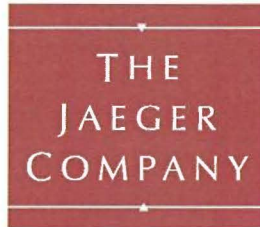


Preservation/Restoration of Moton Field

Phase II



Tuskegee Airmen
National Historic Site
Tuskegee, Alabama

Historic Structure Report
Bath & Locker House

Contents

MANAGEMENT SUMMARY

Executive Summary
Administrative Data

PART I: DEVELOPMENTAL HISTORY

Historical Background and Context
Chronology of Development and Use
Physical Description

PART II: TREATMENT AND USE

Ultimate Treatment and Use
Requirements for Treatment
Alternatives for Treatment

APPENDICES

- A. Archival Documents, Photographs, Architectural Drawings
- B. Bibliography
- C. Conditions Assessment/Features Inventory
- D. Materials Analysis
 - Paint Analysis
 - Mortar Analysis

Management Summary

Executive Summary

Administrative Data

Executive Summary

Tuskegee Institute (now Tuskegee University) was the only institution during World War II that provided primary military flight training for African-American pilot cadets in the United States Army Air Corps. Tuskegee Institute constructed Moton Field in Tuskegee, Macon County, Alabama, from 1941 to 1945 and used it as the principal facility of their contract primary flying school. The airfield was named for the second president of Tuskegee Institute, Robert Russa Moton. Most Tuskegee Airmen received their first military flight training at Moton Field.

The Tuskegee Airmen were the first African-American soldiers to complete their pilot training successfully and enter the Army Air Corps. Military leaders were at first hesitant to use the Tuskegee Airmen in combat. Eventually the airmen saw considerable action in Europe and North Africa. Their accomplishments in the air proved conclusively that African Americans could fly and maintain sophisticated combat aircraft and ultimately paved the way for full integration of the United States military.

The Southeast Regional Office of the National Park Service (NPS) prepared the *Moton Field/Tuskegee Airmen Special Resource Study* in October 1998 to evaluate the potential of adding Moton Field to the National Park System and to define the significance of the site with regard, specifically, to its association with the Tuskegee Airmen during World War II and, in general, to its role in the history of military aviation. The airfield complex at Moton Field was designated as the Tuskegee Airmen National Historic Site in November 1998 and was subsequently programmatically listed in the National Register of Historic Places.

MANAGEMENT SUMMARY

This Historic Structure Report (HSR) has been prepared as part of Phase II of the Moton Field Preservation/Restoration project. Phase II includes the production of a Cultural Landscape Report (CLR) and fifteen Historic Structure Reports for nine extant structures and six non-existing structures. The CLR addresses the Moton Field site as a whole and contains the complete historic context for the site; each HSR contains an abbreviated historic context that focuses on building history. Following is a list of the fifteen structures for which HSRs have been prepared.¹

EXTANT STRUCTURES

Hangar Number One
Skyway Club
Control Tower
Bath and Locker House
Warehouse/Vehicle Storage Building
Dope Storage Shed
Oil Storage Shed
Fire Protection Shed
Entrance Gate

NON-EXISTING STRUCTURES

Hangar Number Two
Cadet Class and Waiting Room
Army Supply Building
Physical Plant Warehouse
Vehicle Maintenance Shed
Guard Booth

A *Moton Field Structure Nomenclature* table clarifying the name of each structure for purposes of the CLR and HSRs follows the Executive Summary.

To prepare the Historic Structure Reports and the Cultural Landscape Report, research was done at a number of repositories and on site. Research included on-site field inspections; interviews of persons associated with the site before, during, and after the construction of Moton Field; and review of primary and secondary sources related to the social and physical history of Moton Field, including NPS files compiled during the preparation of the *Special Resource Study* and selected transcripts from the ongoing NPS Tuskegee Airmen Oral History Project. A list of repositories visited and the primary materials that were reviewed at each is located in the bibliography of the Cultural Landscape Report.

Major research findings resulting from the research phase of the project included the location of a number of primary sources yielding information about the construction and operation of Moton Field. This primary information included original architectural drawings and site plans for the airfield and its expansions throughout the war years; historic photographs of the airfield complex and the flight training activities that took place there; written histories chronicling the airfield's construction and day-to-day operations; information on the building contractor and landscape architect involved in the complex's design and construction; and the history of the site before and after its war-era use for primary flight training.

¹ The Phase II scope of work originally included a seventh non-existing structure, the Shed/Pump House, for which an HSR was to be prepared. After the research phase, however, no specific information had been found on the location or design of a shed/pump house on the Moton Field site. Because of this, the building was dropped from the list of non-existing structures.

MANAGEMENT SUMMARY

The period of significance for the interpretation of Moton Field has been established as 1941 to 1945, the period during which Moton Field was constructed and the Tuskegee Airmen were trained by the contract primary flying school. 1945 will be the date of restoration for the field's extant buildings and site features; the date of reconstruction for Hangar Number Two, the only non-existing building at the field that will be re-created; and the date of interpretation for the remaining non-existing buildings and site features. 1945 is the date by which all the buildings and site features at the airfield that were associated with the flying school had been constructed.

Built in the winter of 1942-1943, the Bath and Locker House provided locker and toilet facilities for both men and women mechanics and service personnel at the airfield. Based on historical research, a thorough investigation of the building and its relationship to the site as a whole, and the building's significance to the site's interpretation, the Ultimate Treatment And Use Recommendation for the Bath and Locker House is **Restoration of the exterior and interior of the building**. System requirements for restoration of the building will include a new heating system of gas-fired heaters suspended from the ceiling; period plumbing fixtures that are not usable (if fixtures are restored); a new electrical system; replicated lighting fixtures; a new wet-pipe sprinkler system and notification fire alarm system; a monitored security system; and a telephone outlet and new communication wiring. The Bath and Locker House best illustrates the supporting role of service personnel, especially women, at the airfield, and its restoration will be a critical component in the interpretation of the airfield to the public.

MOTON FIELD STRUCTURE NOMENCLATURE

EXTANT STRUCTURES

*****Use Structure Name in Bold Italics***

<u>Original Name¹</u>	<u>Common/Later Name</u>	<u>NPS Name</u>
<i>Hangar Number One</i>		
Civilian Recreation Bldg.	<i>Skyway Club</i>	All Ranks Club
<i>Control Tower</i>		
<i>Bath and Locker House</i> Mechanics' Bath & Locker Bldg.		Administration/Locker Bldg.
Warehouse, Maintenance Bldg., Vehicle Storage		<i>Warehouse/Vehicle Storage Bldg.</i>
Dope Storage		<i>Dope Storage Shed</i>
Oil House		<i>Oil Storage Shed</i>
Fire Protection		<i>Fire Protection Shed</i>
<i>Entrance Gate</i>		Entrance Gate

NON-EXISTING STRUCTURES

<u>Original Name</u>	<u>Common/Later Name</u>	<u>NPS Name</u>
<i>Hangar Number Two</i>		
<i>Cadet Class & Waiting Room</i> (Cadet Waiting House)	Flight Command Office	Flight Command Office
Supply Building	Army Supply Building	<i>Army Supply Building</i>
<i>Physical Plant Warehouse</i>		Physical Plant Storage
Vehicle & Maintenance Shed		<i>Vehicle Maintenance Shed</i>
Guard House		<i>Guard Booth</i>

¹ Based on architectural drawings, written histories, or other original documentation.

Administrative Data

Locational Data

Building Name: Bath and Locker House

Building Location: Moton Field, Tuskegee Airmen National Historic Site, Chief Anderson Drive, Tuskegee, Macon County, Alabama.

Real Property Information

Acquisition Date: November 1998

Total Improvement/Modification Costs to Date: \$810,855 (total construction cost to date for stabilization at Moton Field)

Size Information

Total Floor Area: 1,427 SF

First Floor Area: 1,427 SF

Basement Area: n/a

Roof Area: 2,004 SF

Perimeter Length: 216 feet

Number of Stories: One (1)

Number of Rooms: 8 (including bathrooms)

Number of Bathrooms: 2

MANAGEMENT SUMMARY

Building Code Information

Applicable Codes:

- Building / Dwelling Code: 1997 Standard Building Code
- Structural Code: 1997 Standard Building Code
- Plumbing Code: 1997 Standard Plumbing Code
- Mechanical Code: 1997 Standard Mechanical Code
- Electrical Code: 1996 National Electric Code
- Fire/Life Safety: 1994 Standard Fire Protection Code, 1997 NFPA 101

Seismic Hazard Exposure Group 8- No seismic requirements for architectural, mechanical and electrical systems. There are some minor structural requirements.

Analysis of the Bath and Locker House is based on the complete restoration of the building. Building area is approximately 1665 sf.

1997 Standard Building Code

- Assembly Occupancy - Group A2
- Construction Type VI unprotected
- Fire sprinklered

- Maximum allowable height 40'
- One Story allowed
- Maximum allowable area 15,000 sf

The facility will be able to meet the area and height requirements.

NFPA 101

- Assembly Occupancy - Group A

Proposed Treatment

Proposed Treatment for the Bath and Locker House: Restoration of the exterior and interior

Related Studies

Moton Field/Tuskegee Airmen Special Resource Study, National Park Service, Southeast Regional Office, Atlanta, Georgia, 1998.

Cultural Resource Data

The Bath and Locker House is a contributing resource in the Moton Field complex which was programmatically listed in the National Register of Historic Places as a historic site unit of the National Park Service on November 6, 1998 with the approval by President Bill Clinton of Public Law 105-355 which established the Tuskegee Airmen National Historic Site.

MANAGEMENT SUMMARY

The period of significance for Moton Field has been established as 1941 – 1945, the period during which Moton Field was constructed and served as the principal facility of the primary flying school for the training of the Tuskegee Airmen.

Moton Field is nationally significant for its association with the historic contexts of African-American History and Military/ Aviation History. In both African-American and Military/ Aviation history, the airfield complex is significant for its role as the only primary flight training facility for African-American pilot cadets in the Army Air Corps during the World War II era. The accomplishments of the Tuskegee Airmen in military air combat in both European and North African theaters of operation helped pave the way for the full integration of the United States military and future civil rights advancements.

Recommendations for Documentation, Cataloging, and Storage of HSR Materials

A copy of research materials specifically documenting the Bath and Locker House is located within the body or in *Appendix A* of this HSR. A copy of research materials documenting Moton Field as a whole may be found with the Cultural Landscape Report. Pre-stabilization photographs and other photographs taken during and after stabilization work of the Moton Field structures and site will remain with the project architectural firm until the completion of final construction drawings and specifications required for the preservation/restoration work.

Part I – Developmental History

Historical
Background & Context

Chronology of
Development & Use

Physical Description

Historical Background & Context

Formally approved as Tuskegee Airmen National Historic Site on November 6, 1998, Moton Field is of national importance for its association with the training of the Tuskegee Airmen during World War II. Moton Field, constructed between June 1941 and March 1945, was the only primary military flight training facility for African-American pilot candidates in the United States Army Air Corps during the war. The field, named in honor of Robert Russa Moton, the second president of Tuskegee Institute (now known as Tuskegee University), symbolizes the entrance of African-American pilots into the Army Air Corps under a policy of segregation that was mandated by the military and institutionalized in the South. The buildings that remain at Moton Field have changed little over the years and the historic setting of the 1940s is still discernible.

Context

Opportunities for African-American participation in the United States military were always limited and controversial. Quotas, exclusion, and discrimination based on race reinforced the prevailing attitude in both the military and the general public that African Americans did not possess the intelligence or ability to be successful in the military. This perception carried into the 1940s when military officials still believed that African Americans could not become successful pilots in the Army Air Corps. The Air Corps decided to train a small number of African-American pilot candidates under segregated conditions and in January 1941, chose Tuskegee Institute as a civilian contractor to operate a primary flying school at a location in Tuskegee, Alabama, that would become known as Moton Field. This was the only primary military flight training facility for African-American pilot candidates in the U.S. Army Air

PART I – DEVELOPMENTAL HISTORY

Corps during World War II. The facility symbolizes the entrance of African-American pilots into the Air Corps, although on a segregated basis.

War-Era Construction at Moton Field

Building construction at Moton Field can be divided into three major phases of construction. These construction phases are modern descriptive terms and are not historic nomenclature. The justification for the three phases is based on actual dates of construction as well as the source of funding for each. The primary flying field was not officially known as Moton Field until its dedication in April 1943.

Phase One, beginning in June of 1941 and lasting through December of that same year, consisted of the initial establishment of the airfield (grading and clearing) as well as the construction of Hangar Number One and the Fire Protection Shed. Tuskegee Institute contributed \$20,000, but the major funding source was a \$130,000 loan from the Julius Rosenwald Fund.

Phase Two began in the summer of 1942 and lasted almost a year. Tuskegee Institute's Board of Trustees initially authorized \$15,000 for construction of the Cadet Class and Waiting Room and the Army Supply Building.² Hangar Number Two and the Control Tower, the Bath and Locker House, several small sheds for oil and dope storage, and an addition to Hangar Number One were completed with a \$150,000 loan from the institute's general funds.³

Phase Three began in early spring of 1944 and extended through the summer of the following year. It is believed that Tuskegee Institute funded this third phase of construction as well, but documentation has not been located to support or disprove this. During this phase the Vehicle Maintenance Shed and the Physical Plant Warehouse were constructed and the enlargement of the asphalt parking mat and paving of roadways in the building area were completed. The ground was graded south of Hangar Number One for a civilian recreation building, later known as the Skyway Club, that was not started until 1945.

Phase One Construction (June-December 1941)

Following the final contract negotiations with the Julius Rosenwald Fund, the United States Army, and Samuel Mizel (S.M.) Eich, the owner of the farm land on which the primary flying field would be built, construction of the airfield got underway in the early summer of 1941. "The History of the 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama" states that the contract was signed on June 6, 1941 and construction of the airfield started about the same time.⁴ Archie A. Alexander, a prominent African-American contractor from Iowa, was recruited to supervise the initial phase of airfield construction.

² Julius Rosenwald Fund (JRF) Box 359, Folder 5. General Correspondence.

³ JRF Box 359, Folder 5. General Correspondence.

⁴ "The History of the 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama: Section I," p.1.

PART I – DEVELOPMENTAL HISTORY

By the end of 1941 the first phase of construction was complete. Hangar Number One was constructed for \$44,134, which was included in the total cost of \$148,506.98. The final construction costs were as follows:

Payment in full of contract	\$112,900.00
Extra work by contractors	1,389.50
Purchase of land	33,500.00
Cutting trees	500.00
Allowances for crop damages	217.48
	\$148,506.98 ⁵

Phase Two Construction (June 1942-May 1943)

The Tuskegee training program expanded per orders of the Army, and the facilities originally constructed for a smaller number of cadets soon became inadequate. By the end of May 1942 plans were underway to construct one new supply building and one cadet waiting house. Hangar space formerly used for supply was converted to a link trainer room and empty office space was nonexistent at the field.⁶ The Tuskegee Institute Board of Trustees authorized special expenditures of \$15,000 to finance these improvements, which were completed by late July 1942.

That fall, when it became necessary to expand the facilities at the field again because of another increased quota of students per class, financing once again was an issue. A request to the Julius Rosenwald Fund for an additional loan was rejected. In addition, they offered no leniency for loan repayment should Tuskegee be able to secure a loan from another source. Ultimately, \$150,000 was secured through a loan from the general funds of Tuskegee Institute to complete the second phase of construction.

In addition to the expansion work completed by July 1942, the following construction was completed during Phase Two. Hangar Number Two was built with lean-to space for a Cadet Ready Room, five link trainers, and space for parachute maintenance, issue, storage, and drying. The Control Tower, a pump house containing chlorination units, the Dope Storage Shed, the Oil Storage Shed, and Bath and Locker House were also part of this phase.⁷

Women began to apprentice as mechanics, due to the manpower shortage during the War that necessitated separate facilities for men and women. Although initial construction had failed to anticipate women workers at the primary flying field, toilet and locker facilities were incorporated into the plans of the Bath and Locker House to remedy the need for women's facilities.⁸

A School Facilities and Civilian Personnel Report dated October 27, 1942 details the status of the construction project with Hangar Number Two including the Control Tower at 7%

⁵ JRF Box 359, Folder 5. General Correspondence.

⁶ "The History of the 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama: Section II," p. 4.

⁷ Ibid, p. 5.

⁸ George L. Washington, *The History of Military and Civilian Pilot Training of Negroes at Tuskegee, Alabama, 1939-1945* (Washington, D.C.: George L. Washington, 1972), pp. 306-307; 310-311.

PART I – DEVELOPMENTAL HISTORY

complete; the Bath and Locker House at 25%; and the Oil Storage Shed at 90% complete. Progress to date on the main field was 20% complete.⁹

During construction it became difficult to obtain some building materials due to the shortage caused by the war. Even with a high priority rating obtained from the Air Force, locating materials often lengthened construction time. This was especially true with regard to the 100-foot span trusses and metal truss ties for Hangar Number Two. Ultimately, David A. Williston, the Landscape Architect at Tuskegee Institute who was responsible for the landscape design at the primary flying field, scoured the campus for suitable trees for cutting and milling the trusses. Construction on the hangar came to a virtual stopping point for two months until truss ties could be located.¹⁰

On November 10, 1942, 35% progress was reported on the main field. Construction on the Oil Storage Shed was complete and Hangar Number Two had reached 35% completion while the Bath and Locker House was 60% complete.¹¹ By November 25, the Hangar progressed to 60% completion and the Bath and Locker House to 75% complete.¹²

In December construction began on the Warehouse/Vehicle Storage Building and a Vehicle Maintenance Shed. The shed, which was located at the east extremity of the building complex, housed trucks and ambulances overnight as well as miscellaneous lumber used for maintenance. The warehouse was a concrete block building located east of where the Physical Plant Warehouse was soon completed.¹³ The December 10, 1942 report boosted the Hangar to 70% completion, the Bath and Locker House to 80%, and the Warehouse/Vehicle Storage Building was 20% complete. Although the main field had been in use over a year, it was only 45% completed as of this report.¹⁴

Despite being only 95% complete in March 1943, offices in Hangar Number Two were occupied in order to relieve office congestion in Hangar Number One. May 1943 marked the completion of the second building phase at the airfield. The Bath and Locker House, Warehouse/Vehicle Storage Building, improvements to the landing field and Hangar Number Two were finished. At this time the Intelligence Office was moved from Hangar Number One to Hangar Number Two, which allowed space for the Intelligence Library. As the Cadet Ready Room was also moved to the second hangar, it allowed trainees free access to the reading materials. The Intelligence Office was a military office that provided secure as well as general information about war activities. The office included an Intelligence Library with reading materials such as magazines, newspapers and intelligence summaries, and a War Room with additional reading materials, models of aircraft, ships, and tanks, and maps of various theaters of operations, all of which were kept updated as the war progressed.

⁹ "The History of the 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama: Section II," Appendix III.

¹⁰ Washington, pp. 301-303.

¹¹ "The History of the 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama: Section II," Appendix IV.

¹² Ibid, Appendix V.

¹³ Washington, p. 312.

¹⁴ "The History of the 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama: Section II," Appendix VI.

PART I – DEVELOPMENTAL HISTORY

Aviation cadets were encouraged to spend a few minutes each day in the Library and War Room to keep themselves informed. The Parachute and Link Trainer Departments also moved into larger spaces in Hangar Number Two. This left more space in Hangar Number One for Engineering and Operations.¹⁵

The airfield was named Moton Field in honor of Tuskegee Institute's second president Robert Russa Moton. In preparation for the official dedication ceremony on April 4, 1943, a brick entrance gate was constructed along the main road to the west of the building complex. The south wall contained a niche that featured a bust of Robert Moton.¹⁶

In July of 1943, Tuskegee Institute made its final payment on the loan to the Julius Rosenwald Fund. Tuskegee Institute president Dr. Frederick D. Patterson summed up this special partnership with the following words:

I think it is safe to say that were it not for the wisdom and generosity of the Rosenwald Fund, in its willingness to make an exception to its stated policy, this favorable accomplishment probably would not be a matter of record today. I am sure also that the action of the Rosenwald Fund encouraged our own trustees to take the larger portion of our free funds to make possible the expansion and promotion of this development. We now have a total investment of approximately \$350,000, and aviation has been developed to the point where I am sure it will be a permanent feature of the work of Tuskegee Institute. When we consider the importance of aviation as a vocation today and what it will in all probability mean in the post-war world, we can see that a contribution of lasting importance has been made.¹⁷

Phase Three Construction (Spring 1944-Summer 1945)

During the first half of 1944, Moton Field experienced yet another program expansion. In March a new Physical Plant Warehouse was completed, which provided additional office and storage space used by the primary flying school contractor, Tuskegee Institute, to better oversee activities at the airfield.¹⁸

A year later construction finally got underway on the civilian recreation building, later known as the Skyway Club. This building was to serve as a recreational facility for employees who worked at Moton Field. Built as a cooperative project, Tuskegee Institute supplied the materials while the employees were expected to contribute most of the labor. "Solo," a locally distributed newsletter at Moton Field, suggested that an appropriate motto for the new building project was, "[t]he harder we work, the sooner we get to play."¹⁹

¹⁵ "The History of the 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama: Section III," pp. 1-2; "History of the 2164th AAF Base Unit (CPS.P)(Formerly 66th AAFFTD), Tuskegee Institute, Alabama: Section IV," p. 39; *Sda*. 10 March 1945, p. 9.

¹⁶ Washington, p. 310.

¹⁷ JRF Box 359, Folder 5. General Correspondence.

¹⁸ "The History of the 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama: Section IV," p. 1.

¹⁹ *Sda*. 10 March 1945, p. 9.

PART I – DEVELOPMENTAL HISTORY

The final installment of the History of the 2164th AAF Base Unit, Tuskegee Institute, Alabama covered September through November 1945. This period marked the final phase of primary flying training of African-American personnel at Moton Field. By the end of November all trainees had either graduated, been discharged, or transferred to Tuskegee Army Air Field.²⁰

Post War (1946-1998)

The close of the Army Air Corps contract flying school in November 1945 brought a change in the activity at Moton Field. Charles Alfred “Chief” Anderson, who was a flight instructor at the field for the Army Air Corps, continued to offer private flying lessons from Moton Field. Even though primary flight training operations had ceased at the airfield, the Skyway Club continued to operate as a night club open to the general public during this time. According to Bill Childs, who worked as a mechanic at Moton Field, a private business, Tuskegee Aviation Corporation, formed soon after the end of primary flight training. This corporation used the Moton Field facilities to repair and maintain planes and convert military planes for civilian use. In addition, the corporation operated a G. I. flight school through the G. I. College Bill, and Tuskegee Institute offered a degree in Aircraft Mechanics using the corporation and Moton Field for training. The corporation operated for approximately two years after the war ended.²¹ According to Mr. Childs, the City of Tuskegee attempted to levy Tuskegee Aviation Corporation for a total of four million dollars in taxes, the amount for which the Moton Field property was insured. Rather than pay the taxes, the corporation decided to shut down. The government’s first attempt to tax Tuskegee Institute for the property failed because the school was tax exempt and refused to pay the taxes.²²

After the corporation dissolved, Macon County used the hangars for storage of surplus food and as a distribution center for welfare recipients.²³ During this time, several of the support buildings were turned into housing for employees of Tuskegee Institute. The bare minimum was spent on upkeep of these “cottages” as they were known, and residents did general repairs on the buildings themselves. Bill Childs remembers the Skyway Club serving as a dormitory for male students shortly after the war. The G. I. Bill increased student enrollment, and, while campus dorms were being renovated, the Skyway Club’s original open space was subdivided into smaller sleeping quarters. The building may have been in use as a dormitory until the early 1950s.²⁴

All activity, with the exception of housing Tuskegee Institute employees in the cottages, ceased by the mid-1950s, and Tuskegee Institute put little money into the maintenance and upkeep of the buildings and grounds at Moton Field. According to Ed Pryce, landscape architect and superintendent of grounds and maintenance from 1955-1969, the only official

²⁰ “The History of the 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama: Section XII,” p. 2.

²¹ Telephone Interview with Bill Childs by Debbie Curtis Toole, December 2001.

²² Ibid.

²³ Ibid.

²⁴ Ibid.

PART I – DEVELOPMENTAL HISTORY

upkeep at the field was occasional mowing and maintaining the water and sewer lines. No official use was given to the hangars or sheds during this time. With this lack of maintenance, the buildings and landscape deteriorated.

In the 1960s, the Tuskegee Institute School of Veterinary Medicine began to use the airfield for animal research. The area to the east of the field's building complex contained numerous cattle pens. The school renovated Hangar Number Two into a large animal operating and research lab in the early 1970s, which involved subdividing the large hangar space into operating rooms while the original office and classroom areas were converted into laboratories.²⁵ A fire destroyed the hangar in 1989, and the remaining walls were leveled to the ground. Based on a 1964 floor plan of the Skyway Club, this building may also have been used by the Veterinary School. In the mid-1970s, the school renovated the Warehouse/Vehicle Storage Building into a Swine Research Center.

In 1972, a tract consisting of 325 acres of the original Moton Field was deeded to the City of Tuskegee for development of a municipal airport. Bids for the contract were opened in April of 1972, and construction began a year later by the Dubose Construction Corporation in March of 1973. The Municipal Airport was constructed to the north of the building complex. The new paved runways occupy the southern portion of cleared land where the original grass runways were located.

Creation of Tuskegee Airmen National Historic Site

President Bill Clinton approved Public Law 105-355 on November 6, 1998, which established the Tuskegee Airmen National Historic Site at Moton Field in Tuskegee, Alabama. The site was created to commemorate and interpret the heroic actions of the Tuskegee Airmen during World War II and was established as a unit of the National Park System. With this approval, Moton Field was also programmatically listed in the National Register of Historic Places. Establishment of the site included the acquisition by the National Park Service from Tuskegee University of approximately forty-four acres known as Moton Field.²⁶ This forty-four acre tract includes the nine extant historic structures as well as the former sites of the six non-existing structures. In addition, the tract includes an overlook area that might eventually be the site of a proposed interpretative center. NPS land does not include the grass runways, a portion of the historic taxiway, or a portion of the historic tarmac.

Because of its creation as a contract school, Moton Field facilities have not faced the adaptation or conversion typically experienced by other World War II pilot training facilities. Although deterioration has occurred to the historic fabric, the surviving buildings have not undergone significant alterations. When considered in the larger historic setting, the buildings and surviving landscape features express the field's historic function as a flight training facility. Moton Field retains a high level of integrity for interpretation of the training and activities of the Tuskegee Airmen.

²⁵ Interview with Booker Conley by The Jaeger Company, September 26, 2001.

²⁶ Public Law 105-335. 112 Stat. 3254-3258.

PART I – DEVELOPMENTAL HISTORY

For a complete historical overview and developmental history of Moton Field see the Cultural Landscape Report (CLR) for Moton Field, Tuskegee, Alabama.

Chronology of Development & Use

The Bath and Locker House is a novelty wood sided building with a gable roof that is located between the two hangars on the south side of the access road. (See *Figure 1*.)

The building was part of the second phase of construction at Moton Field, which improved the physical facilities to better meet the needs of enlisted men as well as service workers at the airfield. By the summer of 1942 manpower for maintenance and mechanic jobs was becoming scarce throughout the country due to the war. At Moton Field, women were beginning to be relied upon as apprentice mechanics because of this shortage and ultimately became a large percentage of the mechanics and helpers at the airfield.²⁷ Original plans had failed to include facilities for women at the field. The construction of the Bath and Locker House with amenities for women as well as men improved this situation.

Construction of the Bath and Locker House began in the fall of 1942 and by October 27, 1942, 25% of the work had been completed.²⁸ Later construction reports state that 60% of the building had been completed by November 10, 1942; 75% by November 25, 1942, and by December 10, 1942, the building had reached 80% completion.²⁹ G. L. Washington, head of the Department of Mechanical Industries, Division of Aeronautics at Tuskegee Institute described the difficulty in obtaining building materials, especially for the completion of

²⁷ G. L. Washington, *The History of Military and Civilian Pilot Training of Negroes at Tuskegee Alabama 1939-1945*. Not published. Pgs. 306-307.

²⁸ "History of 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama, Section II – 7 December 1941 to 31 December 1942 Inclusive." Appendix III.

²⁹ Ibid, Appendix IV, Appendix V, p. 4.

PART I – DEVELOPMENTAL HISTORY

Hangar Number Two.³⁰ There may have been similar difficulties in obtaining materials for the Bath and Locker House as it was not completely finished until May of 1943.³¹

No architectural drawings of the exterior have been located for the Bath and Locker House at this date. However the floor plan is shown on historic site plans. One site plan, "Plot Plan Primary Flying Field, Tuskegee Institute, Ala.," dated January 20, 1943, shows floor plans for all buildings at Moton Field including the Bath and Locker House.³² Separate toilet and locker rooms for men and women, a heater room, a first aid room, and a men's shower room are depicted. (See *Figure 2*.)

Interior baseboards of the building are a concrete curb that was poured at the same time as the concrete floor slab. Thus the original floor plan can be determined by those areas in the building where this concrete curbing is undisturbed. The original floor plan appears to closely follow what was drawn on the site plan mentioned previously. One exception is found in the women's toilet area. This room is shown on the plan as one room with access on the north wall into the women's locker room. As built, this area was divided into two smaller toilet rooms with access into the women's locker room from one and into the first aid room from the other. G. L. Washington described the Bath and Locker House as having a single sleeping room and bath at one end of the building.³³ Although no room is labeled as such on this plan, the first aid room and its adjoining toilet room might have been used for this purpose.

Other information about the Bath and Locker House is gained from historic photographs. In a labeled aerial photograph circa 1944, the building is referred to as simply "Bathhouse." The south facade and roofline are visible. A small 7-foot square addition on the south wall of the first aid room has not yet been constructed.³⁴ A circa 1945 aerial photograph shows the Bath and Locker House with the addition of this small room on the rear of the building.³⁵

A fire occurred in the building sometime between May of 1943 and 1945. This date range is identified because a completed Hangar Number Two can be seen in the background of one of the pictures and the small addition to the rear of the first aid room has not yet been constructed. Photographs document efforts to extinguish the fire which resulted in the roof of the heater room being damaged to the point of collapse.³⁶ (See *Figures 3 and 4*.)

It is believed that the Bath and Locker House was used after the end of the contract flying school in November 1945, but a specific function is not known at this time. An electric hot water heater was installed in the men's shower with pipes leading to a sink on the opposite

³⁰ G. L. Washington, p. 302-303.

³¹ "History of 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama, Section III – 1 January 1943 to 31 January 1944, Inclusive," p.1.

³² "Plot Plan Primary Flying Field, Tuskegee Institute, Ala." January 20, 1943.

³³ G. L. Washington, p. 313.

³⁴ Moton Field Historic Aerial Photograph, Historic Photographic Collection, Howard University.

³⁵ World War II-era Aerial Photograph of Moton Field, Historic Photograph Collection, NPS Curatorial Storage Facility, Tuskegee Institute NHS, Tuskegee, Alabama.

³⁶ Historic Photograph Collection, Howard University.

PART I – DEVELOPMENTAL HISTORY

side of the wall in the men's toilet. Three-prong electrical outlet boxes (different from the older, t-shaped receptacles) have either been installed or replaced existing receptacles in several locations— on the east wall of the men's locker room, on the north wall of the men's toilet, and on the north wall of the first aid room. An exterior door was added on the north front facade that allowed for access directly into the men's toilet area. Additionally, the door opening leading from the women's locker room to the toilet area has been infilled.

According to Ed Pryce, landscape architect and superintendent of grounds maintenance at Tuskegee Institute from 1955-1969, there was little money to maintain Moton Field during the 1950s and 1960s, and the airfield and its buildings deteriorated.³⁷ A photograph from the 1970s shows the building to be in fair condition.³⁸ (See *Figure 5*.)

By the late 1990s the Bath and Locker House had fallen into an even greater deteriorated state. Roof shingles were damaged or missing and in several places the entire roof system was absent, which exposed the interior to the elements.³⁹ (See *Figures 6 and 7*.) Pre-stabilization drawings and photographs document the increased pace of deterioration to the point of a collapsed roof, missing shingles, and exposed rafters.⁴⁰ The roof and damaged south wall have been reconstructed during recent stabilization efforts to protect the interior from further deterioration. A detailed description of the existing building and the recent stabilization work is found in the *Physical Description* section.

³⁷ Interview with Ed Pryce, NPS.

³⁸ Booker Conley's Files, Physical Plant, Tuskegee University.

³⁹ Pre-stabilization photographs, NPS.

⁴⁰ Pre-stabilization drawings, Pond and Company.

-
- An aerial photograph of the Los Alamos Laboratory complex. The image shows several large, interconnected buildings with flat and arched roofs. A white arrow points to a building on the left side of the main complex. The surrounding area includes fields, roads, and other smaller structures. The caption indicates that this is the building where the atomic bomb was designed.

Hand-drawn floor plan of the main building at the Los Alamos Laboratory. The plan shows a central corridor with rooms on either side. On the left side, from top to bottom, are the 'OIL STORAGE' room, 'HEATER RM.', and a 'REST ROOM'. On the right side, from top to bottom, are the 'LOCKER (MEN)', 'TOILET (MEN)', 'TOILET (WOMEN)', 'FIRST AID RM.', and 'REST ROOM'. A 'DOOR' is marked at the bottom center. The plan also shows a 'ROAD' running horizontally across the middle and a 'ROAD' running vertically on the right side. A 'ROAD' is also marked at the bottom left. The plan is labeled 'PLAN' at the top left and 'DOOR' at the bottom center.

Figure 2: Floor plan of the Bath and Locker House from a war-era site plan. Physical Plant, Tuskegee University.



Figure 3: Fire in the women's locker room circa 1944. Historic Photograph Collection, Howard University.



Figure 4: Working to put out the fire on the heater room roof circa 1944. Historic Photograph Collection, Howard University.



Figure 5: North and west facades on June 14, 1977. Booker Conley's Files, Physical Plant, Tuskegee University.



Figure 6: North facade in 1997 prior to stabilization. National Park Service, SERO, Atlanta, Georgia.



Figure 7: South facade in 1997 prior to stabilization. National Park Service, SERO, Atlanta, Georgia.



Figure 8: Existing north front facade.



Figure 9: Existing south rear facade.



Figure 10: Former location of toilets in men's toilet room.



Figure 11: View of the plumbing chase that separates the men's and women's facilities.



Figure 12: Deteriorated condition of plaster ceiling in the first aid room.



Figure 13: Evidence of fire safety system on the north interior wall of the heater room.

Physical Description

The Bath and Locker House is a wood frame building that was constructed during the fall and winter of 1942-1943. A small addition was added to the rear of the first aid room prior to 1945. The building contains four distinct areas— a men's locker room, shower and toilet; a women's locker room and toilet; a heater room; and a first aid room and toilet. The building is located on the south side of the access road centrally located between Hangar Number One and the former site of Hangar Number Two.

[See *Figures 8 and 9* for current photographs of the exterior of the Bath and Locker House.]

Following is a detailed description of the features and materials of the Bath and Locker House based on field inspection and supported by original site plans and historic photographs. A *Conditions Assessment/Features Inventory* detailing the conditions of each of the following features is located in *Appendix C*; a detailed *Paint Analysis* and *Mortar Analysis* are located in *Appendix D*.

Foundation

There has been no excavation or other ground disturbing investigations to determine foundation materials of the Bath and Locker House. No architectural drawings of the building to indicate the foundation material have been located to this point. Based on other foundation materials used at Moton Field, the foundation most likely consists of poured concrete footings.

PART I – DEVELOPMENTAL HISTORY

Floor Plan

The Bath and Locker House contains four separate areas. Access to each area is gained only from one exterior entrance. The heater room is a 10-foot by 7-foot room located at the west end of the building and is entered through double doors on the north side. There is a single window on each of the west, south and north walls.

The men's locker and toilet room area makes up the largest portion of the building. The locker room, at 11½ feet square, is the largest room in the building. Originally this room was entered from the exterior only on the west but an exterior entrance door added after the war era, provides direct access to the men's toilet from the exterior. Three windows are evenly spaced along both the north and south walls. The men's toilet contains a shower area in the southwest corner. A concrete threshold separates the two areas and kept water from escaping the shower area. A row of four toilets was located along the east wall. (See *Figure 10*.)

A small chase 1½ feet wide runs the width of the building between the men's toilet and the women's locker room and toilet. This area contains numerous pipes for plumbing and sewage. (See *Figure 11*.) An access hole has been cut in the wall at the northeast corner of the men's toilet area.

Accessible only from the east facade, the women's locker and toilet room is located in the northeast corner of the building. Three windows are located along the north wall. This room is the only room where the ceiling remains. Evidence of six former lighting fixtures can be seen in the plaster ceiling. The doorway that leads to the toilet on the south wall has been infilled at some previous point so that access is no longer possible.

The first aid room is located in the southeast corner of the building. A doorway at the southwest corner of the room allows access to the toilet area, which has been divided into two unequal rooms. This differs from the historic site plan, but appears to be original to the building. In the smaller of the two rooms, there is evidence of the former toilet location in the floor.

The only addition to the building is a small room located on the south wall. Access to this room was gained by replacing an earlier window with a door. Because this entire addition was badly deteriorated, it has been completely reconstructed with in-kind materials during recent stabilization efforts.

Floors

The original concrete slab on grade floors remain intact throughout the building. Concrete curbs around the perimeter of each room were constructed of brick with concrete applied over the surface. The floors and curbs are generally in sound condition but are cracked and broken in some areas.

PART I – DEVELOPMENTAL HISTORY

Frame Walls

The walls of the Bath and Locker House are 2x4 frame walls. The exterior walls are finished with novelty wood siding that is painted gray on the exterior and finished with plaster on the interior. Interior frame walls are finished with plaster on both sides. Although intact, most of the interior framing is exposed due to the absence of plaster (see *Interior Finishes*).

The south exterior wall was largely reconstructed in the recent stabilization work. Only a portion of the original frame work on this facade remains at the southwest corner of the building. Interior wall studs closest to the south wall are either deteriorated or missing. The east wall of the heater room has one replacement stud as well as a new pressure-treated plate that runs the entire length of the wall. In the southeast corner of the men's locker room what remains of the original frame wall is severely deteriorated. Water damage has destroyed the plate along the east wall to the point that some thirty-six inches of the plate no longer exist. Two wall studs on this wall closest to the southeast corner have been removed and the next wall stud does not meet the plate because of damage. On the east wall of the men's toilet, what remains of the plaster is helping to support the frame wall. The plate has been recently cut away at the south end and at least three wall studs are missing from this end.

Windows

Windows throughout the building are six-over-six double-hung wood sash windows, with one exception. There is a smaller opening in the shower that was a six-pane fixed window. Both the north and south facades are punctured with a series of window openings. The east facade has one window opening in the first aid room; the heater room has one window opening on the west facade near the northwest corner. All windows are in varying conditions. Some of the windows have missing or broken panes. Others have frosted glass panes that appear to be later replacement material.

All of the windows on the south facade have been removed during the recent stabilization work as have all the remaining window screens. These openings and all of the remaining windows have been covered with plywood on the exterior for protection from further exposure and vandalism.

Doors

Three original exterior doors lead to the women's locker room, the first aid room, and the men's locker room, respectively. These wood doors each contain five horizontal panels and are set in wood frames. On the exterior the doors were sheltered with a shed-roof canopy made of a wood frame covered with either asphalt shingles or asphalt roll roofing.

The exterior double doors to the heater room also appear to be original. These doors are set in a wood frame and open inward. The doors have two horizontal wood panels beneath a nine-pane sash. The west door no longer has glass and the sash is protected from behind with particle board and plywood. The east door sash is completely gone and covered with plywood. Ghost marks of the muntins can be seen on the sash frame.

PART I – DEVELOPMENTAL HISTORY

The exterior door to the men's toilet is not original to the building. It is a hollow-core, wood-veneer door set in the original wood frame.

Currently there is only one door set on hinges in the interior of the building. A hollow-core wood-veneer door hinged in a wood frame separates the men's toilet from the men's locker room. A wood door with two-over-two vertical panels is currently being stored in the men's toilet room. At this point it cannot be determined if this is an original door, and if so, where the door was located historically.

Interior Finishes

All interior walls and ceilings were originally painted plaster. Much of the plaster has been lost over time due to the deterioration of the building. In general, the further away from the south wall, the better the condition of the plaster. A room by room description of interior finishes follows.

In the heater room none of the plaster ceiling remains. The plaster on the walls of the heater room is attached to gypsum board with holes that allowed the plaster to form keys. The plaster remains largely undamaged on the north and west walls. Below the window on the west wall, Portland cement has been used to patch a large crack. Only about ten percent of the original plaster remains on the south wall; the rest of the wall consists of exposed framing from recent stabilization work. The east wall has a large framed-out hole in the center of the wall that has been filled in with drywall. Another patched hole exists near the ceiling close to the northeast corner. All remaining plaster in this room is painted gray.

The men's locker room was badly deteriorated prior to stabilization as the roof and part of the south wall had collapsed. No ceiling remains in this room, only exposed ceiling joists that have recently been replaced. The only plaster remaining is on the north wall. The rest of the walls are exposed frame walls. The south wall was reconstructed with new material during stabilization work. The east and west walls are original frame walls. A small hole has been created in the concrete baseboard on the east wall between the locker room and the shower area, possibly to allow heat into the shower area.

In the center of the building is the men's toilet and shower area. The shower area is located in the southwest corner of the toilet room. The walls of the shower are plaster and extend all the way to the concrete floor. The ceiling is also plaster, but is badly deteriorated close to the south wall. What remains of the wall and ceiling paint is peeling.

The walls and ceiling of the men's toilet are also plaster. Only a small portion of the ceiling in this room remains and that is located closest to the north wall. Exposed wire lath can be seen. Plaster remains intact on the north wall and about seventy percent of the west wall plaster remains. The south wall is a complete reconstruction and does not have an interior finish. The east wall retains some original plaster near the northeast corner, but at the south wall all plaster is missing entirely.

The first aid room has a plaster over wire lath ceiling, of which about thirty-five percent remains. (See *Figure 12*.) The north, west and east walls in this room still retain a majority of

PART I – DEVELOPMENTAL HISTORY

the original plaster finish. The south wall as well as the small addition off this room are new construction and do not yet have interior finishes.

Plaster in the women's toilet area is badly deteriorated. A small portion of the ceiling remains and the plaster walls are down to the scratch coat in most places.

The women's locker room is the only room in the building where the entire plaster ceiling remains. All four walls retain their original plaster. The west wall has been patched in numerous places as has a small hole on the north wall. Paint covers the walls and ceiling in this room.

Roof

The roof structure of the building consists of a ridge pole and 2x6 rafters. The ridge pole as well as original decking in the heater room and above the women's locker room have some char that show evidence of a former fire. Recent reconstruction of the roof system has occurred throughout the building where the existing roof had collapsed. The decking, rafters, and half of the ceiling joists have been replaced in the heater room south of the ridge pole. A majority of the roof structure has been replaced in the men's toilet and locker room. The original roof structure in the women's locker and toilet and first aid room survives.

The current roof covering is green three tab asphalt shingles. The shingles were replaced during recent stabilization work and do not accurately reflect the historic roof covering.

Chimney

A brick chimney stack that vented the original heating system is located on the south facade behind the heater room. The chimney is approximately square and rises several feet above the building's roof. The chimney appears to be in good condition.

Mechanical/Electrical/Plumbing Systems

Many components of the building's electrical and plumbing systems are intact in the building, although they are no longer functional and many have deteriorated. The heating system in the building no longer exists but the brick chimney stack is still located on the south facade behind the heater room.

Much of the original electrical conduit and wiring remain but these are in poor condition. Many receptacles and switches are also intact.

Piping for some of the plumbing remains in a chase that runs the width of the building between the men's and women's locker rooms but all plumbing fixtures have been removed.

Fire extinguishers were located in two places in the heater room for fire protection. Faded red painted squares on the north wall between the door and the window and on the south wall near the southwest corner are all that remain of the fire safety system. (See *Figure 13*.)

PART I – DEVELOPMENTAL HISTORY

More information on the existing mechanical, electrical, and plumbing systems of the Bath and Locker House can be found in the *Conditions Assessment/Features Inventory* in *Appendix C*.

Although some original fabric has been lost due to deterioration, the Bath and Locker House retains its as-built configuration. It represents a very necessary component of the field's history.

Part II - Treatment & Use

Ultimate Treatment & Use
Requirements for Treatment
Alternatives for Treatment

Ultimate Treatment & Use

Three potential treatments based on the standard historic preservation treatments defined in *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* have been considered for the Bath and Locker House. These three treatments are (1) Preservation, (2) Rehabilitation, and (3) Restoration. The Ultimate Treatment And Use Recommendation for the Bath and Locker House is **Restoration of both the exterior and interior**. This recommendation is evaluated based on the Criteria for Determining Treatment. The evaluation is followed by a summary of the steps needed to realize the treatment and a summary recommendation based on the practical feasibility of the treatment, the treatment's impact on historic materials, and its effect on the historic character of Moton Field as a whole.

The **Period of Significance** for interpreting the history of Moton Field is 1941-1945, the period during which the buildings and landscape at Moton Field were constructed and the Tuskegee Airmen were being trained in the primary flying school. 1945 is the **Restoration Date** identified for the restoration of extant buildings. 1945 is the date by which the entire complex at Moton Field associated with the training of the Tuskegee Airmen and the operation of the flying school had been constructed.

ULTIMATE TREATMENT AND USE RECOMMENDATION

The Ultimate Treatment and Use Recommendation for the Bath and Locker House is **Restoration of the exterior and interior based on existing materials and features, historic photographs, and original site plans.**

PART II – TREATMENT & USE

Restoration will conserve the building's existing historic fabric and restore its missing fabric. It will also allow the building to serve as an informational exhibit that will illustrate to visitors the vital yet often overlooked role of men and women at Moton Field who served as mechanics and support personnel.

Criteria for Determining Treatment

Following are the criteria that have been used in determining the recommendation for the ultimate treatment of the historic structures at Moton Field. An explanation of how the Bath and Locker House meets each criterion for the treatment of restoration is provided.

• Significance and Value to the Site's Interpretation

The Bath and Locker House was specifically constructed to provide facilities for men and women who worked as support personnel at Moton Field. Restoration of this building would allow for the best interpretation of the role of the supporting mechanics and assistants who were also a part of the Tuskegee Airmen Experience. The presence of women in these support roles at the airfield necessitated the construction of locker and toilet facilities for their use. While women worked as mechanics and helpers in the hangars and throughout the airfield complex, the Bath and Locker House provides the most tangible evidence of the role of women in the airfield's maintenance and operation. Interpretation of the role of women at Moton Field should also be included at other appropriate locations throughout the site. The restoration of the Bath and Locker House will allow a more complete visitor experience by explaining that the story of the Tuskegee Airmen extended beyond the pilots.

• Existing Condition and Material Evidence

The Bath and Locker House is in good structural condition because of recent stabilization work. The south wall and portions of the roof were reconstructed with in-kind materials to prevent further deterioration of the interior of the building. Interior walls are structurally sound with a few exceptions even though many of them no longer retain their original finishes. With the exception of the women's locker room, what remains of the plaster ceiling is probably not salvageable. Interior finishes remain intact enough to provide information for a restoration. Despite the disrepair of the interior walls, the original floor plan remains.

Much of the building's original materials had fallen into disrepair before recent stabilization work began, especially on the interior. Due to the loss of a large portion of the roof and south wall, most of the interior wall treatments in the rooms are now gone. Remnants of the interior finishes that remain provide information on original interior materials and features. The structural condition of the building and the information provided by existing materials would facilitate an exterior and interior restoration.

• Archival Documentation

Historic documentation of the Bath and Locker House exists in the form of original site plans, historic photographs, and written histories. Site plans found to date document the building's floor plan and room uses. Minor variations exist in what was actually constructed, so the drawings must be used in conjunction with other documentation to get an accurate picture of the building's original construction.

Historic site plans also document the building's relationship to other buildings at the site through the 1940s and into the 1970s. Historic photographs are the most authentic form of documentation available for the exterior of the building. Numerous historic photographs show the building and its surroundings as well as the activities that took place there during the period of significance as a flight training facility. Other photographs document the deterioration of the building from the 1970s up to the present. These photographs only show the exterior; no documentation of the interior has been found to this point. Written accounts of the airfield's history also provide valuable information about the initial construction of the building.

Little information exists on the building's interior furnishings.

Restoration of the Bath and Locker House

Restoration of the exterior and interior of the Bath and Locker House will seek to return the building to its historic appearance in 1945. This will conserve the building's remaining historic fabric and will create an ideal space for interpretation of the role of support personnel, especially the role of women, as a part of the Tuskegee Airmen Experience.

With the combination of original site plans, historic photographs, and the existing building, the restoration of the Bath and Locker House can be accomplished. Ample documentation exists to restore the building, but further research will be needed to replicate the interior furnishings. There is a crucial need for photographs or other documentation of the building's interior to complete a restoration of the interior that includes interior furnishings.

Restoration of the Bath and Locker House will include restoring existing materials where possible and reconstructing missing features. Recent stabilization work has replaced damaged or missing exterior novelty board siding, reconstructed the collapsed portion of the south wall, and replaced the roofing material with asphalt shingles. The majority of this work was determined to be historically accurate and will not be addressed in the treatment recommendations below. Following are items that should be addressed in the restoration. These items are not in order of importance or how they should be accomplished. A detailed work plan should be devised to establish an appropriate order for accomplishing the restoration work.

Roof

- Replace asphalt shingles installed during stabilization work; new shingles should match the original shingles removed from the building in material, size, thickness, and color.

PART II – TREATMENT & USE

Frame Walls

- Reconstruct interior frame walls where sill, plate, and studs have been damaged or removed due to deterioration.
- Prepare siding and trim surfaces for re-painting; restore original exterior color scheme based on *Paint Analysis* findings. (See Paint Recommendations in the *Paint Analysis* in *Appendix D*.)

Floors

- Remove all debris from the floors and clean them.
- Repair cracked areas of the concrete floor and damaged concrete curbing with in-kind materials.

Exterior and Interior Doors

- Repair the existing exterior wood doors and frames; replace deteriorated areas and elements as necessary with in-kind materials; repair existing hardware, including hinges and door knobs; replace missing glass panes on heater room doors.
- Remove nonhistoric exterior door from north front facade; reconstruct missing exterior siding with in-kind materials.
- Replicate missing interior and exterior wood doors based on existing doors and physical evidence of door locations and swings.
- Open blocked doorway between women's locker room and toilet and replicate missing door and frame.
- Reconstruct missing wood-frame screened doors on the outside of exterior doors if documentation or physical evidence can be found to substantiate their design.
- Re-paint doors and door frames based on information from the *Paint Analysis*. (See Paint Recommendations in the *Paint Analysis* in *Appendix D*.)

Windows

- Remove vented plywood added during stabilization.
- Repair existing wood window sash and frames; replace sash and frame elements too deteriorated to repair with in-kind materials; paint based on information from the *Paint Analysis*. (See Paint Recommendations in the *Paint Analysis* in *Appendix D*.)
- Replicate missing wood window frames and moldings on south facade based on surviving frames on other facades.
- Replace missing and broken glass panes with glass matching the existing as closely as possible.
- Repair window hardware to make the windows operable; replace hardware too deteriorated for repair with in-kind materials.
- Repair the existing interior wood frames; reconstruct missing interior window moldings based on physical evidence and historic documentation.

Interior Finishes

- Evaluation of the remnants of interior wall and ceiling plaster should be carried out by a professional familiar with historic plasters before any of the plaster is removed or the walls re-plastered.
- Remove the remnants of interior wall and ceiling plaster that are loose and/or deteriorated.

PART II – TREATMENT & USE

- Repair plaster on walls and ceilings in areas where deterioration or damage is minimal and the original plaster is salvageable, being careful not to damage historic fire safety system indicators.
- Replace missing and deteriorated wire lath, based on physical evidence, in areas where lath was originally used; replace missing gypsum board lath, based on physical evidence, in areas where this type of lath was used.
- Re-plaster the interior walls and ceilings in all areas where plaster is missing or unsalvageable, based on the findings from the professional evaluation; replicate the composition, texture, color, and application of plaster coats as closely as possible.
- Restore the original color scheme of the walls and ceilings based on the findings of the *Paint Analysis*. (See Paint Recommendations in the *Paint Analysis* in *Appendix D*.)

Chimney

- Clean exterior brick chimney with the gentlest method possible; clean out interior of chimney; install flashing around the chimney stack at the roof line to prevent further interior water damage.

Mechanical/Electrical/Plumbing Systems

- Replace the existing electrical system with a new system; run electrical conduit and place switches and receptacles in the same location as originals; use new switches and receptacles that match originals.
- Remove non-historic water heater and plumbing lines from men's shower.
- Further research will be needed to verify the design of missing plumbing and light fixtures.
- Restore period fire safety systems to historic locations in the heater room.
- Further research will be needed to verify the design of the original heating system.

Additional Documentation Required for Restoration

Following are items that require additional documentation in order to accomplish a complete and accurate restoration of the building.

- Screen doors
- Plumbing fixtures
- Lighting fixtures
- Interior furnishings
- Original heating system and applicable fixtures

If additional documentation is not found, conjectural design decisions will have to be made in order to proceed with the building's restoration.

Interior Space and Use Recommendations

Hierarchy of Interior Spaces

- Out of the four distinct spaces, the women's locker area and the men's locker area are the most important for interpretative purposes.

PART II – TREATMENT & USE

- The heater room and the first aid area could be adapted for numerous uses, but the floor plan should remain unaltered.

Interpretation and Use of the Building

- Both men's and women's locker areas should be publicly accessible; add furnishings or displays to interpret the role of non-cadets at the airfield.
- The heater room and first aid area should be publicly accessible as interpretive areas.

Systems Requirements Based on Use

HVAC System

- The building originally had heat but not air conditioning. A series of gas fired unit heaters, suspended from the ceilings, would be the most unobtrusive and cost effective method of providing heat to the area. Each unit heater would require a vent through the roof. Approximately three unit heaters would be required. Total heat requirement would be about 45 MBH. The Bath and Locker House would be provided with exhaust fans only for cooling in summer. Approximately three such fans would serve the area and would provide a total of about 2500 CFM.
- An air conditioning system is needed only if exhibits are temperature sensitive.

Plumbing/Toilet Facilities

- If the men's toilet and shower area and/or the women's toilet and shower area are restored as interpretative exhibits, period fixtures should be installed, but they would not have to be operable.
- If a functional restroom in this building is desired, the toilet area adjacent to the first aid room is recommended to be restored as a functional restroom.

Electrical Power

- A new electrical system will have to be installed to provide the needed electricity to the space. The existing 120/240 volt single phase electrical service needs to be replaced. The new electrical service should be provided from new overhead power poles to match the original locations on the site. New pole mounted transformers will need to be provided to serve the buildings. The existing conduits that are still intact can be re-used. Other new conduits will need to be provided in locations to match original construction or concealed in new ceiling and wall spaces. All new panelboards and disconnect switches will need to be provided to serve the building loads. A new 120/240 volt, single phase, 2-pole, service entrance rated panelboard will need to be provided. A new ground rod will need to be provided for service entrance ground. All new grounded branch circuits will need to be provided to each of the building's devices. New wiring installed should be THHN/THWN copper conductors. New receptacles and light switches should be installed to match original devices in style and color as much as possible, while still providing the needed functionality of the electrical system. New outlet and switch coverplates should be provided to match the original construction.

Lighting

- Lighting fixtures replicating original fixtures should be installed if documentation of original fixtures can be found. Battery back-up exit lights should be provided in all areas

PART II – TREATMENT & USE

as required by NFPA 101 for exit marking. Emergency egress lighting should be served by battery back-up power for the fixtures in the egress pathway.

Fire Protection

- A wet-pipe sprinkler system will be provided to protect the building. A fire alarm system should be provided to notify fire department/park personnel of a fire condition in the building. The fire alarm system should be a complete system consisting of manual pull stations at all exit doors, tamper and flow switches at the new sprinkler riser, notification devices (horns and strobes) that comply with NFPA 72 and ADA requirements and duct mounted smoke detectors in large air handling equipment as required by NFPA 90A.

Security System

- A monitored security system should be installed to provide notification of an intruder during closed hours. The security system should consist of motion detectors to be placed as inconspicuously as possible in each space. Monitored doors and windows are not recommended due to the historic nature of the items and the disruptive installation necessary for these items. Provide battery back-up power for the security system.

Communications

- A telephone outlet should be provided in a location to be used by park personnel. The telephone outlet is not a replication of a historical item; therefore, there is no need to attempt to provide a historic type item. A new telephone outlet should be a typical category 3, RJ11 outlet with category 3 wiring and should be installed in a non-publicly viewable space. The telephone wiring should be routed to the new telephone service in Hangar Number Two. New communication wiring should also be installed for security devices and monitoring circuits.

ADAAG Accessibility

- This is an on-grade facility and will not require additional accessibility considerations. The interior historic layout of this facility did not accommodate current accessibility requirements. While it is desirable to accommodate handicapped individuals, certain areas, due to their historic configuration will not be accessible. It should be noted that a combined effort between the NPS and the Architectural firm will be undertaken to establish a route in the facility to maximize accessibility to as many areas as possible. Areas that are beyond the accessible route should have an interpretive display indicating the use and historic functions of the areas.

Summary Recommendation

Restoration of the Bath and Locker House will preserve this important extant building and will provide an authentic place of interpretation to fully explain the role of mechanics and support personnel, especially women, at Moton Field. Recent stabilization has halted deterioration of the building's historic fabric. The exterior is largely intact and can be easily restored. Even though there has been an extensive loss of interior historic fabric, enough survives to facilitate an accurate interior restoration. Therefore, restoration of both the exterior and the interior is the Recommended Ultimate Treatment.

Requirements for Treatment

Legal mandates and policy directives restrict treatment of the Bath and Locker House. The NPS's Cultural Resources Management Guideline (DO-28) requires planning for the protection of cultural resources "whether or not they relate to the specific authorizing legislation or interpretive programs of the parks in which they lie."

Section 106 of the National Historic Preservation Act (NHPA) mandates that federal agencies, including the NPS, take into account the effects of their actions on properties listed or eligible for listing in the National Register and give the Advisory Council on Historic Preservation a reasonable opportunity to comment.

To help guide compliance with the statutes and regulations noted above, the Secretary of the Interior's *Standards for the Treatment of Historic Properties* have been issued along with guidelines for applying those standards.

Issues of human safety, fire protection, and handicap accessibility are addressed in the Administrative Data and Ultimate Treatment and Use sections. Proper abatement of any hazardous materials will be addressed in the construction phase of the project.

Alternatives for Treatment

Two alternatives for treatment of the Bath and Locker House have been considered and are presented here. They are (1) **Preservation of the building in its current state** and (2) **Rehabilitation of the interior for modern use**. These alternatives are evaluated based on the Criteria for Determining Treatment. This evaluation is followed by a summary of the steps needed to realize the treatment and a summary recommendation based on the practical feasibility of the alternative, the alternative treatment's impact on historic materials, and its effect on the historic character of Moton Field as a whole.

The **Period of Significance** for interpreting the history of Moton Field is 1941-1945, the period during which the buildings and landscape at Moton Field were constructed and the Tuskegee Airmen were being trained in the primary flying school. 1945 is the date identified during the period of significance by which time the entire complex at Moton Field associated with the training of the Tuskegee Airmen and the operation of the flying school had been constructed.

ALTERNATIVE FOR TREATMENT: PRESERVATION

One alternative for treatment of the Bath and Locker House is **Preservation of the building in its current condition**. Interpretative signage at the site, including historic photographs and illustrations, would convey to visitors the original function of the building.

Criteria for Determining Treatment

Following are the criteria used in determining the alternatives for treatment of the historic structures at Moton Field. An explanation of how the Bath and Locker House meets each criterion for the treatment of preservation is provided.

• Significance and Value to the Site's Interpretation

The Bath and Locker House was specifically constructed to provide facilities for men and women who worked as support personnel at Moton Field. The Bath and Locker House best addresses the role of support staff, especially women at the airfield. By preserving the building, this aspect of the field's history would be told, but it would not be as effective as with an interior restoration.

• Existing Condition and Material Evidence

The Bath and Locker House is in good structural condition because of recent stabilization work. Most of the interior finishes were lost due to deterioration and for most interior walls only exposed framing remains. Additional preservation work would have to take place to prevent the interior from further deterioration.

• Archival Documentation

Documentation in the form of historic photographs and site plans that date to the period of significance may be used to determine original materials and features as well as alterations that have taken place so that the interpretation of the building as it now exists will be as accurate as possible.

Preservation of the Bath and Locker House

Preservation of the Bath and Locker House would seek only to repair existing material and maintain the current character of the building. Repairs would be made to prevent further deterioration of the building and to eliminate possible threats to life safety. Because of the extensive loss of historic interior fabric, the interior would not be open to the general public in this treatment. Following are items that should be addressed in the preservation and interpretation of the Bath and Locker House. Stabilization/preservation work should be clearly differentiated from historic materials. These items are not in order of importance or how they should be accomplished. A detailed work plan should be developed to establish an appropriate order for accomplishing the work.

Exterior

- Remove all vegetation from around the exterior of the building.
- Paint all wood siding and trim that was replaced during stabilization with a finish coat. (See Paint Recommendations in the *Paint Analysis* in *Appendix D*.)
- Clean the brick chimney with the gentlest method possible; repoint mortar joints where needed (see Conclusions in the *Mortar Analysis* in *Appendix D* for recommended

PART II – TREATMENT & USE

compatible mortar); install flashing around the chimney stack at the roof line to prevent further interior water damage.

Floors

- Remove all debris from the floors and clean them.
- Repair damaged areas of the concrete floor and concrete curbing with in-kind materials to prevent further deterioration.

Exterior Doors

- Repair the existing exterior wood doors as necessary to prevent further deterioration.

Windows

- Remove vented plywood added during stabilization.
- Repair existing wood window sash and frames; replace sash and frame elements too deteriorated to repair with in-kind materials.
- Replace missing and broken glass planes to prevent further interior deterioration.

Interpretation and Use Recommendations

- Interpretative signage that includes historic photographs and site plans should explain the building's construction and how the building fit into the overall complex.
- The interior could be viewed through windows but public access would not be allowed for safety reasons.
- Written text in conjunction with historic photographs could explain how each interior space was used historically.

Summary Recommendation

Preservation of the Bath and Locker House would preserve the building's remaining historic fabric. Recent stabilization of the Bath and Locker House has halted deterioration of the historic fabric. Preservation would not negatively impact the surviving historic fabric; rather, it would seek to protect the building from further decay. However, this building presents the best opportunity to fully explain the role of support staff, especially women, at Moton Field. Preservation of the building would allow this story to be told, but in a less effective manner than an interior restoration. Therefore, preservation of the building as it now exists is not the Recommended Ultimate Treatment.

ALTERNATIVE FOR TREATMENT: REHABILITATION OF THE INTERIOR

A second alternative for treatment of the Bath and Locker house is **Rehabilitation** of the interior of the building for modern use in addition to an exterior restoration. This treatment would seek to retain the appearance of the war-era building on the exterior while creating updated, usable space for office and administrative purposes on the interior. The interior of the building would not be accessible to the general public in the rehabilitation treatment. Interpretative signage that includes historic photographs and illustrations would convey to visitors the building's original function.

Criteria for Determining Treatment

Following are the criteria used in determining the alternatives for treatment of the historic structures at Moton Field. An explanation of how the Bath and Locker House meets each criterion for the treatment of rehabilitation of the interior is provided.

• Significance and Value to the Site's Interpretation

The Bath and Locker House was specifically constructed to provide facilities for men and women who worked as support personnel at Moton Field. The Bath and Locker House best addresses the role of support staff, especially women at the airfield. A treatment involving an interior rehabilitation would significantly inhibit the ability to interpret the importance of this building to the public to the same level as an interior restoration because much of the evidence of women's role at the airfield is on the interior.

• Existing Condition and Material Evidence

The Bath and Locker House is in good structural condition because of recent stabilization work. Most of the interior finishes were lost due to deterioration and for most interior walls only exposed framing remains. The original floor plan is readily discernable; because a large percentage of interior wall finishes are missing, rehabilitation of the interior would be a cost-effective choice.

• Archival Documentation

Documentation in the form of historic photographs and site plans that date to the period of significance should be used to determine original materials and features of the Bath and Locker House. As historic documentation for the interior is not as prevalent as the exterior, rehabilitation provides a feasible alternative, as long as it is accomplished without compromising the existing historic fabric.

Interior Rehabilitation of the Bath and Locker House

An interior rehabilitation of the building would be in addition to an exterior restoration. The following items specifically address the interior rehabilitation of the Bath and Locker House. Refer to the *Ultimate Treatment and Use* section for items that need to be accomplished for an exterior restoration. The items that follow are not in order of importance or how they

PART II – TREATMENT & USE

should be accomplished. A detailed work plan should be developed to establish an appropriate order for accomplishing the work.

Interior Frame Walls

- Reconstruct interior frame walls in areas where sill, plate, and studs have been damaged or removed due to deterioration with in-kind materials.

Interior Finishes

- Evaluation of the remnants of interior wall and ceiling plaster should be carried out by a professional familiar with historic plasters before any plaster is removed or the walls replastered.
- Retain interior wall and ceiling finishes in areas wherever possible; retain character defining features of construction such as gypsum board backing for plaster.
- In areas where interior finishes are too deteriorated to repair or are missing completely, replace with in-kind materials; if this is not economically feasible, then a compatible substitute should be considered.
- Repaint with historically accurate colors using *Paint Analysis* information. (See Paint Recommendations in *Paint Analysis* in *Appendix D*.)

Floors

- Remove all debris from the floors and clean them.
- Repair damaged areas of the floor and concrete curbing with in-kind materials.

Mechanical/Electrical/Plumbing Systems

- Replace the existing electrical system with a new system; run electrical conduit and place switches and receptacles in the same location as original; use new switches and receptacles that match the original.
- Install heating and air conditioning units if required by the new use in a manner that does not damage historic features; install ductwork in service rooms and the wall cavity where possible.

Interior Space and Use Recommendations

- All interior rehabilitation work should be done in accordance with *The Secretary of the Interior's Standards for Rehabilitation*.
- Use interior space for modern use such as administrative offices.
- If character defining spaces must be subdivided for modern use, it should be done in a manner that does not obscure original window or door openings.
- All new materials should be discernible from historic materials.

Interpretation and Use Recommendations

- Public access to the interior would not be allowed in this treatment.
- Interpretative signage that includes historic photographs and site plans could explain the building's construction and how the building fit into the overall complex.
- Written text, in conjunction with historic photographs, could explain how each interior space was used historically.

Summary Recommendation

Rehabilitation of the interior for modern use in conjunction with exterior restoration would provide usable space for office and administrative purposes. Recent stabilization of the Bath and Locker House has halted deterioration of the historic fabric. Because of the extensive loss of historic fabric on the interior, rehabilitation of the space for modern use such as offices presents a cost effective alternative to interior restoration. However, this building presents the best opportunity to fully explain the role of women at Moton Field, and much of the evidence of the female presence at the airfield is located on the interior of this building. A treatment involving an interior rehabilitation would significantly inhibit the ability to interpret the role of women because the interior would not be accessible to the general public. Therefore, rehabilitation of the interior for modern use in conjunction with exterior restoration is not the Recommended Ultimate Treatment.

Appendices

Appendix A

The following information is provided for the purpose of the project. It is not intended to be a comprehensive list of all information available. The information is provided for the purpose of the project and is not intended to be a comprehensive list of all information available.

• Archival Documents

• Photographs

• All Recorded Activities

A p p e n d i x B

- Bibliography

Bibliography

Conley, Booker. Physical Plant Files, Tuskegee University, Tuskegee, Alabama.

Historic Photograph Collection, Air Force Historical Research Agency, Maxwell Air Force Base, Montgomery, Alabama.

Historic Photograph Collection, Moorland-Spingarn Research Center, Howard University, Washington, D.C.

"History of 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama, Section II - 7 December 1941 to 31 December 1942 Inclusive." 234.821, Moton Field Collection, Air Force Historical Research Agency, Maxwell Air Force Base, Montgomery, Alabama.

"History of 66th AAF Flying Training Detachment, Moton Field, Tuskegee Institute, Alabama, Section III - 1 January 1943 to 31 January 1944 Inclusive." 234.821, Moton Field Collection, Air Force Historical Research Agency, Maxwell Air Force Base, Montgomery, Alabama.

Photographs of Moton Field, National Park Service, 1997 and February 1998.

Photographs of Moton Field, pre-stabilization, Pond and Company, 2000.

APPENDICES

"Plot Plan, 66th AAF Primary Flying Field, Tuskegee Institute, Alabama," Edward C. Miller, Architect; G. L. Washington, Engineer; Louis A. Scipio, Draftsman, Approved by G.L.W., January 20, 1943. Tuskegee University Physical Plant, Tuskegee, Alabama.

Pryce, Ed. Interviews by Christine Trebellas, 13-14 March, 2000. Tuskegee Airmen Oral History Project, National Park Service, SERO, Atlanta, Georgia.

Washington, G. L. *The History of Military and Civilian Pilot Training of Negroes at Tuskegee, Alabama 1939-45*. Tuskegee University Archives, Tuskegee, Alabama.

World War II-era Aerial Photograph of Moton Field, c.1945. Historic Photograph Collection, NPS Curatorial Storage Facility, Tuskegee Institute NHS, Tuskegee, Alabama.

A p p e n d i x C

- Conditions
Assessment/
Features Inventory

FEATURE INVENTORY: EXTERIOR**Administration / Locker Building****Historic Rating Designations**

U - Undetermined (The historic significance of the feature has not been determined)
H - Historic (The feature has historic significance)
T - Treat as Historic (The feature should be treated as if it has historic significance)
N - Not Historic (The feature does not have historic significance)

All Estimable Items			
Materials:	\$36,127.00	Labor:	\$16,127.00
Total =			\$52,254.00

EXTERIOR	4110	Exterior Wall Surface	Wood
-----------------	-------------	------------------------------	-------------

Feature Description:	Exterior wood "novelty siding" showing deterioration
-----------------------------	--

Feature Notes:	Large areas of the exterior wall have been replaced in the stabilization process.
-----------------------	---

Feature Condition: Good

Total Inventory: 2014 S.F.

Historic Rating: H

Priority: Minor

Deficiency:	Loose and warping siding has been replaced. Loose and peeling paint has been corrected
--------------------	--

Recommendation:	Repaint to match original color scheme.
------------------------	---



Materials:
(Refer to 4160 - Exterior Finish)

Labor:**Quantity:****Total =**

EXTERIOR	4111	Exterior Wall Structure	Wood
-----------------	-------------	--------------------------------	-------------

Feature Description:	2 x 4 wood stud walls
-----------------------------	-----------------------

Feature Notes:	Large areas of the exterior wall have been replaced in the stabilization process.
-----------------------	---

Feature Condition: Good **Total Inventory:** 34 L.F.

Historic Rating: N **Priority:** Minor

Deficiency:	Collapsed portions have been replaced.
--------------------	--



Recommendation:	Utilize as restored.
------------------------	----------------------

Materials: **Labor:** **Quantity:** **Total =**

EXTERIOR	4113	Exterior Wall Trim	Wood
-----------------	-------------	---------------------------	-------------

Feature Description:	Roof fascia board and corner trim
-----------------------------	-----------------------------------

Feature Notes:	
-----------------------	--

Feature Condition: Fair **Total Inventory:** 40 L.F.

Historic Rating: H **Priority:** Minor

Deficiency:	Missing boards and deteriorated trim have been replaced during stabilization. Loose and peeling paint has been corrected.
--------------------	---



Recommendation:	Repaint to match original color scheme.
------------------------	---

Materials: **Labor:** **Quantity:** **Total =**

(Refer to 4160 - Exterior Finish)

EXTERIOR **4113** **Exterior Wall Trim - Sun Control** **Wood**

Feature Description: Sun control awnings at entrances

Feature Notes:

Feature Condition: Fair

Total Inventory: 3 at 16 s.f ea.

Historic Rating: H

Priority: Minor

Deficiency: Missing and deteriorated elements have been replaced during stabilization.



Recommendation:

Materials: \$2,922.00 **Labor:** \$228.00 **Quantity:** **Total =** \$3,150.00

EXTERIOR **4113** **Exterior Wall Trim - Vent** **Wood**

Feature Description: Wood vent for attic ventilation

Feature Notes:

Feature Condition: Good

Total Inventory: 2

Historic Rating: H

Priority: Minor

Deficiency: None



Recommendation: Repaint to match original color scheme.

Materials: **Labor:** **Quantity:** **Total =**
(Refer to 4160 - Exterior Finish)

EXTERIOR	4117	Exterior Eave/ Soffit	Wood
----------	------	-----------------------	------

Feature Description: Wood roof eave.

Feature Notes:

Feature Condition: Good

Total Inventory: 40 L.F.

Historic Rating: H

Priority: Minor

Deficiency: Missing boards and deteriorated trim have been replaced during stabilization. Loose and peeling paint has been corrected.

Recommendation: Repaint to match original color scheme.



Materials: \$451.00 **Labor:** \$1,768.00 **Quantity:** Total = \$2,219.00

EXTERIOR	4140	Exterior Window Unit	Wood
----------	------	----------------------	------

Feature Description: Operable, 6 over 6 , 2'-8" x 4'-2" wood sash windows

Feature Notes: May have been removed and stored during stabilization.

Feature Condition: Missing

Total Inventory: 6

Historic Rating: H

Priority: Serious

Deficiency: Missing some windows and frames.

Recommendation: Remove vented plywood. Replicate missing windows and install.



Materials: \$10,263.00 **Labor:** \$675.00 **Quantity:** Total = \$10,938.00

EXTERIOR	4140	Exterior Window Unit	Wood
-----------------	-------------	-----------------------------	-------------

Feature Description: Fixed in place, 3 over 3 , 2'-8" x 2'-4" windows

Feature Notes: May have been removed and stored during stabilization.

Feature Condition: Missing

Total Inventory: 1

Historic Rating: H

Priority: Serious

Deficiency: Missing

Recommendation: Remove vented plywood.
Replicate missing windows and install.

Materials:

Labor:

Quantity:

Total =

(See previous item)

EXTERIOR	4140	Exterior Window Unit	Wood
-----------------	-------------	-----------------------------	-------------

Feature Description: Fixed in place 2'-0" x 1'-0" window

Feature Notes: May have been removed and stored during stabilization.

Feature Condition: Missing

Total Inventory: 1

Historic Rating: H

Priority: Serious

Deficiency: Missing

Recommendation: Remove vented plywood.
Replicate missing windows and install.

Materials:

Labor:

Quantity:

Total =

(See previous item)

EXTERIOR	4141	Exterior Window Frame	Wood
-----------------	-------------	------------------------------	-------------

Feature Description: Operable, 6 x 6 , wood sash windows

Feature Notes: Missing at locations where windows have been removed

Feature Condition: Fair

Total Inventory: 6

Historic Rating: H

Priority: Serious

Deficiency: Some missing window and frame

Recommendation: Remove vented plywood.
Replicate missing windows and install.



Materials:

Labor:

Quantity:

Total =

(Refer to 4140 - Exterior Window Unit)

EXTERIOR	4143	Exterior Window Trim	Wood
-----------------	-------------	-----------------------------	-------------

Feature Description: Wood trim

Feature Notes: Approximately 208 lin. ft. of nominal 4" wood trim.
Approximately 51 lin. ft. of 1-1/2" x 7-1/2" wood sill.

Feature Condition: Fair

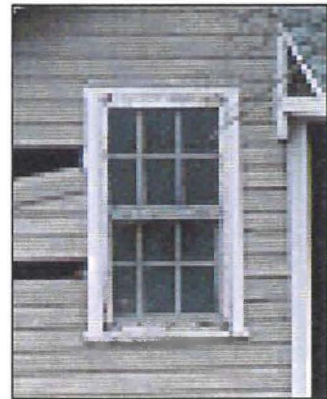
Total Inventory:

Historic Rating: H

Priority: Serious

Deficiency: Some deteriorated.
Some are missing where window units are missing.

Recommendation: Repair at all deteriorated areas.
Replicate and install where missing.



Materials:

Labor:

Quantity:

Total =

(Refer to 4140 - Exterior Window Unit)

EXTERIOR	4144	Exterior Window Hardware	Metal
-----------------	-------------	---------------------------------	--------------

Feature Description: Metal window hardware

Feature Notes:

Feature Condition: Poor

Total Inventory: 10

Historic Rating: H

Priority: Serious

Deficiency: Rusted and corroded.

Recommendation: Clean and repair all existing where possible. Replicate and replace where necessary or missing.



Materials:

Labor:

Quantity:

Total =

(Refer to 4140 - Exterior Window Unit)

EXTERIOR	4150	Exterior Door Unit	Wood
-----------------	-------------	---------------------------	-------------

Feature Description: Exterior Doors are typically panel doors. One door on north side replaced with flush door.

Feature Notes: North elevation door not historical.

Feature Condition: Fair

Total Inventory: 1

Historic Rating: N

Priority: Serious

Deficiency: Surface delamination. Not historical.

Recommendation: Remove door and frame, reconstruct siding to match adjacent. Repair/ replace all exterior doors. Use historic photographs to provide appropriate replication in doors.



Materials: \$12,742.00 **Labor:** \$265.00 **Quantity:** **Total =** \$13,007.00

EXTERIOR **4152** **Exterior Door** **Wood**

Feature Description: Exterior Doors are typically panel doors with mullions on upper half.

Feature Notes:

Feature Condition: Poor

Total Inventory: 1 Pr.

Historic Rating: H

Priority: Serious

Deficiency: Loose and peeling paint, some repair needed. One leaf missing mullions.

Recommendation: Repair doors, replicate missing mullions. Install new glass where missing.



Materials:

Labor:

Quantity:

Total =

(Refer to 4150 -Exterior Door Unit)

EXTERIOR **4153** **Exterior Door Trim** **Wood**

Feature Description: 6" wood trim

Feature Notes:

Feature Condition: Good

Total Inventory: 5 units

Historic Rating: H

Priority: Minor

Deficiency:

Recommendation: Repaint to match original color scheme.



Materials:

Labor:

Quantity:

Total =

(Refer to 4150 -Exterior Door Unit)

EXTERIOR	4154	Exterior Door Hardware	Metal
----------	------	------------------------	-------

Feature Description: Metal door hardware

Feature Notes: Some locking hardware has been added in recent years.

Feature Condition: Poor

Total Inventory: 5 doors

Historic Rating: H

Priority: Serious

Deficiency: Rusted and corroded.

Recommendation: Remove non-historic hardware.
Clean and repair existing hardware where possible.
Replicate and install replacement hardware where missing



Materials: \$5,491.00 Labor: Quantity: Total = \$5,491.00

EXTERIOR	4155	Exterior Door Sill/ Threshold	None
----------	------	-------------------------------	------

Feature Description: Door thresholds

Feature Notes: It appears that most of the doors on this facility did not have thresholds.

Feature Condition: Fair

Total Inventory: 5 doors

Historic Rating: H

Priority: Minor

Deficiency: None

Recommendation: None.



Materials: Labor: Quantity: Total = \$0.00

EXTERIOR	4160	Exterior Finish	Paint
-----------------	-------------	------------------------	--------------

Feature Description: Exterior boards have been painted.

Feature Notes:

Feature Condition: Fair

Total Inventory: 2014 S.F.

Historic Rating: H

Priority: Minor

Deficiency: Areas where exterior boards were replaced need to be painted.

Recommendation: Repaint to match original color scheme.



Materials: \$1,781.00 **Labor:** \$7,164.00 **Quantity:** **Total =** **\$8,945.00**

EXTERIOR	4310	Roof Surface	Shingles
-----------------	-------------	---------------------	-----------------

Feature Description: Asphalt shingle roof.

Feature Notes: Majority of roof has been replaced in stabilization process.

Feature Condition: Fair

Total Inventory: 2205 S.F.

Historic Rating: N

Priority: Minor

Deficiency: Areas of roof had collapsed exposing structure.

Recommendation: Remove modern roofing material and replace with replicated roofing material to match original construction.



Materials: \$2,302.00 **Labor:** \$3,874.00 **Quantity:** **Total =** **\$6,176.00**

EXTERIOR	4330	Chimney	Masonry
-----------------	-------------	----------------	----------------

Feature Description: Masonry Chimney - constructed of standard red brick.

Feature Notes: 3 ft wide x 20 ft. high - approximately 226 sq. ft. exposed to exterior.

Feature Condition: Good

Total Inventory: 1

Historic Rating: H

Priority: Minor

Deficiency: Slight discoloration, minor deterioration at mortar joints.

Recommendation: Clean masonry to remove discoloration. Repoint masonry joints as needed at deteriorated areas.



Materials:	\$175.00	Labor:	\$2,153.00	Quantity:	Total =	\$2,328.00
-------------------	-----------------	---------------	-------------------	------------------	----------------	-------------------

FEATURE INVENTORY: INTERIOR**Administration / Locker Building****Historic Rating Designations**

U - Undetermined (The historic significance of the feature has not been determined)
H - Historic (The feature has historic significance)
T - Treat as Historic (The feature should be treated as if it has historic significance)
N - Not Historic (The feature does not have historic significance)

All Estimable Items			
Materials:	\$53,416.00	Labor:	\$22,055.00
Total =			\$75,471.00

INTERIOR	4210	Interior Wall Surface	Plaster
-----------------	-------------	------------------------------	----------------

Feature Description:	Plaster wall surface on gypsum board.
-----------------------------	---------------------------------------

Feature Notes:	The wall system used a gypsum backer board with plaster applied to the surface.
-----------------------	---

Feature Condition: Poor**Total Inventory:** 20 L.F.**Historic Rating:** H**Priority:** Serious

Deficiency:	Holes/ missing sections of walls throughout the facility.
--------------------	---

Recommendation:	Repair plaster and replace in areas where missing. Re-paint base on expert analysis.
------------------------	---



Materials:	\$21,154.00	Labor:	\$8,103.00	Quantity:		Total =	\$29,257.00
-------------------	-------------	---------------	------------	------------------	--	----------------	--------------------

INTERIOR **4211** **Interior Wall Structure** **Wood**

Feature Description: Wood stud interior walls.

Feature Notes:

Feature Condition: Poor **Total Inventory:** 12-15 L.F.

Historic Rating: H **Priority:** Serious

Deficiency: Missing portions of wall and support studs.

Recommendation: Install missing studs to receive new wall surface.



Materials: \$10,745.00 **Labor:** \$7,164.00 **Quantity:** **Total =** **\$17,909.00**

INTERIOR **4211** **Interior Wall Structure** **Wood**

Feature Description: Interior wall at first aid closet.

Feature Notes: Looks to be a later addition to the structure. Not in the original plans.

Feature Condition: Fair **Total Inventory:** 24 L.F.

Historic Rating: N **Priority:** Historic

Deficiency: Replaced with wood sheathing
No interior finish material present.

Recommendation: Utilize as restored.



Materials: **Labor:** **Quantity:** **Total =** **\$0.00**

INTERIOR	4211	Interior Wall Structure	Plaster
----------	------	-------------------------	---------

Feature Description:	Wire lath and plaster system in shower areas
-----------------------------	--

Feature Notes:

Feature Condition: Poor

Total Inventory: 54 L.F.

Historic Rating: H

Priority: Critical

Deficiency:	In areas where exposed, lath and plaster base are intact, finish coat is deteriorated and the supporting structure is deteriorated.
--------------------	---

Recommendation:	Replace missing portions of lath and plaster system.
------------------------	--



Materials:

Labor:

Quantity:

Total =

\$0.00

(Refer to 4210 - Interior Wall Surface)

INTERIOR	4220	Interior Ceiling Surface	Plaster
----------	------	--------------------------	---------

Feature Description:	Plaster ceiling surface.
-----------------------------	--------------------------

Feature Notes:	Entire ceiling system appears to have been wire lath and plaster system applied to underside of roof trusses.
-----------------------	---

Feature Condition: Missing

Total Inventory: 1150 S.F.

Historic Rating: H

Priority: Critical

Deficiency:	Missing portions of ceiling throughout most of the facility.
--------------------	--

Recommendation:	Replace missing area of ceiling lath and plaster system.
------------------------	--



Materials:

\$4,210.00

Labor:

\$3,597.00

Quantity:

Total =

\$7,807.00

INTERIOR	4221	Interior Ceiling Structure	Wood
----------	------	----------------------------	------

Feature Description: Wood trusses.

Feature Notes: Deteriorated areas of the trusses were replaced during stabilization.

Feature Condition: Fair **Total Inventory:** 250 S.F.

Historic Rating: H/N **Priority:** Minor

Deficiency: Missing portions of ceiling in facility.

Recommendation: Utilize as restored.



Materials: **Labor:** **Quantity:** **Total =** \$0.00

INTERIOR	4230	Interior Floor Surface/ Cover	Concrete
----------	------	-------------------------------	----------

Feature Description: Concrete slab on grade.

Feature Notes:

Feature Condition: Fair **Total Inventory:** 22 L.F.

Historic Rating: H **Priority:** Minor

Deficiency: Some cracking is evident in floor.

Recommendation: Remove debris.
Clean and leave concrete in place as existing.



Materials: \$500.00 **Labor:** \$1,500.00 **Quantity:** **Total =** \$2,000.00

INTERIOR	4231	Interior Floor Structure	Concrete
----------	------	--------------------------	----------

Feature Description: Concrete floor with curb
--

Feature Notes: Anticipated use as base system. The curbs were built up out of brick with the concrete applied over the surface.
--

Feature Condition: Fair

Total Inventory: 6 L.F.

Historic Rating: H

Priority: Minor

Deficiency: Broken in areas.

Recommendation: Repair broken curb with in-kind concrete material.



Materials:	\$250.00	Labor:	\$750.00	Quantity:	Total =	\$1,000.00
-------------------	----------	---------------	----------	------------------	----------------	------------

INTERIOR	4250	Interior Door Unit	Wood
----------	------	--------------------	------

Feature Description: Wood interior doors

Feature Notes:

Feature Condition: Missing

Total Inventory: 4

Historic Rating: H

Priority: Serious

Deficiency: Missing all original interior doors.

Recommendation: Replicate all missing doors and install.



Materials:	\$12,344.00	Labor:	\$151.00	Quantity:	Total =	\$12,495.00
-------------------	-------------	---------------	----------	------------------	----------------	-------------

INTERIOR	4251	Interior Door Frame	Wood
----------	------	---------------------	------

Feature Description:	Wood door frame
-----------------------------	-----------------

Feature Notes:

Feature Condition: Missing

Total Inventory: 1

Historic Rating: H

Priority: Serious

Deficiency:	Missing frames.
--------------------	-----------------

Recommendation:	Reconstruct all missing door frames.
------------------------	--------------------------------------



Materials:

Labor:

Quantity:

Total =

(Refer to 4250 - Interior Door Unit)

INTERIOR	4252	Interior Door	Wood
----------	------	---------------	------

Feature Description:	Wood and glass interior door
-----------------------------	------------------------------

Feature Notes:

Feature Condition: Fair

Total Inventory: 1

Historic Rating: N

Priority: Historic

Deficiency:	Non-historic door.
--------------------	--------------------

Recommendation:	Remove non-historic door and replace with replicated door.
------------------------	--



Materials:

Labor:

Quantity:

Total =

(Refer to 4250 - Interior Door Unit)

INTERIOR **4253** **Interior Door Trim** **?**

Feature Description: 4" wood door trim

Feature Notes:

Feature Condition: Fair

Total Inventory: 51 L.F.

Historic Rating: H

Priority: Serious

Deficiency: Missing where door frames are missing.

Recommendation: Replicate all missing door trim and install.



Materials:

Labor:

Quantity:

Total =

(Refer to 4250 - Interior Door Unit)

INTERIOR **4260** **Interior Finish** **Paint**

Feature Description: Paint on wall board and plaster system

Feature Notes:

Feature Condition: Poor

Total Inventory: 3300 S.F.

Historic Rating: H

Priority: Serious

Deficiency: Paint chipping and peeling throughout the facility.

Recommendation: Remove all loose and chipping paint. Restore and paint to match original color scheme.



Materials:

\$4,213.00

Labor:

\$590.00

Quantity:

Total =

\$4,803.00

FEATURE INVENTORY: MECHANICAL SYSTEMS

MECHANICAL **5828** **Water Heater** **?**

Feature Description: Electric hot water heater.

Feature Notes: Hot water heater may be operational, but is basically at the end of its useful life.

Feature Condition: Poor

Total Inventory: 1

Historic Rating: N

Priority:

Deficiency: Hot water heater is badly rusted and would most likely require considerable service work to become operational.

Recommendation: Remove unit and associated plumbing/electrical elements.



Materials: **Labor:** \$200.00 **Quantity:**
(See Plumbing Section in estimate for full scope)

Total = **\$200.00**

Feature Inventory Locker Building

Shower	
Walls	
Surface	Complete replacement needed
Structure	Wire lath and plaster system
Base	concrete curb
Trim	N/A
Floor	
Surface	Concrete slab
Structure	
Ceiling	
Surface	Missing
Structure	
Trim	N/A
Windows	
Unit	N/A
Hardware	N/A
Trim	N/A
Doorways	
Single Doors	1 Unit
Unit	1 door openings
Doors	Missing
Frame	
Transom	N/A
Threshold	N/A
Trim	
Hardware	N/A

Feature Inventory Locker Building

Men's Toilet	
Walls	
Surface	50% Intact
Structure	Gypsum board with plaster coat
Base	Concrete curb
Trim	N/A
Floor	
Surface	Concrete slab
Structure	
Ceiling	
Surface	Missing
Structure	Replaced during stabilization
Trim	N/A
Windows	
Double Units	1 Unit
Unit	Intact
Hardware	Intact
Trim	Intact
Single Units	1 Unit
Unit	Missing one single unit and frame
Hardware	Missing
Trim	Missing
Doorways	
Single Doors	2 Units
Unit	Both door were replacements for original doors
Doors	Intact
Frame	Intact
Transom	N/A
Threshold	Missing
Trim	Intact
Hardware	Intact
Fixtures	
Unit	All fixtures missing

Feature Inventory Locker Building

Men's Locker	
Walls	
Surface	35% Intact (north - intact) (east- 75% intact) (west - orig. studs - no surface)
	(south - reconstructed during stabilization - no surface)
Base	Concrete curb
Trim	N/A
Floor	
Surface	concrete slab - crack across room
Structure	
Ceiling	
Surface	Missing
Structure	
Trim	N/A
Windows	6 Units
Unit	3 south windows removed during stabilization - north units intact
Hardware	3 intact
Trim	3 intact
Doorways	
Single Doors	2 Units
Unit	Door to Men's Toilet is a replacement from the original
Doors	2 Intact
Frame	2 Intact
Transom	N/A
Threshold	Missing
Trim	2 Intact
Hardware	2 Intact

Feature Inventory Locker Building

Women's Locker	
Walls	
Surface	Walls intact - 2 large holes in west wall approx. 4' x 6'
Structure	Stud walls intact
Base	Concrete curb
Trim	N/A
Floor	
Surface	Concrete slab
Structure	
Ceiling	
Surface	Intact
Structure	
Trim	N/A
Windows	3 Units
Unit	3 Intact
Hardware	3 Intact
Trim	3 Intact
Doorways	
Single Doors	
Unit	1 door openings
Doors	Intact
Frame	Intact
Transom	N/A
Threshold	Missing
Trim	Intact
Hardware	Intact

Feature Inventory Locker Building

Toilet	
Walls	
Surface	Walls intact
Structure	All wire lath and plaster
Base	Concrete curb
Trim	
Floor	
Surface	Concrete slab
Structure	
Ceiling	
Surface	Intact
Structure	
Trim	
Windows	
Unit	N/A
Hardware	N/A
Trim	N/A
Doorways	1 Unit
Single Doors	1 Units
Unit	
Doors	Missing
Frame	Intact
Transom	N/A
Threshold	N/A
Trim	Intact
Hardware	N/A

Feature Inventory Locker Building

First Aid Room	
Walls	
Surface	60% walls intact
Structure	
Base	Concrete curb
Trim	N/A
Floor	
Surface	Concrete slab
Structure	
Ceiling	
Surface	15% intact
Structure	Wire lath and plaster system throughout facility
Trim	N/A
Windows	
	3 Units
Unit	1 unit on south wall missing entirely, 2 intact
Hardware	2 Intact
Trim	2 Intact
Doorways	
Single Doors	
	2 Units
Unit	2 door openings
Doors	Door into small closet are missing
Frame	1 Intact
Transom	N/A
Threshold	N/A
Trim	1 Intact
Hardware	1 Intact

Feature Inventory Locker Building

Closet Area	
Walls	
Surface	None
Structure	New studs from stabilization Exterior replaced during stabilization
Base	N/A
Trim	N/A
Floor	
Surface	Concrete slab
Structure	
Ceiling	
Surface	Missing
Structure	
Trim	N/A
Windows	
Single Units	1 Unit
Unit	Missing unit and frame
Hardware	Missing
Trim	Missing
Doorways	
Single Doors	1 Units
Unit	1 door openings
Doors	Removed during stabilization
Frame	Missing
Transom	N/A
Threshold	Missing
Trim	Missing
Hardware	N/A

Feature Inventory Locker Building

Heater Room	
Walls	
Surface	75% intact
Structure	Intact
Base	N/A
Trim	N/A
Floor	
Surface	Concrete slab
Structure	
Ceiling	
Surface	Missing
Structure	
Trim	N/A
Windows	
Single Units	3 Units
Unit	3 unit intact
Hardware	Intact
Trim	2 intact, 1 unit with sill trim missing
Doorways	
Double Doors	1 Units
Unit	1 door openings
Doors	Intact
Frame	Intact
Transom	N/A
Threshold	N/A
Trim	Intact
Hardware	N/A

FEATURE INVENTORY: EXTERIOR AND INTERIOR**Locker Building****Historic Rating Designations**

U - Undetermined (The historic significance of the feature has not been determined)
H - Historic (The feature has historic significance)
T - Treat as Historic (The feature should be treated as if it has historic significance)
N - Not Historic (The feature does not have historic significance)

All Estimable Items

Materials: \$66,467.00 **Labor:** \$28,562.00 **Total =** \$95,029.00

INTERIOR 5830 Electrical System

Feature Description: Armored cable

Feature Notes:

The fact that the cable passes through the stud indicates that this is part of the original construction

Feature Condition: Fair

Total Inventory: 1(exposed)

Historic Rating: H

Priority:

Deficiency:

Recommendation: Leave intact as existing. Install new electrical throughout facility for new service and distribution requirements.



Materials: \$18,158.00 **Labor:** \$7,883.00 **Quantity:** **Total =** \$26,041.00

INTERIOR **5830** **Electrical System**

Feature Description: Flush-mounted receptacle

Feature Notes: This flush-mounted ungrounded receptacle appears to be part of the original equipment.

Feature Condition: Fair

Total Inventory: See dwg
and table

Historic Rating: H

Priority:

Deficiency: Coverplate is missing

Recommendation: Use to replicate device. Install
new devices in existing locations throughout facility.



Materials:

Labor:
(See previous item)

Quantity:

Total =

INTERIOR **5830** **Electrical System**

Feature Description: Flush-mounted ceiling junction box.

Feature Notes: This box probably supported a light fixture

Feature Condition: Fair

Total Inventory: See dwg
and table

Historic Rating: H

Priority:

Deficiency: Light fixture is missing

Recommendation: Replicate light fixture from
historical information and install in all missing locations.



Materials: \$43,579.00 **Labor:** \$15,232.00 **Quantity:**

Total = \$58,811.00

EXTERIOR **5830** **Electrical System - Service Distribution**

Feature Description: Ceramic Insulator and wire

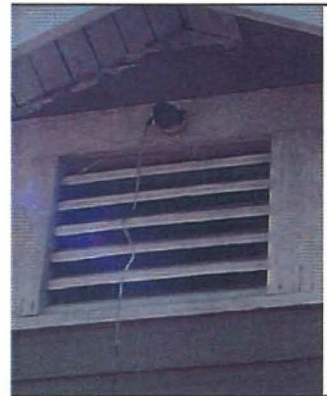
Feature Notes: This insulator probably supported an exterior branch circuit conductor.

Feature Condition: Fair **Total Inventory:** 1

Historic Rating: H **Priority:**

Deficiency:

Recommendation: Install new electrical service into the building at this location. Retain existing ceramic insulator as existing.



Materials: \$4,730.00 **Labor:** \$5,447.00 **Quantity:** **Total =** \$10,177.00

EXTERIOR **4140** **Electrical System**

Feature Description: Ceramic Insulator and wire

Feature Notes: This insulator probably supported an exterior branch circuit conductor.

Feature Condition: Fair **Total Inventory:** 2

Historic Rating: H **Priority:**

Deficiency:

Recommendation: Retain as existing.



Materials: **Labor:** **Quantity:** **Total =**
(Refer to 5830 - Electrical System - Service Distribution)

INTERIOR	5839	Electrical System
----------	------	-------------------

Feature Description: Surface-mounted receptacle and conduit

Feature Notes: This receptacle was probably not part of the original construction.

Feature Condition: Fair

Total Inventory: 1

Historic Rating: N

Priority:

Deficiency:

Recommendation: Remove all devices not part of the original construction and repair walls as required.



Materials:

Labor:

Quantity:

Total =

(Refer to 5830 - Electrical System)

No.	Description		Complete	Cover missing	Receptacle missing	Box with wiring	Outlet box only	Flush-mounted	Original Equipment	Notes	Condition
1	Receptacle	Men's locker - north wall		X				X	X		P
2	Receptacle	Men's locker - north wall		X				X	X		P
3	Receptacle	Men's locker - east wall		X				X	X		P
4	Switch	Men's toilet - west wall		X				X	X		P
5	Receptacle	Men's toilet - north wall		X							P
6	Junction box	Men's toilet - east wall		X				X	X		P
7	Junction box	Men's toilet - east wall		X				X	X		P
8	Switch	Men's toilet - west wall		X				X	X		P
9	Ceramic insulator	Under eave, north side of building						X	X		P
10	Ceramic insulator	Under eave, north side of building						X	X		P
11	Receptacle	First aid room - north wall		X				X	X		P
12	Switch	First aid room - east wall		X				X	X		P
13	Ceramic insulator	East wall of building at gable vent						X	X		P
14	Junction box - for light fixture	Women's locker and toilet - ceiling					X	X	X		P
15	Junction box - for light fixture	Women's locker and toilet - ceiling				X		X	X		P
16	Junction box - for light fixture	Women's locker and toilet - ceiling				X		X	X		P
17	Junction box - for light fixture	Women's locker and toilet - ceiling				X		X	X		P
18	Receptacle	Women's locker and toilet N wall		X				X	X		P
19	Receptacle	Women's locker and toilet N wall		X				X	X		P
20	Switch	Women's locker and toilet E wall		X				X	X	1	P
21	Receptacle	Women's locker and toilet S wall		X				X	X		P
22	Exposed armored cable	Women's locker and toilet N wall						X	X		P
23	Switch	Toilet N wall		X				X	X	2	P
24	Junction box	Shower N wall		X						3	P
25	Switch outlet box	Shower N wall		X							P
26	Hole in ceiling	Shower Ceiling								4	P
27	Water Heater	Shower									P

Notes:

- 1 Three-gang switch box, only one switch de
- 2 Mounted 48" above floor, probably for lavatory.
- 3 Hole in box where conduit entered, but conduit is missing.
- 4 Hole in ceiling looks like there may have been a light fixture.

Conditions

G = Good
F = Fair
P = Poor
VP = Very Poor

A p p e n d i x D

- **Materials Analysis**
Paint Analysis
Mortar Analysis

PAINT ANALYSIS
OF
THE BATH & LOCKER HOUSE
MOTON FIELD
TUSKEGEE, ALABAMA

**PREPARED
FOR
THE JAEGER COMPANY**

**BY
MARYELLEN HIGGINBOTHAM
PRESERVATION/DESIGN CONSULTANT
September 2002**

TABLE OF CONTENTS

INTRODUCTION	Page	1
SCOPE OF WORK	Page	2
GENERAL SUMMARY	Page	3
PAINT ANALYSIS	Page	4
Exterior	Page	4
Interior	Page	4
Heater Room	Page	4
Men's Locker, Toilet, & Shower Rooms	Page	5
Women's Locker & Toilet Rooms	Page	5
First Aid Room	Page	6
Chromo-chronologies	Page	7
PAINT RECOMMENDATIONS	Page	13
APPENDIX		
List of Figures		
List of Samples		
Frank Welsh Report		

INTRODUCTION

In the summer of 1941, Tuskegee Institute began the development of Moton Field in Tuskegee, Alabama. The extant historic buildings/structures at Moton Field are unique examples of facilities needed for basic flight training during the 1940s. The African-American pilots who trained here made a considerable contribution to the United States flight operations during World War II. After the war, the civilian uses of these buildings/structures included civilian aviation, recreation, and housing in addition to Tuskegee Institute programs. Most of the buildings were vacant and deteriorated by the 1980s.

According to research conducted by the National Park Service and The Jaeger Company, construction of the main buildings/structures at Moton Field began in spring of 1941, with Hangar Number One, and concluded in the summer/fall of 1945, with the Skyway Club. These buildings/structures were constructed in Three Phases and all within five years. The nine extant historic buildings/structures are Hangar Number One, Entrance Gate, Control Tower, Bath and Locker House, Warehouse/Vehicle Storage Building, Dope Storage Shed, Oil Storage Shed, Fire Protection Shed, and Skyway Club.

SCOPE OF WORK

Paint analysis of the paint histories of the nine extant historic buildings/structures at Moton Field has been conducted in two phases. The project began at the request of Amy Kissane, Senior Preservation Planner at The Jaeger Company and is a part of The Jaeger Company's Moton Field Project for the National Park Service. The objective of the first phase of the paint analysis was a survey of the exterior/interior paint history for each of the nine buildings/structures to aid in the development of a restoration and interpretation plan for the site.

Phase One began with a site visit and a review of Moton Field maps, architectural drawings and photographs provided by The Jaeger Company. The site visits were coordinated with Debbie Toole, Architectural Historian for The Jaeger Company. Three days were spent on site at Moton Field. Multiple paint samples were taken from the main architectural elements on the exterior and interior rooms of the buildings or structures. An initial microscopic study of selected paint samples was conducted on site. During the study, more than 200 paint samples were examined under a lighted, 40X stereo microscope. Construction materials and finishes were also considered as tools in understanding the buildings'/structures' paint histories. Pigment analysis and spectrophotometric color matching were not included in this survey.

The objective of Phase Two was to determine, where possible, the paint schemes for the nine extant historic buildings/structures during the designated period of significance "1945". Nineteen paint samples from six buildings/structures were sent to Frank S. Welsh, an Architectural Coating Specialist, for specific color matching to Sherwin Williams Color Swatches. These samples were taken from buildings built just before and during World War II, a period when building materials were expensive and in short supply. Because it was felt that emphasis was on building and not repainting, Mr. Welsh was requested to color match to the original colors on each paint sample. Findings of Mr. Welsh and of the paint survey have been used to recommend, where possible, the color schemes for the nine extant historic buildings/structures at Moton Field.

This written presentation of the paint analysis of the extant buildings/structures at Moton Field includes a brief introduction, scope of work, general summary; paint histories material and color samples; and Mr. Welsh's report. Chromo-chronologies, paint layer sequencing, of each building/structure are presented when possible.

GENERAL SUMMARY

The paint histories of the extant buildings/structures at Moton Field are incomplete puzzles of paint, color, and materials. Time and the elements have not been kind to the original materials remaining in these buildings. In many cases, original materials are missing or so altered as to be unreadable. Paint was often applied thinly and inconsistently within rooms making some paint histories difficult to determine. No paint schedules were located to confirm paint colors. However, colors and paint mediums do provide a general paint history in each building/structure.

Construction materials contributed greatly to the exterior and interior decorative schemes of the buildings/structures. Colors used during the war years reflect the scarcity and cost of paint materials. Although Moton Field was not officially a military facility, the original paint colors found on the site's buildings/structures resemble the gray colors of military facilities of the era. Wooden buildings at Moton Field were painted varying shades of gray with gray to white trim. Building interiors were also painted grays but they became more colorful as the building uses changed over time.

Each building/structure will be discussed chronologically by period of construction and the rooms will be presented according to the POND Architectural Plans. When possible, original paint colors for main architectural elements on buildings and in rooms will be given.

PAINT ANALYSIS

BATH AND LOCKER HOUSE

The Bath and Locker House is one of the two remaining wooden buildings at Moton Field. It was constructed between 1942 and 1943.

POND EXISTING CONDITIONS BATH AND LOCKER HOUSE FLOOR PLAN will be used for building/rooms information and orientation. (See Figure 1)

EXTERIOR

The Bath and Locker House exterior has been painted at least 5 times. The exterior novelty (shiplap) siding has always been painted varying shades of gray. The original color, matched by Frank Welsh, was a light gray close to Sherwin Williams #1001. (See Sample 1). The exterior trim was also originally painted the same light gray. (See Sample 1). Later the trim was painted darker or lighter shades of gray until it was painted white as seen today.

INTERIOR

Interior rooms are in varying degrees of deterioration and missing elements. Ceilings, where present, are plaster on metal lath and walls are plaster and/or skim coats of plaster over gypsum board. The baseboards are smooth concrete. The interior substrate samples sent to Frank Welsh for color matching were inconclusive. Microscopic survey work indicated that all the rooms within the Bath and Locker House were initially painted the same light gray color. When the exterior color matched sample Sherwin Williams #1001 was compared to additional samples from each room, it appears that the interiors of the Bath and Locker House were originally painted the same Sherwin Williams #1001 color as the exterior. (See Sample 1) Most of the rooms have been painted multiple times with the exception of the heater room, which has been painted only three times.

Bath and Locker House interior room paint histories will be presented using the POND EXISTING CONDITIONS ADMIN/LOCKER BLDG. FLOOR PLAN for orientation -- beginning on the west side. (See Figure 1)

Heater Room

Ceiling

The original ceiling is missing.

Walls

Walls in the Heater Room were originally painted a light gray, close to Sherwin Williams #1001. (See Sample 1) At a later date, the walls were painted a chalky light gray then a medium gray. (Figure 1)

Windows

Windows were painted in the same manner as the walls.

Doors

Doors were painted in the same manner as the walls.

Men's Locker, Toilet, and Shower Rooms**Ceiling**

The original ceiling in the Men's Locker Room is missing. Some ceiling fragments remain in the Men's Toilet Room.

Walls

The Men's Locker, Toilet, and Shower Rooms have all been painted in the same manner—beginning with a light gray, close to Sherwin Williams #1001. (See Sample 1) Walls are painted varying shades of gray and green until the final three latex paintings of brown, pink-orange, and buffs.

Windows

Windows have been painted in the same manner as the walls.

Doors

Doors have been painted in the same manner as the walls.

Women's Locker and Toilet Rooms**Ceiling**

The ceiling has been painted gray three times, then light blue followed by buffs. The original gray color is close to Sherwin Williams #1001.

Walls

The walls in the Women's Locker and Toilet Rooms have been painted in the same manner as the ceiling except for an additional brown color. The original wall color is close to Sherwin Williams #1001.

Windows

The original color of the windows is close to Sherwin Williams #1001.

Windows were painted gray three times, then dark gray followed by blue and brown.

Doors

The original color of the doors is close to Sherwin Williams #1001.

Doors were painted gray three times, then dark gray followed by blue and brown.

First Aid Room

Ceiling

The first ceiling color is close to Sherwin Williams #1001.

Walls

The first colors in the First Aid Room color history are similar to those in Hangar Number One Rooms 123, 124, and 125. The original wall color is close to Sherwin Williams #1001. The additional colors are gray, green, green, blue, and buff or brown.

Windows

Windows correspond to the wall colors.

Doors

Doors correspond to the wall colors

CHROMO-CHRONOLOGIES

Chromo-chronologies are presented for those exterior and interior surfaces where there is sufficient substrate and/or paint evidence to determine a paint sequence for that surface.

The original paint layer in the chromo-chronology chart of the Bath and Locker House relates to the building construction date of 1942-1943.

BATH AND LOCKER HOUSE

Exterior

Paint Layers	Siding	Trim
Original	gray	gray
Paint 2	gray	gray
Paint 3	gray	gray
Paint 4	gray	gray
Paint 5	gray	white

BATH AND LOCKER HOUSE
Heater Room

Paint Layer	Ceiling	Wall	Window Frame	Window Sash	Door Frame	Door
Original	gray ?	gray	gray	gray	gray	gray
Paint 2	gray ?	gray	gray	gray	gray	gray
Paint 3	gray ?	gray	gray	gray	gray	gray

BATH AND LOCKER HOUSE
Women's Locker and Toilet Rooms

Paint Colors	Ceiling	Wall	Window Frame	Window Sash	Door Frame	Door
Original	gray	gray	gray	gray	gray	gray
Paint 2	gray	gray	gray	gray	gray	gray
Paint 3	gray	gray	gray	gray	gray	gray
Paint 4	blue	blue	blue	blue	blue	blue
Paint 5	buff	buff	buff	buff	buff	buff
Paint 6	buff	brown	brown	brown	brown	brown

BATH AND LOCKER HOUSE

First Aid Room

Paint Colors	Ceiling	Wall	Window Frame	Window Sash	Door	Door
Original	gray	gray	gray	gray	gray	gray
Paint 2	gray	gray	gray	gray	gray	gray
Paint 3	green	green	green	green	green	green
Paint 4	gray	gray	gray	gray	gray	gray
Paint 5	blue	blue	gray	gray	gray	gray
Paint 6	buff	buff	blue	blue	blue	blue
Paint 7	buff	buff	brown	brown	brown	brown

PAINT RECOMMENDATIONS

BATH AND LOCKER HOUSE

By 1945, the period of significance for Moton Field interpretation, the Bath and Locker House would have been approximately two years old. During those two years the mission at Moton Field was building and training; not repainting. Thus, due to the site expansion and the scarcity and cost of paint materials during those two years of WWII it is unlikely that the Bath and Locker House would have been painted more than once.

Sherwin Williams #1001 (See Sample 1) has been determined by Frank Welsh to be close to the original exterior color for the Bath and Locker House. The same gray color appears as the original interior color on walls and woodwork.

Architectural evidence, paint evidence and the above considerations indicate that for the Bath and Locker House during the 1945 period of significance, the appropriate color for both the exterior and the interior would be gray, Sherwin Williams #1001. (See Sample 1).

The colors would be applied in the following manner:

Exterior

Siding and woodwork

Sherwin Williams #1001

Interior

Walls and woodwork

Sherwin Williams #1001

APPENDIX

LIST OF FIGURES

Figure 1

POND EXISTING CONDITIONS BATH AND LOCKER HOUSE FLOOR PLAN

Figure 2

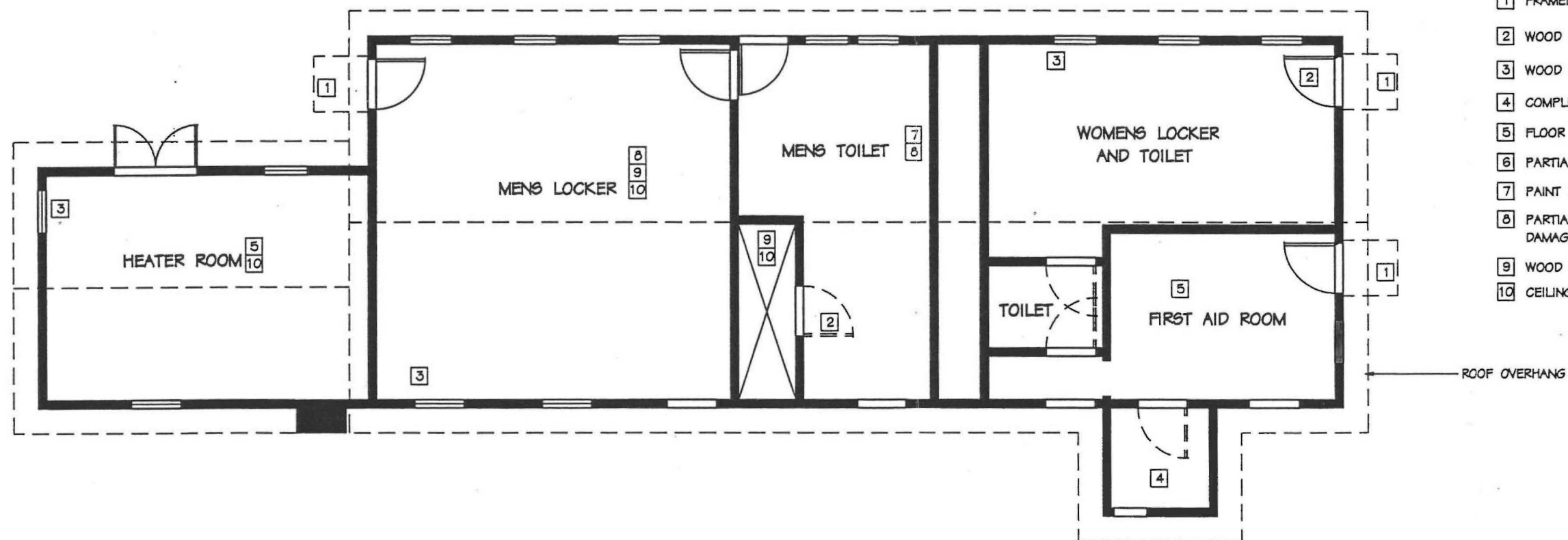
Heater Room, existing conditions

LEGEND

-  EXISTING WALL
-  EXISTING DOOR
-  DOOR MISSING

KEY NOTES

- 1 FRAMED AWNING
- 2 WOOD DOOR (TYP)
- 3 WOOD FRAMED WINDOW W/ SCREENS (TYP)
- 4 COMPLETELY REDONE
- 5 FLOOR EXPOSED CONCRETE W/ CONCRETE 6" BASE
- 6 PARTIAL 6" CONCRETE BASE
- 7 PAINT PEELING OFF MOST/ALL WALLS
- 8 PARTIAL STRUCTURE OF WALL IS MISSING/DAMAGED/ROTTED
- 9 WOOD SUPPORT GONE/ROTTED
- 10 CEILING DAMAGED/MISSING



FLOOR PLAN
SCALE: 1/4" = 1'-0"

4 0 4 8
SCALE: 1/4" = 1'-0"



DESIGNED:
DRD
CHECKED:
DRD
TECH. REVIEW:
RAS
DATE:
2002 January XX

SUB SHEET NO.
A7

TITLE OF SHEET
**EXISTING CONDITIONS
BATH AND LOCKER BLDG
FLOOR PLAN**
MOTON FIELD STABILIZATION
TUSKEGEE ARMY NAT'L HISTORIC SITE
TUSKEGEE, ALABAMA

DRAWING NO.
XX,XXX
SHEET
28
OF 55

Figure 2

NATIONAL PARK SERVICE
MOTON FIELD HISTORIC STRUCTURES
STABILIZATION STATUS JULY 2001
BUILDING: LOCKER BUILDING



BEFORE



PRESENT

LIST OF SAMPLES

Sample 1

Sherwin Williams #1001 color strip

Sample 2

Men's Locker Room

PRELIMINARY LABORATORY DATA

PROJECT	DATE OF ANALYSIS
MOTON FIELD TUSKEGEE, ALABAMA	7/22/02
SPACES	ANALYST
EXTERIORS	Frank S. Welsh
EQUIPMENT	
•Bausch & Lomb stereomicroscope (10 - 105x) •Nikon SKE polarized light microscope •Schott halogen fiber-optic illuminator (3200K)	
DESCRIPTION OF PRESENTATION OF LABORATORY DATA FROM THE ANALYSIS	
■ The following pages contain all of the requisite information found on each sample gathered during the preliminary laboratory analysis of the historically significant coatings. ■ The information on these pages is the data upon which additional research and analyses can be based. ■ Illustrations diagramming the locations from which the samples were taken are included in the Field Note - Sample Location sheets.	
KEY TO THE ABBREVIATIONS USED IN THE LABORATORY DATA SHEETS	
<u>For Layer/Coat:</u> • P = prime or sealer coating • I = intermediate or second prime • Gr = ground or base coating for marbling or graining • F = finish for final coating <u>For Color Name:</u> • W = white • YW = yellowish white • YG = yellowish gray • GY = grayish yellow • MRB = moderate reddish brown • MOY = moderate orange yellow • POY = pale orange yellow • LT = light • MED = medium <u>For Type of coating:</u> • O = oil • D = distemper or calcimine • Wsh = whitewash • Vrn = varnish • Stn = stain • Pb = lead content <u>For Age:</u> • orig = original • er = early • md = middle • lt = late • c = century	

PRELIMINARY LABORATORY DATA SHEETS

Sample Number	Location/Description	Layers and Comments	Sample Number	Location/Description	Layers and Comments
1	Hangar One, Hangar side of metal door into Room 1A.	There is only one layer of old paint on this sample. It is a dark gray, close to Sherwin Williams color # 2117. Above the gray are only 3 layers of new (ie mid/late 20th) paints.	4	Hangar One, Paint from Smith door frame - Room 3 (wood)	The paint evidence is extremely degraded on this sample and almost impossible to evaluate w/ any accuracy. The first finish appears to be white, close to SW Color # 1004. The second layer is an aqua color. On another sample in the same envelope there is a second layer that is a Medium Blue-Green.
2	Hangar One, Plaster from interior north wall - Room 1A.	Sample taken at a patch - relatively new.			
3	Hangar One, Plaster from window; north wall, Room 1B.	This plaster is very degraded. It does not appear to be very old. It is grayish white and has only one layer of faded + degraded green oil paint on its surface. The color of the green is close to S.W. Color # 1197	15	Hangar One, Paint from wood door frame - Hangar side into Room 17	The paint evidence on this sample is very degraded. There appears to be two layers of white oil paint - color close to SW # 1004 followed by a Medium Blue Green.

PRELIMINARY LABORATORY DATA SHEETS

Sample Number	Location/Description	Layers and Comments	Sample Number	Location/Description	Layers and Comments
6	Dope Storage Shed. Paint from exterior door & frame	No old paint evidence is on this sample. There are only several layers of newer white paint.	10	Bath & Locker building - exterior trim.	There are 5 layers of paint on this sample. They are: Lt Gray, Dark Gray, Lt Grays & White. The original light gray is the same as on #9. SW Color # 1001.
7	Entrance gate. Concrete from niche	Very little substrate. There are only 2 or 3 layers of new white paint on this sample.	11	Bath & Locker building, plaster north wall Men's Locker Room.	All but one plaster sample in the envelope here is medium gray oil paint as the first finish. It is close to SW Color # 2120. One piece of plaster has a lighter gray as the first finish. Its color is close to SW # 2121. Above those first finish coats on all samples are several newer whites + tans.
8	Tower. Concrete interior wall	There are no paints on this sample.	12	Bath & Locker building - window frame - Womers Locker Room.	There are no old paints on this sample. There are only several new layers of white + tan.
9	Bath & Locker building, paint from exterior siding.	There are approximately 5 finish coats of light gray oil paint on this sample. The first is a lead-based oil paint whose color is very close to S.W. # 1001.			

PRELIMINARY LABORATORY DATA SHEETS

Sample Number	Location/ Description	Layers and Comments	Sample Number	Location/ . Description	Layers and Comments
13.	Skyway club exterior Siding.	There are 5-to-6 finish coats of Medium- to-Light Gray oil paint on this sample of Siding. The first finish is close to S.W. Color # 1232	18	Skyway Club. Rm 121 gypsum board on North wall.	There are 4 layers of paint on this sample. The first is buff and close to SW # 1358 The next 3 are light and medium greens.
14	Skyway Club. Exterior trim	There are 5-to-6 layers of degraded white paint on this sample. The first finish coat is close to SW Color # 1004.	19.	Skyway Club Fiber board North wall - Rm 124	The first finish paint on this sample is a buff, close to SW Color # 1625. There are 4 layers above it. A grayish white, light gray and 2 greens.
15	Skyway Club Room 108 - North wall	- Newer gypsum board			
16	Skyway Club Base board Rm 108	No paint is on this tiny sample.			
17	Skyway Club Room 108 - Ceiling	Fiber board. - a grayish white surface with a lot of mica.			



LAW

RESOURCES CREATING SOLUTIONS

March 28, 2002

Ms. Debbie Toole
The Jaeger Company
119 Washington Street
Gainesville, GA 30501

**Subject: Moton Field Mortar Evaluation, Revision
Moton Field Stabilization, Tuskegee Airmen National Historic Site
Tuskegee, Alabama
LAW Project No. 50157-1-4754-01-602**

Dear Ms. Toole:

Law Engineering and Environmental Services, Inc. (LAW) has completed the mortar evaluation as authorized by your company on September 4, 2001. The purpose of this evaluation was to obtain samples of mortar from approximately nine buildings/structures, perform analysis of the mortar to determine its composition and to describe the aggregates. A visual condition survey of the buildings was not a part of the scope of work. This report is a revision of the report submitted on November 1, and the report submitted November 19, 2001. This report has been revised to reflect changes regarding the names of buildings and description of specimens.

Background Information

LAW understands there are a total of nine historical buildings/structures that were built as part of a World War II training facility (1941-1945) and are in the process of being restored. They include Hangar No. 1, Control Tower, Bath and Locker House, Warehouse/Vehicle Storage, Skyway Club, Dope Storage Shed, Oil Storage Shed, Fire Protection Shed and the Entrance Gate. We understand The Jaeger Company is assisting Pond & Company with renovation/restoration design of the facility.

Evaluation Procedures and Results

Site Work

LAW representatives, Mr. Mark Leeman and Ms. Marian Strukel, met with Jaeger Company's Ms. Debbie Toole at the subject site on September 28, 2001. The buildings/structures were observed and samples were taken. Selective sampling of existing masonry mortar and wall plaster materials were taken above-grade and at heights able to be accessed from standing on the ground; no ladders or manlifts were used. Samples were taken from interior and exterior walls. Five buildings/structures were sampled (a total of 10 samples were taken). Two samples of raw sand were taken, one from the road east of the Dope Storage Shed and one from the vicinity of Hangar No. 2. Sand was sampled for comparison purposes. We wanted to compare the sand sampled, both chemically and with respect to gradation, to the sand observed in the mortar.

Mortar samples were not taken from each building at the site. The mortar was observed to be fairly consistent throughout the site. A determination was made in the field that if the mortar was hard and competent then a sample may not have been taken for a particular building if the mortar was consistent with other buildings at the site. This was the case for the mortar at the Entrance Gate, the Skyway Club and the Warehouse/Vehicle Storage buildings. The mortar was judged to be hard and competent; therefore was not sampled for proportions.

Samples were taken at the following locations:

Sample	Construction	Location
1	Brick Mortar	Control Tower - exterior
2	Block Mortar	Control Tower - exterior
3	Brick Mortar	Dope Storage Shed - interior
4	Parge Coat	Hangar No.1 - interior
5	Brick Mortar	Hangar No. 1 - interior
6	Brick Mortar	Hangar No. 1 - exterior
7	Brick Mortar	Fire Protection Shed - interior
8	Brick Mortar	Fire Protection Shed - exterior
9	Plaster	Bath and Locker - interior
10	Gypsum Board and Paper	Bath and Locker - interior

Photographs of the buildings/structures and the samples taken at each location can be found attached to this report.

The masonry units of the structures observed were similar in appearance and were in satisfactory condition. We observed both clay brick masonry and concrete masonry. Deterioration in the form of cracks was not observed. Significant efflorescence staining was not observed on the masonry units. Areas of re-pointing were observed on the Control Tower. We understand this was a part of recent stabilization work.

The mortar observed was intact, competent and not easily scratched with a metal chisel. The mortar joints were well tooled and concave in shape. Several mortar joint surfaces had undergone weathering which resulted in sand particles being exposed on the surface. The mortar was well bonded to the masonry units. The mortar was strong and required significant effort to break out samples from the constructed masonry. In general, our selective sampling indicated the mortar was strong, but occasionally areas of softer mortar were observed. Since softer mortar was encountered infrequently, we did not consider it a representative condition and did not intentionally sample it.

A visual survey of the Skyway Club was performed, but samples were not taken. The mortar observed at this structure was similar to the others and competent. Ms. Toole informed LAW that the block used for the Skyway Club was made with local materials and called "Tuskegee Block". The parge coat mortar taken from Hangar No. 1 was intact, but could be broken easily. The sand particles on the surface of the parge coat were exposed and poorly bonded (Photo 11).

Softer mortar was observed in isolated areas of Hangar No. 1. The mortar appeared to have a higher lime content at some places than the other mortars observed. This determination was made by observation of the mortar color and the hardness of the mortar. The mortar inside Hangar No. 1 ranged from soft (easily scratched with a metal chisel) around the structural clay tile to medium hard around the brick. A section of the exterior south face of this building was re-constructed the summer of 2001. The white colored mortar with a brown surface smear coat was observed (Photo 12). The brown smear coat was applied for aesthetic reasons to match the new mortar to the existing one.

Laboratory Evaluation

Evaluation of the mortars was conducted in accordance with ASTM C1324 "Standard Test Method for Examination and Analysis of Hardened Masonry Mortar". Chemical evaluations and petrographic examinations were made of the mortars. No thermal analysis or x-ray diffraction was performed on the mortars.

Chemical evaluation results can be found in Table 1. The chemical results and petrographic evaluations indicated the mortars were similar in composition. The percentage of insoluble residue, soluble calcium oxide and soluble silica contents were similar in the samples analyzed.

Determination of the mortar composition was performed in accordance with the calculations of ASTM C1324, assuming a portland cement, lime, siliceous sand mixture. Chunks of lime were observed in several samples of the existing mortar, indicating this assumption is reasonable. However, if information becomes available to indicate the mortar was made using masonry cement, the proportion calculations can be adjusted. A package of masonry cement was observed at the project near the new brick construction. This indicates this mortar was made with masonry cement.

This is supported by the chemical evaluations; the proportions calculated are presented in Table 2. The use of non-masonry cement versus masonry cement are two means of achieving the same mortar after construction. The primary difference occurs with material selection and the amount of work performed by the on-site masons during construction. Chemical analysis indicated the mortars ranged from Type M to Type O using ASTM C270 Proportion Specifications. The mortars were generally Types S and N, but an occasional Type M and O were observed. In general, the mortars were hard and the classifications based on the chemical evaluations were in general agreement with our field observations.

The petrographic evaluations indicated the mortars were made with a natural sand. The sand particles were mostly quartz and other hard siliceous minerals. The particles ranged in size from $\frac{1}{2}$ to $1\frac{1}{2}$ millimeters (mm) and were subangular in shape. The sand particles were mostly clear to opaque, tan to smokey gray in color with less than approximately 10 percent of the particles dark in color. No significant component of calcareous aggregate was observed in the sand. The mineralogy of the sand indicated it was a local material. The mortars had an estimated air content of 10 to 20 percent. A lower air content of 5 to 10 percent was observed in the newer mortar located on the exterior wall of Hangar No. 1. The air voids observed in the samples were spherical in shape and evenly distributed in the mortar. The mortar color ranged from light gray to medium gray, except for the new mortar observed outside Hangar No. 1 which was white. This mortar was made with white portland cement. The mortars were hard to medium hard when scratched with a sharp metal instrument. Isolated particles of unhydrated lime were observed in the sample taken from the Fire Protection Shed (exterior, south face).

Freeze-thaw damage was not observed in the samples. Carbonation was observed in the samples taken from the Tower Building (mortar from block), Dope Storage Shed (interior), Hangar 1 (parge coat and interior) and the Fire Protection Shed (interior). The presence of carbonation was not unusual considering the age and exposure conditions of the structures.

The plaster sample analyzed from the Bath and Locker House was a gypsum-based material (Photos 20 and 21). This is typical plaster material. The gypsum board sample was analyzed similar to the mortars. There was an indication that gypsum was present, but it was not quantified.

The gypsum board was analyzed chemically and was determined to be a lime and sand mixture, with a binder to sand ratio of approximately 1 to 0.7.

Conclusions

The masonry units of the structures observed were similar in appearance and were in good condition. Deterioration in the form of cracks was not observed. Significant efflorescence staining was not observed on the masonry units.

The mortars observed were competent and did not crumble or break easily. The mortar was difficult to excavate at most locations. The mortar was intact in most locations and was not easily scratched with a metal chisel. The mortar observed was light gray to medium gray in color. The sand observed was a natural sand composed of quartz and other hard siliceous minerals. The mortar joints were well tooled and concave in shape. Freeze-thaw damage was not observed.

New mortar was observed on the exterior wall of Hangar No. 1. The mortar was white in color and had a brown smear coat applied to the surface. The brown coating provided a means of matching it to the existing mortar. LAW understands this area was re-constructed in the summer of 2001. The new masonry work appeared to be in good condition.

Petrographic evaluations and field observations indicated the mortars were similar in composition. Chemical analysis indicated the mortars ranged from a Type M to Type O based on ASTM C270 Proportion Specifications. The mortars were generally Types S and N, but an occasional Type M and O were observed. If re-pointing of the existing masonry is performed in the future, it is LAW's opinion that a reasonably strong mortar can be used without damaging the units. Softer mortars may result in increased watertightness in the mortar and better bond to the masonry units. A Type N mortar would be appropriate for most pointing purposes at the site.

The plaster sample analyzed from the Bath and Locker House was a gypsum-based material. This is typical plaster material. The gypsum board sample was analyzed similar to the mortars. There

March 28, 2002

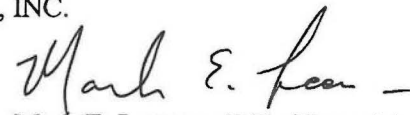
was an indication that gypsum was present, but it was not quantified. The gypsum board was determined to be a lime and sand mixture, with a binder to sand ratio of approximately 1 to 0.7.

LAW appreciates the opportunity to have worked with you on this project. If you have any questions about this report, please do not hesitate to contact the undersigned.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.


Marian D. Strukel *by MLE*
Project Engineer *w/permission*


Mark E. Leeman, P.E. (Georgia)
Principal Engineer

Attachments: Photographs
Moton Field Layout
Table 1 – ASTM C1324 Chemical Evaluation Results
Table 2 – Calculated Mortar Proportions

File: g:/lab/mstrukel/moton



Photo 1. Control Tower Building



Photo 2. Control Tower Building – West Face



Photo 3. Control Tower Building – Interior North Face

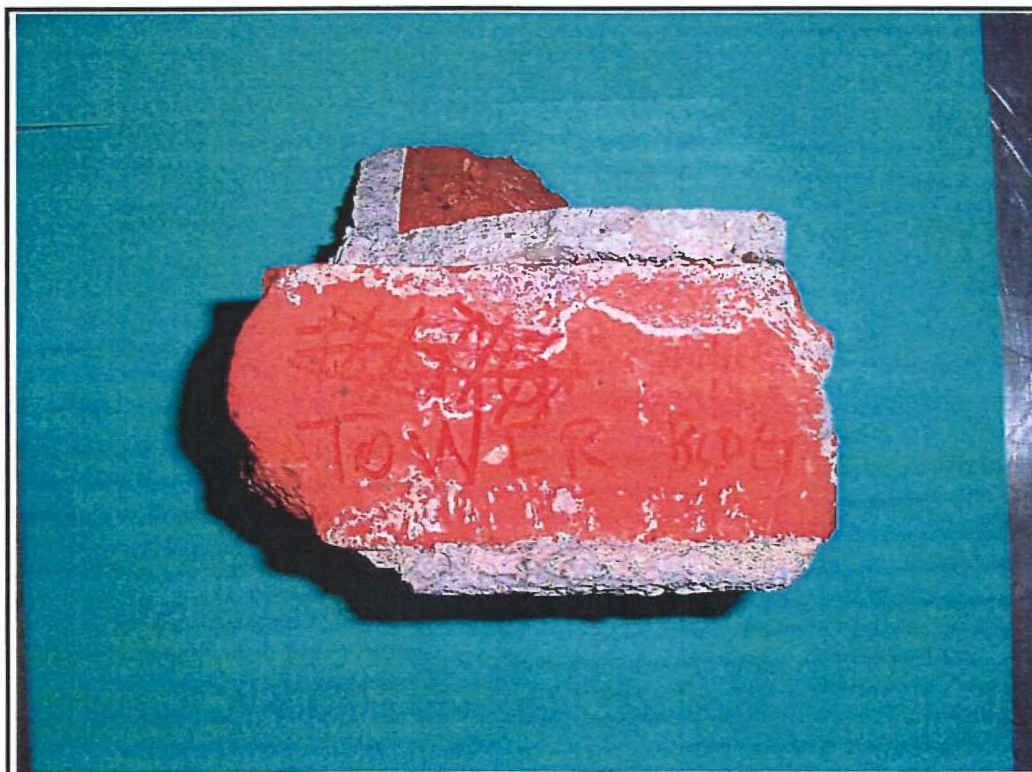


Photo 4. Brick/Mortar sample taken from exterior of Control Tower Building



Photo 5. Mortar samples from Control Tower – exterior west face of building

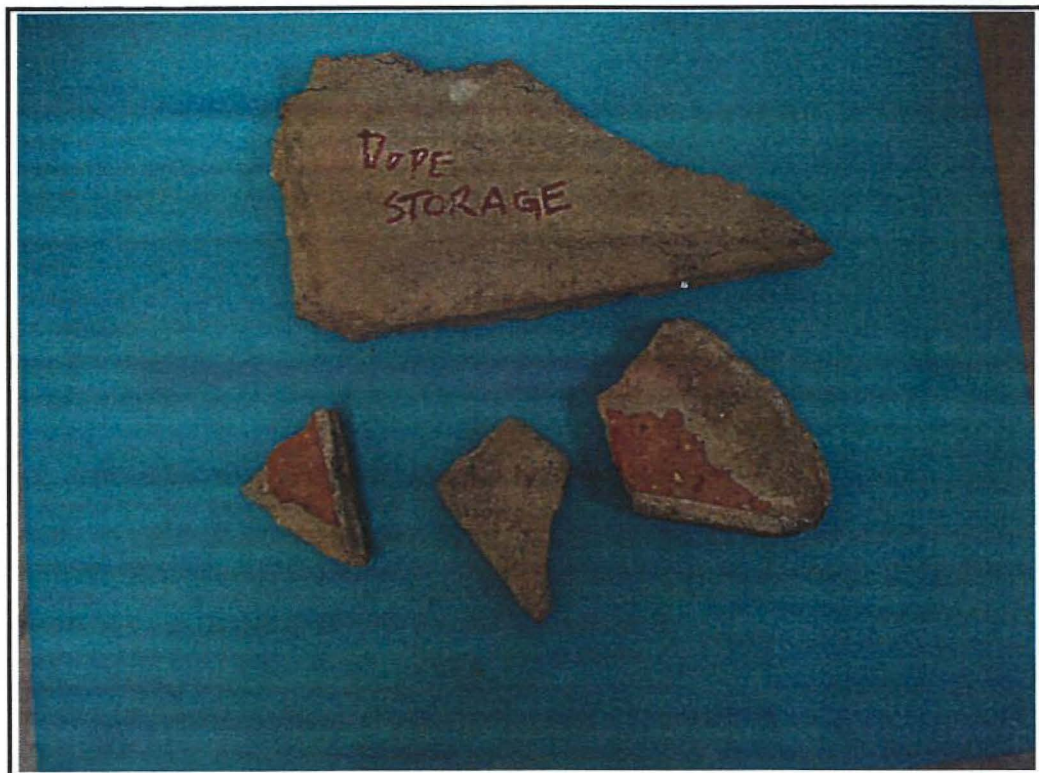


Photo 6. Mortar/Brick samples taken from interior of Dope Storage Shed



Photo 7. Hangar No. 1 – East Face



Photo 8. Hangar No. 1 – West Face



Photo 9. Hangar No. 1 – South Face



Photo 10. Hangar No. 1, Interior – Parge coat mortar observed on structural clay tile and masonry surfaces.



Photo 11. Hangar No. 1, Interior – Parge coat mortar observed. Note sand particles on surface poorly bonded to mortar.

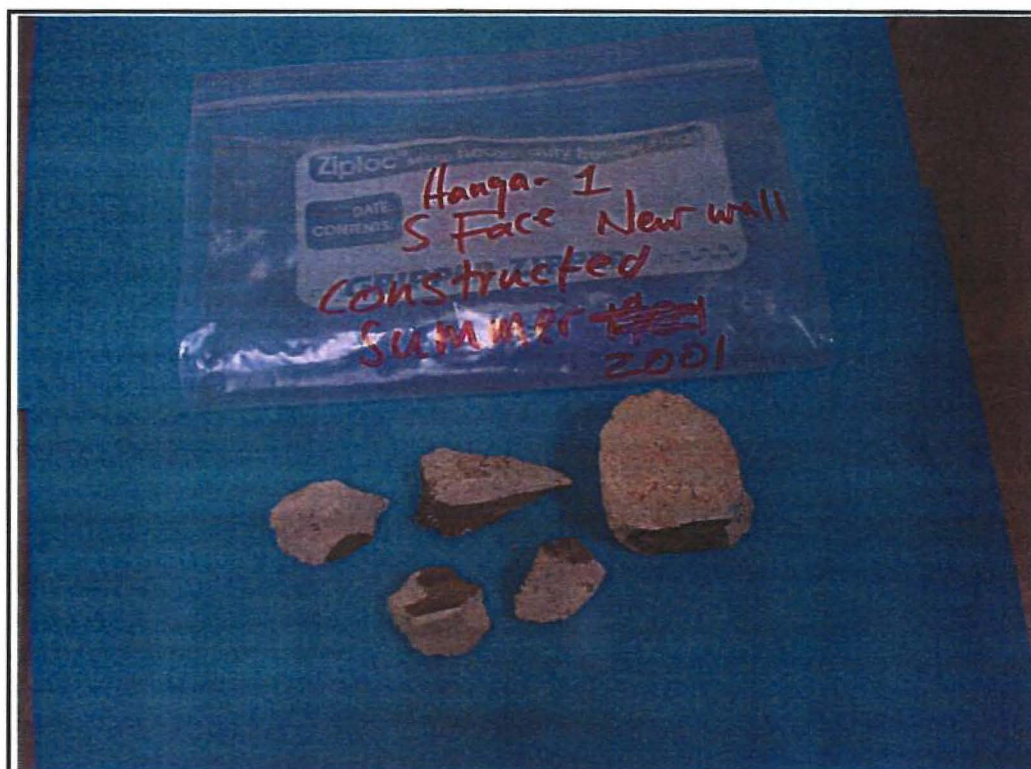


Photo 12. Hangar No. 1, Exterior South Face – Mortar samples taken from new construction. Note white mortar color (A) and brown smear coat (B) on tooled joint surface.



Photo 13. Hangar No. 1, Interior South Side— Mortar taken from brick



Photo 14. Fire Protection Shed – East Face



Photo 15. Fire Protection Shed – Interior face beside door. Note cracked mortar.

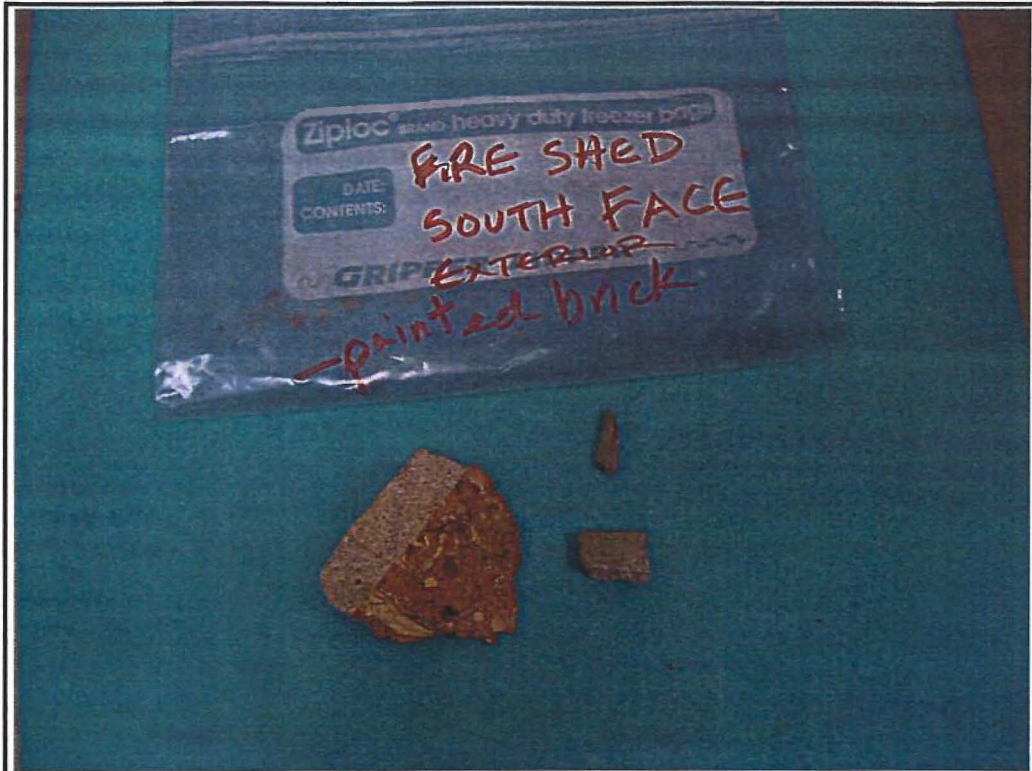


Photo 16. Fire Protection Shed – Mortar/brick samples from south face. Brick painted on side not shown.

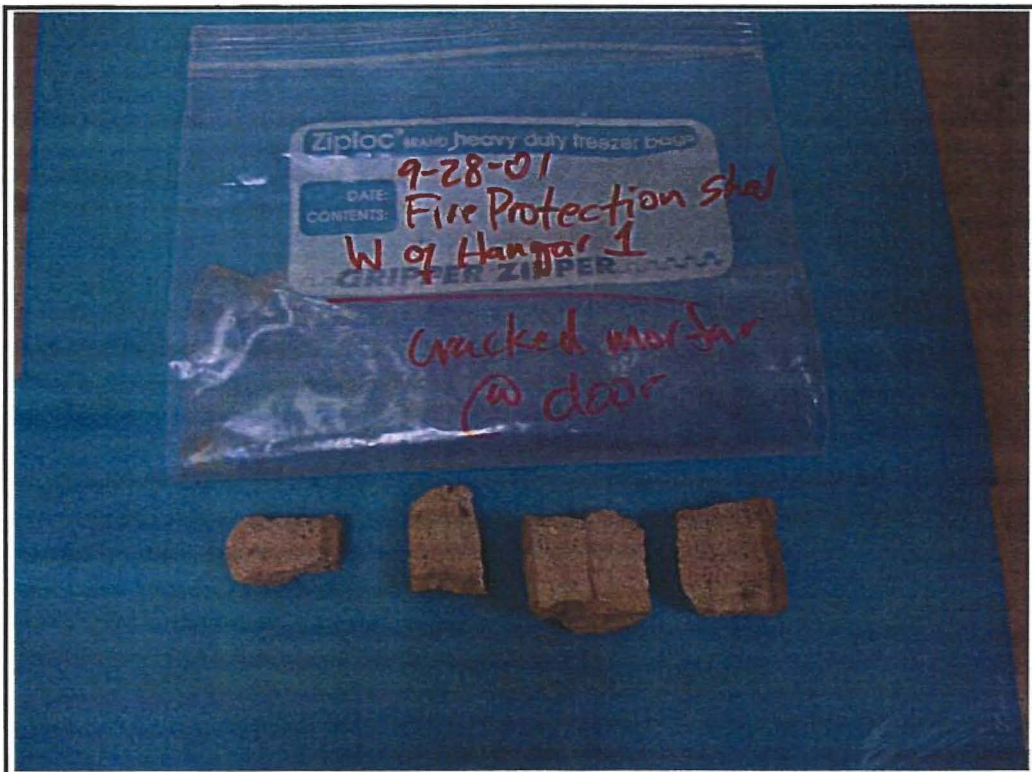


Photo 17. Fire Protection Shed – Interior cracked mortar at door. Note mortar discoloration at surface (extending approximately ¼ inch from surface).



Photo 18. Bath and Locker House – East Face



Photo 19. Bath and Locker House – West Face

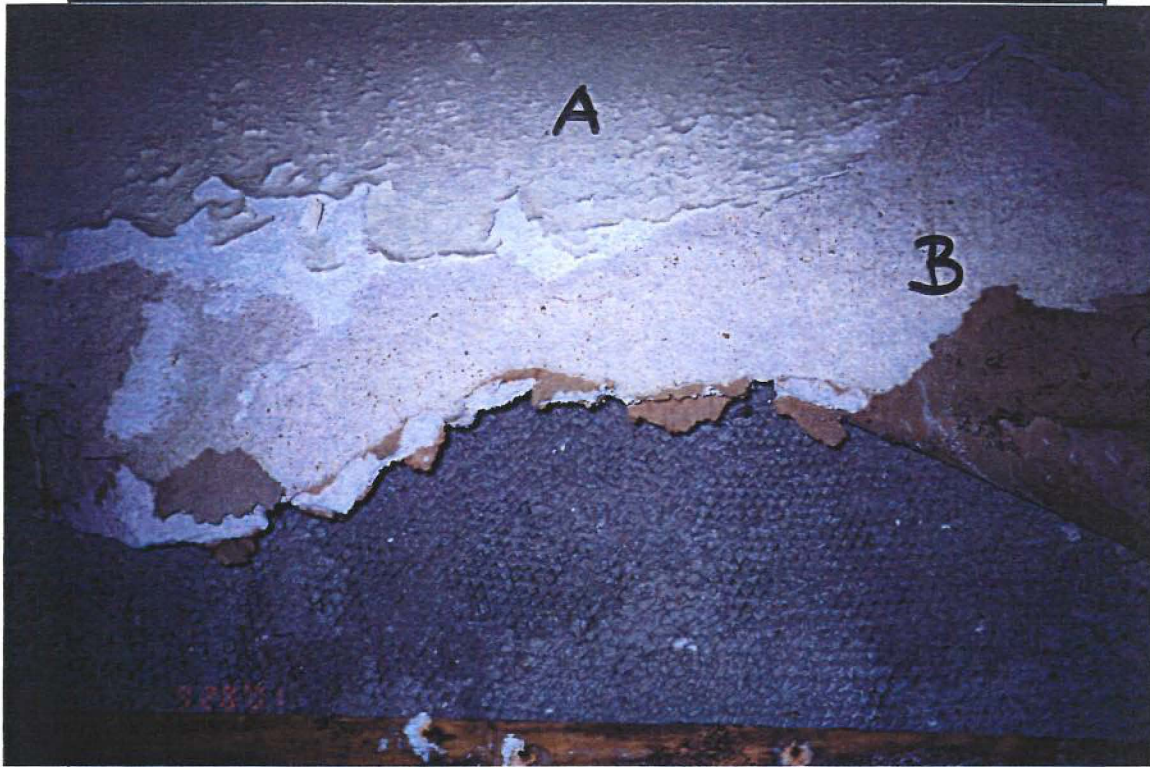


Photo 20. Bath and Locker House – Interior, Plaster (A) and gypsum board (B)

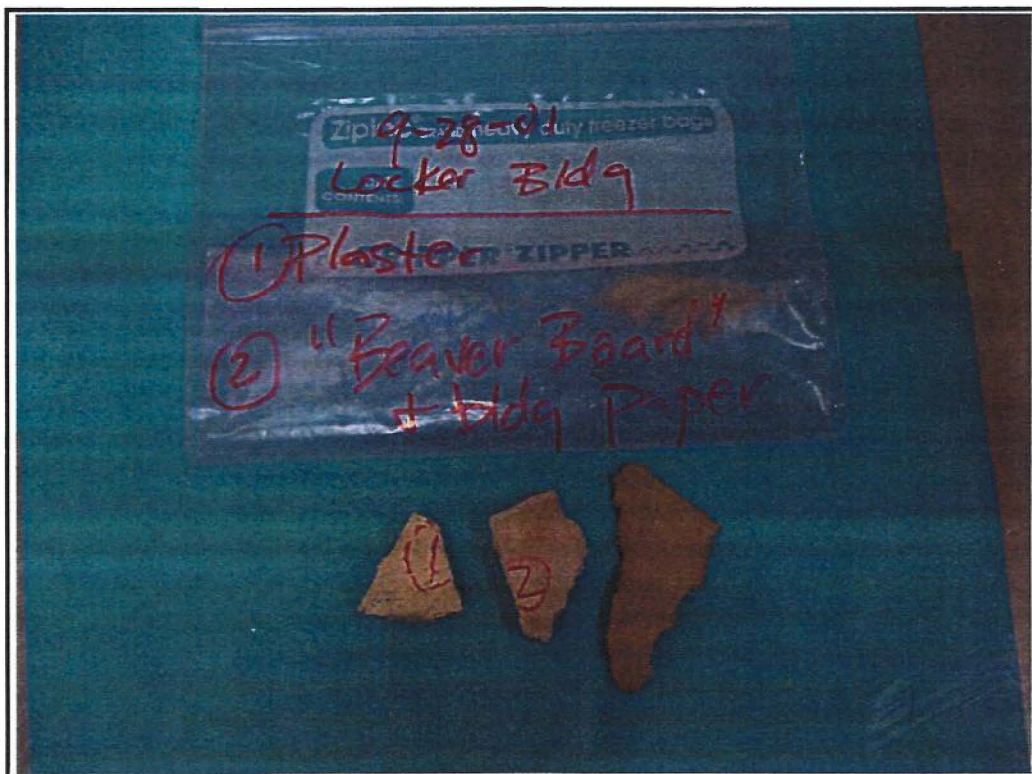


Photo 21. Bath and Locker House – Samples of Plaster (1) and gypsum board (2) with building paper (3)

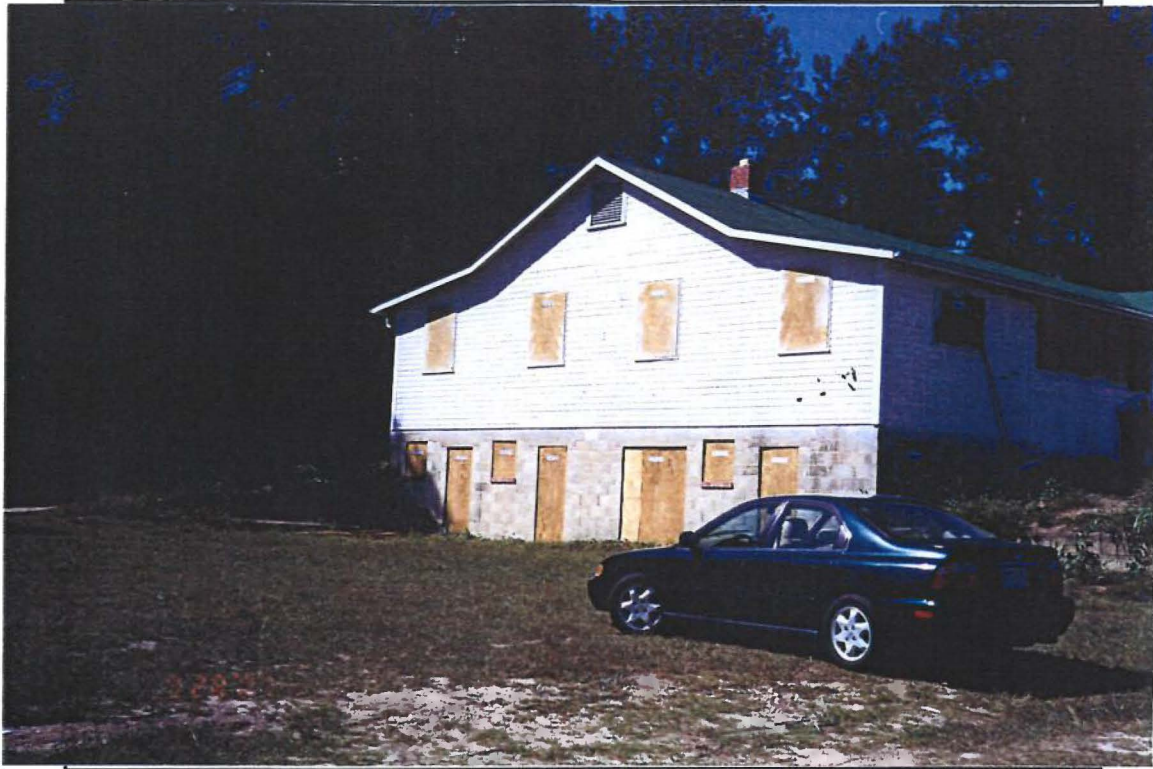
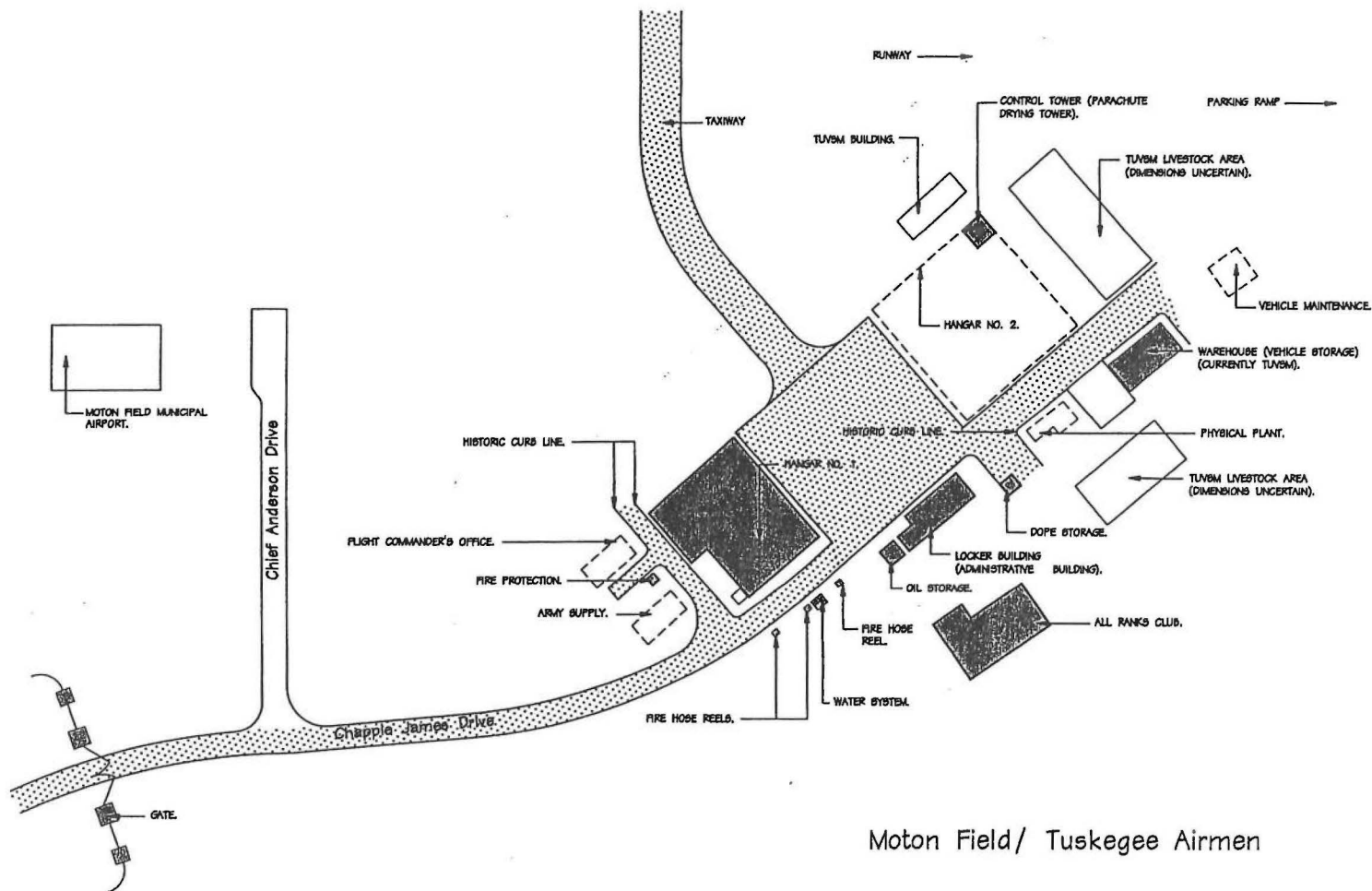


Photo 22. Skyway Club – East Face



SITE PLAN
SCALE: N.T.S.

GENERAL NOTES

1. REMOVE VANDER FROM ALL HISTORIC STRUCTURES. ALL TREES, SHRUBS, GROWTH WITHIN 6'-0" O.C. OF HISTORIC STRUCTURES.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS INCLUDING, BUT NOT LIMITED TO, MATERIALS, SIZES, AND EXISTING CONFIGURATIONS. NOTIFY THE CONTRACTING OFFICER OF MAJOR DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
3. ALL NEW AND EXISTING WOOD SHALL BE TREATED WITH A BORATE SPRAY.

LEGEND

- EXTANT HISTORIC RESOURCE
- NON-EXTANT HISTORIC RESOURCE
- EXTANT NON-HISTORIC RESOURCE
- EXTANT HISTORIC LANDSCAPE FEATURE
- NON-EXTANT HISTORIC LANDSCAPE FEATURE
- EXTANT NON-HISTORIC LANDSCAPE FEATURE

Moton Field/ Tuskegee Airmen

SEAL

BOND
Architect & Engineer
2000 Century Parkway
Birmingham, Alabama 35202
P 205.988.8888
F 205.988.8888

DESIGNED:
DRD
CADD:
DRD
TECH. REVIEW:
RAS
DATE:
03/15/00

SUB SHEET NO.

C1

TITLE OF SHEET
SITE PLAN

**MOTON FIELD STABILIZATION
TUSKEGEE AIRMEN NAT'L HISTORIC SITE
TUSKEGEE, ALABAMA**

DRAWING NO.
459
80.016

PKG. NO. SHEET
2
OF 52

Table 1: ASTM C1324 Chemical Evaluation Results

Chemical Analysis (%)	Dope Strg Int. Wall	Hangar 1 New Const	Hangar 1 S. Int.wall	Locker Blg Beaver Brd	Locker Blg Plaster	Fire Shed W.of Hang 1	Fire Shed S. Exterior	Tower Blg Ext. W.Face
Soluble SiO ₂	3.36	4.28	4.99	0.26	0.84	3.87	2.85	3.83
Soluble CaO	18.32	22.15	15.6	26.15	15.82	14.36	13.62	15.24
Soluble MgO	1.02	0.66	0.74	1.65	2.92	0.45	0.8	2.49
Insoluble	62.25	63.73	65.95	46.61	64.75	67.01	68.72	65.2
Total Solids	84.95	90.82	87.28	74.67	84.33	85.69	85.99	86.76
LOI 110C (free water)	0.87	3.24	0.89	2.01	1.75	0.86	0.7	1.02
LOI 550C (combined water)	2.63	3.65	2.27	19.29	7.23	2.53	4.11	4.28
LOI 950C (carbonates)	10.23	4.79	8.6	2.01	3.82	7.95	8.54	6.57
Total	98.68	102.5	99.04	97.98	97.13	97.03	99.34	98.63
ASTM C1218M Water Soluble Sulfate (SO ₄)					11.79			

Table 2: Calculated Mortar Proportions

Constituent	<u>Volume by Parts</u>							
	Dope Strg	Hangar 1	Hangar 1	Locker Blg	Locker Blg	Fire Shed	Fire Shed	Tower Blg
	Int. Wall	New Const	S. Int.wall	Beaver Brd	Plaster	W.of Hang1	S. Exterior	Ext. W.Face
portland cement	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
lime	1.6	1.4	0.1	63.6	10.3	0.4	1.1	0.6
sand	4.6	3.7	3.3	44.2	19.0	4.3	5.9	4.2
total cemeticious	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
sand	1.8	1.5	3.1	0.7	1.7	3.0	2.8	2.6
ASTM C270 Type	O	S*	M			S	N	N

* Based on masonry cement