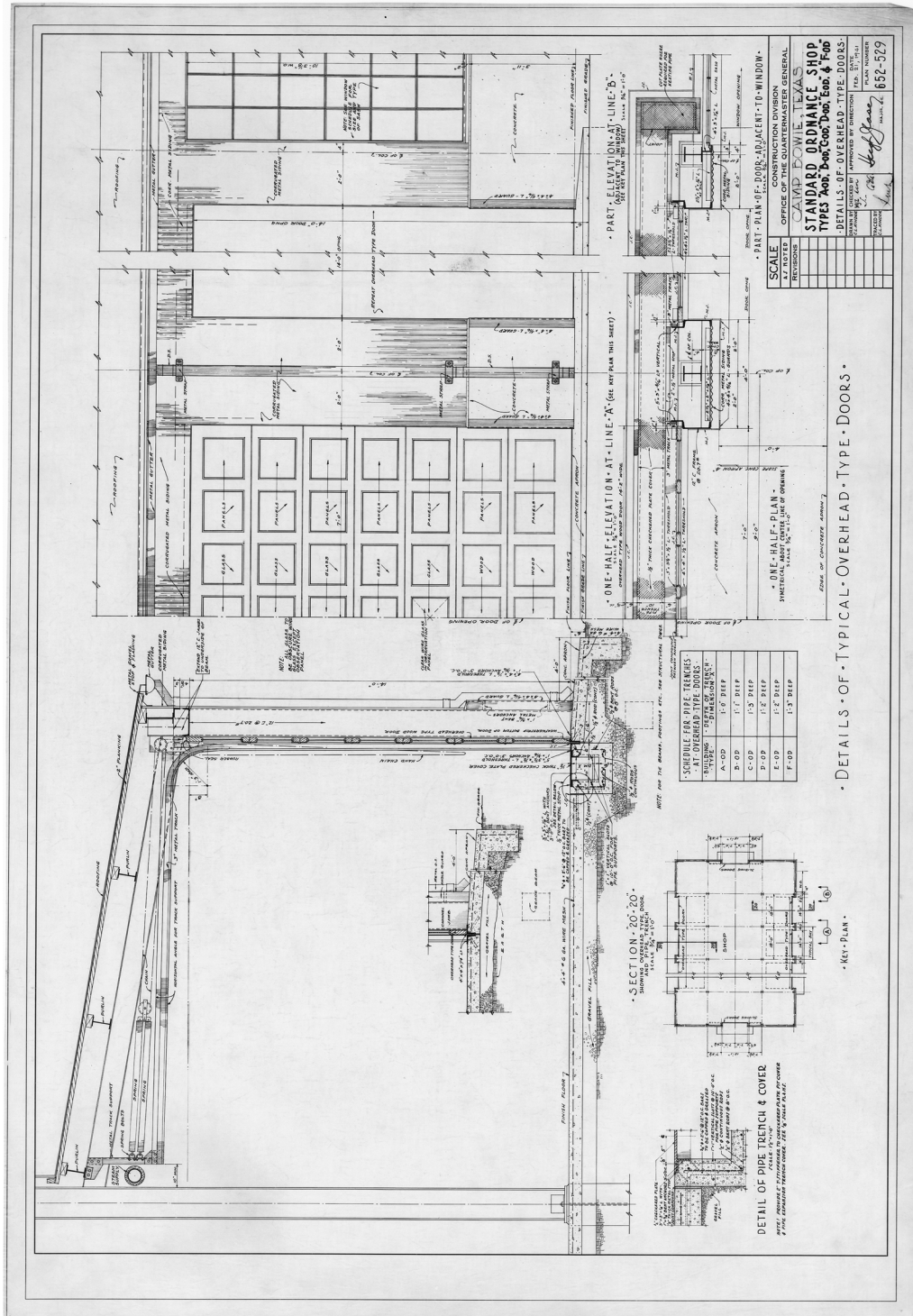
SCALE	CONSTRUCTION DIVISION	OFFICE OF THE QUARTERMASTER GENERAL
REVISIONS	STANDARD ORDNANCE SHOP	TYPE 'B' - 6' X 12' 6"
	FRAMING PLAN	DATE: 1/1/54
	APPROVED BY: [Signature]	PLAN NUMBER: 652-507

NOTE: All dimensions are given in feet and inches. All dimensions are to be checked against the original drawings. All dimensions are to be checked against the original drawings. All dimensions are to be checked against the original drawings.

FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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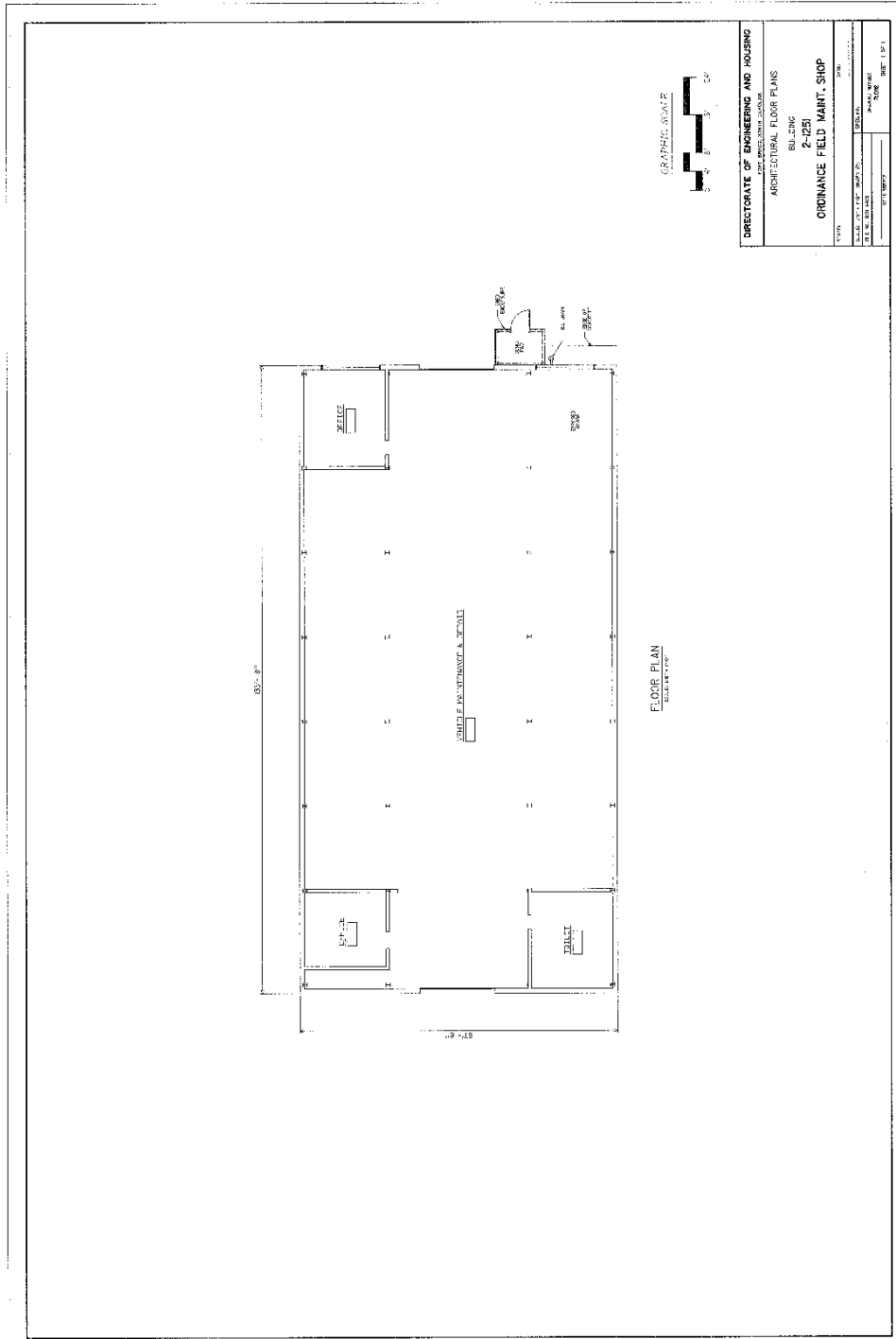
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HABS No. NC-398-30
 (see verso)



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D. Building No. 2-1150 (HABS No. NC-399):

1. History:

The Boiler House (originally numbered 583a and currently 2-1150) was built to provide shelter for the heating plant of the Ordnance Repair Shop. Fort Bragg requested the funds for this building on March 5, 1941 and the funds were approved by the War Department on May 7, 1941. The building was utilized as a boiler house until the utilities were deactivated in July 2002.

2. Architectural Character:

The Boiler House (2-1150) follows the adage of “form follows function,” with its service area constructed out of brick and the boiler room constructed out of steel covered by corrugated galvanized iron siding. The building has a high level of architectural integrity. Little was changed on this building through the years except for the replacement of the original boiler.

The boiler’s chimney was a simple galvanized metal tube sitting upon a concrete pad. Guy wires supported the height of the chimney with one set placed in the parking area, another connected to the roof of the Boiler House, and the third connected to the Ordnance Repair Shop. This original chimney was replaced August 9, 1955 with a 47’ high brick chimney at a cost of \$2,634.67.

3. Description of Exterior:

a. Overall Dimensions:

The Boiler House is composed of two masses with a north-south orientation. The larger mass measures 26’-6”x15’-4¾”, and the smaller mass measures 26’-6”x9’-9¼”. The entire building sits on a concrete wall foundation with a concrete slab floor. The ridge height of the larger mass is 18’-5” above grade on the west facade, while the ridge height of the smaller mass is 8’-1¼” above grade on the east section. Differences in window/door placement and use of materials produce four distinct elevations for all facades. The large separate chimney on the east facade gives the building an asymmetric profile all around.

The north elevation (Photo NC-399-3, Photocopy NC-399-12) is marked by no fenestration on the facade. The main element of the facade is a half-gable that slopes to the east. The corrugated iron siding sits upon a 15” concrete wall. The service lean-to is a half-gable that slopes to the west, with a brick wall that sits upon a 15” concrete wall. The main half-gable portion is 15’-4½” wide by 18’-5” high at the ridge and 16’ high at the base. The lean-to half-gable is 15’-4½” wide by 18’-5” high at the ridge and 16’ high at the base. The concrete roof for the lean-to is 4” thick and is visible from the exterior.

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The massive brick chimney dominates the east elevation (Photo NC-399-1, Photocopy NC-399-12) on the right. The facade has a nine paned steel commercial projected window in the top right quadrant, and a wood door with six glass panes in the bottom left quadrant. The window is 16'-8 $\frac{1}{4}$ " from the left side and is 9' above the top of the concrete slab. The door is 3'-6" from the left side. A large external chimney dominates the right of this elevation. This chimney is 47'-0" high from the finished grade in the parking area.

The south elevation (Photo NC-399-1 and NC-399-2, Photocopy NC-399-12) is marked by a large pair of wooden doors set symmetrically into the main portion of the facade. The main element of the facade is a half-gable that slopes to the east. The corrugated galvanized iron sheeting sits upon a 15" concrete wall. The service lean-to is a half-gable that slopes to the west, with a brick wall that sits upon a 15" concrete wall. The main half-gable portion is 15'-4 $\frac{1}{2}$ " wide by 18'-5" high at the ridge and 16' high at the base. The lean-to half-gable is 15'-4 $\frac{1}{2}$ " wide by 18'-5" high at the ridge and 16' high at the base. The 4" thick concrete roof for the lean-to is clearly evident.

The west elevation (Photo NC-399-3, Photocopy NC-399-12) is composed of 25" concrete base topped by a 5'-2 $\frac{1}{2}$ " brick wall that has a 9 $\frac{1}{2}$ " concrete roof structure. Above this system is a 9' wall composed of corrugated galvanized iron sheeting with two symmetrically placed windows 5'-5" from either side of the facade. There is an opening on the brick wall 23" above the concrete and 7'-2 $\frac{3}{4}$ " from the right side.

b. Foundations:

Foundation is concrete wall with a concrete slab poured over compacted soil. Depth of slab is undetermined. No crawl space is extant.

c. Wall Construction:

The main perimeter walls are constructed out of 6"x6" "H" steel columns with three 4"x3" unequal leg angles connecting the two "H" columns. The northwest, middle, and southwest "H" columns are 16'-7" high and the northeast, middle, and southeast "H" column are 14'-2" high. Wind bracing on the north wall is achieved by two 1" round iron rods that span the inside elevation forming an "X" (Photo NC-399-5, Photocopy NC-399-11). Wind bracing on the east wall is achieved with one 1" round iron rod that spans the first bay from the top left to the bottom right, and by two 1" round iron rods that span the area above the entrance door forming an "X". Wind bracing on the south wall is achieved by two 1" round iron rods that span the top half-gable triangle forming a modified "X". There is no wind bracing on the west wall. The base of the walls is composed of a 7" high concrete wall topped by a 3 $\frac{1}{2}$ "x5 $\frac{1}{2}$ " wood sill. The first unequal leg angle is 3'-3 $\frac{1}{2}$ " above the wood sill, with the next unequal leg angle 4'-2" above the first, and the top unequal leg angle 4'-2" above that. The exterior side of the walls is composed of 2 $\frac{1}{2}$ " corrugated galvanized iron with a $\frac{1}{2}$ " depth that does not appear to be original to the construction of the building. At the top of the corru-

gated galvanized iron siding, a 12" high topcap surrounds the perimeter of the exterior walls.

d. Structural System, Framing:

The roof platform is composed of four 4"x6" steel I-beams connecting the top of the four steel "H" columns. Two 4"x6" steel I-beams connect the north and south plates, with 4"x6" steel I-beams spanning the three areas in an east-west direction. Wind bracing for the roof is achieved by two 1" round iron rods that form an "X" in each of the two bays of the interior (Photo NC-399-5, Photocopy NC-399-11). The roof deck is composed of 5½"x1½" wood.

e. Porches, Balconies:

None.

f. Chimney:

The building has a large separate brick chimney constructed in 1955. The chimney is off center to the right on the east facade. The bricks measure 47'-0" with a 3/8" mortar joint. The chimney is 3' from the east facade. At its base, it measures 5'x5' (Photo NC-399-1 and NC-399-8). It retains this dimension for its entire height. The top of the chimney has a concrete cap 6" high. The total height of the chimney is 47'. This chimney is connected to the boiler inside of the Boiler House by a galvanized pipe 18" in diameter. The vent pipe is 18" from the north elevation and 3'-7" above grade. A cast iron door is on the east side of the chimney near its base. The door measures 10"x12".

g. Openings:

(1) Openings: On the west facade of the brick lean-to service area there is a 19½"x22¼" opening framed by 4"x1" wood. This opening is 7'-2¾" from the southwest corner and 23" above the concrete foundation. A wood door was found on the ground that fit this opening (Photo NC-399-4, Photocopy NC-399-12).

(2) Doorways and Doors: There are two entrances to the building. The east facade entrance has its original door. This is a 35½"x83" door with six panes of glass over three wooden panels. The panes measure 12"x13½", and the wooden panels are 7"x28". The 36"x83½" opening is formed by 2"x6" steel studs. The door opening is 3'-3½" from the southeast corner (Photo NC-399-1, Photocopy NC-399-12).

The south facade entrance has its original 35"x118½" doors. Each door is composed of seven 5"x118½"x1" wood boards, vertically oriented. The doors are strengthened by 5½"x1½" wood in a "Z" pattern. The 9'-10 ½"x6' opening is formed by 2"x6" steel studs (Photo NC-399-7, Photocopy NC-399-12).

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(3) Windows: The three windows are nine paned steel commercial projected windows in 30¼"x27" openings (Photo NC-399-1 and NC-399-3, Photocopy NC-399-12). The upper six panes are an awning that pivots out from the bottom. The east facade window opening is framed on the bottom and the top by the second and third 4"x3" unequal leg angles that support the east wall. The sides of the opening are framed by 4"x3" unequal leg angles. The west facade window openings are framed on the bottom by the top of the concrete lean-to roof, and on the top by a 4"x3" unequal leg angles that supports the west wall. The sides of the openings are framed by 4"x3" unequal leg angles.

h. Roof:

(1) Shape, Covering: The roof of the larger mass is a moderate slope half-gable. The 5½"x1½" wood deck is covered by tarpaper with gray three-tab asphalt shingles.

The roof of the smaller mass is also a moderate slope half-gable. The 4" concrete slab was at one time covered by tar with gravel placed on top. Most of this roofing material has disappeared.

(2) Cornice, Eaves: The roofs on both parts of the Boiler House have close rakes with little overhang. The cornice on the roof of the larger mass is made out of 12" galvanized iron nailed to the bottom of the roof deck and to the side of the corrugated galvanized iron siding. There is no cornice on the roof of the smaller mass; however, a 5" high piece of steel has been bolted into the 4" high concrete roof to contain the roofing tar and gravel. There are no gutters on the building.

(3) Dormers, Cupolas, Towers: There is one galvanized metal ventilator in the middle of the roof of the larger mass.

The coal storage area has a covered opening allowing a truck to unload directly into the room through the roof opening (Photo NC-399-4). It measures 46½"x64" on a built-up concrete base of 49"x70". The top of the door is 39" from the base where it connects with the concrete roof. Two galvanized steel-covered wood doors secure the opening.

4. Description of Interior:

a. Floor Plan:

The floor plan is divided into three unequal rooms accessed from the central boiler room. This central boiler room connects to the southwest coal storage area through an opening in the brick wall and to the northwest pump pit through another opening in the brick wall. The central boiler room measures 26'-6"x14'-6½". The coal storage area measures 16'-7"x8'-5", and the pump pit measures 10'-5"x8'-5" (Photocopy NC-399-10).

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b. Stairways and Ladders:

There is one ladder that leads down to the equipment room in the brick lean-to.

c. Flooring:

The floors are bare concrete in the three rooms.

d. Wall and Ceiling Finish:

The inside of the walls are not covered by any structure or material (Photo NC-399-5). The main elements of the structure (either steel or brick) and the siding (either corrugated galvanized iron siding or brick) are displayed.

The inside of the ceilings are not covered by any structure or material. The main elements of the structure (either steel or concrete) and the roofing material (either wood or concrete) are displayed (Photo NC-399-5).

e. Openings:

(1) Openings: There are two openings on the west wall of the interior. The left opening is 5'-7"x5' and is located 22½" from the left "H" column. It allows access to the coal storage area, and is protected by a wire-mesh security gate the same size as the opening. The right opening is 5'-1"x6'-9" and is located 12½" from the right "H" column. It allows access to the pump pit.

(2) Doorways and Doors: There are none.

(3) Windows: There are none.

f. Decorative Features, and Trim:

There are no decorative features.

g. Hardware:

Original hardware appears to be extant for all of the windows and doors in the Boiler House. No manufacturer for the hardware could be found.

h. Mechanical Equipment:

(1) Heating, Air Conditioning, Ventilation: The Boiler House did not have HVAC equipment for its own use, but provided the heat for the Ordnance/Motor Repair Shop (Photos NC-399-5 and NC-399-6, Photocopy NC-399-13). The boiler sits upon a concrete pad that is 4" high with dimensions of 6'-4"x4'. The current gas-fired boiler was manufactured by Weil-McLain at an unknown date. It measures 5'-2" high with dimensions of 5'-4"x3'-3". The boiler vented out the east wall via an 18" diameter

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galvanized metal flue. This flue then connected to the west side of the brick chimney that was built in 1955. The heated water left the boiler via a 4" insulated pipe that entered the pump pit and exited the pump pit on the west wall. It then connected to the Ordnance/Motor Repair Shop heating system by a tunnel. The condensate returned from the Ordnance/Motor Repair Shop by the same tunnel in a 1½" uninsulated pipe that then connected back to the boiler where the water would be reheated.

(2) Lighting: The original lighting is still extant but not operable. It consisted of four enameled steel fixtures hanging from the underside of the roof deck. Within each hood was one large incandescent bulb. Three fluorescent fixtures replaced this original lighting. These newer fixtures are also hanging from the underside of the roof deck. Two of the fluorescent fixtures are placed above the boiler and the other fixture placed perpendicular above the main entrance (Photo NC-399-5).

(3) Plumbing: The plumbing network was inaccessible and its type is unknown.

(4) Fixtures: A Marsh Dunkirk kerosene drum is located next to the north facade. The drum is 84¾" long by 48" wide, with a 52¼" long base structure, and a 42½" long base.

i. Original Furnishings:

There are no original furnishings.

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5. HABS No. 399 Index To Photographs

Martin Stupich, Photographer

October 2002

- NC-399-1 OBLIQUE VIEW TO NORTHWEST SHOWING EAST AND SOUTH FACADES
- NC-399-2 OBLIQUE VIEW TO NORTHEAST SHOWING EAST AND WEST FACADES
- NC-399-3 VIEW OF WEST ELEVATION
- NC-399-4 DETAIL, ROOF ACCESS TO COAL STORAGE AREA; VIEW TO NORTHEAST
- NC-399-5 INTERIOR, BOILER AREA; VIEW TO NORTH
- NC-399-6 INTERIOR DETAIL, BOILER; VIEW TO NORTHEAST
- NC-399-7 INTERIOR DETAIL, ACCESS DOORS; VIEW TO SOUTH
- NC-399-8 VIEW OF CHIMNEY FOR BOILER; VIEW TO NORTHWEST

United States Army Quartermaster Corps

August 14, 1941

- NC-399-9 Photocopy of existing photograph (original print located at National Archives at College Park, MD).
GENERAL VIEW OF BOILER HOUSE; VIEW TO WEST.
- NC-399-10 Photocopy of existing drawing (this photograph is an 8"x10" enlargement from a 4"x5" negative; dated December 9, 1940, drawn by Loehler, Burkholder, and W.J. Loeber for the War Department, Office of the Chief of Engineers-Construction Division, Washington, DC; original negative located at Archives, Office of History, US Army Corps of Engineers).
STRUCTURAL PLANS
- NC-399-11 Photocopy of existing drawing (this photograph is an 8"x10" enlargement from a 4"x5" negative; dated December 9, 1940, drawn by Loehler, Burkholder, and W.J. Loeber for the War Department, Office of the Chief of Engineers-Construction Division, Washington, DC; original negative located at Archives, Office of History, US Army Corps of Engineers).
STRUCTURAL STEEL DETAILS
- NC-399-12 Photocopy of existing drawing (this photograph is an 8"x10" enlargement from a 4"x5" negative; dated December 9, 1940, drawn

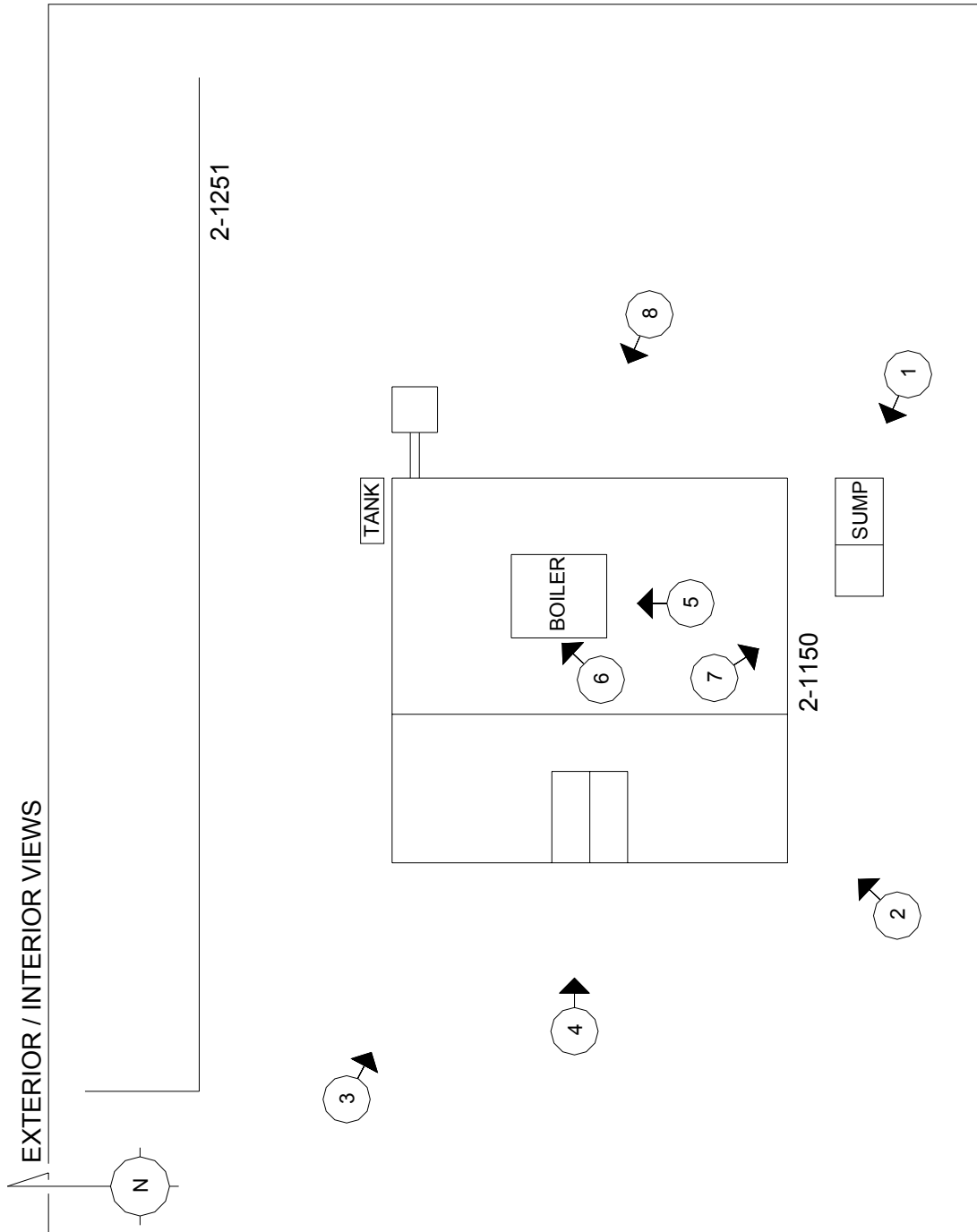
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by Jacques Segal for the War Department, Office of the Chief of Engineers-Construction Division, Washington, DC; original negative located at Archives, Office of History, US Army Corps of Engineers).

ELEVATIONS, SECTION, AND DETAILS

- NC-399-13 Photocopy of existing drawing (this photograph is an 8"x10" enlargement from a 4"x5" negative; dated December 9, 1940, drawn by Klonin for the War Department, Office of the Chief of Engineers-Construction Division, Washington, DC; original negative located at Archives, Office of History, US Army Corps of Engineers).
HEATING PLAN

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Photograph Locations

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HABS No. NC-399-2



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HABS No. NC-399-4



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HABS No. NC-399-5



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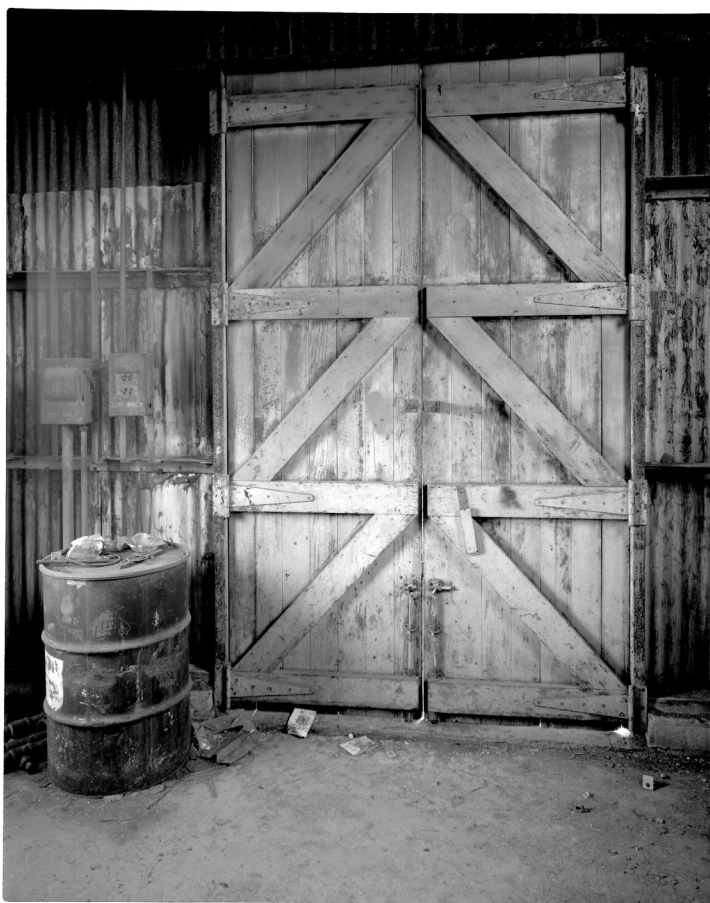
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HABS No. NC-399-7



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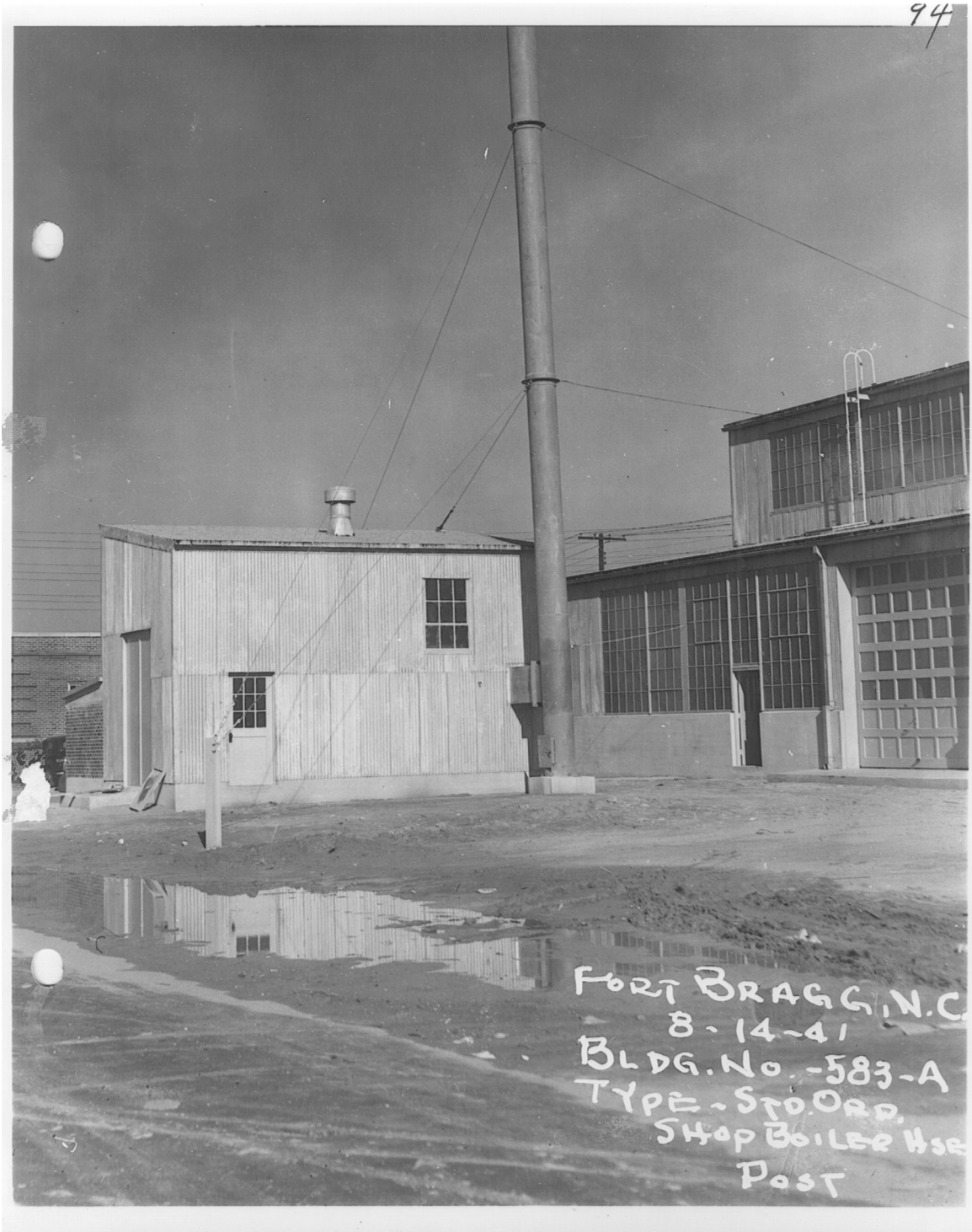
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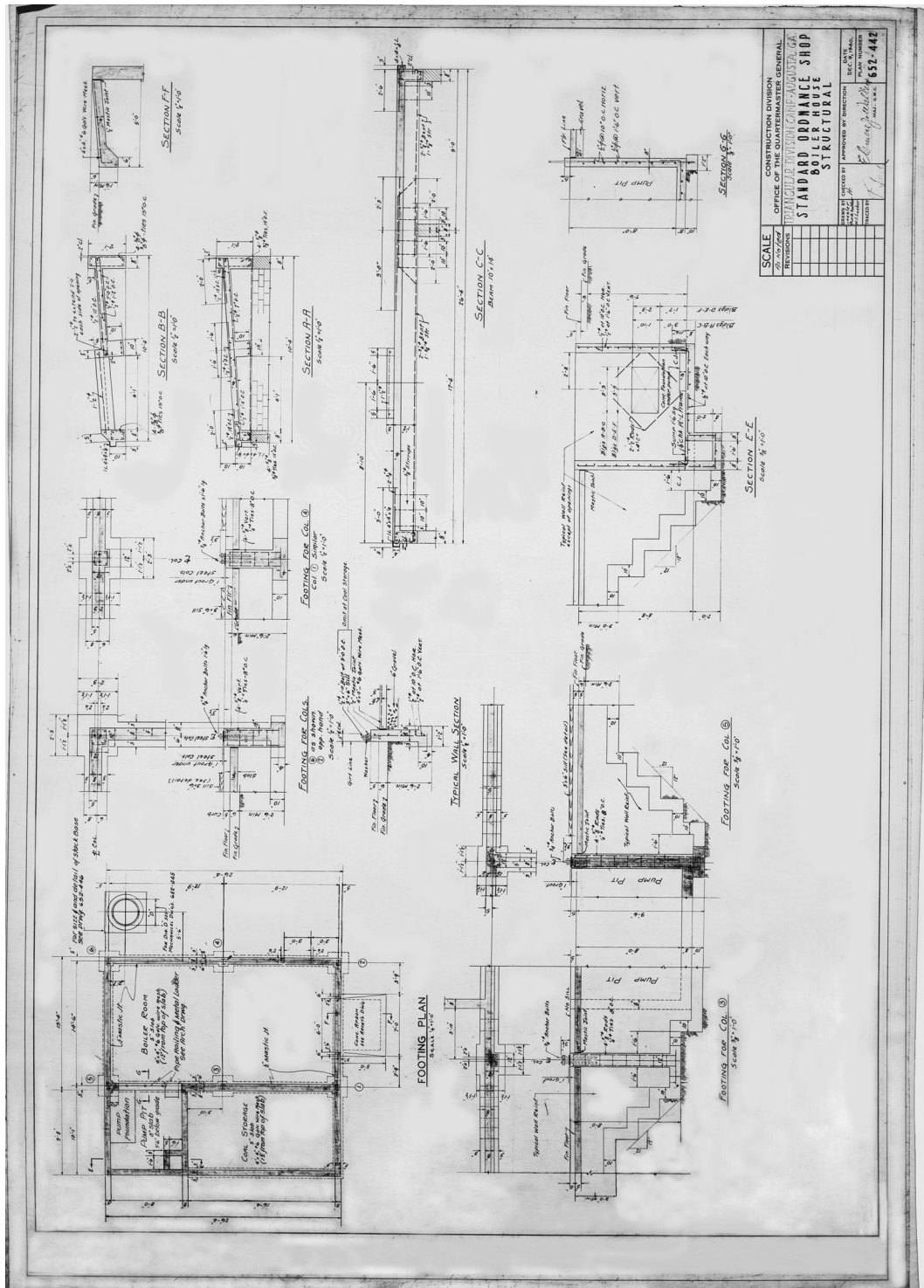
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(see verso)



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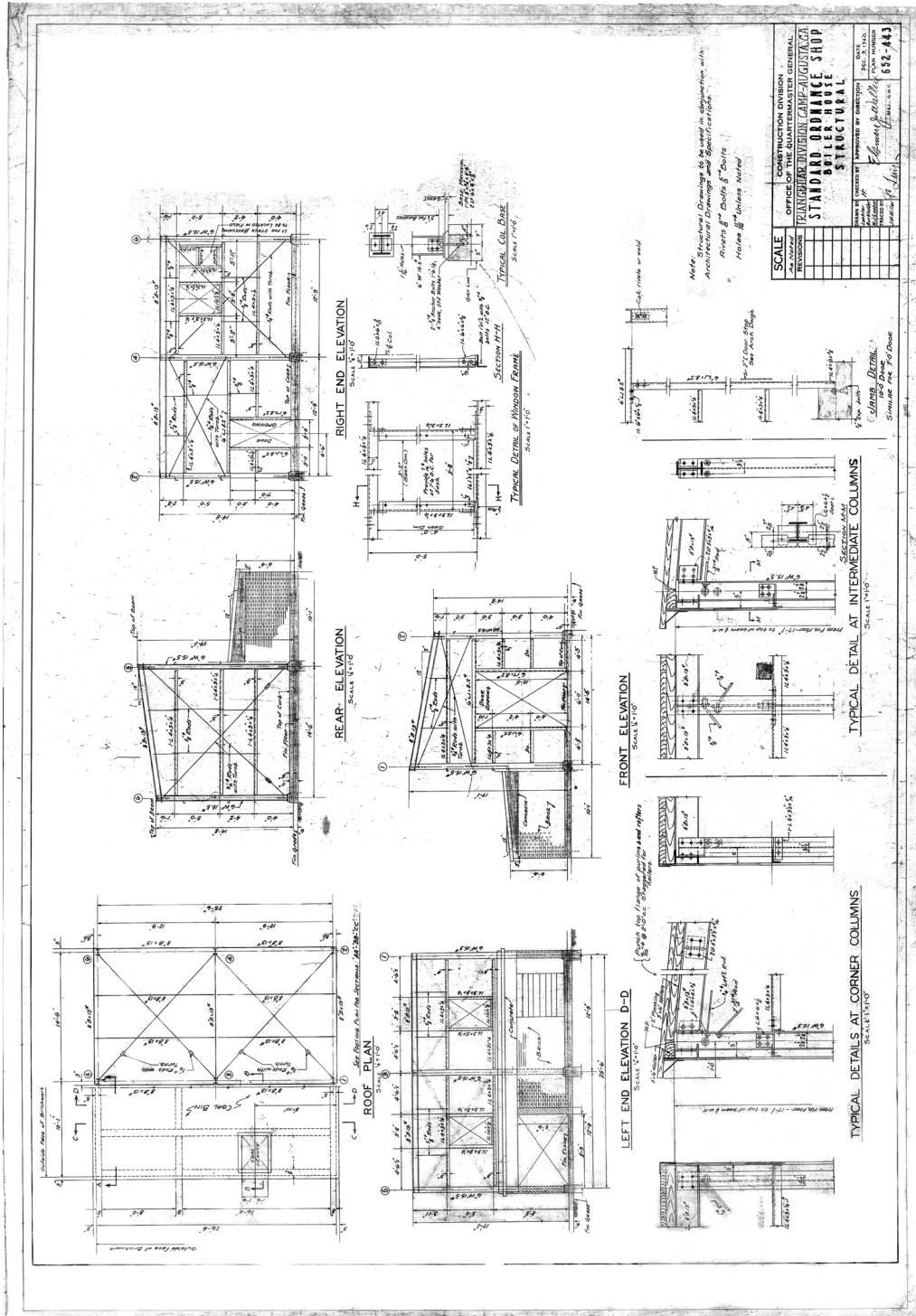
HABS No. NC-399-10
 (see verso)



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
 (BUILDING Nos. 2-1251, 2-1150, and 2-1152)
 HABS Nos. NC-398, NC-399, and NC-400 (page 99)

HISTORIC AMERICAN BUILDINGS SURVEY
 SEE INDEX TO PHOTOGRAPHS FOR CAPTION

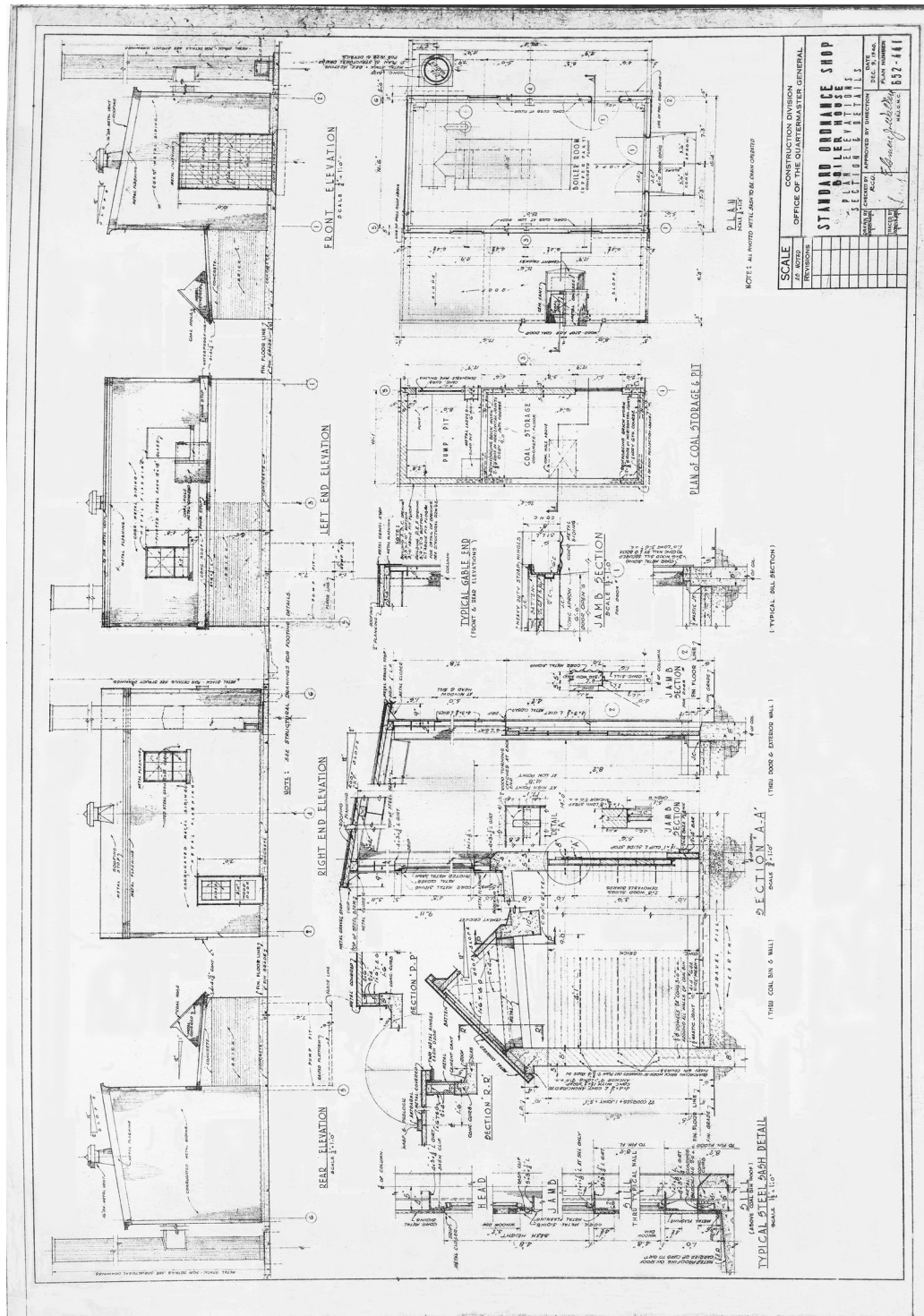
HABS No. NC-399-11
 (see verso)



FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
 (BUILDING Nos. 2-1251, 2-1150, and 2-1152)
 HABS Nos. NC-398, NC-399, and NC-400 (page 100)

HISTORIC AMERICAN BUILDINGS SURVEY
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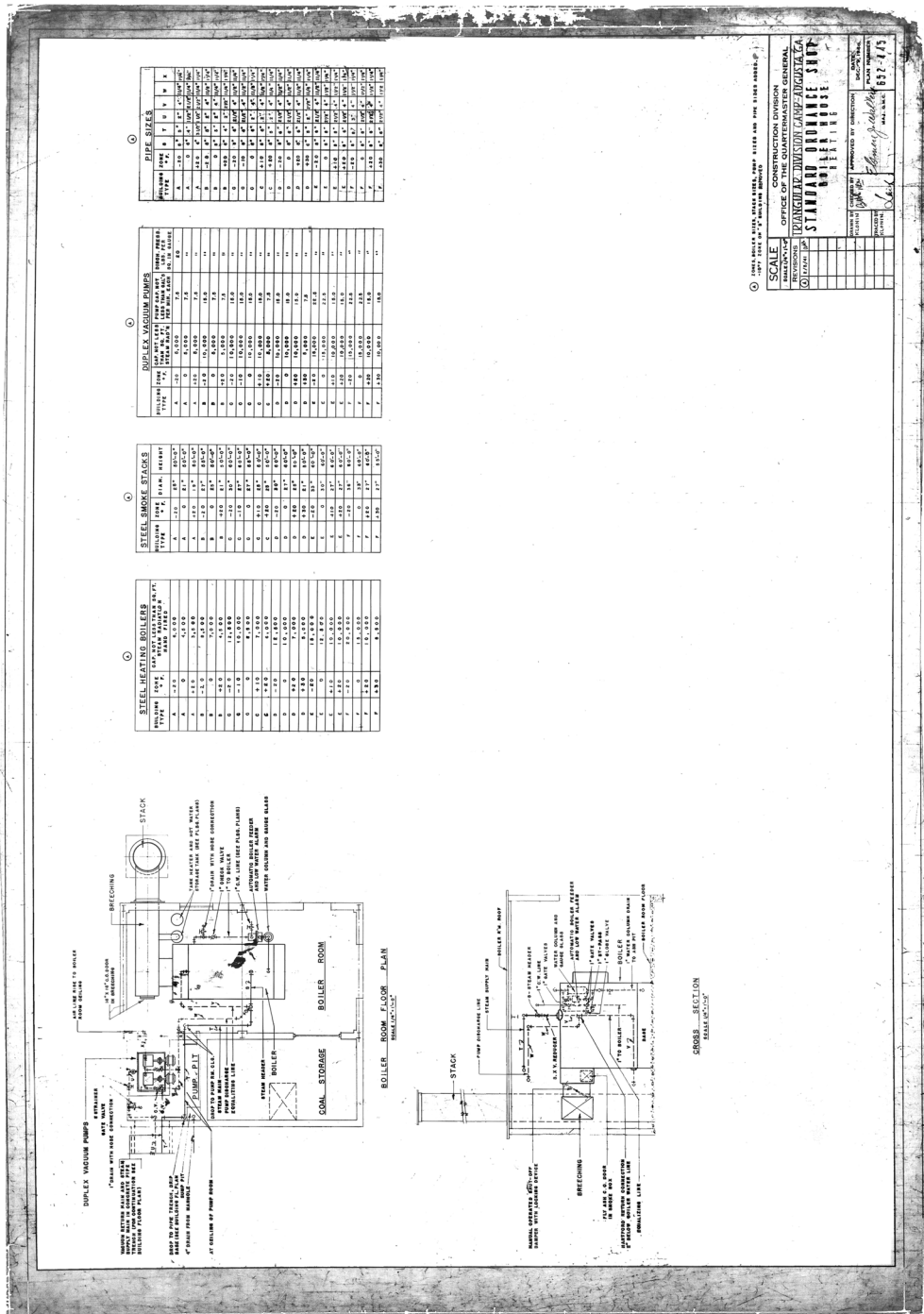
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FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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HABS No. NC-399-13
 (see verso)



SCALE 1" = 1'-0"

CONSTRUCTION DIVISION
 OFFICE OF THE QUARTERMASTER GENERAL
 STANFORD JUNIOR COLLEGE
 STANFORD, CALIFORNIA

DATE: 1942
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

FORT BRAGG, ORDNANCE/MOTOR REPAIR SHOP
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E. Building No. 2-1152 (HABS No. NC-400):

1. History:

The Oil Storage Building (originally numbered T-583b and currently 2-1152) was built to provide shelter for used-oil drums and mechanical equipment used in the maintenance of ordnance vehicles in the Ordnance Repair Shop. Fort Bragg completed this building on March 5, 1948. The building was utilized as an oil storage building until July 2002.

2. Architectural Character:

The Oil Storage Building (2-1152) is placed in the southeast corner of the complex, creating a symmetrical frame to the Ordnance Repair Shop. The building is constructed out of wood framing covered by corrugated galvanized iron siding. The interior consists of two floors with a wooden staircase. The building has a high level of architectural integrity. Little was changed on this building through the years except for placing plywood in lieu of the original windows.

3. Description of Exterior:

a. Overall Dimensions:

The Oil Storage Building is composed of one large mass measuring 26'-1"x15'-6" with a north-south orientation. It is a double story building. The entire building sits on a concrete block foundation with a concrete slab floor. The ridge height is 17'-8" above grade on the east facade and 15'-½" above grade on the west facade. Differences in window and door placement produce four distinct elevations for all facades.

The north elevation (Photo NC-400-1) is marked by two matching openings placed one above another, 2'-3" from the east edge of the corrugated galvanized iron siding and 2'-9¾" above grade. Plywood has been nailed over the openings. A pair of wooden doors is 10" from the west edge of the corrugated galvanized iron siding. The horizontal seam for the corrugated galvanized iron siding is 7'-11" above grade.

The east elevation (Photo NC-400-2) is composed of two window openings stacked on top of one and other along the central axis of the facade. The bottom window opening is nailed shut with plywood and the top window is opened. The horizontal seam follows the north elevation seam that is 7'-11" above grade from the north side.

The south elevation (Photo NC-400-3) is marked by no fenestration on the facade. The main element of the facade is a half-gable that slopes to the west. The corrugated galvanized iron siding sits upon a 20½" concrete foundation wall. The horizontal seam of the corrugated galvanized iron siding follows the east elevation.

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The west elevation (Photo NC-400-4) is marked by no fenestration on the facade. The corrugated galvanized iron siding sits upon a 9" concrete wall at the east that slopes up to a 20½" concrete foundation wall. The horizontal seam of the corrugated galvanized iron siding follows the south elevation.

b. Foundations:

Foundation is concrete wall with a concrete slab poured over compacted soil. Depth of slab is undetermined. No crawl space is extant.

c. Wall Construction:

The perimeter walls are constructed of 2"x4" vertical wood studs between a 2"x6" sill plate and 2"x6" double top plate. The stud wall is resting on top of the concrete foundation wall, which varies in height from 9" at the north wall to 20½" at the south wall. Horizontal 2"x4" and 2"x10" floor joists are placed between the vertical studs for lateral bracing at 6'-5¾" high. There are two 2"x10" diagonal bracing at the east and west walls and one 2"x10" diagonal bracing at the north and south walls. Insulating pressboard covers the walls. The exterior side of the walls is composed of 2½" corrugated galvanized iron (Photo NC-400-5).

d. Structural System, Framing:

There are four wooden columns measuring 7½"x 7½" and 5'-8" high, running north-south of the building. The columns are 7'-11¾" from the east side of the building and 6'-6" on center with the first column aligned with the north wall. The wooden beam resting on the columns is composed of three 2"x10"s. There are two 2"x4"s attached diagonally from the column to the beam forming a "Y" for bracing. The 2"x10" floor joists for the second floor have a 4½" overlap above the wooden beam. The floor joists run east-west with x-bracing at the middle of the span.

The roof platform is 2"x4" rafters 16" on center with x-bracings in the middle of the span.

e. Porches, Balconies:

There are none.

f. Chimney:

There are none.

g. Openings:

(1) Doorways and Doors: The north facade entrance has the original door. This is a 5'-4"x6'-7½" door with four wooden panels. The wooden panels are 1'-11¼"x3'-4" with

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4½" wood trim around it. The opening of the wooden doorframe is formed by the 2"x4" wood studs with ½"x3" trim with the corrugated galvanized iron siding nailed to it. There is a 4"x3" galvanized iron drip edge extending 1¼" out from the top of the opening.

(2) Windows: There are no windows.

(3) Openings: The four openings are 2'-7¾"x4'-6½". Three of the openings are covered by plywood. All the openings have a ½"x3" trim with the corrugated galvanized iron siding nailed to it at the jambs and a 2"x4" sill. There is a 4"x3" galvanized iron drip edge extending 1¼" out from the top of the opening. The first opening on the north facade is located 2'-3" from the east wall and 2'-9¾" above grade. The second opening on the north facade is directly above the first opening and it is 11'-5" above grade. The two openings on the east facade are located at the same heights as the north facade. They are 11'-9¾" from the south wall of the building (Photo NC-400-9).

h. Roof:

(1) Shape, Covering: The roof is a moderate slope half-gable. The 5½"x1½" wood deck is covered by tarpaper with gray three-tab asphalt shingles.

(2) Cornice, Eaves: The roof of the Oil Storage Building has close rakes with little overhang. The cornice on the roof consists of 12" galvanized iron nailed to the bottom of the roof deck and to the side of the corrugated galvanized iron siding. There are no gutters on the building.

(3) Dormers, Cupolas, Towers: There is one galvanized metal ventilator, measuring 1'-8 ¼"x1'-7 ¾", in the middle of the roof.

4. Description of Interior:

a. Floor Plans:

(1) First Floor Plan: The floor plan is an open plan that measures 26'-1"x15'-6".

(2) Second Floor Plan: The floor plan is an open plan that measures 26'-1"x15'-6".

b. Stairways:

A stairway is at the northeast corner of the building leading to the second floor.

c. Flooring:

The first floor is bare concrete. The second floor consists of 2"x8" wood planks nailed to the floor joists.

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d. Wall and Ceiling Finish:

The inside of the walls are not covered by any structure or material (Photos NC-400-5 through C-7). The main elements of the structure (wood) and the siding (corrugated galvanized iron sheeting) are displayed.

The inside of the ceilings are not covered by any structure or material. The main elements of the structure (wood) and the roofing material (wood) are displayed (Photo NC-400-5 and C-7).

e. Openings:

(1) Openings: There are none.

(2) Doorways and Doors: There are none.

(3) Windows: There are none.

f. Decorative Features and Trim:

There are no decorative features.

g. Hardware:

Door locks and hinges are the only original hardware left in the Oil Storage Building; no date of manufacture or company was found.

h. Mechanical Equipment:

(1) Heating, Air Conditioning, Ventilation: No HVAC equipment exists.

(2) Lighting: The original lighting is still extant. It consists of five steel fixtures: three hanging from the underside of the second floor, and two hanging from the underside of the roof deck. Each fixture has the capability of having a wire guard to protect the incandescent bulb; however, only one is extant.

(3) Plumbing: There is no plumbing.

(4) Fixtures: There are no original fixtures.

i. Original Furnishings:

There are no original furnishings.

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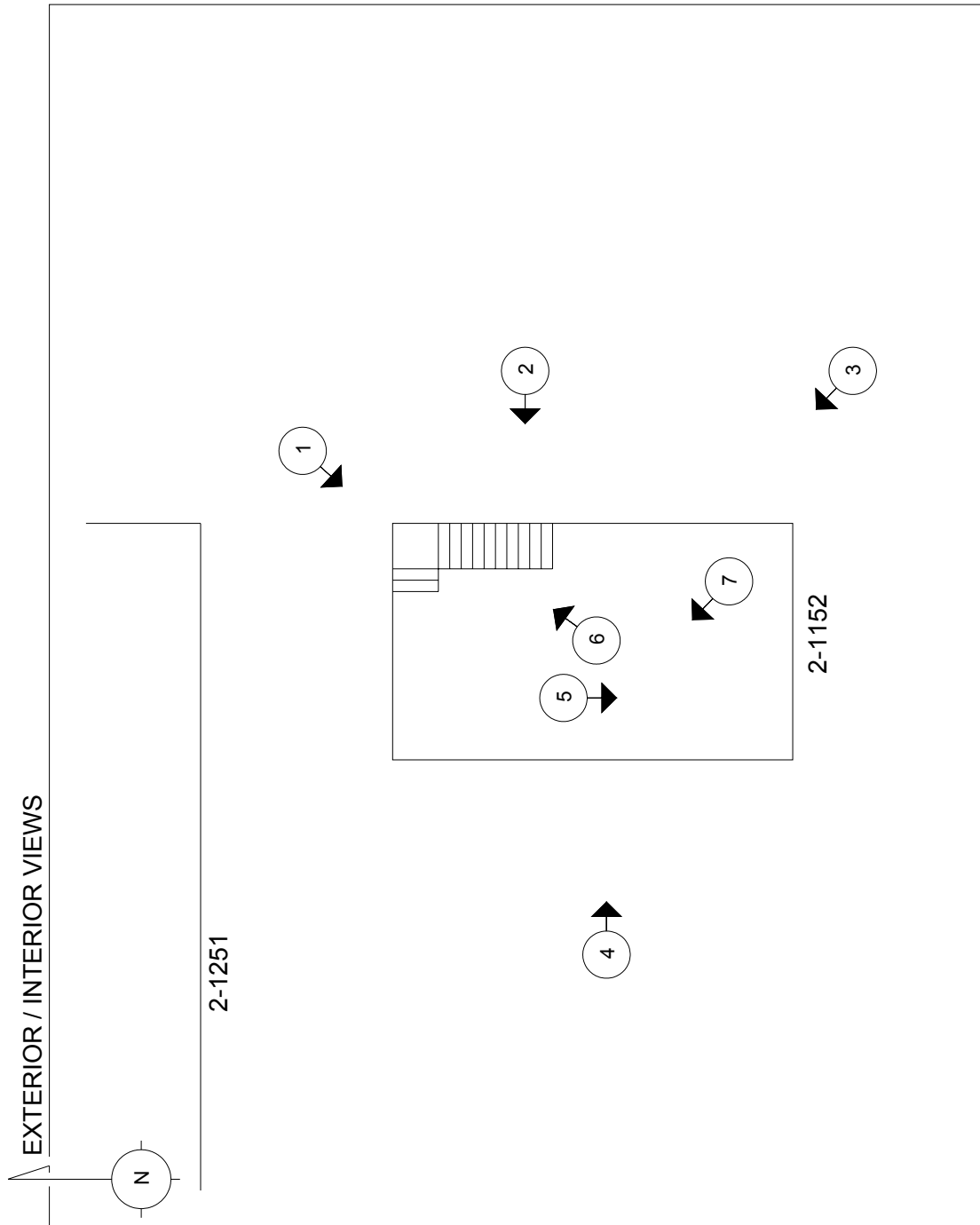
5. HABS No. 400 Index To Photographs

Martin Stupich, Photographer

October 2002

- | | |
|----------|------------------------------------------------------------------------------|
| NC-400-1 | OBLIQUE VIEW TO SOUTHWEST SHOWING NORTH FACADE |
| NC-400-2 | VIEW OF EAST ELEVATION |
| NC-400-3 | VIEW OF SOUTH ELEVATION |
| NC-400-4 | VIEW OF WEST ELEVATION |
| NC-400-5 | INTERIOR, OIL STORAGE ROOM SHOWING SUPPORTS FOR SECOND FLOOR; VIEW TO SOUTH |
| NC-400-6 | INTERIOR, OIL STORAGE ROOM SHOWING STAIRS TO SECOND FLOOR; VIEW TO NORTHEAST |
| NC-400-7 | INTERIOR, SECOND FLOOR; VIEW TO NORTHWEST |

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Photograph Locations

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HABS No. NC-400-2



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HABS No. NC-400-3



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HABS No. NC-400-4



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HABS No. NC-400-5



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HABS No. NC-400-6



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HABS No. NC-400-7



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PART III. SOURCES OF INFORMATION

A. Architectural Drawings:

Ten standardized drawings, “Standard Ordnance Shop, Type “B” (65’ x 126’),” by War Department, Office of the Quartermaster General—Construction Division, Washington, DC. Negatives of original drawings utilized for documentation are located at: Archives, Office of History, Humphreys Engineer Center, HQ US Army Corps of Engineers, 7701 Telegraph Road, Alexandria, VA.

One existing drawing, “Architectural Floor Plans, Building 2-1251,” by Directorate of Engineering and Housing, Fort Bragg, North Carolina. Drawing is located at: Archives, Artifact Curation Facility (Building 3-1333), Cultural Resources Program, Environmental Sustainment Office, Public Works Business Center, Fort Bragg, NC.

B. Historic Views:

Original aerial photography utilized for documentation are located at: Archives, Artifact Curation Facility (Building 3-1333), Cultural Resources Program, Environmental Sustainment Office, Public Works Business Center, Fort Bragg, NC.

Caption – Fort Bragg, N.C., 8-14-41, BLDG. No.-583, TYPE-Std. Ord. Shop Post; Fort Bragg-2-234 – Folders 4-6—Historical Records: building plan numbers, building numbers, completion dates, descriptions of buildings, photos; Records of the Corps of Engineers, Record Group 77 Entry Number 393; National Archives at College Park, College Park, MD.

Caption – Fort Bragg, N.C., 8-14-41, BLDG. No.-583-A, TYPE-Std. Ord. Shop Boiler Hse. Post; Fort Bragg-2-234 – Folders 4-6—Historical Records: building plan numbers, building numbers, completion dates, descriptions of buildings, photos; Records of the Corps of Engineers, Record Group 77 Entry Number 393; National Archives at College Park, College Park, MD.

C. Interviews:

None.

D. Bibliography:

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E. Likely sources not yet investigated:

None

F. Supplemental material:

None

PART IV. PROJECT INFORMATION

The Cultural Resources Program in the Public Works Business Center at Fort Bragg, North Carolina sponsored this project. The project was completed at the Land and Heritage Conservation Branch of the Construction Engineering Research Laboratory (CERL) part of the United States Army Corps of Engineers, Engineer Research and Development Center (ERDC). Project historian Adam Smith (CERL), with assistance from Christella Lai and Elizabeth Campbell, produced the architectural description section of the report. Martin Stupich produced the large-format photographs contained in the report. Documentation was coordinated with the Fort Bragg Cultural Resources Program through preservation planner Cris Armstrong.

Date: December 2002

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

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1. REPORT DATE (DD-MM-YYYY) 08-2003		2. REPORT TYPE Final		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE Historic American Buildings Survey, Ordnance/Motor Repair Shop, Fort Bragg, North Carolina				5a. CONTRACT NUMBER 21/2020/220/A/MIPR2LCER6K201/PO	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Adam Smith, Martin Stupich, Christella Lai, and Elizabeth Campbell				5d. PROJECT NUMBER MIPR	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Engineer Research and Development Center (ERDC) Construction Engineering Research Laboratory (CERL) PO Box 9005 Champaign, IL 61826-9005				8. PERFORMING ORGANIZATION REPORT NUMBER ERDC/CERL MP-03-4	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Public Works Business Center Fort Bragg Fayetteville, NC 28307-5000				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES Copies are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.					
14. ABSTRACT The Ordnance/Motor Repair Shop area at Fort Bragg, NC, is a contributing part of the Old Post historic district, which is eligible for the National Register of Historic Places. This paper presents Historic American Buildings Survey (HABS) documentation of the Ordnance/Motor Repair Shop Area (Buildings 2-1251, 2-1150, and 2-1152). The original archival records, designated HABS Nos. NC-398, NC-399, and NC-400, are on file at the Library of Congress.					
15. SUBJECT TERMS Fort Bragg, NC, Historic American Building Survey (HABS), Quartermaster Corps historic buildings, National Register of Historic Places (NRHP), military installations					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT SAR	18. NUMBER OF PAGES 129	19a. NAME OF RESPONSIBLE PERSON Adam Smith
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER (include area code) (217)352-6511 x7523