

FORT BRAGG, BOILER HOUSE
(Fort Bragg, Building No. 2-1150)
Northwest corner of Macomb Street & Sturgis Street
Fort Bragg
Cumberland County
North Carolina

HABS No. ~~NC-397~~
NC-397-E

HABS
NC-397-E

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Southeast Region
Department of the Interior
Atlanta, Georgia 30303

HISTORIC AMERICAN BUILDINGS SURVEY

FORT BRAGG, BOILER HOUSE

(Fort Bragg, Building No. 2-1150)

HABS No. NC-~~390~~
317-E

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: 17.3891360.683288

Present Owner: Department of Defense
Department of the Army
Fort Bragg

Present Use: Vacant

Significance: The Boiler House for Ordnance/Motor Repair Shop at Fort Bragg is a contributing part of an eligible Fort Bragg historic district for the National Register of Historic Places. Built right before World War II (WWII) and utilizing U.S. Army Quartermaster 600-series building plans; the complex served the Quartermaster Corps at Fort Bragg. The Ordnance/Motor Repair Shop Complex was at the eastern edge of the Quartermaster Corps/Guard Compound as identified in the Fort Bragg Military Reservation Eligibility Report, May 2001.

PART I. HISTORICAL INFORMATION

A. Physical History

1. Date of Erection: 1941
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 Boiler House could not be located during the research investigation. The plans for the mass-produced boiler house were located.
6. Alterations and additions: The Boiler House has had little alteration to its fabric since construction. 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.

B. Historical Context: Boiler House

1. Introduction¹

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, lies at the eastern edge of the base, in Cumberland County 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 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.

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, North Carolina, May 2001).

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 "Iron Mike" statue 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 non-commissioned officer's 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.

2. Fort Bragg Historical Background

For more detailed historical context information, please refer to HABS No. NC-398.

3. Design Context

3a. 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 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.² 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.³ 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.⁴ 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. Further examples are the Ordnance/Motor Repair Shop (2-1251) and its Boiler House (2-1150), both constructed in 1941 (see Figure 1).

3b. 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 located at Fort Bragg at this time).⁵ In few locations around the country, would the mature tree cover and

² "National Historic Context for Department of Defense Installations, 1790-1940," prepared for U.S. Army Corps of Engineers, Baltimore District, August 1995. Vol. I, 207.

³ "The Well Planned Post," Muriel Zimm Ray. George Washington University Master's Thesis, 1994, 9.

⁴ "Housing the Army," *Quartermaster Review* 10, March-April 1931, 11-13

⁵ "Landscaping the Army Post," E. Mack Hallauer, *Quartermaster Review* 19, (July-August 1939), 28-31.

shrubby 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.

3c. Buildings

From 1926 to 1939, the master plan was gradually completed with brick and stuccoed tile housing, civic, medical and office buildings (see Figure 2). 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 architect's names appear in any of these records. Various architects of the Quartermaster Generals 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, has a Georgian Revival design, with a central pedimented pavilion with stone entrance and balcony. The Macomb Street buildings have 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 Georgian Revival, Moderne style, or utilitarian industrial design. Included in this area is the Boiler House (2-1150), constructed for the Ordnance/Motor Repair Shop (2-1251) out of steel framing and sided by corrugated galvanized iron, with a brick coal room to the side. The 1948 master plan shows the Boiler House (2-1150) in its context (see Figure 3).

4. Ordnance/Motor Repair Shop Area

The Boiler House (originally numbered 583a and currently 2-1150) was needed for the heating needs of the Ordnance/Motor Repair Shop (originally numbered 583 and currently 2-1251). The Ordnance/Motor Repair Shop 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 Fourth 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.⁶

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 Fourth 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.

⁶ AG 600.12 Fort Bragg, Memos re:; RG 407; NACP.

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.⁷

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.⁸

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."⁹

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

⁷ "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.

⁸ AG 600.12 Fort Bragg; Memos re.; RG 407; NACP

⁹ AG 600.12 Fort Bragg; Memos re.; RG 407; NACP

[Signed] Raymond G. Curtin, Major, Ord. Dept., Assistant¹⁰

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.¹¹

The War Department signed off on the Adjutant General's recommendations for Ordnance Facilities on May 7, 1941.¹²

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.¹³

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."¹⁴ The contractor for the Ordnance Repair Shop was never named; however, only T.A. Loving & Company, Goldsboro, North Carolina 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

¹⁰ AG 600.12 Fort Bragg; Memos re.; RG 407; NACP

¹¹ AG 600.12 Fort Bragg; Memos re.; RG 407; NACP.

¹² AG 600.12 Fort Bragg; Memos re.; RG 407; NACP.

¹³ Ft. Bragg-10, Original Property Record Card; Records of the Office of the Chief of Engineers; RG 77; NACP.

¹⁴ Ft. Bragg-10, Completion Report; Records of the Office of the Chief of Engineers; RG 77; NACP.

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."¹⁵ 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. ¹⁶

Loving completed its work on July 31, 1941 at a cost of approximately \$40,700,000¹⁷, two days after the official completion date for the Ordnance Repair Shop.

The Boiler House (2-1150) follows the adage of "form follow function," with its service area constructed out of brick and the boiler room constructed out of steel covered by corrugated galvanized iron siding (see Figure 4). 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 5).

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 the pump pit on the west wall. It then connected to the Ordnance/Motor Repair Shop heating system by a tunnel. The condensate then returned from the Ordnance/Motor Repair Shop by the same tunnel in a 1½" uninsulated pipe that then connected back to the boiler to be reheated.

The building has a high level of integrity both in fabric and context. The Boiler House retained all of its original windows. The original corrugated galvanized iron siding is beneath the current corrugated siding on the Boiler House. The Boiler House has its original doors. The interiors have seen little change since the buildings were built in 1941. The Quartermaster Support Area

¹⁵ Ft. Bragg-10, Completion Report, Book One, page 2; Records of the Office of the Chief of Engineers; RG 77; NACP.

¹⁶ Ft. Bragg-10, Completion Report, Book Three, page 1; Records of the Office of the Chief of Engineers; RG 77; NACP.

¹⁷ Ft. Bragg-10, Completion Report, Book One, page 4; Records of the Office of the Chief of Engineers; RG 77; NACP.

in which the buildings are situated also retains most buildings that were located there when the buildings were built in 1941 (see Figures 6-8).

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural Character: The Boiler House 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 brick chimney 47’ high at a cost of \$2,634.67.

2. Condition of Fabric: 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 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 90 percent of the surface is spalling. Some pebbles remain. The roofing consists of 5-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 3-5 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. On the west drive, there is eighty percent aggregate exposure.

Chimney: A large corroded metal horizontal stack leads from the boiler inside the boiler house to a 5' x 5', single-standing chimney spaced three feet 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" x 12" 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 on 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.

B. Description of Exterior:

1. Overall Dimensions: The Boiler House is composed of two masses with a north-south orientation. The larger mass measures 26'-6" x 15'-4³/₄", and the smaller mass measures 26'-6" x 9'-9¹/₄". 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'-1¹/₄" 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.

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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'-4¹/₂" wide by 18'-5" high at the ridge and 16' high at the base. The lean-to half-gable is 15'-4¹/₂" 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
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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.

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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.

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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.

2. Foundations: Foundation is concrete wall with a concrete slab poured over compacted soil. Depth of slab is undetermined. No crawl space is extant.
3. Wall Construction: The main perimeter walls are constructed out of 6" x 6" "H" steel columns with three 4" x 3" 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 by 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 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " 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 corrugated galvanized iron siding, a topcap 12" high surrounds the perimeter of the exterior walls.
4. Structural System, Framing: The roof platform is composed of four 4" x 6" steel I-beams connecting the top of the four steel "H" columns. Two 4" x 6" steel I-beams connect the north and south plates, with 4" x 6" 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 5 $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " wood. ~~-397-E~~ ~~-397-E~~

b. 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 either parts of the building.

c. 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" x 64" on a built-up concrete base 49" x 70". 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.

C. Description of Interior:

1. 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" x 14'-6½". The coal storage area measures 16'-7" x 8'-5", and the pump pit measures 10'-5" x 8'-5" (Photocopy ~~NC-399-10~~).
2. Stairways and Ladders: There is one ladder that leads down to the equipment room in the brick lean-to.
3. Flooring: The floors are bare concrete in the three rooms.
4. 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~~).

5. Openings:

a. Openings: There are two openings on the west wall of the interior. The left opening is 5'-7" x 5' 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" x 6'-9" and is located 12½" from the right "H" column. It allows access to the pump pit.

b. Doorways and Doors: There are none.

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- c. Windows: There are none.
6. Decorative Features, and Trim: There are no decorative features.
7. 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.
8. Mechanical Equipment:
- a. 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" x 4'. The current gas-fired boiler was manufactured by Weil-McLain at an unknown date. It measures 5'-2" high with dimensions of 5'-4" x 3'-3". The boiler vented out the east wall via an 18" diameter 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 then returned from the Ordnance/Motor Repair Shop by the same tunnel in a 1½" uninsulated pipe that then connected back to the boiler to be reheated.
- b. 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).
- c. Plumbing: The plumbing network was inaccessible and its type is unknown.
- d. Fixtures: A Marsh Dunkirk kerosene drum is located next to the north facade. The drum is dimensioned 84¼" long by 48" wide, a 52¼" long base structure, and a 42½" long base.
9. Original Furnishings: There are no original furnishings.
- D. Site:
1. General Setting:

The Boiler House is located on Fort Bragg, North Carolina. The Boiler House faces south with its long axis perpendicular to Macomb Street and is located approximately 20'-2" south of the Ordnance/Motor Repair Shop. A large concrete parking lot is located to the east of the Boiler House. This 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 there is a very slight slope down to the southeast.

2. Landscaping:

The site, on which the building is located, consists of crabgrass growing thickly on sandy soil to the north, west, and south. The parking lot is to the east. There are no trees on the site. The surface of the concrete is abraded, exposing the aggregate on ninety percent of the area.

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.

PART III. Sources of Information:

A. Architectural Drawings: Four 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, Virginia.

B. Historic Views: One Photograph

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. Bibliography:

1. Primary and unpublished sources:

Adjutant General J.G. Brackinridge, War Department, Adjutant General Office to the Quartermaster General, May 8, 1941; Memos re: AG 600.12 Fort Bragg; Records of the Adjutant Generals' Office, Record Group 407, Entry Number 363; National Archives at College Park, College Park, MD.

Army Navy Register, April 12, 1941, 6.

Cheatham, Maj. Gen B.F. Quartermaster General United States Army, US House Committee on Military Affairs, "Housing Program of the Army" (69-2), 1926, H454: 23-25.

Curtin, Major Raymond G., Ordnance Department Assistant, War Department to the Quartermaster General, April 2, 1941; Memos re: AG 600.12 Fort Bragg; Records of the Adjutant Generals' Office, Record Group 407, Entry Number 363; National Archives at College Park, College Park, MD.

- Ford, George B. "New Army Posts for Old." *The Quartermaster Review* (Nov.-Dec. 1929): 20.
- Ft. Bragg-10, Completion Report; Completion report for cantonment and Replacement Center February 23, 1942; Records of the Office of the Chief of Engineers, RG 77, Entry Number 391; National Archives at College Park, College Park, MD.
- Ft. Bragg-10, Property Record Card No. 1; Completion report for cantonment and Replacement Center February 23, 1942; Records of the Office of the Chief of Engineers, RG 77, Entry Number 391; National Archives at College Park, College Park, MD.
- Grandine, Katherine. Fort Monmouth Cantonment Historic District National Register Nomination, 1993.
- Historical Display at Directorate Public Works and Environment, Ft. Bragg, November 1995.
- "History of Fort Bragg 1918-1967." typescript, XVIII Airborne Corps Headquarters, Fort Bragg, NC, 1967.
- "Housing the Army," *Quartermaster Review* 10, March-April 1931, 11-13
- Illegible, Assistant Quartermaster General, to Adjutant General, April 12, 1941; Memos re: AG 600.12 Fort Bragg; Records of the Adjutant Generals' Office, Record Group 407, Entry Number 363; National Archives at College Park, College Park, MD.
- "Landscaping the Army Post," E. Mack Hallauer, *Quartermaster Review* 19, (July-August 1939), 28-31.
- Meyns, Lt. Col. L.J., Ordnance Officer IV Corps Area, to Fort Bragg Ordnance Officer, February 25, 1941; Memos re: AG 600.12 Fort Bragg; Records of the Adjutant Generals' Office, Record Group 407, Entry Number 363; National Archives at College Park, College Park, MD.
- Nurse, 1st Lt. H.B. "The Planning of Army Posts," *The Quartermaster Review* (Sept.-Oct. 1928): 14-16.
- Office of Public Relations. Fort Bragg, typescript history, 1941, 9 pages, in collection of Main Post Library, Fort Bragg.
- Property Record Card No. 2 located at the XVIII Airborne Corps History Office, Fort Bragg, North Carolina.
- Rising, Lt. Col. H.N., Ordnance Officer Fort Bragg, to Ordnance Officer, IV Corps Area, March 4, 1941; Memos re: AG 600.12 Fort Bragg; Records of the Adjutant Generals' Office, Record Group 407, Entry Number 363; National Archives at College Park, College Park, MD.

2. Secondary and published sources:

“Camp Bragg and Fayetteville NC,” Chapel Hill, NC: North Carolina Collection, University of North Carolina, 1919.

Cannan, Deborah, Leo Hirrel, Katherine Grandine, Kathryn Kuranda, Bethany Usher, Hugh McAloon, and Martha Williams. *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.

Chattey, Paul, Horace Foxall, Flossie McQueen, Cynthia Nielsen, Mary Shipe, Terri Taylor, and Jamie Tippet. Context Study of the United States Quartermaster General Standardized Plans (1866-1942). Prepared by US Army Corps of Engineers Seattle District Seattle, Washington for US Army Environmental Center, Environmental Compliance Division, Aberdeen Proving Ground, Maryland, November 1997.

Grandine, Katherine and Deborah Cannan. Support and Utility Structures and Facilities (1917-1946). Prepared by R. Christopher Goodwin & Associates Frederick, Maryland for Department of the Navy, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia, May 1995.

Little, M. Ruth. Historic Architectural Resources Eligibility Report, Fort Bragg, North Carolina. Prepared by Longleaf Historic Resources, Raleigh, North Carolina for the Public Works Business Center, Fort Bragg, North Carolina, May 2001.

Parker Jr., Roy. *Cumberland County, A Brief History*. Raleigh: North Carolina Department of Cultural Resources, 1990.

Ray, Muriel Zimm. “The Well Planned Post.” George Washington University: masters’ thesis, 1994.

D. Likely sources not yet investigated:

None

E. Supplemental material:

FORT BRAGG, BOILER HOUSE
(Fort Bragg, Building No. 2-1150)
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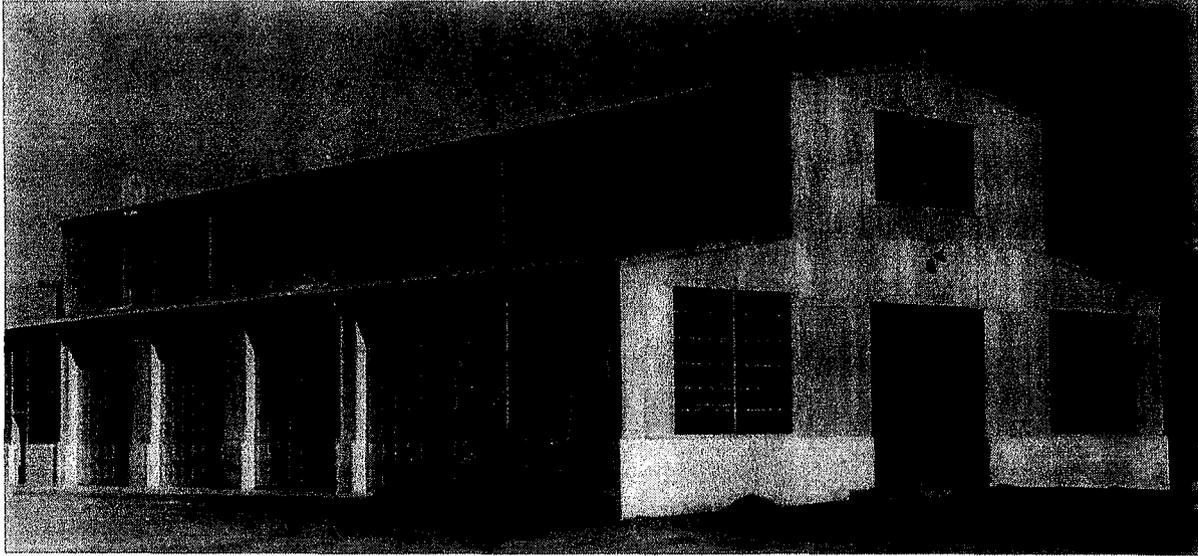


Figure 1: Building 2-1251 (courtesy of the National Archives).

FORT BRAGG, BOILER HOUSE
(Fort Bragg, Building No. 2-1150)
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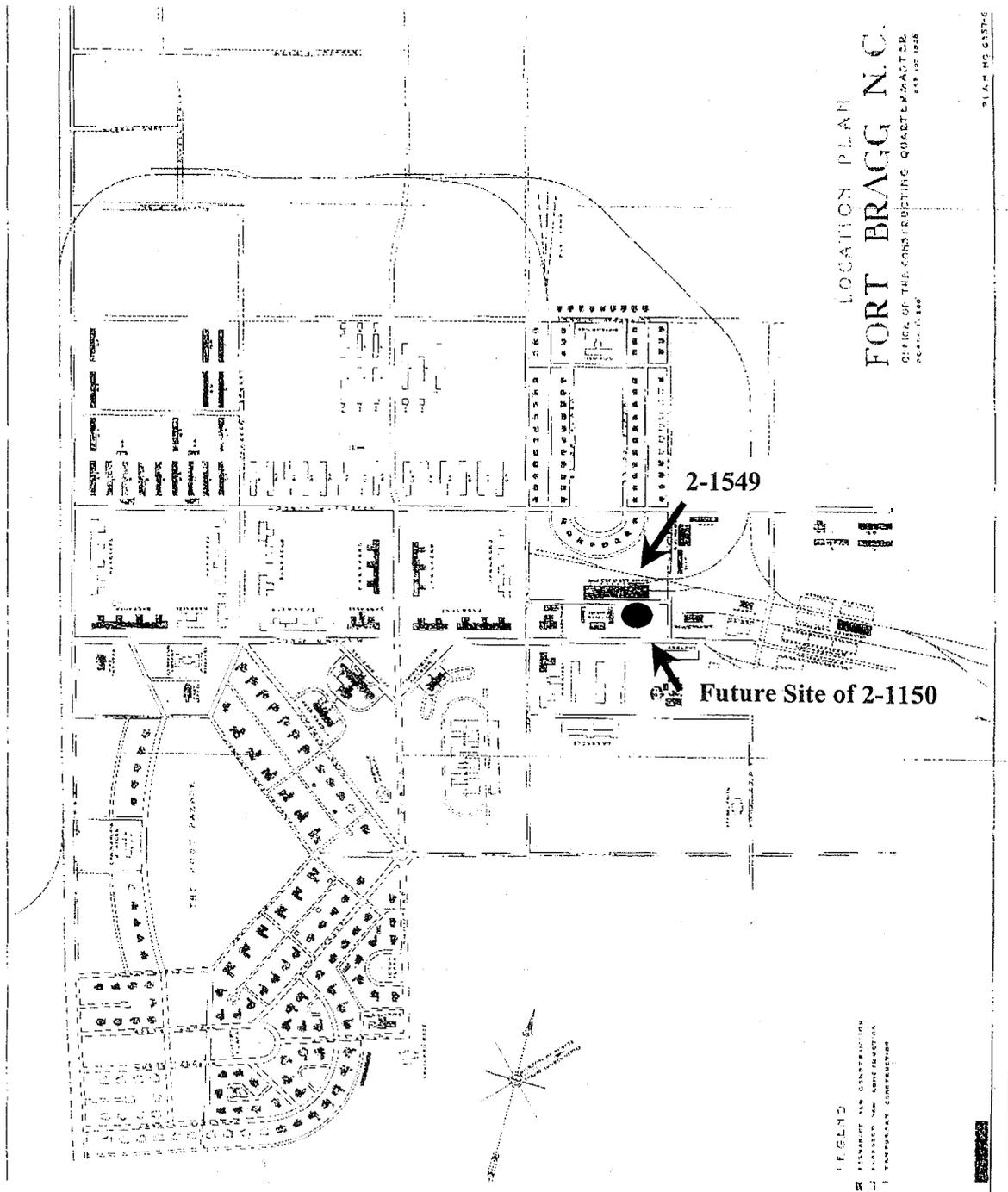


Figure 2: Fort Bragg February 1935 plan (courtesy PWBC, Fort Bragg).

NC-397-1

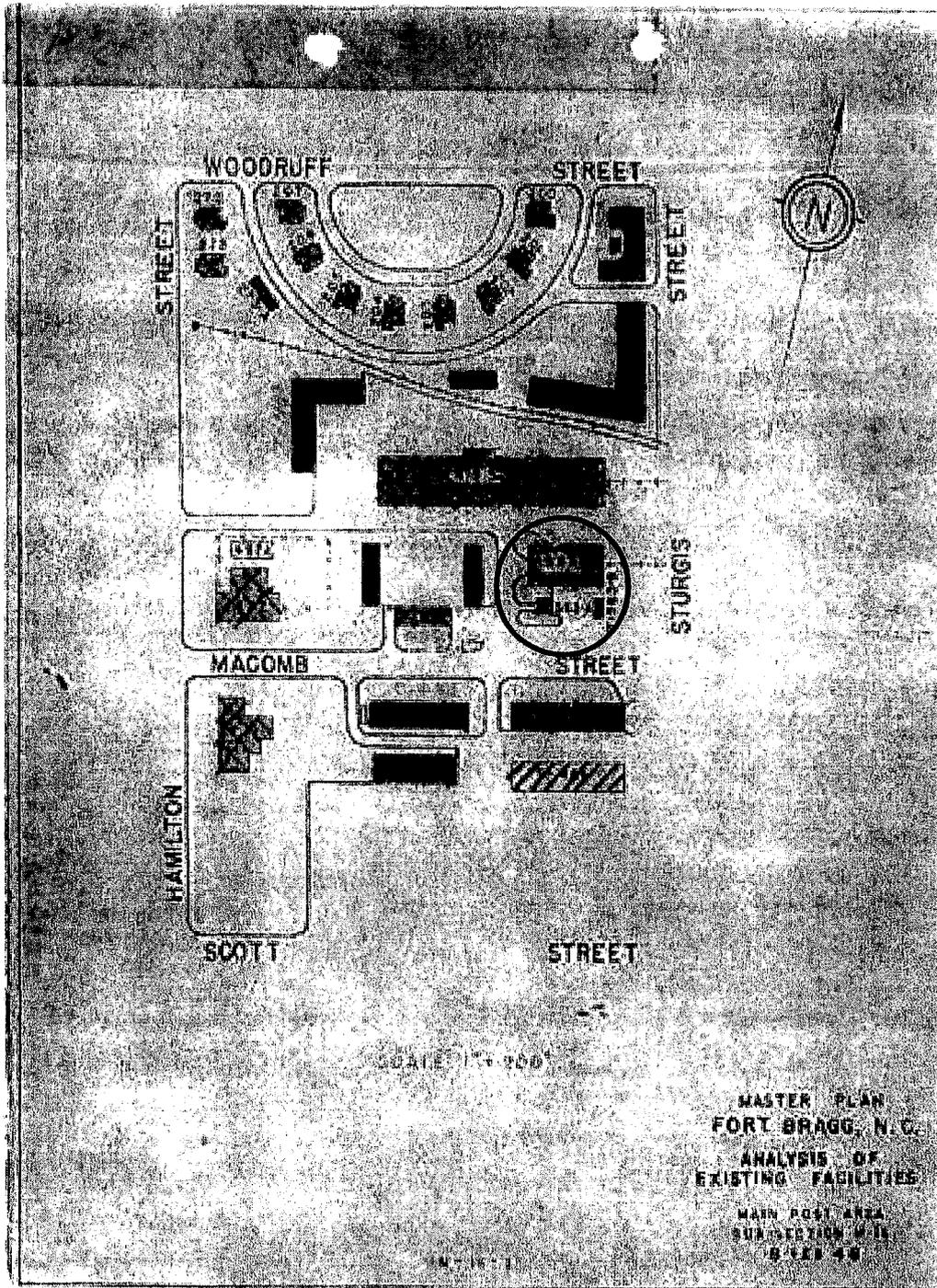


Figure 3: Portion of 1948 Master Plan with buildings in center right (courtesy PWBC, Fort Bragg).

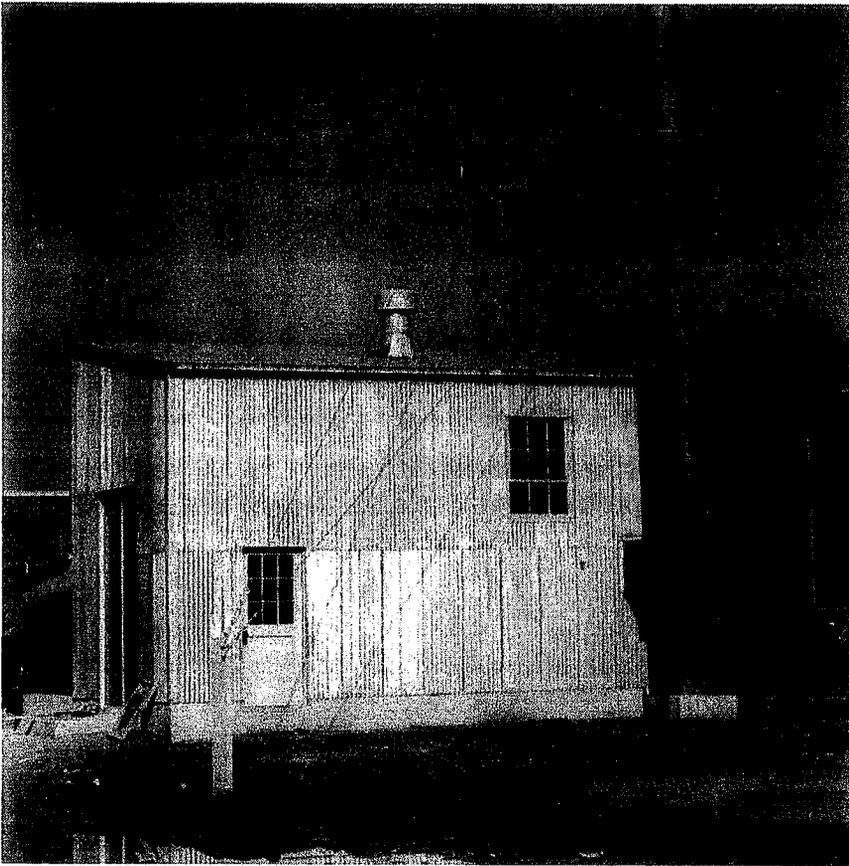


Figure 4: Building 2-1150 (courtesy of the National Archives).

NC-397-E

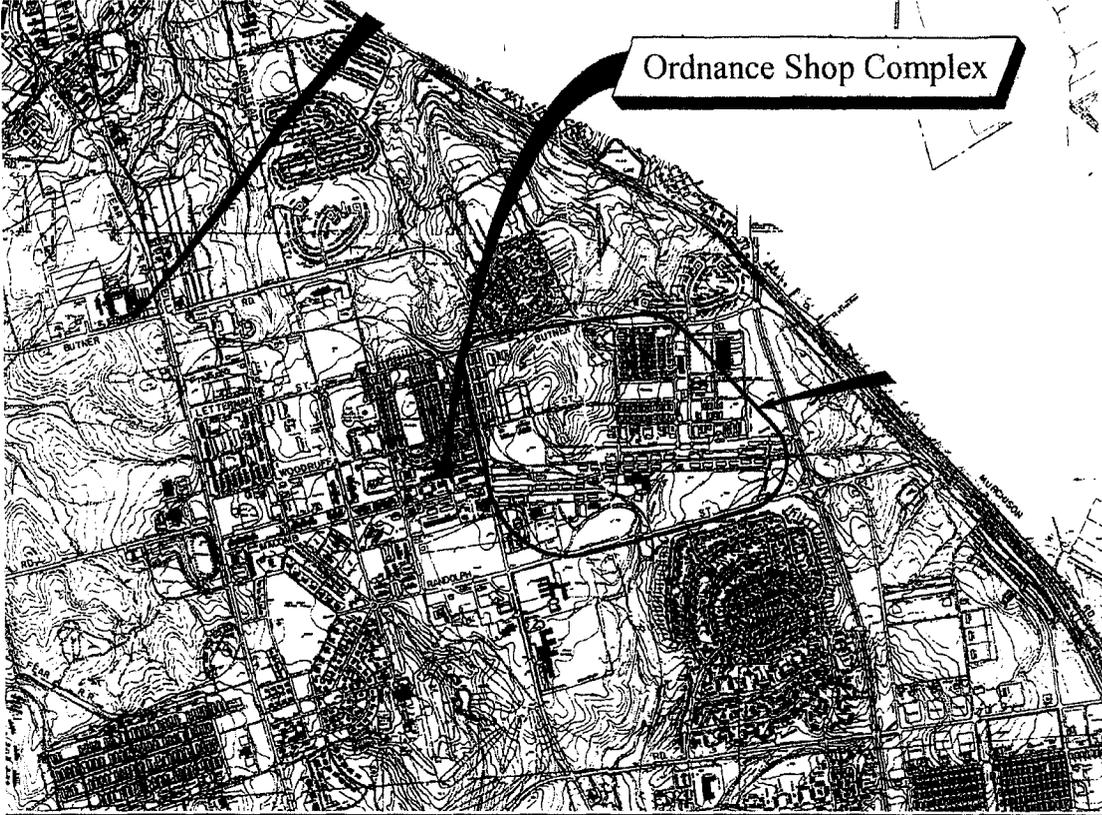


Figure 6: Location of Ordnance Repair area in the cantonment of Fort Bragg (courtesy PWBC, Fort Bragg).

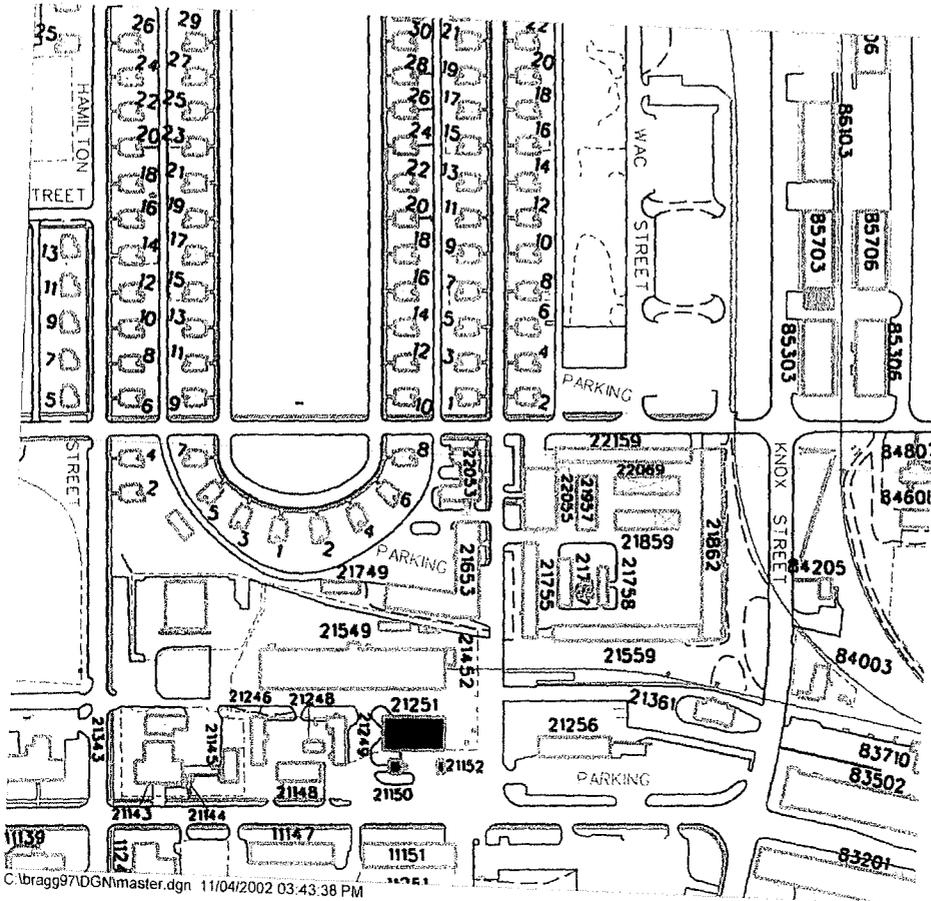


Figure 7: Portion of 2002 cantonment map with buildings marked in black (courtesy PWBC, Fort Bragg).

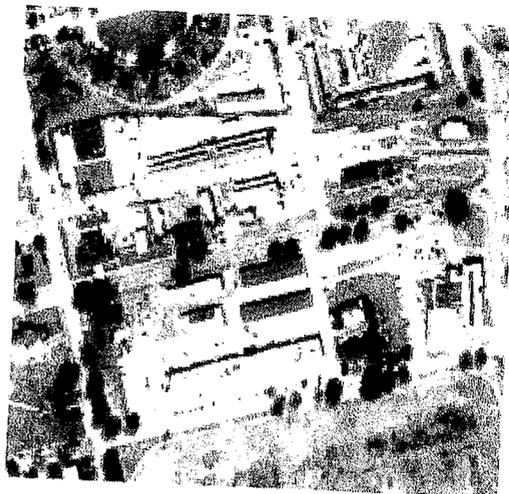
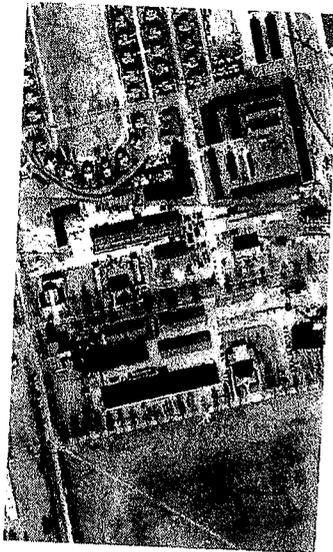


Figure 8: Comparison between the 1959 aerial and 2002 aerial with buildings in center of photographs (courtesy PWBC, Fort Bragg).

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). The project historian was Adam Smith (CERL). 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. The documentation was completed November 2002.