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June 2006

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Final Report




Prepared for Fort Leonard Wood
Directorate of Public Works
Environmental Division
Fort Leonard Wood, MO 65473

**ABSTRACT:** This document is an architectural survey, historic context, and measured drawings of stonework elements created by German POWs during World War II throughout the cantonment of Fort Leonard Wood. The German POWS created the stonework from 1943 to 1946. The POWs built sidewalks, steps, retaining walls, foundations, chimneys, patios, bridges, and culverts.

In May 2004, the Fort Leonard Wood Directorate of Public Works, Environmental Division retained ERDC-CERL to write an architectural survey, historic context, and measured drawings for the German POW stonework that had been declared eligible for the National Register of Historic Places in 1987. This report satisfies Section 110 of the National Historic Preservation Act of 1966 as amended (NHPA).

The researchers determined that there are two historic districts directly attributed to the German POWs and their associated stonework throughout the Fort Leonard Wood cantonment. They are the:

German POW Stonework Historic District

German POW Fire Hydrant Plinth Historic District

The researchers also determined that the POW stonework in the already eligible WWII Temporary Historic District is a contributing feature to that historic district.

Several recommendations for the maintenance and upkeep of the POW stonework can be found in chapters 5 and 6.

# Contents

# List of Figures and Tables

**Figures**

## Tables

# Conversion Factors

Non-SI* units of measurement used in this report can be converted to SI units as follows:

| Multiply | By | To Obtain |
|---|---|---|
| acres | 4,046.873 | square meters |
| cubic feet | 0.02831685 | cubic meters |
| cubic inches | 0.00001638706 | cubic meters |
| degrees (angle) | 0.01745329 | radians |
| degrees Fahrenheit | (5/9) x (°F – 32) | degrees Celsius |
| degrees Fahrenheit | (5/9) x (°F – 32) + 273.15. | kelvins |
| feet | 0.3048 | meters |
| gallons (U.S. liquid) | 0.003785412 | cubic meters |
| horsepower (550 ft-lb force per second) | 745.6999 | watts |
| inches | 0.0254 | meters |
| kips per square foot | 47.88026 | kilopascals |
| kips per square inch | 6.894757 | megapascals |
| miles (U.S. statute) | 1.609347 | kilometers |
| pounds (force) | 4.448222 | newtons |
| pounds (force) per square inch | 0.006894757 | megapascals |
| pounds (mass) | 0.4535924 | kilograms |
| square feet | 0.09290304 | square meters |
| square miles | 2,589,998 | square meters |
| tons (force) | 8,896.443 | newtons |
| tons (2,000 pounds, mass) | 907.1847 | kilograms |
| yards | 0.9144 | meters |

*_Système International d'Unités_ ("International System of Measurement"), commonly known as the "metric system."

# Preface

This study was conducted for the U.S. Army Garrison Fort Leonard Wood, Directorate of Public Works/Environmental Division/Natural Resources Branch, Fort Leonard Wood, MO, under project number CNC-Q964, "Conduct Stonework Inventory." Funding was provided by Military Interdepartmental Purchase Request (MIPR) 21/2020/220/ MIPR4HKCERLDE74, dated 27 May 2004. The Fort Leonard Wood technical monitor was Ms. Stephanie Nutt, Historic Archeologist.

The work was performed by the Land and Heritage Conservation Branch (CN-C) of the Installations Division (CN), Construction Engineering Research Laboratory (CERL). The CERL Project Manager was Mr. Adam Smith. Dr. Lucy A. Whalley is Chief, CEERD-CN-C, and Dr. John Bandy is Chief, CEERD-CN. The Director of CERL is Dr. Ilker R. Adiguzel.

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

# 1 Methodology

## Background

Through the years, the U.S. Congress has enacted laws to preserve our national cultural heritage. The first major Federal preservation legislation was the Antiquities Act of 1906. This Act was instrumental in securing protection for archeological resources on federal property. The benefits derived from this Act and subsequent legislation precipitated an expanded and broader need for the preservation of historic cultural resources. With this growing awareness, the U.S. Congress codified the National Historic Preservation Act of 1966 (NHPA), the most sweeping cultural resources legislation to date.

The U.S. Congress created the NHPA to provide guidelines and requirements aimed at preserving tangible elements of our past primarily through the creation of the National Register of Historic Places (NRHP). Contained within this piece of legislation (Sections 110 and 106) are requirements for Federal agencies to address their cultural resources, defined as any prehistoric or historic district, site, building, structure, or object. Section 110 requires Federal agencies to inventory and evaluate their cultural resources. Section 106 requires the determination of effect of Federal undertakings on properties deemed eligible or potentially eligible for the NRHP.

The United States Army Maneuver Support Center is located at Fort Leonard Wood (FLW), Missouri, off Interstate 44, in the northern portion of the Ozarks. FLW presently contains nearly 61,411 acres of the Missouri Ozarks. FLW is located about 120 miles southwest of St. Louis, Missouri, and 85 miles northeast of Springfield, Missouri. The cantonment occupies approximately 6,000 acres in the northeast portion of the fort, while ranges and impact areas occupy most of the southern half of the fort.

FLW received its first soldiers in April 1941, and its primary mission was to train Engineers for World War II (WWII). In 1946, the Army closed the camp, but reopened it in August 1950 for the Korean Conflict. FLW became a permanent fort in March 1956.

The United States Army Engineer School (USAES) is located here along with the United States Army Chemical School (USACS) and the United States Army Military Police School (USAMPS).

FLW requested a survey of its stone structures constructed by WWII prisoners of war (POWs) in 1986. Harland Bartholomew and Associates of Chesterfield, Missouri, completed this survey in December 1987. The report included a historic context, study area observations, and recommendations relating to 60 POW stone structures.

## Objectives

The objective of this effort was to perform a thorough inventory of all of the POW stone structures at FLW. The inventory would consist of photo-documentation for each structure, a GPS location for each structure, and a GIS map of the stonework easting and northing coordinates. The report would also contain an updated historic context of the POW stonework, a determination of integrity for the stonework as a whole, a definition of a POW stonework historic district if found necessary, and Historic American Building Survey (HABS) style drawings for the major stonework structures found throughout the cantonment. The purpose of this report is to determine the NRHP eligibility status for the POW stonework.

## Approach

The researchers approached the objective by first performing a site visit that included a stonework survey; measurement, photographing, and sketch plans of major structures; and initial archival research.

### *Site Visits*

Members of the research team conducted three site visits to survey, conduct research, and measure the POW stonework. The site visits occurred on 16 August 2004 to 22 August 2004, 17 December 2004 to 19 December, and 4 April 2005 to 8 April 2005. During the site visits, researchers collected archival information such as engineering drawings and historic photographs from the installation and made preliminary identification of historic eligibility. Researchers conducted site reconnaissance on foot and by car using photography, sketches, and note taking to help in defining a stonework historic district and help in defining which stonework structures still had their integrity to be eligible for the NRHP. The researchers utilized a GPS unit in locating the easting and northing Universal Transverse Mercator (UTM) coordinates for each stonework structures as well as their elevations.

The researchers utilized the site visit on 4 April 2005 to 8 April 2005 in locating and photographing non-contributing elements of the proposed stonework historic district.

### *Archival Research*

Archival research involves several tasks. The first task is the initial literature review. The second is to identify and locate primary research materials.

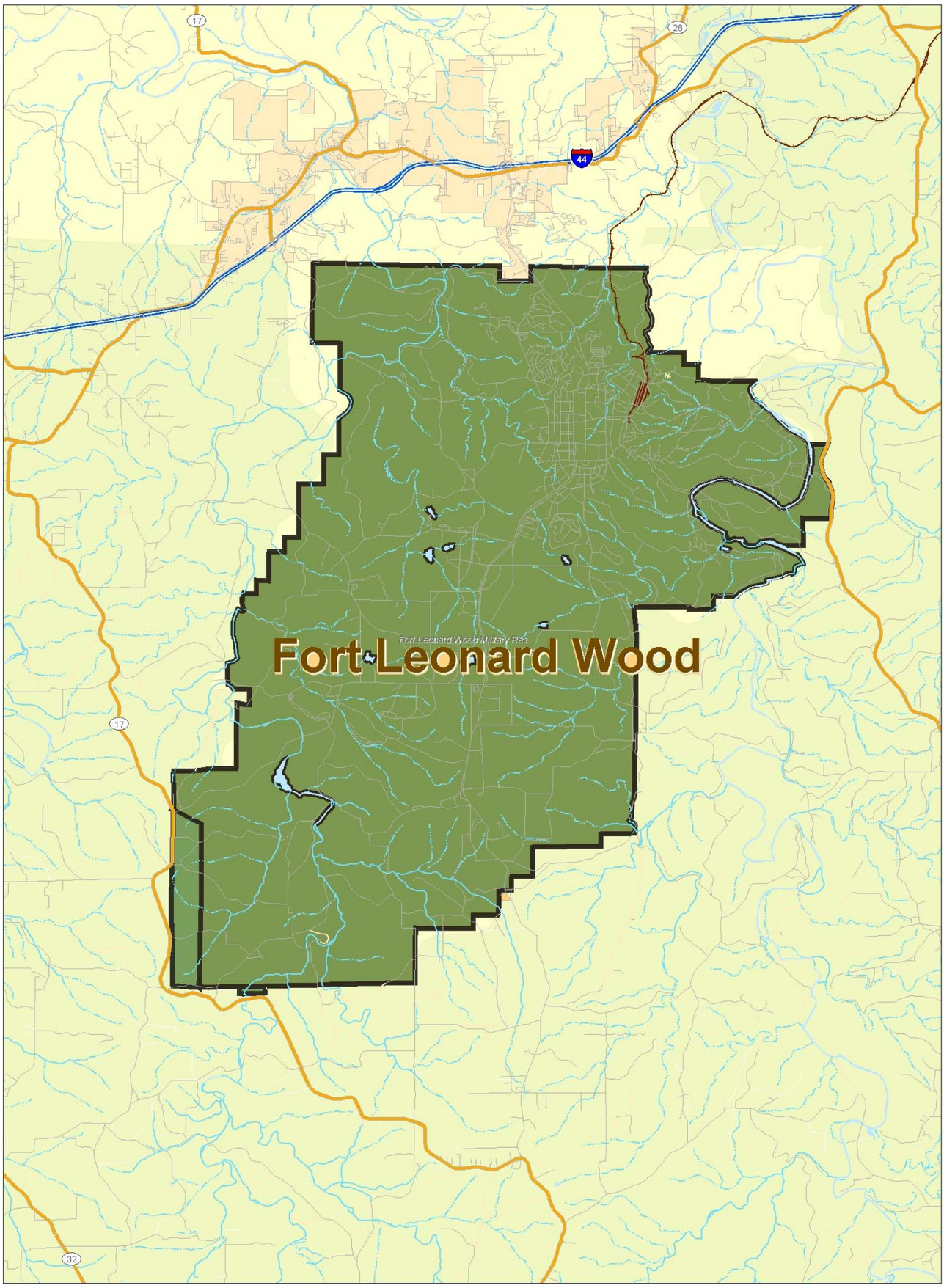
#### Literature review

The research team used secondary literature to determine the general history of the WWII POWs across the United States and at FLW. This involved reading published and unpublished material on the WWII POWs. Items looked at and reviewed for FLW included the 1987 Cantonment Historical Resources Survey, the 1992 Installation Building Survey, the 2002 FLW Building Survey: 1941 to 1956, and the 2003 Integrated Cultural Resources Management Plan.

UNCLASSIFIED

## Fort Leonard Wood, MO

SCALE 1:110,000




LEGEND
Roads
Installation Area

1: 110,000

0 2.5 5 10 Kilometers

0 2.5 5 10 Miles

SPHEROID.....WORLD GEODETIC SYSTEM 1984 (WGS84)
PROJECTION.....UNIVERSAL TRANSVERSE MERCATOR
HORIZONTAL DATUM.....WGS84
VERTICLE DATUM.....MEAN SEA LEVEL


UNCLASSIFIED

Figure 1. Fort Leonard Wood Installation Map, 2005 (courtesy FLW Directorate of Public Works).

UNCLASSIFIED

# Fort Leonard Wood Cantonment Area

SCALE 1:20,000

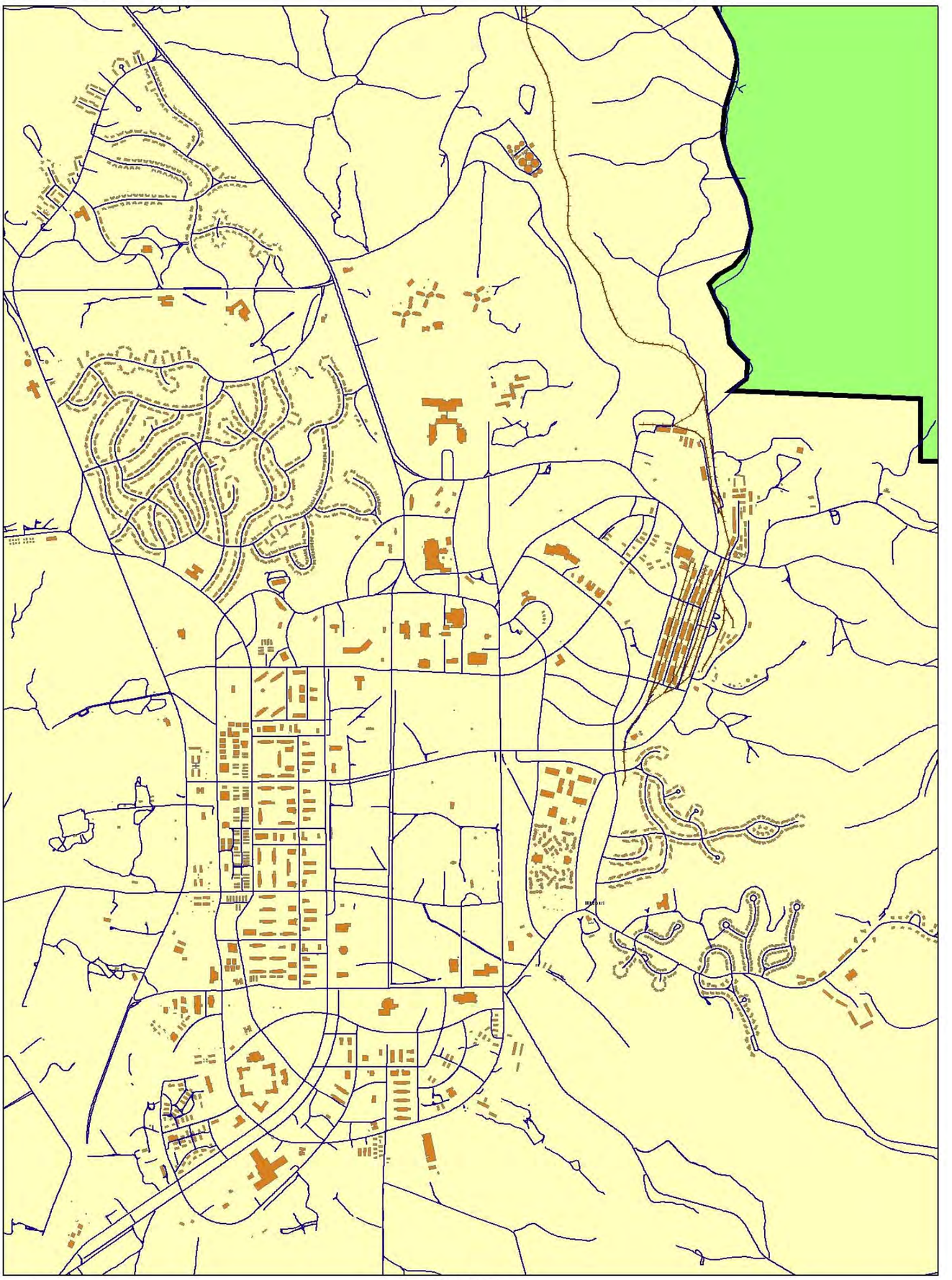



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Figure 2. Fort Leonard Wood Cantonment Map, 2005 (courtesy FLW Directorate of Public Works).

#### Research material

The research team then located primary research materials and additional secondary materials to establish a strategy to best utilize these resources. Members of the research team conducted a visit to the National Archives at College Park, Maryland, on 14 December 2004 to 17 December 2004. Members of the research team conducted a visit to the Missouri State Archives in Jefferson City, Missouri, on 5 April 2005 and Camp Crowder, Missouri, on 7 April 2005. A member of the research team also conducted research at the Engineer Center History Office on 6 April 2005.

### *Analysis*

After the initial research was complete, the team analyzed the gathered information. After the site visits, the architectural historians determined which stonework structures continued to have their integrity. They then determined which ones were in close enough proximity and with enough historic context to be eligible as a historic district. After the researchers delineated the historic district, they determined which structures were non-contributing elements of the historic district. The GIS specialist located on GIS layers provided by FLW the easting and northing coordinates of the stonework as provided by the architectural historians. The project historian wrote a historic context for the WWII POWs in the United States and at FLW. Three architectural interns measured, took notes, and photographed the large stonework structures found throughout the cantonment and then utilized their notes and photographs to draw the HABS-like drawings of those stonework structures utilizing appropriate computer programs.

### *Evaluation*

The evaluation of structures and landscapes follows the guidelines in the *National Register Bulletin #15 How to Apply the National Register Criteria for Evaluation*, and *National Register Bulletin #16 How to Complete the National Register Registration Form*. In addition, the survey followed the Army's guidance for "Documenting and Evaluating Historic Military Landscapes: An Integrated Landscape Approach."

### *Researchers*

The researchers utilized on this project were Adam Smith, M.Arch. as project manager and lead architectural historian; Sunny Stone, M.Arch. as assistant architectural historian; Susan Enscore, Ph.D. as historian; Marcia Harris, M.Arch., Christella Lai, M.Arch. and Jacqueline Wolke as stonework structure delineators; and William Meyer, MA as GIS specialist and map creator.

### *Acknowledgements*

People that assisted with the formation of this report are Ms. Stephanie Nutt, FLW historic archeologist; Dr. Richard Edging, FLW cultural resources point of contact; Dr. Larry Roberts, Engineer Center Historian; Mr. Phillip Shelden of Devil's Elbow, Missouri, and the

many helpful archivists at the National Archives in College Park, Maryland, especially in the Still Pictures Room.

# 2 Willkommen? Benvenuto?: German and Italian Prisoners of War at Fort Leonard Wood

## The POW Camp Program in the United States

One of the consequences of war is the capture and imprisonment of enemy soldiers. By the end of World War II, approximately 455,000 German, Italian, and Japanese prisoners filled 500 internment camps across the United States. Approximately 15,000 of them spent the remaining war years in one of about 30 Prisoner of War (POW) camps in Missouri.[1] This account details how they got to Missouri and what they did during those years in the Midwest.

### *Origin, Development, and Administration*

In previous wars, U.S. forces had not retained large numbers of prisoners from opposing armies, so the influx of Italian, German, and Japanese prisoners entered a system that was only partially up and running. The Provost Marshal General's Office held responsibility for POW operations throughout the war, but the events of late 1941 and the rapid mobilization that followed left little time for focusing on the few prisoners expected on U.S. soil. Events conspired to alter these expectations, as Great Britain had run out of room to house prisoners by the first half of 1942 and approached the United States in August to relieve the shortage by accepting 50,000 POWs with 100,000 more moved to the United States shortly thereafter. The U.S. military was already beginning to confine prisoners on their own, and the War Department decided in early 1942 to bring POWs back to the United States to save resources on the front lines. Applying the provisions of the Geneva Convention concerning feeding and housing of prisoners was much simpler if the military removed them to the United States.[2]

The logical place for prisoners from a security standpoint was on existing U.S. military bases, and the Provost Marshal General's Office placed a majority of POW camps at these sites. Needing more space, the Provost Marshal General's Office had camps built from scratch, mostly in the Midwest and Southern states. This placement met the requirement for camps to be isolated from major population centers and away from strategic military or industrial sites. No matter where they were located, the camps generally followed a basic plan. Compounds

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[1] Fort Leonard Wood Museum, "The Fallen Foe: America's German Prisoners of War, 1942-1946," (Fort Leonard Wood: Fort Leonard Wood Museum, nd), 3; David Fiedler, The Enemy among Us: POWs in Missouri during World War II, (St. Louis: Missouri Historical Society Press, 2003), 1.

[2] Fiedler, Enemy among Us, 5-6.

designed to hold 1,000 men were the basic building blocks. If camps needed to expand, they built more compounds (see Figure 3). Encased in barbed wire fences, monitored around the clock by armed guards in watchtowers, and patrolled by dogs, the camps presented a very secure appearance.[3]

Organization within the camps relied on hierarchy and rank, concepts familiar to all soldiers. The compounds each had an elected leader from the ranks of the POW companies making up each compound. The company leaders reported to the compound leaders who, in turn, reported to the highest-ranking prisoner, the POW spokesman. This individual provided the liaison between the prisoners and the camp administration to hand down directives and forward up prisoner requests or complaints. The Geneva Convention authorized the spokesman to represent the prisoners to outside agencies that periodically inspected the camps such as the Swiss Legation, the International Red Cross, and the YMCA. This avenue of communication put the spokesman in indirect contact with the German foreign office and military high command through which they could affect the treatment of Allied prisoners by reporting on their own treatment. This influenced the treatment of the German prisoners, as it tended to reinforce the provisions of the Geneva Convention.[4]

### *Cost and POW Labor to Offset*

Providing shelter and sustenance for these involuntary guests on American soil came at a substantial monetary cost. Prisoner labor helped offset this expenditure. Initially, Axis POWs housed in the United States during WWII filled in for labor shortages on the military bases containing their housing compounds. They worked with the civilian laborers and despite initial fears, this arrangement worked well. There were fears at the highest levels that the Germans would plant saboteurs as POWs; President F. Roosevelt worried publicly and FBI Director J. E. Hoover warned this would be a "…danger to our internal security…and the lives and safety of our citizens."[5] In spite of these fears, WWII POWs in small groups first performed farm labor in the fall of 1942 during a period when there was a desperate need due to the severe labor shortage in this industry.[6]

Per the Geneva Convention and other international agreements regarding POWs, only lower ranking POW soldiers could be used for work; noncommissioned officers (NCOs) could not be compelled to perform labor duties. Wages paid were based on European wage rates that were lower than U.S. wages. Because contractors paid the prevailing United States wages for the POW workers, the Government made a profit ($100 million in 1944 alone). These profits paid for housing, feeding, and medical care of the POWs and made the POW program self-supporting. Additionally, the War Department estimated that $80 million was saved by the work done by the POWs on military posts. Government calculations were that the POWs performed a total of 19,567,719 man-days of work on military posts and 10,181,275 man-days of work for contract employers. Estimates developed by Army historians George Lewis

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[3] Ibid., 11-12.

[4] Ibid., 14.

[5] Ibid., 36.

[6] Ibid., 35-36.

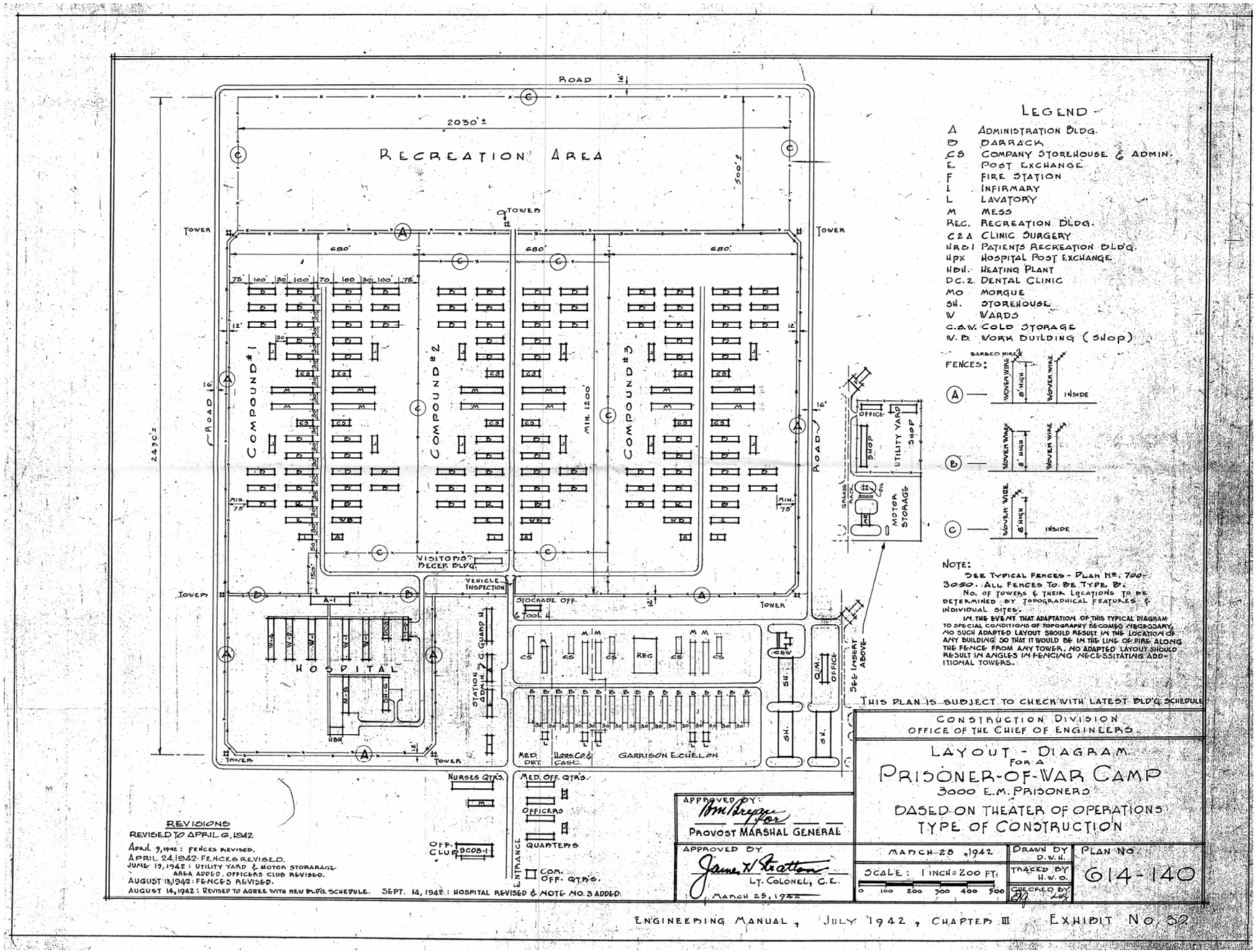


**Figure 3. Layout Diagram for a Prisoner of War Camp, 3000 Prisoners, 25 March 1942 (NARA College Park, RG 389, Box 1439).**

and John Mewha placed government savings at more than $131 million for the work done on military bases by POWs, and collections from contractors netted $39 million.[7]

A typical workday for a POW was reveille at 0515 and assembly for work beginning at 0730 after breakfast and roll call. Prisoners worked until lunch from 1130 to 1300. Afternoon work was from 1300 to 1700 and then lights out at 2200 after supper (see Figure 4). Prisoner NCOs served as supervisors or "straw bosses" so the men did not "promote trouble and foment unrest while in their barracks."[8]

Because of acute labor shortages in the U.S. and travel times to the work sites and farms, these work units needed to be located in closer proximity to where they worked. There was initial hesitation in setting up branch camps due to the large number of GIs needed as guards. Initial estimates were that it would take 90 guards for 300 POWs and this was not possible in the early days of the war since the number of GIs available for this duty was limited.[9] After the initial experience with the low number of POWs trying to escape, it became obvious that this number was over-estimated and that the number of GIs needed for guard duty less than 90. As a result, the Army established branch camps primarily for agricultural work across the country.

**Figure 4. POWs at unidentified camp march to their barracks after a day's work, 1943 (NARA College Park, RG 208 AA Box 308 Folder K).**

[7] Ibid., 37, 41.

[8] Ibid., 38.

[9] Ibid., 39.

### *Re-education Program*

One of the most significant challenges by the administrators of the POWs in U.S. camps was the influence and activities of the Nazi proponents in the camps trying to instill their ideals in the more moderate POWs. Any German prisoner showing interest in democracy risked punishment by fellow prisoners including danger of physical attack. The Nazis even organized Gestapo units in the camps. Estimates of German POWs killed by their fellow prisoners range from 100 to 300.[10] Initially, U.S. authorities failed to accurately assess the intimidation and political beliefs of the prisoners and segregate them or provide support for the more moderate prisoners. Authorities segregated the prisoners only by rank, the branch of the military they were from, and nationality. Eventually, U.S. authorities improved at identifying Nazi prisoners and actively separated the "most hardened."[11]

Towards the end of WWII, the Army engaged in a covert re-education program directed at the German POWs to teach them the "merits of democracy" in hopes of combating Nazi influence and increasing the chances of a successful post-war German transition to a democratic government. Although this program came close to violating Geneva Convention articles and was highly secret, a few civilian groups in the U.S. publicly advocated similar programs. First Lady Eleanor Roosevelt championed the secret Army program after calls for action led Dorothy Thompson and Dorothy Bromley of *The New York Herald* to take the problem directly to the First Lady, who then took it to the President. President Roosevelt sent the matter to the Secretaries of War and State who passed the issue to the new provost marshal general, Major General Archer L. Lerch. The program remained a secret until after V-E Day in May 1945.[12]

Methods for teaching and indoctrinating the German POWs were to use films and books, as well as a nationwide German POW newspaper *Der Ruf* (The Call) supplemented with individual newspapers for each camp. The more democratically minded prisoners were recruited to write for these publications and their efforts provided a platform for a more open discussion of governance options in post-war Germany. The "Special Projects Division" was the name given the program to influence German POWs. The name was deliberately bland to belie the true purpose of propagandizing the Germans and the authorities instructed the staff that the purpose was to "democratize" not "Americanize" the prisoners. As historian Arthur Krammer noted, although the purpose was to send the prisoners "…home to live in Germany as favorably inclined to the United States as may be possible, they are not to be so encouraged as to try to remain in the United States."[13]

Gauging the success of the project is difficult. There were several measurements used. First, was *Der Ruf*, which began publication in March 1945. Published by German POWs under the supervision of the Special Projects Division, the paper was selling 73,000 copies through camp canteens by October 1945.[14] Second, the Special Projects Division began subtly replacing the books in the camp libraries that contained pro-Nazi information and messages with books with a more democratic frame of reference (see Figure 5). The Division commissioned a set of purchasable paperback books at 25 cents per set at the canteens that eventually comprised 24 titles with German authors such as Thomas Mann and Heinrich

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[10] Ibid., 42-43.

[11] Ibid., 43-44.

[12] Ibid., 42, 44, 46.

[13] Ibid., 45.

[14] Ibid., 46.

Heine. The Division concluded that the books were popular and had "…exerted some influence and perhaps a great one [on the German prisoners]."[15]

The Division also influenced the movies and films shown at the camps for POW entertainment. Prior to the project, the prisoners themselves had chosen the films. Frequently they were movies with a damaging view of the U.S. such as films depicting gangsters, crime, violence and showed life in the U.S. as decadent and morally corrupt. The Division substituted films from the Army Signal Corps and the Office of War Information as well as popular Hollywood movies showing a more positive view of American life. The film program was popular with 8.2 million viewers between 15 June 1945 and 31 January 1946, which worked out to an average of thirty films seen by each POW. Additionally, after the fall of Germany, the Provost Marshall General's Office required films of the Nazi atrocities be shown with reaction varying from horror to a belief that they were untrue and a doctored product of U.S. propaganda.16

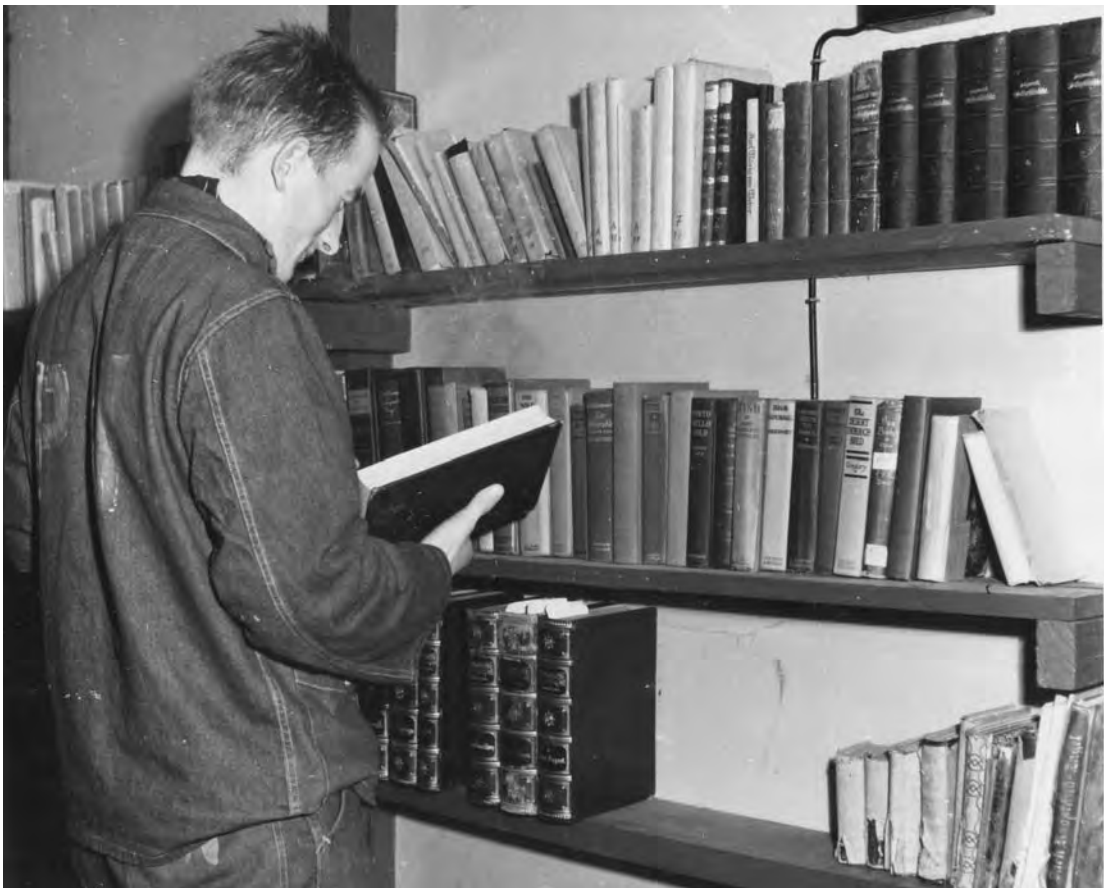

**Figure 5. POW in a camp library, no date (NARA College Park, RG 208 AA Box 309 Folder S).**

15 Ibid.

16 Ibid., 47.

## From Germany to Fort Leonard Wood

Activated by General Order No 43, the Fort Leonard Wood (FLW) POW camp came into existence on 18 December 1942.[17] Known officially as the "Enemy Alien Internment Camp," the staff on that day consisted of three military escort guard companies newly arrived from Camp Clark, Missouri. Commanded by Lt. Col. Vernon H. Vrooman, these companies each consisted of 3 officers and 135 enlisted men. They had little time to adjust to their new posting as that December day also witnessed the arrival of 662 Italian Prisoners of War.[18] Over the next four years, thousands of men would inhabit the compound on the edge of the new Army post created from the Missouri Ozark uplands.

### *Transit to a New World*

The number of prisoners assigned to FLW varied greatly throughout the war as groups of POWs shuttled between internment camps across the United States. In early June 1943, the entire group of Italian prisoners transferred to the camp at Weingarten, Missouri. Within a matter of weeks, the barracks filled again with the initial group of 800 German POWs who arrived on 29 June 1943. The POW population at FLW remained composed of German soldiers until the camp closed following the end of the war.

> The German POW strength grew to 3,000 men—the capacity of the camp—by August of 1943 and remained at that strength throughout much of that year. Large contingencies of prisoners were sent to other POW camps during 1944 and the FLW population decreased to a low of 1,400 POWs during the summer months….In the fall of 1944 and the spring of 1945, large numbers of prisoners were transferred to Fort Leonard Wood. The peak POW strength occurred in June of 1945 at 5,187 prisoners. The use of branch camps for up to 2,000 POWs kept FLW base camp population within the 3,000 man design capacity.[19]

Fritz Ensslin, a former POW held at FLW, provides in his memoirs a vivid account of the journey from the front lines to the American Midwest for the Germans. Like most of the initial German prisoners at FLW, he served as part of Rommel's Afrika Korps. Captured by the British in Tunisia on 11 May 1943, the British turned Ensslin over to the Americans for incarceration. Although he states concisely that "we boarded an American transport ship in Morocco, and after 30 days of voyage we landed at Norfolk, Virginia…we arrived at FLW at midnight after a two-day trip by train in well secured rail cars,"[20] there was quite a complicated series of steps to get him and others there. Basic information such as fingerprints and photographs was taken at a processing station near the point of capture. Moved to major embarkation ports, they waited in holding areas for available transport. Norfolk, Virginia was one of three major arrival ports along with Boston and Camp Shanks, New York. The boredom of ship life ended abruptly upon docking when they were ushered into a large warehouse on the docks for processing (see Figures 6 and 7). Prisoners were sorted by

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[17] Headquarters, Fort Leonard Wood, Missouri, "General Orders No 43: Activation of Internment Camp, Ft. Leonard Wood, MO," 9 December 1942, Fort Leonard Wood History Office, Vertical File 004-002, 1.

[18] "Historical Data: Prisoner of War Camp Fort Leonard Wood, Missouri," Fort Leonard Wood History Office, Vertical File FLW-004-002, typewritten manuscript, nd, 1.

[19] Harland Bartholomew & Associates, Inc., Cantonment Historical Resources Survey, Report of Findings, Fort Leonard Wood, MO, (St. Louis, MO: Harland Bartholomew & Associates, Inc., 1987), 8.

[20] Fritz Ensslin, "German POW Memoirs from Fort Leonard Wood," typewritten manuscript, 1982, Fort Leonard Wood History Office, Vertical File 004-001, 1.

nationality (German or Italian), and thoroughly searched. After disinfection, haircuts, deposition of personal effects with the quartermaster, showers, and donning their now deloused clothing, it was on to provide clerks with more personal information such as names, ages, addresses, and more fingerprints. Ready for their new life, the prisoners were then loaded on trains destined for POW camps[21] (see Figures 8 and 9).


**Figure 6. POWs arriving in Boston by ship, 1944 (NARA College Park, RG 208 AA Box 309 Folder EE).**

[21] Fiedler, Enemy among Us, 7-9.


**Figure 7. POWs arriving in Manhattan, 1945 (NARA College Park, RG 208 AA Box 309 Folder CC).**


**Figure 8. POWs boarding a train in Boston, 1944 (NARA College Park, RG 208 AA Box 309 Folder EE).**

**Figure 9. POW transport train, no date (NARA College Park, RG 208 AA Box 309 Folder K).**

Arrival at their final destination was both a positive and negative experience for the POWs. After long periods of deprivation, the abundance of food, the luxury of beds, linens, clean clothes, and the knowledge they were out of harm's way seemed miraculous. At the same time, the sight of the camp instilled fear and uncertainty about their new life. According to Fritz Ensslin:

> We were received by a large force of security guards, armed with submachine guns, with their fingers on the triggers ready to fire at us at all times. We were escorted by guards to Camp 1. The camp looked like a cage for wild animals. It was illuminated by dozens of spotlights to an extent that it made you think it was daylight at midnight. We had never seen so much barbed wire at one place. Between the barbed wire fences there were numerous observation towers manned by guards with submachine guns. Thousands of fist-sized moths could be seen in the light screens in front of the spotlights. It was an unforgettable first impression.[22]

## *Development of the Fort Leonard Wood POW Camp*

### Layout

The Army placed the internment camp next to an abandoned Civilian Conservation Corps camp, opposite the FLW airfield, and about 4 miles from the Post Headquarters.[23] Built

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[22] Ensslin, "German POW Memoirs from Fort Leonard Wood," 1.

[23] Major Earl Edwards, "Inspection of Prisoner of War Camp, Fort Leonard Wood, Missouri, August 26 and 27, 1943," 1, RG 389, Box 2665, National Archives and Records Administration, College Park, Maryland; Fiedler, Enemy Among Us, 180-181.

by the McCarthy Brothers Construction Company, the camp contained 87 acres and was located on the southwest corner of the cantonment.[24] This was an isolated location and enhanced security by keeping the prisoners separate from the post personnel. Even so, it was close enough to allow easy access for transporting prisoners providing labor for post activities (see Figure 10).

The camp was constructed to provide three compounds, each capable of housing 1,000 prisoners, with the fourth quarter left open for a shared recreation space (see Figure 11). Construction of the camp followed WWII standard Theater of Operations designs for the buildings, the same designs as were built for American soldiers.

### Facilities

The compound's design contained 20 barracks, 4 latrines, 4 mess halls, 1 canteen, 1 administration barracks, 1 recreation room, 1 theater, 1 infirmary, and various recreation areas.[25] Additional facilities were constructed for the camp as a whole: 1 dental clinic, 4 classrooms, 1 library, 1 soccer field, 2 handball courts, 1 art classroom, 1 watch repair shop, 1 book binder, and a former visitors' building modified to contain 1 stockade office and an office for the POW spokesman (see Figure 12). The former stockade office became an infirmary.[26] Each compound had a barbershop operated by a prisoner with the necessary skills.[27]

Housing for the prisoners was in standard 20 x 100 foot, single-story temporary barracks with the majority having tarpaper roofs, although asphalt shingles were utilized as well (see Figure 13). The exterior walls were covered with Cellotex boards joined with tar. The open-bay 50 man barracks interior typically provided each prisoner with 40 cubic feet of air space, a bunk, shared table and chair, storage in footlockers and wall lockers, and a section of the wall for the display of personal items (see Figure 14). These usually took the form of pinups, family photos, religious icons, or patriotic items such as small swastikas that were allowed by the Geneva Convention.[28] Outside, the rather drab appearance of the compound inspired the German prisoners to enhance the grounds with landscaping and gardening with seeds and plants supplied by the camp commander, but also such unique elements as a model railroad (see Figure 15).[29]

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[24] Edwards, "Inspection of Prisoner of War Camp," 1; Fiedler, Enemy among Us, 181.

[25] Fiedler, Enemy among Us, 181.

[26] Edwards, "Inspection of Prisoner of War Camp," 2.

[27] "Italian Prisoners of War Kept at Work at Fort Wood," unlabeled newspaper reproduction, 10 June 1943, Fort Leonard Wood History Office, Vertical File FLW-004-002.

[28] Fiedler, Enemy among Us, 15.

[29] Ensslin, "German POW Memoirs from Fort Leonard Wood," 2.

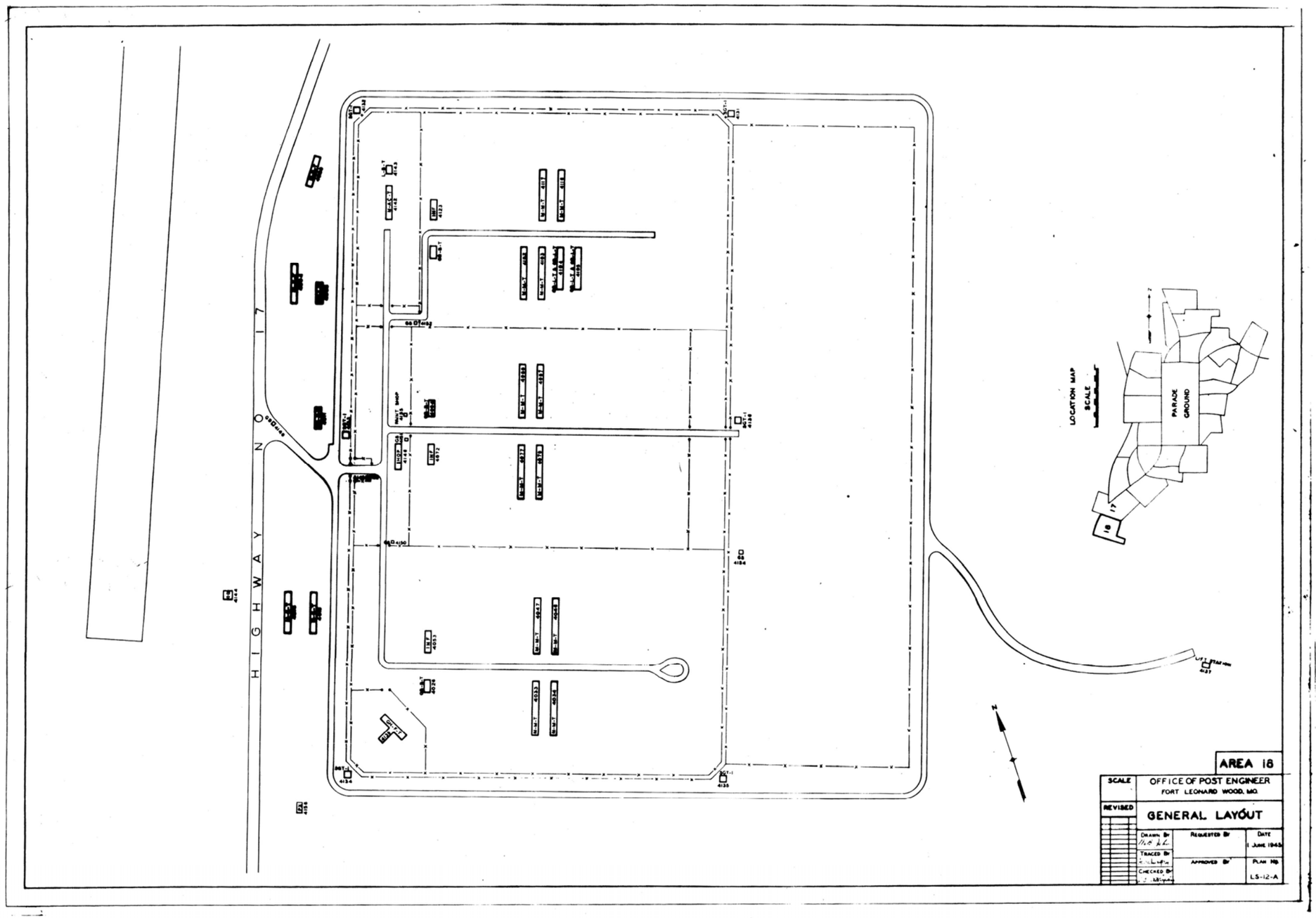


**Figure 10. General Layout Map of POW Camp, FLW, 1945 (courtesy U.S. Army Directorate of Public Works, FLW).**

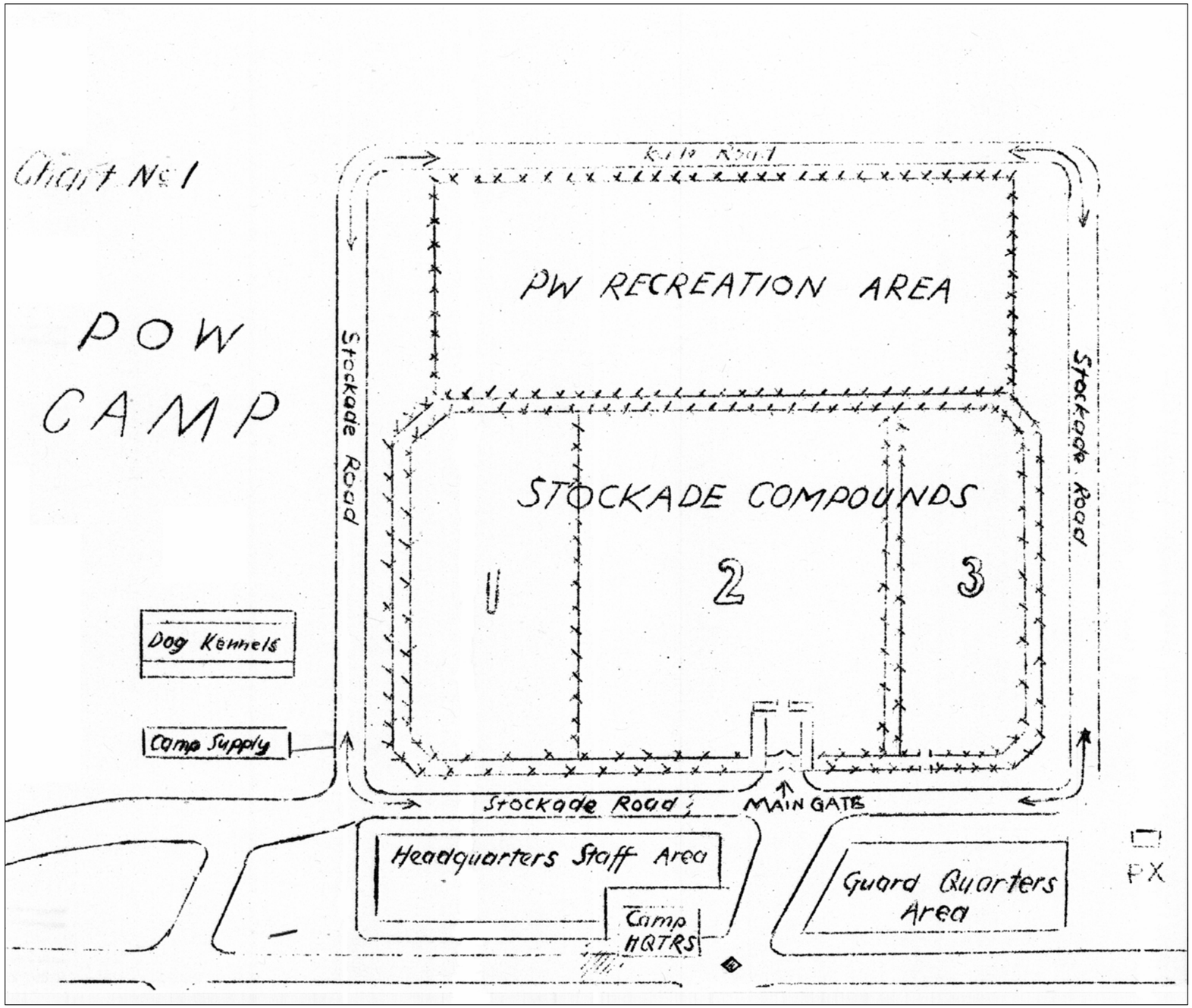


**Figure 11. Layout of FLW Prisoner of War Camp, 1944. (NARA College Park, RG 339, Entry 461, Box 2665).**

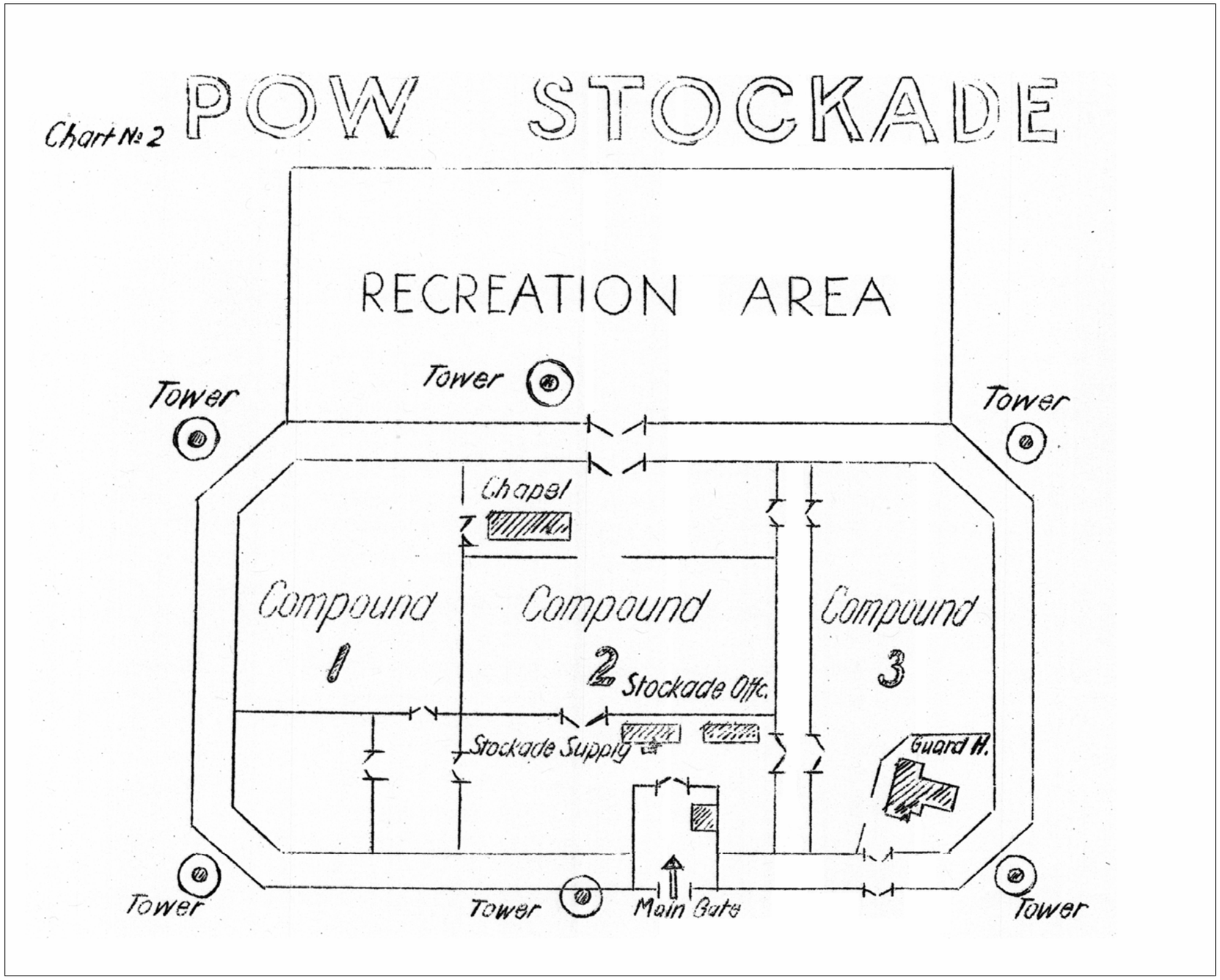


**Figure 12. Layout of FLW Prisoner of War Camp with stockade perimeter, 1944 (NARA College Park, RG 339, Entry 461, Box 2665).**

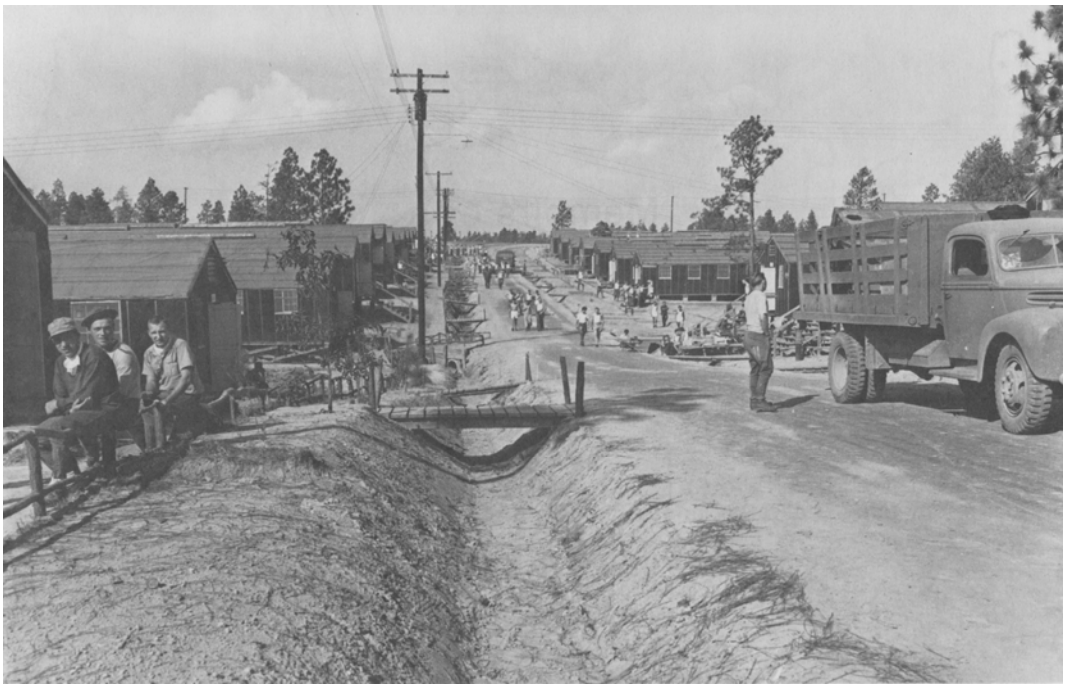

**Figure 13. Typical Street and Barracks of a POW Camp, no date (courtesy FLW Museum).**

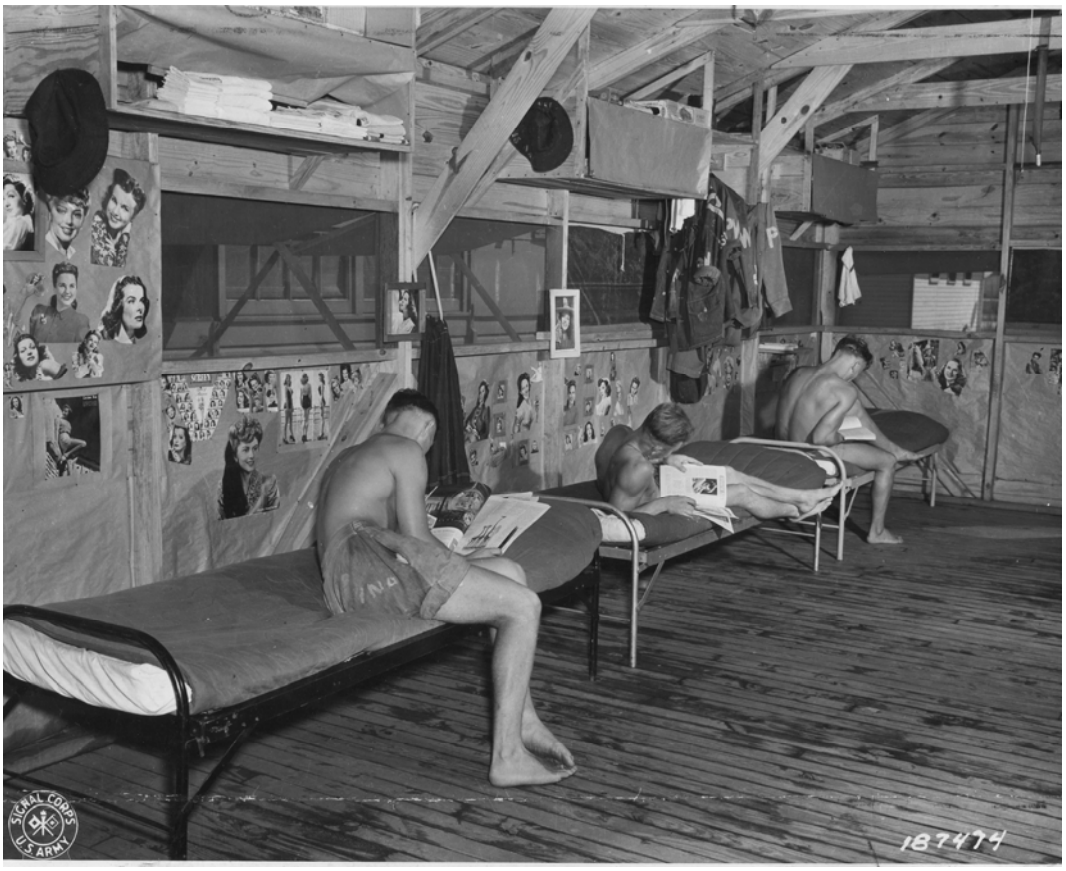


**Figure 14. POW barracks interior, Camp Blanding, Florida, 1943 (NARA College Park, RG 208 AA Box 309 Folder S).**

**Figure 15. Model Railway constructed by POWs at unknown camp, no date (NARA College Park, RG 208 AA Box 308 Folder K).**

In addition to the buildings for prisoners, a variety of buildings was required for the Army personnel running and guarding the camp. These troops required guard barracks, administration buildings, warehouses, and utility areas, all constructed outside the fence toward the road. As the guard duties were somewhat monotonous for the soldiers, steps were taken to make their duty more pleasant through the provision of recreational facilities including a beverage garden, boxing ring, volley ball courts, a baseball diamond, a relocated chapel, and a recreation building constructed by the guard personnel.[30]

A double fence of barbed wire about eight feet tall ringed all the POW buildings and areas with guard towers spaced strategically along the perimeter (see Figure 16). The guard towers were of the standard octagonal design, and each contained a machine gun pointed midway along the fence between it and the next tower (Figure 17). Visibility was enhanced with searchlights, floodlights, and auxiliary lighting systems.[31] Twenty "war dogs" were also assigned to the camp for use in night patrols, with four dogs on watch at one time.[32]

30 Edwards, "Inspection of Prisoner of War Camp," 7.

31 Ibid., 2.

32 Ibid., 3.

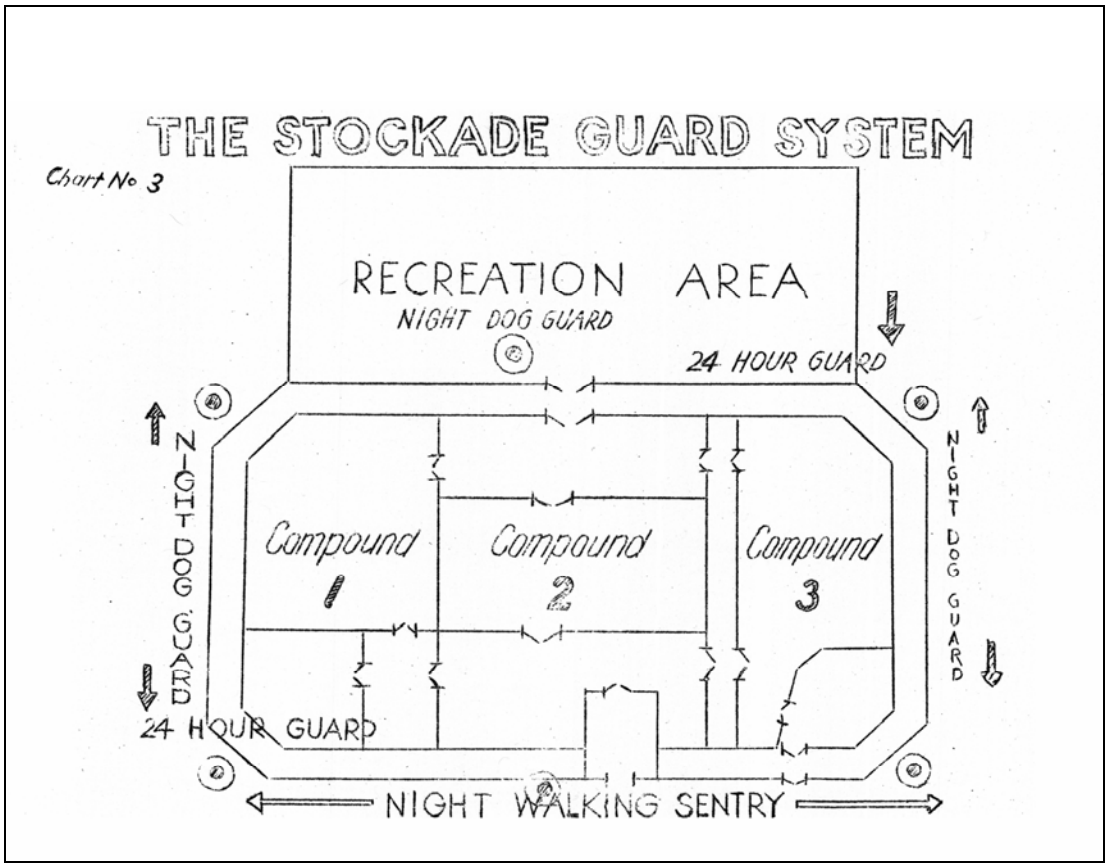


**Figure 16. Guard System for FLW Prisoner of War Camp, 1944 (NARA College Park, RG 339, Entry 461, Box 2665).**

**Figure 17. POW Stockade Tower in 1944 (courtesy the FLW Clarke Library).**

## Camp Life

From all accounts, FLW treated the POWs well. The U.S. officers understood the value of fomenting good will towards the POWs, both to keep things running smoothly at home, and to set an example hopefully to be followed in the Axis treatment of American prisoners.[33] Of the U.S. soldiers at FLW, only one percent spoke German, although a 1945 Field Services report noted that ten percent were interested in studying the language.[34] Orders were given through an interpreter, and prisoners were expected to work during their confinement. They were paid for the work, and had off hours to enjoy sports, music, films, and other leisure activities. These amenities did not dispel the fact of imprisonment, and the POWs were well aware of the loss of their freedom.

### *Prisoner Security and Confinement*

For the POWs, the most overriding aspect of camp life was, of course, their lack of liberty. The enforcers of their confinement, the camp guards, personified this aspect. Duties for these GIs included maintaining camp security and order, guarding prisoners on work details, and transporting prisoners to and from work sites (see Figure 18).[35]


**Figure 18. Guards on patrol at Camp Chaffee, no date (NARA College Park, RG 111-SC, photo 187982).**

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[33] Karl Gustaf Almquist, "Report of Visit to Prisoner of War Camp, Fort Leonard Wood, Missouri," 15 May 1945, 1, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland.

[34] Headquarters Army Service Forces, Office of the Provost Marshal General, "Field Services Camp Survey," 26-27 April 1945, 11, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland.

[35] Bartholomew & Associates, Cantonment Historical Resources Survey, 8, 10.

Overall, there were very few disciplinary problems with the prisoners. According to the Harland Bartholomew & Associates report:

> Considering that the compound was full of enemy soldiers during the most massive war in the world's history, the cooperation between the Americans and Germans was good and the level of problems was unusually low. Occasionally prisoners would attempt escapes (four in all), and occasionally the guards would have serious disagreements with the POWs; however, security measures such as the guarding of work details were adjusted to reflect lower concerns. The prisoners kept their barracks clean, were avid gardeners, and wanted to know about the war news.[36]

Although a number of POWs attempted escape, they were usually found within a day or two and not far from the camp since their possibility of getting home was almost nil due to the distance to Europe and the lack of support from the local population. The most serious known incident was a POW who "requisitioned" an unattended automobile for his own use.[37] Indeed, the biggest problem confronting the American soldiers tasked to guard the POWs was boredom. The GIs charged with guarding the prisoners were at first reticent because they were given no specific training in handling POWs, but the same guards worked with the prisoners daily and soon became comfortable with this duty and with the prisoners, sometimes to the point of sleeping while supposedly guarding the prisoners. Unknown to the POWs, the GI guards were not issued ammunition for their rifles due to the ongoing shortage of munitions.[38]

Overall, relations between the guards and the prisoners were cordial, and in some cases friendly. Private William Hahn, a guard at one of the post's rock quarries, recalled, "…I had chums among the POWs, and several who worked in the kitchen often slipped me a 'fryer' (chicken) to take home."[39] Phillip Shelden served as a guard at the camp from the time it opened until March 1945. For most of that time, he drove a bus ferrying POWs to their work sites. Mr. Shelden recalled the prisoners as very friendly, and did not remember any particular problems between the guards and the POWs, stating, "most people didn't mind working there."[40] Fritz Ensslin, however, had a different point of view concerning the guards:[41]

> Occasionally we had trouble with the Polish (American) guards who hated us passionately. When one of us had been mistreated by the guards, the entire camp went on strike. For us this meant living on bread and water for one to three days and the kitchen and the store were placed off-limits. There was total silence in the camp during these times. Our camp commander always ironed out these problems by re-establishing normal operations of the kitchen and store, then everything would be back to normal until the next incident.

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36 Ibid., 3.

37 Fiedler, Enemy among Us, 36-38.

38 Ibid., 184.

39 Arnold Krammer, Nazi Prisoners of War in America, (Briarcliff Manor, New York: Stein and Day, 1979), 150. Quoted in Bartholomew & Associates, Cantonment Historical Resources Survey, 10.

40 Phillip Shelden, former Fort Leonard Wood POW Camp guard, interview by Susan Enscore, 8 April 2005.

41 Ensslin, "German POW Memoirs from Fort Leonard Wood." Quoted in Bartholomew & Associates, Cantonment Historical Resources Survey, 10.

The initial allotment of three military escort guard companies remained unchanged through June 1944. By that time, it had become apparent that the prisoners did not present as great a security risk as had been expected. Escape attempts were few, disciplinary problems mostly straightforward, and the camp had fewer prisoners at that time. These factors combined to reduce the number of guards detailed to the camp. At the end of the month, the Army deactivated the Military Escort Guard Companies and three Guard Detachments were organized in their place.[42] The camp gates remained open during the day (although still patrolled by armed guards), and work details on the post often had no guards present, supervised only by the ranking POW on the detail or a civilian supervisor.[43]

### *Political Activism*

The most pressing problem for the Camp Commander and his staff was one camp administrators across the country shared: how to deal with Nazism among the prisoners. The Geneva Convention promised prisoners the right to participate in political activities. At FLW, the propaganda and behavioral control administered by the hard line Nazis was pervasive and occasionally violent. According to former POW Anton Kuehmoser, at least one prisoner at the camp was murdered for not cooperating with the Nazis, having been stabbed to death for failure to show up at Nazi meetings. "Even in the camp here, we had Nazi rules. Some of the Nazis forced everyone to gather for an evening every other week for indoctrination. Anyone who skipped got a warning the first time. The second time, he got a visit from the 'Holy Ghost,' an SS executioner."[44] One of the reasons for the acuteness of this problem at FLW is that the first group of German prisoners to arrive was nearly all from the elite Afrika Corps. This facet of the German Army consisted of two Panzer divisions in Libya and Egypt during the German North Africa campaign commanded by Erwin Rommel. The expeditionary force developed a reputation for being fierce supporters of Hitler and Nazism.

Initially, a part of the POW camp, Compound #3, was separately fenced and used to contain those POWs who were labeled as "agitators" and others who refused to work. The extent of the problem is illustrated by the statistic that in May 1944, this compound contained 380 non-commissioned officers. They were completely separated in that they cooked their own food and attended the weekly movies as a separate group.[45] Even this did not serve to quell the intimidation and violence among the prisoners, and eventually policy directives were changed to allow the worst offenders to be centralized at camps designated for that purpose. Seventy-five of the POWs were transferred out of FLW and segregated due to political tendencies, with some being transferred to Camp Clark, Missouri, and Camp Alva, Oklahoma.[46]

### *Life's Necessities*

After years of deprivation while fighting a losing battle for Germany, the food available to the POWs at FLW naturally became a focus of their lives as prisoners. As mandated by the Geneva Convention, prisoners were given the same rations the American troops received (see

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[42] Bartholomew & Associates, Cantonment Historical Resources Survey, 8.

[43] Ibid., 12; Shelden, interview.

[44] Anton Kuehmoser, quoted in Fiedler, Enemy among Us, 43.

[45] Charles C. Eberhardt, "Report of visit to Prisoner of War Camp, Fort Leonard Wood, Missouri," 24 May 1944, 2, RG 389, Box 2665, National Archives and Records Administration, College Park, Maryland.

[46] Headquarters Army Service Forces, Office of the Provost Marshal General, "Field Services Camp Survey," 7.

Figure 19). In the hands of prisoners with some skills in the kitchen, especially the Italian cooks, the meals at the POW camp gained recognition on the post. The numbers of GIs managing to eat in the POW mess grew so large that measures had to be instituted to control the situation.

German cooks prepared the food for the German prisoners although there were complaints about the lack of meat and bread.[47] The rations were augmented with produce grown by the POWs in camp gardens (see Figure 20).[48] In the first year of the POW camp, there was a lack of fresh vegetables, but fifteen POWs began working on an eight-acre garden that provided vegetables turned over to the FLW quartermaster for the POWs and the GIs. The POWs grew tomato, cabbage, cucumber, and other vegetables (the 1944 harvest were, respectively, 37,000 lbs., 12,500 lbs., 7,600 lbs., 2,800 lbs.).[49]

**Figure 19. POW mess hall, no date (NARA College Park, RG 208 AA Box 309 Folder E).**

47 Eberhardt, "Report of visit to Prisoner of War Camp," 24 May 1944, 4.

48 Ensslin, "German POW Memoirs from Fort Leonard Wood," 2.

49 Fiedler, Enemy among Us, 183.

**Figure 20. A typical POW camp garden, no date (NARA College Park, RG 111-SC, photo 130071).**

Food rations changed toward the end of the war. Either due to responses of coddling that were being raised against the government in the press about the perceived soft treatment of the POWs, to actual shortages of food in the United States, or as retribution against the treatment of U.S. POWs in Germany, food for U.S. POWs was greatly curtailed beginning in March 1945. Due to a reinterpretation of Article 11 of the Geneva Convention, rations were immediately cut to be equal in nutritional value to those furnished regular base troops, but not necessarily the same in content. Camp commanders were ordered to cut the rations items in short supply such as fruit and vegetables, sugar, and butter and to reduce meat rations to four ounces per day substituting lower quality cuts of meat. Immediately after V-E day, beef was served only twice a month and eggs became a rarity. In addition, items for sale at the canteens such as cigarettes and beer were curtailed and the $3 monthly stipend was ended.[50]

Prisoners of War were clothed in nationally proscribed uniforms designed to be recognizable at a distance. The prisoners received used GI fatigues dyed blue with a large white "PW" printed on them (see Figure 21), along with a "short jacket of herringbone weave."[51] They were allowed to wear their own clothes when off-duty and many chose to continue wearing their German uniforms during their own time (see Figure 22). The POWs were responsible for doing their own laundry (see Figure 23).

For their health care, the camp had a hospital facility with space for 220 patients. The facility was attended by one American doctor, four German doctors, and one German dentist.[52] In addition, each compound had a dispensary (see Figure 24). In August 1944, the most serious

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[50] Ibid., 47-48.

[51] Bartholomew & Associates, Cantonment Historical Resources Survey, 13.

[52] Eberhardt, "Report of visit to Prisoner of War Camp," 24 May 1944, 4.

illness was malaria, which was suffered by eighteen POWs.[53] In the May 1945 two-day visit by Dr. Rudolph Fischer of the Swiss Legation, 13 POWs were in the hospital facility. Of these patients, two showed signs of tuberculosis, one had Hodgkin's disease, and the rest were minor.[54] For seriously ill or injured POWs, an addition to the Station Hospital was constructed with four wards (capacity 150) and a mess hall - all enclosed in double barbed wire fences.

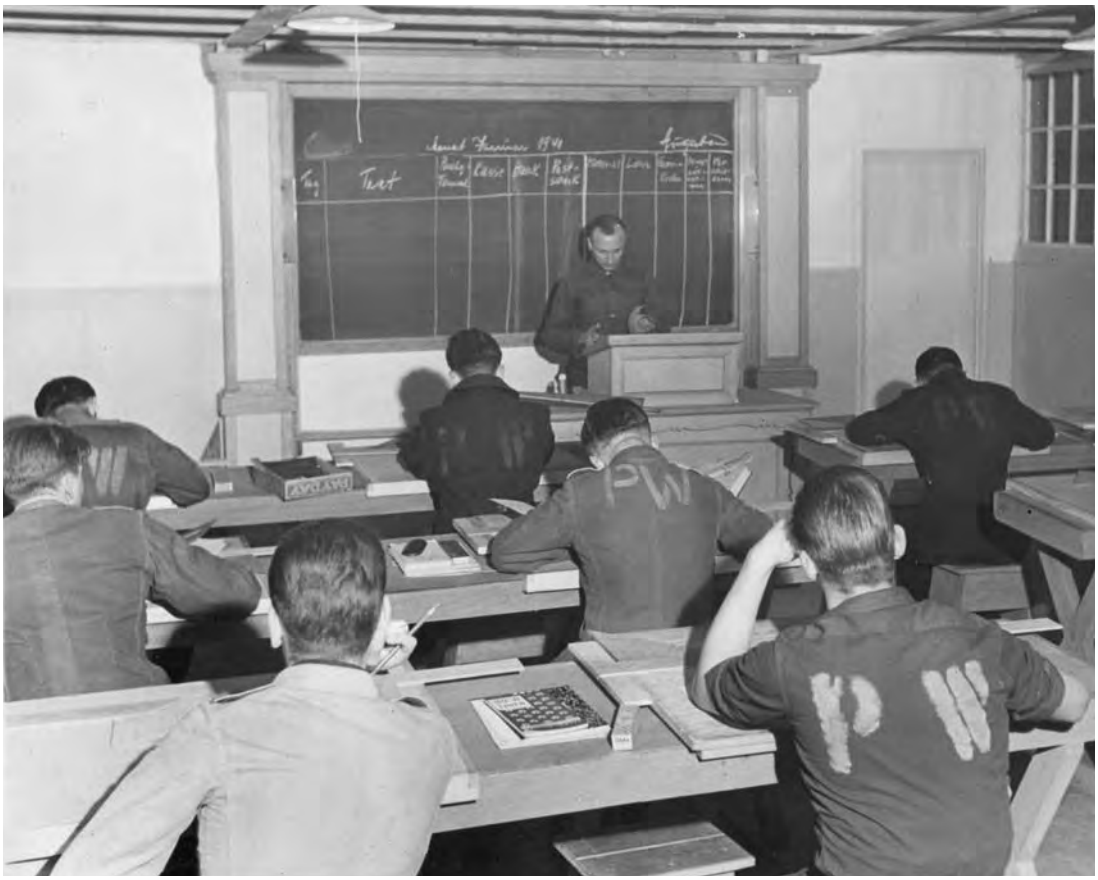


**Figure 21. POWs in class [note large "PW" on clothing], no date (NARA College Park, RG 208 AA Box 308 Folder K).**

53 Paul Schnyder, "Report of visit to Camp Leonard Wood, Missouri," 19 August 1944, 2, RG 389, Box 2665, National Archives and Records Administration, College Park, Maryland.

54 Charles C. Eberhardt, "Report of visit to Prisoner of War Camp Fort Leonard Wood," 6-7 May 1945, 4, RG 389, Box 2665, National Archives and Records Administration, College Park, Maryland.

**Figure 22. POWs relaxing in their personal clothes, no date (NARA College Park, RG 208 AA Box 308 Folder K).**


**Figure 23. POWs doing their laundry, no date (NARA College Park, RG 111-SC, photo 180069).**

**Figure 24. POWs in a camp infirmary, no date (NARA College Park, RG 208 AA Box 309 Folder G).**

### *Work Life*

For most POWs, labor was a fact of life (see Figure 25). The prisoners with officer rank were not required to do manual work but the enlisted-level POWs could be forced to work if physically able. In some cases, a policy of "no work, no food" served as a catalyst for disinclined prisoners. In actuality, most of the POWs, even the officers, at FLW did work, if just to alleviate the boredom of captivity. It is also possible that initially some prisoners, particularly the most fervent Nazis, saw work details as a possible way of escaping until they realized their location and the futility of getting out of central Missouri and back to Germany. Others may have worked simply for the pay and the opportunity to buy items at the canteen.

**Figure 25. POWs providing manual labor at an unidentified camp, no date (NARA College Park, RG 208 AA Box 308 A Folder 5).**

No matter their motivations, it was noted in October 1943 that among all United States' prisoner camps at full capacity, FLW had the largest percentage of POWs working.[55] In May 1944, it was reported that 426 POWs were working for the quartermaster, post engineer, and other post agencies, while 283 were working at the POW compound and 172 POWs were working at branch camps. This amounted to 52 percent of the POWs producing labor.[56] During an inspection on 6-7 May 1945, 848 non-commissioned officers were working, with only four refusing. Ninety percent worked on the post at FLW with the rest working within

55 Fiedler, Enemy among Us, 196.

56 Eberhardt, "Report of visit to Prisoner of War Camp," 24 May 1944, 4.

the POW camp. The usual pay was 80¢ per day and 10¢ towards canteen coupons.[57] The average earnings were from $21 to $25 per month.[58]

There were some minor infractions by the work details. In April 1944, fifty-one POWs refused to work and were confined to the guardhouse.[59] From January through May 1944, there were seven thefts of clothing from the laundry, which were also disciplined by confinement (usually three days), forfeiture of part of their pay (usually one day), compound labor for a week, and other minor punishments. Most of the disciplinary actions were designed to induce a prisoner to return to work.[60] The next month, the major infractions came from the laundry unit. An inspector noted, "The workers in the laundry at this camp seem bound to cause trouble."[61] They staged a slowdown to one-third to one-half the required work. Attempts at incentives such as pay for piecework had no results, but the prisoners involved eventually returned to full production.[62] During April 1945, there were twenty-four disciplinary actions of which thirteen were for refusal to work and connected with refusal to obey officers. Additionally, four were for laxity of work and three for "hiding out."[63] The most dramatic of these work refusals occurred in the winter of 1945:[64]

> On the 17th of January 1945 a prisoner of War who had been working in the Quartermaster warehouse on the Post refused to go to work. The prisoner was consequently confined in the Post Guard House on a restricted diet. Twenty-three (23) prisoners who worked in the same locality thereupon refused to go to work unless the first prisoner was released from the restricted diet and confinement. These prisoners were also confined in the guard house and also put on a restricted diet. Following this incident, all of the Prisoners of War in the Camp refused to work. Upon this refusal all of the Prisoners were confined in the Compound and placed on a restricted diet.
>
> At approximately 1:00 the 21st of January 1945, the Base Camp Commander, Lt. Col. William S. Hannan, held a conference with the German spokesman and the Prisoners agreed to resume work immediately.

There were many regulations governing the behavior of the POWs while on work details. Conversation was prohibited during work except for matters pertaining directly to the job being done. According to Fritz Ensslin, "love matters, particularly, were strictly forbidden."[65] Even so, Americans sometimes managed to provide little luxuries like cigarettes for their German co-workers, and the POWs sometimes reciprocated with a loaf of fresh bread from the bakery or some other treat they could access unbeknownst to their guards.

Of course, there were complaints from the prisoners about some of the types of work to which they were assigned. When formally made, these complaints were reviewed and investigated. For example, when the prisoners complained about the ditch digging work on

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57 Ibid.

58 Idem, "Report of visit to Prisoner of War Camp Fort Leonard Wood," 6-7 May 1945, 4.

59 Idem, "Report of visit to Prisoner of War Camp," 24 May 1944, 5.

60 Ibid., 5.

61 Ibid., 6.

62 Ibid., 7.

63 Idem, "Report of visit to Prisoner of War Camp Fort Leonard Wood," 6-7 May 1945, 5.

64 "Historical Data: Prisoner of War Camp," 23.

65 Fiedler, Enemy among Us, 197.

open ditches with the complaint that the water present was open sewage, an investigation showed otherwise.[66] It is likely that in at least some cases the various complaints that had to be investigated were made in order for the POWs to get out of work.

### Work in the Camp

The POWs were responsible for policing their own quarters, in addition, the camp itself required numerous types of laborers such as cooks, carpenters, and latrine orderlies who were compensated for their work duties (see Figure 26).[67] Administrative work was also done by the POWs, applying them "…not only to administration within the individual companies and branch camps, but under supervision, to the routine clerical and bookkeeping problems of maintaining the personnel, labor, and pay records for over 3,000 prisoners."[68]

Each compound had a workshop used by the prisoners for general purposes. The prisoners put cement floors in the workshops. A separate carpenter shop was constructed by the prisoners from scrap lumber.[69] Scavenging for needed items was a reliable method for acquisition at POW camps across the country (see Figure 27).

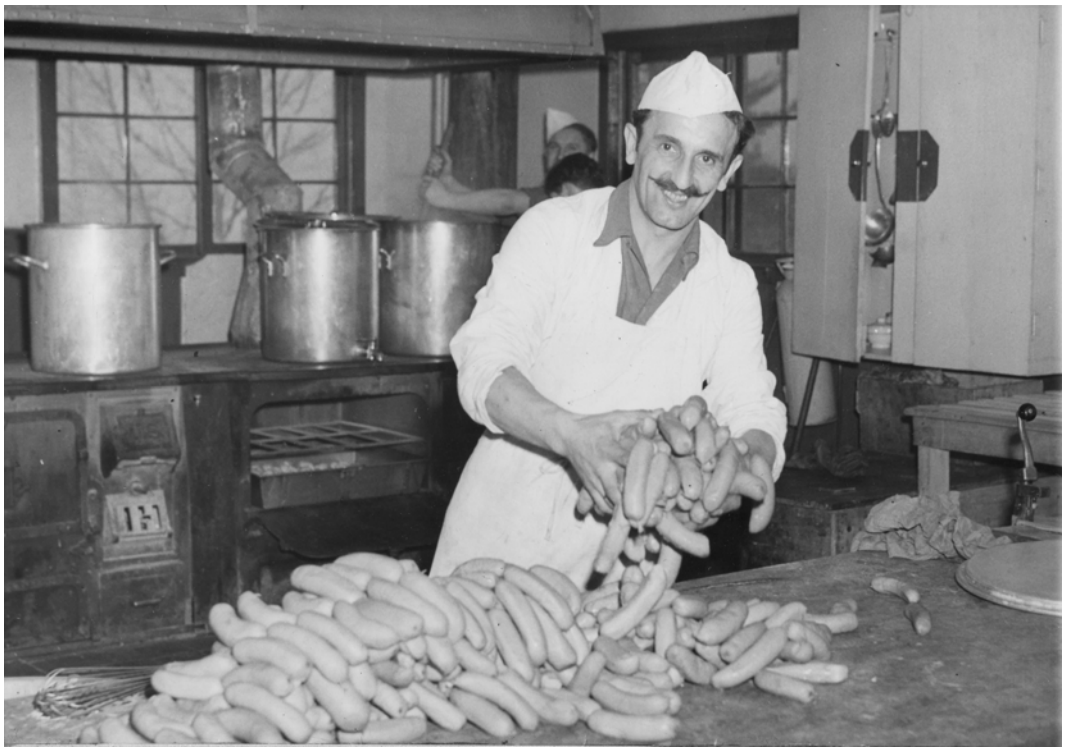

**Figure 26. Chef at Pennsylvania camp, 29 January 1945 (NARA College Park, RG 208 AA Box 308 Folder M).**

66 Eberhardt, "Report of visit to Prisoner of War Camp," 24 May 1944, 6.

67 Edwards, "Inspection of Prisoner of War Camp," 3.

68 Fiedler, Enemy among Us, 198.

69 Edwards, "Inspection of Prisoner of War Camp," 6.

**Figure 27. POWs scavenging materials for re-use, no date (NARA College Park, RG 111-SC, photo 235453).**

### Work on the Post

By far the main use of POW labor was in work details for various sites on FLW itself. As replacements for American personnel needed for the war effort, the German prisoners were used in a wide variety of jobs. Beginning in July 1943 with 10 POWs volunteering for work in the laundry, the labor pool provided by the prisoners rose to a high of over 2,500 men between July and September 1945.[70] This peak coincided with the most pressing shortage of GI labor as American military personnel were being separated from the military at a rapid rate in anticipation of and at the war's end.

Like other military installations across the country with associated POW camps, essential tasks at FLW came to be more and more dependent on the work of prisoners. In a 5 May 1944 phone call between General Clemens, HQ Seventh Service Command and Colonel Duvall, FLW, the extent to which the post had come to rely on POW labor became clear. General Clemens informed Colonel Duvall of plans to ship out nearly 5,000 POWs from the Command, leaving only about 500 for post labor at FLW. Colonel Duvall expressed dismay at the news, detailing how the laundry and bakery would be nearly incapacitated by the reduction. Other essential services relying on POW labor at that time included subsistence services, sewage disposal plant, shoe shop, officers' messes, motor pools, photo laboratory, incinerator, engineer maintenance garage, road repair, dry cleaning,

**70 "Historical Data: Prisoner of War Camp, Fort Leonard Wood, Missouri," Fort Leonard Wood History Office, Vertical File FLW-004-002, typewritten manuscript, nd, 14.**

meat cutting, salvage, blacksmith shop, bowling alley (pin boys), quarry, and stone masons (see Figures 28-30).[71]

Additional to this list were other types of labor provided by POWs such as firing the furnaces in the officers' quarters, cleaning office buildings and clubs, performing mechanical repairs, painting, carpentry, cabinet making, working in tool shops, maintenance shops, and warehouses, performing automobile repair, ditch digging, brush clearing, and stone laying (see Figures 31-33).[72] One of the most coveted jobs on post was working in the mess halls because the POWs there could eat whatever they wanted.[73] The prisoners provided significant amounts of labor for post facilities including the bakery, which ran three shifts.[74] The evening shift at the shoe repair shop was made up entirely of prisoners working under the training and direction of their own foreman, a former employee of a shoe factory in Germany.[75] Eventually, other shops were opened that took advantage of the skills of the POWs such as a watch repair shop, a bookbindery, and a photo lab.[76] A paper salvage operation was manned entirely by POWs. This involved bundling paper and loading the bundles onto train cars at a nearby rail siding.[77]

**Figure 28. POW baker at Fort Riley, no date (NARA College Park, RG 111-SC, photo 182696).**

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71 General Clemens, HQ Seventh Service Command and Colonel Duvall, Fort Leonard Wood, typewritten transcript of a phone conversation, 5 May 1944, FLW History Office File 004-002, 1-3.

72 Fiedler, Enemy among Us, 196; Edwards, "Inspection of Prisoner of War Camp," 3; Schnyder, "Report of visit to Camp Leonard Wood, Missouri," 19 August 1944, 3.

73 Fiedler, Enemy among Us, 199.

74 Eberhardt, "Report of visit to Prisoner of War Camp," 24 May 1944, 6.

75 Edwards, "Inspection of Prisoner of War Camp," 4.

76 Fiedler, Enemy among Us, 199.

77 Ibid., 198.


**Figure 29. POW labor at a subsistence warehouse, no date (NARA College Park, RG 208 AA Box 308 Folder K).**

**Figure 30. POW labor at Fort Riley laundry, no date (NARA College Park, RG 111-SC, photo 235456).**

**Figure 31. POW roadwork [note guard tower in background], no date (NARA College Park, RG 208 AA Box 309 Folder J).**

**Figure 32. POWs doing maintenance work at Camp Crowder, Missouri, 1944 (NARA College Park, RG 208 AA Box 308 Folder K).**

**Figure 33. POWs in mail room, no date (NARA College Park, RG 208 AA Box 308 Folder K).**

Initially, POWs were prohibited from working in the laundry due to the inflammable nature of the chemicals used for dry cleaning and the danger of flash fires. Safeguards were instituted that mitigated the hazards, and the camp laundry became the main source of labor for the POWs.[78] They worked as sewing machine operators, pressers, hangers, tailors, and clerks.[79] The laundry work in the August 1943 report showed that the prisoners were very good at this job and worked well together and with the civilian laborers, although there was a report of an older civilian lady passing a note to one of the prisoners.[80] By August 1944, the laundry ran three shifts of seventy men each shift. A prisoner was required to iron 20 trousers per hour with a steam press. Six prisoners were required to iron 2,800 sheets per day.[81]

Within a few months of arrival at the camp, the German POWs had begun producing the high-quality stonework for which they were lauded and which would become a lasting reminder of their presence. A combination of elements led to this work, including a large quantity of appropriate stone, a climate and topography that led to a need for drainage structures of many sizes and kinds, and a ready supply of prisoner labor including experienced stonemasons. Starting with their own compounds, which were hastily engineered and constructed, they built "elaborate" drainage ditches laid out by two prisoners who were engineers.[82] They also created less utilitarian stonework including rock gardens and "extremely elaborate mosaics…which depict[ed] in minute detail their regimental insignia and other designs."[83] The stonework and rock gardens were all built from rock quarried by

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78 Ibid., 198.

79 Ibid., 196.

80 Edwards, "Inspection of Prisoner of War Camp," 4.

81 Schnyder, "Report of visit to Camp Leonard Wood, Missouri," 19 August 1944. 3.

82 Edwards, "Inspection of Prisoner of War Camp," 4.

83 Fiedler, Enemy among Us, 182.

the prisoners. Period inspectors visiting the camp remarked on this work saying the prisoners "…built stone revetments usually six feet high and have constructed a concrete trough to the foot of these ditches."[84]

The POW stonework was not confined to the prison camp, but was spread out across the installation where it was needed. Most of this labor went into utilitarian structures such as a stone dam and a boat landing at a water intake plant on the Big Piney River (Figures 34 and 35) and drainage structures such as culverts and ditches (Figure 36).

There remains a large amount of stonework adorning the installation and some of its most significant buildings. There are currently over 493 different stoneworks scattered across FLW including culverts, steps, walkways, roads, walls, and chimneys (see Figures 37-39). Beginning in 1943 and continuing through 1945, over 250 German prisoners were laboring with stone: [85]

Base records in 1944 indicate 10 German POW stonemasons had been employed full time in working and laying sandstone walks and walls for a year or more, and an additional 240-250 prisoners were engaged in quarry and roadwork using sandstone and other stone. Thus, approximately one out of every ten POWs was working at least part time on stone structures.

Many important WWII era buildings received stonework, including the Post Headquarters area (see Figure 36), the Red Cross building, an Officer's Quarters, the Black Officers' Club, and Major General Garlington's quarters. Cemeteries and chapels also were stonework sites (see Figures 40-41).[86]


**Figure 34: Stone dam under construction by POWs at Fort Leonard Wood, 17 March 1944 (U.S. Army Signal Corps photo in Bartholomew & Associates, 14).**

84 Edwards, "Inspection of Prisoner of War Camp," 4.

85 Bartholomew & Associates, Cantonment Historical Resources Survey, 3.

86 Ibid, 3-4, 13.

**Figure 35: Stone boat landing under construction by POWs at Fort Leonard Wood, 1944 (U.S. Army Signal Corps photo in Bartholomew & Associates, 30).**

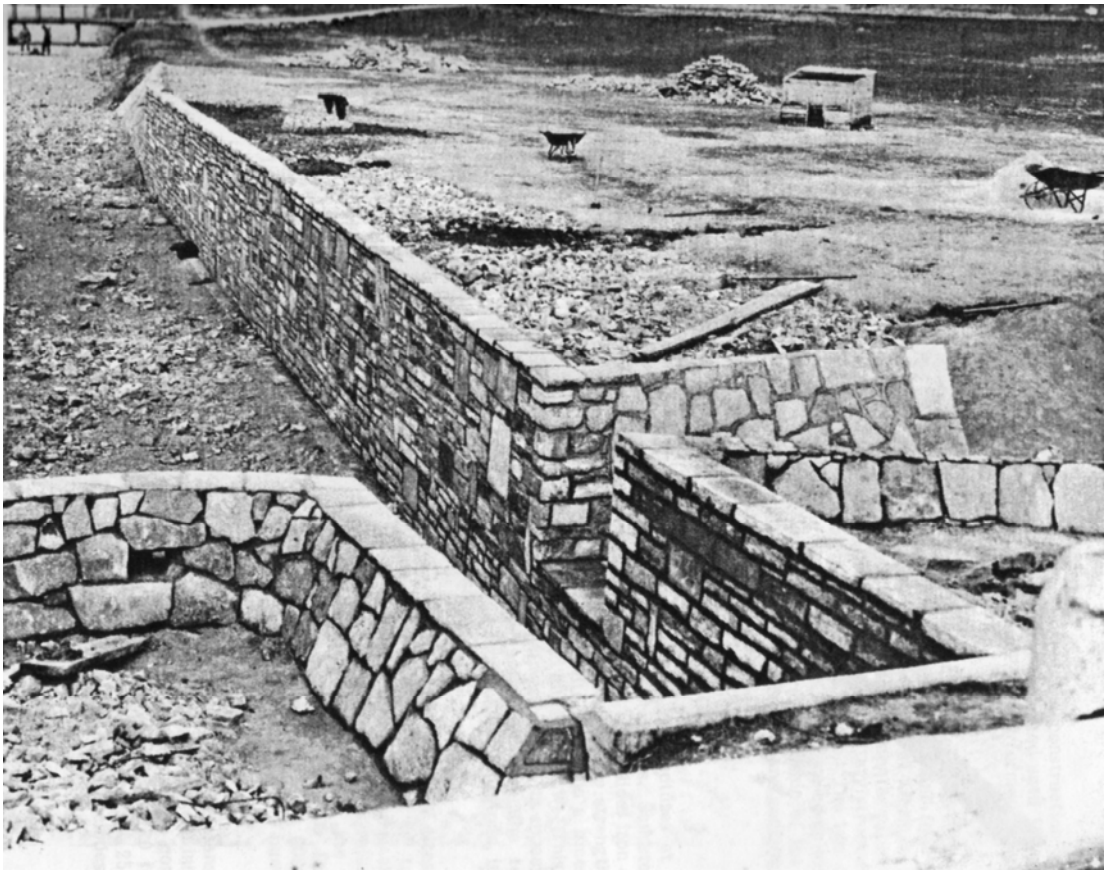

**Figure 36: Stone culvert and ditch near Nebraska and Minnesota Avenues under construction by POWs at Fort Leonard Wood, 1943 (U.S. Army Signal Corps photo in Bartholomew & Associates, 29).**


**Figure 37. POW identification mark on chimney, no date (courtesy FLW History Office).**

**Figure 38. Stone steps in Headquarters area, circa 1970s (courtesy FLW History Office).**

**Figure 39. Stone walkway and culvert, FLW (FLW History Office, 1970s).**

**Figure 40. Stone retaining wall, culvert, and walkway at Headquarters area, circa 1970s (courtesy FLW History Office).**


**Figure 41. Wedding at FLW chapel with POW stonework steps, no date (NARA College Park, RG 111-SC, photo 140411).**

### Work at Branch Camps

The acute shortage of labor, particularly for agriculture, precipitated by the war effort led to the use of POW labor outside of military posts. Once an installation had its camp and post labor needs addressed, excess POWs could be offered to private citizens (businessmen or farmers mostly), for use as contract labor. In line with government regulations, the POW labor cost the contractors the same as hiring American laborers, although the POWs were only paid the established 80¢ per day. The establishment of branch camps allowed for a secure and accountable method for the use of POW labor where it was needed most.[87]

With the public support of Missouri Congressman Marion T. Bennett, POW labor from FLW and other Missouri bases was officially sanctioned for use in agriculture on private farms in Missouri.[88] Beginning in the summer of 1943, approximately 20 branch camps with between 50 and 250 prisoners were created in 12 Missouri towns. These prisoners were housed where available—riverboat camps, horse tracks, tent camps, college dormitories, and other unused bunking areas.[89] It was determined that FLW could offer

[87] Ibid., 16.

[88] Fiedler, Enemy among Us, 36.

[89] Ibid., 39-40.

the labor of up to 1,500 POWs without seriously impacting the necessary work at the camp and on post. As of April 1945, FLW supplied POW labor for eight branch camps in Missouri: Marston, Gasconade, Louisiana, Jefferson Barracks, Rosati, Independence, Marshall, and Chesterfield.[90] The number of prisoners at these camps varied from several dozen to several hundred depending on need, type of work, and season of the year. [91]

The work done by the POWs was remarkably good. Efficiency of a POW work detail from FLW was noted by a local farmer who estimated three days for ten "carefully-selected prisoners" to stack hay on approximately thirty acres. The work was completed in less than one day. Efficiency was attributed to the number of POWs that worked on farms in Europe, which were smaller. Work performed by POWs in Missouri, other than agriculture, was in quarries, on levees, a small number of factories and warehouses, and roadwork (see Figures 42-43).[92]

**Figure 42. POWs doing agricultural work, no date (NARA College Park, RG 208 AA Box 308 Folder K).**

[90] Paul A. Neuland, Major, Field Service Branch, "Memorandum for Director, Prisoner of War Special Projects Division," Fort Leonard Wood History Office, Vertical File FLW-004-002, 11 May 1945, 2**;** Capt. J. H. Waxer, FSO, Special Projects Division, letter to Commanding Officer, Fort Leonard Wood, 24 September 1945, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland.

[91] Schnyder, "Report of visit to Camp Leonard Wood, Missouri," 19 August 1944, 1; Eberhardt, "Report of visit to Prisoner of War Camp Fort Leonard Wood," 6-7 May 1945, 3.

[92] Fiedler, Enemy among Us, 38-39, 41.

**Figure 43. POWs loading crops, no date (NARA College Park, RG 208 AA Box 309 Folder L).**

A number of farmers and agricultural businesses surrounding FLW also needed workers during this time. With these sites in close proximity to the Post, branch camps were not needed. The POWs were transported out to the work sites daily and returned in the evenings. A typical example of this was the Wulff dairy farm. Louis J. Wulff owned a construction business and a dairy farm. He and his three sons worked both businesses. With the increase in the construction business due to the construction on FLW, the dairy operations were left to his wife, Margaret Wulff, who also worked in the Officers' Club. Margaret could speak German and could manage the POWs. An informal arrangement was made to have a small number of German POWs work on the farm when "…the schedule got to tight to fit in all that needed to be done." [93]

These arrangements worked very well, with little animosity evident between the contractors and the POWs. Most of the farmers and small businessmen were very glad to get the labor they needed, and treated the prisoners well, even augmenting the POWs' rations from their own tables and pantries. One such contractor, Preston Woody, recalled, "They ate the noon meal at our table and we worked along side them—just like they were hired hands."[94] For the POWs, it was an opportunity to be away from the camp with its inherent politics and wartime animosities. Fritz Ensslin described the experience from the POW perspective:[95]

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[93] Ibid., 200-202.

[94] Bartholomew & Associates, Cantonment Historical Resources Survey, 17.

[95] Ensslin, "German POW Memoirs from Fort Leonard Wood," 5.

> …it was the Spring[sic] of 1944 and the situation had greatly changed. Hatred against anything German developed into a domineering role. I was fortunate enough to be transferred, along with 20 POWs to work on a farm in Missouri. There the people were uncomplicated; good work was rewarded with good treatment.

### *Off-duty Life*

When work was done for the day, or for those POWs not required to work, off-duty hours were spent in a variety of physical, social, artistic, and intellectual pursuits. Camp administrators made sure the prisoners were supplied with the materials they needed to keep them acceptably occupied in their free time.

#### Recreation

Not surprisingly, soccer was the sport of choice for both the Italian and German prisoners. Compounds organized teams which competed with each other on a field the prisoners had prepared. These teams were strongly supported with both players and spectators (see Figure 44). Italian prisoners also built a bocce court.[96] Sports activities also included basketball, track and field activities, fistball, and soccer, which was "…limited only by the availability of balls."[97] The Camp POW fund (from canteen receipts) was used for equipment and charitable organizations contributed items.[98] Prisoners constructed many of their recreational facilities themselves, including bowling alleys for the German officers. Indoor activities included table tennis, cards, checkers, and chess (see Figure 45).[99]

A workroom in each compound supported handicrafts such as woodworking, painting, carpentry using scrap lumber to construct furniture and other items, and sculpture. The POWs studied painting from a professional artist. They worked on a painting for a church altar and there was a desire to present the "…altar picture to some parish here in America."[100]

Films were shown once a week with all POWs attending. Selection and distribution of films for prisoner viewing was made by the Provost Marshal General's Office. American films shown included *Gone with the Wind*, *Snow White and the Seven Dwarfs*, and *All Quiet on the Western Front,* as well as documentaries.[101]

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96 "Italian Prisoners of War Kept at Work at Fort Wood," 10 June 1943.

97 Howard Hong, "Report of Visit to Prisoner of War Camp, Fort Leonard Wood, Missouri", 15 May 1945, 2, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland.

98 "Historical Data: Prisoner of War Camp," 19.

99 Fiedler, Enemy among Us, 188-189.

100 Almquist, "Report of Visit to Prisoner of War Camp," 2.

101 Headquarters Army Service Forces, Office of the Provost Marshal General, "Field Services Camp Survey," 4; "Historical Data: Prisoner of War Camp," 20.

**Figure 44. Soccer at unidentified POW camp, no date (NARA College Park, RG 208 AA Box 308 Folder K).**

**Figure 45. POW clubhouse interior, no date (NARA College Park, RG 208 AA Box 309 Folder V).**

There was a theater group consisting of twenty POW actors, with men playing both the male and female roles out of necessity (see Figure 46). The Camp POW fund was used to purchase theatrical accouterments, and the YMCA provided props.[102] Comedies and variety shows were the preferred genres with the textual material supplied by the YMCA or written by the prisoners.[103] The theatricals were very popular with both the performers and the audiences, attracting American officers on a regular basis. Each compound had their own theater with stage built by the POWs and performances were given at the camp hospital.[104]


**Figure 46. Theatrical presentation with scavenged items for sets, no date (NARA College Park, RG 11-SC, photo 182691).**

Italian prisoners formed a small band, and utilized a phonograph and records that had been donated.[105] A 35-man strong chorus and 16-man orchestra offered classical music, with musical instruments and classical recordings donated by the YMCA (see Figure 47).[106] Prisoners were also allowed to possess radios as long as they could not receive short wave broadcasts, and had passed inspection by the Signal Corps.[107] It was noted, "light music was heard continuously" on the radio.[108]

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102 "Historical Data: Prisoner of War Camp," 19.

103 "Headquarters Army Service Forces, Office of the Provost Marshal General, "Field Services Camp Survey," 10.

104 Fiedler, Enemy among Us, 190-191.

105 "Italian Prisoners of War Kept at Work at Fort Wood," 10 June 1943.

106 Hong, "Report of Visit to Prisoner of War Camp, Fort Leonard Wood, Missouri", 15 May 1945, 2; "Headquarters Army Service Forces, Office of the Provost Marshal General, "Field Services Camp Survey," 9.

107 "Historical Data: Prisoner of War Camp," 20.

108 Hong, "Report of Visit to Prisoner of War Camp, Fort Leonard Wood, Missouri", 15 May 1945, 2; "Headquarters Army Service Forces, Office of the Provost Marshal General, "Field Services Camp Survey," 9.

**Figure 47. POW orchestra, no date (NARA College Park, RG 208 AA Box 309 Folder C).**

The compound canteen provided consumer items for the prisoners and served as an informal social center (see Figure 48). As recalled by Fritz Ensslin:

> We worked eight hours per day and were paid ten cents per hour. To have cash in possession was strictly forbidden; therefore, we were paid in five-cent and ten-cent money certificates. Stores were established in each 1000-man camp where we were able to purchase all our necessities and many luxuries like chocolate, mineral water, toilet articles like the finest soaps, after shave lotions, hair grooming lotions, safety razors, peanuts, etc. At the end of each working day, we also received a ration for two bottles of beer at ten cents each. The beer was brewed in St. Louis and was called Alpenbrau.[109]

[109] Ensslin, "German POW Memoirs from Fort Leonard Wood," 3.


**Figure 48. POW camp canteen at Ft. Knox, 1944 (NARA College Park, RG 208 AA Box 308 Folder P).**

### Education

Books were provided by donor organizations, most particularly the YMCA. By November 1945, the Camp library contained 4,048 volumes, mostly in German, with seventy-five percent in circulation.[110] All, of course, had been censored before being placed on the shelves, as was the mail sent and received by the prisoners (see Figure 49). The POWs published a camp newspaper (also censored) on FLW called "Die Brische" and a newspaper at the Chesterfield branch camp, "Chesterfield Herald" that were printed by mimeograph and consisted of articles, poems by the POWs, and reprints (see Figures 50-51).[111] There was also a school bulletin, "Bildung und Wissen" (Education and Knowledge).[112] In addition, the *St. Louis Post* and the *St. Louis Globe-Democrat* were delivered to the camp daily for censoring and distribution. Garbage and incinerator duty provided the opportunity to salvage discarded reading material, so the prisoners got a taste of mainstream American magazines and comics (see Figure 52).[113]

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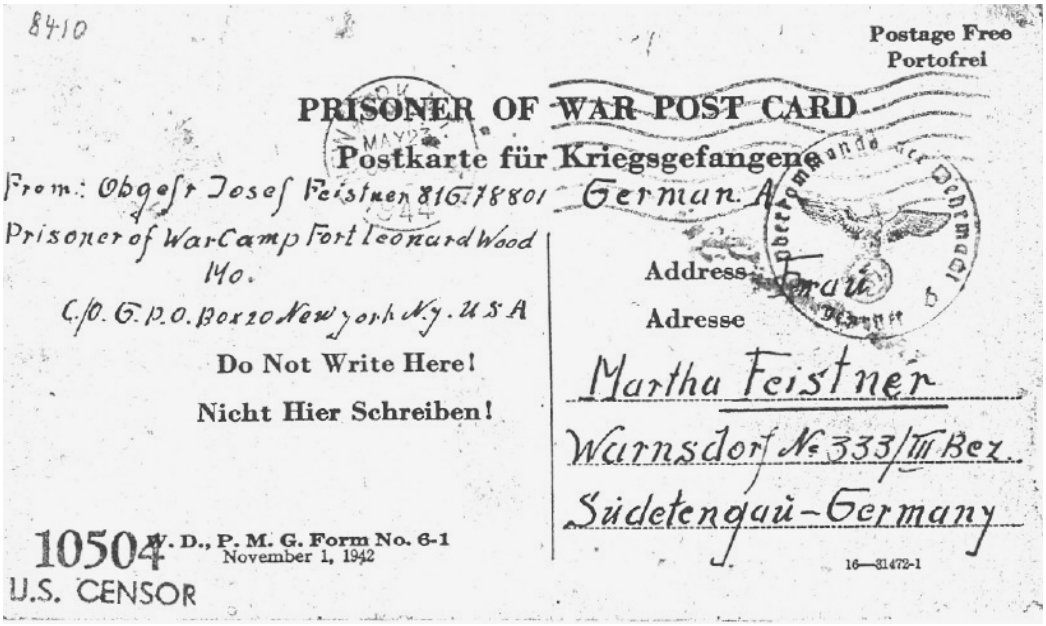
110 Headquarters Army Service Forces, Office of the Provost Marshal General, "Field Services Camp Survey," 3.

111 Ibid., 6 (No translation could be found for "Die Brische," but it is possible the author of the survey misspelled the newspaper's name which may actually have been "Die Britsche" which translates as "The Chatter.").

112 Captain Thornley F. Wells, Fort Leonard Wood Prisoner of War Camp, Seventh Service Command to Special Projects Branch, Prisoner of War Division, Office of the Provost Marshal General, 2 October 1945, RG 389, Box 1617, National Archives, College Park, Maryland.

113 Ensslin, "German POW Memoirs from Fort Leonard Wood," 4.


8410

Postage Free
Portofrei

PRISONER OF WAR POST CARD
Postkarte für Kriegsgefangene

From: Obgefr Josef Feistner 816.78801 German. A.
Prisoner of War Camp Fort Leonard Wood
Mo.
C/O. G.P.O. Boston New York N.Y. U.S.A

Do Not Write Here!
Nicht Hier Schreiben!

Address
Adresse

Martha Feistner
Warnsdorf No 333/III Bez.
Südetengau - Germany

10504 W. D., P. M. G. Form No. 6-1 November 1, 1942
U.S. CENSOR

16—31472-1

**Figure 49. Post card sent by FLW POW, 23 May 1944 (courtesy U.S. Army Directorate of Public Works, FLW).**

**Figure 50. Reading POW paper, no date (NARA College Park, RG 208 AA Box 309 Folder Q).**

# Bildung und Wissen

Unterrichtsblätter im Kriegsgefangenenlager

Nummer 11 Fort Leonard Wood 29.Sept 1945

## Die Deutsche Muttersprache

Zusammenschreiben oder zusammen schreiben?

In den bisherigen Aufsaetzen haben wir festgestellt, welche Laute es im Hochdeutschen gibt und wie man sie durch Zeichen, d.h. in diesem Falle durch Buchstaben, ausdrueckt. Wir haben uns weiter mit der Gross- und Kleinschreibung befasst. Nun bleibt uns noch eine Frage zu klaeren, die oft erhebliche Schwierigkeiten bereitet und die wir in der Ueber - schrift schon angedeutet haben: Wie schreibt man zusammengesetzte Woerter?

Es ist offenbar nicht dasselbe, wenn ich sage: "Sie muessen das Wort zusammenschreiben", d.h. also in einem Wort schreiben, oder ob ich sa- ge: "Dieses Buch werden ich und mein Freund zusammen schreiben", wobei allerdings ein gehaessiger Kritiker spaeter behaupten koennte: "Die beiden Verfasser haben das Buch nicht nur zusammen geschrieben, sonde auch zusammengeschrieben." Ehe wir uns aber in die Abgruende dieser feinen Unterscheidungen verlieren, wollen wir uns erst einmal grund - saetzlich fragen: Welche Woerter kann man zusammensetzen? Nehmen wir zwei ganz beliebige Woerter, z.B. Haus und Tuer. Daraus laesst sich bilden: Haustuer, aber zur Not auch Tuerenhaus, ein Wort, das zwar nicht gebraeuchlich ist, das aber jeder sofort versteht: naemlich ein Haus, das aus vielen Tueren besteht. Aber sehen wir uns lieber das Wort "Haustuer" naeher an: Bekanntlich gibt es auch noch andere Tueren, wie Gartentuer, Hoftuer, Stubentuer usw. In allen Faellen handelt es sich um Tueren; das vorangehende Wort (Haus, Garten, Hof und Stube) gibt je- desmal an, welche Art von Tueren gemeint ist. Durch das erste Wort wird also das zweite naeher"bestimmt". Man nennt es deshalb Bestimmungswort, waehrend der zweite Teil der Zusammensetzung Grundwort heisst.

Es ist eine Eigentuemlichkeit der deutschen Sprache, dass man nahezu alle ihre Woerter miteinander zusammensetzen kann. Darin zeigt sich die Kraft unserer Sprache; andererseits verfuehrt diese Moeglichkeit auch oft dazu, Wortungeheuer zu bilden, wie z.B. Schuelermonatsfahr - kartenantraege. Im allgemeinen wird man solche unuebersichtlichen und schwerfaelligen Bildungen vermeiden. Vergleichen wir nun einmal das Wort Haustuer mit folgenden Gebilden: Annaluise, Vaterunser, Stolze - Schrey. Handelt es sich hier auch um Grund- und Bestimmungswoerter? Meinen wir mit Annaluise eine Luise, die zum Unterschied von anderen Luisen "Anna" heisst? Oder mit Vaterunser ein bestimmtes "unser"? Oder einen bestimmten"Schrey", naemlich den Stolze-Schrey? Gewiss nicht.

**Figure 51. School Bulletin, FLW Prisoner of War Camp, 29 September 1945, (NARA College Park, RG 389, Box 1617, File "FLW").**


**Figure 52. POWs reading Life magazine, no date (NARA College Park, RG 208 AA Box 308 Folder N).**

Classes, lectures, and discussion groups for the prisoners were organized and taught by POWs. Basic education courses were offered, including English, reading, writing, American history, geography, mathematics, music, arts, and literature. A director of studies was selected from among the POWs to run the educational activities. Prisoners selected as teachers were freed from other labor and were compensated for their efforts from canteen funds. The expenses for this program were covered by the Camp POW Fund, and existing facilities were used for classrooms.[114] By August 1944, there were 10 to 12 "professors" and class offerings had expanded to include languages, metalwork, medicine, commerce, and construction. Although there were reports that classes in English were particularly well attended, overall there was little interest in the educational classes at first. Over time, participation improved and by March 1945 35 subjects were being taught by 20 instructors in 70 day and evening classes.[115]

The assistant executive Lt. Perry M. Georgiady was in charge of the re-education program. It was reported that his enthusiasm for the program increased interest among the POWs after previous program directors were "reluctant to support the program."[116] Many American newspapers, magazines, and other periodicals were available in the canteen for the POWs, with additional materials coming from Washington University in St. Louis, Missouri.

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114 "Historical Data: Prisoner of War Camp," 19.

115 Hong, "Report of Visit to Prisoner of War Camp, Fort Leonard Wood, Missouri", 15 May 1945, 2; Fiedler, Enemy among Us, 192-193.

116 Neuland, "Memorandum for Director," 1.

Washington University was asked to be a sponsoring university to help supply materials and efforts for the re-education program, but they initially turned down the offer stating that they feared negative publicity and that the University would be seen as helping "coddle" the POWs and would be involved in the "prisoner of war muddle"[117] They questioned the aims of the program when informed of the classified status of the program, but when informed of the extent of the educational program for the German POWs at FLW, they subsequently loaned educational materials to the camp for use by the POWs including "…books, study aids, and materials…[and]…visual aids for prisoner of war classes."[118] The University could supply German reading material. Funding for these materials was covered from the POW funds rather than from Washington University or the general funds of FLW. Additionally, Washington University provided advice on problems encountered and worked with the instructors assigned to FLW. Walter B. Bodenhafer, professor of sociology was chosen as the liaison between Washington University and FLW. He turned down the request after his initial trip to FLW in February 1945, but subsequent negotiations about the safety of the loaned material and the extent of the University's involvement in the project proved positive for both parties.[119]

Success of the program was hard to judge, but reports were positive. Positive, that is, until the change in food rations that took effect in March 1945. In addition to scaled back and altered menus, items for sale at the canteens such as cigarettes and beer were curtailed. The combined effect of these changes had the effect of undoing many of the positive changes brought about by the Special Projects Division program and the POWs positive feelings towards the United States.[120]

### Religion

Although the spiritual needs of the Italian prisoners were served by a Catholic military chaplain, the arrival of the German POWs necessitated a change. Reported incidents of open hostility toward the chaplain from anti-Catholic Nazi prisoners prompted a policy of providing clergymen from within the POW ranks. These prisoners were allowed to conduct religious work within the camp, were freed from other duty, were compensated at the same rate as other prisoners for their labor, and used materials donated by religious institutions (see Figure 53). The Camp Commander had approval authority for the

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117 Ibid., 2; Lt. P. M. Georgiady, Assistant Executive Officer, Fort Leonard Wood, to Office of Provost Marshal General, Special Projects Division, 22 March 1945, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland.

118 Lt. Col. Edward Davison, Director, Special Projects Division to Commanding Officer, Fort Leonard Wood, 7 March 1945, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland; Georgiady to Office of Provost Marshal General, 22 March 1945; Stuart A. Queen, Acting Librarian, Washington University, to Major E. Davison, PMG Officer, 26 January 1945, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland; Lt. P. M. Georgiady, Assistant Executive Officer, Fort Leonard Wood, to Stuart A. Queen, Acting Librarian, Washington University, 29 January 1945, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland.

119 Davison to Commanding Officer, Fort Leonard Wood, 7 March 1945; W. B. Bodenhafer to Lt. P. M. Georgiady, Assistant Executive Officer, Fort Leonard Wood, 16 February 1945, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland; Lt. P. M. Georgiady, Assistant Executive Officer, Fort Leonard Wood to Commanding General, 7th Service Command, 23 January 1945, RG 389, Box 1617, National Archives and Records Administration, College Park, Maryland.

120 Fiedler, Enemy among Us, 47-48.

selection of these clergymen and their sermons were reviewed prior to services. At his discretion, the Commander could also allow other clergymen into the camp to conduct services, but they were restricted to only speaking of religious matters and were accompanied within the camp by an official who remained in sight.[121]

Originally, one of the barracks buildings in each compound was designated for church services, with Protestant services each Sunday. By February 1944, the prisoners were building a chapel for their use and creating the altar and other furnishings. The more suitable facility seems to have boosted attendance as fifteen percent of the POWs attended the Lutheran service and twenty percent attended the Catholic service.[122] Once a week about 25 of the POWs would gather to study the Bible and "…speak about problems in their lives as Christians."[123]

**Figure 53. POWs at religious service, no date (NARA College Park, RG 208 AA Box 308 Folder K).**

121 "Historical Data: Prisoner of War Camp," 20; Fiedler, Enemy among Us, 194.

122 POWs reportedly were fifty percent Catholic, forty-seven percent Protestant, and three percent Other. Almquist, "Report of Visit to Prisoner of War Camp," 1; Headquarters Army Service Forces, Office of the Provost Marshal General, "Field Services Camp Survey," 5.

123 Almquist, "Report of Visit to Prisoner of War Camp," 1.

## End of War – Closing of Camp – Destruction of Camp

By the end of March 1946, a date of 20 April had been set for the departure of the last POWs from the FLW Camp.[124] Since these prisoners would not be replaced, plans were implemented for closing the camp. The plans involved disposition of not only the prisoners, but the operating personnel, buildings, equipment, and supplies presently at the facility. Lists of buildings, structures, and equipment were submitted to the Seventh Service Command Headquarters, along with a layout plan of the facility. Disposition of vehicles, clothing, subsistence stocks, and other excess supplies were carried out in accordance with War Department procedures. Leases for branch camps were cancelled and decisions were made through Headquarters FLW regarding the separation, transfer, or reassignment of excess officers and enlisted men.[125]

The internment camp at FLW was discontinued on 20 May 1946 through issuance of General Orders No 22 (see Figure 54). The buildings were reportedly torn down a few years later.[126] A 1975 post newspaper article, however, says the site was used for training as early as 1950 and continued up until the time of the article. The watchtowers and barbed wire fences were removed, and training began. The newspaper mentioned specifically that surviving were a bell from a post chapel, a POW shower being used as the Engineer Tools office, and a sweat box serving as a Petroleum Oil Lubricant shed.[127]

While some remnants of the POW camp at FLW may have survived their original purpose, all buildings and structures on the site are now gone. Luckily, many examples of their presence remain elsewhere on FLW, literally marked in stone (see Figures 55-59).

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124 N.J. Safourek to Commanding Officer, Fort Leonard Wood, 27 March 1946, Fort Leonard Wood History Office, Vertical File 004-002, 1.

125 Ibid., 1-2.

126 Seventh Service Command, Fort Leonard Wood, Missouri, "General Orders No 22: Discontinuance of Activity," 20 May 1946, FLW History Office File 004-002, 1; "History," Vertical File Fort Leonard Wood – History, Clarke Library, Fort Leonard Wood, Missouri 1991,1.

127 "Pioneer Training Occupies Site of WWII POW Camp," *Ft. Leonard Wood GUIDON*, 24 April 1975, 7.

Seventh Service Command
Fort Leonard Wood
Missouri

GENERAL ORDERS
NUMBER 22

20 May 1946

DISCONTINUANCE OF ACTIVITY

1. Effective 2400, 20 May 1946, the 1718 SCU Prisoner of War Camp, Fort Leonard Wood, Missouri. is discontinued.

2. Disposition of all personnel presently assigned 1718 SCU Prisoner of War Camp, this station, will be made through transfer and assignment of such personnel by Headquarters, Fort Leonard Wood, Missouri. EDCMR 20 May 1946.

3. The final Morning Report will contain remarks indicating disposition of all personnel and appropriate records of events entry in accordance with Paragraph 38a, AR 345-400, dated 3 January 1945.

4. The final roster will be prepared and distributed as required by Paragraph 13, AR 345-900, as amended by Changes No 4, 22 June 1944. Authority: 2d Indorsement, SPKSA 354 Wood (13 May 46), Headquarters, Seventh Service Command, Omaha, Nebraska, 16 May 1946, to Letter, Army Service Forces, Seventh Service Command, Prisoner of War Camp, Fort Leonard Wood, Missouri, 13 May 1946, Subject: Request for Discontinuance Orders.

BY ORDER OF COLONEL DUVALL:

JOHN F SULLIVAN
Major AGD
Adjutant

OFFICIAL:

JOHN F SULLIVAN
Major AGD
Adjutant

DISTRIBUTION:
ONE-TWO

**Figure 54. General Orders No. 22 discontinuing the POW camp, 20 May 1946 (courtesy FLW History Office).**

**Figure 55. "V" shaped stone with engraved heart at Veterans Park, August 2004 (ERDC-CERL).**


**Figure 56. Constitution Avenue culvert with engraved PVW (unknown what the "V" stood for), August 2004 (ERDC-CERL).**

**Figure 57. Afrika Korps palm tree symbol engraved on stone in culvert by large Constitution Avenue bridge, August 2004 (ERDC-CERL).**

**Figure 58. Culvert located at the southeast corner of Battery Street and South Dakota Avenue, August 2004 (ERDC-CERL).**

**Figure 59. Black Officers' Club chimney, August 2004 (ERDC-CERL).**

# 3 Survey Results

The German prisoners of war (POWs) were quite prolific in erecting stonework throughout Fort Leonard Wood, Missouri. The researchers located 450 individual stonework structures still extant in the cantonment (see Figures 56-59) with two structures found along FLW 25 past the Rolling Heath Schoolhouse (see Table 1 for a complete list of stonework and their respective locations). Harland Bartholomew's *Cantonment Resources Survey* declared the stonework as eligible for the National Register of Historic Places (NRHP) in 1987; however, that survey did not go the next step in determining if the stonework was individually eligible, eligible as a district, or if only portions of the stonework were eligible for the NRHP. The purpose for this report is to determine the NRHP eligibility status for the POW stonework.

The NRHP Criterion for Evaluation describes how properties/districts are significant for their association with important events or persons (Criteria A and B), for their importance in design or construction (Criterion C), or for their information potential (Criterion D). The following is a brief description of each of the four Criterions (excerpted from *National Register Bulletin #15: How to Apply the National Register Criteria for Evaluation):*

**A. Event**--associated with events that have made a significant contribution to the broad patterns of our history; or

**B. Person--**associated with the lives of persons significant in our past; or

**C. Design/Construction--**embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

**D. Information Potential**--yielded, or is likely to yield, information important in prehistory or history.

"Historic properties either retain integrity (this is, convey their significance) or they do not. Within the concept of integrity, the National Register criteria recognize seven aspects or qualities that, in various combinations, define integrity.

To retain historic integrity a property will always possess several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance. Determining which of these aspects are most important to a particular property requires knowing why, where, and when the property is significant (NR Bulletin #15)."

The seven aspects of integrity as outlined in National Register Bulletin 15, read as follows:

***Location***

Location is the place where the historic property was constructed or the place where the historic event occurred.

***Design***

Design is the combination of elements that create the form, plan, space, structure, and style of a property. It results from conscious decisions made during the original conception and planning of a property (or its significant alteration) and applies to activities as diverse as community planning, engineering, architecture, and landscape architecture. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.

***Setting***

Setting is the physical environment of a historic property. Setting refers to the character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space.

***Materials***

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form an historic property.

***Workmanship***

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.

***Feeling***

Feeling is a property's expression of the aesthetic or historic sense of a particular time period.

***Association***

Association is the direct link between an important historic event or person and an historic property.

## Stonework Inventory

The researchers located 450 stonework structures throughout the FLW cantonment and 2 stonework structures outside the FLW cantonment (see Table 1 and Figures 60 through 63).

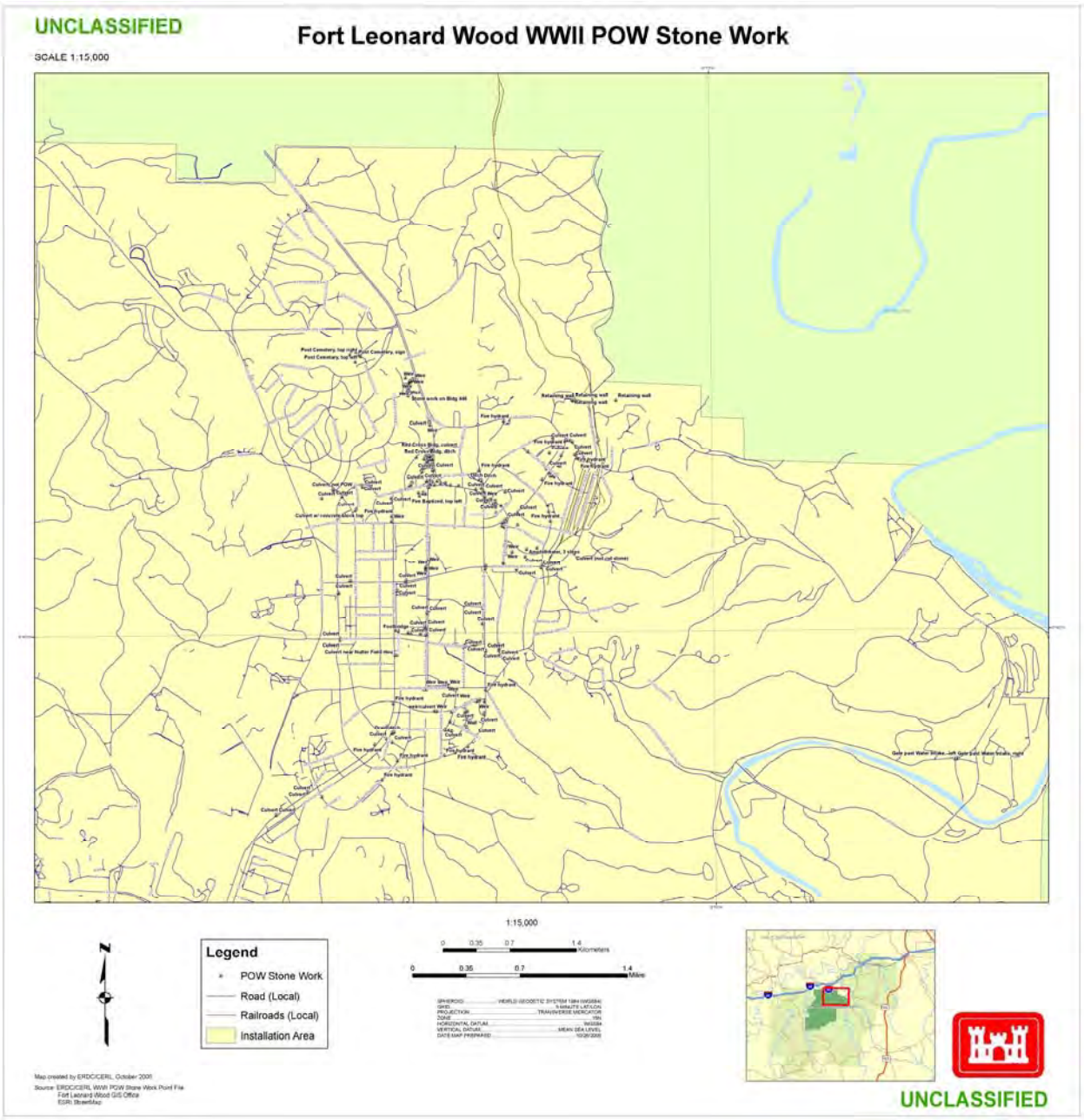


**Figure 60. Stonework found in cantonment, 2005 (ERDC-CERL adaptation of FLW Directorate of Public Works map).**

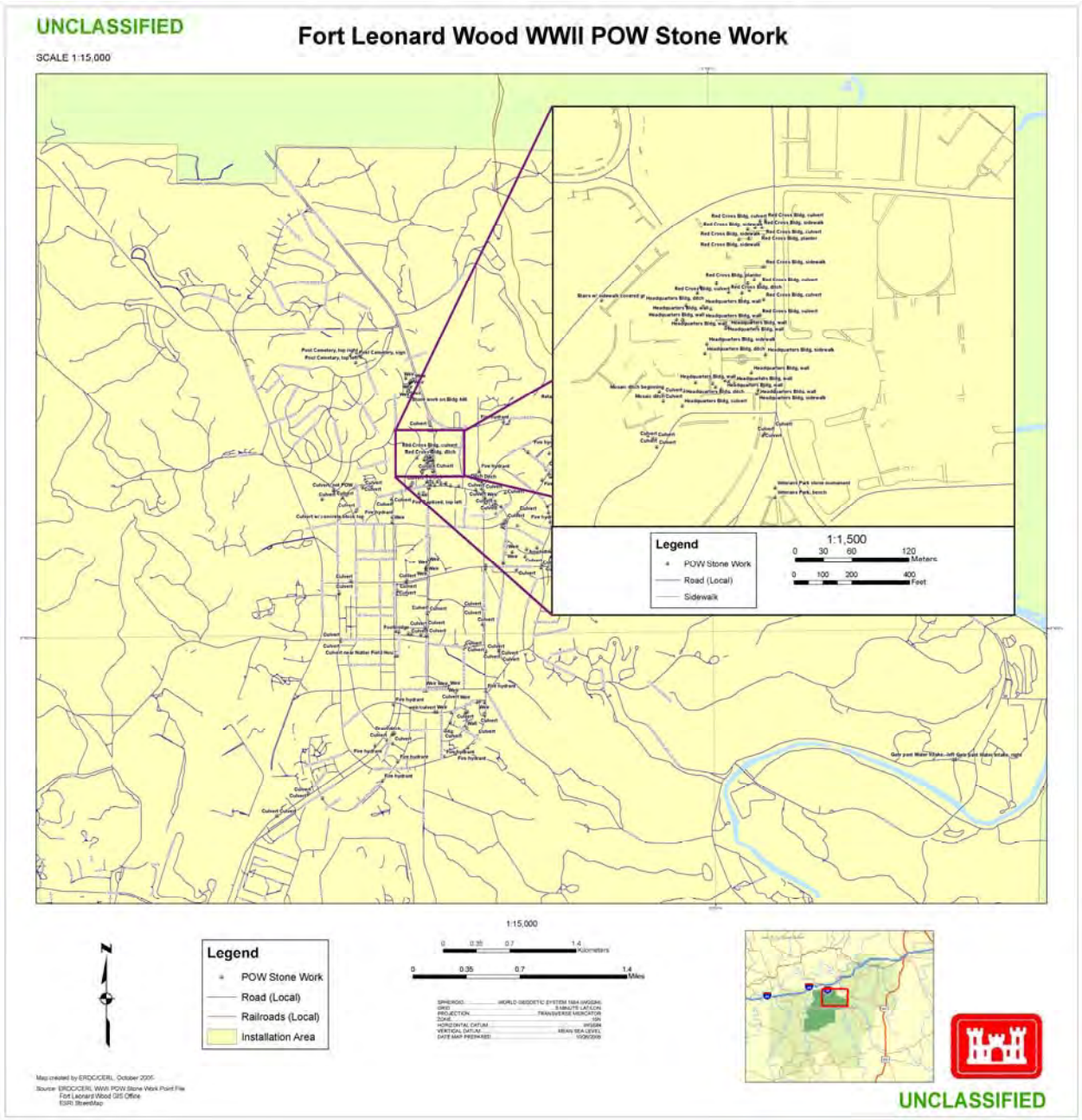


**Figure 61. Stonework found near the Old Post Headquarters area of cantonment, 2005 (ERDC-CERL adaptation of FLW Directorate of Public Works map).**

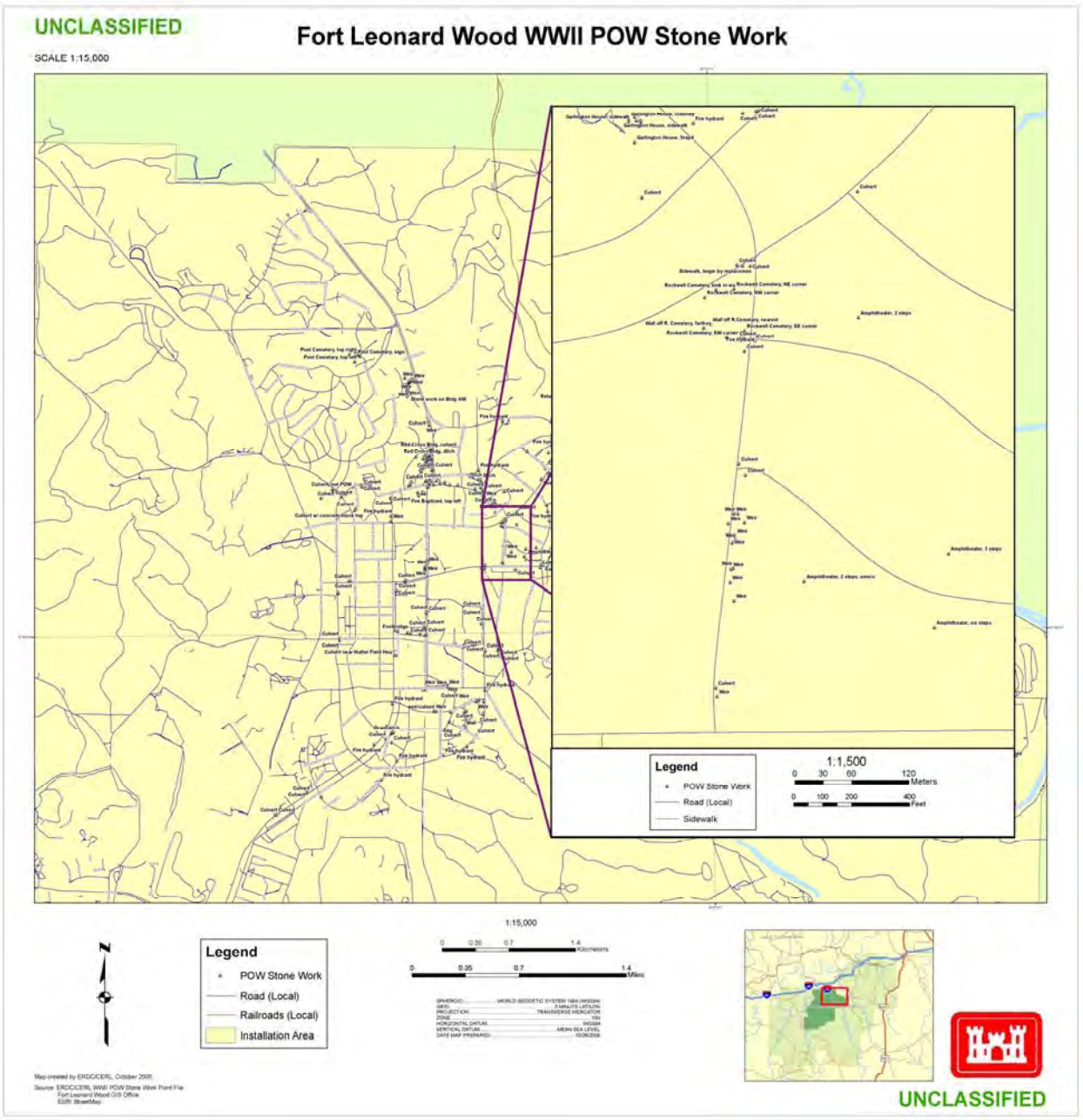


**Figure 62. Stonework found near the Garlington House in the cantonment, 2005 (ERDC-CERL adaptation of FLW Directorate of Public Works map).**

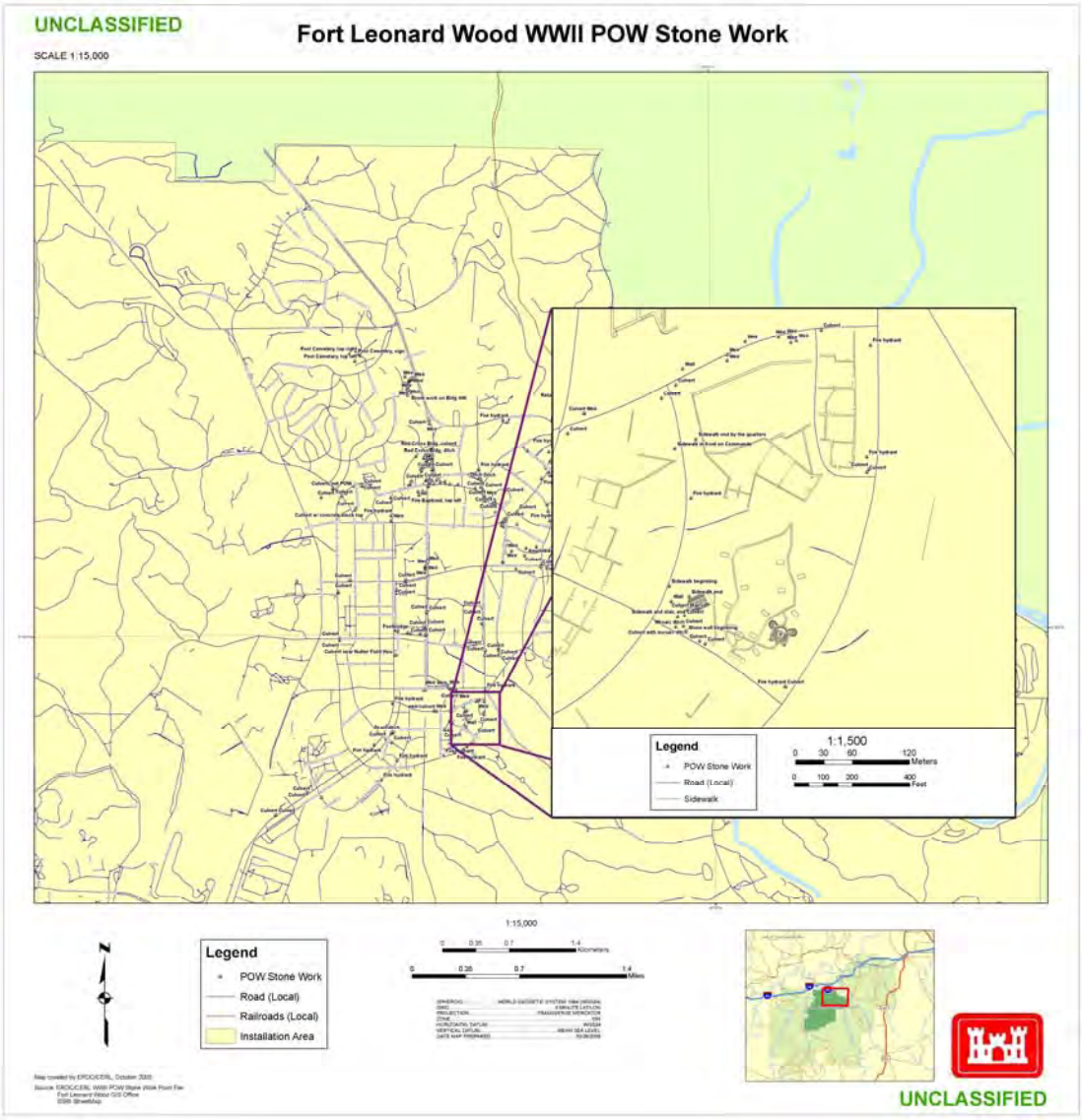


**Figure 63. Stonework found in the WWII Temporary Building Historic District in the cantonment, 2005 (ERDC-CERL adaptation of FLW Directorate of Public Works map).**

**Table 1. Stonework structures found at FLW**

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Culvert | poor | 15 | 579029 | 4180360 | East Second St. |
| Culvert | fair | 15 | 579006 | 4180199 | East Second St. |
| Retaining wall for parking lot | fair | 15 | 579000 | 4180189 | East Second St. |
| Circle in ground/around flagpole | poor | 15 | 578994 | 4180204 | East Second St. |
| Fire hydrant | good | 15 | 578963 | 4180246 | East Second St. |
| Fire hydrant | good | 15 | 578882 | 4180310 | East Second St. |
| Fire hydrant | fair | 15 | 578802 | 4180373 | East Second St. |
| Fire hydrant | fair | 15 | 578758 | 4180415 | East Second St. |
| Fire hydrant | fair | 15 | 579065 | 4180524 | Elm St. |
| Fire hydrant | good | 15 | 579188 | 4180488 | Replacement St. |
| Fire hydrant | good | 15 | 579152 | 4180335 | Replacement St. |
| Fire hydrant | good | 15 | 578953 | 4180080 | Replacement St. |
| Weir | good | 15 | 577370 | 4179634 | Replacement St. |
| Under a concrete slab | poor | 15 | 578032 | 4179575 | Replacement St. |
| Culvert | poor | 15 | 578580 | 4179650 | Replacement St. |
| Culvert | fair | 15 | 578566 | 4179651 | Replacement St. |
| Sidewalk, end across from 5th | poor | 15 | 578569 | 4179573 | Michigan Ave. |
| Rockwell Cemetery, entrance | good | 15 | 578574 | 4179572 | Replacement St. |
| Wall off R. Cemetery, farthest | good | 15 | 578531 | 4179584 | Replacement St. |
| Culvert | fair | 15 | 578683 | 4179128 | Replacement St. |
| Culvert | undetermined | 15 | 578693 | 4179728 | Replacement St. |
| Fire hydrant | good | 15 | 578893 | 4179941 | Replacement St. |
| Stone patio wall | poor | 15 | 579120 | 4180230 | Replacement St. |
| Stone patio wall, curved part | poor | 15 | 579122 | 4180225 | Replacement St. |
| Stone retaining wall, stair open | fair | 15 | 579362 | 4180282 | First St. |
| Fire hydrant | good | 15 | 579427 | 4180272 | First St. |
| Culvert | good | 15 | 579384 | 4180306 | First St. |
| Fire hydrant | good | 15 | 579354 | 4180363 | First St. |
| Culvert | good | 15 | 579335 | 4180415 | First St. |
| Culvert | poor | 15 | 579269 | 4180482 | First St. |
| Culvert | fair | 15 | 579244 | 4180497 | First St. |
| Culvert | fair | 15 | 579215 | 4180500 | First St. |
| Fire hydrant | fair | 15 | 579297 | 4180342 | First St. |
| Drain next to hydrant | poor | 15 | 579300 | 4180342 | First St. |
| Fire hydrant | good | 15 | 578545 | 4180694 | First St. |
| Culvert | poor | 15 | 576633 | 4179879 | Louisiana Ave. |
| Amphitheater, six steps | fair | 15 | 578774 | 4179267 | Off Michigan Ave. |
| Culvert/Mosaic Ditch | poor | 15 | 579104 | 4180128 | Army St. |
| Fire hydrant | good | 15 | 579010 | 4179802 | Oklahoma Ave. |
| Fire hydrant | poor | 15 | 579020 | 4179734 | Oklahoma Ave. |
| Fire hydrant | poor | 15 | 579038 | 4179636 | Oklahoma Ave. |
| Culvert | good | 15 | 578962 | 4179214 | Oklahoma Ave. |
| Culvert | poor | 15 | 578956 | 4179188 | Oklahoma Ave. |
| Culvert | good | 15 | 578966 | 4179174 | Oklahoma Ave. |
| Culvert | poor | 15 | 578951 | 4179175 | Oklahoma Ave. |
| Courtyard area, planter | poor | 15 | 578898 | 4179362 | Oklahoma Ave. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Courtyard area, bench | poor | 15 | 578898 | 4179362 | Oklahoma Ave. |
| Culvert | good | 15 | 578502 | 4178226 | Michigan Ave. |
| Culvert | good | 15 | 578513 | 4178216 | Michigan Ave. |
| Culvert | poor | 15 | 578497 | 4178271 | Michigan Ave. |
| Culvert wall end | poor | 15 | 578493 | 4178332 | Michigan Ave. |
| Culvert | poor | 15 | 578499 | 4178295 | Michigan Ave. |
| Weir | unknown | 15 | 578545 | 4179194 | Michigan Ave. |
| Culvert | poor | 15 | 578544 | 4179203 | Michigan Ave. |
| Weir | good | 15 | 578563 | 4179296 | Michigan Ave. |
| Weir | good | 15 | 578559 | 4179315 | Michigan Ave. |
| Weir | fair | 15 | 578562 | 4179330 | Michigan Ave. |
| Weir | good | 15 | 578560 | 4179329 | Michigan Ave. |
| Weir | fair | 15 | 578561 | 4179357 | Michigan Ave. |
| Weir | good | 15 | 578564 | 4179360 | Michigan Ave. |
| Weir | good | 15 | 578564 | 4179364 | Michigan Ave. |
| Weir | good | 15 | 578574 | 4179378 | Michigan Ave. |
| Weir | good | 15 | 578567 | 4179387 | Michigan Ave. |
| Weir | unknown | 15 | 578557 | 4179377 | Michigan Ave. |
| Weir | good | 15 | 578563 | 4179387 | Michigan Ave. |
| Weir | poor | 15 | 578563 | 4179387 | Michigan Ave. |
| Culvert | poor | 15 | 578575 | 4179428 | Michigan Ave. |
| Culvert | unknown | 15 | 578568 | 4179440 | Michigan Ave. |
| Culvert | poor | 15 | 578574 | 4179559 | Michigan Ave. |
| Culvert | fair | 15 | 578572 | 4179573 | Michigan Ave. |
| Fire hydrant | fair | 15 | 578587 | 4179575 | Michigan Ave. |
| Culvert | poor | 15 | 578585 | 4179570 | Michigan Ave. |
| Fire hydrant | poor | 15 | 578520 | 4179800 | Michigan Ave. |
| Culvert | poor | 15 | 578572 | 4179811 | Michigan Ave. |
| Culvert | good | 15 | 578586 | 4179813 | MP Drive |
| Culvert | good | 15 | 578589 | 4179814 | MP Drive |
| Culvert | good | 15 | 578571 | 4179958 | MP Drive |
| Culvert | good | 15 | 578564 | 4179950 | MP Drive |
| Culvert | good | 15 | 578401 | 4179870 | MP Drive |
| Culvert | good | 15 | 578406 | 4179861 | MP Drive |
| Culvert | fair | 15 | 578394 | 4179859 | MP Drive |
| Culvert | fair | 15 | 578391 | 4179855 | MP Drive |
| Culvert | fair | 15 | 578363 | 4179843 | Nebraska Ave. |
| Culvert | fair | 15 | 578361 | 4179850 | Nebraska Ave. |
| Weir | good | 15 | 578351 | 4179880 | Nebraska Ave. |
| Culvert | poor | 15 | 578350 | 4179898 | Nebraska Ave. |
| Culvert | poor | 15 | 578466 | 4179722 | MP Drive |
| Fire hydrant | poor | 15 | 578456 | 4179857 | Michigan Ave. |
| Culvert | poor | 15 | 578445 | 4179847 | Michigan Ave. |
| Culvert | poor | 15 | 578444 | 4179849 | Michigan Ave. |
| Culvert | poor | 15 | 578454 | 4179847 | Michigan Ave. |
| Culvert | poor | 15 | 578459 | 4179839 | Michigan Ave. |
| Retaining wall | good | 15 | 579270 | 4180909 | Ordnance Dr. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Retaining wall | good | 15 | 579726 | 4180910 | Ordnance Dr. |
| Culvert | fair | 15 | 576931 | 4179006 | Minnesota Ave. |
| Culvert | fair | 15 | 576941 | 4179004 | Minnesota Ave. |
| Culvert | poor | 15 | 577518 | 4179001 | Minnesota Ave. |
| Culvert | poor | 15 | 577524 | 4179011 | Minnesota Ave. |
| Culvert | fair | 15 | 578941 | 4179148 | Minnesota Ave. |
| Culvert (not cut stone) | poor | 15 | 579284 | 4179304 | Minnesota Ave. |
| Culvert | fair | 15 | 578049 | 4177845 | South Dakota Ave. |
| Culvert | good | 15 | 578026 | 4177850 | South Dakota Ave. |
| Weir | good | 15 | 577964 | 4177882 | South Dakota Ave. |
| Weir | poor | 15 | 577941 | 4177880 | South Dakota Ave. |
| Weir | fair | 15 | 577931 | 4177874 | South Dakota Ave. |
| Weir | fair | 15 | 577925 | 4177878 | South Dakota Ave. |
| Weir | poor | 15 | 577916 | 4177882 | South Dakota Ave. |
| Weir | fair | 15 | 577910 | 4177880 | South Dakota Ave. |
| Weir | fair | 15 | 577907 | 4177874 | South Dakota Ave. |
| Weir | poor | 15 | 577903 | 4177877 | South Dakota Ave. |
| Weir | poor | 15 | 577891 | 4177879 | South Dakota Ave. |
| Weir | poor | 15 | 577883 | 4177876 | South Dakota Ave. |
| Weir | poor | 15 | 577878 | 4177877 | South Dakota Ave. |
| Weir | poor | 15 | 577866 | 4177876 | South Dakota Ave. |
| Weir | poor | 15 | 577856 | 4177879 | South Dakota Ave. |
| Weir | fair | 15 | 577848 | 4177879 | South Dakota Ave. |
| Weir | poor | 15 | 577839 | 4177878 | South Dakota Ave. |
| Weir | poor | 15 | 577826 | 4177876 | South Dakota Ave. |
| Wall, coping not original, east end | good | 15 | 577739 | 4177856 | South Dakota Ave. |
| Steps, sidewalk removed | good | 15 | 577727 | 4177853 | South Dakota Ave. |
| Culvert | good | 15 | 577697 | 4178034 | Constitution Ave. |
| Culvert | good | 15 | 577714 | 4178036 | Constitution Ave. |
| Culvert | good | 15 | 577741 | 4178036 | Constitution Ave. |
| Weir | poor | 15 | 577998 | 4178759 | Near softball field 10 |
| Weir | poor | 15 | 577998 | 4178759 | Near softball field 10 |
| Weir | poor | 15 | 577998 | 4178759 | Near softball field 10 |
| Weir | poor | 15 | 577998 | 4178759 | Near softball field 10 |
| Ditch | poor | 15 | 577998 | 4178759 | Near softball field 10 |
| Culvert | good | 15 | 578260 | 4178334 | Kansas Ave. |
| Culvert | poor | 15 | 578235 | 4178332 | Kansas Ave. |
| Culvert | poor | 15 | 578141 | 4178316 | Kansas Ave. |
| Culvert | fair | 15 | 578132 | 4178311 | Kansas Ave. |
| Culvert | poor | 15 | 578055 | 4178329 | Kansas Ave. |
| Culvert | poor | 15 | 578029 | 4178330 | Kansas Ave. |
| Culvert | poor | 15 | 578117 | 4178304 | Kansas Ave. |
| Culvert | fair | 15 | 577732 | 4178430 | Constitution St. |
| Culvert | fair | 15 | 577739 | 4178433 | Constitution St. |
| Ditch, old mosaic pattern | fair | 15 | 577675 | 4178445 | Kansas Ave. |
| Picture of Palm Tree in Ditch | fair | 15 | 577576 | 4178447 | Kansas Ave. |
| Step-down culvert/weir | poor | 15 | 577542 | 4178454 | Kansas Ave. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Looking at culvert on Constitution | poor | 15 | 577542 | 4178454 | Kansas Ave. |
| Mosaic by footbridge, Iowa culvert | poor | 15 | 577411 | 4178479 | Kansas Ave. |
| Footbridge | poor | 15 | 577441 | 4178469 | Kansas Ave. |
| Culvert | poor | 15 | 577718 | 4178509 | Constitution St. |
| Culvert | poor | 15 | 577725 | 4178517 | Constitution St. |
| Wall by Bldg 446, nearest | fair | 15 | 577542 | 4180960 | Franklin Drive |
| Weir | poor | 15 | 577546 | 4180999 | Franklin Drive |
| Weir | poor | 15 | 577541 | 4181035 | Franklin Drive |
| Weir | poor | 15 | 577544 | 4181036 | Franklin Drive |
| Weir | poor | 15 | 577544 | 4181051 | Franklin Drive |
| Weir | poor | 15 | 577544 | 4181055 | Franklin Drive |
| Weir | poor | 15 | 577545 | 4181057 | Franklin Drive |
| Weir | poor | 15 | 577542 | 4181058 | Franklin Drive |
| Weir | poor | 15 | 577546 | 4181067 | Franklin Drive |
| Weir | poor | 15 | 577545 | 4181074 | Franklin Drive |
| Weir | poor | 15 | 577545 | 4181077 | Franklin Drive |
| Weir | poor | 15 | 577553 | 4181088 | Franklin Drive |
| Weir | fair | 15 | 577560 | 4181106 | Franklin Drive |
| Weir | poor | 15 | 577558 | 4181196 | Franklin Drive |
| Weir | poor | 15 | 577561 | 4181105 | Franklin Drive |
| Weir | poor | 15 | 577565 | 4181113 | Franklin Drive |
| Weir | poor | 15 | 577563 | 4181114 | Franklin Drive |
| Weir | poor | 15 | 577565 | 4181121 | Franklin Drive |
| Weir | poor | 15 | 577564 | 4181123 | Franklin Drive |
| Weir | fair | 15 | 577567 | 4181119 | Franklin Drive |
| Weir | fair | 15 | 577577 | 4181120 | Franklin Drive |
| Weir | poor | 15 | 577575 | 4181126 | Franklin Drive |
| Weir | fair | 15 | 577587 | 4181145 | Franklin Drive |
| Weir | poor | 15 | 577593 | 4181129 | Franklin Drive |
| Culvert | fair | 15 | 577604 | 4181137 | Missouri Ave. |
| Entire Franklin/Phoenix Weir | | 15 | 577604 | 4181137 | Franklin Drive |
| Culvert/bridge | poor | 15 | 577738 | 4179488 | Constitution St. |
| Culvert | fair | 15 | 577756 | 4179486 | Constitution St. |
| Culvert | poor | 15 | 577735 | 4179201 | Constitution St. |
| Culvert | poor | 15 | 577759 | 4179211 | Constitution St. |
| Culvert | fair | 15 | 577769 | 4179238 | Constitution St. |
| Culvert | poor | 15 | 577724 | 4179096 | Constitution St. |
| Weir | poor | 15 | 577730 | 4179126 | Constitution St. |
| Weir | poor | 15 | 577728 | 4179140 | Constitution St. |
| Weir | fair | 15 | 577731 | 4179151 | Constitution St. |
| Weir | poor | 15 | 577730 | 4179156 | Constitution St. |
| Weir | poor | 15 | 577742 | 4179193 | Constitution St. |
| Culvert | fair | 15 | 577740 | 4178679 | Constitution St. |
| Culvert | fair | 15 | 577743 | 4178668 | Constitution St. |
| Sidewalk beginning | good | 15 | 578136 | 4177477 | Caisson St. |
| Culvert | good | 15 | 578152 | 4177446 | Caisson St. |
| Culvert | good | 15 | 578155 | 4177452 | Caisson St. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Wall | poor | 15 | 578138 | 4177461 | Caisson St. |
| Sidewalk and stair, beginning | fair | 15 | 578142 | 4177439 | Pine St. |
| Fire hydrant | good | 15 | 578149 | 4177456 | Caisson St. |
| Culvert | good | 15 | 578151 | 4177435 | Pine St. |
| Culvert with mosaic ditch | good | 15 | 578143 | 4177434 | Pine St. |
| Mosaic ditch | poor | 15 | 578143 | 4177434 | Pine St. |
| Stone wall beginning | fair | 15 | 578154 | 4177430 | Pine St. |
| Culvert | poor | 15 | 578168 | 4177419 | Pine St. |
| Culvert | poor | 15 | 578174 | 4177416 | Pine St. |
| Fire hydrant | poor | 15 | 578159 | 4177570 | Caisson St. |
| Sidewalk | fair | 15 | 578142 | 4177622 | Caisson St. |
| Culvert | good | 15 | 578143 | 4177689 | Caisson St. |
| Culvert | fair | 15 | 578128 | 4177675 | Caisson St. |
| Wall | fair | 15 | 578150 | 4177706 | 19th St. |
| Weir | poor | 15 | 578197 | 4177715 | 19th St. |
| Weir | poor | 15 | 578197 | 4177721 | 19th St. |
| Weir | poor | 15 | 578216 | 4177735 | 19th St. |
| Weir | poor | 15 | 578251 | 4177740 | 19th St. |
| Weir | poor | 15 | 578264 | 4177741 | 19th St. |
| Weir | fair | 15 | 578264 | 4177734 | 19th St. |
| Weir | poor | 15 | 578270 | 4177736 | 19th St. |
| Culvert | poor | 15 | 578296 | 4177747 | 19th St. |
| Fire hydrant | good | 15 | 578348 | 4177731 | Nebraska Ave. |
| Fire hydrant | fair | 15 | 578344 | 4177613 | Nebraska Ave. |
| Culvert | poor | 15 | 578346 | 4177600 | Nebraska Ave. |
| Culvert | poor | 15 | 578344 | 4177597 | Nebraska Ave. |
| Fire hydrant | fair | 15 | 578259 | 4177371 | Nebraska Ave. |
| Culvert | poor | 15 | 578258 | 4177371 | Nebraska Ave. |
| Culvert near Bldg 1368 | good | 15 | 578000 | 4177417 | near Pine St. |
| Culvert near Bldg 1368 | unknown | 15 | 577969 | 4177429 | near Pine St. |
| Fire hydrant | good | 15 | 577985 | 4177524 | Old Battery Rd. |
| Culvert | unknown | 15 | 577930 | 4177437 | Old Battery Rd. |
| Culvert | poor | 15 | 577928 | 4177433 | Old Battery Rd. |
| Fire hydrant | good | 15 | 577935 | 4177429 | Old Battery Rd. |
| Culvert | poor | 15 | 577317 | 4177332 | Caisson and Iowa |
| Culvert | poor | 15 | 577375 | 4177295 | Caisson St. |
| Mosaic ditch, beginning | poor | 15 | 577374 | 4177389 | Arkansas Ave. |
| Drain/ditch | poor | 15 | 577394 | 4177404 | Arkansas Ave. |
| Fire hydrant | poor | 15 | 576635 | 4176717 | Artillery Circle |
| Fire hydrant | good | 15 | 577267 | 4176906 | Artillery Circle |
| Fire hydrant | good | 15 | 577431 | 4177108 | Artillery Circle |
| Culvert | poor | 15 | 578046 | 4177659 | 19th St. |
| Weir | fair | 15 | 578047 | 4177659 | 19th St. |
| Culvert | poor | 15 | 578029 | 4177638 | 19th St. |
| Culvert | fair | 15 | 577998 | 4177624 | 19th St. |
| Weir | poor | 15 | 577819 | 4177631 | 19th St. |
| weir/culvert | poor | 15 | 577845 | 4177628 | 19th St. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Culvert | fair | 15 | 578115 | 4180529 | Illinois Ave. |
| Fire hydrant | good | 15 | 578290 | 4180176 | Nebraska Ave. |
| Fire hydrant | good | 15 | 578289 | 4180079 | Nebraska Ave. |
| Ditch | poor | 15 | 578310 | 4180070 | Nebraska Ave. |
| Ditch | poor | 15 | 578315 | 4180065 | Nebraska Ave. |
| Culvert | fair | 15 | 578311 | 4179990 | Nebraska Ave. |
| Culvert | good | 15 | 578253 | 4179978 | North Dakota Ave. |
| Culvert | unknown | 15 | 578334 | 4179961 | Nebraska Ave. |
| Culvert | fair | 15 | 578330 | 4178733 | Nebraska Ave. |
| Culvert | poor | 15 | 578330 | 4178720 | Nebraska Ave. |
| Culvert | good | 15 | 578323 | 4178550 | Nebraska Ave. |
| Culvert | fair | 15 | 578356 | 4178271 | Nebraska Ave. |
| Culvert (mostly concrete) | poor | 15 | 578361 | 4178265 | Nebraska Ave. |
| Fire hydrant | poor | 15 | 578357 | 4177851 | Nebraska Ave. |
| Fire hydrant | poor | 15 | 578170 | 4177253 | Nebraska Ave. |
| Fire hydrant | good | 15 | 578041 | 4177189 | Nebraska Ave. |
| Fire hydrant | poor | 15 | 577918 | 4177159 | Nebraska Ave. |
| Culvert | fair | 15 | 576832 | 4178379 | Alabama Ave. |
| Culvert | poor | 15 | 576829 | 4178393 | Alabama Ave. |
| Culvert, not POW | poor | 15 | 576812 | 4178875 | Alabama Ave. |
| Culvert, not POW | poor | 15 | 576810 | 4178883 | Alabama Ave. |
| Culvert, not POW | poor | 15 | 576802 | 4179276 | Alabama Ave. |
| Culvert | fair | 15 | 576849 | 4179897 | Alabama Ave. |
| Culvert w/ mosaic ditch | poor | 15 | 576892 | 4179926 | North Dakota Ave. |
| Culvert | fair | 15 | 576978 | 4179998 | North Dakota Ave. |
| Culvert | fair | 15 | 576991 | 4180008 | North Dakota Ave. |
| Culvert | fair | 15 | 577055 | 4180018 | North Dakota Ave. |
| Culvert | poor | 15 | 577062 | 4180002 | North Dakota Ave. |
| Culvert | good | 15 | 577465 | 4179963 | North Dakota Ave. |
| Culvert | poor | 15 | 577474 | 4179962 | North Dakota Ave. |
| Culvert | poor | 15 | 577557 | 4180009 | Headquarters Rd. |
| Culvert | poor | 15 | 577559 | 4180016 | Headquarters Rd. |
| Round Circle w/ upright stones | poor | 15 | 577583 | 4180053 | Headquarters Rd. |
| Line of upright stones | poor | 15 | 577586 | 4180046 | Headquarters Rd. |
| Stone patio | poor | 15 | 577580 | 4180043 | Headquarters Rd. |
| Stone ditch from brick culvert | poor | 15 | 577572 | 4180025 | Headquarters Rd. |
| Stairs w/ sidewalk covered grass | poor | 15 | 577632 | 4180314 | Headquarters Rd. |
| Culvert, leads to Veterans Park | poor | 15 | 577738 | 4180062 | Missouri Ave. |
| Culvert, leads to Veterans Park | poor | 15 | 577741 | 4180069 | Missouri St. |
| Culvert | poor | 15 | 576999 | 4179765 | Oak St. |
| Culvert w/ concrete block top | poor | 15 | 576990 | 4179748 | Oak St. |
| Culvert | poor | 15 | 577364 | 4179883 | Iowa St. |
| Culvert | fair | 15 | 577370 | 4179838 | Iowa Ave. |
| Sidewalk by chapel, not POW | good | 15 | 577370 | 4179838 | Iowa Ave. |
| Fire hydrant | fair | 15 | 577369 | 4177687 | Iowa Ave. |
| Culvert | poor | 15 | 576487 | 4176768 | Iowa Ave. |
| Culvert | poor | 15 | 576483 | 4176762 | Iowa Ave. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Culvert | fair | 15 | 576156 | 4176531 | Iowa Ave. |
| Culvert | good | 15 | 576158 | 4176531 | Iowa Ave. |
| Fire hydrant | poor | 15 | 577385 | 4177709 | Iowa Ave. |
| Fire hydrant | poor | 15 | 577321 | 4177471 | Iowa Ave. |
| Fire hydrant | poor | 15 | 577192 | 4177273 | Iowa Ave. |
| Fire hydrant, not POW | poor | 15 | 577114 | 4177209 | Iowa Ave. |
| Culvert, not POW | poor | 15 | 576755 | 4179979 | Buckeye Rd |
| Officer Club sign, not POW | good | 15 | 576756 | 4179966 | Buckeye Rd |
| Culvert, not POW | poor | 15 | 576761 | 4179977 | Buckeye Rd |
| Wall next to Chapel | fair | 15 | 575897 | 4181148 | Indiana Ave. |
| Post Cemetery, entrance left | good | 15 | 577027 | 4181391 | Cemetery Rd. |
| Post Cemetery, top right | good | 15 | 576930 | 4181394 | Cemetery Rd. |
| Post Cemetery, entrance right | good | 15 | 577025 | 4181394 | Cemetery Rd. |
| Post Cemetery, sign | good | 15 | 576996 | 4181372 | Cemetery Rd. |
| Fire Baptized, entrance left | good | 15 | 577701 | 4179930 | North Dakota Ave. |
| Culvert | poor | 15 | 577754 | 4180732 | Missouri Ave. |
| Culvert, west side | fair | 15 | 577764 | 4180688 | Missouri Ave. |
| Culvert, east side | fair | 15 | 577767 | 4180690 | Missouri Ave. |
| Weir coming into culvert | poor | 15 | 577766 | 4180684 | Missouri Ave. |
| Weir | poor | 15 | 577772 | 4180672 | Missouri Ave. |
| Weir | poor | 15 | 577772 | 4180666 | Missouri Ave. |
| Mosaic ditch | poor | 15 | 577772 | 4180672 | Missouri Ave. |
| Weir | poor | 15 | 577772 | 4186057 | Missouri Ave. |
| Mosaic ditch beginning | poor | 15 | 577693 | 4180218 | Old HQ Bldg |
| Culvert | poor | 15 | 577697 | 4180215 | Old HQ Bldg |
| Culvert | poor | 15 | 577697 | 4180208 | Old HQ Bldg |
| Mosaic ditch | poor | 15 | 577697 | 4180208 | Old HQ Bldg |
| Culvert | poor | 15 | 577681 | 4180172 | Old HQ Bldg |
| Culvert | poor | 15 | 577686 | 4180169 | Old HQ Bldg |
| Culvert | poor | 15 | 577689 | 4180168 | Old HQ Bldg |
| Culvert | poor | 15 | 577690 | 4180160 | Old HQ Bldg |
| Gate past Water Intake, left | poor | 15 | 583322 | 4177130 | Water Intake Rd |
| Gate past Water Intake, right | poor | 15 | 583296 | 4177128 | Water Intake Rd |
| Culvert | poor | 15 | 577802 | 4180172 | Missouri Ave. |
| Culvert | poor | 15 | 577804 | 4180174 | Missouri Ave. |
| Culvert | poor | 15 | 577813 | 4180179 | Missouri Ave. |
| Culvert near Nutter Field House | good | 15 | 577426 | 4178221 | Iowa Ave. |
| Culvert near Nutter Field House | fair | 15 | 577405 | 4178222 | Iowa Ave. |
| Gammon Field | good | 15 | 577421 | 4178901 | Iowa Ave. |
| Culvert | poor | 15 | 577421 | 4178901 | Iowa Ave. |
| Culvert | poor | 15 | 577428 | 4178903 | Iowa Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578360 | 4179171 | Nebraska Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578360 | 4179171 | Minnesota Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578360 | 4179171 | Nebraska Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578355 | 4179141 | Nebraska Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578360 | 4179171 | Nebraska Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578360 | 4179171 | Nebraska Ave. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Veterans Park, bench | poor | 15 | 577815 | 4180107 | Veterans Park |
| Veterans Park stone monument | poor | 15 | 577816 | 4180056 | Veterans Park |
| Veterans Park SW bench | fair | 15 | 577797 | 4180059 | Veterans Park |
| Veterans Park Culvert | fair | 15 | 577777 | 4180058 | Veterans Park |
| Veterans Park east along ditch | fair | 15 | 577775 | 4180036 | Veterans Park |
| Veterans Park Culvert | fair | 15 | 577775 | 4180036 | Veterans Park |
| Veterans Park south steps | poor | 15 | 577820 | 4180024 | Veterans Park |
| Veterans Park looking north | poor | 15 | 577820 | 4180024 | Veterans Park |
| Veterans Park east side of bridge | fair | 15 | 577817 | 4180050 | Veterans Park |
| Veterans Park SE bench | fair | 15 | 577846 | 4180066 | Veterans Park |
| Veterans Park SE Culvert | fair | 15 | 577886 | 4180041 | Veterans Park |
| Veterans Park Culvert | poor | 15 | 577936 | 4180047 | Veterans Park |
| Veterans Park looking along ditch | fair | 15 | 577936 | 4180047 | Veterans Park |
| Veterans Park fire hydrant | poor | 15 | 577988 | 4180022 | Veterans Park |
| Veterans Park Culvert | poor | 15 | 578074 | 4180016 | Veterans Park |
| Veterans Park Culvert | fair | 15 | 577763 | 4180000 | North Dakota Ave. |
| Veterans Park Culvert | fair | 15 | 577756 | 4179998 | North Dakota Ave. |
| Veterans Park down N. Dakota | | 15 | 577763 | 4180000 | North Dakota Ave. |
| Garlington House, sidewalk | fair | 15 | 578435 | 4179820 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578458 | 4179807 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578462 | 4179809 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578460 | 4179803 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578464 | 4179803 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578465 | 4179799 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578465 | 4179802 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578452 | 4179802 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578444 | 4179793 | Michigan Ave. |
| Garlington House, fire pit | fair | 15 | 578458 | 4179780 | Michigan Ave. |
| Garlington House, chimney | good | 15 | 578452 | 4179805 | Michigan Ave. |
| Black Officers' Club, wall | poor | 15 | 579053 | 4180145 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579044 | 4180156 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579045 | 4180159 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579043 | 4180159 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579043 | 4180161 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579040 | 4180159 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579037 | 4180155 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579036 | 4180154 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579034 | 4180153 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579027 | 4180150 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579034 | 4180139 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579037 | 4180134 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579047 | 4180139 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579047 | 4180156 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579048 | 4180158 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579054 | 4180148 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579065 | 4180142 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579070 | 4180144 | East Second St. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Black Officers' Club, sidewalk | poor | 15 | 579068 | 4180134 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579077 | 4180132 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579071 | 4180132 | East Second St. |
| Black Officers' Club, sidewalk | poor | 15 | 579076 | 4180128 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579070 | 4180129 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579056 | 4180136 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579052 | 4180126 | East Second St. |
| Black Officers' Club, chimney | good | 15 | 579036 | 4180120 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579041 | 4180116 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579055 | 4180118 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579070 | 4180121 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579078 | 4180112 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579082 | 4180115 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579073 | 4180118 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579077 | 4180122 | East Second St. |
| Black Officers' Club, sidewalk | poor | 15 | 579064 | 4180121 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579065 | 4180151 | East Second St. |
| Guest House, Bldg 448, wall | fair | 15 | 577514 | 4181155 | Franklin Drive |
| Guest House, Bldg 448, wall | fair | 15 | 577532 | 4181014 | Franklin Drive |
| Guest House, Bldg 448, sidewalk | poor | 15 | 577534 | 4180972 | Franklin Drive |
| Guest House, Bldg 448, sidewalk | poor | 15 | 577554 | 4180982 | Franklin Drive |
| Guest House, Bldg 448, wall | fair | 15 | 577556 | 4180985 | Franklin Drive |
| Guest House, Bldg 448, wall | fair | 15 | 577551 | 4180984 | Franklin Drive |
| Guest House, Bldg 448, chimney | good | 15 | 577552 | 4180985 | Franklin Drive |
| Guest House, Bldg 448, wall | fair | 15 | 577553 | 4180982 | Franklin Drive |
| Headquarters Bldg, wall | poor | 15 | 577796 | 4180286 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577805 | 4180257 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577803 | 4180224 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577797 | 4180220 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577815 | 4180220 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577803 | 4180232 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577796 | 4180216 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577790 | 4180238 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577762 | 4180230 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577766 | 4180229 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577772 | 4180227 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577758 | 4180221 | Missouri Ave. |
| Headquarters Bldg, sidewalk | fair | 15 | 577752 | 4180223 | Missouri Ave. |
| Headquarters Bldg, ditch | fair | 15 | 577749 | 4180227 | Missouri Ave. |
| Headquarters Bldg, sidewalk | good | 15 | 577747 | 4180233 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577741 | 4180258 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577743 | 4180268 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577747 | 4180305 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577739 | 4180308 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577736 | 4180328 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577730 | 4180326 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577733 | 4180322 | Missouri Ave. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Headquarters Bldg, sidewalk | poor | 15 | 577721 | 4180309 | Missouri Ave. |
| Headquarters Bldg, sidewalk | fair | 15 | 577717 | 4180294 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577718 | 4180293 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577711 | 4180294 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577723 | 4180233 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577731 | 4180228 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577719 | 4180219 | Missouri Ave. |
| Headquarters Bldg, culvert | poor | 15 | 577717 | 4180203 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577763 | 4180285 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577763 | 4180288 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577766 | 4180286 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577790 | 4180293 | Missouri Ave. |
| Red Cross Bldg, culvert | fair | 15 | 577753 | 4180332 | Missouri Ave. |
| Red Cross Bldg, ditch | fair | 15 | 577766 | 4180323 | Missouri Ave. |
| Red Cross Bldg, sidewalk | fair | 15 | 577780 | 4180322 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577788 | 4180325 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577786 | 4180332 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577777 | 4180379 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577787 | 4180380 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577786 | 4180390 | Missouri Ave. |
| Red Cross Bldg, sign base | fair | 15 | 577794 | 4180392 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577801 | 4180392 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577799 | 4180399 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577805 | 4180400 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577803 | 4180382 | Missouri Ave. |
| Red Cross Bldg, planter | fair | 15 | 577798 | 4180375 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577803 | 4180350 | Missouri Ave. |
| Red Cross Bldg, planter | fair | 15 | 577793 | 4180336 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577799 | 4180331 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577803 | 4180315 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577799 | 4180298 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577799 | 4180299 | Missouri Ave. |
| Amphitheater, 3 steps | poor | 15 | 578789 | 4179346 | Louisiana Ave. |
| Amphitheater, 2 steps, semi-circle | poor | 15 | 578637 | 4179316 | Michigan Ave. |
| Amphitheater, 2 steps | poor | 15 | 578694 | 4179595 | East Fifth St. |

## Findings

The researchers concurred with the findings in the Harland Bartholomew's *Cantonment Resources Survey* that the German POW stonework is eligible for the National Register; however, the researchers determined after the current all-encompassing survey of extant POW stonework that 20 years later, not every piece of POW deserved to be eligible for the National Register. The researchers looked at the integrity of the POW stonework by proximity to other stonework, integrity of original construction, and integrity of original purpose. The researchers found that 199 POW stonework structures are not eligible for the NRHP due to these issues (see Table 2).

The overall time period of the German POW stonework was from May 1943 to May 1946, when the U.S. Army Provost Marshall General's Office held captured German soldiers in the Fort Leonard Wood camp.

It is the determination of this report that the Fort Leonard Wood German POW stonework is eligible for the NRHP in three separate historic districts throughout the cantonment under:

Criterion A: WWII Prisoner of War Camps in the United States.

Criterion C: Vernacular stonework design by German Prisoners of War

The three districts are:

WWII Temporary Building Historic District and Associated Buildings

German POW Stonework Historic District

German POW Fire Hydrant Plinth Historic District

Any POW stonework outside of these three districts is not eligible for the National Register.

**Table 2. POW Stonework Determined Not Eligible for the National Register**

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Culvert | poor | 15 | 579029 | 4180360 | East Second St. |
| Culvert | fair | 15 | 579006 | 4180199 | East Second St. |
| Retaining wall for parking lot | fair | 15 | 579000 | 4180189 | East Second St. |
| Circle in ground/around flagpole | poor | 15 | 578994 | 4180204 | East Second St. |
| Weir | good | 15 | 577370 | 4179634 | Replacement St. |
| Under a concrete slab | poor | 15 | 578032 | 4179575 | Replacement St. |
| Culvert | fair | 15 | 578683 | 4179128 | Replacement St. |
| Culvert | undetermined | 15 | 578693 | 4179728 | Replacement St. |
| Stone patio wall | poor | 15 | 579120 | 4180230 | Replacement St. |
| Stone patio wall, curved part | poor | 15 | 579122 | 4180225 | Replacement St. |
| Stone retaining wall, stair open | fair | 15 | 579362 | 4180282 | First St. |
| Culvert | good | 15 | 579384 | 4180306 | First St. |
| Culvert | good | 15 | 579335 | 4180415 | First St. |
| Culvert | poor | 15 | 579269 | 4180482 | First St. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Culvert | fair | 15 | 579244 | 4180497 | First St. |
| Culvert | fair | 15 | 579215 | 4180500 | First St. |
| Drain next to hydrant | poor | 15 | 579300 | 4180342 | First St. |
| Culvert | poor | 15 | 576633 | 4179879 | Louisiana Ave. |
| Culvert/Mosaic Ditch | poor | 15 | 579104 | 4180128 | Army St. |
| Culvert | good | 15 | 578962 | 4179214 | Oklahoma Ave. |
| Culvert | poor | 15 | 578956 | 4179188 | Oklahoma Ave. |
| Culvert | good | 15 | 578966 | 4179174 | Oklahoma Ave. |
| Culvert | poor | 15 | 578951 | 4179175 | Oklahoma Ave. |
| Courtyard area, planter | poor | 15 | 578898 | 4179362 | Oklahoma Ave. |
| Courtyard area, bench | poor | 15 | 578898 | 4179362 | Oklahoma Ave. |
| Culvert | good | 15 | 578502 | 4178226 | Michigan Ave. |
| Culvert | good | 15 | 578513 | 4178216 | Michigan Ave. |
| Culvert | poor | 15 | 578497 | 4178271 | Michigan Ave. |
| Culvert wall end | poor | 15 | 578493 | 4178332 | Michigan Ave. |
| Culvert | poor | 15 | 578499 | 4178295 | Michigan Ave. |
| Culvert | poor | 15 | 578575 | 4179428 | Michigan Ave. |
| Culvert | unknown | 15 | 578568 | 4179440 | Michigan Ave. |
| Culvert | poor | 15 | 578574 | 4179559 | Michigan Ave. |
| Culvert | fair | 15 | 578572 | 4179573 | Michigan Ave. |
| Culvert | poor | 15 | 578585 | 4179570 | Michigan Ave. |
| Culvert | poor | 15 | 578572 | 4179811 | Michigan Ave. |
| Culvert | good | 15 | 578586 | 4179813 | MP Drive |
| Culvert | good | 15 | 578589 | 4179814 | MP Drive |
| Culvert | good | 15 | 578571 | 4179958 | MP Drive |
| Culvert | poor | 15 | 578445 | 4179847 | Michigan Ave. |
| Culvert | poor | 15 | 578444 | 4179849 | Michigan Ave. |
| Culvert | poor | 15 | 578454 | 4179847 | Michigan Ave. |
| Culvert | poor | 15 | 578459 | 4179839 | Michigan Ave. |
| Retaining wall | good | 15 | 579270 | 4180909 | Ordnance Dr. |
| Retaining wall | good | 15 | 579726 | 4180910 | Ordnance Dr. |
| Culvert | fair | 15 | 576931 | 4179006 | Minnesota Ave. |
| Culvert | fair | 15 | 576941 | 4179004 | Minnesota Ave. |
| Culvert | poor | 15 | 577518 | 4179001 | Minnesota Ave. |
| Culvert | poor | 15 | 577524 | 4179011 | Minnesota Ave. |
| Culvert | fair | 15 | 578941 | 4179148 | Minnesota Ave. |
| Culvert (not cut stone) | poor | 15 | 579284 | 4179304 | Minnesota Ave. |
| Culvert | fair | 15 | 578049 | 4177845 | South Dakota Ave. |
| Culvert | good | 15 | 578026 | 4177850 | South Dakota Ave. |
| Wall, coping not original, east end | good | 15 | 577739 | 4177856 | South Dakota Ave. |
| Steps, sidewalk removed | good | 15 | 577727 | 4177853 | South Dakota Ave. |
| Culvert | good | 15 | 577697 | 4178034 | Constitution Ave. |
| Culvert | good | 15 | 577714 | 4178036 | Constitution Ave. |
| Culvert | good | 15 | 577741 | 4178036 | Constitution Ave. |
| Weir | poor | 15 | 577998 | 4178759 | Near softball field 10 |
| Weir | poor | 15 | 577998 | 4178759 | Near softball field 10 |
| Weir | poor | 15 | 577998 | 4178759 | Near softball field 10 |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Weir | poor | 15 | 577998 | 4178759 | Near softball field 10 |
| Ditch | poor | 15 | 577998 | 4178759 | Near softball field 10 |
| Culvert | good | 15 | 578260 | 4178334 | Kansas Ave. |
| Culvert | poor | 15 | 578235 | 4178332 | Kansas Ave. |
| Culvert | poor | 15 | 578141 | 4178316 | Kansas Ave. |
| Culvert | fair | 15 | 578132 | 4178311 | Kansas Ave. |
| Culvert | poor | 15 | 578055 | 4178329 | Kansas Ave. |
| Culvert | poor | 15 | 578029 | 4178330 | Kansas Ave. |
| Culvert | poor | 15 | 578117 | 4178304 | Kansas Ave. |
| Footbridge | poor | 15 | 577441 | 4178469 | Kansas Ave. |
| Culvert | poor | 15 | 577718 | 4178509 | Constitution St. |
| Culvert | poor | 15 | 577725 | 4178517 | Constitution St. |
| Wall by Bldg 446, nearest | fair | 15 | 577542 | 4180960 | Franklin Drive |
| Weir | poor | 15 | 577546 | 4180999 | Franklin Drive |
| Weir | poor | 15 | 577541 | 4181035 | Franklin Drive |
| Weir | poor | 15 | 577544 | 4181036 | Franklin Drive |
| Weir | poor | 15 | 577544 | 4181051 | Franklin Drive |
| Weir | poor | 15 | 577544 | 4181055 | Franklin Drive |
| Weir | poor | 15 | 577545 | 4181057 | Franklin Drive |
| Weir | poor | 15 | 577542 | 4181058 | Franklin Drive |
| Weir | poor | 15 | 577546 | 4181067 | Franklin Drive |
| Weir | poor | 15 | 577545 | 4181074 | Franklin Drive |
| Weir | poor | 15 | 577545 | 4181077 | Franklin Drive |
| Weir | poor | 15 | 577553 | 4181088 | Franklin Drive |
| Weir | fair | 15 | 577560 | 4181106 | Franklin Drive |
| Weir | poor | 15 | 577558 | 4181196 | Franklin Drive |
| Weir | poor | 15 | 577561 | 4181105 | Franklin Drive |
| Weir | poor | 15 | 577565 | 4181113 | Franklin Drive |
| Weir | poor | 15 | 577563 | 4181114 | Franklin Drive |
| Weir | poor | 15 | 577565 | 4181121 | Franklin Drive |
| Weir | poor | 15 | 577564 | 4181123 | Franklin Drive |
| Weir | fair | 15 | 577567 | 4181119 | Franklin Drive |
| Weir | fair | 15 | 577577 | 4181120 | Franklin Drive |
| Weir | poor | 15 | 577575 | 4181126 | Franklin Drive |
| Weir | fair | 15 | 577587 | 4181145 | Franklin Drive |
| Weir | poor | 15 | 577593 | 4181129 | Franklin Drive |
| Culvert | fair | 15 | 577604 | 4181137 | Missouri Ave. |
| Entire Franklin/Phoenix Weir | | 15 | 577604 | 4181137 | Franklin Drive |
| Culvert/bridge | poor | 15 | 577738 | 4179488 | Constitution St. |
| Culvert | fair | 15 | 577756 | 4179486 | Constitution St. |
| Culvert | poor | 15 | 577735 | 4179201 | Constitution St. |
| Culvert | poor | 15 | 577759 | 4179211 | Constitution St. |
| Culvert | fair | 15 | 577769 | 4179238 | Constitution St. |
| Culvert | poor | 15 | 577724 | 4179096 | Constitution St. |
| Weir | poor | 15 | 577730 | 4179126 | Constitution St. |
| Weir | poor | 15 | 577728 | 4179140 | Constitution St. |
| Weir | fair | 15 | 577731 | 4179151 | Constitution St. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Weir | poor | 15 | 577730 | 4179156 | Constitution St. |
| Weir | poor | 15 | 577742 | 4179193 | Constitution St. |
| Culvert | fair | 15 | 577740 | 4178679 | Constitution St. |
| Culvert | fair | 15 | 577743 | 4178668 | Constitution St. |
| Culvert near Bldg 1368 | good | 15 | 578000 | 4177417 | near Pine St. |
| Culvert near Bldg 1368 | unknown | 15 | 577969 | 4177429 | near Pine St. |
| Culvert | unknown | 15 | 577930 | 4177437 | Old Battery Rd. |
| Culvert | poor | 15 | 577928 | 4177433 | Old Battery Rd. |
| Culvert | poor | 15 | 577317 | 4177332 | Caisson and Iowa |
| Culvert | poor | 15 | 577375 | 4177295 | Caisson St. |
| Mosaic ditch, beginning | poor | 15 | 577374 | 4177389 | Arkansas Ave. |
| Drain/ditch | poor | 15 | 577394 | 4177404 | Arkansas Ave. |
| Culvert | poor | 15 | 578046 | 4177659 | 19th St. |
| Weir | fair | 15 | 578047 | 4177659 | 19th St. |
| Culvert | poor | 15 | 578029 | 4177638 | 19th St. |
| Culvert | fair | 15 | 577998 | 4177624 | 19th St. |
| Weir | poor | 15 | 577819 | 4177631 | 19th St. |
| weir/culvert | poor | 15 | 577845 | 4177628 | 19th St. |
| Culvert | fair | 15 | 578115 | 4180529 | Illinois Ave. |
| Ditch | poor | 15 | 578310 | 4180070 | Nebraska Ave. |
| Ditch | poor | 15 | 578315 | 4180065 | Nebraska Ave. |
| Culvert | fair | 15 | 578311 | 4179990 | Nebraska Ave. |
| Culvert | good | 15 | 578253 | 4179978 | North Dakota Ave. |
| Culvert | unknown | 15 | 578334 | 4179961 | Nebraska Ave. |
| Culvert | fair | 15 | 578330 | 4178733 | Nebraska Ave. |
| Culvert | poor | 15 | 578330 | 4178720 | Nebraska Ave. |
| Culvert | good | 15 | 578323 | 4178550 | Nebraska Ave. |
| Culvert | fair | 15 | 578356 | 4178271 | Nebraska Ave. |
| Culvert (mostly concrete) | poor | 15 | 578361 | 4178265 | Nebraska Ave. |
| Culvert | fair | 15 | 576832 | 4178379 | Alabama Ave. |
| Culvert | poor | 15 | 576829 | 4178393 | Alabama Ave. |
| Culvert, not POW | poor | 15 | 576812 | 4178875 | Alabama Ave. |
| Culvert, not POW | poor | 15 | 576810 | 4178883 | Alabama Ave. |
| Culvert, not POW | poor | 15 | 576802 | 4179276 | Alabama Ave. |
| Culvert | fair | 15 | 576849 | 4179897 | Alabama Ave. |
| Culvert w/ mosaic ditch | poor | 15 | 576892 | 4179926 | North Dakota Ave. |
| Culvert | fair | 15 | 576978 | 4179998 | North Dakota Ave. |
| Culvert | fair | 15 | 576991 | 4180008 | North Dakota Ave. |
| Culvert | fair | 15 | 577055 | 4180018 | North Dakota Ave. |
| Culvert | poor | 15 | 577062 | 4180002 | North Dakota Ave. |
| Culvert | good | 15 | 577465 | 4179963 | North Dakota Ave. |
| Culvert | poor | 15 | 577474 | 4179962 | North Dakota Ave. |
| Culvert | poor | 15 | 577557 | 4180009 | Headquarters Rd. |
| Culvert | poor | 15 | 577559 | 4180016 | Headquarters Rd. |
| Round Circle w/ upright stones | poor | 15 | 577583 | 4180053 | Headquarters Rd. |
| Line of upright stones | poor | 15 | 577586 | 4180046 | Headquarters Rd. |
| Stone patio | poor | 15 | 577580 | 4180043 | Headquarters Rd. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Stone ditch from brick culvert | poor | 15 | 577572 | 4180025 | Headquarters Rd. |
| Stairs w/ sidewalk covered grass | poor | 15 | 577632 | 4180314 | Headquarters Rd. |
| Culvert, leads to Veterans Park | poor | 15 | 577738 | 4180062 | Missouri Ave. |
| Culvert, leads to Veterans Park | poor | 15 | 577741 | 4180069 | Missouri St. |
| Culvert | poor | 15 | 576999 | 4179765 | Oak St. |
| Culvert w/ concrete block top | poor | 15 | 576990 | 4179748 | Oak St. |
| Culvert | poor | 15 | 577364 | 4179883 | Iowa St. |
| Culvert | fair | 15 | 577370 | 4179838 | Iowa Ave. |
| Sidewalk by chapel, not POW | good | 15 | 577370 | 4179838 | Iowa Ave. |
| Culvert | poor | 15 | 576487 | 4176768 | Iowa Ave. |
| Culvert | poor | 15 | 576483 | 4176762 | Iowa Ave. |
| Culvert | fair | 15 | 576156 | 4176531 | Iowa Ave. |
| Culvert | good | 15 | 576158 | 4176531 | Iowa Ave. |
| Fire hydrant, not POW | poor | 15 | 577114 | 4177209 | Iowa Ave. |
| Culvert, not POW | poor | 15 | 576755 | 4179979 | Buckeye Rd |
| Officer Club sign, not POW | good | 15 | 576756 | 4179966 | Buckeye Rd |
| Culvert, not POW | poor | 15 | 576761 | 4179977 | Buckeye Rd |
| Wall next to Chapel | fair | 15 | 575897 | 4181148 | Indiana Ave. |
| Culvert | poor | 15 | 577754 | 4180732 | Missouri Ave. |
| Culvert, west side | fair | 15 | 577764 | 4180688 | Missouri Ave. |
| Culvert, east side | fair | 15 | 577767 | 4180690 | Missouri Ave. |
| Weir coming into culvert | poor | 15 | 577766 | 4180684 | Missouri Ave. |
| Weir | poor | 15 | 577772 | 4180672 | Missouri Ave. |
| Weir | poor | 15 | 577772 | 4180666 | Missouri Ave. |
| Mosaic ditch | poor | 15 | 577772 | 4180672 | Missouri Ave. |
| Weir | poor | 15 | 577772 | 4186057 | Missouri Ave. |
| Mosaic ditch beginning | poor | 15 | 577693 | 4180218 | Old HQ Bldg |
| Culvert | poor | 15 | 577697 | 4180215 | Old HQ Bldg |
| Culvert | poor | 15 | 577697 | 4180208 | Old HQ Bldg |
| Mosaic ditch | poor | 15 | 577697 | 4180208 | Old HQ Bldg |
| Culvert | poor | 15 | 577681 | 4180172 | Old HQ Bldg |
| Culvert | poor | 15 | 577686 | 4180169 | Old HQ Bldg |
| Culvert | poor | 15 | 577689 | 4180168 | Old HQ Bldg |
| Culvert | poor | 15 | 577690 | 4180160 | Old HQ Bldg |
| Gate past Water Intake, left | poor | 15 | 583322 | 4177130 | Water Intake Rd |
| Gate past Water Intake, right | poor | 15 | 583296 | 4177128 | Water Intake Rd |
| Culvert | poor | 15 | 577802 | 4180172 | Missouri Ave. |
| Culvert | poor | 15 | 577804 | 4180174 | Missouri Ave. |
| Culvert | poor | 15 | 577813 | 4180179 | Missouri Ave. |
| Culvert near Nutter Field House | good | 15 | 577426 | 4178221 | Iowa Ave. |
| Culvert near Nutter Field House | fair | 15 | 577405 | 4178222 | Iowa Ave. |
| Gammon Field | good | 15 | 577421 | 4178901 | Iowa Ave. |
| Culvert | poor | 15 | 577421 | 4178901 | Iowa Ave. |
| Culvert | poor | 15 | 577428 | 4178903 | Iowa Ave. |

### *WWII Temporary Building Historic District and Associated Buildings*

The *FLW Building Survey: 1941 to 1956* identified the WWII Temporary Building Historic District and associated buildings in 2002. The report described a historic district of 13 wood WWII temporary buildings that still had their integrity. The historic district is on the southeast portion of the cantonment bounded by Nineteenth Street, Nebraska Avenue, Pine Street, and Caisson Drive (see Table 3 and Figure 64). The determination of eligibility included five WWII buildings that were not part of the historic district but individually eligible to the National Register due to the POW stonework inherent in those buildings (see Table 4). These associated buildings include the Black Officers Club (Building 2101), Old Post Headquarters (Building 401), Ike Skelton House (Old Red Cross Building) (Building 430), Garlington House (Building 2051), and Building 448. These five buildings retain their important POW stonework attributes and remain eligible for the NRHP (see Figures 65 to 73).[128]

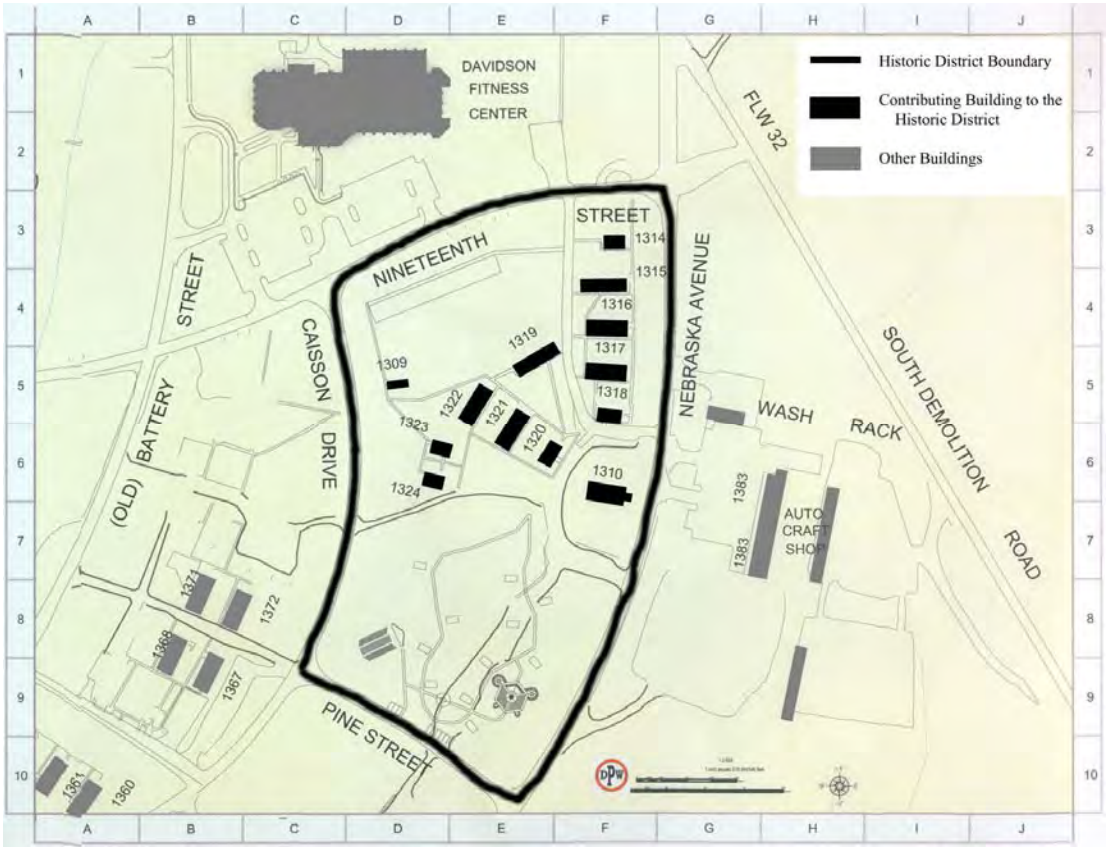


**Figure 64. Map of WWII Temporary Building Historic District (map courtesy FLW DPW with modifications by ERDC-CERL).**

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128 Building 1601 (Water Treatment Plant) and Building 10250 (Water Intake Plant) were determined eligible for the National Register through the acceptance of *Historical Properties Evaluation Report: Four Properties Proposed for Utilities Privatization at Fort Leonard Wood, Missouri* by the MO SHPO. Vegetation covers the POW stonework at Building 1601 and was not included in this study. The POW stonework at Building 10250 was not accessible to the researchers and also was not included in this study. The POW stonework at these two buildings is still eligible for the National Register and if it is determined that there will be an adverse effect FLW will need to develop an MOA with the MO SHPO.

**Table 3. Stonework located in the WWII Temporary Building Historic District**

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Sidewalk beginning | good | 15 | 578136 | 4177477 | Caisson St. |
| Sidewalk end | fair | 15 | 578157 | 4177466 | Caisson St. |
| Stairs | fair | 15 | 578155 | 4177452 | Caisson St. |
| Culvert | good | 15 | 578152 | 4177446 | Caisson St. |
| Culvert | good | 15 | 578155 | 4177452 | Caisson St. |
| Wall | poor | 15 | 578138 | 4177461 | Caisson St. |
| Sidewalk and stair, beginning | fair | 15 | 578142 | 4177439 | Pine St. |
| Sidewalk and stair, end | fair | 15 | 578145 | 4177445 | Pine St. |
| Fire hydrant | good | 15 | 578149 | 4177456 | Caisson St. |
| Culvert | good | 15 | 578151 | 4177435 | Pine St. |
| Culvert with mosaic ditch | good | 15 | 578143 | 4177434 | Pine St. |
| Mosaic ditch | poor | 15 | 578143 | 4177434 | Pine St. |
| Stone wall beginning | fair | 15 | 578154 | 4177430 | Pine St. |
| Stone wall end | fair | 15 | 578160 | 4177423 | Pine St. |
| Culvert | poor | 15 | 578168 | 4177419 | Pine St. |
| Culvert | poor | 15 | 578174 | 4177416 | Pine St. |
| Fire hydrant | poor | 15 | 578159 | 4177570 | Caisson St. |
| Sidewalk in front of Commanders | fair | 15 | 578142 | 4177622 | Caisson St. |
| Sidewalk end by the quarters | fair | 15 | 578164 | 4177632 | Caisson St. |
| Culvert | good | 15 | 578143 | 4177689 | Caisson St. |
| Culvert | fair | 15 | 578128 | 4177675 | Caisson St. |
| Wall | fair | 15 | 578150 | 4177706 | 19th St. |
| Weir | poor | 15 | 578197 | 4177715 | 19th St. |
| Weir | poor | 15 | 578197 | 4177721 | 19th St. |
| Weir | poor | 15 | 578216 | 4177735 | 19th St. |
| Weir | poor | 15 | 578251 | 4177740 | 19th St. |
| Weir | poor | 15 | 578264 | 4177741 | 19th St. |
| Weir | fair | 15 | 578264 | 4177734 | 19th St. |
| Weir | poor | 15 | 578270 | 4177736 | 19th St. |
| Culvert | poor | 15 | 578296 | 4177747 | 19th St. |
| Fire hydrant | good | 15 | 578348 | 4177731 | Nebraska Ave. |
| Fire hydrant | fair | 15 | 578344 | 4177613 | Nebraska Ave. |
| Culvert | poor | 15 | 578346 | 4177600 | Nebraska Ave. |
| Culvert | poor | 15 | 578344 | 4177597 | Nebraska Ave. |
| Fire hydrant | fair | 15 | 578259 | 4177371 | Nebraska Ave. |
| Culvert | poor | 15 | 578258 | 4177371 | Nebraska Ave. |

**Table 4. Stonework Located at Buildings Associated with the WWII Temporary Building Historic District**

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Garlington House, sidewalk | fair | 15 | 578435 | 4179820 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578458 | 4179807 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578462 | 4179809 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578460 | 4179803 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578464 | 4179803 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578465 | 4179799 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578465 | 4179802 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578452 | 4179802 | Michigan Ave. |
| Garlington House, sidewalk | fair | 15 | 578444 | 4179793 | Michigan Ave. |
| Garlington House, fire pit | fair | 15 | 578458 | 4179780 | Michigan Ave. |
| Garlington House, chimney | good | 15 | 578452 | 4179805 | Michigan Ave. |
| Black Officers' Club, wall | poor | 15 | 579053 | 4180145 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579044 | 4180156 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579045 | 4180159 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579043 | 4180159 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579043 | 4180161 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579040 | 4180159 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579037 | 4180155 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579036 | 4180154 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579034 | 4180153 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579027 | 4180150 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579034 | 4180139 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579037 | 4180134 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579047 | 4180139 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579047 | 4180156 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579048 | 4180158 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579054 | 4180148 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579065 | 4180142 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579070 | 4180144 | East Second St. |
| Black Officers' Club, sidewalk | poor | 15 | 579068 | 4180134 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579077 | 4180132 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579071 | 4180132 | East Second St. |
| Black Officers' Club, sidewalk | poor | 15 | 579076 | 4180128 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579070 | 4180129 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579056 | 4180136 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579052 | 4180126 | East Second St. |
| Black Officers' Club, chimney | good | 15 | 579036 | 4180120 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579041 | 4180116 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579055 | 4180118 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579070 | 4180121 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579078 | 4180112 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579082 | 4180115 | East Second St. |
| Black Officers' Club, wall | fair | 15 | 579073 | 4180118 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579077 | 4180122 | East Second St. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Black Officers' Club, sidewalk | poor | 15 | 579064 | 4180121 | East Second St. |
| Black Officers' Club, wall | poor | 15 | 579065 | 4180151 | East Second St. |
| Headquarters Bldg, wall | poor | 15 | 577796 | 4180286 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577805 | 4180257 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577803 | 4180224 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577797 | 4180220 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577815 | 4180220 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577803 | 4180232 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577796 | 4180216 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577790 | 4180238 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577762 | 4180230 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577766 | 4180229 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577772 | 4180227 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577758 | 4180221 | Missouri Ave. |
| Headquarters Bldg, sidewalk | fair | 15 | 577752 | 4180223 | Missouri Ave. |
| Headquarters Bldg, ditch | fair | 15 | 577749 | 4180227 | Missouri Ave. |
| Headquarters Bldg, sidewalk | good | 15 | 577747 | 4180233 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577741 | 4180258 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577743 | 4180268 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577747 | 4180305 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577739 | 4180308 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577736 | 4180328 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577730 | 4180326 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577733 | 4180322 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577721 | 4180309 | Missouri Ave. |
| Headquarters Bldg, sidewalk | fair | 15 | 577717 | 4180294 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577718 | 4180293 | Missouri Ave. |
| Headquarters Bldg, wall | poor | 15 | 577711 | 4180294 | Missouri Ave. |
| Headquarters Bldg, sidewalk | poor | 15 | 577723 | 4180233 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577731 | 4180228 | Missouri Ave. |
| Headquarters Bldg, ditch | poor | 15 | 577719 | 4180219 | Missouri Ave. |
| Headquarters Bldg, culvert | poor | 15 | 577717 | 4180203 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577763 | 4180285 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577763 | 4180288 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577766 | 4180286 | Missouri Ave. |
| Headquarters Bldg, wall | fair | 15 | 577790 | 4180293 | Missouri Ave. |
| Red Cross Bldg, culvert | fair | 15 | 577753 | 4180332 | Missouri Ave. |
| Red Cross Bldg, ditch | fair | 15 | 577766 | 4180323 | Missouri Ave. |
| Red Cross Bldg, sidewalk | fair | 15 | 577780 | 4180322 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577788 | 4180325 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577786 | 4180332 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577777 | 4180379 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577787 | 4180380 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577786 | 4180390 | Missouri Ave. |
| Red Cross Bldg, sign base | fair | 15 | 577794 | 4180392 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577801 | 4180392 | Missouri Ave. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Red Cross Bldg, culvert | poor | 15 | 577799 | 4180399 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577805 | 4180400 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577803 | 4180382 | Missouri Ave. |
| Red Cross Bldg, planter | fair | 15 | 577798 | 4180375 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577803 | 4180350 | Missouri Ave. |
| Red Cross Bldg, planter | fair | 15 | 577793 | 4180336 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577799 | 4180331 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577803 | 4180315 | Missouri Ave. |
| Red Cross Bldg, culvert | poor | 15 | 577799 | 4180298 | Missouri Ave. |
| Red Cross Bldg, sidewalk | poor | 15 | 577799 | 4180299 | Missouri Ave. |
| Amphitheater, 3 steps | poor | 15 | 578789 | 4179346 | Louisiana Ave. |
| Amphitheater, 2 steps, semi-circle | poor | 15 | 578637 | 4179316 | Michigan Ave. |
| Amphitheater, 2 steps | poor | 15 | 578694 | 4179595 | East Fifth St. |

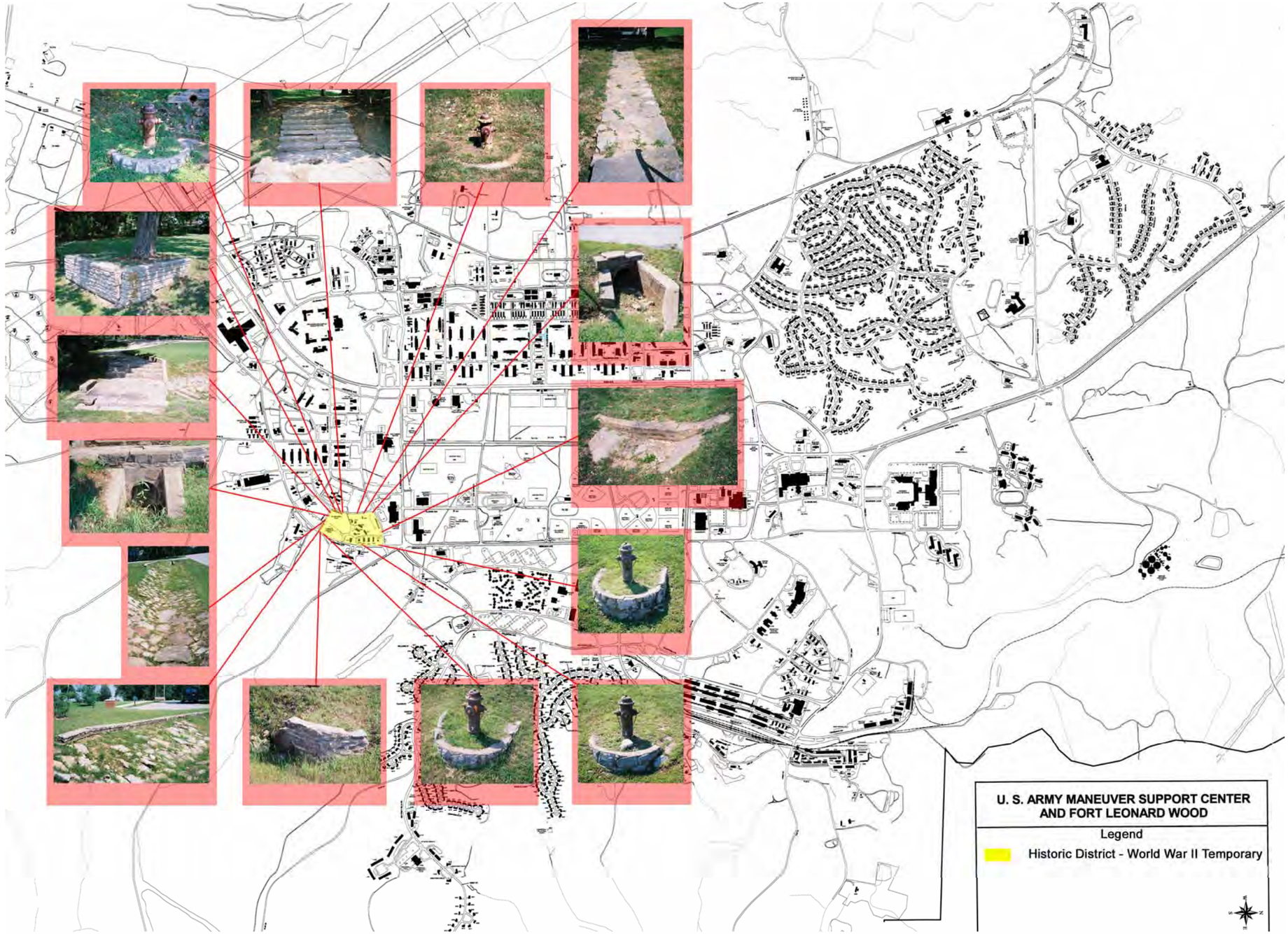



**Figure 65. Map of POW Stonework in the WWII Temporary Building Historic District (ERDC-CERL).**

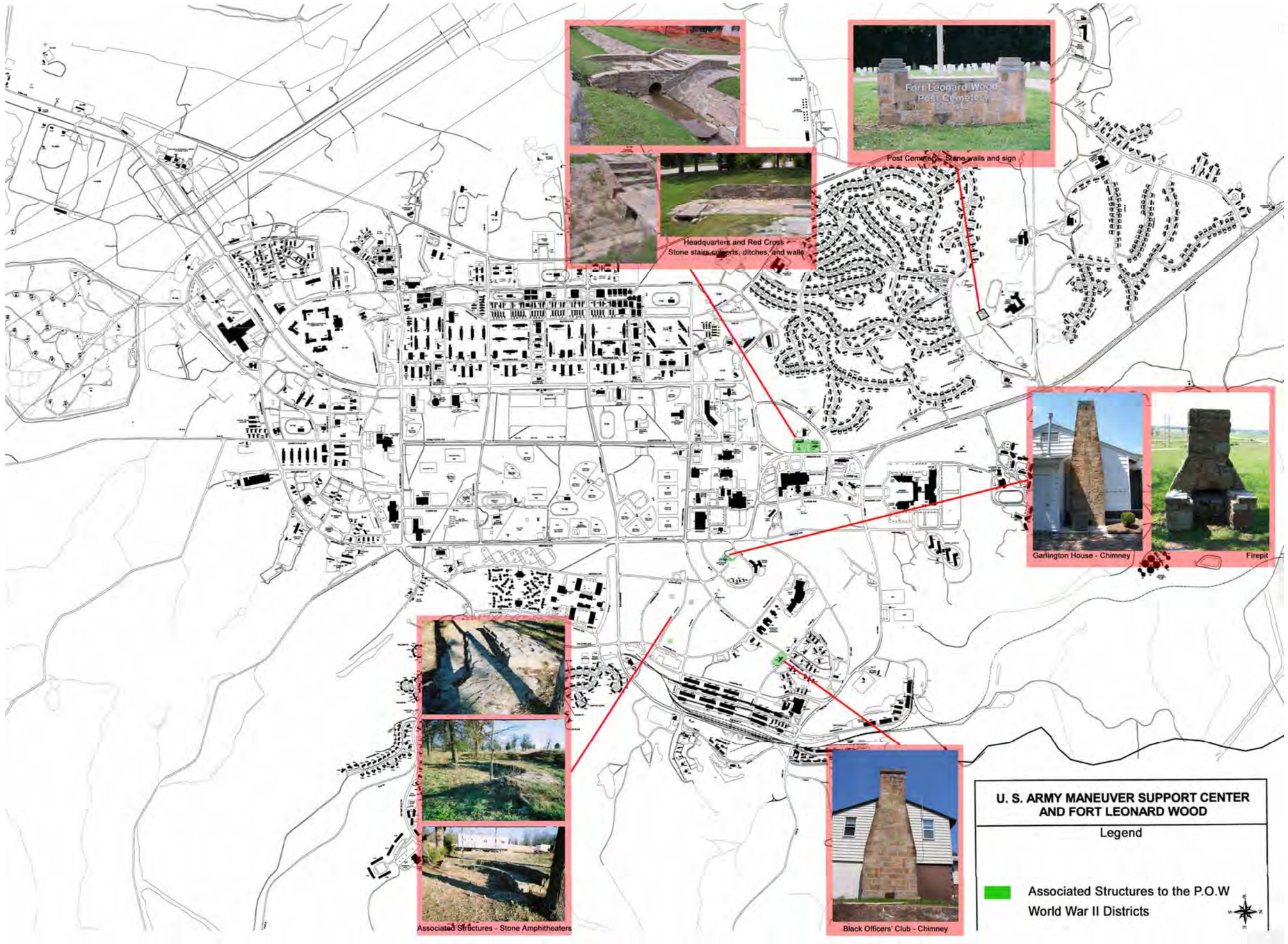



**Figure 66. Map of POW Stonework at the Black Officers Club, Garlington House, Old Post Headquarters, Old Red Cross Building, Building 448, amphitheaters, and the Post Cemetery (ERDC-CERL).**

**Figure 67. Black Officers' Club chimney, August 2004 (ERDC-CERL).**

**Figure 68. Old Post Headquarters retaining wall, August 2004 (ERDC-CERL).**

**Figure 69. Old Post Headquarters steps, August 2004 (ERDC-CERL).**

**Figure 70. Ike Skelton House steps, August 2004 (ERDC-CERL).**

**Figure 71. Building 448 chimney, August 2004 (ERDC-CERL).**


**Figure 72. Garlington House chimney, August 2004 (ERDC-CERL).**

**Figure 73. Garlington House patio, August 2004 (ERDC-CERL).**

### *German POW Stonework Historic District*

The German POW Stonework Historic District is a linear historic district (see Figure 76). After the integrity analysis of existing stonework, the researchers determined that the stonework with the best integrity and the closest proximity to each other was the stonework on the parade field constructed to control the flow of water. The stonework in the historic district consists of 99 stonework bridges, viaducts, culverts, weirs, sidewalks, and walls (see Tables 5 to 6 and Figures 77 to 81). There are 30 noncontributing elements to the German POW Stonework Historic District (see Table 7).

**Table 5. Stonework Located in the German POW Stonework Historic District**

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Mosaic by footbridge, Iowa culvert | poor | 15 | 577411 | 4178479 | Kansas Ave. |
| Step-down culvert/weir | poor | 15 | 577542 | 4178454 | Kansas Ave. |
| Picture of Palm Tree in Ditch | fair | 15 | 577576 | 4178447 | Kansas Ave. |
| Stone ditch on left side | poor | 15 | 577675 | 4178445 | Kansas Ave. |
| Culvert | fair | 15 | 577732 | 4178430 | Constitution Ave. |
| Culvert | fair | 15 | 577739 | 4178433 | Constitution Ave. |
| Weir | poor | 15 | 577826 | 4177876 | South Dakota Ave. |
| Weir | poor | 15 | 577839 | 4177878 | South Dakota Ave. |
| Weir | fair | 15 | 577848 | 4177879 | South Dakota Ave. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Weir | poor | 15 | 577856 | 4177879 | South Dakota Ave. |
| Weir | poor | 15 | 577866 | 4177876 | South Dakota Ave. |
| Weir | poor | 15 | 577878 | 4177877 | South Dakota Ave. |
| Weir | poor | 15 | 577883 | 4177876 | South Dakota Ave. |
| Weir | poor | 15 | 577891 | 4177879 | South Dakota Ave. |
| Weir | poor | 15 | 577903 | 4177877 | South Dakota Ave. |
| Weir | fair | 15 | 577907 | 4177874 | South Dakota Ave. |
| Weir | fair | 15 | 577910 | 4177880 | South Dakota Ave. |
| Weir | poor | 15 | 577916 | 4177882 | South Dakota Ave. |
| Weir | fair | 15 | 577925 | 4177878 | South Dakota Ave. |
| Weir | fair | 15 | 577931 | 4177874 | South Dakota Ave. |
| Weir | poor | 15 | 577941 | 4177880 | South Dakota Ave. |
| Weir | good | 15 | 577964 | 4177882 | South Dakota Ave. |
| Looking west at South Dakota weir | poor | 15 | 577964 | 4177882 | South Dakota Ave. |
| Culvert | good | 15 | 577697 | 4178034 | Constitution Ave. |
| Culvert | good | 15 | 577714 | 4178036 | Constitution Ave. |
| Culvert | good | 15 | 577741 | 4178036 | Constitution Ave. |
| Weir | poor | 15 | 577998 | 4178759 | Near. Softball Field 10 |
| Weir | poor | 15 | 577998 | 4178759 | Near. Softball Field 10 |
| Weir | poor | 15 | 577998 | 4178759 | Near. Softball Field 10 |
| Weir | poor | 15 | 577998 | 4178759 | Near. Softball Field 10 |
| Ditch | poor | 15 | 577998 | 4178759 | Near. Softball Field 10 |
| Minnesota/Nebraska Culvert | fair | 15 | 578355 | 4179141 | Nebraska Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578360 | 4179171 | Nebraska Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578360 | 4179171 | Nebraska Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578360 | 4179171 | Nebraska Ave. |
| Minnesota/Nebraska Culvert | fair | 15 | 578360 | 4179171 | Nebraska Ave. |
| Culvert | fair | 15 | 577738 | 4179488 | Constitution Ave. |
| Culvert close-up detail | fair | 15 | 577738 | 4179488 | Constitution Ave. |
| Culvert | fair | 15 | 577756 | 4179486 | Constitution St. |
| Weir | poor | 15 | 578545 | 4179194 | Michigan Ave. |
| Culvert | poor | 15 | 578544 | 4179203 | Michigan Ave. |
| Weir | good | 15 | 578563 | 4179296 | Michigan Ave. |
| Weir | good | 15 | 578559 | 4179315 | Michigan Ave. |
| Weir | fair | 15 | 578562 | 4179330 | Michigan Ave. |
| Weir | good | 15 | 578560 | 4179329 | Michigan Ave. |
| Weir | fair | 15 | 578561 | 4179357 | Michigan Ave. |
| Weir | good | 15 | 578564 | 4179360 | Michigan Ave. |
| Weir | good | 15 | 578564 | 4179364 | Michigan Ave. |
| Weir | good | 15 | 578574 | 4179378 | Michigan Ave. |
| Weir | good | 15 | 578567 | 4179387 | Michigan Ave. |
| Weir | poor | 15 | 578557 | 4179377 | Michigan Ave. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Weir | good | 15 | 578563 | 4179387 | Michigan Ave. |
| Fire hydrant | fair | 15 | 578587 | 4179575 | Michigan Ave. |
| Culvert | poor | 15 | 578585 | 4179570 | Michigan Ave. |
| Culvert | poor | 15 | 578574 | 4179559 | Michigan Ave. |
| Culvert | fair | 15 | 578572 | 4179573 | Michigan Ave. |
| Rockwell Cemetery, entrance | good | 15 | 578574 | 4179572 | Replacement St. |
| Rockwell Cemetery, SE corner | good | 15 | 578574 | 4179581 | Replacement St. |
| Sidewalk, end across from 5th | poor | 15 | 578569 | 4179573 | Michigan Ave. |
| Culvert | poor | 15 | 578580 | 4179650 | Michigan Ave. |
| Culvert | poor | 15 | 578566 | 4179651 | Michigan Ave. |
| Rockwell Cemetery, wall | fair | 15 | 578531 | 4179584 | Replacement St. |
| Garlington House, patio | fair | 15 | 578464 | 4179803 | MP Drive |
| Culvert | poor | 15 | 578445 | 4179847 | Michigan Ave. |
| Culvert | poor | 15 | 578444 | 4179849 | Michigan Ave. |
| Culvert | poor | 15 | 578459 | 4179839 | Michigan Ave. |
| Culvert | poor | 15 | 578454 | 4179847 | Michigan Ave. |
| Culvert | good | 15 | 578401 | 4179870 | MP Drive |
| Culvert | good | 15 | 578406 | 4179861 | MP Drive |
| Culvert | fair | 15 | 578394 | 4179859 | MP Drive |
| Culvert | fair | 15 | 578391 | 4179855 | MP Drive |
| Culvert | fair | 15 | 578363 | 4179843 | Nebraska Ave. |
| Culvert | fair | 15 | 578361 | 4179850 | Nebraska Ave. |
| Weir | good | 15 | 578351 | 4179880 | Nebraska Ave. |
| Culvert | poor | 15 | 578350 | 4179898 | Nebraska Ave. |
| Culvert | good | 15 | 578334 | 4179961 | Nebraska Ave. |
| Culvert | fair | 15 | 578311 | 4179990 | Nebraska Ave. |
| Culvert | good | 15 | 578253 | 4179978 | North Dakota Ave. |
| Veterans Park Culvert | poor | 15 | 578074 | 4180016 | Veterans Park |
| Veterans Park fire hydrant | poor | 15 | 577988 | 4180022 | Veterans Park |
| Veterans Park looking along ditch | fair | 15 | 577936 | 4180047 | Veterans Park |
| Veterans Park Culvert | poor | 15 | 577936 | 4180047 | Veterans Park |
| Veterans Park SE Culvert | fair | 15 | 577886 | 4180041 | Veterans Park |
| Veterans Park SE bench | fair | 15 | 577846 | 4180066 | Veterans Park |
| Veterans Park east side of bridge | fair | 15 | 577817 | 4180050 | Veterans Park |
| Veterans Park looking north | poor | 15 | 577820 | 4180024 | Veterans Park |
| Veterans Park heart detail in stone | fair | 15 | 577820 | 4180024 | Veterans Park |
| Veterans Park south steps | poor | 15 | 577820 | 4180024 | Veterans Park |
| Veterans Park Culvert | fair | 15 | 577775 | 4180036 | Veterans Park |
| Veterans Park east along ditch | fair | 15 | 577775 | 4180036 | Veterans Park |
| Veterans Park Culvert | fair | 15 | 577777 | 4180058 | Veterans Park |
| Veterans Park SW bench | fair | 15 | 577797 | 4180059 | Veterans Park |
| Veterans Park stone monument | poor | 15 | 577816 | 4180056 | Veterans Park |
| Veterans Park down N. Dakota | | 15 | 577763 | 4180000 | North Dakota Ave. |
| Veterans Park Culvert | fair | 15 | 577763 | 4180000 | North Dakota Ave. |
| Veterans Park Culvert | fair | 15 | 577756 | 4179998 | North Dakota Ave. |

| STONEWORK | CONDITION | UTM | EASTING | NORTHING | LOCATION |
|---|---|---|---|---|---|
| Fire Baptized, entrance left | good | 15 | 577701 | 4179930 | North Dakota Ave. |
| Fire Baptized, bottom right | good | 15 | 577699 | 4179946 | North Dakota Ave. |
| Fire Baptized, top left | fair | 15 | 577663 | 4179907 | North Dakota Ave. |

**Figure 74. Constitution Avenue bridge, August 2004 (ERDC-CERL).**

**Figure 75. Minnesota-Nebraska culvert, April 2005 (ERDC-CERL).**

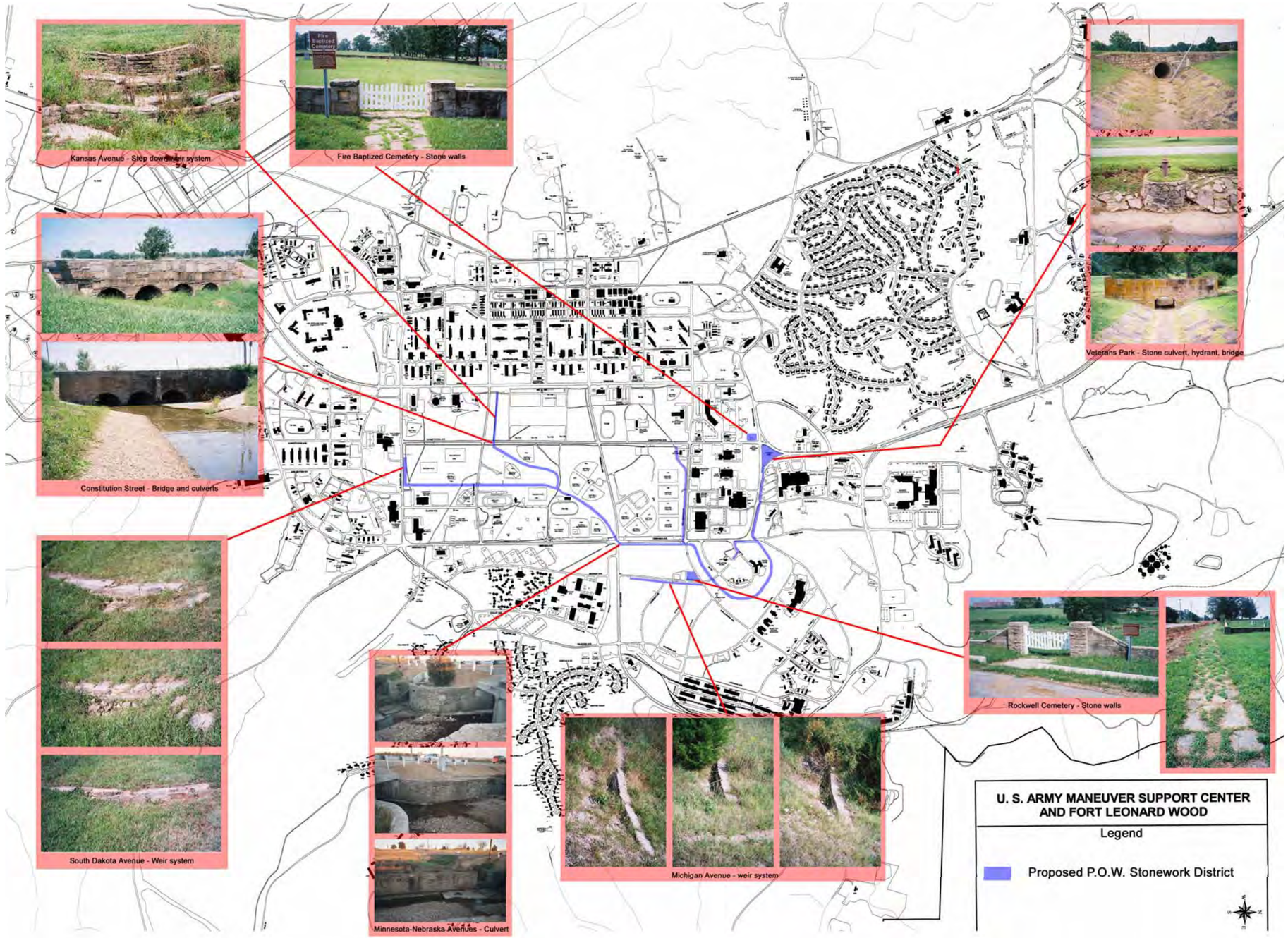



**Figure 76. Map of POW Stonework in the German POW Stonework Historic District (ERDC-CERL).**

**Figure 77. South Dakota weirs, August 2004 (ERDC-CERL).**

**Figure 78. South Dakota weirs, August 2004 (ERDC-CERL).**

**Figure 79. Constitution Avenue culvert, November 2005 (ERDC-CERL).**


**Figure 80. Fire Baptized Cemetery walls, August 2004 (ERDC-CERL).**

**Figure 81. Michigan Avenue sidewalk, August 2004 (ERDC-CERL).**

## Table 6. Stonework Historic District Contributing Elements

1. Ditch
UTM 15 577411E 4178479N
Kansas Avenue

2. Step-down culvert/weir
UTM 15 577542E 4178454N
Kansas Avenue

3. Step-down culvert/weir
UTM 15 577542E 4178454N
Kansas Avenue

4. Palm tree design in stone
UTM 15 577576E 4178447N
Kansas Avenue

5. Stone ditch on left side
UTM 15 577675E 4178445N
Kansas Avenue

6. Ditch
UTM 15 577675E 4178445N
Constitution Street

7. Culvert/bridge
UTM 15 577732E 4178430N
Constitution Street

8. Culvert/bridge close-up of west side
UTM 15 577732E 4178430N
Constitution Street

9. Culvert/bridge
UTM 15 577732E 4178430N
Constitution Street

10. Culvert/bridge
UTM 15 577739E 4178433N
Constitution Street

11. Culvert/bridge
UTM 15 577739E 4178433N
Constitution Street

12. Weir
UTM 15 577826E 4177876N
South Dakota Avenue

13. Weir
UTM 15 577839E 4177878N
South Dakota Avenue

14. Weir
UTM 15 577848E 4177879N
South Dakota Avenue

15. Weir
UTM 15 577856E 4177879N
South Dakota Avenue

16. Weir
UTM 15 577866E 4177876N
South Dakota Avenue

17. Weir
UTM 15 577878E 4177877N
South Dakota Avenue

18. Weir
UTM 15 577883E 4177876N
South Dakota Avenue

19. Weir
UTM 15 577891E 4177879N
South Dakota Avenue

20. Weir
UTM 15 577903E 4177877N
South Dakota Avenue

21. Weir
UTM 15 577907E 4177874N
South Dakota Avenue

22. Weir
UTM 15 577910E 4177880N
South Dakota Avenue

23. Weir
UTM 15 577916E 4177882N
South Dakota Avenue

24. Weir
UTM 15 577925E 4177878N
South Dakota Avenue

25. Weir
UTM 15 577931E 4177874N
South Dakota Avenue

26. Weir
UTM 577941E 4177880N
South Dakota Avenue

27. Weir
UTM 15 577964E 4177882N
South Dakota Avenue

28. Weirs
Looking west at South Dakota Weir system

29. Culvert
UTM 15 577697E 4178034N
North of South Dakota Avenue and west off of Constitution Avenue

30. Culvert
UTM 15 577714E 4178036N
West side of Constitution Avenue

31. Culvert
UTM 15 577741E 4178036N
East side of Constitution Avenue

32. Weir
UTM 15 577998E 4178759N (approximate)
North of Kansas Avenue, east of Constitution Avenue, south of Minnesota Avenue, and west of Nebraska Avenue

33. Weir
UTM 15 577998E 4178759N (approximate)
North of Kansas Avenue, east of Constitution Avenue, south of Minnesota Avenue, and west of Nebraska Avenue

34. Weir
UTM 15 577998E 4178759N (approximate)
North of Kansas Avenue, east of Constitution Avenue, south of Minnesota Avenue, and west of Nebraska Avenue

35. Ditch/weir
UTM 15 577998E 4178759N (approximate)
North of Kansas Avenue, east of Constitution Avenue, south of Minnesota Avenue, and west of Nebraska Avenue

36. Ditch
UTM 15 577998E 4178759N (approximate)
North of Kansas Avenue, east of Constitution Avenue, south of Minnesota Avenue, and west of Nebraska Avenue

37. Ditch
UTM 15 577998E 4178759N (approximate)
North of Kansas Avenue, east of Constitution Avenue, south of Minnesota Avenue, and west of Nebraska Avenue

38. Wall
UTM 15 578355E 4179141N
Nebraska Avenue and Minnesota Avenue

39. Culvert
UTM 15 578360E 4179171N
Nebraska Avenue and Minnesota Avenue

40. Culvert/Wall
UTM 15 578360E 4179171N
Nebraska Avenue and Minnesota Avenue

41. Wall
UTM 15 578360E 4179171N
Nebraska Avenue and Minnesota Avenue

42. Wall/Ditch
UTM 15 578360E 4179171N
Nebraska Avenue and Minnesota Avenue

43. Culvert
UTM 15 577738E 4179488N
Constitution Avenue

44. Culvert close-up detail
UTM 15 577738E 4179488N
Constitution Avenue

45. Culvert
UTM 15 577756E 4179486N
Constitution Avenue

46. Weir
UTM 15 578545E 4179194N
Michigan Avenue

47. Culvert
UTM 15 578544E 4179203N
Michigan Avenue

48. Weir
UTM 15 578563E 4179296N
Michigan Avenue

49. Weir
UTM 15 578559E 4179315N
Michigan Avenue

50. Weir
UTM 15 578562E 4179330N
Michigan Avenue

51. Weir
UTM 15 578560E 4179329N
Michigan Avenue

52. Weir
UTM 15 578561E 4179357N
Michigan Avenue

53. Weir
UTM 15 578564E 4179360N
Michigan Avenue

54. Weir
UTM 15 578564E 4179364N
Michigan Avenue

55. Weir
UTM 15 578574E 4179378N
Michigan Avenue

56. Weir
UTM 15 578567E 4179387N
Michigan Avenue

57. Weir
UTM 15 578557E 4179377N
Michigan Avenue

58. Weir
UTM 15 578563 4179387N
Michigan Avenue

59. Hydrant
UTM 15 578587E 4179575N
Michigan Avenue

60. Culvert
UTM 15 578585E 4179570N
Michigan Avenue

61. Culvert
UTM 15 578574E 4179559N
Michigan Avenue

62. Culvert
UTM 15 578572E 4179573N
Michigan Avenue

63. Rockwell Cemetery entrance
UTM 15 578574E 4179572N
Michigan Avenue

64. Rockwell Cemetery wall
UTM 15 578574E 4179581N
Michigan Avenue

65. Sidewalk
UTM 15 578569E 4179573N
Michigan Avenue

66. Culvert
UTM 15 578580E 4179650N
Michigan Avenue and Replacement Avenue

67. Culvert
UTM 15 578566E 4179651N
Michigan Avenue and Replacement Avenue

68. Rockwell Cemetery wall
UTM 15 578531E 4179584N
Michigan Avenue

69. For more photographs and information refer to Garlington House in the World War II section

70. Culvert/Sidewalk
UTM 15 578445E 4179847N
Michigan Avenue

71. Culvert/sidewalk
UTM 15 578444E 4179849N
Michigan Avenue

72. Culvert
UTM 15 578459E 4179839N
Michigan Avenue

73. Culvert
UTM 15 578454E 4179847N
Michigan Avenue

74. Culvert
UTM 15 578401E 4179870N
MP Drive

75. Culvert
UTM 15 578406E 4179861N
MP Drive

76. Culvert
UTM 15 578394E 4179859N
MP Drive

77. Culvert
UTM 15 578391E 4179855N
MP Drive

78. Culvert
UTM 15 578363E 4179843N
Nebraska Avenue and MP Drive

79. Culvert
UTM 15 578361E 4179850N
Nebraska Avenue and MP Drive

80. Weir
UTM 15 578351E 4179880N
Nebraska Avenue

81. Culvert
UTM 15 578350E 4179898N
Nebraska Avenue

82. Culverts
UTM 15 578334E 4179961N
Nebraska Avenue

83. Culverts
UTM 15 578311E 4179990N
Nebraska Avenue and North Dakota Avenue

84. Culvert
UTM 15 578253E 4179978N
North Dakota Avenue

85. Culvert/Ditch
UTM 15 578074E 4180016N
North Dakota Avenue


86. Culvert/Ditch
UTM 15 578074E 4180016N
North Dakota Avenue

87. Hydrant
UTM 15 577988E 4180022N
North Dakota Avenue

88. Ditch
UTM 15 577936E 4180047N
North Dakota Avenue

89. Culvert
UTM 15 577936E 4180047N
North Dakota Avenue

90. Culvert/Ditch
UTM 15 577886E 4180041N
North Dakota Avenue

90. Veteran's Park bench/sidewalk
UTM 15 577846E 4180066N
North Dakota Avenue

92. Veteran's Park bridge/ditch
UTM 15 577817E 4180050N
North Dakota Avenue

93. Veteran's Park sidewalk (looking north)
UTM 15 577820E 4180024N
North Dakota Avenue

94. Veteran's Park heart detail in stone
UTM 15 577820E 4180024
North Dakota Avenue

95. Veteran's Park sidewalk/steps
UTM 15 577820E 4180024N
North Dakota Avenue

96. Veteran's Park culvert
UTM 15 577775E 4180036N
North Dakota Avenue and Missouri Avenue

97. Veteran's Park ditch
UTM 15 577775E 4180036N
North Dakota Avenue

98. Veteran's Park culvert/ditch
UTM 15 577777E 4180058N
North Dakota Avenue and Missouri Avenue

99. Veteran' Park bench/sidewalk
UTM 15 577797E 4180059N
North Dakota Avenue

100. Veteran's Park sidewalk
UTM 15 577816E 4180056N
North Dakota Avenue

101. Looking east down North Dakota Avenue across the street from Veteran's Park

102. Culvert
UTM 15 577763E 4180000N
North Dakota Avenue and Constitution Avenue

103. Culverts
UTM 15 577756E 4179998N
North Dakota Avenue and Constitution Avenue


104. Fire Baptized Cemetery entrance
UTM 15 577701E 4179930N
Constitution Avenue

105. Fire Baptized Cemetery wall
UTM 15 577699E 4179946N
Constitution Avenue

106. Fire Baptized Cemetery wall
UTM 15 577663E 4179907N
Constitution Avenue

**Table 7. Stonework Historic District Noncontributing Elements**

1. South Dakota Avenue
Noncontributing concrete bridge and culvert

2. South Dakota Avenue
Noncontributing concrete culverts

3. Near South Dakota Avenue and Illinois Avenue
Noncontributing steel and concrete bridge

4. Near South Dakota Avenue and Illinois Avenue
Open creek bed with no stonework

5. Near Illinois Avenue
Open creek bed with no stonework

6. Near Kansas Avenue and Illinois Avenue
Noncontributing concrete bridge

7. Near Kansas Avenue and Illinois Avenue
Noncontributing culvert

8. Kansas Avenue
Noncontributing poured concrete culverts

9. Constitution Avenue
Noncontributing poured concrete culvert/bride (foreground) and contributing stone culverts (background)

10. Iowa Avenue
Noncontributing poured concrete culverts

11. Iowa Avenue
Noncontributing metal bridge

12. Kansas Avenue
Noncontributing culvert

13. Constitution Avenue
Noncontributing wood bridge

14. Near Constitution Avenue and Kansas Avenue
Noncontributing steel and concrete bridge

15. West of softball field complex on Minnesota Avenue
Open creek

16. West of softball field complex on Minnesota Avenue
Noncontributing plastic culvert

17. In the softball field complex on Minnesota Avenue
Noncontributing concrete culvert

18. Southwest of the intersection of Nebraska Avenue and Minnesota Avenue
Noncontributing concrete culverts

19. Near Nebraska Avenue and Minnesota Avenue
Open creek bed with no stonework

20. Southeast of the intersection of Nebraska Avenue and Minnesota Avenue
Noncontributing concrete culvert

21. Ditch between the Nebraska-Minnesota culvert and Replacement Avenue
Noncontributing poured concrete ditch

22. Southeast of the intersection of Nebraska Avenue and Replacement Avenue
Noncontributing concrete culverts

23. Southeast of the intersection of Constitution Avenue and Replacement Avenue
Noncontributing poured concrete ditch

24. Replacement Avenue
Noncontributing poured concrete ditch

25. Replacement Avenue
Noncontributing concrete culvert/bridge and poured concrete ditch

26. Replacement Avenue
Noncontributing concrete culvert/bridge and poured concrete culvert

27. Looking east down Replacement Avenue at new culvert
Noncontributing poured concrete ditch

28. South of the intersection of Nebraska and Replacement Avenues
Noncontributing poured concrete ditch, culvert, and bridge

29. South of Garlington House and west of Michigan Avenue
Noncontributing concrete culvert/bridge (background) with open creek area (foreground)

30. Northeast of Foster House off of MP Drive
Open creek area

### *Fire Hydrant Stonework Plinths Historic District*

The German POWs assembled stonework plinths for erosion control at approximately one-third of the fire hydrants throughout the Fort Leonard Wood cantonment (see Table 8). Primarily the plinths are in a mortared rubble stone configuration with some cutting and shaping necessary. The majority of these stonework plinths are in good to excellent condition. Although, it could not be determined how many plinths the POWs originally constructed, it appears that a vast majority of them are extant.

It is the conclusion of this report that these fire hydrant stonework plinths are eligible for the National Register as a "point" district. The researchers deemed that drawing a line to group all of the extant fire hydrants with plinths into one historic district was not necessary and would actually confuse the issue of the historic nature of these plinths. Thus, we recommend that wherever a fire hydrant stonework plinth exists, it should be treated as part of a larger single entity.

**Table 8. Photographs of Fire Hydrant Stonework Plinths**

| | | |
|---|---|---|
|  <br>UTM 15 578963E 4180246N<br>East Second Street |  <br>UTM 15 578882E 4180310N<br>East Second Street |  <br>UTM 15 578802E 4180373N<br>East Second Street |
|  <br>UTM 15 578758E 4180415N<br>East Second Street |  <br>UTM 15 579065E 4180524N<br>Elm Street |  <br>UTM 15 579188E 4180488N<br>Replacement Street |

UTM 15 579152E 4180335N
Replacement Street

UTM 15 578953E 4180080N
Replacement Street

UTM 15 578893E 4179941N
Replacement Street

UTM 15 579427E 4180272N
First Street

UTM 15 579354E 4180363N
First Street

UTM 15 579297E 4180342N
First Street

UTM 15 578545E 4180694N
First Street

UTM 15 579010E 4179802N
Oklahoma Street

UTM 15 579020E 4179734N
Oklahoma Street

UTM 15 579038E 4179636N
Oklahoma Street

UTM 15 578587E 4179575N
Michigan Avenue

UTM 15 578520E 4179800N
Michigan Avenue

UTM 15 578456E 4179857N
Michigan Avenue

UTM 15 578149E 4177456N
Caisson Street

UTM 15 578159E 4177570N
Caisson Street

UTM 15 578348E 4177731N
Nebraska Avenue

UTM 15 578344E 4177613N
Nebraska Avenue

UTM 15 578259E 4177371E
Nebraska Avenue

UTM 15 577985E 4177524N
Old Battery Road

UTM 15 577935E 4177429N
Old Battery Road

UTM 15 576635E 4176717N
Artillery Circle

UTM 15 577267E 4176906N
Artillery Circle

UTM 15 577431E 4177108N
Artillery Circle

UTM 15 578290E 4180176N
Nebraska Avenue

UTM 15 578289E 4180079N
Nebraska Avenue

UTM 15 578357E 4177851N
Nebraska Avenue

UTM 15 578170E 4177253N
Nebraska Avenue

UTM 15 578041E 4177189N
Nebraska Avenue

UTM 15 577918E 4177159N
Nebraska Avenue

UTM 15 577369E 4177687N
Iowa Avenue

UTM 15 577385E 4177709N
Iowa Avenue

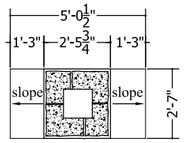
UTM 15 577321E 4177471N
Iowa Avenue

UTM 15 577192E 4177273N
Iowa Avenue

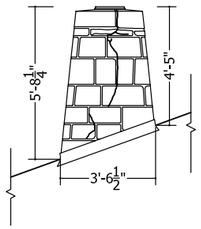
UTM 15 577114E 4177209N
Iowa Avenue

UTM 15 577988E 4180022N
Veterans Park

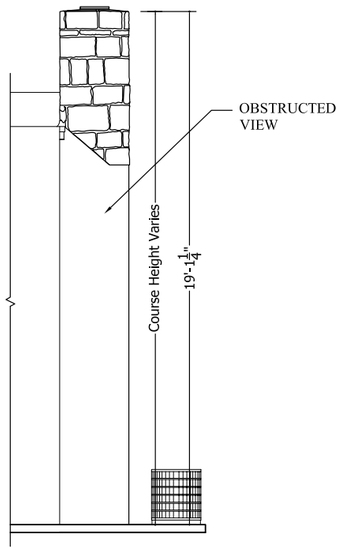
# 4 Drawings



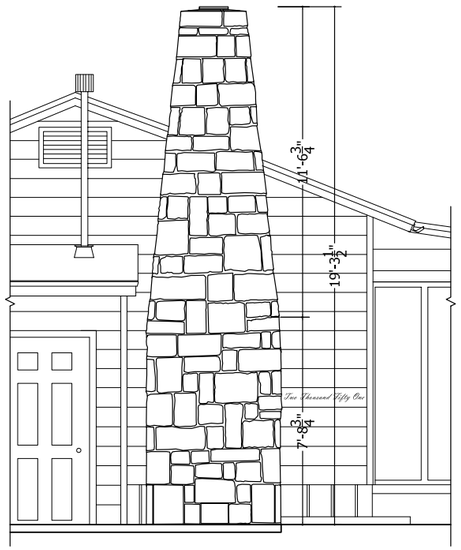

PLAN




WEST ELEVATION




SOUTH ELEVATION

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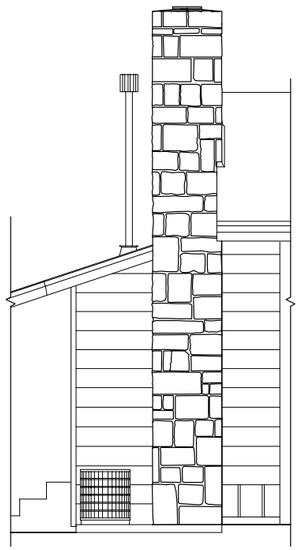

NORTH ELEVATION

DRAWN BY: MARCIA D. HARRIS, 2005

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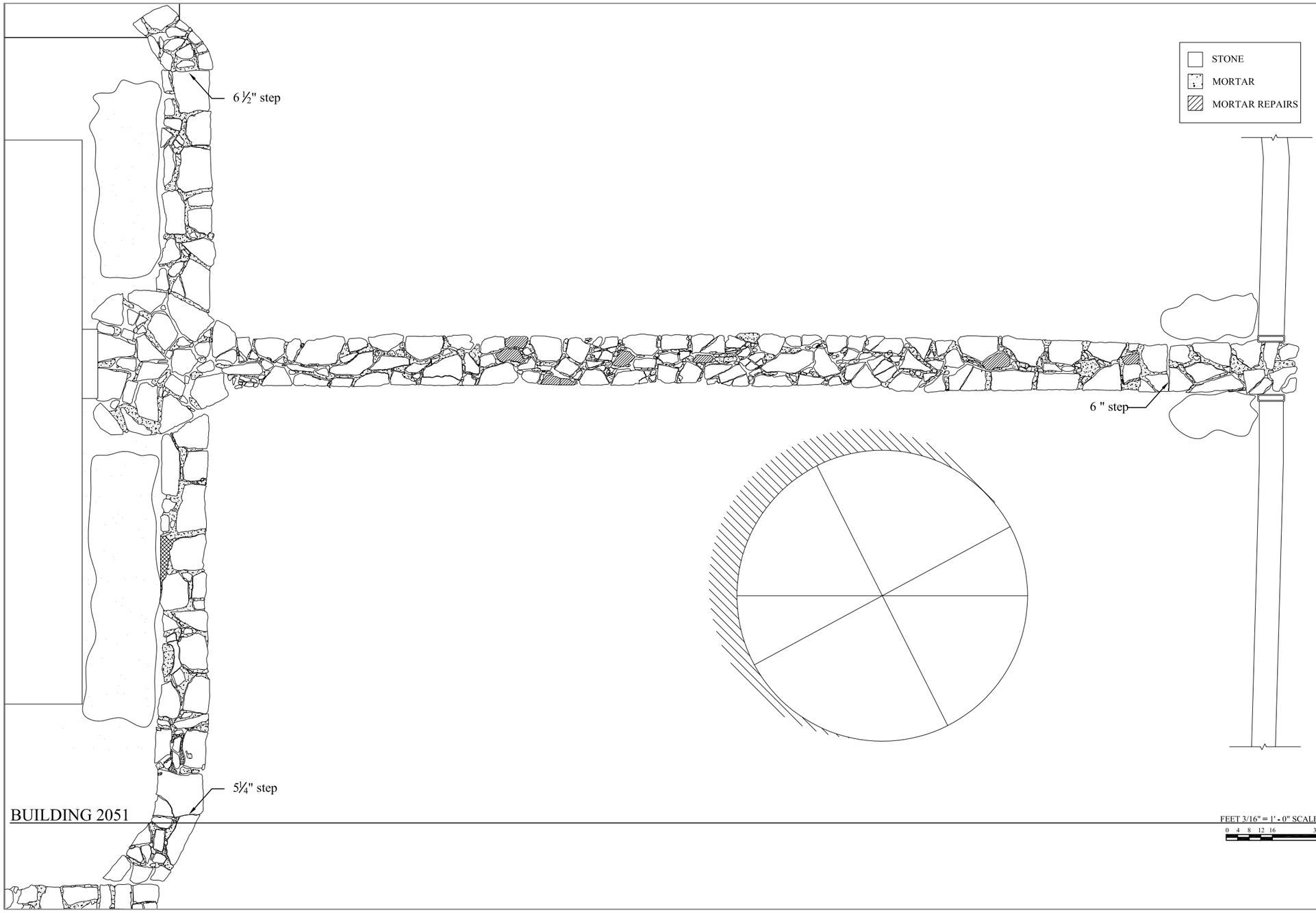
CONSTRUCTION ENGINEERING RESEARCH LAB
UNDER DIRECTION OF THE NATIONAL PARK SERVICE,
UNITED STATES DEPARTMENT OF THE INTERIOR

NAME AND LOCATION OF STRUCTURE
**GARLINGTON GUEST HOUSE (FORT LEONARD WOOD, BUILDING NO. 2251)**
FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO. --

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 1 OF 1 SHEETS




DRAWN BY: MARCIA D. HARRIS; 2005

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UNDER DIRECTION OF THE NATIONAL PARK SERVICE,
UNITED STATES DEPARTMENT OF THE INTERIOR

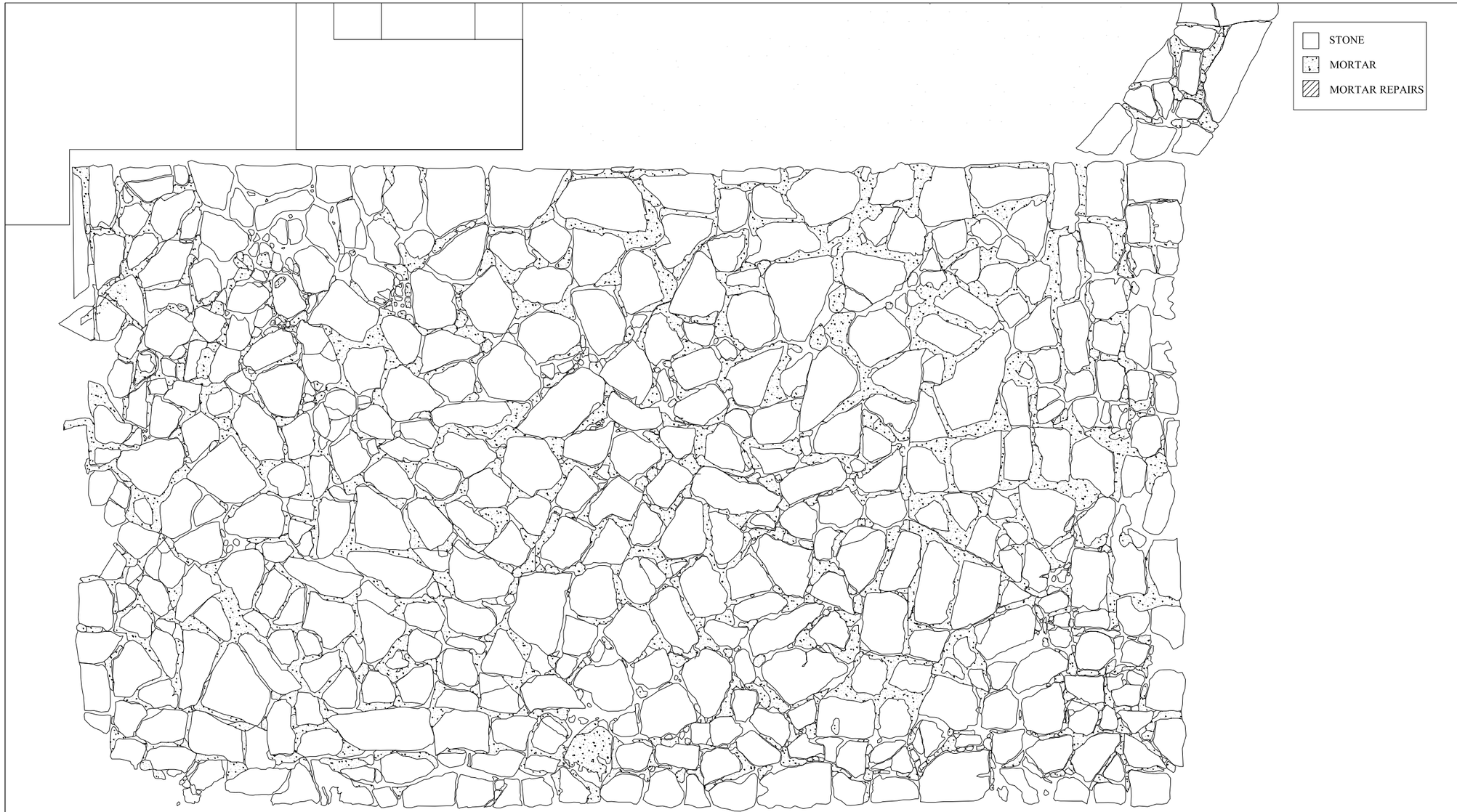
NAME AND LOCATION OF STRUCTURE

**GARLINGTON GUEST HOUSE (FORT LEONARD WOOD, BUILDING NO. 2051)**

FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO. -

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 1 OF 1 SHEETS




BUILDING 2051

FEET 3/8" = 1' - 0" SCALE
0 8 16

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CONSTRUCTION ENGINEERING RESEARCH LAB
UNDER DIRECTION OF THE NATIONAL PARK SERVICE,
UNITED STATES DEPARTMENT OF THE INTERIOR

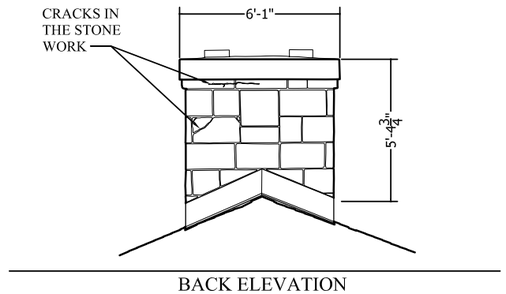
NAME AND LOCATION OF STRUCTURE

**GARLINGTON GUEST HOUSE (FORT LEONARD WOOD, BUILDING NO. 2051)**

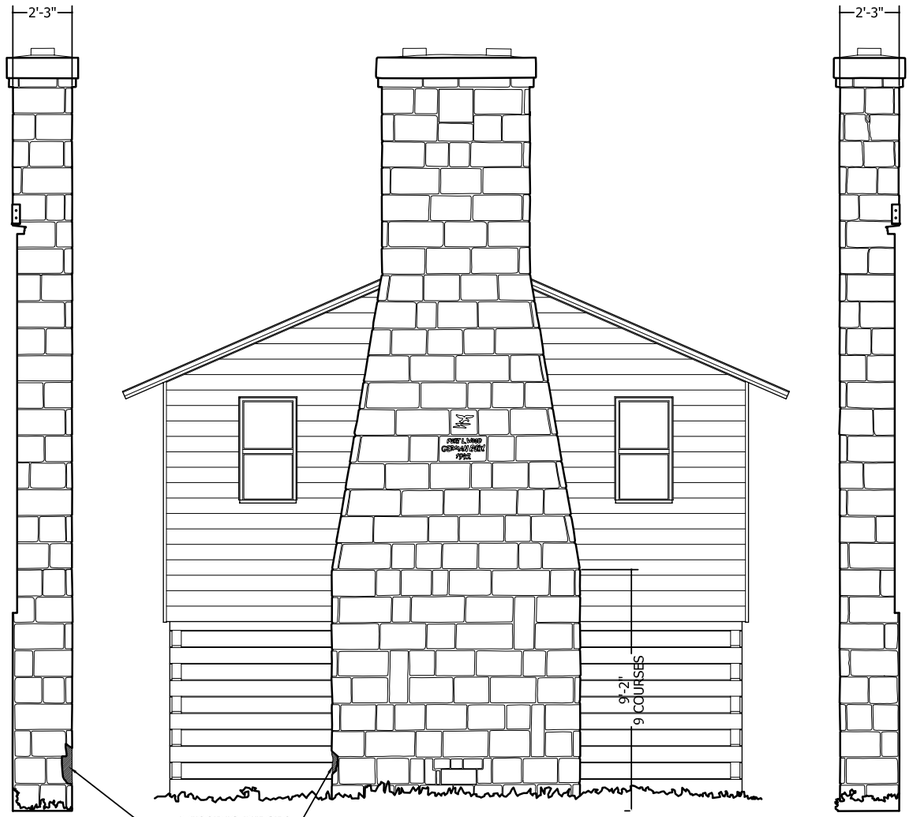
FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO.
-

**HISTORIC AMERICAN BUILDINGS SURVEY**
SHEET 1 OF 1 SHEETS




BACK ELEVATION




SIDE LEFT ELEVATION FRONT ELEVATION SIDE RIGHT ELEVATION

FEET 3/16" = 1' - 0" SCALE
0 4 8 12 16 32

DRAWN BY: JACQUELINE M. WOEKE- 2006

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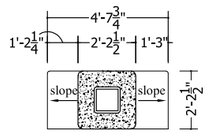
CONSTRUCTION ENGINEERING RESEARCH LAB
UNDER DIRECTION OF THE NATIONAL PARK SERVICE,
UNITED STATES DEPARTMENT OF THE INTERIOR

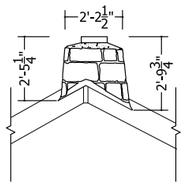
NAME AND LOCATION OF STRUCTURE
**BLACK OFFICER'S CLUB CHIMNEY**
FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO.
-

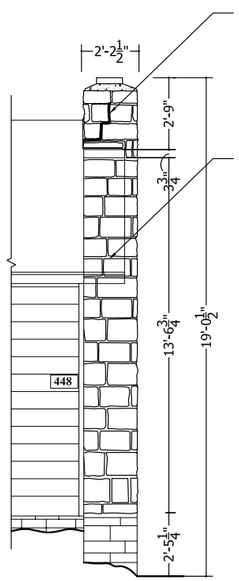
HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 1 OF 1 SHEETS

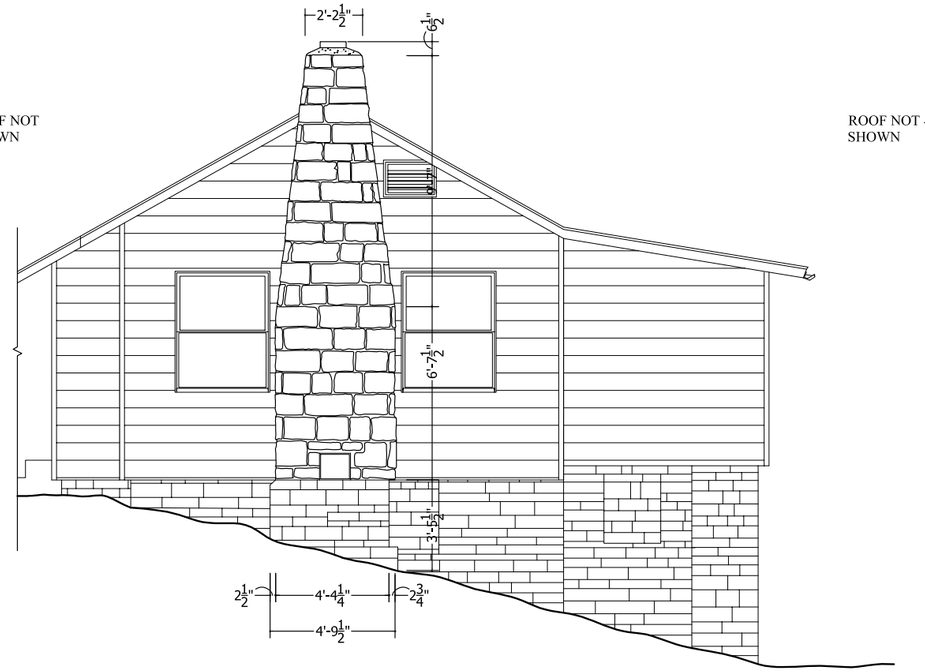


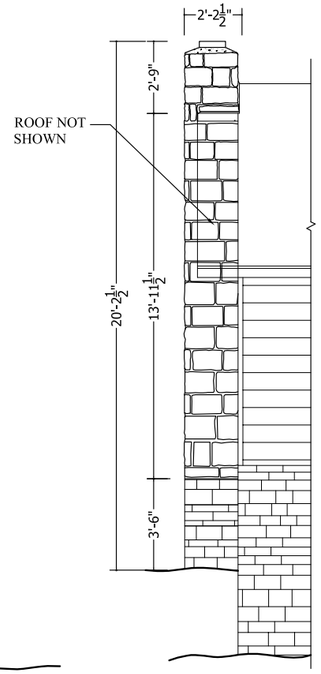

PLAN




SOUTH ELEVATION




BUILDING 448

EAST ELEVATION NORTH ELEVATION WEST ELEVATION

FEET 3/16" = 1'-0" SCALE
0 4 8 12 16 32

DRAWN BY: MARCIA D. HARRIS, 2005

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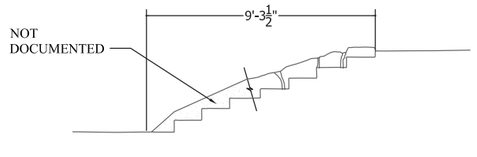
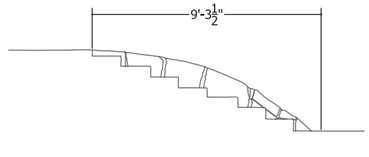
CONSTRUCTION ENGINEERING RESEARCH LAB
UNDER DIRECTION OF THE NATIONAL PARK SERVICE,
UNITED STATES DEPARTMENT OF THE INTERIOR

NAME AND LOCATION OF STRUCTURE
**GUEST QUARTERS (FORT LEONARD WOOD, BUILDING NO. 448)**
FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO. -

**HISTORIC AMERICAN BUILDINGS SURVEY**
SHEET 1 OF 1 SHEETS



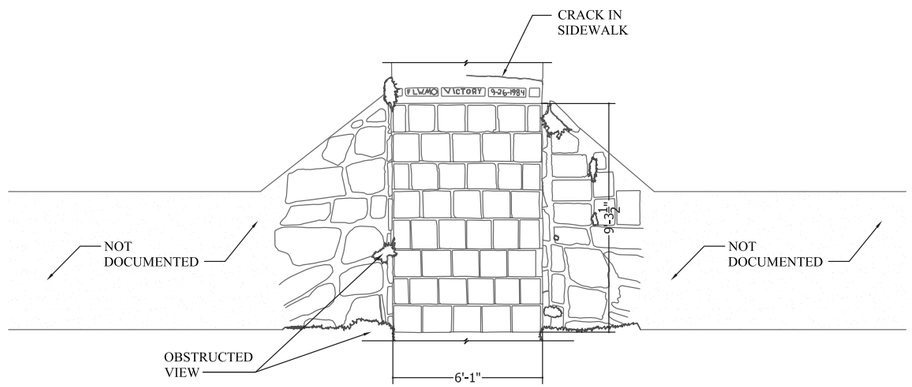

STAIRS

LEFT ELEVATION

RIGHT ELEVATION

FEET 3/16" = 1' - 0" SCALE

0 4 8 12 16 32




STAIRS

PLAN

FEET 3/16" = 1' - 0" SCALE

0 4 8 12 16 32

DRAWN BY: JACQUELINE M. WOLKE: 2006

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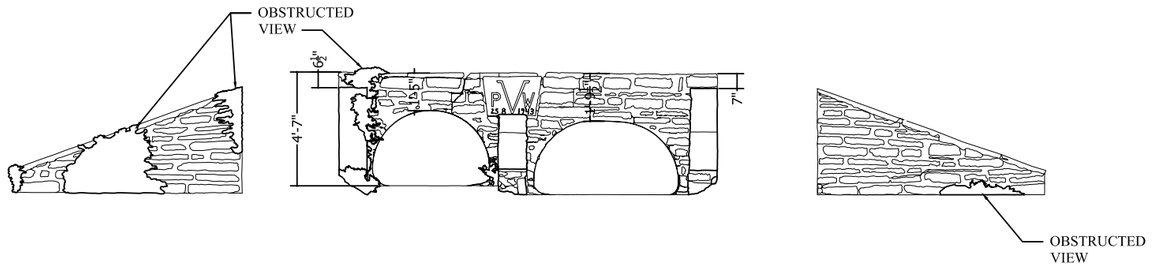
UNDER DIRECTION OF THE NATIONAL PARK SERVICE,
UNITED STATES DEPARTMENT OF THE INTERIOR

NAME AND LOCATION OF STRUCTURE
**OLD POST HEADQUARTERS (FORT LEONARD WOOD)**
FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO.
--

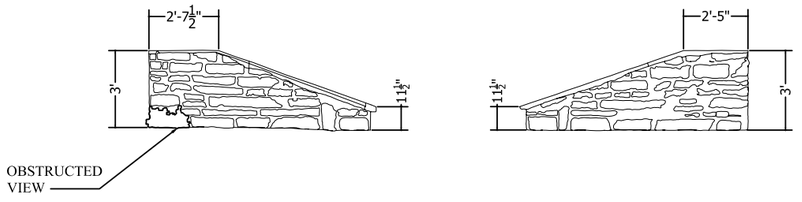
HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 1 OF 1 SHEETS




CULVERT

LEFT WING ELEVATION FRONT ELEVATION RIGHT WING ELEVATION

FEET 3/16" = 1' - 0" SCALE
0 4 8 12 16 32




CENTER WING (LEFT) ELEVATION CENTER WING (RIGHT) ELEVATION

FEET 3/16" = 1' - 0" SCALE
0 4 8 12 16 32

NAME AND LOCATION OF STRUCTURE
**BUS STATION BRIDGE**
FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO. --

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 1 OF 1 SHEETS

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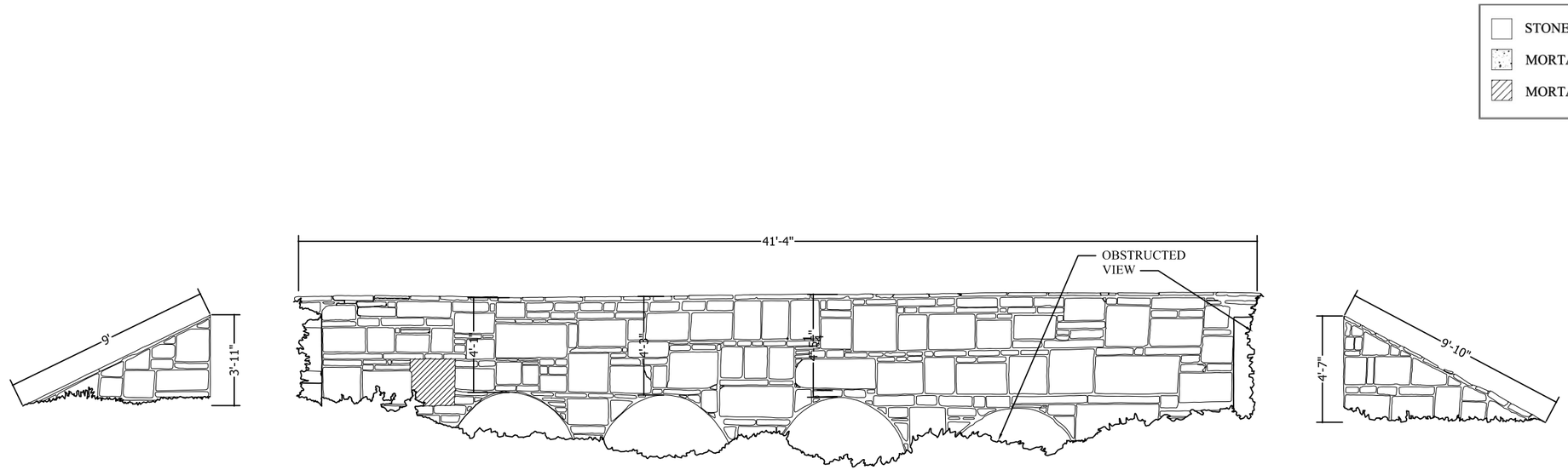
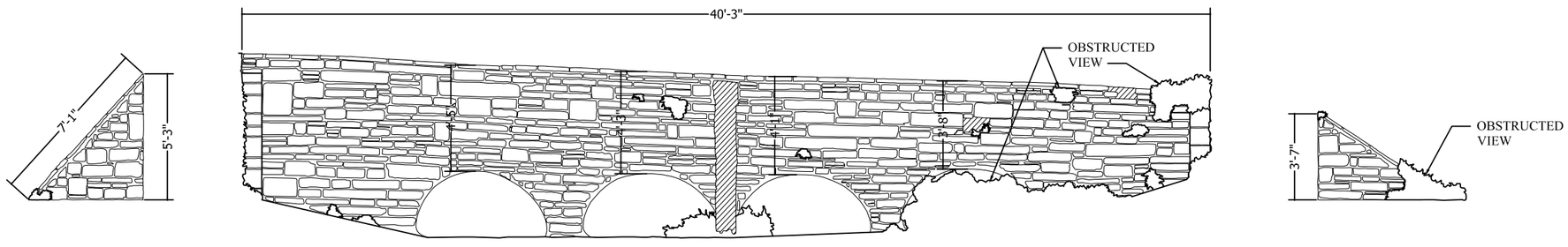



CULVERT

LEFT WING ELEVATION FRONT ELEVATION RIGHT WING ELEVATION

FEET 3/16" = 1' - 0" SCALE

0 4 8 12 16 32




CULVERT

LEFT WING ELEVATION FRONT ELEVATION RIGHT WING ELEVATION

FEET 3/16" = 1' - 0" SCALE

0 4 8 12 16 32

DRAWN BY: JACQUELINE M. WOLKE, 2006

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UNITED STATES DEPARTMENT OF THE INTERIOR

NAME AND LOCATION OF STRUCTURE

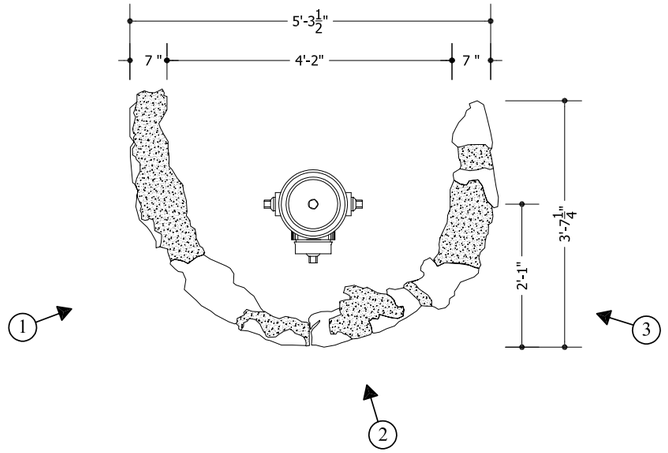
**CONSTITUTION AVENUE VIADUCT**

FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO. -

**HISTORIC AMERICAN BUILDINGS SURVEY**

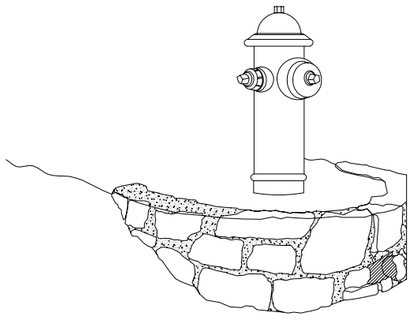
SHEET 1 OF 1 SHEETS

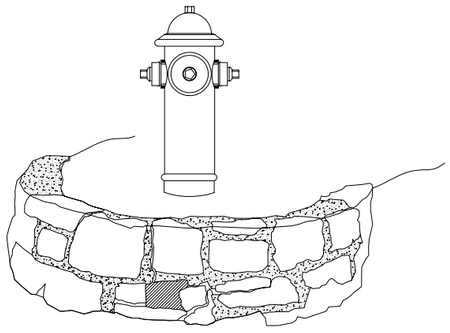


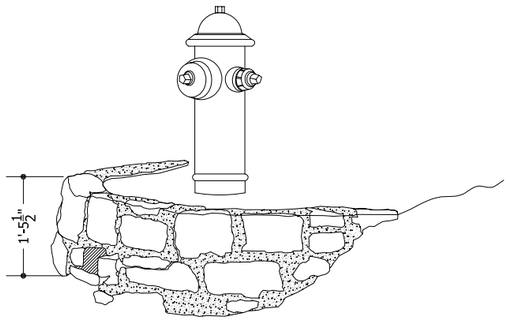

PLAN

FEET 1/2" = 1' - 0" SCALE
0 3 6 9 12 24

STONE
MORTAR
MISSING STONES








HISTORIC DISTRICT - NEBRASKA AVENUE FIRE HYDRANT #1

PERSPECTIVE ELEVATION 1 PERSPECTIVE ELEVATION 2 PERSPECTIVE ELEVATION 3

FEET 1/2" = 1' - 0" SCALE
0 3 6 9 12 24

DRAWN BY: MARCIA D. HARRIS, 2005

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UNITED STATES DEPARTMENT OF THE INTERIOR

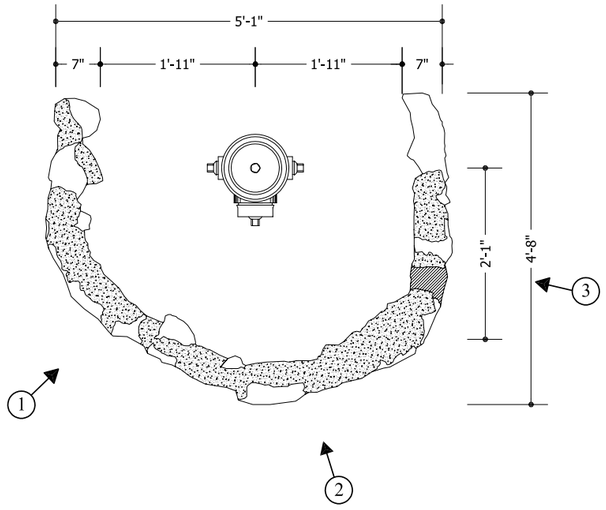
NAME AND LOCATION OF STRUCTURE

**HISTORIC DISTRICT FIRE HYDRANT#1 (FORT LEONARD WOOD)**

FORT LEONARD WOOD PULASKI COUNTY MISSOURI

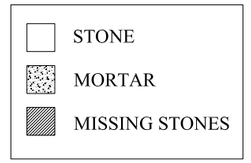
SURVEY NO. -

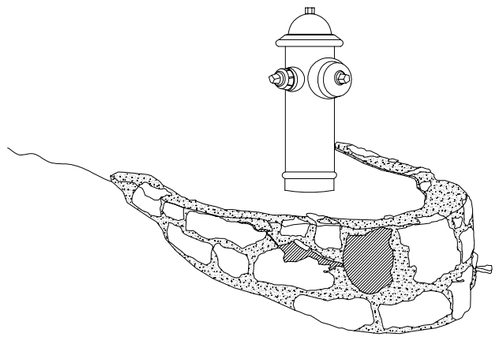
**HISTORIC AMERICAN BUILDINGS SURVEY**
SHEET 1 OF 1 SHEETS

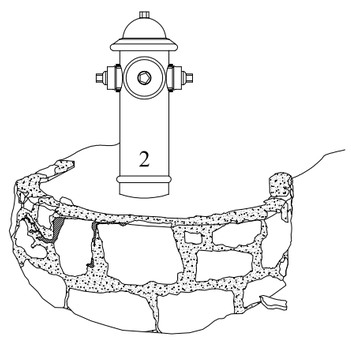


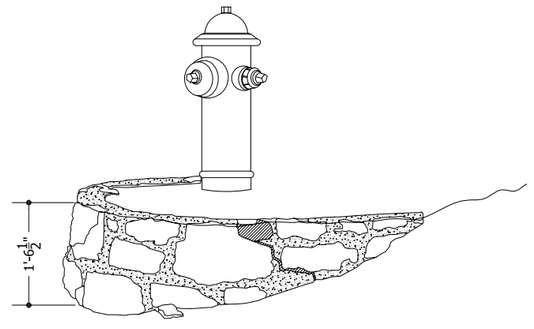

PLAN

FEET 1/2" = 1' - 0" SCALE
0 3 6 9 12 24






HISTORIC DISTRICT - NEBRASKA AVENUE FIRE HYDRANT #2

PERSPECTIVE ELEVATION 1

PERSPECTIVE ELEVATION 2

PERSPECTIVE ELEVATION 3

FEET 1/2" = 1' - 0" SCALE
0 3 6 9 12 24

DRAWN BY: MARCIA D. HARRIS; 2005

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UNITED STATES DEPARTMENT OF THE INTERIOR

NAME AND LOCATION OF STRUCTURE

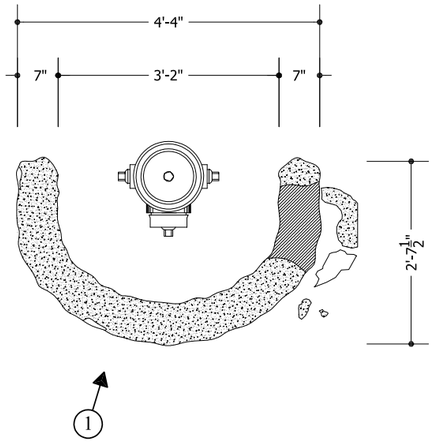
**HISTORIC DISTRICT FIRE HYDRANT#2 (FORT LEONARD WOOD)**

FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO. -

HISTORIC AMERICAN BUILDINGS SURVEY

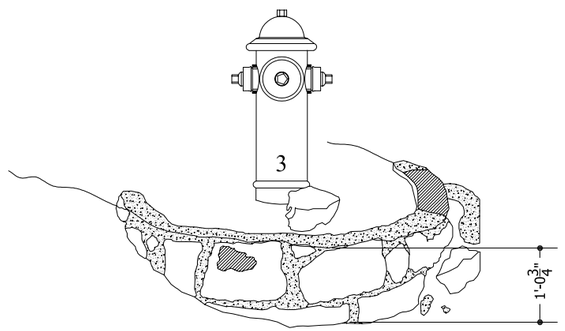
SHEET 1 OF 1 SHEETS

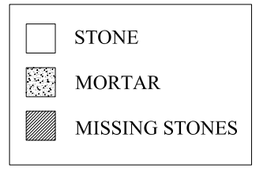



PLAN

FEET 1/2" = 1' - 0" SCALE

0 3 6 9 12 24




HISTORIC DISTRICT - NEBRASKA AVENUE FIRE HYDRANT #3

PERSPECTIVE ELEVATION 1

FEET 1/2" = 1' - 0" SCALE

0 3 6 9 12 24

DRAWN BY: MARCIA D. HARRIS, 2005

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UNITED STATES DEPARTMENT OF THE INTERIOR

NAME AND LOCATION OF STRUCTURE

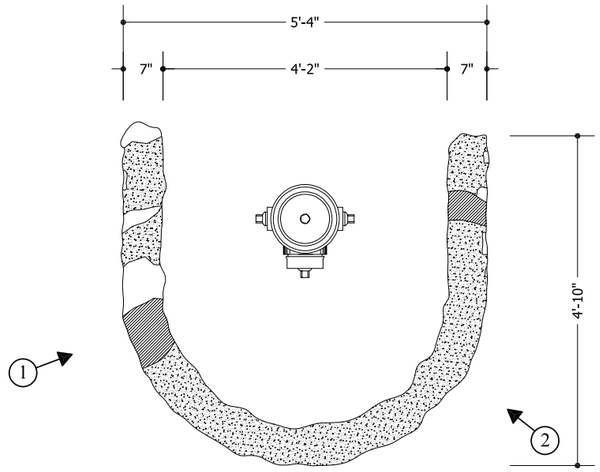
**HISTORIC DISTRICT FIRE HYDRANT#3 (FORT LEONARD WOOD)**

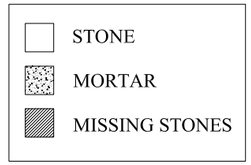
FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO. -

**HISTORIC AMERICAN BUILDINGS SURVEY**

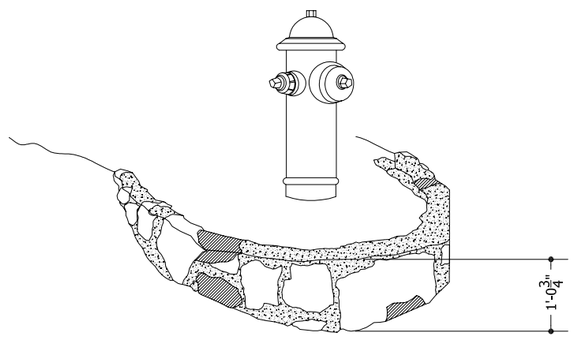
SHEET 1 OF 1 SHEETS

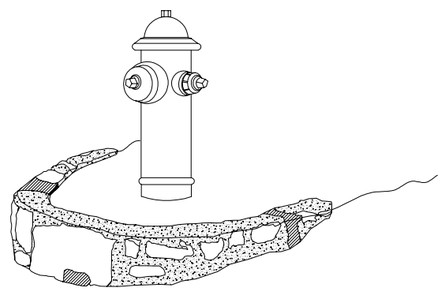



PLAN

FEET 1/2" = 1' - 0" SCALE
0 3 6 9 12 24



HISTORIC DISTRICT - NEBRASKA AVENUE FIRE HYDRANT #7

PERSPECTIVE ELEVATION 1

PERSPECTIVE ELEVATION 2

FEET 1/2" = 1' - 0" SCALE
0 3 6 9 12 24

DRAWN BY: MARCIA D. HARRIS; 2005

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UNITED STATES DEPARTMENT OF THE INTERIOR

NAME AND LOCATION OF STRUCTURE

**HISTORIC DISTRICT FIRE HYDRANT#7 (FORT LEONARD WOOD)**

FORT LEONARD WOOD PULASKI COUNTY MISSOURI

SURVEY NO. -

HISTORIC AMERICAN BUILDINGS SURVEY

SHEET 1 OF 1 SHEETS

# 5 Maintenance and Repair

## Mortar Formula

Materials List

| | | |
|---|---|---|
| Arkhola Sand and Gravel | Fort Smith Arkansas | Washed Sand |
| Meadors Lumber Company | Alma Arkansas | Building Supplies |
| Fields Hardware and Lumber | Fort Leonard Wood | Building Supplies |
| Sheldon Hardware | Fort Leonard Wood | Misc. Tools |
| Havin Concrete Company | Rolla Missouri | Cement |

Mortar Formula
NOTE: All measurements are by volume not by weight.

5 parts clean washed masonry sand
4 parts concrete sand
3 parts type s lime
1 part Portland cement

## Maintenance / Management Guidelines for Masonry

According to *The Secretary of Interior's Standards for Rehabilitation*, the proper procedure is to respect the significance of the original materials and features, repair and retain them wherever possible, and replace them only when absolutely necessary.

The following recommendations for care of the historic masonry are to be thoroughly read and understood before a treatment is specified. *The Secretary of the Interior's Standards for Rehabilitation* should also be consulted to determine the appropriateness of any treatment.

The following is adapted from *The Secretary of the Interior's Standards for Rehabilitation*. Full documentation can be found at http://www2.cr.nps.gov/tps/tax/rhb/stand.htm

**Figure 82. Comparison of mortar joints from 1943 to 2005.**

**Figure 83. Example of inappropriate mortar replacement and new concrete without tinting at the Nebraska/Minnesota Culvert (ERDC-CERL).**

**Figure 84. Example of inappropriate mortar replacement and new concrete without tinting at the Nebraska/Minnesota Culvert (ERDC-CERL).**

**Figure 85. Example of inappropriate new concrete culvert without tinting at the Constitution Avenue Culvert (ERDC-CERL).**

### *Identify, Retain, and Preserve*

**Recommended**…

- Identifying, retaining, and preserving masonry features that are important in defining the overall historic character of the stonework; and details such as tooling and bonding patterns, coatings, and color.

**Not Recommended…**

- Removing or radically changing masonry features that are important in defining the overall historic character of the stonework so that, as a result, the character is diminished.
- Replacing or rebuilding a major portion of exterior masonry walls that could be repaired so that, as a result, the stonework is no longer historic and is essentially new construction.
- Applying paint or other coatings such as stucco to masonry that has been historically unpainted or uncoated to create a new appearance.

### *Protect and Maintain*

**Recommended**…

- Protecting and maintaining masonry by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved decorative features.
- Cleaning masonry only when necessary to halt deterioration or remove heavy soiling.
- Carrying out masonry surface cleaning tests after it has been determined that such cleaning is appropriate. Tests should be observed over a sufficient period so that both the immediate and the long-range effects are known to enable selection of the gentlest method possible.
- Cleaning masonry surfaces with the gentlest method possible, such as low-pressure water and detergents, using natural bristle brushes.
- Inspecting painted masonry surfaces to determine whether repainting is necessary.
- Removing damaged or deteriorated paint only to the next sound layer using the gentlest method possible (e.g., hand scraping) prior to repainting.
- Applying compatible paint coating systems following proper surface preparation.
- Repainting with colors that are historically appropriate to the building and district.
- Evaluating the overall condition of the masonry to determine whether more than protection and maintenance are required, that is, if repairs to the masonry features will be necessary.

**Not Recommended…**

- Failing to evaluate and treat the various causes of mortar joint deterioration such as soil subsidence, differential soil settlement, capillary action, or extreme weather exposure.
- Cleaning masonry surfaces when they are not heavily soiled to create a new appearance, thus needlessly introducing chemicals or moisture into historic materials.
- Cleaning masonry surfaces without testing or without sufficient time for the testing results to be of value.
- Sandblasting stone surfaces using dry or wet grit or other abrasives. These methods of cleaning permanently erode the surface of the material and accelerate deterioration.
- Using a cleaning method that involves water or liquid chemical solutions when there is any possibility of freezing temperatures.
- Cleaning with chemical products that will damage masonry, such as using acid on limestone or marble, or leaving chemicals on masonry surfaces.
- Applying high-pressure water cleaning methods that will damage historic masonry and the mortar joints.
- Failing to undertake adequate measures to assure the protection of masonry features.

### *Repair*

**Recommended**…

- Repairing masonry walls and other masonry features by repointing the mortar joints where there is evidence of deterioration such as disintegrating mortar, cracks in mortar joints, or cracks in the stone.
- Removing deteriorated mortar by carefully hand raking the joints to avoid damaging the masonry.
- Duplicating old mortar in strength, composition, color, and texture (see Mortar Formula).
- Duplicating old mortar joints in width and in joint profile.
- Repairing masonry features by patching, piecing-in, or consolidating the masonry using recognized preservation methods. Repair may also include the limited replacement in-kind--or with compatible substitute material--of those extensively deteriorated or missing parts of masonry features.
- Applying new or non-historic surface treatments such as water-repellent coatings to masonry only after repointing and only if masonry repairs have failed to arrest water penetration problems.

**Not Recommended…**

- Removing nondeteriorated mortar from sound joints, and then repointing the entire piece of stonework to achieve a uniform appearance.
- Using electric saws and hammers rather than hand tools to remove deteriorated mortar from joints prior to repointing.
- Repointing with mortar of high Portland cement content (unless it is the content of the historic mortar). This can often create a bond that is stronger than the historic material and can cause damage as a result of the differing coefficient of expansion and the differing porosity of the material and the mortar.
- Repointing with a synthetic caulking compound.
- Using a "scrub" coating technique to repoint instead of traditional repointing methods.
- Changing the width or joint profile when repointing.
- Replacing an entire stonework feature when repair of the stonework and limited replacement of deteriorated of missing parts is appropriate.
- Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the masonry feature or that is physically or chemically incompatible.
- Applying waterproof, water repellent, or non-historic coatings such as stucco to masonry as a substitute for repointing and masonry repairs. Coatings are frequently unnecessary, expensive, and may change the appearance of historic masonry as well as accelerate its deterioration.

### *Replace*

**Recommended**…

- Replacing in-kind an entire masonry feature that is too deteriorated to repair--if the overall form and detailing are still evident--using the physical evidence as a model to reproduce the feature. Examples can include large sections of a wall, a sidewalk, or steps. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

**Not Recommended…**

- Removing a masonry feature that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.

# REMOVING BIOLOGICAL GROWTH FROM EXTERIOR MASONRY AND STUCCO

U.S. General Services Administration

Historic Preservation Technical Procedures[129]

**04200-02**

**The Cultural Resources POC, DPW will review all proposed work; in addition, these guidelines must be reviewed and followed by all personnel prior to performing this procedure.**

## PART 1---GENERAL

1.01 SUMMARY

A. This procedure includes guidance on removing biological growth such as lichens, algae, mold, and mildew from masonry and stucco.

B. Biological growths such as lichens, algae, moss, and fungi growing on masonry walls are usually an indication that there is excess moisture in or around the masonry. These growths should be removed, as they attract moisture to the masonry surface and hold it there, which can lead to more serious problems. Lichens and mosses in particular, produce oxalic acid which can damage certain types of historic masonry.

C. See 01100-07-S for general project guidelines to be reviewed along with this procedure. These guidelines cover the following sections:

1. Safety Precautions
2. Historic Structures Precautions
3. Submittals
4. Quality Assurance
5. Delivery, Storage and Handling
6. Project/Site Conditions
7. Sequencing and Scheduling
8. General Protection (Surface and Surrounding)

These guidelines should be reviewed prior to performing this procedure and should be followed, when applicable, along with recommendations from the State Historic Preservation Officer (SHPO).

## PART 2---PRODUCTS

2.01 MANUFACTURERS

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[129] The following excerpt is from the U.S. General Services Administration (GSA). Full documentation can be found at: http://w3.gsa.gov/web/p/hptp.nsf

A. ProSoCo, Inc.
P.O. Box 1578
Kansas City, KS 66117
913/281-2700

2.02 MATERIALS

A. For Removing Mold and Mildew:

1. Non-sudsing ammonia or one of the following bleaches:

**CAUTION: DO NOT MIX AMMONIA WITH CHLORINE BLEACHES, A POISONOUS GAS WILL RESULT! DO NOT USE BLEACH ON BIRD DROPPINGS.**

Sodium Hypochlorite (NaOCl):

a. An unstable salt produced usually in aqueous solution and used as a bleaching and disinfecting agent.
b. Other chemical or common names include Bleaching solution*; Household bleach*; Laundry bleach*; Solution of chlorinated soda*.
c. Potential Hazards: CORROSIVE TO FLESH.
d. Available from chemical supply house, grocery store or supermarket, hardware store or janitorial supply distributor.

-OR-

Hydrogen Peroxide (H202):

a. An unstable compound used especially as an oxidizing and bleaching agent, an antiseptic, and a propellant.
b. Other chemical or common names include Peroxide of hydrogen*; Solution of hydrogen dioxide*; Superoxol*; (hydrogen peroxide is commonly sold as a 3% solution; Superoxol is a 30% solution; Superoxol causes flesh burns; 3% hydrogen peroxide does not).
c. Potential Hazards: TOXIC (when concentrated); CORROSIVE TO FLESH; FLAMMABLE (in high concentration).
d. Available from chemical supply house, drugstore, pharmaceutical supply distributor, or hardware store.

-OR-

Calcium Hypochlorite (CaCl2O2):

a. A white powder used especially as a bleaching agent and disinfectant.
b. Other chemical or common names include Chlorinated calcium oxide; Bleaching powder*; Calcium oxymuriate*; Chloride of lime*; Chlorinated lime*; Hypochlorite of lime*; Oxymuriate of lime*.
c. Potential Hazards: CORROSIVE TO FLESH; FLAMMABLE (WHEN IN CONTACT WITH ORGANIC SOLVENTS).
d. Available from chemical supply house, dry cleaning supply distributor, drugstore or pharmaceutical supply distributor, janitorial supply distributor,

swimming pool supply distributor, or water and sanitation supply distributor.

-OR-

Chloramine-T: Chloramine is any of various compounds containing nitrogen and chlorine.

2. Trisodium Phosphate:

NOTE: THIS CHEMICAL IS BANNED IN SOME STATES SUCH AS CALIFORNIA. REGULATORY INFORMATION AS WELL AS ALTERNATIVE OR EQUIVALENT CHEMICALS MAY BE REQUESTED FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REGIONAL OFFICE AND/OR THE STATE OFFICE OF ENVIRONMENTAL QUALITY.

a. Strong base-type powdered cleaning material sold under brand names.
b. Other chemical or common names include Sodium Orthophosphate; Tribasic sodium phosphate; Trisodium orthophosphate; TSP*; Phosphate of soda*; (also sold under brand names such as).
c. Potential Hazards: CORROSIVE TO FLESH.
d. Available from chemical supply house, grocery store or supermarket or hardware store.

3. Powdered detergent such as "Tide" or approved equal.

B. Proprietary cleaner such as "Limestone Restorer" (ProSoCo, Inc.), or approved equal.
C. Clean, potable water

2.03 EQUIPMENT

A. Garden hose and nozzle
B. Rubber or polyethylene bucket (DO NOT USE A METAL BUCKET AS IT MAY REACT WITH THE CHEMICAL CLEANER AND PRODUCE TOXIC FUMES)
C. Glass or ceramic mixing bowl
D. Knife blade
E. Stiff, natural bristle brushes (non-metallic)
F. Tampico brush, roller or low pressure (50 psi maximum) spray such as pneumatic garden sprayer
G. Rubber gloves
H. Safety glasses

**PART 3---EXECUTION**

3.01 EXAMINATION

A. Determine the source of excessive moisture, i.e. leaky downspout, standing water, roof overhang, vegetation, etc., and make any necessary repairs before continuing with this task.
B. Determine the type of stain, i.e. algae and lichens, or mold and mildew.

3.02 PREPARATION

A. Protection:

1. Provide adequate wash solutions (i.e. water, soap, and towels) before starting the job.
2. Do not spray in the immediate vicinity of unprotected people and animals.

3.03 ERECTION, INSTALLATION, APPLICATION

NOTE: DO NOT TRY MORE THAN ONE TREATMENT ON A GIVEN AREA UNLESS THE
CHEMICALS USED FROM PRIOR TREATMENT HAVE BEEN WASHED AWAY.

A. Removing Lichens and Algae (ONLY):

1. Remove as much plant growth as possible using a knife blade and stiff bristle brush.
2. Water rinse the surface to remove most of the plant material.
    a. If the substrate is sound and dense, use low to medium water pressure (100-400 psi).
    b. If the masonry is softer, use standard water pressure from the spigot.
3. Allow water to soak plant growth for approximately 30 minutes.
4. Gently scrub the surface with a stiff, natural bristle brush.
5. Thoroughly rinse the surface again with clean, clear water at low pressure from a garden hose.

NOTE: DO NOT USE ANY CHEMICALS WITHOUT FIRST CONSULTING WITH Cultural Resources POC, DPW.

B. Removing Mold and Mildew (ONLY):

CAUTION: DO NOT MIX AMMONIA WITH CHLORINE BLEACHES, A POISONOUS GAS WILL RESULT!

1. Mix the following:

    3 oz. (2/3 cup) trisodium phosphate (TSP) cleaner
    1 oz. (1/3 cup) powdered detergent (i.e. Tide)
    1 qt. 5% sodium hypochlorite bleach (laundry bleach)
    3 qts. warm water

-OR-

    1 part ammonia with 3 parts water

2. Apply the solution to the affected area and scrub with a medium-hard natural bristle brush. Keep the surface saturated until the stain is bleached,

CAUTION: BE SURE TO WEAR RUBBER GLOVES AND SAFETY GLASSES WHEN APPLYING THE SOLUTION.

3. Thoroughly rinse the surface with clean, clear water from a garden hose and allow to dry.
4. Repeat the process as necessary to achieve the desired level of cleanliness.

-OR-

C. For treating any of the above (lichens, algae, mold or mildew), try using a proprietary cleaner such as Limestone Restorer (ProSoCo, Inc.), or approved equal.
    1. Add 1 part Limestone Restorer to 3 parts water and mix in a rubber or polyethylene bucket.
    2. Apply a flood coat of this mixture to the masonry using a low pressure spray (approximately 50 psi).

CAUTION: DO NOT USE A HIGH PRESSURE SPRAY WHEN APPLYING THIS SOLUTION AS THIS MAY CAUSE THE SOLUTION TO BE DRIVEN DEEPER INTO THE PORES OF THE MASONRY, MAKING REMOVAL OF THE SOLUTION DIFFICULT.

a. Begin spraying at the top of the vertical surface and move across horizontally. Allow 100mm rundown.
b. Continue the next horizontal pass across the previous run down.
c. Allow the solution to remain on the surface approximately 5-30 minutes depending upon the thickness of the growth.
d. Gently scrub the surface with a stiff, natural bristle brush. Thoroughly rinse the treated area using pressure-applied water (approximately 400 to 1500 psi) with a 40-60 degree fan spray or garden hose with nozzle adjusted to a tight stream. Rinse from the bottom of the treated area to the top.
e. Allow the surface to dry a minimum of 24 hours.

END OF SECTION

# REPOINTING MASONRY USING LIME MORTAR

U.S. General Services Administration

Historic Preservation Technical Procedures[130]

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**04520-02**

**The Cultural Resources POC, DPW will review all proposed work; in addition, these guidelines must be reviewed and followed by all personnel prior to performing this procedure.**

**PART 1---GENERAL**

1.01 SUMMARY

A. This procedure includes guidance on repointing stone masonry using lime mortar.

B. Repointing is the process of removing deteriorated mortar from a masonry joint and replacing old mortar with new, sound mortar.

C. This process is sometimes referred to as "tuck pointing", though "tuck pointing", is actually a decorative treatment rather than a method of repair. True tuck pointing is the process of adding a finish layer of mortar, occasionally tinted, to the outer portion of a newly laid joint.

D. Major reasons for mortar joint failures include:
   1. Weathering action,
   2. Settling,
   3. Temperature cycles,
   4. Poor original design and materials, and
   5. Lack of exterior maintenance.

E. See 01100-07-S for general project guidelines to be reviewed along with this procedure. These guidelines cover the following sections:
   1. Safety Precautions
   2. Historic Structures Precautions
   3. Submittals
   4. Quality Assurance
   5. Delivery, Storage and Handling
   6. Project/Site Conditions
   7. Sequencing and Scheduling
   8. General Protection (Surface and Surrounding)

F. For guidance on preparing lime mortar, see 04100-03-S.

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[130] The following excerpt is from the U.S. General Services Administration (GSA). Full documentation can be found at: http://w3.gsa.gov/web/p/hptp.nsf

1.02 SUBMITTALS

A. Manufacturers' literature describing packaged items.

B. Source and screen analysis of bulk aggregate.

C. Mortar sample: Submit, for verification and approval, a sample of each type of mortar used, in form of 6" long by 1/2" wide sample strips of mortar set in aluminum or plastic channels.
   1. Provide record of mortar mix, composition, and field procedures to be followed.

1.03 QUALITY ASSURANCE

A. Mock-ups: Raking and Repointing Sample Work:
   1. Test/Sample Area and THE CULTURAL RESOURCES POC Approval:
      a. Initially perform sample joint raking and repointing on each of a 100 sq. ft. test of stone, brick, and terra cotta areas as approved by THE CULTURAL RESOURCES POC.
      b. Demonstrate proficiency with joint raking tools and ability to not damage masonry units with either hand or power tools.
      c. Mix and cure test batch of repointing mortar and place in joints; repeat test mix until mortar color is approved. Test mortar should be matched, dried, and approved before placing in joints.
      d. Demonstrate workmanship of repointing procedures and joint finishing.
      e. Gain written approval from THE CULTURAL RESOURCES POC for test area before proceeding with remaining work.
   2. Joint Raking Method: Rake joints by hand ONLY using special joint cleaning chisels and hammer.
   3. Repointing Method: Repoint joints by hand ONLY using approved pointing trowels. NO "BAGGING" OR CAULKING GUN POINTING METHODS APPROVED.

1.04 PROJECT/SITE CONDITIONS

A. Environmental Conditions: Perform repointing only when the temperature is between 40º Fahrenheit and 80º Fahrenheit. If the temperature is below 40º the mortar sets too slowly, and there is a good chance of freezing before it fully sets. If the temperature is above 80º, the mortar will set too quickly, and there is a strong chance of excessive loss of water prior to adequate setting.

**PART 2---PRODUCTS**

2.01 MANUFACTURERS

A. Repointing Tools: Available from good hardware stores, building material suppliers or mail-order catalogues.
   1. The Stanley Gold-blatt Tool Co.
      511 Osage Ave.
      Kansas City, KS 66105-2198
      913/621-3010

   2. Marshalltown Trowel Co.
      P.O. Box 738
      Marshalltown, IA 50158
      515/753-5999

3. Masonry Specialty Co.
   4430 Gibsonia Rd.
   Gibsonia, PA 15044
   412/443-7080

2.02 MATERIALS

A. Lime mortar (See 04100-03-S for materials and procedures in preparing lime mortar)

B. Clean, potable water

2.03 EQUIPMENT

A. Trowels: range in length from 10-12 inches

B. Chisels:
   1. Joint chisels or a standard mason's chisel with a 1-1/2” blade and a long narrow handle
   2. Floor chisels

C. Hammers:
   1. 5# stone dressing hammer
   2. 2# striking hammer
   3. "No-Bounce" hammer
   4. Full size and one half size brick hammers

D. Joint Tools: (see 2.01 MANUFACTURERS above)
   1. 3/8"-1/4" raised beaded tool
   2. 3/8"-1/4" beaded striking tool
   3. 1/2" raised beaded tool with offset handle
   4. 1/2" flat joint iron
   5. Pointing tool should be about 1/16" narrower than the joint being filled to achieve good compaction

E. Hawks: Plywood or steel hawk (mortar board)

F. Brushes:
   1. Natural bristle brushes
   2. Stiff bristle brushes (no wire)

G. Spray bottle

2.03 MIXES

A. See 04100-03-S for lime mortar mixes

**PART 3---EXECUTION**

3.01 EXAMINATION

A. Examine all existing exterior mortar joints. If the answer to any of the following questions is yes, then the building's joints are deteriorated and need repointing:
   1. Are mortar joints eroded back more than 1/4" from the masonry face?
   2. Are there cracks running vertically or horizontally through the mortar?
   3. Are mortar bonds broken or pulled away from the masonry?
   4. Has mortar fallen out of joints?

5. Is mortar excessively soft, powdery, or crumbling?
6. Is pointing badly-stained?

B. Typical exterior damage due to mortar deterioration includes open joints, efflorescence, spalling and loosened masonry units.

C. Typical interior damage due to mortar deterioration includes failing plaster and stained wall paper.

D. A professional pointer experienced in old masonry is required for any of the following areas or conditions:
1. Chimneys need repointing
2. Window lintels must be rebuilt
3. Masonry is loose or missing
4. Work must be done from scaffolds or extension ladders
5. The original mortar joints were "beaded"-tooled with a raised, round-profiled joint that projects out from the wall

3.02 PREPARATION

A. Preparing the Joints:
1. Clean area of loose dirt and debris using a stiff bristle brush and remove all extraneous fastenings and devices.
2. Install necessary protection of adjacent building materials, property, and persons from joint cleaning work and dirt.
3. Control dust and dirt from raking work; dampen area being worked; and use curtains to limit spread of dust from joint raking and cutting operations.

B. Joint Cutting and Raking:
1. Cut and rake old mortar from existing joints by hand using a hammer and chisel.
NOTE: POWER CHISELS AND POWER SAWS SHOULD NOT BE USED.
2. Place the chisel in the center of the joint and pound it with a striking hammer or "No-Bounce" hammer until the mortar disintegrates.
3. Rake out the loose material to a depth of about 1 inch and never to a depth less than their width. Leave a clean, square face at the back of the joint to provide optimum contact with the new mortar.

CAUTION: AVOID OVER CUTTING ENDS OF VERTICAL JOINTS, WIDENING JOINTS OR CUTTING INTO BEDDING FACES OF MASONRY UNITS.

4. While raking out joints, remove all metal fittings such as nails, brackets, and clips on both horizontal and vertical surfaces.
5. Carefully clean out the prepared face with a soft or stiff bristle brush, or blow the joints clean with low-pressure compressed air (40-60 psi).
6. Thoroughly flush out joint with clean, clear water.

3.03 ERECTION, INSTALLATION, APPLICATION

A. Filling Joints:
1. Dampen masonry surfaces and joints to control suction and evaporation before placing repointing mortars.

NOTE: There should be no free water present which may cause voids in the mortar.

2. Using a pointing tool, push the mortar into the joint from a board and iron with the maximum possible pressure; the mortar should be applied in layers, each to a maximum thickness of 3/8".

NOTE: The pointing tool should be about 1/16" narrower than the joint being filled to achieve good compaction. In some cases, the joints will be so thin that a standard pointing tool will need to be ground down to fit the joint.

3. Thoroughly compact each layer of mortar and allow to set until thumb-print hard before applying the next layer of mortar.
4. Fill the joints so that they are slightly recessed from the masonry face. Avoid leaving a joint which is visually wider than the actual historical appearance.
5. Continuously keep all excess and spilled mortar brushed off the faces of masonry units, ledges and other surfaces before it sets or stains the work.

B. Joint Finishing:
   1. Begin when mortar attains "thumb print" hardness.
   2. Tool the joint to match the old mortar.

NOTE: It is important to tool the joint at the right stage; if the joint is too soft, the color will be lighter than expected and hairline shrinkage cracks are likely to occur; if the joint is too hard when tooled, dark streaks may appear (tool burning) and good closure of the mortar against the masonry will not be achieved. Excessive tooling may bring lime and fine aggregates to the surface, creating a visual change in texture and a surface subject to early deterioration.

3. To produce a roughened texture, lightly spray the mortar with water after the initial set, stipple the mortar with a stiff bristle brush, or dab the mortar with coarse sacking.
4. Protect finished work from direct sun and rain until the face has dried and hardened.

3.04 ADJUSTING/CLEANING

A. Cleaning Up:
   1. Use masking and drop cloths to prevent mortar stains on adjacent work and ledges.
   2. Keep work areas clean and free from mortar drips, spills, and residue of waste mortars or wash-off.
   3. Clean off excess mortar as work proceeds using masonry brushes before mortar sets.
   4. Wash completed repointing work when finished mortar joints are set with clean water and masonry brushes, scrubbing only as required to clean mortar stains off masonry without scouring the units and joint faces.
   5. Do not use acid or detergent cleaning agent to aid mortar removal and clean-up without written approval from THE CULTURAL RESOURCES POC.

B. Curing:
   1. Schedule work only when moderate weather is forecast.
   2. Protect completed work from adverse weather, heavy rainfall, freezing, and drying by direct sunlight and winds until cured.
   3. Sprinkle or mist repointed work as required to achieve cure in mortar joints for a minimum of 72 hours after completion.
   4. Lime Mortar: Cures by drying and crystallization, not by hydration; and can be washed out of joints if not protected before it cures.

C. Final Cleaning:
   1. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter using stiff nylon or bristle brushes and clean water spray applied at low pressure.

NOTE: Use of metal scrapers or brushes is not permitted. Use of acid or alkali cleansing agents is not permitted.

D. Some efflorescence, called new construction "bloom," occasionally appears on the surface within the first few months following a repointing project. These deposits normally are harmless and are removed by the natural washing of the rain. If not removed by natural weathering, they can be removed with dry brushing with a bristle brush. The use of chemical cleaners to remove this type of efflorescence normally is not necessary; AVOID USING ACIDS, PARTICULARLY MURIATIC ACID.

END OF SECTION

# PREPARING LIME MORTARS FOR REPOINTING MASONRY

U.S. General Services Administration

Historic Preservation Technical Procedures[131]

**04100-03**

**The Cultural Resources POC, DPW will review all proposed work; in addition, these guidelines must be reviewed and followed by all personnel prior to performing this procedure.**

**PART 1---GENERAL**

1.01 SUMMARY

A. This standard includes guidance on preparing lime mortars for repointing masonry.

B. Lime mortars are preferable to Portland cement mortars for repointing historic masonry:
   1. Lime mortars are more permeable by water. Water passing through lime mortar will dissolve a small portion of the lime and then will deposit it in hairline cracks as the water evaporates.
   2. Lime mortars expand slightly during setting, and resists shrinkage which causes cracking.
   3. Lime mortars are more durable than generally recognized.

C. See 01100-07-S for general project guidelines to be reviewed along with this procedure. These guidelines cover the following sections:
   1. Safety Precautions
   2. Historic Structures Precautions
   3. Submittals
   4. Quality Assurance
   5. Delivery, Storage, and Handling
   6. Project/Site Conditions
   7. Sequencing and Scheduling
   8. General Protection (Surface and Surrounding)

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM), 100 Barr Drive, West Conshohocken, PA 19428, (610) 832-9585 or FAX (610) 832-9555.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection: Lime and cement must be protected from rainwater and ground moisture, as water vapor in the air can begin the setting process. Other materials also should be protected from contamination.

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131 The following excerpt is from the U.S. General Services Administration (GSA). Full documentation can be found at: http://w3.gsa.gov/web/p/hptp.nsf

**PART 2---PRODUCTS**

2.01 MATERIALS

NOTE: The use of standard specifications for materials, such as those developed by the ASTM, provides an easily referenced level of quality.

A. Lime: Should conform to ASTM C207, Type S, high plasticity, Hydrated Lime for Masonry Purposes.
    1. Lime which meets this standard will "work" well, resists drying during curing, and is sufficiently strong for the purpose of repointing.
    2. Lime expands as it hydrates, making high lime mortars more resistant to crack formation.

B. Cement: Should conform to ASTM C150, Type I, White. It should not have more than 0.60% alkali nor more than 0.15% water soluble alkali. Use gray Portland cement ONLY if a dark mortar is to be matched.
    1. Cement meeting this standard should increase the workability of the mortar, accelerate the setting time, and slightly increase the strength of the mortar.
    2. The low alkali content will prevent efflorescence.

C. Sand: Free of impurities and conforming to ASTM C144.
    1. Sand color, size, and texture should match the original as closely as possible. Provide a sample of the sand for comparison to the original, and have it approved by THE CULTURAL RESOURCES POC before beginning repointing work.
    2. When possible, use bar sand or beach sand rather than crushed sand for the repointing mortar.
        a. Crushed sand has sharp edges, which makes it more "sticky" and difficult to work into the joints.
        b. Bar sand, on the other hand, has rounded edges and flows easily during the mortar application.
        c. The working characteristics of mortar made with crushed sand may be improved by adding a slight amount of Portland cement. The amount of cement should be determined by experimentation, but should not exceed 20% of the total lime/cement binder. 20% OR LESS OF CEMENT HAS MINIMAL EFFECT ON THE HARDNESS OF THE MORTAR. CEMENT CONTENT ABOVE 20% WILL MAKE THE MORTAR TOO HARD.

NOTE: Bar sand or beach sand should be washed to remove the salts before using.

D. Clean, potable water: If the water must be transported or stored in a container, the container must not impart any chemicals to the water.

E. Stone dust finely ground from the same stone as that to be repointed.

F. Additives: NO antifreeze compounds or other admixture shall be used.

NOTE: Do not use anti-freeze compounds. These compounds are designed for use with cement mortars, and their effectiveness with high lime mortars is questionable. Furthermore,

the compounds contain salts which can lead to serious problems in the masonry at a later time.

NOTE: Air entraining agents are not recommended. These agents are designed for use with cement rather than lime, and they result in decreased bonding of the mortar and the masonry. Air entraining is not necessary with high lime mortars because of the natural ability of these mortars to flex with temperature changes.

2.02 EQUIPMENT

A. Surface temperature thermometer - can be either mechanical (less expensive but must be calibrated often) or digital electronic

B. Wooden mortar boxes

C. Hoe

D. Mesh screen

E. Hawks: Plywood or steel hawk (mortar board)

2.03 MIXES

A. Some factors to consider when mixing lime mortar include durability, color and texture, and workability.
    1. Durability: Repointing mortar should be softer than the masonry units and the original mortar to reduce stresses at the edge of the masonry and, in the case of lime mortar, to reduce shrinkage which can cause cracks in the mortar.
        a. If the new mortar is harder than the masonry or the original mortar, it can cause serious stresses within the wall during thermal expansion and contraction, which can lead to deterioration of the masonry units rather than the mortar.

        b. If the mortar is softer, any deterioration which occurs will take place in the mortar, which is easier to replace than the units themselves.

    2. The repointing mortar should allow the passage of water, both liquid and vapor. If the mortar does not allow water to pass freely through it, the water can become trapped inside the wall, freeze, and cause serious deterioration to the masonry.

    3. Color and texture: The repointing mortar should match the original mortar in color, texture, and physical characteristics.
        a. Obtaining an accurate color match is best achieved by selecting appropriate sand.
            1. Use sand which is similar to the original in color and gradation. Sand from more than one source may be required.
            2. For repointing of natural stones, use finely ground stone "dust" in the mortar to match the joints as closely as possible to the stone.

b. If the original mortar was tinted, or if it is impossible to obtain a color match by the use of sand, it may be necessary to use a special mortar pigment.

CAUTION: PIGMENTS MAY REACT WITH OTHER INGREDIENTS IN THE MORTAR TO FORM EFFLORESCENCE. THEY MAY ALSO WEATHER AT A DIFFERENT RATE THAN NATURAL COLORING AND CAUSE A COLOR VARIATION IN THE MORTAR.

NOTE: If pigments must be used, pure mineral oxides should be used because they do not fade or leach out of the mortar. Amount of pigment should not exceed 2% of the mortar mix by the weight.

c. Many mortars used before the twentieth century have small lumps of incompletely burned or ground lime, or other impurities. To match the original appearance of the masonry, these impurities must be included in the new repointing mortar. Use identical materials, such as ground oyster shells (obtained at feed stores) or lumps of lime, to duplicate original lumps.

4. Workability: The workability or plasticity of the mortar is a direct result of the selection of materials.

B. Mortar Mix:

1. Have the existing mortar completely analyzed to insure that the repointing mortar will not be less permeable/harder than the masonry units or the original mortar. IT IS BETTER TO HAVE MORTAR THAT IS MORE PERMEABLE THAN LESS.
2. Measure all ingredients by cubic volume using a pre-established uniform measure, such as a small bucket, rather than a less uniform measure such as a shovel.
3. For historic masonry set in lime mortar, use the following mortar mix:

   1 part Portland cement
   3 parts lime
   8-12 parts sand (To match existing mortar as closely as possible.)

NOTE: The exact mix required will relate to the grain size and sharpness of the sand and will vary depending on the supply.

-OR-

For historic masonry set in standard mortar, use the following mortar mix (ASTM C270 Type "0") as a starting point:

1 part Portland cement
2 parts lime or lime putty
6 to 9 parts sand and stone dust (To match existing mortar as closely as possible.)

-OR-

For Limestone (ASTM C270 Type "N"):

1 part Portland cement
1 parts lime

4-6 parts aggregate
Enough water to form a workable consistency

-OR-

For Granite (ASTM C270 Type "S"):

2 parts Portland cement
1 part lime
7-9 parts aggregate
Enough water to form a workable consistency

NOTE: For deteriorated granite walls or granite walls indicating movement, use ASTM C270 type “N” as listed above for limestone.

4. Mix a final "job-size" batch once the correct sand color, cement content, etc. have been determined through small tests to ensure the on-site mixing conditions will result in the same final product.

**PART 3---EXECUTION**

3.01 ERECTION, INSTALLATION, APPLICATION

A. Mix Hydrated Lime:
   1. Add dry bagged hydrated lime to water. Stir and hoe the mass to form a thick cream.
   2. Allow to stand at least 24 hours before use.

B. Prepare Roughage Premix (for later use):
   1. Accurately proportion the sand and lime using measuring boxes constructed to contain the exact volume of each ingredient required to make on batch.
   2. Mix sand and lime thoroughly for about ten minutes. Store in plastic-lined drums and seal until required.

NOTE: This compound may be stored indefinitely if kept sealed from air and kept from freezing.

3. When required for use, add and mix the correct portion of gauging cement as specified and use immediately. ACCURATE PORTIONING IS VERY IMPORTANT.

C. Add cements to lime and aggregate mixes immediately before the use of the mortar.
   1. Perform all batching with wooden boxes or plastic pails of known volume to ensure standardization and conformity of measurement; SHOVEL MEASUREMENT OF MATERIALS IS NOT PERMITTED.
   2. Use box sizes that are sufficient for producing a batch size equal to one mixer load.

NOTE: Mix dry ingredients thoroughly before adding any water (approximately five minutes.

D. Add a small amount of water so that the mortar is just wet enough to hang on a trowel.

NOTE: Excess water will cause shrinkage and too little water will retard carbonation. Record the amount of water added so that it may be used as a guide for future batches.

E. Mix mortars at least 10 minutes before using to improve workability and ensure thorough mixing.

NOTE: Automatic mixers should have rubber blades. Clean mixing boards and mixing machines thoroughly after each use to prevent hardened lumps of mortar from containing the next batch of mortar.

1. Repointing mortars may sit 1-2 hours after initial mixing and then may be remixed to a workable consistency. This is done to reduce shrinkage.
2. Test the mix by holding a trowel with mortar on it upside down and shaking it once.
    a. If the mortar falls off without shaking, it has too much sand.
    b. If more than one shake is required, the mortar is too sticky or "plastic" and the lime content must be decreased.

F. Coloring Mortars:
1. Take samples of freshly-broken mortar from the original masonry pointing. Note color of aggregate for color-matching. DO NOT TRY TO MATCH THE COLOR OF THE BINDER.

NOTE: Use unweathered, unsoiled samples only.

2. Prepare test patties of mortar approximating the inner color of the sample and set aside to dry for at least 72 hours. Drying time may be accelerated by placing the patty sample in an oven or over a hot-plate.
3. Break the sample test patties and compare the inner portions to the original.
4. See Section 2.03 above for additional information on coloring mortars.

G. Use repointing mortar within approximately 1-2 hours of final mixing. Retemper the mortar as necessary to maintain workability.

NOTE: Retempering is permitted to maintain workability. Remixing is not permitted. Add water at the mortar-board using a spray bottle to replace only water lost through evaporation.

NOTE: Use all mortar within two hours of gauging; throw out left over mortar; do not re-temper or remix mortars after this time has elapsed.

NOTE: This time limit may vary depending upon the outside temperature (longer on cooler days and shorter on warmer days.)

H. For guidance on repointing, see 04520-02-R.

END OF SECTION

# 6 Recommendations

## Stonework Overall

Generally throughout the three historic districts, the condition of the POW stonework ranges from poor to good.

POOR

Stones are missing throughout the piece of stonework

Mortar is missing throughout the piece of stonework

Thaw/Freeze cycle has cracked the piece of stonework

FAIR

Stonework is missing only one or two stones

Mortar is missing/replaced in certain spots

Thaw/Freeze cycle has created unevenness throughout the piece of stonework

GOOD

Stonework pieces are intact

Mortar is intact but may be cracked or separated from stones

Thaw/Freeze cycle has not harmed the overall structure

It should be Fort Leonard Wood's aim to get all stonework in the three historic districts up to a FAIR condition if not a GOOD condition. This would bring Fort Leonard Wood into compliance with Sections 106 and 110 of the NHPA.

Fort Leonard Wood will need to institute a stonework monitoring program. It is highly suggested that the cultural resources staff monitor and assess the stonework on a revolving yearly basis. Problems in any subject stonework will need to be brought to the attention of DPW for repair or replacement (if absolutely necessary).

The major recommendation of this report regarding stonework is that stonework outside of the three historic districts be salvaged on an "as necessary" basis to be utilized to repair (or replace missing pieces of) the stonework in the three historic districts. Since stone is a popular building material in the Waynesville/St. Robert region, it is suggested that the salvaged stone be kept either in a locked building or a secured fenced-in area.

Fort Leonard Wood also should undertake a program to remove the green vegetation that grows up through the cracks in the mortar. The vegetation decomposes over the winter and adds soil to the stonework wherein more vegetation can grow the next year.

## WWII Temporary Building Historic District

The stonework in the WWII Temporary Building Historic District is in poor to fair condition. Most of the stonework in this historic district primarily requires maintenance and vegetation clearing.

The other issue is that FLW has ignored the stonework in the planning and construction of the three memorial groves. The stonework that once led to the entrance of a chapel (see Figure 86) now just ends in grass and trees (see Figure 87). FLW needs to integrate the steps and circular sidewalk that leads from the corner of Caisson Drive and Pine Street into the sidewalks of the memorial groves.


**Figure 86. Stonework in the WWII Temporary Historic District not longer after it was constructed (NARA College Park, RG 111-SC, photo 140411).**

**Figure 87. Abrupt end to stonework sidewalk in the WWII Temporary Building Historic District [former location of a chapel], 2004 (ERDC-CERL).**

## Garlington House

The Garlington House is utilized as visiting quarters for Fort Leonard Wood Lodging.

### *Sidewalk and Patio*

The sidewalk and patio are in serious need of reconstruction. Currently they are extremely uneven due to the freeze/thaw cycle, both of them are missing stones in certain portions, and mortar is missing throughout the area (see Figures 88 and 89). The drawing chapter contains drawings for both the sidewalk and patio. The contractors should utilize these drawings for placement of the stones, although absolute adherence to original placement is not necessary. The sidewalk from the patio to the rear of Garlington has been covered over by soil and grass. FLW should remove these encroachments and if necessary, then rebuild the sidewalk.

**Figure 88. Overhead view of the Garlington House sidewalk, 2004 (ERDC-CERL).**

**Figure 89. Overhead view of the Garlington House patio, 2004 (ERDC-CERL).**

### *Barbeque*

The Garlington House barbeque is located to the southeast of the house and patio (see Figures 90 through 92). The barbeque is in poor condition and needs to be rebuilt. If the barbeque is not rebuilt, it will more than likely be rubble in the next couple of years. It is the opinion of the researchers that the barbeque should be rebuilt next to the patio. The barbeque is currently very remote from the house, thus is not well utilized. If it is reconstructed closer to the house, the visitors to the house will be able to enjoy its craftsmanship. The movement of the barbeque should not hinder its eligibility to the National Register.

**Figure 90. Oblique view of the Garlington House barbeque, 1987 (courtesy Harland Bartholomew).**

**Figure 91. Front view of the Garlington House barbeque, 2004 (ERDC-CERL).**

**Figure 92. Rear view of the Garlington House barbeque, 2004 (ERDC-CERL).**

## Old Post Headquarters/Old Red Cross Building

The Old Post Headquarters is currently utilized as office space. The Old Red Cross Building (Ike Skelton House) is utilized as visiting quarters for Fort Leonard Wood Lodging.

### *Sidewalks*

The sidewalks throughout the Old Post Headquarters and Old Red Cross Building area are in serious need of reconstruction. Currently they are extremely uneven due to the freeze/thaw cycle, both of them are missing stones in certain portions, and mortar is missing throughout

the area. Grass and other vegetation are growing through cracks in the mortar and needs to be removed.

Currently the sidewalks are mostly in a poor condition. Fort Leonard Wood replaced the POW stonework sidewalk from the front of the Old Post Headquarters to the steps that go down to Missouri Avenue in 1984 (at this point they also replaced the original inscription located at the top of the steps). Fort Leonard Wood needs to remove the replacement concrete with stonework culled from non-eligible pieces of stonework elsewhere in the cantonment (see Figures 93 through 97).

Fort Leonard Wood also replaced the sidewalks that are located around the Old Red Cross Building at some point with concrete (see Figures 98 and 99). Fort Leonard Wood also needs to replace these concrete replacements with stonework culled from elsewhere in the cantonment.

**Figure 93. Historic view of the Old Post Headquarters with POW stonework sidewalk, no date (courtesy FLW History Office).**


**Figure 94. Historic view of the Old Post Headquarters with POW stonework sidewalk, no date (courtesy FLW History Office).**


**Figure 95. Inscription at top of steps at the Old Post Headquarters, 1987 (courtesy Harland Bartholomew).**

**Figure 96. Steps at the Old Post Headquarters, 2004 (ERDC-CERL).**

**Figure 97. Steps at the Old Post Headquarters, 2004 (ERDC-CERL).**

**Figure 98. Steps at the Old Red Cross Building, 2004 (ERDC-CERL).**

**Figure 99. Sidewalk at the Old Red Cross Building, 2004 (ERDC-CERL).**

# 7 References

Almquist, Karl Gustaf. “Report of Visit to Prisoner of War Camp, Fort Leonard Wood, Missouri.” 15 May 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

Beauregard, Alan et al. Historical Properties Evaluation Report: Four Properties Proposed for Utilities Privatization at Fort Leonard Wood, Missouri. Carlisle, PA: BHE Environmental, Inc., 2002.

Bodenhafer, W. B. Letter to Lt. P. M. Georgiady, Assistant Executive Officer, Fort Leonard Wood. 16 February 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

Davison, Lt. Col. Edward. Director, Special Projects Division. Letter to Commanding Officer, Fort Leonard Wood. 7 March 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

Eberhardt, Charles C. “Report of Visit to Prisoner of War Camp Fort Leonard Wood.” 6-7 May 1945. RG 389, Box 2665. National Archives and Records Administration, College Park, Maryland.

_____. “Report of visit to Prisoner of War Camp, Fort Leonard Wood, Missouri.” 24 May 1944. RG 389, Box 2665. National Archives and Records Administration, College Park, Maryland.

Edwards, Major Earl. “Inspection of Prisoner of War Cap, Fort Leonard Wood, Missouri.” 26-27 August 1943. RG 389, Box 2665. National Archives and Records Administration, College Park, Maryland.

Ensslin, Fritz. “German POW Memoirs from Fort Leonard Wood.” Fort Leonard Wood History Office. Vertical File “FLW-004-001.” Typewritten manuscript, 1982.

Fiedler, David. The Enemy among Us: POWs in Missouri during World War II. St. Louis: Missouri Historical Society Press, 2003.

"Ft. Wood at 50: A History of Fort Leonard Wood." np: Van Beydler, 1991. Clarke Library, Fort Leonard Wood.

General Clemens, HQ Seventh Service Command and Colonel Duvall, Fort Leonard Wood. Fort Leonard Wood History Office. Vertical File "FLW-004-002." Typewritten transcript of a phone conversation, 5 May 1944.

Georgiady, Lt. P. M. Letter to Commanding General, 7th Service Command. 23 January 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

_____. Letter to Stuart A. Queen. 29 January 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

_____. Letter to Office of Provost Marshal General, Special Projects Division. 22 March 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

Harland Bartholomew & Associates, Inc. Cantonment Historical Resources Survey, Report of Findings, Fort Leonard Wood, MO. St. Louis, MO: Harland Bartholomew & Associates, Inc., 1987.

Headquarters Army Service Forces, Office of the Provost Marshal General. "Field Services Camp Survey." 26-27 April 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

Headquarters, Fort Leonard Wood, Missouri. "General Orders No 43: Activation of Internment Camp, Ft. Leonard Wood, MO." Fort Leonard Wood History Office. Vertical File "FLW-004-002." Typewritten manuscript, 9 December 1942.

"Historical Data: Prisoner of War Camp Fort Leonard Wood, Missouri." Fort Leonard Wood History Office. Vertical File "FLW-004-002." Typewritten manuscript. No date.

"History." Vertical File "Fort Leonard Wood – History." Clarke Library, Fort Leonard Wood, Missouri, 1991.

Hong, Howard. "Report of Visit to Prisoner of War Camp, Fort Leonard Wood, Missouri." 15 May 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

"Italian Prisoners of War Kept at Work at Fort Wood." Fort Leonard Wood History Office. Vertical File "FLW-004-002." Unlabeled newspaper reproduction, 10 June 1943.

Krammer, Arnold. Nazi Prisoners of War in America. Briarcliff Manor, New York: Stein and Day, 1979.

Neuland, Major Paul A. "Memorandum for Director, Prisoner of War Special Projects Division." Fort Leonard Wood History Office. Vertical File "FLW-004-002." 11 May 1945.

"Pioneer Training Occupies Site of WWII POW Camp." *Ft. Leonard Wood GUIDON*. 24 April 1975.

Queen, Stuart A. Letter to Maj. E. Davison. 26 January 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

Schnyder, Paul. "Report of visit to Camp Leonard Wood, Missouri." 19 August 1944. RG 389, Box 2665. National Archives and Records Administration, College Park, Maryland.

Seventh Service Command, Fort Leonard Wood, Missouri. "General Orders No 22: Discontinuance of Activity," Fort Leonard Wood History Office. Vertical File "FLW-004-002." Typewritten Manuscript, 20 May 1946.

Safourek, Lt. Col. N.J., Headquarters Seventh Service Command to Commanding Officer, Fort Leonard Wood, Missouri. Fort Leonard Wood History Office. Vertical File "FLW-004-002." Typewritten Manuscript, 27 Mar 1946.

Shelden, Phillip. Former Fort Leonard Wood POW Camp guard. Interview by Susan Enscore, ERDC-CERL. 8 April 2005.

Smith, Adam et al. Fort Leonard Wood Building Survey: 1941 to 1956. Champaign, IL: USACE/ERDC Construction Engineering Research Laboratory, 2003.

"The Fallen Foe: America's German Prisoners of War, 1942-1946." Fort Leonard Wood Museum: Fort Leonard Wood, Missouri, nd.

Waxer, Capt. J. H., FSO. Special Projects Division. Letter to CO, Ft. Leonard Wood. 24 September 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

Wells, Captain Thornley F. Fort Leonard Wood Prisoner of War Camp, Seventh Service Command. Letter to Special Projects Branch, Prisoner of War Division, Office of the Provost Marshal General. 2 October 1945. RG 389, Box 1617. National Archives and Records Administration, College Park, Maryland.

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**14. ABSTRACT**

This document is an architectural survey, historic context, and measured drawings of stonework elements created by German POWs during World War II throughout the cantonment of Fort Leonard Wood. The German POWS created the stonework from 1943 to 1946. The POWs built sidewalks, steps, retaining walls, foundations, chimneys, patios, bridges, and culverts.

In May 2004, the Fort Leonard Wood Directorate of Public Works, Environmental Division retained ERDC-CERL to write an architectural survey, historic context, and measured drawings for the German POW stonework that had been declared eligible for the National Register of Historic Places in 1987. This report satisfies Section 110 of the National Historic Preservation Act of 1966 as amended (NHPA).

The researchers determined that there are two historic districts directly attributed to the German POWs and their associated stonework throughout the Fort Leonard Wood cantonment. They are the:

German POW Stonework Historic District

German POW Fire Hydrant Plinth Historic District

The researchers also determined that the POW stonework in the already eligible WWII Temporary Historic District is a contributing feature to that historic district.

Several recommendations for the maintenance and upkeep of the POW stonework can be found in chapters 5 and 6.

**15. SUBJECT TERMS**
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