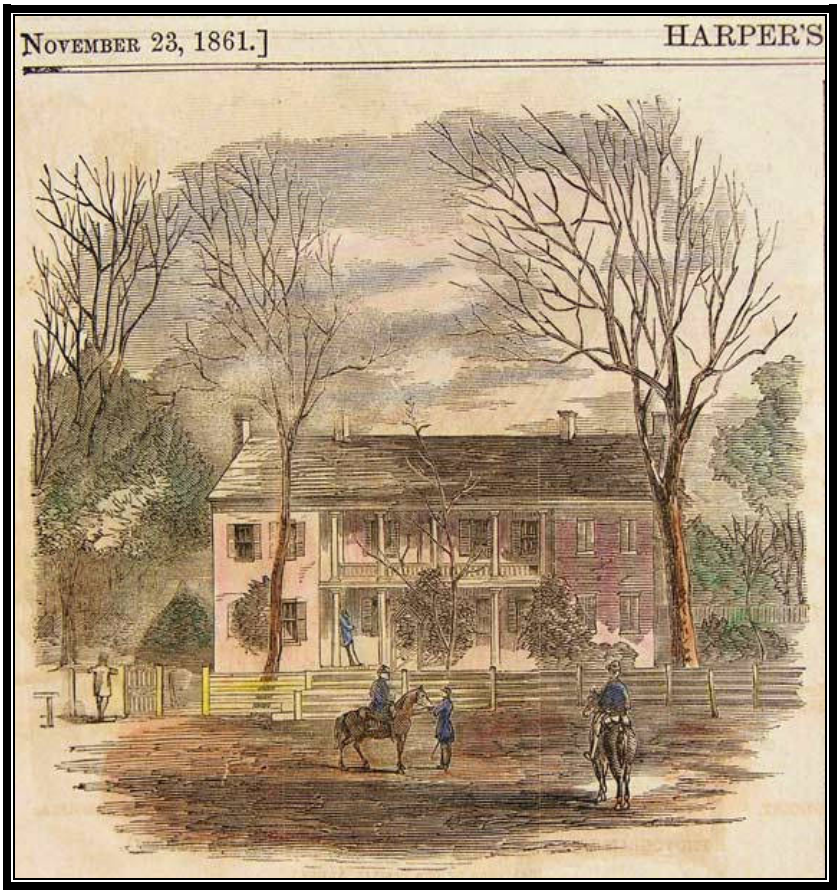
ARCHAEOLOGICAL INVESTIGATION OF CAMP DICK ROBINSON, GARRARD COUNTY, KENTUCKY

By

M. Jay Stottman

With contributions by
Matthew J. Davidson, Brian Mabelitini, Bruce L. Manzano, and Jack Rossen



Kentucky Archaeological Survey
Jointly Administered By:
The University of Kentucky
The Kentucky Heritage Council
KAS Report No. 222

ARCHAEOLOGICAL INVESTIGATIONS OF CAMP DICK ROBINSON, GARRAD COUNTY, KENTUCKY

By

M. Jay Stottman

With contributions by
Jack Rossen
Bruce L. Manzano
C. Brian Mabelitini
Matthew J. Davidson

Kentucky Archaeological Survey
Research Report No. 10

Jointly Administered by: The University of Kentucky Department of Anthropology and
The Kentucky Heritage Council
Lexington, Kentucky

Report Prepared for:

Mr. Daniel B. Davis
Division of Environmental Analysis, Kentucky Transportation Cabinet
200 Mero Street, Frankfort, KY 40622

2013

Kentucky Archaeological Survey

The Kentucky Archaeological Survey is jointly administered by the Kentucky Heritage Council (State Historic Preservation Office) and the University of Kentucky Department of Anthropology. Its mission is to provide a service to other state agencies, to work with private landowners to protect archaeological sites, and to educate the public about Kentucky's rich archaeological heritage.

Kentucky Heritage Council

The mandate of the Kentucky Heritage Council is to identify, preserve, and protect the cultural resources of Kentucky. The Council also maintains continually-updated inventories of historic structures and archaeological sites and nominates properties to the National Register of Historic Places. By working with other state and federal agencies, local communities, and interested citizens, the Council seeks to build a greater awareness of Kentucky's past and to encourage the long-term preservation of Kentucky's significant cultural resources. Through its various programs (e.g., Main Street, Grants, Publications, Rural Preservation, Civil War Initiative, Conferences), the Council strives to show how historic resources contribute to the heritage, economy, and quality of life of all Kentuckians.

University of Kentucky
Department of Anthropology

The University of Kentucky Department of Anthropology has a mission to educate students and promote scholarly research in the field of archaeology. The Department also is charged by state law with enforcing and administering the State Antiquities Act, which prohibits the destruction of archaeological sites on state and municipal lands. It maintains comprehensive inventory files and records on archaeological sites in the Commonwealth through the Office of State Archaeology, and supports the major state curation repository for archaeological collections (the William S. Webb Museum of Anthropology).

ACKNOWLEDGEMENTS

I would like to thank the Kentucky Transportation Cabinet for the opportunity to work on this project. I am most appreciative of Eric J. Schlarb, Lori C. Stahlgren, Ronnie J. Hazelett III, Jason Hodge, Jason Ross, and Brian Mabelitini, for their diligent fieldwork. Thanks to Brian Mabelitini for analyzing the artifacts and for conducting background research. Thank you to Hayward Wilkerson for producing some of the graphics. Finally, a special thanks to Steve McBride, Kim McBride and David Pollack for editorial comments, and to administrative staff Ed Winkle and Barbara Gortman.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1:
INTRODUCTION

At the request of the Kentucky Transportation Cabinet, the Kentucky Archaeological Survey (KAS) conducted archaeological investigations at Camp Dick Robinson (15Gd87) and Site 15Gd89, both of which are located in Garrard County, Kentucky (Figure 1). The purpose of the investigations was 1) to investigate a portion of Camp Dick Robinson in order to recover information that will contribute to a better understanding of history and use of this Civil War camp; and 2) to determine if Site 15Gd89, a late nineteenth century house, contained significant historic archaeological deposits. Both sites will be impacted by the proposed relocation of U.S. 27.

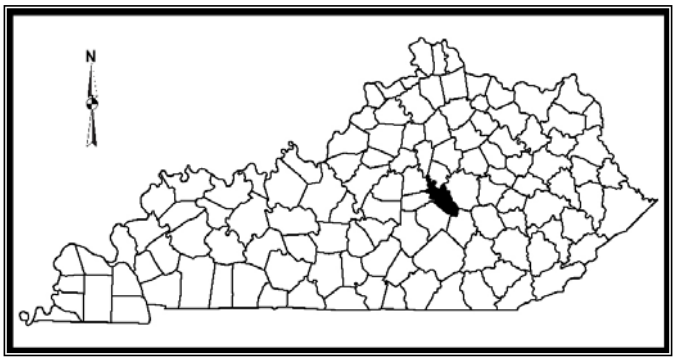


Figure 1. The Location of Garrard County, Kentucky.

The archaeological investigations were conducted from July 23rd to August 1st, 2007 and October 16th to October 20th, 2008. Fieldwork was conducted by Ronnie J. Hazelett III, Jason Hodge, Brian Mabelitini, David Pollack, Jason Ross, Eric J. Schlarb, Lori C. Stahlgren, and M. Jay Stottman. Laboratory work, artifact analysis, and archival research were conducted by Brian Mabelitini. Additional archival research was conducted by Kim A. McBride.

PREVIOUS WORK

The portion Camp Dick Robinson investigated during the course of this project and Site 15Gd89 were identified during an archaeological survey conducted by Cultural Resource Analysts (CRA) (Anderson 2004). Cultural Resource Analysts subsequently conducted limited excavations of both sites (Anderson and Faberson 2006). The portion of Camp Dick Robinson that will be impacted by the relocation of U.S. 27 is located in a pasture adjacent to the west property line of the Camp Dick Robinson Elementary School. The area investigated is situated on a flat rise adjacent to a large sinkhole just northwest of the intersection of U.S. 27 and KY 34 (Figure 2). The site measures approximately 335 m north/south and 75 m east/west, and encompasses 2.5 ha (6.2 acres).

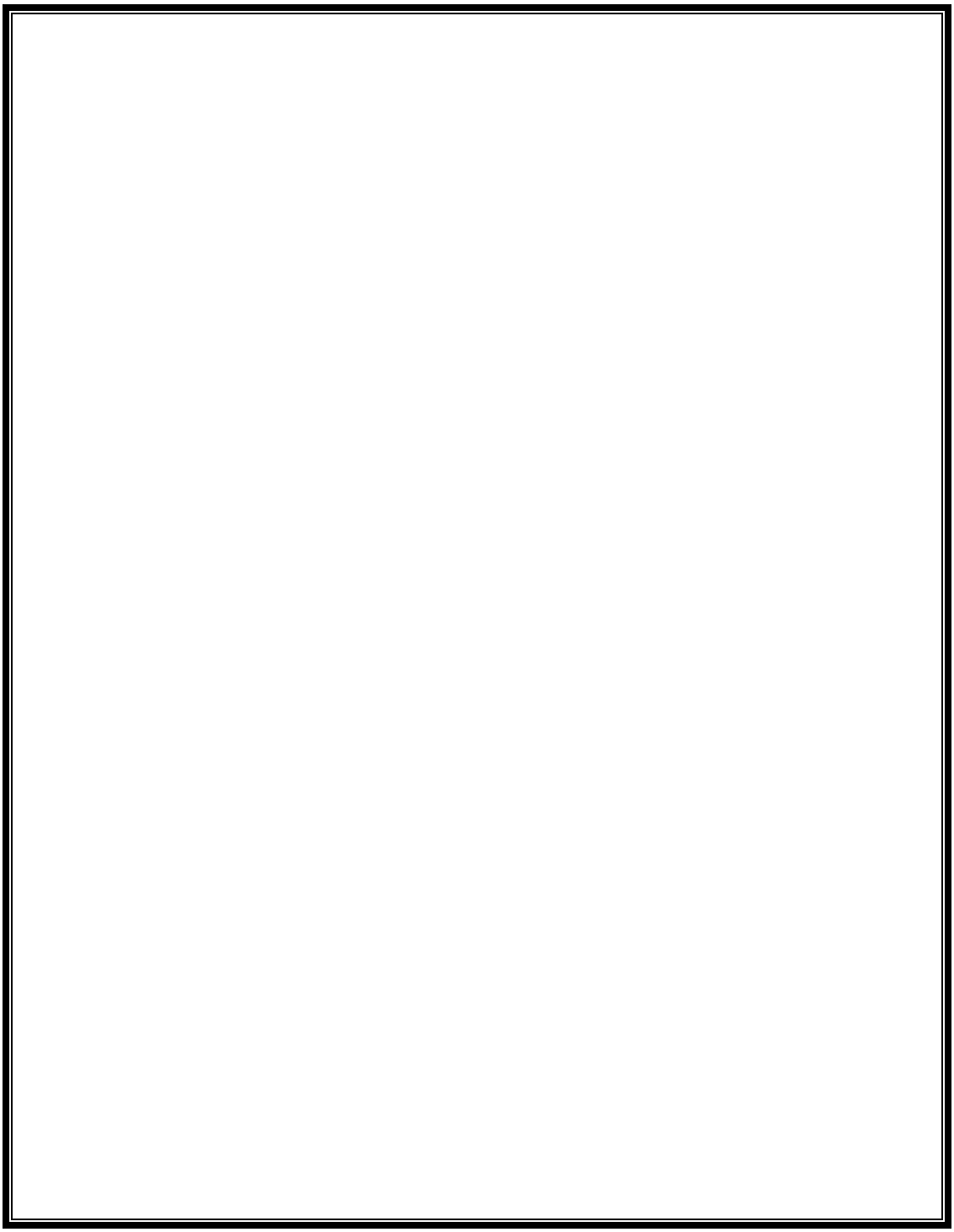


Figure 2. U.S.G.S. Topographic Map Showing the Location of Sites 15Gd87 and 15Gd89 (Bryantsville Quad.).

Features documented during the course of the CRA investigation consisted of posts holes, trash pits, and latrines (privies). Artifacts recovered, included Civil War related materials, such as bullets, artillery fragments, and accoutrements. Domestic and

architectural artifacts also were found, including fragments of dishes, bottles, faunal remains, bricks, and nails. This site also produced prehistoric remains dating from the Late Woodland to Fort Ancient periods. Most were restricted to the plowzone, but some were recovered from a pit feature.

Site 15Gd89, a farmstead, is located along U.S. 27 just southwest of Mt. Hebron Road (State Route 1355) (Figure 2). It measured approximately 180 m northwest/southeast and 260 m northeast to southwest and contains 3.8 ha (9.4 acres). CRA's investigations at Site 15Gd89 produced historic period domestic and architectural artifacts, such as dish and bottle fragments, window glass, nails, faunal remains and brick. Features identified at the site included post holes, builder's trenches, and trash pits.

KAS INVESTIGATIONS

KAS's investigations of Camp Dick Robinson (15Gd87) and Site 15Gd89 consisted of 10 stripped blocks totaling 5,005 m² of stripped area (4,280 m² at Camp Dick Robinson and 725 m² at Site 15Gd89) (Figure 3). This work resulted in identification of 21 new features (18 at Camp Dick Robinson and three at Site 15Gd89) and the relocation of six features documented during CRA's earlier investigation of Camp Dick Robinson. A total of 293 historic artifacts (Camp Dick Robinson, n=266; Site 15Gd89, n=27) was recovered during the course of this study. In addition to these materials, 2,532 faunal remains and 5,159 botanical remains were recovered from Camp Dick Robinson. Features identified at Camp Dick Robinson consisted of Civil War latrine trenches and trash pits, and nineteenth and twentieth century post holes. Features identified at Site 15Gd89 consisted of terra cotta drain pipes, a mid-twentieth century concrete cistern, and a late nineteenth to early twentieth century stone cesspool.

In addition to the historic artifacts, a light scatter of prehistoric artifacts (n=60) also were recovered from Camp Dick Robinson. These materials primarily date to the late Middle/early Late Woodland (A.D. 300-800) subperiod.

SUMMARY OF KAS INVESTIGATIONS

The archaeological resources recovered during the investigation of Site 15Gd87 have contributed to a better understanding of the function and spatial layout of Camp Dick Robinson. It was determined that the project area represented the latrine and trash disposal area of a lightly used periphery encampment. The living area of the encampment was likely located to the east on the property of the elementary school.

The spatial distribution of latrines, trash pits, and posts at Camp Dick Robinson suggests that the encampment was oriented in a linear fashion as depicted in the regulations (see Figure 29). That privacy fences were associated with the northern latrine group suggests that more time was invested in the establishment of these facilities than was the case with the southern latrine cluster. The observed patterns could indicate

differing attention to discipline exhibited by the camp occupants or reflect variation in the disciplinary philosophies of their commander. It is also possible that the occupants of the northern area intended to stay at the encampment longer than those in the southern area.

Figure 3. Removal of the Plowzone at Camp Dick Robinson.

The investigations demonstrated that the archaeological remains of both occupations were mainly associated with enlisted men who primarily consumed beef, beans, canned food, corn, beans, and barley supplemented with wild plants. That there was little exploitation of local meat resources suggests that the troops were well supplied. The general layout of the encampment indicates that good sanitary philosophy was practiced, as trash disposal areas and latrines were separated from the living area. The short-term nature of one occupation may be associated with regimental evacuations ordered during an epidemic at the camp.

The focus of this report is KAS's investigations of a portion of Camp Dick Robinson and the synthesis of the data collected by CRA. First, the historical context of Civil War and Camp Dick Robinson is presented along with extensive background on encampment research. Next, the historic period artifacts, the faunal remains, and botanical remains recovered from both the KAS and CRA investigations are described.

This is followed by descriptions of the excavations conducted and features documented, and an analysis and interpretation of the features and artifacts recovered with regards to camp function, status, spatial organization, and sanitation. Finally conclusions are presented.

Because no Civil War related-materials or any significant archaeological resources were found, the results of KAS's investigations at Site 15Gd89 are presented separately in Appendix A. A description of the excavations, results, and conclusions of the investigations at Site 15Gd89 are presented there.

Prehistoric artifacts recovered from Camp Dick Robinson are described in Appendix B.

CHAPTER 2
BACKGROUND

GARRARD COUNTY

The first Europeans to visit Kentucky included explorers, trappers, traders, and surveyors. During the 1750s, the English Crown's attempt to colonize the Ohio Valley spurred a race to form land companies and send surveyors into the area to map out enormous swaths of land (Jillson 1934). It is believed that the first verifiable documentation of exploration in Kentucky by Euro-Americans began with Dr. Thomas Walker and his scouting party, who visited the Upper Cumberland in April of 1750 (Kleber 1992).

In 1763, England's King George III set aside the land west of the Appalachians for Indians and English fur traders, but closed the area to permanent settlement. However, this decree fell upon deaf ears and further colonial exploration and development continued. Daniel Boone first explored Kentucky in 1767 and by 1769, had explored much of the Red and Kentucky River valleys (Kleber 1992). Armed with land grants received because of military service in the French and Indian War and later, the Revolutionary War, the historic settlement of Kentucky was in full force by 1773.

The central Kentucky region was settled just before the Revolutionary War ca. 1774-1775 by Euro-Americans who had traveled over the Appalachian Mountains by land and by way of the Cumberland Gap. Other settlers began moving down the Ohio River from Fort Pitt past the Indian encampments towards the Falls of the Ohio River.

Garrard was the 25th county created in the Commonwealth of Kentucky formed by the legislature on December 17, 1796. It was created from portions of Lincoln, Madison, and Mercer counties and named after Kentucky's second governor, James Garrard. The county seat of Lancaster was formed in 1797 (Kleber 1992; Rennick 1984). The county was first settled because of its proximity to the Wilderness Road, a route from the Cumberland Gap to the outlying settlements in Kentucky. It followed the old Warrior's Path through the Cumberland Gap to Flat Lick, then parts of Skagg's Trace from Flat Lick to Crab Orchard, Kentucky. With the use of waterways such as the Kentucky River, livestock, hemp, and tobacco were among the early agricultural products of the county that were shipped by flatboat to markets located downstream.

Garrard County was primarily an agricultural community throughout the Antebellum period. The Kentucky River forms most of the county's northern boundary and flatboats were utilized to ship produce, livestock, hemp, tobacco, and grain out of the county to ports of trade in Louisville and New Orleans. By the beginning of the nineteenth century, several gristmills were in operation in all parts of the county. Milling crops for both household use and export continued to be an important agriculturally based industry throughout the first half of the century (Calico 1947:74-77; Kleber 1992:365).

The Civil War brought many enlisted men from Garrard County into the Union ranks. During this time, Garrard County was the focus of military and political activities during the early months of the Civil War. As the secession crisis unfolded across the South, a local farmer by the name of Richard M. Robinson, allowed William "Bull" Nelson to establish a Union Army recruiting camp on his farm located north of Lancaster on the road leading to Lexington (Allgood 2001). The camp quickly became one of the most important Union posts in the early days of the war. Its existence was in direct conflict with Kentucky's policy of "armed neutrality" set forth by then Governor Beriah Magoffin.

After the war, Garrard County experienced a brief period of railroad development. In 1868, the Louisville and Nashville Railroad completed a line between Richmond and Stanford, passing through Lancaster. Rail access was an economic boom to the county, providing farmers with direct and rapid access to markets in Lexington, Louisville, and Cincinnati. With the completion of the railway line, Garrard County began producing and distributing cattle, sheep, hogs, poultry, thoroughbred horses, and burley tobacco.

During the twentieth century, Garrard County remained an agricultural producing area with a major emphasis on burley tobacco. The development of cultivated white burley tobacco changed Garrard County's agricultural economy and landscape. Throughout the Antebellum period, western Kentucky produced a majority of the Commonwealth's tobacco because the soil was well suited for the cultivation of the short stalked, long leafed dark tobacco plant. This type of crop was rarely grown in the Bluegrass Region during the same time because hemp was the primary cash crop in central Kentucky (Amos 1988). Nevertheless, white burley tobacco gained popularity when farmers learned that the plant thrived in the soils of the Bluegrass Region (Amos 1988:132-137; Davis 1927:83-85). By 1870, a handful of farmers in the Bluegrass grew small crops of burley tobacco. Within thirty years, burley tobacco was the primary cash crop for the region and much of the rest of the Commonwealth.

Although agriculture dominated the county's economy in the twentieth century, manufacturing and commercial trade continued to expand. Improvements to U.S. 27 between Lexington and Lancaster in the late 1940s opened the county to an increased amount traffic and development of subdivisions in the northern portion of the county. Industries located in the area after 1970 provided jobs that allowed population figures to increase once more; in 1980, the population was 10,853 and in 1990, it reached 11,579 (Kleber 1992).

THE CIVIL WAR IN KENTUCKY

The Civil War is unquestionably one of the most significant events to take place in this nation's history. Kentucky's participation and role in the Civil War is as varied as the attitudes of its people towards the war. At the onset of the war in the spring of 1861 Kentucky was placed in a very awkward position, as it was a slave state that was against secession (McBride and McBride 2008). Though Kentucky's political leaders stressed

neutrality as its position, the citizens were strongly divided on their support for the Union or Confederacy. Both sides saw Kentucky as a fertile recruiting ground and the early battles in the state were not fought on the battlefield, but were focused on winning the loyalties of its young men's service.

Neutrality did not last long in Kentucky, as the Union made the first move in the state with the establishment of Camp Dick Robinson in the late summer of 1861 to recruit and train troops (McBride and McBride 2008). Less than a month later troops from both armies began moving into Kentucky and by the fall of 1861 political leaders became pro-Union and the state was divided with Union troops occupying the north half of the state and the Confederates the south. Both sides established fortifications and recruiting camps throughout their territory in the state. The Confederates established major forts at Columbus and Bowling Green to compliment Forts Henry and Donelson nearby in Tennessee. Bowling Green was made the headquarters as a series of minor forts were established along the Confederate line in Hopkinsville, Glasgow, Monticello, and Somerset. The Union established bases mainly along the Ohio River at Smithland, Wickliffe, Maysville, Covington, and Louisville, which was made headquarters (McBride and McBride 2008).

Although the state had been divided amongst the two sides, there was very little engagement during the remainder of 1861, except for some minor skirmishes. The most significant of these were the battles of Wildcat Mountain in Laurel County and Ivy Mountain in Floyd County in which Confederate troops were repulsed and pushed further south (Hafendorfer 2003; McBride and McBride 2008; Matthews 2005). The first moderate engagement took place in January of 1862 at Mill Springs on the Cumberland River in Southeastern Kentucky, when 4,000 Confederate troops under the command of General Felix Zollicoffer were repulsed by 4,000 to 6,000 Union troops commanded by George H. Thomas (Hafendorfer 2001; Harrison 1975; McBride and McBride 2008).

The most significant early engagement that affected Kentucky took place in February of 1862 just across the border at Forts Henry and Donelson in Tennessee. There, Union General Ulysses S. Grant attacked and defeated the Confederates with 17,000 troops to cut off and make irrelevant the Confederate stronghold at Columbus. With the defeat and the loss of Nashville as a supply center, the Confederates effectively moved out of Kentucky by the summer of 1862 (Harrison 1975; McBride and McBride 2008; Nevin 1983).

After the Confederates abandoned Kentucky, there were but just a few minor skirmishes throughout the state, as the Union strengthened its positions in the following few months. However the Confederates did engage Union troops on occasion with John Hunt Morgan's raid during the summer of 1862 (McBride and McBride 2008; Penn 1995). In August of 1862, the Confederates made a push to once again occupy Kentucky in hopes that they would be able to recruit much needed troops for their armies. General Kirby Smith and his 12,000 troops entered Kentucky through Barbourville and made his way north defeating a small detachment of Union defenders at Big Hill and the main Union force of 6,500 in a moderate engagement just outside of Richmond, known as the

Battle of Richmond (Harrison 1975; McBride and McBride 2008; McBride and Stottman 2000; Lambert 1995). The aftermath of this battle allowed the Confederates to occupy much of the Bluegrass including Lexington.

In a coordinated effort, General Braxton Bragg moved into Kentucky from Chattanooga with 27,000 troops and ended up in the Glasgow area by the fall of 1862. Bragg intended to meet with Smith and march on Louisville. However, Bragg's Confederate forces were delayed by unexpected strong Union resistance at Munfordville and the concerted attack on Louisville never happened. Instead Bragg left his troops scattered around the region and took a small force to establish a Confederate government in Frankfort. Union General Don Carlos Buell moved from Tennessee with 60,000 troops to defend Louisville and because of Bragg's delay was able to reach his destination without interference from Bragg. The Confederate government was short lived as Buell moved into Frankfort from Louisville. In pursuit of Bragg, Buell's forces ended up at Perryville, where Bragg attempting to assemble his scattered troops encountered the Union forces with around 15,000 men. On October 7th, 1862 a skirmish between the two armies began and by the next day had erupted into the largest battle fought in Kentucky during the Civil War. Realizing that he was outnumbered Bragg withdrew from the battle to Tennessee. The result of the battle was over 1,000 men killed and over 5,000 wounded. These loses effectively ended the Confederate incursion into Kentucky (Harrison 1975; McBride and McBride 2008; Noe 2001).

Perryville was the end of major engagement in Kentucky as the Union took control of and occupied the entire state. Throughout the remainder of the war, the only engagements were raids on railroads and supply depots by Confederate John Hunt Morgan and General Nathan Bedford Forrest, which included a skirmish in Cynthiana in 1864 and in Paducah in 1865 (Harrison 1975; McBride and McBride 2008).

After Perryville, the Union army fortified defenses around major cities on the Ohio River, such as Louisville, Paducah, Owensboro, and Covington. Kentucky's role in the war became primarily to support Union offensives into the south and in the western theater and as a recruitment center. This role was most evident with the establishment of Camp Nelson located along the Kentucky River in Jessamine County in 1863. Camp Nelson was a major supply depot and recruiting center for African-American troops. By the summer of 1864, 16,000 African-American men had volunteered, making Camp Nelson one of the largest African-American recruiting centers in the Union (McBride and McBride 2008).

CAMP DICK ROBINSON

By: C. Brian Mabelitini and M. Jay Stottman

At the onset of the Civil War, Kentucky struggled to maintain its neutrality, as citizens sympathetic to either side feared a tip in the balance. Garrard County judge Allen Burton made a request of President Lincoln to raise and organize Union troops in Kentucky in order to provide Union loyalists the ability to stand up to the Secessionist

State Guard. Burton recommended U.S. Naval Lieutenant William Nelson for the task (Clark 2011; Courier Journal 1895). Nelson was detached from the Navy and made a general in the army and given the task of organizing a force of 10,000 troops in Kentucky. Union sympathizer Richard M. Robinson offered for lease 425 acres of land that he owned for the establishment of a camp. Robinson acquired the property through his wife, Margaret Hoskins, the daughter of prominent Garrard County citizen William Hoskins Sr. The property located at Hoskins Crossroads just north of Lancaster and east of Danville near the Dicks River included gently rolling farmland, a large main house, storehouse, blacksmith shop, barn, mule shed, and other outbuildings. The Hoskins family built the house on the property near the crossroads which became a popular stagecoach stop and tavern during the early nineteenth century (Courier Journal 1895). Nelson determined that the property was an ideal location to establish a camp for the organization and training of a force and made the Robinson house its headquarters (Figure 4). Camp Dick Robinson was established on August 6, 1861, named after the landowner.

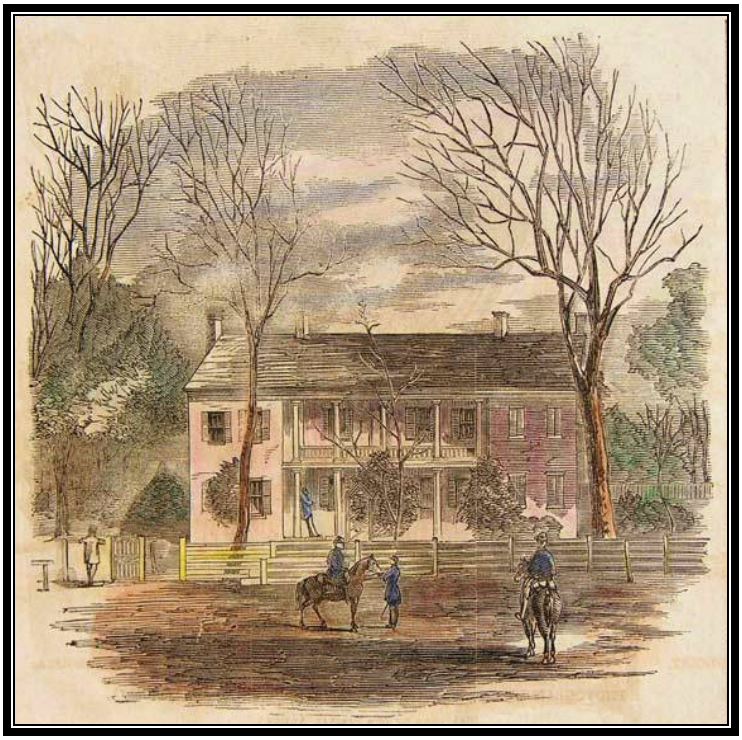


Figure 4. Camp Dick Robinson Headquarters (from Harper's Weekly: November 23, 1861).

Infantry colonels T.T. Garrard, Thomas Bramlette, Speed S. Fry, and cavalry Colonel W.J. Landram were directed to raise regiments in Kentucky, and by late August 1861, the camp was garrisoned by the 3rd, 4th, and 7th Kentucky Infantry, the 1st Kentucky Cavalry, Hewitt's artillery battery, and the 1st and 2nd Tennessee Infantry. These newly organized regiments were trained in artillery, drills, and received issues of clothing and arms. By the end of August there were approximately 3,200 troops under Nelson's

command at Camp Dick Robinson along with 7,000 arms and 6 pieces of artillery (Courier Journal 1895). General Nelson was a large man who was known for his tireless energy. He was described by the troops that served under him as "boisterous and impetuous, impatient of restraint and contradiction, and utterly intolerant of the slightest infraction of discipline" (Clark 2011; Courier Journal 1895). His energy and determination were required to maintain the camp early in its existence as Governor Magoffin lobbied President Lincoln to disperse the camp in order to preserve neutrality. After much oratory amongst state and federal officials, nothing was done about Camp Dick Robinson and President Lincoln's view that it was exclusively occupied by Kentuckians and that they had the right to organize on Kentucky soil was accepted (Courier Journal 1895).

With the camp's existence secured, General William Nelson was reassigned to Maysville, Kentucky, to raise another brigade. Nelson was replaced as camp commander by General Robert Anderson followed by William T. Sherman over a period of about a month (Courier Journal 1895). The newly formed regiments at Camp Dick Robinson were mustered into service by U.S. Mustering Officer, Brig. General George H. Thomas at that time.

No period maps of Camp Dick Robinson exist today. However, an 1895 description in the Louisville Courier-Journal asserts that the camp extended one-half mile from the intersection of the Nicholasville, Lancaster, and Danville Roads. An 1862 sketch made by W.T.R. Brown (who trained at the camp), depicts the Robinson house as being in the center of the camp. The portion of Camp Dick Robinson represented by site 15Gd87 is depicted just over Robinson's house, to the left of the center of the drawing across the road (Figure 5). This sketch was made from the southwest (Harper's Weekly November 1, 1862), and the area of the investigation is visible to the northeast of the Robinson house on the eastern side of present US 27. Rows of tents are visible in this area. Although it is not possible to discern the type of tents depicted in this location, the tents in the foreground appear to be wedge (or A-frame) tents. These were the most commonly used tents, and were in general use by both sides during the first two years of the war (Coggins 1962). Based on this sketch, the portion of Camp Dick Robinson associated with site 15Gd87 appears to extend beyond the site boundaries to the north and east and may have been partially disturbed by the construction of the Camp Dick Robinson Elementary School.

The establishment of Camp Dick Robinson was viewed by secessionists as a blatant violation of the neutrality policy set forth by Kentucky Governor Beriah Magoffin, which led to Confederate General Leonidas K. Polk's occupation of the western Kentucky city of Columbus on September 3, 1861. The following day, Union General Ulysses S. Grant moved his troops into Paducah, bringing an end to Kentucky's policy of neutrality.

Figure 5. Sketch of Camp Dick Robinson Showing Site 15Gd87 (from Harper's Weekly: November 1, 1862).

General George H. Thomas assumed command of the camp in September 15, 1861 after the departure of General Sherman (Courier Journal 1895). Around the time that Thomas took command the camp was in the midst of a measles epidemic. At one point during the epidemic nearly one-third of the soldiers were deemed unfit for duty, which overwhelmed the army's medical staff. Many of the incapacitated soldiers were cared for by Richard Robinson's niece, Eliza Hoskins, inside the Robinson home. Eliza came to be known as the "Angel of Camp Dick" (Hughes 1992:158).

Camp Dick Robinson served as the staging ground for several Union movements in Kentucky throughout late 1861 and early 1862. On September 19, 1861 Confederate forces under the command of General Felix Zollicoffer entered Kentucky from Tennessee and seized the town of Barbourville in Knox County. In early October, General George Thomas took troops from Camp Dick Robinson and others organized by Nelson around Crab Orchard and set-up defenses to protect the Wilderness Road resulting in a skirmish at Rockcastle Hills. Later, those troops defeated the Confederates at the Battle of Camp Wildcat on October 21, 1861. In late November, Thomas and his troops went in pursuit of Zollicoffer, as Camp Dick Robinson continued to serve as recruitment and training facility for new troops. At this time, General William T. Sherman visited Camp Dick Robinson where he had once been in command and reviewed the troops that would take on the task of pushing the Confederates out of Kentucky (Courier Journal 1895). Camp Dick Robinson supplied new troops to Thomas, and the culminating battle ended the Confederate incursion into Kentucky from Zollicoffer. On January 19, 1862 the confederate forces met the pursuing Union troops near Somerset in Pulaski County at the Battle of Mill Springs. Victory at Mill Springs allowed the Union forces to move into middle Tennessee and occupy Nashville by late February of 1862.

Camp Dick Robinson's role in the fortification and establishment of defenses around Kentucky after the initial Confederate incursion may have been limited, as the Union's efforts were more concentrated on strengthening defenses across southern Kentucky in early 1862 (McBride and McBride 2008). During the Confederate's more successful second incursion into Kentucky during the summer of 1862, it appears that Camp Dick Robinson was only minimally occupied when General Kirby Smith followed by General Braxton Bragg took much of eastern and central Kentucky, including Lexington. Acting on the purpose of the incursion to recruit new troops for the dwindling Confederate army, Bragg ordered Simon Bolivar Buckner to establish a recruitment camp at the recently seized Camp Dick Robinson, which was renamed Camp Breckinridge. The effort to bolster Confederate forces with Kentucky enlistments was a failure as only 1,500 responded to the call (Noe 2001).

On September 27, 1862 Bragg ordered General Kirby Smith to establish a supply depot at Camp Breckinridge (Old Camp Dick Robinson) to serve as a rallying point in case of retreat (Noe 2001). During the battle of Perryville on October 8, 1862 Camp Breckinridge served as Bragg's supply depot. After the battle and realizing that he was outnumbered, Bragg retreated from Perryville to Camp Breckinridge. After resupplying at Camp Breckinridge many of the Confederates expected another battle and some contemplated making a stand at the camp which provided a good defensible position

(Noe 2001:128-129). However, Union General Buell was slow to pursue Bragg and did not seek to engage in another battle without the full complement of his force. Bragg also was not eager to force a battle as it became evident by October 11th that the supplies at Camp Breckinridge were less than expected. The camp could only supply Bragg's troops with rations for four more days and resources in the surrounding countryside had been depleted. Buell's inaction and the dwindling supplies at Camp Breckinridge ensured that the two armies would not meet again on the battlefield, as Bragg began his escape to Tennessee on October 13th (Noe 2001). The Confederates loaded up as much of the supplies as they could, as a long wagon train followed by a drove of beef cattle headed south. What supplies the troops could not take with them was set on fire, including barrels of pork. Captured cannon tubes were buried so that they would not fall into enemy hands.

With Camp Dick Robinson back in Union hands, it briefly became the focus of the Union army after its first commander General William Nelson was shot and killed by Union General Jefferson C. Davis at the Galt House in Louisville on September 29, 1862 (Clark 2011; Courier Journal 1895; Yater 1987). Nelson was eventually interred behind the Robinson house at Camp Dick Robinson. The camp remained an important depot until it was replaced by a new camp at a more defensible location a few miles north in Jessamine County on June 12, 1863. The replacement camp was named Camp Nelson in honor of Major General William Nelson. With the establishment of Camp Nelson, Camp Dick Robinson was largely abandoned as a supply depot and served as an outpost for the remainder of the war. On July 4, 1865 a large flag pole and American flag were erected at Nelson's burial site. The flag pole was cut down by unknown parties three years later, after which Nelson was removed and reinterred at a cemetery in Maysville (Courier Journal 1895).

The U.S. government's lease of the Robinson farm ended on June 1, 1865. However, Camp Dick Robinson appeared to have continued to be occupied beyond that date and was still mentioned in the army correspondence. On November 30, 1865, correspondence stated "At Camp Dick Robinson, 8 miles further south, at the junction of the Somerset, and Danville roads were found 8 graves of Union Soldiers in the corner of a pasture West of the road and nearly opposite the grounds occupied by our Armies as a Cavalry Camp" (Restieux 1865). This correspondence supports the notion that the camp continued to be used as an outpost and was occupied through the end of the Civil War.

Richard Robinson was never paid for the use of his land and he died bankrupt in 1869. His widow Margaret P. Robinson was eventually paid rent by the government, but much less than was requested. The property that encompassed Camp Dick Robinson was sold out of the Robinson family in 1884 and 1905.

BACKGROUND ON CIVIL WAR CAMP FEATURES AND ORGANIZATION

In this section the archival and archaeological evidence for Civil War camp organization and layout and its constituent elements are discussed to provide a context for

the archaeological remains identified at Camp Dick Robinson. A discussion of camp shelters, cooking, sanitary practices, and other equipment or furniture that may produce an archaeological signature is presented in relation to their archaeological correlates.

While archaeological examination of Civil War sites have primarily been focused on battlefields, some work has been done at camps, depots, prisons, and shipwrecks (Geier and Winter 1994; Geier and Potter 2000; Geier et al. 2006). Only recently have much focus has been directed to developing approaches to the archaeology of camps (Balicki 2011). Balicki (2011) generally defines three basic types of camps; permanent camps, winter quarters, and surface camps. Archaeological investigations at Civil War camps have primarily been conducted at sites where long-term occupation took place, such as permanent camps and winter quarters (Balicki 2001, 2011; Nelson 2006; Reeves and Geier 2006). Permanent camps were associated with long-term occupations, such as forts, depots, and recruitment or training centers (Balicki 2011; McBride and McBride 2006). Winter quarters were considered a long-term occupation that extended over months at least throughout a winter and consisted of modified or fortified housing. These two types of camps were more likely to have substantial structures, such as barracks, mess halls, huts, cabins, or stockaded tents that leave strong archaeological signatures (Balicki 2011). The third type of camp defined by Balicki (2011) is a surface camp which is characterized by a short-term occupation where tents or open camping were prevalent. These camps have weaker archaeological signatures and have largely been overlooked by researchers. Camp Dick Robinson would have been considered a permanent camp by definition; however the portion of the camp investigated was more like a surface camp.

Based on archaeological investigations that have been conducted at Civil War camps, a variety of features are typically encountered at such sites (Anderson and Faberson 2006; Balicki 2011; Carstens 1998; Geier et al. 2006; Higgins et al. 1995; Bentz and Kim 1993; McBride and McBride 2008; O'Malley 1999; Quertermous 1999; Reeves and Geier 2006). The most prevalent features identified are associated with structures, such as chimney foundations, hut depressions and platforms, and brick or stone rubble. Other features typical of these sites are refuse pits, hearths, and latrine trenches (Geier et al. 2006). At sites with more substantial buildings, such as those found at Camp Nelson, foundation, post hole, and stockade features also are common (McBride et al. 2000). The analysis of archaeological data from Civil War camps have primarily focused on understanding the architectural remains, such as the construction techniques, materials, and use of buildings and huts (McBride and McBride 2006; Nelson 2006; Reeves and Geier 2006). Camp life has been examined through the refuse left by soldiers at the camps, such as artifacts related to diet, clothing, equipment, leisure, ethnicity, and status (Bies 2006; Fesler et al. 2006; Geier et al. 2006; McBride 1994). Features identified from Civil War camps have been examined spatially to understand camp lay out and organization related to camp design regulations and its variations (Balicki et al. 2005; Balicki 2006; Whitehorne 2006).

While there has been extensive excavations conducted at longer-term permanent camps and winter quarters, such as Camp Nelson, there has been little archaeological

work done at surface or short-term encampments that primarily used tents for shelter, other non-permanent shelter, or no shelter at all. The most extensive work at a short-term or surface camp was conducted at site 44AX195 in Alexandria, Virginia (Balicki et al. 2005; Balicki 2011). Archaeological examples and an examination of archival records about camp layout, shelter, and equipment can provide context to better identify the types and pattern of features that could be present at the various types of camps.

Based on archival documents, soldier accounts, and maps much is known about the way camps were supposed to be and how they actually were situated and organized. Camps established during the Civil War by both armies were laid out based on regulations established by the U.S. Army in 1861 (Figure 6). According to regulation an encampment for a regiment of infantry was set up from an established color line, which represented the regimental front. Companies were set up along streets 10 paces beyond the color line, followed by the kitchens, noncommissioned officers, company officers, and field officers each separated by 20 paces. Twenty-five paces beyond that were the wagons and baggage, and horses known as the train. Latrines for the company were dug 150 paces in front of the color line and those for the officers were 100 paces beyond the train. Camps following this regulation measured approximately 480 by 400 paces (Figure 6) (Whitehorne 2006).

In general camps were laid out in this manner unless the regiment was less than full strength or the topography did not allow for it. In these cases and for cavalry units, tents could be set up in a single line. Camps were known to generally adhere to the basic principles of the regulation with tents and shelters organized in company streets, separation of officers and company enlisted men, latrines, baggage trains, kitchens, sulters, and hospitals being located in separate areas, but perhaps not arranged as dictated by the regulations due to topographic constraints or command preference. Figure 7 shows an unidentified camp that conforms to the basic principles of regulated camp lay-out, such as the arrangement of tents in streets, but also shows some deviations, like the locations of some tents and some semi-permanent structures scattered around the periphery.

Archaeological investigations at site 44Ax195 identified several activity areas and organization that are consistent with areas described in camp layout regulations including a hospital area, kitchen area, and enlisted men's living area (Balicki 2011). It was found that this camp conformed in general to the established camp layout regulations.

Soldiers were housed in a variety of ways depending on the season, duration of the encampment, and whether it was early or late in the war. Camps early in the war, primarily those where troops were mustered or regiments were formed, utilized several types of tents to house soldiers, including Sibley, wedge, wall, and dog tents. Sibley or bell tents were supported by a 12 ft. center pole situated on a metal tripod and were circular in shape with an 18 ft. diameter (Figure 8). These tents featured a heating stove with a metal pipe chimney that vented through a flap in the top of the tent and could sleep eight to 12 people. For winter encampments, Sibley tents were often stockaded at the base with logs. These tents were used primarily early in the war, falling out of use by

1863 because they were too expensive and cumbersome (Billings 1993; Whitehorne 2006).

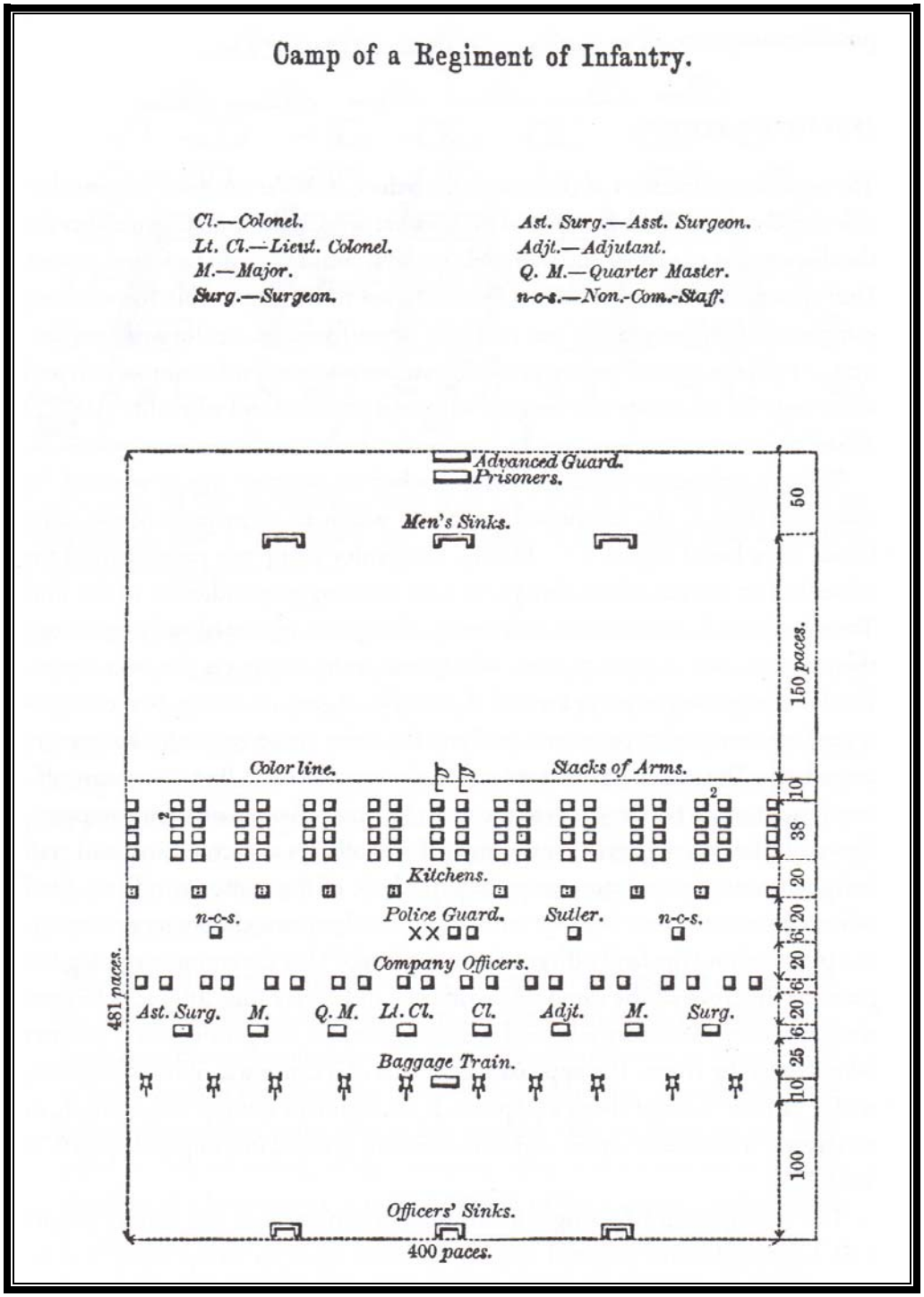


Figure 6. Regulation Camp Layout for the U.S. Army in 1861 (adapted from Whitehorne 2006).

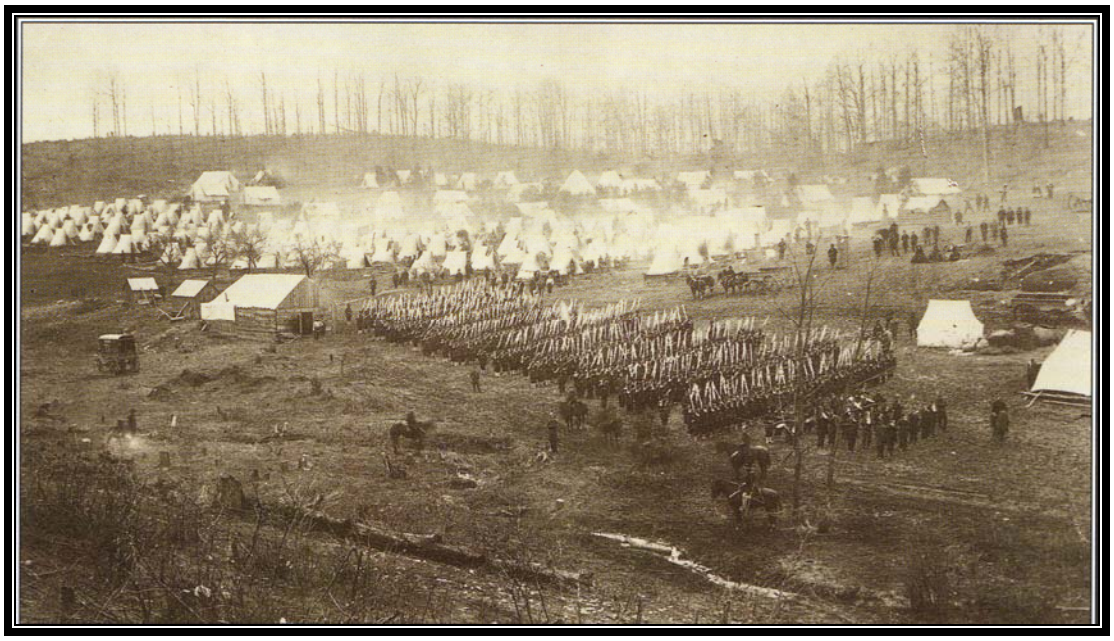


Figure 7. Civil War Encampment (from Davis 2004).

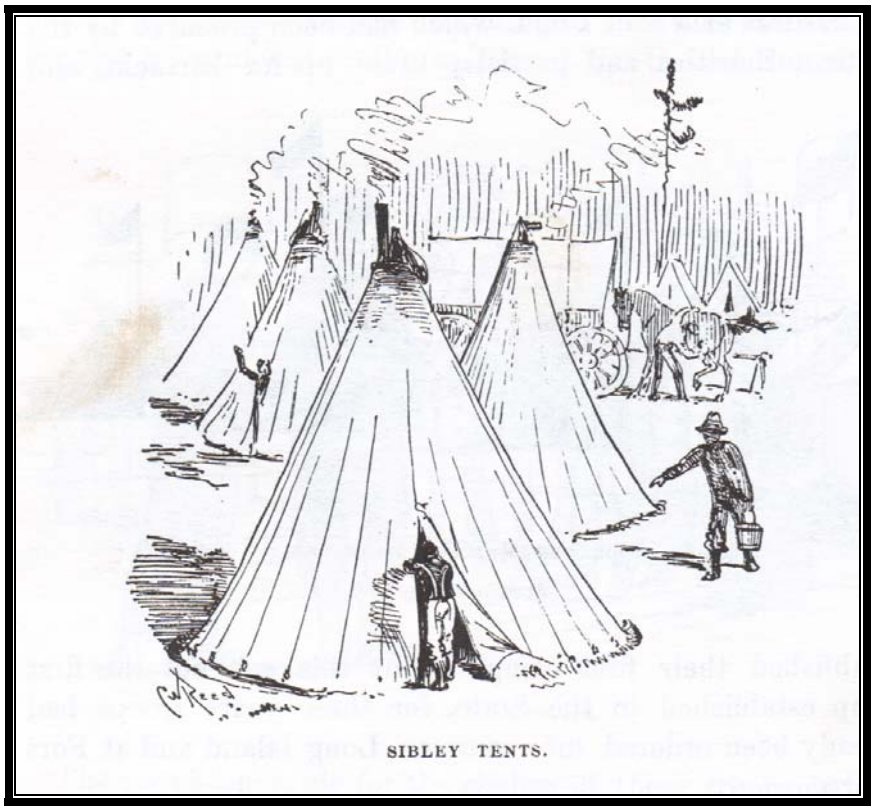


Figure 8. Illustration of a Sibley Tent (Billings 1993).

Wedge or "A" tents were more common than the Sibley tents and consisted of a large piece of canvas stretched over a 6 ft. pole supported at either end by two vertical poles of equal height and was staked out (Figure 9). They measured about 7 ft. square and slept four to six people. The wedge tent was often stockaded for winter encampments. As with the Sibley tents, the wedge tents fell out of use by 1863 because they were deemed too bulky. Wall or hospital tents also were used early in the war and resembled wedge tents, but had walls and were typically much larger, measuring 14 to 24 ft. long and 14.5 ft. wide (Figure 10). They were outfitted with a fly for extra rain and sun protection. These tents primarily served as hospitals, but smaller versions also were used for officers and staff. As with Sibley and wedge tents, wall tents were used until 1862, again because of their size and weight (Billings 1993; Whitehorne 2006).

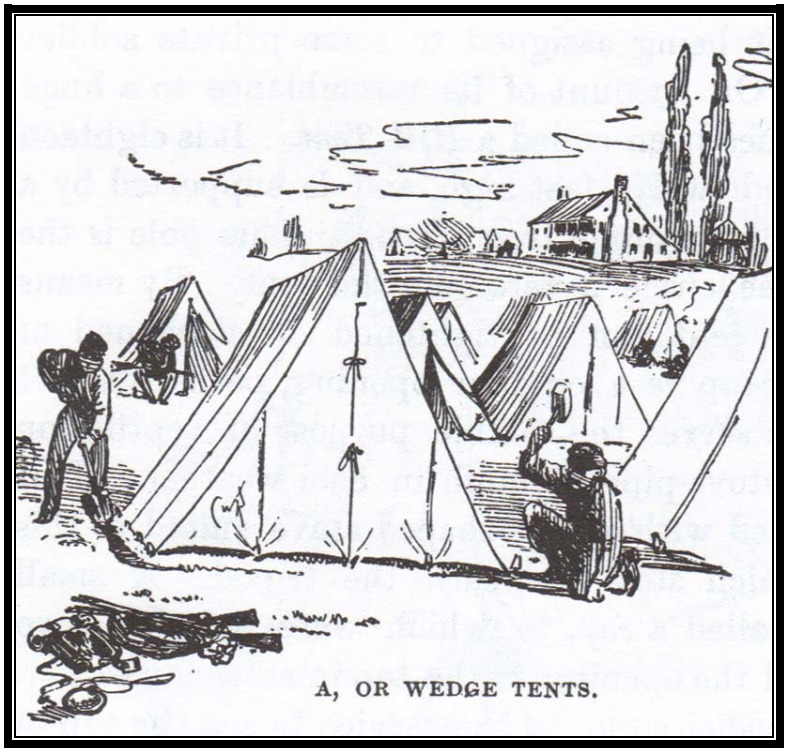


Figure 9. Illustration of a Wedge Tent (Billings 1993).

By late 1862, most tent types had ceased to be used with regularity by both sides, as experienced soldiers and officers saw them as an impediment. Sibley, wedge, and wall tents were primarily used at more permanent or long-term camps, such as supply depots, recruitment and training centers, and refugee camps (McBride and McBride 2006). For the soldiers in the field, sleeping in the open or in a shelter or "dog" tent was most practical (Figure 11). Each soldier was assigned a piece of canvas 6 to 7 ft. x 4 ft. with buttons and buttonholes down each side. The canvas could be stretched over poles or brush to create a shelter and it could be joined together with others via the buttons to form a larger shelter (Billings 1993; Davis 2004; Whitehorne 20006). These shelters were only used when conditions called and many soldiers found them to be cumbersome to transport as well.

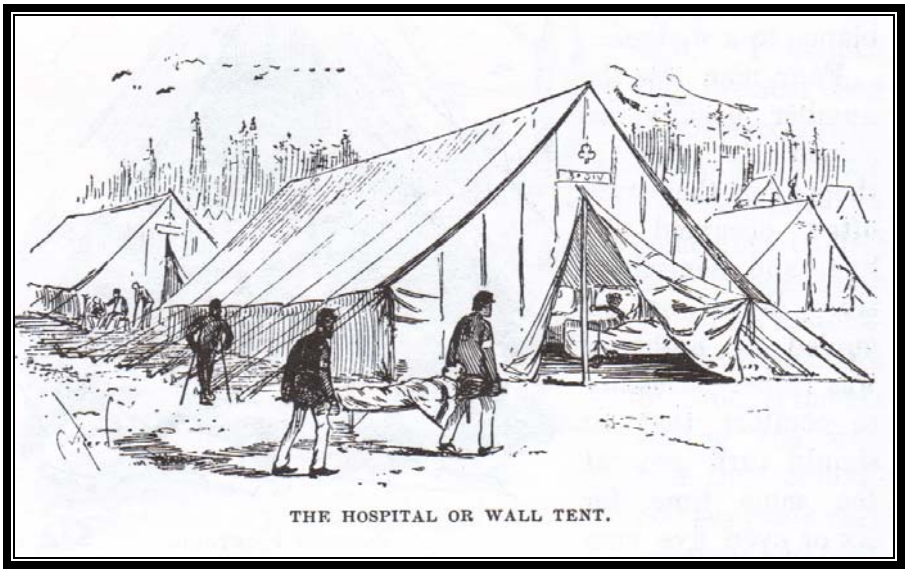


Figure 10. Illustration of a Wall Tent (Billings 1993).

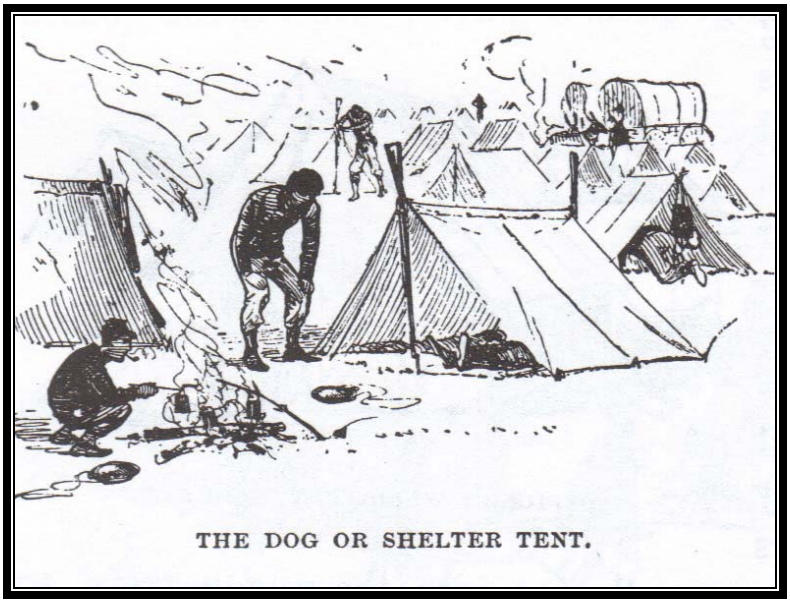


Figure 11. Illustration of a Dog Tent (Billings 1993).

Although soldiers more frequently camped in the open during the warm months, winter camps required more elaborate shelters. Soldiers were housed in small log huts, stockaded tents, and sometimes cabins they constructed (Balicki 2006; Orr 2006). They used primarily logs available from local forests to construct huts and/or stockade tents. Many would build a 2 to 5 ft. wall of notched logs to stockade their shelter tents (Figure 12). Huts were constructed of logs and scavenged materials such as, boards, stone, brick, barrels, and window glass from structure ruins in the area and from the crates and boxes in which their supplies were packed (Billings 1993; Whitehorne 2006).

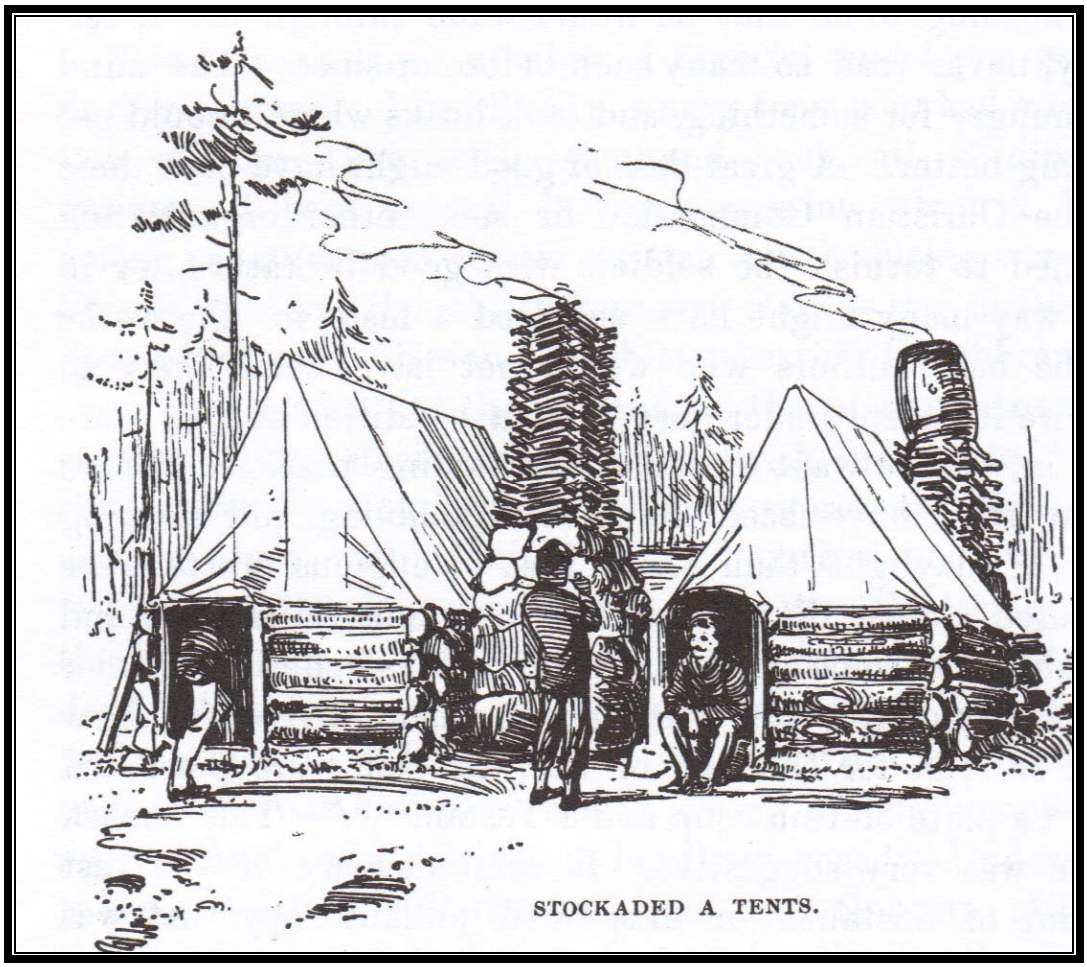


Figure 12. Illustration of a Stockaded Tent or Winterized Shelter (Billings 1993).

The archaeological signature of these shelters at camps will vary depending on the type of shelter present. As previously mentioned, the shelters used at winter, long-term, or permanent camps are more visible archaeologically. However, some archaeological remains could be expected from the various types of shelters described above. The most prevalent feature associated with tents is likely to be drainage ditches. It was common practice for soldiers to ditch around their tents and tie into larger ditches that provided good drainage for the camp (Figure 9) (Billings 1993). These features could provide evidence of tent shapes and sizes. Tent drainage ditches were identified at Camp Nelson (McBride et al. 2003). Also, a variety of post holes would be expected, as most of the tents used required some sort of post and pole system or props to support the structure. Patterns of posts and spacing that match the size of documented tent types could help identify the types of tents used at a camp. The exception to this may be the Sibley tent, in which the center pole was attached to an iron tripod rather than being placed into the ground (Figure 13). Trenches and posts associated with the stockading of Sibley tents for winter were identified archaeologically at Gloucester Point, Virginia (Higgins et al. 1995).

Figure 13. Illustration of the Inside of a Sibley Tent (Billings 1993).

The remains of a hospital tent (walled tent) location was identified at site 44AX195 in Virginia based on the presence of a flue feature associated with a Crimean oven that was used for heating. Its presence at the site was used to identify the area as the hospital because these types of ovens were primarily adopted by the hospital corps (Balicki 2011). Depressions, built up platforms or similar modifications to the topography may also be associated with tents and visible archaeologically (Balicki 2006; Brent 2010; Winter 1994).

In addition to winterizing tents and constructing huts, a variety of other improvements or additions were made to tents which could leave archaeological signatures in the form of post holes. These include the construction of awnings, vestibules, and other temporary structures used to provide additional shelter from sun and rain around tents (Davis 2004). These shelters could sometimes be associated with camp furniture, such as racks or poles to hang equipment such as bags, knapsacks, canteens, or horse tack and saddles in the case of a cavalry unit.

Although the archaeological signatures of tents at short-term encampments could be rather limited, there are a variety of activities that took place at these camps that could leave more significant archaeological signatures. Of the few features identified at Site 44AX195 most were hearths associated with the kitchen and enlisted men's living areas (Balicki 2011). Cooking at camps was done in the designated kitchen area between the company and officer's tents according to regulations (Figures 6 and 14). However, many depictions and descriptions of camp life indicate that cooking was often done within the

living area in front of tents (Figure 11). It appears from the Harper's Weekly illustration of Camp Dick Robinson (Figure 5) that cooking was set-up according to regulation in a designated kitchen area. However, it is unclear whether it was situated between the company and officer's tents according to regulation lay-out. Although the regulations do not describe the cooking methods used, soldier accounts and period illustrations and archaeological evidence provide some insight into the process of cooking and resulting archaeological correlates.

Figure 14. Winslow's Painting *A Rainy Day in Camp Horner* 1871.

Typically cooking was done over an open fire in surface depressions or pits and in trenches that were around 122 cm (4 ft.) long and 61 cm (2 ft.) in depth according to a manual on camp cooking in 1862 (Balicki 2011; Sanderson 1862; Whitehorne 2006). Kettles were hung over the fire pits suspended from a cross pole held up by two posts. Ovens also were used and consisted of a hole lined with flat stones or a buried kettle (Billings 1993). The kitchen at a camp may have also included some type of table for food preparation and some type of rack or poles for hanging cooking equipment or for slaughtering and butchering animals. Figure 5 shows that Camp Dick Robinson featured a typical hearth or cook trench, with a kettle and rows of tables that appear to be supported by posts.

Hearths are archaeological features that are most likely to produce a strong archaeological signature at encampment sites (Geier et al. 2006). A variety of hearth features could be present at encampment sites, including several types of surface fireplaces and dug fire pits and trenches. Surface fireplaces were identified at site 44AX195 associated with both the enlisted men's living area and the kitchen area. The living area fireplaces consisted of shallow pits of approximately 6 in. (15.2 cm) in depth and 61 cm (2 ft.) in diameter (Balicki 2011). The kitchen area of site 44AX195 consisted of five surface fireplaces that included a 3 x 7 ft. shallow pit that had three distinct sections or compartments which indicated diversified cooking techniques, possibly boiling, broiling, and frying (Balicki et al. 2005; Balicki 2011). Another kitchen fireplace identified at the site included a shallow depression that consisted of a shallow fire pit on one side and a shallow depression on the other that contained charcoal, which also may be an indication of different cooking techniques, as coals would have been raked or spread out. All of the fireplaces exhibited a halo of burned soil around them and concentrations of charcoal (Balicki 2011).

Sanitary practices at encampments included primarily trash disposal and latrines (privies), which tend to leave strong archaeological signatures. Regulations designated areas for latrines or sinks that would serve as privies and accept human waste as shown on the standard camp layout (Figure 6). These were supposed to be located away from the living areas at least 100 paces, with the company enlisted men and officers clearly segregated at opposite ends of the encampment. While there no specifications guiding the construction of latrines, according to the shapes depicted on the camp layout and descriptions from the United States Sanitary Commission, they were typically linear trenches. The commission reported that the latrines in some camps were too close to the living area (Anderson and Faberson 2006; Whitehorne 2006; Wiley 1995). Linear trench features identified as latrines were found at Camp Nelson (McBride et al. 2003). However, latrines were notably absent in the archaeological literature concerning many other examples of camps.

Camps were supposed to be kept clean, in particular the streets. Refuse generated in camp were typically disposed of in pits, abandoned hearths or latrines, or outside of the encampment area (Anderson and Faberson 2006; Billings 1993; Wiley 1995). The presence of relatively few artifacts and their distribution at site 44Ax195 was interpreted to be evidence of camp maintenance through policing by keeping areas clean of debris and properly disposing of refuse (Balicki 2011). While it is clear that the soldiers at site 44Ax195 kept a clean camp, the U.S. Sanitary Commission reports indicate that some camps lacked good sanitary practices, as streets and general areas within the camps were littered with refuse (Anderson and Faberson 2006; Wiley 1995). Trash pits are commonly found at encampment archaeological sites, as are deposits of domestic artifacts representative of camp refuse (Geier et al. 2006; McBride et al. 2003).

There are a variety of other camp structures or activities that could leave archaeological signatures. Soldiers were known to have adapted their camps to the particular topographic and climatic contexts present and to suit their needs in general (Billings 1993; Davis 2004; Whitehorne 2006). Some of the adaptations included

modifications to their tents and surroundings, such as awnings, vestibules, or porch-like covers made of wood, sticks, posts, and branches to provide shade and protection called "shebags" (Figure 15) (Davis 2004:138). Other structures could include racks for equipment, kitchen activities, or storage and perhaps small structures or screens for the latrines. These structures are likely to leave archaeological signatures in the form of post holes or concentrations of architectural debris. Many camps, even some that were only briefly occupied, had more substantial buildings or fortified tents constructed and often utilized existing farm structures and houses for headquarters and hospitals, such as the case with Camp Dick Robinson. The remains of these structures could be seen archaeologically in foundations, robber's trenches, builder's trenches, etc.

Figure 15. Photograph of Shelter Structures Added to a Tent (from Davis 2004).

Some camps were used as training facilities and it is possible that this function of a camp could be visible archaeologically through concentrations of fired ammunition. A high percentage of fired ammunition was found at site 44Ax195 despite the fact that no documented battles or skirmishes took place at this site. This finding has been interpreted to indicate that training activities and target shooting occurred at the camp (Balicki 2011).

Based on the discussion of typical camp features and their archaeological correlates, it is likely that trench features associated with latrines, cooking, or drainage; post holes associated with tents, racks, tables, kitchen activities, or small temporary structures; and pits for hearths and refuse and trash disposal would be present at a permanent encampment with short-term surface camp occupations on its periphery throughout the war, such as Camp Dick Robinson.

CHAPTER 3:
METHODS

FIELD AND LABORATORY METHODS

The field methods used during the KAS investigations included mechanical stripping and limited metal detecting. At the Camp Dick Robinson site, the mechanical stripping consisted of the removal of the plowzone (30 to 40 cm) down to subsoil in four blocks totaling 4,280 m² to expose subsurface features (see Figures 3 and 29). The location of stripped blocks was determined based on location of features identified during previous archaeological investigations at the site. A Takeuchi TL 140 track loader with a detachable front loader and small backhoe was used to strip the areas. A limited random metal detector survey was conducted of an area west of Block C south of the sinkhole to help decided whether stripping should take place there.

At site 15Gd89, the mechanical stripping consisted of the removal of topsoil surrounding the extant structures (10 to 60 cm) and plowzone in farm fields (30 to 40 cm) to subsoil in six blocks totaling 725 m² to expose subsurface features. A large track hoe outfitted with a smooth toothless bucket was used to strip the areas.

All features identified during the stripping were mapped, profiled, and photographed. Features were hand excavated and all soil was passed through 6.35 (¼ inch) mesh. Soil samples for flotation and botanical analysis were collected from each intact Civil War feature. A sampling of diagnostic artifacts was collected from the backdirt produced during the mechanical stripping.

All recovered artifacts were washed and cataloged at the University of Kentucky archaeology facility. The artifacts and all notes, drawings, and photographs are curated at the William S. Webb Museum of Anthropology at the University of Kentucky.

ANALYTICAL METHODS

Historic Materials

Functional Groups

The classification of artifacts into functional groups has been a common practice of historic archaeologists for over 20 years (Ball 1984; South 1977). This method assigns artifacts to groups based on the historically derived function of the artifact. For example, objects associated with kitchen activities, like food service or preparation, are assigned to the kitchen group, and items related to architecture are assigned to the architecture group. The number of groups in the classification scheme can range from seven to 16 depending on the type of site and the individual researcher.

Functional groups are used in this report to characterize artifact assemblages from specific stratigraphic layers and features to help determine their function. The functional groups used in this report include activities, architecture, arms, clothing, fuel, hardware, kitchen, military, miscellaneous, and personal.

While faunal and botanical remains are often associated with food and thus could be assigned to the kitchen group, not all were used as such. In this report all faunal and botanical remains were grouped in their own respective categories, which do not represent any particular historic function.

Mean Dating

The presence of diagnostic (datable) artifacts can be used to assign a temporal range to a stratigraphic layer or feature. For some artifacts, a manufacture date range can be established by using historical documents. This date range can then be used to derive a midpoint in its production history. For example, undecorated pearlware has a manufacture date range of 1780 to 1830, and a midpoint of 1805. When the midpoints of all of the artifacts recovered from a context are averaged, a mean date for the age of that context can be calculated (South 1977). Unfortunately the mean age of an artifact collection does not always represent when all of the artifacts were deposited in a particular strata or feature. This is due to the fact that some objects are lost or discarded soon after they were manufactured, while others enter the archaeological records many years after they ceased to be made.

In order to get a better indication of when artifacts associated with a particular strata or feature were deposited, other dating methods like *terminus post quem* (T.P.Q.) are used in conjunction with mean dating and stratigraphic context (Noël Hume 1969). The T.P.Q. is derived from the latest beginning date of a group of artifacts, which indicates a time after which a deposit could have been formed.

It should be noted that temporally diagnostic glass artifacts are more likely to accurately reflect the deposition date of a group of artifacts than ceramic artifacts. This is due to the fact that ceramic objects tend to be curated for a longer period of time than glass artifacts. Some glass artifacts, such as bottles, are more likely to enter the archaeological record much quicker than ceramics, because their use is over when the bottles are emptied. It has been suggested that ceramics are typically curated for an average of 20 years or longer (South 1977).

Prehistoric Materials

Prehistoric materials consisted of chipped stone tools and the debris from their manufacture. The methods used to analyze these materials are described in Appendix B.

CHAPTER 4:
HISTORIC MATERIALS RECOVERED

By
C. Brian Mabelitini

A total of 1,095 historic artifacts was recovered from Camp Dick Robinson, including CRA's two investigations (n=371 and n=542), and KAS's investigation (n=182). These totals do not include faunal (n=6,750) and botanical (n=5,185) remains, which are discussed in Chapters 5 and 6. Artifacts recovered during CRA's initial survey were reanalyzed, while information regarding the artifacts collected during CRA's limited excavations was derived from the Anderson and Faberson's 2006 report. The Civil War related artifacts from all three studies are described in this chapter (contextual information is provided in Chapter 7 and the spatial distribution of these materials is considered in Chapter 8). These materials are described by functional group.

ARCHITECTURE GROUP

This category is comprised of items used in the construction and enhancement of buildings. Items in this group primarily consist of brick, window glass, and nails. Other architectural artifacts consist of a screw, a spike, a hinge, five staples, and one mortar fragment (Table 1).

Table 1. Architecture Group Artifacts.

	CRA Survey	CRA Testing	KAS	Total
Brick	137	136	19	292
Window Glass	2	2	3	7
Nail, Early Machine cut		1		1
Nail, Late Machine cut	60	112	27	199
Nail, Unidentified Machine cut	17		6	23
Nail, Wire	12		2	14
Nail, Unidentified	16	1	3	20
Screw	1			1
Spike	1			1
Staple	5			5
Mortar	1			1
Hinge	1			1
Total	**253**	**252**	**60**	**565**

Brick

Although only samples of brick were collected during field investigations, moderate density of brick fragments was recovered from the site (n=292). Based on Gurke (1987), all of the identifiable bricks are handmade. Many of the brick specimens were too fragmentary and are of indeterminate manufacture.

Window Glass

All flat glass specimens were classified as window glass. All seven window glass sherds are aqua in color.

Changes in the manufacturing process of window glass generally resulted in the production of larger and thicker panes through time (Moir 1987). Several methods have been developed to relate window glass thickness with its date of manufacture (Ball 1983; Moir 1987; Roenke 1978), and examination of the distribution of window glass thickness can assist in determining the presence of one or more building episodes.

The thickness of the window glass assemblage from this site ranges from 1.6 to 2.4 mm. The recovered sample size is too small (n=7), to derive accurate dates from flat glass dating techniques. The small amounts of flat glass recovered from the site is not unexpected given the historic use of the area for a Civil War encampment, which likely did not include permanent structures with windows. The presence of the flat glass may be attributable to the dumping of later demolition debris, or perhaps other uses of flat glass, such as for picture framing.

Nails

Nails were classified by manufacturing technique where possible (Table 1). The four nail types present at this site include early machine cut (n=1), late machine cut (n=199), unidentifiable (i.e. early or late) machine cut nails (n=23), wire nails (n=14), and unidentifiable nails (n=20).

Wrought nails are the earliest form of nails and were manufactured by hand (Nelson 1968). This nail type is absent from the assemblage. Wrought nails taper on all four sides to a point and have irregularly shaped heads. Machine cut nails are square nails cut from a sheet of metal that taper on two sides rather than on all four sides like wrought nails. The earliest machine cut nails were headed by hand and exhibit a pinch below the head as well as irregularly shaped heads. Early machine cut nails were manufactured between the late 1700s and the late 1830s (Cleland 1983:61). Late machine cut nails were completely manufactured by machine, and lack the pinching and irregular heads of the early machine cut nails. Late machine cut nails were largely manufactured from the late 1830s through the 1880s. The unidentifiable machine cut nails were either medial or distal fragments or so badly corroded that they could not be divided into early or late categories. Wire nails replaced machine cut nails for most functions between 1880 and 1890 and are still in use to the present day (Adams 2002; Smith 1975; Wells 1998). Unidentifiable nails were so badly corroded that their method of manufacture could not be determined.

Other Architectural Artifacts

A single flat-headed screw was recovered that is most likely a wood screw. Screws of this type have remained unchanged since the early-nineteenth century, and this specimen is not particularly temporally sensitive. A single large machine cut spike also was recovered. A spike is a large nail, usually with a heavy square cross-section and either a square, round, or L-shaped head (Cleland 1983:58). The specimen found at this site has a square head and likely dates to the nineteenth century. Additionally, a hinge fragment, five iron staples and one fragment of mortar was recovered. The hinge fragment is a butt hinge manufactured from iron. Staples are U-shaped fastening devices that are pointed on both ends, and are used for such purposes as securing fence or electrical wire to wood (Cleland 1983:58). Mortar is used to bind individual masonry units, and is composed of one or more cementitious materials (i.e., cement or lime, sand and water) (Cleland 1983:82). A date range could not be determined for the hinge, staples or the mortar.

ARMS GROUP

The arms category includes items associated with weapons (Figure 16). A total of 26 arms group artifacts was recovered from the Camp Dick Robinson Site. They included percussion caps (n=6), Minie balls (n=11), .69-caliber lead round balls (n=2), a zinc disk from a .58-caliber Williams cleaner bullet (n=1), a rimfire cartridge (n=1), canister shot (n=2), an exploded spherical case shot fragment (n=1), an unidentified projectile (n=1), and a single 12-gauge shotgun shell was recovered (Table 2).

Table 2. Arms Group Artifacts.

	CRA Survey	CRA Testing	KAS	Total
Percussion Cap		5	1	6
Lead Round Ball, .69-cal.	1		1	2
Williams Cleaner Bullet Disk	1			1
Canister Shot	2			2
Exploded Shot			1	1
Shotgun Shell, US/12/CLIMAX	1			1
Minie Ball		11		11
Rimfire Cartridge		1		1
Unidentified Projectiles		1		1
Total	**5**	**18**	**3**	**26**

Percussion caps were patented in 1814. However, they were manufactured from iron or pewter prior to 1816. The percussion cap found at this site is manufactured from copper. Copper percussion caps date after 1816 (Logan 1959:3). Williams Cleaner bullets were introduced in early 1862, and were packaged with the standard .58-caliber Minie ball. These bullets, when fired, were designed to remove residue from within the gun barrel. However, they were distrusted by enlisted men and were discontinued in 1864 (Smith 1994:73). The Minie balls were .58 Springfield types, which date from 1851 to 1866. The rimfired cartridge was .32 caliber and made of brass. It dates from 1857 to the present (Ball 1997).

No beginning or ending manufacture date could be determined for either the canister shot or the spherical case shot fragment. However, these types of field artillery projectiles were common during the Civil War (McKee and Mason 1980:92). Similarly, .69-caliber lead musket balls also were in common use during the Civil War. Although the .69-caliber musket balls could have been fired by a wide variety of older weapons, those recovered from this site were likely used in Model 1842 muskets based on the date range of the site (Avery 2008).

Figure 16. Arms Group: a, spherical case shot fragment; b, .69-caliber lead musket ball.

The 12-gauge shotgun shell was manufactured by the U.S. Cartridge Company, which produced cartridges under the brand name “Climax” from 1879 until 1931 (Standler 2006).

ACTIVITIES GROUP

This category consists of items used in the performance of various activities, and is comprised of a tent peg/stake, a mule shoe, and a modern garden hose fragment (Table 3). No temporal association could be made for either of these artifacts. However, the tent peg/stake is manufactured from iron and may have been associated with Civil War era activities at Camp Dick Robinson.

Table 3. Activities Group Artifacts.

	CRA Survey	CRA Testing	KAS	Total
Iron Tent Peg/Stake	1			1
Mule Shoe	1			1
Garden Hose		1		1
Total	**2**	**1**		**3**

CLOTHING GROUP

This category consists of items that were worn by individuals (Figure 17). A total of 34 clothing artifacts was recovered from the Camp Dick Robinson site. They included suspender buckles (n=2), buckles (n=2), a shoe buckle (n=1), a shoe heel plate fragment (n=1), iron buttons (n=13), white porcelain Prosser buttons (n=14), and an unidentified fastener (n=1) (Table 4).

Table 4. Clothing Group Artifacts.

	CRA Survey	CRA Testing	KAS	Total
Suspender Buckle			2	2
Buckle	2			2
Shoe Heel Plate			1	1
Shoe Buckle		1		1
Button, Iron		9	4	13
Button, Prosser		11	3	14
Other Fastener		1		1
Total	**2**	**22**	**10**	**34**

The suspender buckles (n=2), buckles (n=2), shoe heel plate (n=1), and iron buttons (n=4) likely date to the Civil War period occupation of this site. The iron buttons are four-holed, and were commonly used as pant or coat buttons during the nineteenth century. The white porcelain buttons are four-holed dish-type machine-made Prosser buttons (Sprague 2002:112). Porcelain buttons have been in use since the eighteenth century, but not until Richard Prosser patented machinery in 1840 were they machine made (Epstein and Safro 2001:74; Sprague 2002:111). The regularity of the buttonholes, their uniform shape, and the orange-peel surface on the button backs indicates that these buttons are machine-made Prosser buttons (Sprague 2002:111). Porcelain Prosser buttons, which were known as “agate” buttons during the nineteenth century, were fashionable between 1850 and 1920 (Luscomb 1967:156; Sprague 2002:112).

Two iron buckles and one shoe heel plate fragment also was recovered. The buckles are likely from packs, and are common on Civil War sites. The shoe heel plate fragment predates 1912, when the cemented heel came into use in shoe construction (Anderson 1968:62). A shoe buckle and an unidentified fastener also were found.

Suspender buckles and buttons recovered from latrine trenches (Features 1 and 12) were likely lost while fastening and unfastening clothing.

Figure 17. Clothing Items: a, iron button; b, Prosser button, c, d, suspender buckles; e, shoe heel plate fragment.

HARDWARE GROUP

This category consists of general hardware items. A total of 62 hardware artifacts was recovered from the Camp Dick Robinson site. They include two sections of iron chain, wire fencing fragments (n=26), carriage bolts (n=4), nuts (n=2), iron strap/band fragments (n=10), an iron bracket (n=1), a clip hook (n=1), a fence staple (n=1), a wood screw (n=1), barbed wire (n=9), and a cotter pin (n=1) (Table 5). No temporal association could be determined for any of the artifacts in this group.

Table 5. Hardware Group Artifacts.

	CRA Survey	CRA Testing	KAS	Total
Chain Link	2			2
Wire Fencing	13	10	3	26
Bolt	4			4
Carriage Bolt	3		1	4
Nut	2			2
Iron Strap/Band	8		2	10
Iron Bracket	1			1
Clip Hook	1			1
Cotter Pin	1			1
Fence Staple		1		1
Screw		1		1
Barbed Wire		9		9
Total	**35**	**21**	**6**	**62**

KITCHEN GROUP

The artifacts in this category were used in activities related to the preparation, service, or consumption of foods and liquids (Table 6). Major categories consist of refined ceramics, coarse ceramics, and container glass. The remaining kitchen group materials are discussed under the category of Other Kitchen. Table 7 provides summary counts of refined and coarse ceramics by context. A minimum of eight ceramic vessels were recovered. Analysis of ceramics yielded a mean date of approximately 1866 for the ceramic assemblage (Table 8). Due to the low sample size of recovered ceramics, this date may be slightly skewed. However, the MCD (mean ceramic date) analysis is suggestive of a mid-nineteenth century date range for this assemblage.

Table 6. Kitchen Group Artifacts.

	CRA Survey	CRA Testing	KAS	Total
Ironstone, undecorated		3	1	4
Whiteware, undecorated	1		3	4
Porcelain, English hard paste, undecorated			2	2
Porcelain, English hard paste, overglaze painted			1	1
Stoneware, Salt-Glazed	1			1
Stoneware, Albany slip			7	7
Stoneware, Bristol slip interior/Color glaze exterior			1	1
Yellowware, undecorated	1	1		2
Unidentified refined earthenware		1		1
Container Glass	20	23	65	108
Glass Tableware, Press Molded		1		1
Cast Iron Stove Fragment	3			3
Cast Iron Kettle Fragment	1			1
Metal Round Food Can Fragments		127		127
Unidentified Metal Food Can Fragments		8		8
Total	**27**	**164**	**80**	**271**

Refined Ceramics

Three refined ceramic types were recovered, which consist of whiteware, ironstone, and porcelain (Figure 18). Whiteware is a refined earthenware with a white, porous paste and a clear, colorless glaze (Lofstrom et al. 1982; Miller 1991; Price 1979). Whiteware was initially manufactured in the 1830s and quickly supplanted pearlware as the dominant type. It reached its greatest popularity in the decades from 1830 through 1870. Ironstone wares have a hard, nearly non-porous, paste and a colorless glaze (Price 1979). Initially manufactured in England in the early 1800s, it appears in American assemblages primarily after the 1840s (Huser 1993; Miller 2000; Sussenbach 2000). American production of ironstone began during the Civil War (DeBolt 1994; Huser 1993), resulting in ironstone vessels becoming much more common during the late 1800s (Price 1979). Porcelain is a highly vitrified ware with a white paste. English hard paste porcelain was initially produced in 1768 and is still manufactured to the present day (Fisher 1966:229).

Figure 18. Ceramics: a, Albany slipped stoneware; b, whiteware; c, ironstone; d, Bristol slipped stoneware; e, overglaze painted English hard-paste porcelain.

Three fragments of undecorated whiteware, a single undecorated ironstone fragment, two undecorated and one overglaze painted English hard paste porcelain

fragment was recovered. Although English hard paste porcelain has a long period of manufacture and is not particularly temporally sensitive, the presence of plain whiteware and ironstone suggests that this site was occupied from the mid to late nineteenth century.

Coarse Ceramics

Coarse ceramic types in the assemblage include yellowware and stoneware (Figure 18). Yellowware has a yellow or cream colored paste and a clear or alkaline glaze. It was commonly manufactured between the 1830s and the 1940s (Ramsay 1939:61). Two yellowware sherds were recovered. Stoneware is a semi-vitreous earthenware that typically has brown or gray paste. Salt-glazed (n=1), Albany slipped (n=7), and Bristol slipped interior/Color glazed exterior (n=1) stoneware were recovered.

American salt-glazed stoneware was manufactured from 1705 through 1930 (Ketchum 1991:86). Albany slip is very smooth dark glossy black or brown clay coatings over stoneware (Mullins 1988:57). Albany slip decorated American stonewares were largely produced between about 1805 and 1920 (Ramsey 1939:21-22, 59). Bristol slip refers to a white, non-salt glaze coating over stoneware. Although originally developed in Bristol, England, potters from Ohio introduced a form of this glaze at the New Orleans Exposition of 1884. Bristol slips date from 1835 to the present day (Oswald et al. 1982:19).

Table 7. Ceramic Types and Decorations.

Type/Decoration	Frequency	MNV
Whiteware		
Undecorated	3	1
Ironstone		
Undecorated	4	4
Porcelain		
English hard-paste, undecorated	2	1
English hard paste, overglaze painted	1	1
Stoneware		
American Salt-Glazed	1	1
Albany Slipped	7	1
Bristol Interior/Color Glazed exterior	1	1
Yellowware		
Undecorated	2	2
Total	**21**	**12**

Table 8. Mean Ceramic Date.

Artifact by Material	N=	Date Range	Mean Date	Product	Source
Whiteware	3	1820-1900	1860	5580	South 1977:212
Ironstone	4	1842-1930	1886	7544	Miller 1991:10
Stoneware, Albany	7	1805-1920	1862.5	13037.5	Ramsey 1939
Stoneware, Bristol	1	1835-2008	1921.5	1921.5	Oswald 1982:19
Stoneware, Salt-glaze	1	1705-1930	1817.5	1817.5	Ramsey 1939:21
Yellowware	2	1830-1940	1885	3770	Ramsay 1939:61
Total	**18**			**33670.5**	
Mean Ceramic Date				**1870.6**	

Container Glass

Of the 106 kitchen group container glass fragments recovered from the site (Table 9), most were likely from bottles whose function could not be determined. However, a medicine (n=1) and an alcohol (n=1) bottle were recovered. Also one container glass sherd was part of press-molded tableware (Table 9). Of the base and lip fragments, six are complete enough to provide information on manufacturing techniques (Table 10). One aqua bottle lip has a laid-on ring lip finish, indicating it was hand blown sometime between 1840 and 1870 (Newman 1970:73). Two lip fragments, one dark amber and one aqua in color, exhibit an applied lip finish. Glass containers with applied lips were manufactured from 1850 to 1870 (Newman 1970:73). One complete empontilled bottle base features a push-up with iron or graphite residue typical of an improved pontil mark, indicating it was manufactured between 1840 and 1880 (Newman 1970:73) (Figure 19). Two base fragments, one dark amber and one aqua, were manufactured in a snap case between 1855 and 1913 (Newman 1970:73) (Figure 20).

Table 9. Glass Vessel Forms and Objects.

Vessel Form/Object	MNV
Bottle, unidentified	24
Bottle, medicine	1
Bottle, wine	1
Tableware, press molded	1
Total	**27**

Table 10. Container Glass Lip and Base Types.

Attribute/Type	Frequency
Lip/Rim	
Applied	7
Laid On Ring	1
Folded	3
Base	
Pontil	5
Improved Pontil	1
Snap Case	2
Total	**19**

The color of certain glass sherds can provide some chronological information. Without the addition of certain chemicals and minerals, glass naturally has a light green to blue color resulting from the presence of iron in the sand used in the manufacturing process. Prior to the late-middle 1800s, most glass had natural colors (Baugher-Perlin 1982). The olive, amber, and aqua sherds could date to this period (Table 11). To obtain other colors, or to produce clear glass, manufacturers found it necessary to add particular materials to the glass. The clear container glass in this assemblage was most likely manufactured by adding lead to the glass mixture. Lead glass was initially produced in England in the late 1600s, but became common in the United States during the middle 1800s (Polak 1994).

Figure 19. Improved Pontil Bottle Base.

Figure 20. Container Glass: a, b, applied lip; c, laid-on ring; d, e, cathedral bottle neck fragments; f, g, snap case base fragments.

Table 11. Container Glass Color.

Color	Frequency
Olive	**20**
Clear	**25**
Aqua	**39**
Amethyst	**1**
Dark Amber	**8**
Light Amber	**7**
Light Green	**1**
Black	**1**
Melted	**4**
Total	**106**

The amethyst glass found at this site dates from 1880 to 1925 (Newman 1970:74). The amethyst color is derived from manganese oxide used in the manufacturing process to overcome the yellow or light green tint of iron oxide in glass; however, glass with manganese turns purplish after extended exposure to the ultraviolet rays of the sun (Jones and Sullivan 1989:13). The end of amethyst glass is associated with the change to selenium, which began by 1915 and was almost exclusively used as a decolorizing agent after German imports of manganese were suspended in 1918 (Deiss 1981:82-83).

Other Kitchen

The remaining items in the Kitchen Group consist of cast iron stove fragments (n=3), cast iron kettle fragment (n=1), and metal round food cans. Most of the food cans date from 1847 to 1885 (Anderson and Faberson 2006).

PERSONAL GROUP

This category is comprised of objects that usually belong to just one person, and are associated with the day to day activities of that person. Artifacts in this group include a smoking pipe bowl, a skeleton key, a folding fork, a canteen stopper, a carpet bag frame, and glass ink bottles (Table 12). The ink bottles consisted of two umbrella and one conical type. They all exhibited pontil marked bases and hand formed folded or rolled lips.

Table 12. Personal Group Artifacts.

Artifact	CRA Survey	CRA Testing	KAS	Total
Smoking pipe bowl fragment			1	1
Skeleton Key	1			1
Folding Fork	1			1
Canteen Stopper	1			1
Carpet Bag Frame			1	1
Ink Bottle, glass pontil base, folded lip		3		3
Total	**3**	**3**	**2**	**8**

Pipes and pipe parts are common artifacts on nineteenth century sites (Cleland 1983:22). The specimen recovered from this site is part of a detachable stem pipe, made to fit a wood or reed stem. This specimen is made of stoneware and exhibits a decorative pattern of molded vertical lines (Figure 21). The folding fork recovered from this site likely had a wooden or bone handle and was issued as part of military mess equipment (Woodhead 1998:225). The canteen stopper recovered from this site was attached to a tin canteen, and also was issued by the U.S. military (Woodhead 1998:206-207). Canteen stoppers of this type are common on Civil War era sites. A skeleton key and a portion of a carpet bag frame also were recovered (Figure 22). All of these items date to the nineteenth century and could be associated with the Civil War period occupation of the site.

Figure 21. Smoking Pipe Bowl Fragment

Figure 22. Carpet Bag Frame Fragment.

TRANSPORTATION GROUP

This category includes any object used in the conveyance of people or goods. Most of the artifacts in this group consist of metal hardware associated with animal powered transportation vehicles. This group is comprised of horseshoes (n=12), horseshoe nails (n=4), wagon hardware (n=5), and a single fragment of modern safety glass (Table 13).

Table 13. Transportation Group Artifacts.

Artifact	CRA Survey	CRA Testing	KAS	Total
Horseshoe	9	1	2	12
Horseshoe Nail	2	2		4
Whiffletree Strap	1			1
Whiffletree Hook	1			1
Corner Iron	1			1
Wagon Staple	1			1
Harness Hardware	1			1
Safety Glass	1			1
Total	**17**	**3**	**2**	**22**

Wagon hardware includes a whiffletree strap and hook, a corner iron, a wagon staple, and iron hardware from a harness. All of these items date to the nineteenth century (Spivey 1979). Other transportation related artifacts include horseshoes (n=12) and safety glass (n=1). Safety glass was invented in France in ca. 1915 for use in gas mask lenses. However, it wasn't until after World War I that it was adapted for use in automobile windows (Panati 1987:158).

MILITARY GROUP

The military group various items and accoutrements used by soldiers. Accoutrements refer to articles of a soldier's equipment, which are neither weapons nor clothing (such as rifle belts, packs, cartridge boxes, etc.). This category is comprised of a possible brass bayonet scabbard hook (Table 14) (Figure 23). This hook would have been attached to a leather scabbard, which allowed it to be hooked onto a belt. It most likely dates to the Civil War.

Table 14. Military Group Artifact.

Artifact	CRA Survey	CRA Testing	KAS	Total
Brass Bayonet Scabbard Hook			1	**1**
Total			**1**	**1**

Figure 23. Possible Bayonet Scabbard Hook.

MISCELLANEOUS GROUP

This category consists of items that could not be clearly identified as to function, could serve multiple functions, or were simply unidentifiable (e.g., corroded metal artifacts). Two tin fragments, 22 unidentified iron fragments/objects, an unidentified electronic object, lye, and 13 fragments of a twentieth century wooden post make up this group (Table 15). The lye was recovered from Feature 11.

Table 15. Miscellaneous Group Artifacts.

	CRA Survey	CRA Testing	KAS	Total
Unidentified Iron	22	42	4	26
Unidentified Tin	2			2
Vinyl Fabric	2			2
Unidentified Electronic Component	1			1
Wood		15	13	13
Lye			1	1
Unidentified Slate		1		
Total	**27**	**58**	**18**	**45**

DISCUSSION

The goal when analyzing artifact assemblages is two-fold. The first goal is to determine the age of the site and the length of occupation. The second is to determine site function, meaning what activities took place at the site.

Based on historic artifacts recovered, the materials recovered from Camp Dick Robinson could date as early as the mid-nineteenth century. Although no maps depict a residential structure in the site area, an 1862 sketch of Camp Dick Robinson depicts a military encampment in the vicinity of this site (Harper's Weekly 1862). The recovered architectural, domestic, and military-related artifacts are consistent with the date range of this encampment. Architectural materials indicate that some of the structures in this encampment may have been constructed of wood, and possibly included brick chimneys.

No evidence of an historic farm/residence was located at this site. However, the presence of both refined and coarse earthenwares indicates that both the consumption and storage of food took place at this locality. Based on diagnostic artifacts (Table 16), such as late machine cut nails, whiteware, ironstone, yellowware, applied and laid-on ring glass container lips, and empontilled and snap case glass container base fragments, this site was occupied sometime between the mid- to late-nineteenth century. MCD analysis suggests a mid-nineteenth century period of occupation. The presence of mid-nineteenth century architectural and kitchen materials, as well as materials indicative of a Civil War period military presence (i.e. armaments and accoutrements), indicates that this locality is associated with Camp Dick Robinson.

Archaeological and archival data suggest that this locality likely represents a military encampment depicted in an 1862 sketch of Camp Dick Robinson. The domestic occupation of this locality likely dates from approximately 1861 to 1863, when the camp was abandoned by Federal troops. Twentieth century materials recovered from this site appear to be associated with modern farming practices, and are not related to the nineteenth century activities that took place at this locality.

Table 16. Diagnostic Historic Artifacts.

Artifacts by Functional Group	Freq	Date Range	Source
Architecture			
Nail, Late Machine cut	87	1830-1880	Nelson 1968
Nail, Wire	14	1890-present	Adams 2000
Arms			
Percussion Cap, Copper	1	1816-present	Logan 1959:3
Williams Cleaner Bullet disk	1	1862-1864	Smith 1994:73
Shotgun Shell (Climax)	1	1879-1931	Standler 2006
Minie Balls	11	1851-	
Rimfire Cartridge .38 cal.	1	1866-	
Clothing			
Button, Prosser	3	1840-1920	Luscomb 1967:156; Sprague 2002:112
Kitchen			South 1977:212
Whiteware	4	1820-1900	Miller 1991:10
Ironstone	4	1842-1930	Ramsey 1939:21
Stoneware, Salt-Glazed	1	1705-1930	Ramsey 1939
Stoneware, Albany Slip	7	1805-1920	Oswald et al.1982:19
Stoneware, Bristol Slip	1	1835-present	Ramsay 1939:61
Yellowware	2	1830-1940	Newman 1970:73
Bottle Lip, Applied	5	1850-1870	Newman 1970:73
Bottle Lip, Laid-On Ring	1	1840-1870	
Bottle Lip, Folded	5		Newman 1970
Bottle Base, Pontil	5	1810-1870	Newman 1970:73
Bottle Base, Improved Pontil	1	1840-1880	Newman 1970:73
Bottle Base, Snap Case	2	1855-1913	Newman 1970:74; Deiss 1981:82-83
Amethyst (purple)	1	1880-1925	Lockhart 2006
Transportation			
Safety Glass	1	1918-present	Panati 1987:158
Total		**1705-present**	

CHAPTER 5:
FAUNAL REMAINS

By
Bruce L. Manzano

INTRODUCTION

This chapter describes and interprets the faunal assemblage recovered from Camp Dick Robinson by Kentucky Archaeological Survey (KAS) in the summer of 2007, and the materials recovered by Cultural Resource Analysts (CRA) in 2006 (Church 2007). The assemblage consists of mammal remains deposited by the Federal Army when it occupied Camp Dick Robinson from August 1861 to September 1862. The number of identified specimens (NISP) contained within the KAS assemblage is 1,449 with a total weight of 2,841.4 g (Table 17). These materials are supplemented by those (NISP=5,301 and weight 5,832.88 g) recovered by CRA (Church 2007). Combined, both assemblages (NISP=6,750 and weight 8,709.11 g) can be used to determine the overall dietary and utilitarian pattern of animal use at Camp Dick Robinson (Table 17). This pattern can then be compared to faunal assemblages recovered from other Civil War Federal camp sites.

Table 17. Summary of Faunal Remains by Taxon.

Species	KAS NISP	KAS Wt (gm)	CRA[1] NISP	CRA Wt (gm)	Total NISP	NISP %	Total Wt (gm)	Wt %
Mammal								
cf. Cow (cf. *Bos taurus*)	2	17.40	17	114.70	19	0.28	132.10	1.51
Cow (*Bos taurus*)	8	385.50	67	2,109.30	75	1.11	2,489.60	28.58
cf. Pig (*Sus scrofa*)	0	0.0	6	28.98	6	0.08	28.98	0.33
Pig (*Sus scrofa*)	2	1.00	13	156.14	15	0.22	157.14	1.80
cf. Horse (cf. *Equus caballus*)	1	3.30	599	515.11	600	8.90	518.41	5.95
Horse (*Equus caballus*)	26	1,375.10	28	1,235.30	54	0.79	2,605.30	29.91
Large Mammal	1,409	1,058.90	4,154	1,560.89	5563	82.40	2,666.49	30.61
Medium Mammal*	0	0.0	9	5.67	9	0.13	5.67	0.07
UID Mammal**	1	0.20	0	0	1	0.01	0.20	0.002
Total	**1,449**	**2,841.40**	**4,893**	**5,726.09**	**6,343**	**94.00**	**8,567.49**	**98.762**
Bird								
Chicken (*Gallus gallus*)	-	-	150	71.58	150	2.22	71.58	0.82
Medium Bird	-	-	19	1.11	19	0.28	1.1.1	0.01
UID Bird	-	-	209	32.72	209	3.09	32.72	0.38
Total	**-**	**-**	**378**	**105.41**	**378**	**5.60**	**105.41**	**1.21**
UID Vertebrata			30	1.38	30	0.42	1.38	0.01
Total	**1,449**				**6,750**	**100.00**	**8,709.11**	**100.00**

[1]From Church 2007. * Church (2007:110) considered these medium mammal as possibly young pig
**Large Mammal includes what Church (2007:110) considered as UID very large mammal (horse, ox, and large bull).

METHODS

Faunal remains were identified to their lowest possible taxonomic level based on direct comparison to study specimens housed at the University of Kentucky's William S. Webb Museum of Anthropology. Additional aid came from diagnostic information available within the relevant zooarchaeological literature (e.g., Olsen 1964; Reitz and Wing 1999; Schmid 1972; Steadman 1980). Quantification is based on the weights and NISP of recognizable species or animal size class (e.g., large, medium, and small mammal), element, side, and portion, plus if possible age and sex of taxon. The fragmentation of some specimens often inhibited species classification because they were sub adult bones or lacked diagnostic characteristics. These specimens were only able to be grouped into a taxonomic category, such as unidentifiable (UID) large mammal or UID mammal.

When applicable, some specimens were recorded tentatively as a close fit (cf.) to a particular species. Calculation of minimum number of individuals (MNI) for species was based on the largest number of individual diagnostic bone elements by side and portion recovered for a species recognized at the site. The MNI was calculated only for specimens identified to genus or species, and not calculated for those that close fit (cf.) to a particular species.

All specimens were examined and recorded for cultural and natural modifications. Cultural modifications consist of marks on the bone attributed to butchering and consumption activities commonly identified as knife, chop, and saw cuts. Saw cut bone specimens (Reitz and Wing 1999:132) can be represented by one end saw cut or with both ends saw cut in a parallel orientation separated by spans of various lengths. Within this assemblage saw cut specimens are only represented by bone saw cut at one end.

Bone modifications by animals also were recorded if present. In particular, gnaw marks from rodents (most likely mice and rats) and carnivores mainly dogs are the major sources of animal modification within faunal assemblages (Lyman 1994). Similarly, the presence of scat bone, also likely from dogs, and defined as specimens with pitting, polished edges, and eroded surfaces, which are characteristics typical of corrosion from digestion (Binford 1981:55; Schmitt and Lupo 1995:499), was noted if present.

Burnt bone modification was recorded if present as black or calcined (Shipman et al. 1984). Black burnt bone results from relatively low heat that carbonizes the organic components, while calcined burnt bone results from more intense heat generally over a prolong time that oxidizes the carbon turning it a white or light blue color (Reitz and Wing 1999:133). Assemblages with high frequencies of calcined bone may reflect efforts to purposely dispose of bone by burning it.

The condition of the recovered bone also was recorded. This involved estimating the stages bone exhibit in regards to weathering (Behrensmeyer 1978; Lyman 1994:360). Recent damage to the bone, which generally results from the archaeologically recovery of the remains, also was noted.

Calculation of biomass amounts, or soft tissue weights were generated exclusively for cow and pig following Reitz and Wing's (1999:224) formula. This was done for only cow and pig as they represent the most common domestic animals utilized for meat species by soldiers at the camp. The formula is $Y = aX^b$ or $\log_{10} Y = a + b (\log_{10} X)$ where:

Y = estimated sample biomass (in kg converted from grams) contributed by the archaeological specimen for a taxon
X = specimen weight (kg) of the archaeological specimen for a taxon
a = the Y-intercept of the linear regression line
b = slope of the regression line

The use of Food Utility Indexes (FUI) followed Metcalfe and Jones (1988) as modified by Purdue et al. (1989). The FUI was generated for cow and pig remains to address animal selection patterns. FUI values reflect the "combined weight of the meat, marrow, and grease attached to each of the body parts" based on caribou (*Rangifer tarandus*), calculated to the nearest gram (Metcalfe and Jones 1988). This study follows the approach of Purdue et al. (1989:150) and grouped animal body parts into three utility/weight categories rounded to the nearest gram: Low Utility (less than 1000); Medium Utility (greater than 1000 and less than 3000); and High Utility (greater than 3000). High FUI values are associated primarily with the femur, proximal tibia, and sternum (after Marean and Frey 1999), medium FUI values are associated with axial specimens, forelimbs, distal tibia, and fibula, and low FUI values are assigned to the head, first two cervical vertebrae, metacarpal, distal metapodal, and phalanges (Table 18) (Lyman 1985).

Table 18. Food Utility Indexes (FUI).

	Element		
Body Portion	**Low Utility <1000**	**Medium Utility >1000 and < 3000**	**High Utility >3000**
Head	Skull, mandible, teeth		
Axial	Atlas, axis	Vertebra, rib,	Sternum
Fore quarter		Scapula, humerus, radius, ulna	
Hind quarter		Pelvis, distal tibia, fibula, astragalus, calcaneus	Femur, proximal tibia
Feet	Metacarpal, distal metatarsal, phalange	Proximal metatarsal	

Skeletal age and element as well as cooking and disposal methods can greatly affect the types of bone specimens preserved at and recovered from archaeological sites (Landon 2005; Lyman 1985). Factors including bone fragmentation, deposition, assemblage size, and specimen identification can affect FUI values and other zooarchaeological measures used in this report. Consequently, the results of these measures are given as a general estimate on the dietary significance of the animal body portions recognized at this site (Rick et al. 2002:113).

RESULTS

The 6,750 specimens described in this study were recovered from 10 features: 1 (n=2,417), 10 (n=18), 11 (n=96), 13 (n=1), 15 (n=16), 17 (n=3), 18 (1952), 20 (n=1517), 21 (n=575), and 22 (n=155). Specimens identified to species or cf. species account for only 11.4 percent (NISP=770) of the recovered assemblage. The remaining 88.6 percent (NISP=5981) were classified as UID large mammal (NISP=5,563), UID medium mammal (NISP=9), UID mammal (NISP=1), UID medium bird (NISP=19), UID bird (NISP=209), and UID Vertebrate (NISP=30). Most (73.9 percent) of these were recorded by Church (2007), while the rest are large mammal (NISP=1,410) and one UID mammal assemblage specimens recovered by KAS. Overall, these UID specimens consist of long bone portions, vertebra centrum and epiphyses, plus compact and flat bone sections too fragmented for reliable identification.

The only species identified were cow (NISP=75), pig (NISP=15), horse (NISP=75), and chicken (NISP=150). No wild animal remains were identified within the Camp Robinson faunal assemblage (Table 17). The MNI calculated by site was 10 and by individual feature it was 21 (Table 19).

Table 19. Species MNI by Site and Feature.

Species	MNI by Site	MNI by Features
Cow (*Bos taurus*)	2	6
Pig (*Sus scrofa*)	4	7
Horse (*Equus caballus*)	1	1
Chicken (*Gallus gallus*)	4	7
Total	**10**	**21**

Bone preservation at Camp Robinson is considered moderate due in part to the depositional context of the recovered specimens. More specifically, the bone is judged moderately deteriorated though similar to weathering stage one and two (Behrensmeyer 1978) although no tissue is present on the bones. The term "moderately deteriorated" is used because the bone surface exhibits some spalling and flaking. The bone easily breaks which inflated the NISP count, and made species identification difficult for most of the specimens. Root-etching was observed on some specimens (Church 2007:117).

Cow (*Bos taurus*)

The 75 cow bones (weight=2494.83 g) account for 1.1 percent by count and 29.1 percent by weight of the Camp Dick Robinson faunal assemblage (Table 17). Most of the remains are long bones (humerus and femur), pelvises, and vertebrae, with four carpals and one skull fragment also being present in the assemblage (Table 20). None of the cow bone is burned, but five exhibit butchering marks in the form of smooth saw cuts (Church 2007:103) and four (one humerus and three lumbar vertebrae), have chop or hack marks (Table 20). The site MNI for cow is two based on the left distal epiphyses of

the femur (Church 207:103). The MNI for cow by features is six based on the most numerous specimens within each feature.

Table 20. Cow Specimens.

Feature	Freq	Side	Specimen	Wt (g)
1	1	right	humerus, shaft, hack mark on medial side	162.10
11	1	left	humerus, distal portion, distal portion, epiphysis not all fused but present	91.20
11	1		lumbar vertebra, right posterior articular process	5.20
11	1		lumbar vertebra, centrum, right transverse process, epiphysis unfused, sagittal chopped	12.10
11	1		lumbar vertebra, centrum, right neural arch, sagittal chopped	22.00
11	1		lumbar vertebra, centrum, right transverse process, sagittal chopped	49.50
11	1	left	rib, shaft	13.60
11	1	left	rib shaft	29.80
15	1	left	femur, distal unfused epiphysis	206.06
17	1	right	femur, proximal epiphysis	42.69
17	1	right	femur, sawn unfused proximal	10.21
20	21		centrum epiphysis fragment	24.77
20	1	left	cuneiform (carpal)	7.56
20	1	left	radius, distal	241.73
20	1	left	femur, anterior distal epiphysis	24.58
20	1	left	femur, lateral distal epiphysis	36.19
20	1	left	femur, medial distal epiphysis	32.13
20	1	left	femur, unfused distal	121.15
20	1	right	humerus, proximal sawn unfused	313.45
20	1	left	lunate	12.18
20	1	left	magnum	9.19
20	2		thoracic vertebra, neural portion	50.50
20	1	left	scapula, proximal	153.91
20	2		rib, unfused vertebral end	18.27
20	1	left	scaphoid	13.88
20	1	left	unciform	7.40
20	4		unfused centrum fragment	25.99
20	3		unfused centrum/neural fragment	92.46
21	2		ilium fragment	2.25
21	1		long bone shaft fragment	25.44
21	1	right	radius, proximal	153.76
21	14		rib shaft fragment (2 sawn)	181.76
21	1		ilium, sawn fragment	86.33
21	1		pelvis, sawn left acetabulum w/portion of ilium ischium, pubis	215.49
Total	**75**			**2494.83**

Nineteen specimens listed as cf. cow also were recovered from the site (Church 2007:109). They consisted of two distal articular condyle femur fragments; 13 rib shaft fragments (two of which exhibit sawn ends); one right proximal femur shaft with possible cut marks; one right proximal femur posterior portion; and a left pelvis ischium fragment with chop marks on its medial side.

The allometric biomass for just cow is 15.00 kg representing 92.3 percent of the total weight (16.25 kg) calculated for the cow and pig resources recovered from Camp Dick Robinson. Most (NISP=63, 84.0 percent) of the cow specimens are medium utility portions represented by forequarter (humerus) and axial (lumbar vertebra and rib) cuts. These cuts were often used for pot roasts, stews, and steaks (Evans and Greene 1973:26–27). High FUI value specimens (NISP=7; 9.3 percent) are represented by long bone portions. Low FUI value specimens (NISP=5; 6.7 percent) are represented by one skull foramen magnum fragment, one left cuneiform, one left lunate, and one left scaphoid. None of these specimens exhibit modifications although they were likely also prepared in pot roast, stews, and, especially for the low FUI value specimens, in soups.

Pig (*Sus scrofa*)

The 15 pig bones (weight=157.14 g) account for 0.22 percent by count and 1.81 percent by weight of the Camp Dick Robinson faunal assemblage (Table 17). Most are long bones (humerus, radius, ulna, and femur), with only one premolar and one molar possibly representing skull fragments (Table 21). By site, the MNI for pig is four based on the three left distal humerus estimated in the age range of 12–18 months (Church 2007:109) and one unerupted upper third molar estimated to be less than 6 months in age (Silver 1969:298–299). By feature, MNI increased to seven based on the most numerous specimens within each feature.

Table 21. Pig Specimens.

Feature	Freq	Side	Specimen	Wt. (g)
1	1	right	premolar, fourth upper, crown, deciduous	0.40
11	1	right	molar, third upper, unerupted, crown	0.60
20	1	right	humerus, distal shaft	19.64
20	1	left	humerus, distal	8.27
20	1	left	humerus, distal shaft	17.92
20	1	left	radius, proximal	4.26
20	1	left	ulna, proximal	12.36
21	1	left	humerus, distal	23.58
21	1	left	radius, proximal	5.09
21	1		ulna, proximal	3.76
21	2	left	ulna, proximal shaft	5.32
21	1		femur, proximal unfused epiphysis	3.63
21	1	right	femur, distal unfused articular condyle	4.83
21	1	right	femur, cut marks, unfused distal shaft	47.48
Total	**15**			**157.14**

Six unburned cf. pig specimens were in the site assemblage identified by Church (2007). They consist of three long bone fragments, one patella, one ilium portion with a hack mark, and one right acetabular end of the pubis (Church 2007:109). The last three specimens suggest use of high FUI value (patella) and medium FUI value (ilium and acetabular) portions.

The allometric biomass for pig is 1.25 kg. This represents 7.7 percent of the total biomass weight calculated for the cow and pig resources. The pig FUI value, is similar to cow with most (NISP=10, 66.6 percent) of the specimens having a medium FUI value represented by forequarter (humerus, radius, and ulna) portions. High cow FUI values (NISP=3; 20.0 percent) represented by the femur portions and low FUI values (NISP=2; 13.3 percent) are represented by an upper premolar and an upper molar.

Overall, the smaller amount of pig relative to cow suggests that it was a secondary food resource relative to cows at Camp Dick Robinson. Given the relatively young age of the pigs based on the teeth and fusing age of the bone suggests the pigs were likely obtained from local sources instead of being shipped to the camp via Federal supply lines.

Horse (*Equus caballus*)

The 54 horse bones (weight=2,562.65 g) account for 0.8 percent by count and 30.0 percent by weight of the Camp Dick Robinson faunal assemblage (Table 17). The horse remains consist of primarily of long bones, pelvis, scapula, skull, and teeth (Table 22). The MNI for horse is one based on the "left horizontal ramus of a mandible with teeth" (Church 2007:109). Based on the wear of the teeth, it has estimated age of death of 5-9 years old (Church (2007:109).

Although, none of the recovered horse or cf. horse remains exhibit evidence of burning other modifications where noticed. For example, one left metacarpal fragment may have a cut mark, and one left femur distal condyle exhibited signs of butchering (Church 2007:109) (Figures 24 and 25). The latter was chopped transverse to the shaft through the distal condyles effectively removing the end of the femur. In butchering terms this portion is called the "shank knuckle bone" (Ziegler 1952:355). With respect to cows this bone was used predominately for soups. Its associated with horse remains along the recovery of a left metacarpal with a cut mark raises the possibility that some of the butchered horse bones represent a dietary component of the soldiers at Camp Dick Robinson.

Chicken *(Gallus gallus)*

The 150 chicken remains (weight=71.58 g) account for 2.2 percent by count and 0.8 percent by weight of the Camp Dick Robinson faunal assemblage (Table 17). Most are leg bones (femurs, tibiotarsus, and tarsometatarsus), wings (humerus, ulna, and ulnar carpal), breasts (coracoid and scapula), and neck vertebrae (Table 23). Only nine (6.0 percent) of the chicken bones are burned, and none exhibit signs of other forms of modification (Church 2007:103). The site MNI for chicken is four based on the right distal tibiotarsus (Church 207:103) and the MNI for chicken by feature is seven.

Eggshell fragments (NISP=106, 2.12 g) also were recovered from Camp Dick Robinson. Since the average chicken egg weighs 6.0 gm (Coughlin and Patterson 2003:D6), the recovered remains represent about one third of a chicken egg. The

minimal recovery of such remains suggests that chickens were used mainly as a meat source rather than a source for eggs at the camp.

Table 22. Horse Specimens.

Feature	Freq	Side	Specimen	Wt (g)
1	1	right	first tarsal	3.10
1	1		carpal/tarsal, fragment	8.40
1	1	left	fourth tarsal	8.60
1	1	right	second metatarsal, proximal and shaft	10.10
1	1	left	Pelvis, acetabulum	10.90
1	1	right	central tarsal	11.90
1	1	left	Humerus, lower shaft anterior lateral	15.70
1	3		carpal/tarsal	16.70
1	1	right	third tarsal	17.40
1	1	right	radial carpal	17.70
1	1	right	third tarsal	16.70
1	1	left	Pelvis, pubis	23.50
1	1	right	Pelvis, ischium and acetabulum	25.30
1	1	right	Humerus, lower shaft anterior lateral	27.09
1	1	left	Calcaneum, body superior end	28.30
1	1	right	Tibia, proximal epiphysis fused	27.50
1	1	left	Pelvis, ischium and acetabulum	34.90
1	1	left	Femur, distal condyle, chopped transverse to shaft	34.10
1	1	right	talus	79.40
1	1	right	calcaneum	74.30
1	1	left	Femur, lower shaft	89.10
1	1	left	Scapula, blade and glenoid	155.10
1	1	left	Tibia, shaft and distal end	261.00
1	1	right	Tibia, shaft and distal end	330.60
1A	1	left	lower PM3	0.00
1A	1	left	lower PM4	0.00
1A	1	left	lower incisor	4.63
1A	6		scapula blade fragment	13.59
1A	1	left	lower PM2	20.23
1A	1	left	lower M1	32.54
1A	1	left	lower M3	34.01
1A	1	left	lower M2	34.64
1A	1		occipital condyles	35.10
1A	1	right	upper M1	39.70
1A	1	right	upper PM4	48.78
1A	1	left	upper M2	51.06
1A	1	left	upper M3	51.55
1A	1	right	upper M2	54.11
1A	2		occipital fragment	74.20
1A	1	left	horizontal ramus of mandible	101.29
1A	1	right	glenoid fossa & incomplete blade of scapula	190.19
1B	1		articular condyle of metacarpal, distal	2.68
1B	1	left	metacarpal w/ cut mark	251.70
1C	1	right	proximal medial end of tibia	18.69
1C	1	right	upper cheek tooth	40.83
1C	1	right	proximal portion of tibia shaft	135.74
Total	**54**			**2562.65**

Figure 24. Distal Condyle of Butchered Left Horse Femur, Medial Section.

Figure 25. Distal Condyle of Butchered Left Horse Femur, Anterior Section.

Table 23. Chicken Specimens.

Feature	Freq	Side	Specimen	Wt (g)
20	2		cervical vertebra fragment	2.16
20	1	right	coracoid, proximal	4.21
20	1	right	coracoid, proximal shaft	0.73
20	4		eggshell, fragment	0.10
20	102		eggshell, fragment	2.02
20	2	left	femur, distal	2.34
20	1	right	femur, proximal	0.49
20	1	left	femur, proximal	4.05
20	1		humerus, distal	0.64
20	1	left	humerus, distal medial	0.71
20	1	right	humerus, proximal	0.76
20	1	left	humerus, proximal	3.85
20	1		lumbosacrafe fragment	1.24
20	1	left	scapula, proximal	0.12
20	6		tibiotarsus shaft	4.98
20	1	right	tibiotarsus, distal	0.92
20	2	right	tibiotarsus, distal	8.78
20	1	right	tibiotarsus, distal shaft	3.91
20	1	right	ulna, proximal	0.55
20	1	left	ulna, proximal	2.18
20	1	right	ulna, shaft	1.60
20	1	left	ulnar carpal bone	0.18
21	2	left	coracoid, proximal	1.90
21	1	left	coracoid, shaft	0.43
21	2		femur, distal articular condyle	1.12
21	1	left	femur, shaft	2.31
21	1		tarsometatarsus	0.51
21	1	left	tarsometatarsus	1.34
21	1		tarsometatarsus, proximal	0.10
21	1	right	tibiotarsus, distal	0.75
21	1	right	tibiotarsus, shaft	2.80
22	1	right	femur, proximal	3.74
22	2	left	femur, proximal	4.93
22	1	right	tibiotarsus, distal shaft	1.09
22	1	left	tibiotarsus, shaft	4.04
Total	**150**			**71.58**

Other bird remains recovered from the site, include 19 calcined medium bird long bone shaft fragments that "are of a size consistent" with chicken, grouped as medium bird, and 209 UID bird bone specimens (Church 2000:103). Collectively, 47.8 percent (NISP=109) of the medium and UID bird bones (NISP=228) from Camp Dick Robinson had been burned. This stands in sharp contrast to the identified chicken remains, which had only 6.0 percent burned. Such variation is due to the lack of diagnostics markers on the bone grouped as medium and UID bird along with the likelihood that they are chicken remains. Grouped together, 117 (30.9 percent) of all the bird bone (NISP=378) is burned.

Camp Dick Robinson Faunal Pattern

The faunal remains recovered from Camp Dick Robinson indicate that the soldiers relied on domestic animals for their meat. They appear to have mainly consumed cows that were likely supplied as federal rations accompanying the troops. Archival records indicate that contracts were let to individuals to supply beef to the troops at Camp Dick Nelson, as William Grant of Covington had the contract for furnishing beef to the First Kentucky Cavalry at Camp Dick Robinson (Courier Journal 1895). Next present in the assemblage based on count are chicken followed by pig (Table 24). Both were more than likely obtained from local sources.

Regardless if Union soldiers were in camp or marching, their daily rations for meat was the same: beef fresh or salted was 1 pound, four ounces [20 ounces] and pork fresh, salted, or bacon was 12 ounces (Billings 1993:133). Given these daily army rations, the amount of biomass meat weight estimated from cow [15.0 kg. (33.1 lbs = 530 ounces)] and pig [0.57 kg (1.25 lbs = 20 ounces)] remains recovered from Camp Dick Robinson represents the one day's portion of cow for 26 soldiers and the daily amount of pig that was eaten by less than two soldiers.

For the most part, meat rations were supplied from herds following the Union army. Billings (1993:360) notes that cows were divided into herds that followed troops on the move and herds located at camp depots. Soldiers who tended the herds acted as both butchers and drovers, and were excused from all other duty (Figure 26). Depot camps, such as Camp Dick Robinson, would have supplied the animals used by soldiers stationed at other locations or out on maneuvers. Reportedly 702 cattle made up the Confederate army herd, during their less than one month occupation of Camp Dick Robinson (Broadwater 2005:141). Because no wild animal remains were recovered, it is concluded that soldiers at the camp did not supplement their meat supply with wild resources.

The distribution of cow, pig, and chicken, nevertheless, does point to a few subtle intra-site differences. None, however, stands out as noticeable as horse, which was only recovered from Feature 1 and possibly Feature 21 (Table 24). Chicken and other bird remains were recovered from Features 20, 21, and 22. These three features also collectively yielded the greatest number of cow and pig remains, and Features 20 and 21 yielded the highest amount of moderate FUI value specimens for cow and pig. In addition, Feature 20 was the only feature that yielded low, medium and high FUI values (Table 24).

High FUI values were obtained from Features 15, 18, and 20 for cow and Feature 22 for pig. These features contained collectively yielded 10 high FUI femur portions (Table 19), including both the proximal or distal end epiphyses sections (Tables 21 and 22). As with the moderate FUI value elements, the high FUI cow femur portions may have been used to make pot roasts and stews. The lack of burned cow or pig bone suggests that preparing steaks on the open flame rarely, if ever, occurred at the camp. In contrast, that 30.1 percent of the bird bone in this assemblage is burned suggests roasting

Table 24. Summary Faunal Remains by Features.

Species	Feature No. 1 Freq (wt g)	10 Freq (wt g)	11 Freq (wt g)	13 Freq (wt g)	15 Freq (wt g)	17 Freq (wt g)	18 Freq (wt g)	20 Freq (wt g)	21 Freq (wt g)	22 Freq (wt g)	NISP	Weight
Mammals												
cf. Cow (cf. *Bos taurus*)	0	0	2 (17.40)	0	0	0	17 (114.7)	0	0	0	**19**	**132.10**
Cow (*Bos taurus*)	1 (162.1)	0	7 (223.40)	0	1 (206.06)	0	2 (52.90)	44 (1185.34)	20 (665.03)	0	**75**	**2494.83**
cf. Pig (*Sus scrofa*)	0	0	0	0	0	3 (13.74)	0	0	0	3 (15.24)	**6**	**28.98**
Pig (*Sus scrofa*)	1 (0.40)	0	1 (0.60)	0	0	0	0	5 (62.45)	5 (37.75)	3 (55.94)	**15**	**157.14**
cf. Horse (cf. *Equus caballus*)	599 (518.41)	0	0	0	0	0	0	0	1 (2.09)	0	**601**	**520.5**
Horse (*Equus caballus*)	54 (2562.65)	0	0	0	0	0	0	0	0	0	**54**	**2,562.65**
Large Mammal	1756 (1312.8)	18 (10.40)	86* (89.10)	0	0	0	1933 (525.72)	1250 (377.43)	431 (294.32)	89 (56.72)	**5563**	**2666.49**
Medium Mammal	0	0	0	0	0	0	0	0	9 (5.67)	0	**9**	**5.67**
UID Mammal	0	0	0	1 (0.20)	0	0	0	0	0	0	**1**	**0.20**
Total	**2411 (4556.36)**	**18 (10.40)**	**96 (330.50)**	**1 (0.20)**	**1 (206.06)**	**3 (13.74)**	**1952 (693.32)**	**1299 (1625.22)**	**466 (1004.86)**	**95 (127.90)**	**6343**	**8,568.56**
Birds												
Chicken (*Gallus gallus*)	0	0	0	0	0	0	0	134 (46.52)	11 (11.26)	5 (13.80)	**150**	**71.58**
Medium Bird	0	0	0	0	0	0	0	0	0	19 (1.11)	**19**	**1.11**
UID Bird	0	0	0	0	0	0	0	82 (16.25)	91 (8.36)	36 (6.54)	**209**	**31.15**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**216 (65.75)**	**102 (82.64)**	**60 (5.65)**	**378**	**103.84**
Vertebrata	6 (0.1)	0	0	0	15 (0.54)	0	0	2 (0.62)	7 (0.12	0	**30**	**1.38**
Total	**2417 (5.9)**	**18 (10.40)**	**96 (330.50)**	**1 (0.20)**	**16 (14.46)**	**3 (13.74)**	**1952 (693.32)**	**1517 (217.38)**	**575 (102)**	**155 (261.45)**	**6750**	**8,673.78**

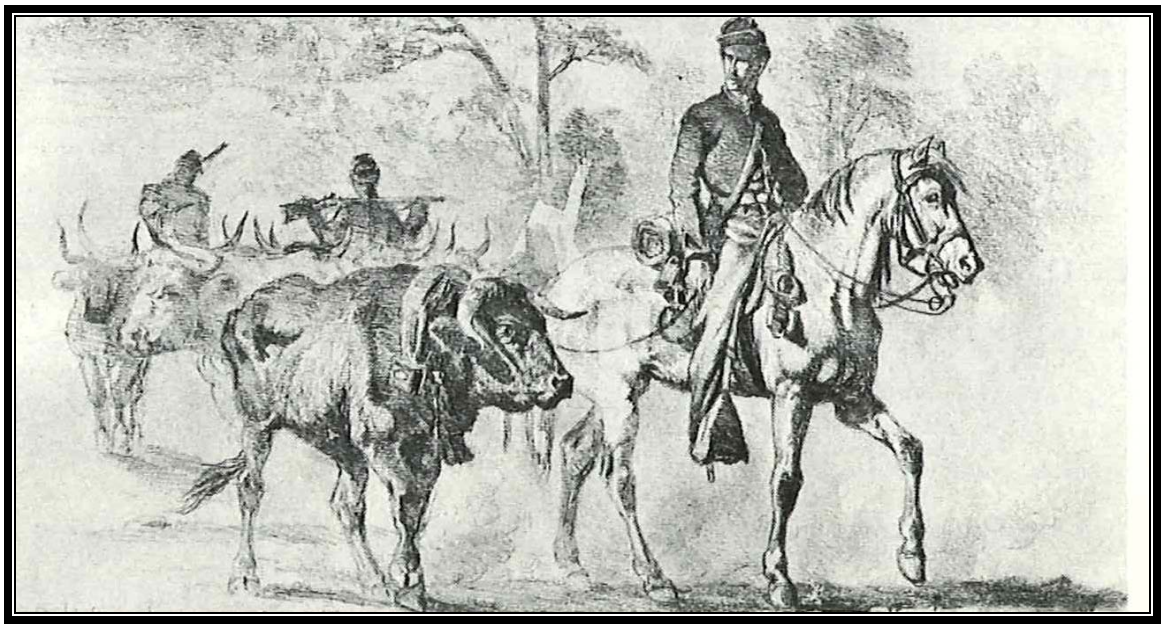


Figure 26. Illustration of Beef Accompanying Union Soldiers taken from Pitkin (1965: 37).

of bird over fires occurred more frequently than the cooking of cow and pig elements over campfires. The preparation of cow and pig meat sources perhaps occurred mainly in stews and soups.

Comparison with Faunal Patterns from Other Civil War Camp Sites

Comparison of the Camp Dick Robinson faunal pattern to those reported from four other archaeologically investigated Union camps are presented below. This comparison offers a context to understand the animal use pattern at Federal Civil War camps. One of the sites is located in Kentucky (Camp Nelson [Coughlin and Patterson 2003; Tune 1991]), two are located in Tennessee (Camp Sevierville Hill [Young 1993] and Fort Pillow [Mainfort 1980]), and one is located in South Carolina (Folly Island [Snyder 1989]).

The faunal assemblages from Camp Dick Robinson, Camp Nelson, Fort Pillow, and Folly Island indicate that cow was more a common source of meat than pig. The overall dominance of cow use is believed to reflect the Federal provisioning of Union camps, although McBride et al. (2000:144) citing Lord (1960:118) notes such a pattern "is not well documented." Possibly, the primary meat of Union forces was composed of both cow and pig depending on the availability, distribution, and preservation of these resources and the time of year, location and pace that forces moved through the theater(s) of action (Madden 2000:126; Wiley 1995 [1958]:225).

Remains from Camp Sevierville Hill, in contrast, suggest that pig and cow may not have been the primary sources of meat at this camp (Young 1993). This suggestion is based on the paucity of medium-large and large sized mammal elements, and the absence

of steaks or other identifiable meat cuts. The lack of such elements suggests that meat rations "arrived preprocessed and that wide spread butchering of fresh pork and beef did not occur or that butchery refuse was deposited over the side of the hill" (Young 1993:128). Based on a greater amount of specimens from medium-sized species relative to medium-large and large-sized species Young (1993:128-129) suggested that the most common meat sources at Camp Sevierville Hill were chickens and mammals the Union soldiers obtained while foraging in surrounding areas to supplement their rations.

The Camp Dick Robinson faunal assemblage indicates that soldiers relied on domestic resources mainly cow that was supplied in federal rations. Pig and chicken, both likely from locally available sources, supplemented the animal sources consumed at the camp. The lack of pig metacarpals and phalanges indicates that pickle pigs' feet were not consumed at Camp Dick Robinson. Likewise the paucity of egg shell suggests that eggs were infrequently consumed. The lack of wild animals is linked to the greater reliability of federal supplies coming to the camp and perhaps the majority of soldier's following requirements to stay at camp.

CONCLUSIONS

The faunal pattern identified for Union forces at Camp Dick Robinson exhibits a minimal amount of variation. The lack of wild resources within the Camp Dick Robinson faunal assemblage indicates that soldiers were able to rely on domestic animals for their sources of meat. These sources are primarily cows that were generally supplied in federal rations, followed by chickens and pigs (both obtained from local available sources).

The horse remains recovered from Camp Dick Robinson represents one of many casualties produced by the extreme harsh conditions these animals endured and succumbed to throughout the Civil War. It is believed that by continued recovery and description of horse remains from Civil War period sites archaeologists will increase our understanding of the unique position held by horses during this historic conflict and the circumstances when horse meat may have been consumed by northern and southern forces.

CHAPTER 6:
ARCHAEOBOTANICAL REMAINS

By
Jack Rossen
Ithaca College

INTRODUCTION AND BACKGROUND

Archaeobotanical studies have become more common in historic archaeology (Holt 1991). These studies are instrumental in understanding foodways, agricultural systems, market trade, and local environments, to give but a few examples. Historic archaeobotany (or paleoethnobotany) is essentially an adaptation to more recent materials of methods used in prehistoric archaeology. Much like prehistoric archaeobotany, the analysis of historic plant remains depends on the systematic and opportunistic field collection of soil samples and their processing by water flotation.

Archaeobotany has produced some key studies for understanding plant use during the Civil War in Kentucky. A large collection of plant remains from Camp Nelson (15Js96), a Union Quartermaster Depot in Jessamine County, displayed how archaeobotany can refine our understanding of the cultural processes and dietary tensions of the time (Rossen 2003). As a companion collection, antebellum samples from the nearby Owens Tavern (15Js97) displayed the rich variety of that period's plant use. A variety of cultivated plants of both New World and Old World origin were recovered, along with nutshell, and seeds of fruits, berries and weedy plants. The spatial distribution of the Camp Nelson Civil War plant remains reflect dietary differences in food consumption and access to resources within the Union Army. For instance, while grains like barley (along with wheat and rye) tended to consumed by officers, African American soldiers ate more beans (and cowpeas). Lower lower status troops, including the African-American soldiers, appear to have supplemented army rations with wild fruits, such as persimmon.

The earliest historic archaeobotanical collection in Kentucky comes from the John Arnold Farmstead site (15Lo168) in Logan County (Andrews et al. 2004). The site contains a 1790s component that probably represents one of the first Euro-American families to settle in the region. The site assemblage is a combination of plants directly adopted from Native Americans with little morphological change (e.g., corn and beans) and introduced Old World grains (e.g., barley, rye, oats, and wheat). By the 1840s, adopted native plants, such as corn had been heavily hybridized, and the Old World grains were well-established. Several good collections from this era, include the Baber Hotel (15Mcl137) in McLean County (Rossen 1995b.), the History Center site (15Fr115) in Franklin County (Rossen n.d.a.), and the Louisville Convention Center site (15Jf646) in Jefferson County (Rossen n.d.b.). Other nineteenth century collections, include the Lextran site (15Fa191) in Fayette County (Rossen 1992), and two sites near Bardstown in Nelson County (Thomas Gwynn House [15Ne57] and Site 15Ne58) (Davis et al. 1997). The pervasiveness of Old World grains in antebellum Kentucky points to a continue reliance on this plants, a pattern that is

generally uncorroborated in historic documents (see also Cummings 1993; Cummings and Puseman 1994; Roberts 1993).

Post-Civil War Kentucky is represented in several plant collections listed above. Following the war, agriculture based on the Old World grains dwindled, and in time, virtually disappeared. New plants, such as tomatoes, were gradually introduced and became staples, while others, such as the purple-flowered groundcherry (*Physalis lobata*), experienced a period of temporary popularity (Heiser 1987; Rossen n.d.a., n.d.b.; Rupp 1987; Scarry 1993).

Within this context of the developing archaeobotanical record of historic Kentucky, new Civil War era collections are welcome additions. Recently, a collection from the Barkley Plantation, near Camp Nelson in Jessamine County, produced new evidence of Civil War era slave life and plant use, including use grains, like wheat and barley, and possible ethnic markers, like cowpeas and gourd rind (Rossen 2003, 2007). For this report, 15 samples (163 liters) from Camp Dick Robinson were analyzed (Tables 25 and 26). This is a relatively small plant collection compared to those recovered from other Kentucky Civil War era sites, but is nonetheless a welcome addition to a growing data base.

Table 25. General Categories of Plant Remains.

Category	Frequency	Percent*	Gram Weight	Percent*
Wood charcoal	4,760	87.1	47.2	98.7
Wild plant seeds	509	9.3		
New World cultigens	47	1.0	0.2	0.4
Nutshell/nutmeat	15	0.3	0.0	
Old World cultigens	13	0.2		
Unidentified-general seeds	118	2.2	0.4	0.8
Total plant remains	**5,462**	**100.0**	**47.8**	**100.0**
***calculated to the nearest 0.1%**				

METHODS

Botanical remains are produced from archaeological sites using a method known as water flotation. Soil samples from the site are placed in a tank with agitated water, and the lighter charcoal and roots float to the surface and are collected separately. Portions of the sample that sink are caught below in fine screen.

The dried flotation samples were received in Ithaca, New York, following flotation. The samples were passed through a 2 mm geological sieve before sorting charcoal from uncarbonized contaminants such as roots. In historic archaeological sites like Camp Dick Robinson, archaeological plant remains may be either carbonized or uncarbonized (desiccated). Plant material such as wood and nutshell from the larger than 2 mm sample were identified, counted, and weighed. Sievings smaller than 2 mm were scanned carefully for seeds. This procedure is followed because fragments of wood and nutshell smaller than 2 mm are difficult to reliably identify. Charcoal specimens larger than 2 mm are

representative of smaller specimens, with a few possible exceptions such as acorn nutshell and squash and gourd rind (Asch and Asch 1975). Laboratory sieving thus saves considerable laboratory sorting time without a loss of information.

Table 26. Plant Remains.

Plant Type/Species	Frequency	Gram Weight	Ubiquity
New World cultigens			
corn - kernel fragment (*Zea mays*)	37	0.2	0.13
gourd - rind (*Lagenaria* sp.)	7		0.33
bean (*Phaseolus vulgaris*)	2	0.0	0.07
tomato (*Lycopersicon esculentum*)	1		0.07
Old World cultigens			
barley (*Hordeum vulgare*)	13		0.07
Wild plant seeds			
elderberry (*Sambucus canadensis*)	384		0.20
grass (Poaceae)	46		0.07
pokeberry (*Phytolacca americana*)	37		0.33
blackberry/raspberry (*Rubus* sp.)	27		0.33
bayberry (*Myrica pensylvanicum*)	12		0.27
ground cherry/tomatillo (*Physalis* sp.)	3		0.07
Nutshell			
hickory (*Carya* sp.)	11	0.0	0.33
butternut (*Juglans cinerea*)	3	0.0	0.07
acorn (*Quercus* sp.)	1	0.0	0.07
Miscellaneous			
fungus	102	0.4	0.07
unidentified - seed fragments	10		
unidentified - general	5	0.0	
unidentified -rind	1		

The samples were analyzed under a light microscope at magnifications of 10 to 30x. Identification of materials was aided by a comparative collection of both archaeological and modern specimens, along with standard catalogs (Martin and Barkley 1973). Specimens were sorted by species, counted, and weighed to the nearest tenth of a gram. Macroscopic wood characteristics were observed from specimen cross-sections (Panshin and deZeeuw 1970). Changes in the visibility of macroscopic characteristics that occur during carbonization were also accounted for in order to ensure maximum accuracy of identification (Rossen and Olson 1985; Smart and Hoffman 1988). Very small wood specimens or specimens that were badly deformed during the carbonization process were classified as "unidentified." Similarly, badly deformed non-wood specimens were classified as "unidentified-general" and deformed, fragmented or unknown seeds were classified as "unidentified-seeds."

Frequencies for seed or wood lots containing more than 400 specimens represent carefully constructed estimates and not exact figures. Actual frequencies were recorded for lots containing fewer than 400 specimens. Estimates were derived in the following manner: two hundred specimens were counted, this subsample was weighed, and the weight of the total sample was divided by the subsample. This number was then multiplied by 200. Estimates of the species composition of each sample were derived by identifying between

15 and 50 specimens. An estimate of the relative percentage of each species represented was then used to calculate the estimated frequency of each species in a sample. This is believed to be a reliable and efficient method for handling large lots of wood charcoal (Rossen 1991).

RESULTS

Old World Cultigen: Barley

Barley (*Hordeum vulgare*, n=13) was recovered from Feature 11 (Table 27). The domestication of this plant originated in the Near Eastern fertile crescent region of Iraq and Iran (Kimber and Sears 1987). It was introduced early to the New World by both Spanish and English explorers. Barley was grown in 1492 in the Caribbean by the colony founded by Christopher Columbus and was introduced to the Massachusetts Bay Colony by 1602 (Hockett 1991; Wiebe 1979).

Relatively little is known of the chronology, adoption, and use of Old World grains like barley in historic Kentucky, although portions of the story are now emerging. It appears that various Old World grains penetrated into even isolated areas of Kentucky quite early, judging from the recovery of wheat, barley, and rye in 1790s deposits at the John Arnold Farmstead (Andrews et al. 2004; Rossen 1995a) and in 1830s deposits (with buckwheat but without rye) at the Baber Hotel site (Rossen 1995b.). It is likely that historic barley in Kentucky was a six-rowed winter variety that originated in the Balkan-Caucasus region of southeastern Europe (Nilan and Ullrich 1993:7). Beside Camp Nelson, barley was recovered in central Kentucky at the History Center site, the Jim Beam House near Bardstown, and in Civil War slave contexts at the Barkley Plantation (Davis et al. 1997; Rossen 1995b, n.d.a.).

It is not known to what extent grains like barley were grown or imported. Some nineteenth century Kentucky farms were certainly growing Old World grains. Grains, such as barley, however, are generally cool season crops that prefer dry, alkaline soils and are relatively intolerant of the warm climate and wet, acidic soils of Kentucky (Nilan and Ullrich 1993:4). After the Civil War, grain production declined in Kentucky. In the early twentieth century, coal camps apparently imported bags of grain by rail instead of growing them (Rossen n.d.c.).

New World Cultigens: Corn, Gourd, Bean, Tomato

Corn

Corn kernel fragments (*Zea mays*, n=37) were recovered from Feature 11 (Table 27). Corn kernels probably represent food waste, as opposed to inedible cupules and cobs, which were not recovered and would represent food preparation debris. Corn remains can thus suggest difference activities that result in the deposition of plant remains.

Table 27. Plant Species by Feature.

Sample	Species	State*	Frequency	Gram Weight
Feature 1	wood (hickory)	c	103	1.1
27 liters	hickory (*Carya* sp.)	c	1	0.0
	gourd - rind (*Lagenaria* sp.)	c	1	0.0
	bayberry (*Myrica pensylvanicum*)	c	1	
	blackberry/raspberry (*Rubus* sp.)	d	1	
Feature 2	Wood (hickory)	c	560	5.6
10 liters	Unidentified - seed	c	1	
Feature 3	Wood (hickory)	c	2,477	30.6
13 Liters	hickory (*Carya* sp.)	c	2	0.0
	acorn (*Quercus* sp.)	c	1	0.0
	unidentified - seed	c	2	0.0
	unidentified - general	c	2	
Feature 4	wood (hickory)	c	31	0.2
5 liters	bayberry (*Myrica pensylvanicum*)	c	1	
Feature 7	wood (hickory)	c	685	4.8
22 Liters	fungus	c	102	0.4
	butternut (*Juglans cinerea*)	c	3	0.0
	hickory (*Carya* sp.)	c	7	0.0
	bean (*Phaseolus vulgaris*)	c	2	0.0
Feature 11	wood (unidentified – twigs)	c	143	0.7
24 Liters	wood (black walnut)	c	636	3.5
	corn – kernel fragments (*Zea mays*)	c	37	0.3
	barley (*Hordeum vulgare*)	c	13	
	gourd – rind (*Lagenaria* sp.)	c	1	
	pokeberry (*Phytolacca americana*)	d	3	
	blackberry/raspberry (*Rubus* sp.)	d	1	
	unidentified – seed	c	5	
	unidentified – rind	c	2	0.0
Feature 12	wood (unidentified – twigs)	c	9	0.0
29 Liters	elderberry (*Sambucus canadensis*)	d	203	
	unidentified – seed	d	2	
Feature 13	wood (hickory)	c	6	0.0
23 Liters	wood (white oak group)	c	34	0.2
	hickory (*Carya* sp.)	d	1	0.0
	gourd – rind (*Lagenaria* sp.)	c	2	0.0
	grass (Poaceae)	d	46	
	pokeberry (*Phytolacca americana*)	d	13	
	ground cherry/tomatillo (*Physalis* sp.)	d	1	
	blackberry/raspberry (*Rubus* sp.)	c	1	
	elderberry (*Sambucus canadensis*)	d	1	
	tomato (*Lycopersicon* sp.)	d	1	
	unidentified – general (amorphous)	c	2	
Feature 14	wood (hickory)	c	8	0.1
10 liters	bayberry (*Myrica pensylvanicum*)	c	5	
*c=carbonized; d=desiccated ; Total 163 Liters				

The kernel fragments are unfortunately too small to make any definitive statement on morphology. What is known is that row number, cupule angles, and kernel proportions (either low and wide or narrow and tall) vary greatly among Kentucky Civil War specimens.

At sites like Barkley Plantation, corn morphology varied within the collection. Camp Nelson corn kernels are very tall and narrow with straight sides that taper from top to bottom and large embryos. All Civil War specimens are a far cry from the small, low crescent-shaped kernels found in 1790s contexts at the John Arnold Homestead in Logan County (Rossen 1995a), demonstrating how much hybridization and experimentation occurred with the corn crop during Antebellum time.

Gourd rind

Gourds (*Lagenaria* sp.) were widely used prehistorically as containers and fishing floats, and their nutritious seeds were probably eaten (Hart et al. 2004; Hudson 2004). Gourd rind also occurs in historic sites, particularly in poor or slave households where they were used as bowls or spoons (Ferguson 1992:97-98). At Camp Dick Robinson, only trace amounts of gourd were recovered from four features (Table 28). Gourds appeared in much higher frequencies in the African American contexts at Camp Nelson and the Barkley Plantation.

Common bean

Two bean fragments (*Phaseolus vulgaris*) were recovered from Feature 7 (Table 27). Beans in antebellum and Civil War sites are a local holdover from Native American foodways. There may have been a connection between beans and lower socioeconomic status dating from prehistoric times. Beans initially made their way into the Ohio Valley between A.D. 1000 and 1300 (Hart and Scarry 1999) and were rapidly adopted as a staple by many eastern U.S. groups, such as the Fort Ancient (Riley et al. 1990). Unlike higher status prehistoric introduced plants, such as corn, beans did not go through a prolonged local period of acclimatization and probable ritual use prior to its adoption as a dietary staple. That is, beans did not go through the process called *ritualization*, whereby a new plant is given high status through the long-term development of a special ritual (or supernatural) context for the plant (Coursey 1976). Perhaps because of this, some groups such as western Kentucky Mississippian populations, who were Fort Ancient contemporaries, apparently chose not to use beans (Edging 1995; Rossen and Edging 1987). In comparison with high status plants, such as corn, beans were probably a low status plant food prehistorically, and this low status was transferred to the adopting Euro-Americans, even though their dietary value was undeniable.

During the Civil War, beans were favored by the Union army because of their ease of transport and storage. They were one of the few provisions to reliably arrive in good condition, in contrast to the mold and worms that infested most food stores (Lord 1969:41; Wiley 1995[1958]:238). They were often distributed to the soldiers to cook themselves (Kory 1993: viii; Wiley 1995[1958]:242). The less centralized role of beans, prepared and consumed outside mess halls, may explain their dominance in the African American soldier area at Camp Nelson (Sanderson 1862; Wiley 1995[1958]:128).

Tomato

One tomato seed (*Lycopersicon esculentum*) was recovered from Feature 13 (Table 27). Tomato was also recovered from high status officer contexts of Camp Nelson (Rossen 2003). The archaeobotanical presence of tomato seeds at Camp Dick Robinson and Camp Nelson is interesting, given that its use among civilian populations was only sporadic at that time. Popular myths that tomatoes were poisonous persisted until the 1880s, and perhaps the use of this plant during wartime helped introduce it to Americans (Heiser 1987; Rupp 1987). Tomato frequencies in historic archaeobotanical collections remained low until the 1880s, when frequencies increased enormously (Rossen 1992a, n.d.a., n.d.b.; Scarry 1993).

Additional Carbonized Seeds

Bayberry

Carbonized specimens of bayberry (*Myrica pensylvanica*, n=8) were recovered from three features (Table 27). These berries have various medicinal uses, such as an astrigent to combat diarrhea and colitis, or to fight colds and flu. Bayberry is commonly present in low frequency in Kentucky Late Prehistoric sites and occasionally exhibits a high ubiquity, such as at the Dry Branch Creek (15Me62) site in Mercer County and the Eva Bandman (15Jf668) site in Jefferson County (Rossen 2004, 2005).

Desiccated Seeds

A variety of desiccated seeds were recovered (Tables 26 and 27). Though these seeds may represent economic plants, they also may represent background weeds. The historic uses of these plants are, thus more difficult to ascertain than the carbonized materials discussed above.

Elderberry

Elderberry (*Sambucus canadensis*) is both an edible berry and background weed. The seeds occurred in particularly high frequency in Feature 12 (Table 27). Its concentration in two flotation samples obtained from this feature increases the chances that elderberry was a utilized economic plant at Camp Dick Robinson.

Grass

A total of 46 desiccated grass seeds (Poaceae) was recovered from Feature 13 (Table 27). These seeds are probably a background weed and a fortuitous inclusion in the archaeobotanical record.

Pokeberry

Pokeberry (*Phytolacca americana*) seeds were recovered from five features (Table 27). The highest concentrations are associated with Features 1 (n=21) and 13 (n=13).

Pokeberry was eaten as a young green and its berries were used as a purple dye. This plant is also considered to be a common background weed in historic sites.

Blackberry/raspberry

Low frequencies of blackberry/raspberry seeds (*Rubus* sp.) were recovered from four features (Table 27). The berries were eaten fresh and baked into pies and cobblers. The seeds are not digestible and commonly occur in the thousands in historic privy deposits (Rossen n.d.a.). The low frequencies of *Rubus* seeds at Camp Dick Robinson are thus suggestive of food debris.

Ground cherry/tomatillo

A trace amount of ground cherry/tomatillo (*Physalis* sp.) was recovered from Feature 13 (Table 27). This is an edible plant, used in a variety of recipes and salsas, and is also a common background weed in historic site plant collections.

Nutshell

Trace amounts of hickory (*Carya* sp.), butternut (*Juglans cinerea*) and acorn (*Quercus* sp.) were recovered (Tables 26 and 27). The use of native nuts in historic Kentucky is a direct borrowing from prehistoric Native American foodways. Euro-American settlers cultivated nut trees (Downing 1866, 1881), in contrast to Native Americans, who probably collected nuts wild and, at most, practiced management of the wild tree stands (Munson 1986).

Hickory nutshell was recovered from four features (Table 27). Hickory nuts were valued for their high protein and fat content, and relative ease of collection, preparation, and storage.

Butternut was recovered from Feature 7 (Table 27). It is widespread in the eastern U.S. archaeological record in small amounts, but was more economically important in the northeastern U.S. Butternut trees only produce good harvests every two or three years, so butternut may not fit into a seasonal collecting strategy as well as other nut-bearing species that produce more consistent harvests (Krochmal and Krochmal 1982; U.S. Department of Agriculture 1948:110, 202). The amount and availability of butternut throughout Kentucky is difficult to assess because a blight has drastically reduced its numbers in recent years.

Acorn (*Quercus* sp.) nutshell is thin and fragile and thus underrepresented archaeologically (Asch and Asch 1975). One specimen was recovered from Feature 3 (Table 28). Acorn is probably the most abundant and reliable southeastern U.S. nut, producing consistent annual masts, while other species vary more in annual production. Acorns, however, require special processing to remove the astringent tannic acid of the nutmeat. Furthermore, acorns are nutritionally inferior to other nuts, with only half the protein and one-third the fat of hickory nuts. Despite this, acorn collection may be

simpler than the collection of other nuts, and nutmeat yields are high, so the net energy potential of acorns may be similar to that of other nuts (Lopinot 1982:726).

Wood Charcoal

The wood charcoal collection from Camp Dick Robinson is unusual for its lack of species diversity. Most historic sites produce wood charcoal assemblages containing from 13 to 20 species, but only five species are present in the Camp Dick Robinson collection (Table 28). Also notable is the absence of mixed wood lots suggestive of firewood debris that are so common in historic sites. The Camp Dick Robinson assemblage is heavily dominated by hickory (*Carya* sp., 83.9 percent by frequency), followed by black walnut (*Juglans nigra*, 14.0 percent by frequency), and trace amounts of ash (*Fraxinus* sp., 1.3 percent by frequency), white oak group (*Quercus* sp., 0.7 percent by frequency) and sycamore (*Platanus occidentalis*, less than 0.1 percent by frequency) (Table 28).

Table 28. Wood Charcoal.

Species	Freq.	Pct*	gm wt.	Pct.
Hickory (*Carya* sp.)	3,870	83.9	42.4	91.2
Black walnut (*Juglans nigra*)	645	14.0	3.5	7.5
Ash (*Fraxinus* sp.)	61	1.3	0.4	0.9
White oak group (*Quercus* sp.)	34	0.7	0.2	0.4
Sycamore (*Platanus occidentalis*)	1	0.0	0.0	
Total identified wood charcoal	**4,611**	**100.0**	**46.5**	**100.0**
Unidentified wood charcoal	149		0.7	
Total wood charcoal	**4,760**		**47.2**	

The detailed wood charcoal assemblage from the Muir site (15Js86), an early Fort Ancient (A.D. 1000-1100) site in Jessamine County (Turnbow and Sharp 1988), provides a baseline for reconstruction of the local forest prior to Euro-American settlement. Based on the Muir data, it is apparent that the area around Camp Dick Robinson was a mixed hardwood forest dominated by various oaks and hickories (Rossen 1988, 1991, see also Campbell 1985). Important secondary species were hard maple, sycamore, yellow polar, beech, and American chestnut. A wide variety of minor secondary species and tertiary species also was present.

In contrast to Muir and other historic sites, several Camp Dick Robinson floatation samples yielded only a single species of carbonized wood, suggesting they represent either posts or single logs. Samples from Features 1 (Section B), 2, 3, and 7 contain substantial amounts of wood charcoal that are entirely represented by hickory. Feature 1 (Section C) yielded only ash and wood charcoal from Feature 11 is represented entirely by black walnut. Other samples contain lower frequencies of white oak, hickory, sycamore or twigs that are more suggestive of traces of firewood debris.

Miscellaneous: fungus

A substantial amount of carbonized fungus was recovered from Feature 7, a post mold. These specimens were recovered in combination with a large lot of hickory wood charcoal. This suggests that the post was old and deteriorated before being burned.

DISCUSSION

The archaeobotanical remains from Camp Dick Robinson are a welcome addition to the literature on historic plant use in Kentucky. In some ways this collection may be considered a subset of the larger plant collection from Camp Nelson, where grains like barley (along with wheat and rye) were found in high status officer quarters and beans (and cowpeas) were relegated to the low status African American soldier tenting ground. Corn, beans, and Old World grains barley, wheat, and rye were undoubtedly plant food staples in Civil War camps. Gourd rind appears in only low frequency. A wide range of plants, many appearing only in desiccated form, are common historically used plants and/or background weeds. Overall the sampled Camp Dick Robinson contexts appear to represent plants that were consumed by high and low status soldiers.

In terms of plant combinations, the most interesting contexts analyzed are Features 11 and 13. In Feature 11, corn, barley, gourd rind, blackberry/raspberry and pokeberry were recovered together. In Feature 13, trace amounts of several species, including blackberry/raspberry, gourd rind, ground cherry/tomatillo, elderberry, tomato and pokeberry, were recovered. The plant remains from both features reflect the collection and consumption of wild plants.

Hickory, butternut, and acorn nutshell appear in very low frequency and may even be incidental to the collection. The variety of wild plant seeds recovered (mostly desiccated) is equivocal. It is not clear whether these plants represent a wild plant collecting component of berries and greens that supplemented the diet, or if they are just background weeds.

The wood charcoal collection differs significantly from assemblages recovered from prehistoric central Kentucky sites. Instead, the Camp Dick Robinson wood charcoal suggests that posts and construction debris were sampled more heavily than firewood and general food debris. Hickory and black walnut are durable species often used for posts.

The archaeobotany of Civil War era sites is a rich and intriguing topic. With each new collection, we add to our comparisons and contrasts of Euro-American, African-American, military, civilian, and slave uses of plants. Camp Nelson and the Owens Tavern began this research in Kentucky, and the Barkley Plantation plant collection was a recent significant addition to this growing data base. In this context, the relatively small collection from the Camp Dick Robinson site corroborates our knowledge of Civil War era plant use. Ultimately, through the analysis of nineteenth century botanical assemblages, researchers will gain a better understand how the twentieth century agricultural systems of Kentucky developed. For example, the decline of the Old World grains can be viewed within the long-

term context of changes in southern and midwestern U.S. culture, economy, and infrastructure. The Civil War collections of Camp Nelson, Owens Tavern, Barkley Plantation, and Camp Dick Robinson can then be viewed together as a mirror of the fulcrum between two different eras of economic plant use and agricultural history.

CHAPTER 7:
RESULTS

A total of 33 features was identified and excavated during the course of CRA's and KAS's investigations of Camp Dick Robinson. This chapter describes the work conducted by KAS at this site and includes a description of the excavations, and a description of the features (n=13) identified. A summary and reexamination of the features documented during CRA's earlier investigations (n=20) follows this section. Finally an analysis and interpretation of the site incorporating all the data is presented.

KAS's investigations at the site included four mechanically stripped blocks totaling 4,280 m² (Figures 27-29; Table 29). Block A was located just west of the Camp Dick Robinson Elementary School and measured 80 m north/south x 26 m east/west (Figure 27). Block B was located 60 m south of Block A near the corner of the fence for the school and measured 50 m north/south x 30 m east/west (Figure 28). Block C was located just southwest of the southwest corner of Block B and measured 20 x 20 m. Block D was an extension of the middle of the south wall of Block A and measured 30 m north/south x 10 m east/west (Figure 27).

Table 29. KAS Excavation Blocks.

Block	Dimensions	New Features	Relocated CRA Features
A	80 x 26 m	11	3
B	50 x 30 m	2	3
C	20 x 20 m	0	0
D	30 x 10 m	0	0
Total	**4,280 m²**	**13**	**6**

The stratigraphy at Camp Dick Robinson consisted of a slightly mottled dark yellow brown silt clay loam plowzone and a yellow brown silt clay subsoil. The plowzone was removed in all the excavation blocks to a depth of 30 to 35 cm except for the north half of Block A, which was excavated to a depth of 40 cm below ground surface.

Of the 19 features identified during the course of KAS's investigation, six had been initially recorded by CRA (Table 29). The remaining 13 features were documented during the course of KAS's work at the site. Most of the new discovered features (n=11) and three of previously identified features were located in Block A. Of the remaining features two newly discovered and three previously discovered features were located in Block B. No features were identified in Blocks C and D. Three features (Feature 22 and 23, and PM 16) documented by CRA that were thought to be located within one of the KAS excavation blocks A and C could not be relocated (Figure 28). Eleven post holes (PM1-3, PM5, PM10, PM13-15, and PM17-19) documented during the course of CRA's earlier work were located outside of the KAS excavation blocks.

Figure 27. Areas A and D, looking North.

Figure 28. Area B, looking West.

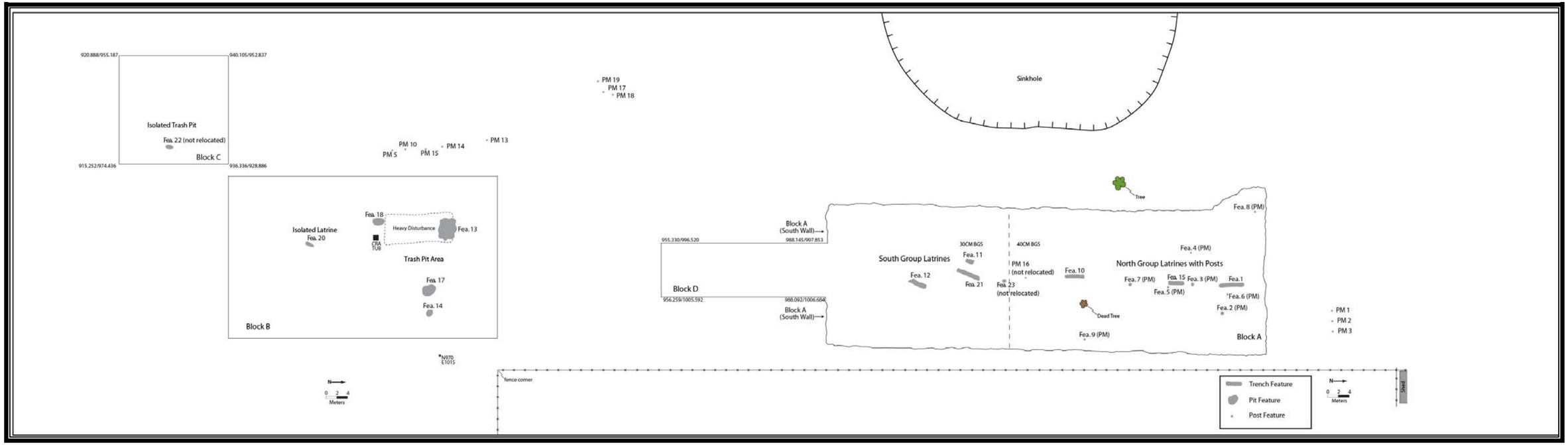


Figure 29. Site Map Showing the Location of Excavation Blocks and Features.

The work at Camp Dick Robinson was conducted during CRA's survey and testing projects and KAS's investigations. The survey project included the excavation of shovel probes, metal detection, and limited surface collection. The testing project included the excavation of test units and stripping. KAS's investigations consisted of stripping, limited metal detection, and surface collection. A total of 1,095 artifacts, 6,750 faunal remains and 5,185 (botanical remains) was recovered from all the work conducted at Camp Dick Robinson. Most of the artifacts were collected during the survey (n=371) and testing (n=542) not including faunal and botanical remains (Table 30). Most of the botanical and faunal remains (n=7,691) were recovered during the KAS investigations along with additional artifacts (n=182) (Table 30). The artifact assemblage as a whole consisted primarily of architectural and domestic refuse, such as brick fragments, nails, glass and ceramic container fragments. Personal and clothing artifacts, including a smoking pipe fragment and buttons also were recovered. Military related artifacts also were found, and included ammunition and a bayonet scabbard hook (Table 30).

SURFACE COLLECTION

A surface collection was conducted of backdirt associated with the removal of plowzone from the excavation blocks during the KAS investigations. Though no artifacts were recovered from the backdirt associated with Block A, 55 artifacts were collected from the plowzone removed from Block B. Most were kitchen group artifacts consisting of glass container fragments and ceramic sherds (Figures 18 and 20). Architecture group artifacts, consisting entirely of nails also were recovered (Table 31). Other artifacts recovered from Block B, included a fragment of spherical case shot (Figure 16), a stoneware smoking pipe fragment (Figure 21), a metal frame for a carpet bag (Figure 22), a horseshoe, metal wire, and unidentified iron. Of the 30 artifacts recovered from the backdirt associated with Block C, most were kitchen and architecture group artifacts, such as ceramic sherds, container glass, and late machine cut nails (Table 31). Other artifacts associated with Block C included a white Prosser button, an iron strap, and unidentified iron fragment. Artifacts recovered from the backdirt associated with Block D consisted of glass container fragments (n=2) (Table 31). One sherd of salt glazed stoneware was surface collected during the Phase I survey.

METAL DETECTION

Metal detector investigations were conducted during the CRA Phase I survey and the KAS investigations. During the CRA survey, the site was metal detected in transects placed 5 m apart. A total of 193 hits were made resulting in the collection of 155 artifacts. They consisted primarily of machine cut and wire nails miscellaneous iron fragments, and hardware such as bolts, screws, and hinges. The assemblage also included horseshoes, ammunition, a folding fork, a key, cookware, (a) horse tack, a tent peg, and some container glass (Table 31). During the KAS investigations a limited metal detector survey was conducted of an area just west of Block C south of the sinkhole. A

total of eight artifacts were found during the survey. They consisted entirely of late machine cut nails, except for one carriage bolt (Table 31).

SHOVEL PROBES

During CRA's Phase I survey they excavated 319 shovel probes at Camp Dick Robinson (Anderson 2004; Anderson and Faberson 2006). The soil profile documented during the survey included a 35 cm thick brown silt loam plowzone and a dark yellowish brown slit clay loam subsoil. The historic artifacts recovered from the shovel probes consisted mostly of architecture related objects such as brick fragments, nails, and window glass (Table 30). Other artifacts recovered included kitchen related items, such as metal cookware, stoneware, and tableware. A small amount of arms, clothing, personal, and furniture artifacts also were found. A large amount of prehistoric artifacts also was recovered. The artifacts were spread out across the entire site with higher density being located along the eastern edge of the site adjacent to the elementary school. The highest concentration of artifacts was located just southwest of the school (Anderson 2004; Anderson and Faberson 2006).

TEST UNITS

A total of 10 1 x 1 m test units was excavated at Camp Dick Robinson during the CRA Phase II testing. Five of the units were excavated in areas of high artifact density determined during the Phase I survey, while the remaining five were placed in areas where anomalies were detected by a geophysical survey conducted during the Phase I survey. The soil profile identified in the test units consisted of a 10 cm thick dark brown silt loam topsoil, a 36 to 46 cm thick dark yellow brown silt loam plowzone, and a yellow brown silt clay subsoil. The historic artifacts recovered from the test units included mostly architecture related items, such as nails, brick fragments, and window glass (Table 30) (Anderson and Faberson 2006). Kitchen artifacts included a small amount of bottle glass and ceramic tableware. The remainder of the assemblage consisted of metal fencing and a horseshoe nail. A large amount of prehistoric artifacts also were recovered from the test units. All of the artifacts was recovered from the topsoil and plowzone and showed a distribution similar to the shovel probes with most being found along the eastern portion of the site.

FEATURES

The features (n=14) identified and excavated during the course of the KAS investigations, including a relocated feature that was partially excavated by CRA, are described in this section. Features were numbered sequentially beginning with Feature 1. With the exception of Feature 1, previously identified features relocated by KAS were renumbered beginning with Feature 14. For KAS's study, posts were given a feature number, but for CRA's work they maintained a separate post list. The KAS post features

are denoted on the site map with (PM) after the feature number to indicate that they are posts (Figure 29).

Table 30. Materials Recovered by Project.

Functional Group/ Object	CRA Survey	CRA Testing	KAS	Total
Architecture				
Brick	137	136	19	**292**
Window Glass	2	2	3	**7**
Nail, Early Machine cut		1		**1**
Nail, Late Machine cut	60	112	27	**199**
Nail, Unidentified Machine cut	17		6	**23**
Nail, Wire	12		2	**14**
Nail, Unidentified	16	1	3	**20**
Screw	1			**1**
Spike	1			**1**
Staple	5			**5**
Mortar	1			**1**
Hinge	1			**1**
Arms				
Percussion Cap		5	1	**6**
Lead Round Ball, .69-cal.	1		1	**2**
Williams Cleaner Bullet Disk	1			**1**
Canister Shot	2			**2**
Exploded Shot			1	**1**
Shotgun Shell, US/12/CLIMAX	1			**1**
Minie Ball		11		**11**
Rimfire Cartridge		1		**1**
Unidentified Projectiles		1		**1**
Activities				
Iron Tent Peg/Stake	1			**1**
Mule Shoe	1			**1**
Garden Hose		1		**1**
Clothing				
Suspender Buckle			2	**2**
Buckle	2			**2**
Shoe Heel Plate			1	**1**
Shoe Buckle		1		**1**
Button, Iron		9	4	**13**
Button, Prosser		11	3	**14**
Other Fastener		1		**1**
Hardware				
Chain Link	2			**2**
Wire Fencing	13	10	3	**26**
Bolt	4			**4**
Carriage Bolt	3		1	**4**
Nut	2			**2**
Iron Strap/Band	8		2	**10**
Iron Bracket	1			**1**
Clip Hook	1			**1**
Cotter Pin	1			**1**
Fence Staple		1		**1**
Screw		1		**1**
Barbed Wire		9		**9**

Table 30. Continued.

Functional Group/ Object	CRA Survey	CRA Testing	KAS	Total
Kitchen				
Ironstone, undecorated		3	1	**4**
Whiteware, undecorated	1		3	**4**
Porcelain, English hard paste, undecorated			2	**2**
Porcelain, English hard paste, overglaze painted			1	**1**
Stoneware, Salt-Glazed	1			**1**
Stoneware, Albany slip			7	**7**
Stoneware, Bristol slip interior/Color glaze exterior			1	**1**
Yellowware, undecorated	1	1		**2**
Unidentified refined earthenware		1		**1**
Container Glass	20	23	65	**108**
Glass Tableware, Press Molded		1		**1**
Cast Iron Stove Fragment	3			**3**
Cast Iron Kettle Fragment	1			**1**
Metal Round Food Can Fragments		127		**127**
Unidentified Metal Food Can Fragments		8		**8**
Personal				
Smoking pipe bowl fragment			1	**1**
Skeleton Key	1			**1**
Folding Fork	1			**1**
Canteen Stopper	1			**1**
Carpet Bag Frame			1	**1**
Ink Bottle, glass pontil base, folded lip		3		**3**
Transportation				
Horseshoe	9	1	2	**12**
Horseshoe Nail	2	2		**4**
Whiffletree Strap	1			**1**
Whiffletree Hook	1			**1**
Corner Iron	1			**1**
Wagon Staple	1			**1**
Harness Hardware	1			**1**
Safety Glass	1			**1**
Military				
Brass Accoutrement, Unidentified			1	**1**
Faunal				
Cow		84	10	**94**
Pig		19	2	**21**
Horse		1	653	**654**
Large Mammals		3,703	1,860	**5,563**
Medium Mammals		9		**9**
Chicken		150		**150**
Medium Bird		19		**19**
UID Bird		209		**209**
UID Mammals			1	**1**
Vertebrata		24	6	**30**
Subtotal	**0**	**4,218**	**2,532**	**6,750**

Table 30. Continued.

Functional Group/ Object	CRA Survey	CRA Testing	KAS	Total
Miscellaneous				
Unidentified Iron	22	42	4	**68**
Unidentified Tin	2			**2**
Vinyl Fabric	2			**2**
Unidentified Electronic Component	1			**1**
Wood		15	13	**28**
Lye			1	**1**
Unidentified Slate		1		**1**
Subtotal	**371**	**542**	**182**	**1,095**
Botanical				
Wood, Hickory			3,870	**3,870**
Wood, Black Walnut			636	**636**
Wood, White Oak group			34	**34**
Wood, Unidentified twigs			152	**152**
Gourd rind			4	**4**
Barley			13	**13**
Bayberry			7	**7**
Bean			3	**3**
Blackberry/Raspberry			2	**2**
Corn		9	37	**46**
Elderberry			204	**204**
Grass			46	**46**
Ground Cherry/Tomatillo			1	**1**
Pokeberry			16	**16**
Tomato			1	**1**
Acorn			1	**1**
Butternut		17	3	**20**
Hickory			11	**11**
fungus			102	**102**
Unidentified			16	**16**
Subtotal	**0**	**26**	**5,159**	**5,185**
Total	**371**	**4,786**	**7,873**	**13,030**

The feature descriptions provided below includes the basic descriptive information about the features and offers only a limited identification or possible feature function. The function of each feature is discussed in the interpretation section of this report.

Feature 1

Feature 1 was originally identified by CRA. At that time only the south 1.5 m of the feature was excavated. This feature was relocated in the north end of Block A (Figure 29). Feature 1 was a rectangular trench that measured 4.7 m north/south x 1.0 m east/west (Figure 30). It extended 20 cm in depth below the stripped surface and had a concave shaped profile (Figure 31). The feature fill consisted of a dark brown silt loam with a high density of bone in the matrix. Feature 1 was excavated in three ca. 1.5 m sections, with Section A being excavated by CRA, and Sections B and C being excavated by KAS.

Table 31. Artifacts from the KAS Surface Collection and Metal Detection.

Functional Group/ Object	Block			Metal Detector Find								Total
	B	C	D	1	2	3	4	5	6	7	8	
Architecture												
Nail, late machine cut		1		1			1	1	1	1	1	7
Nail, machine cut unident.	7	5			1							13
Nail, wire	1											1
Nail, unidentified	1											1
Arms												
Exploded spherical case shot	1											1
Clothing												
Button, Prosser		1										1
Hardware												
Wire	2											2
Carriage bolt						1						1
Iron strap/band		1										1
Personal												
Smoking pipe	1											1
Carpet bag frame	1											1
Kitchen												
Ironstone, undecorated body	1											1
Whiteware, undecorated body	2	1										3
Porcelain, undecorated body	1	1										2
Porcelain, painted overglazed rim		1										1
Stoneware, Albany slip body	7											7
Stoneware, Bristol		1										1
Glass, bottle body, olive	1											1
Glass, bottle applied lip, aqua		1										1
Glass, bottle laid on lip, aqua		1										1
Glass, cathedral bottle neck, aqua	2											2
Glass, container base, aqua	9											9
Glass, container body, aqua	2	8	1									11
Glass, bottle applied lip, brown	1											1
Glass, container base, brown		1										1
Glass, container body, brown	3	6										9
Glass, container body, clear	9		1									10
Transportation												
Horseshoe	1											1
Miscellaneous												
Iron, unidentified	2	1										3
Total	**55**	**30**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**95**

A total of 2,531 artifacts was recovered from Feature 1 (Table 32). Most were faunal remains (n=2,417). The identified faunal remains primarily consisted of horse bones (Figures 24 and 25), with a few cow and pig bones also being present (Table 32). While the cow and pig remains were most likely associated with food, there is no evidence that horse meat was consumed. It is likely that the entire horse or parts of the horse were deposited into Feature 1, perhaps as part of a general camp cleaning.

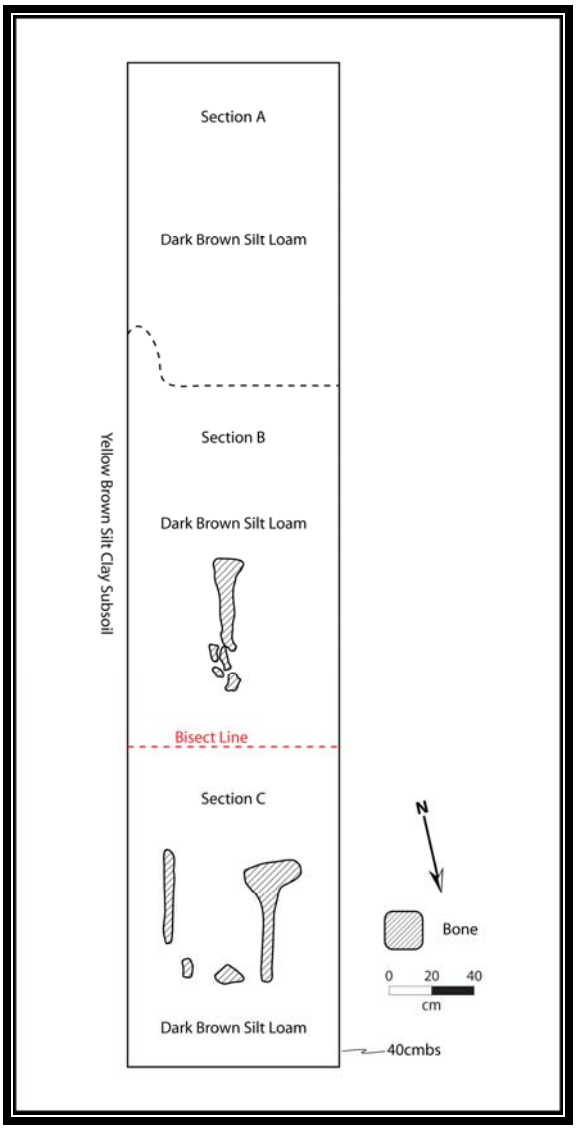


Figure 30. Planview of Feature 1.

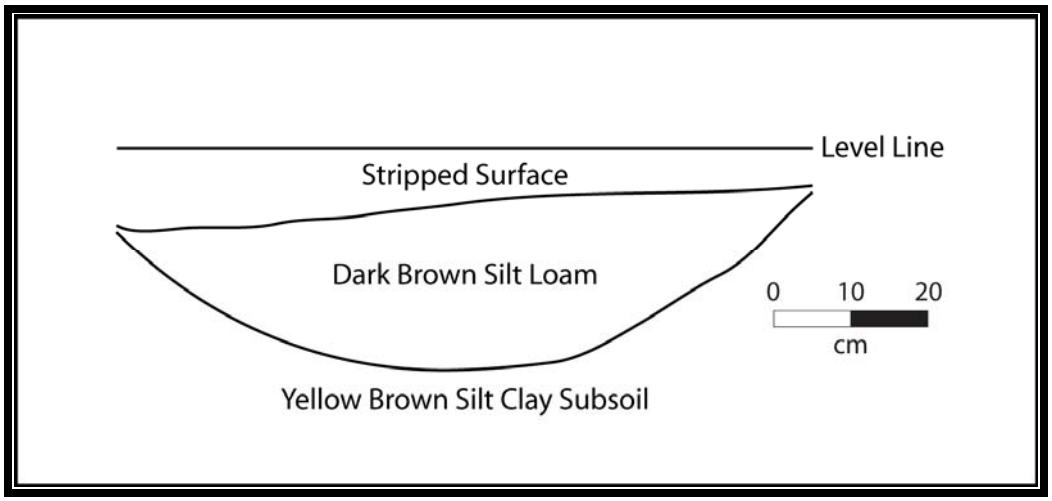


Figure 31. Profile of Feature 1.

Table 32. Artifacts Recovered from KAS Features.

Artifact Group/ Object	Feature No.											Total
	1	2	3	4	7	9	10	11	12	13	14	
Architecture												
Brick fragments	5									16		**21**
Window glass										2		**2**
Nail, late machine cut							1	3		4		**8**
Nail, machine cut unidentified									1	3		**4**
Nail, unidentified							2	1				**3**
Arms												
Percussion cap	1											**1**
Lead round ball .69 cal.										1		**1**
Clothing												
Suspender buckle	1							1				**2**
Shoe heal plate								1				**1**
Button, iron									4			**4**
Button, Prosser										1		**1**
Hardware												
Wire										1		**1**
Iron strap/band										1		**1**
Kitchen												
Glass, bottle body, olive								13		1		**14**
Glass, wine bottle push up pontil, olive								1		1		**2**
Military												
Brass bayonet scabbard hook										1		**1**
Miscellaneous												
Iron, unidentified										1		**1**
Wood						13						**13**
Lye								1				**1**
Faunal												
Cow	1							9				**10**
Pig	1							1				**2**
Horse	653											**653**
Large Mammals	1,756						18	86				**1,860**
UID Mammals										1		**1**
Vertebrata	6											**6**
Botanical												
Wood, Hickory	103	560	2,477	31	685					6	8	**3,870**
Wood, Black Walnut								636				**636**
Wood, White Oak group										34		**34**
Wood, Unidentified twigs								143	9			**152**
Gourd rind	1							1		2		**4**
Barley								13				**13**
Bayberry	1			1							5	**7**
Bean	1				2							**3**
Blackberry/Raspberry								1		1		**2**
Corn								37				**37**
Elderberry									203	1		**204**
Grass										46		**46**
Ground Cherry/Tomatillo										1		**1**
Pokeberry								3		13		**16**
Tomato										1		**1**
Acorn			1									**1**
Butternut					3							**3**
Hickory	1		2		7					1		**11**
fungus					102							**102**
Unidentified		1	4					7	2	2		**16**
Total	**2,531**	**561**	**2,484**	**32**	**799**	**13**	**21**	**958**	**219**	**142**	**13**	**11,991**

Other artifacts recovered from Feature 1, included a brass percussion cap and suspender part (Figure 17), and brick fragments (n=5). Percussion caps were first produced in 1816 and are still manufactured today (Logan 1959). The percussion cap and suspender part, while not exclusive to the Civil War period, are artifacts that would have been common to soldiers of that period. Botanical remains recovered from Feature

1 consisted mostly of hickory wood fragments (n=103). A bean, a gourd rind, a bayberry seed and a blackberry seed also were present. All of the botanical remains were carbonized except for one blackberry seed, which was desiccated.

Feature 2 (Post)

Feature 2 is a round post hole located at the north end of Block A 4.5 m south of Feature 1 (Figure 29). It measured 58 cm north/south and 40 cm east/west and extended to a depth of 86 cm below the stripped surface and 126 cm below the ground surface (Figure 32). The feature fill consisted of a very dark gray brown silt loam with charcoal inclusions. Botanical remains recovered from this feature suggest the post was derived from hickory (Table 32). No other artifacts were recovered from Feature 2.

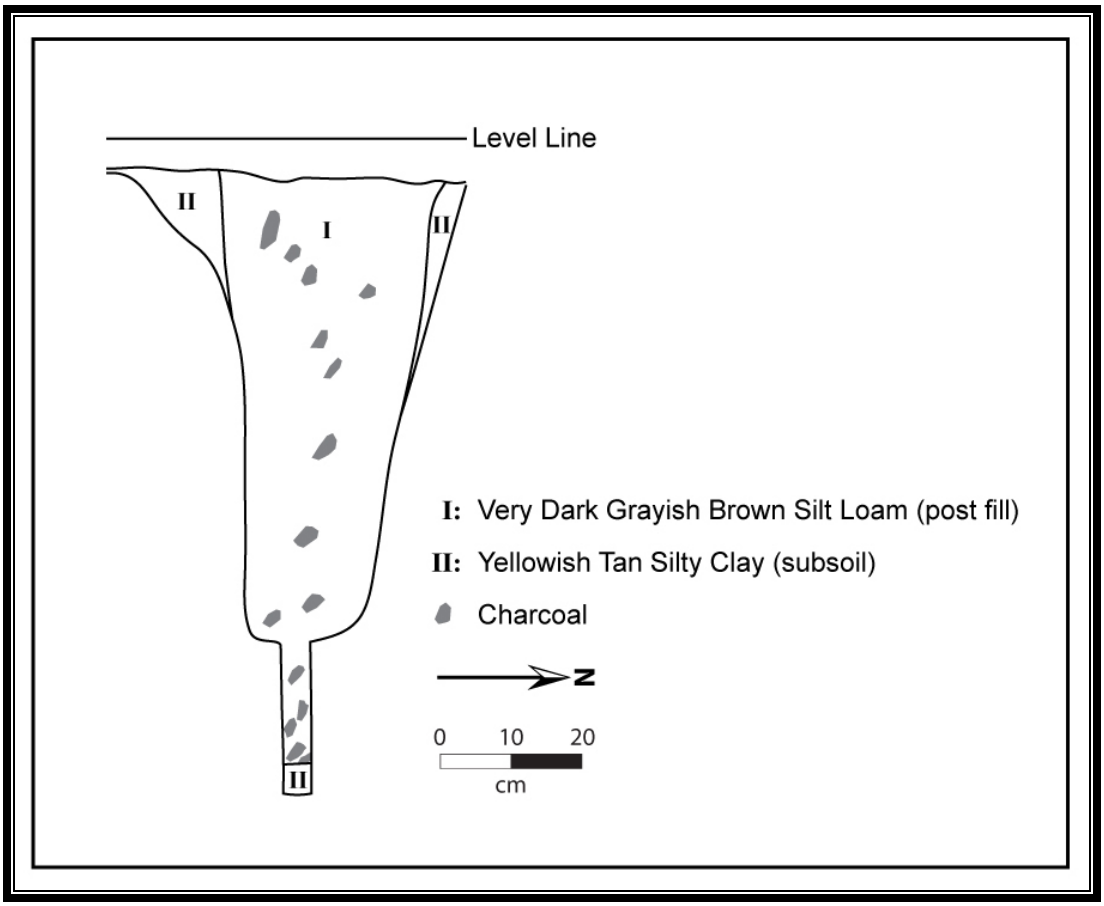


Figure 32. Profile of Feature 2.

Feature 3 (Post)

Feature 3 is a round post hole located in the northern section of Block A 4.5 m west of Feature 1 at grid coordinates N1097.15 E1013.04 (Figure 29). It measured 35 cm

north/south and 40 cm east/west and extended to a depth of 50 cm below the stripped surface and 90 cm below the ground surface (Figure 33). The feature fill consisted of a very dark gray brown silt loam with charcoal inclusions. A substantial amount of botanical remains was recovered from this feature most of which were wood fragments suggesting the post was derived from hickory (Table 32). A small amount of nuts (acorn and hickory) and unidentified seeds also was recovered from the fill of this feature. No artifacts were recovered from Feature 3.

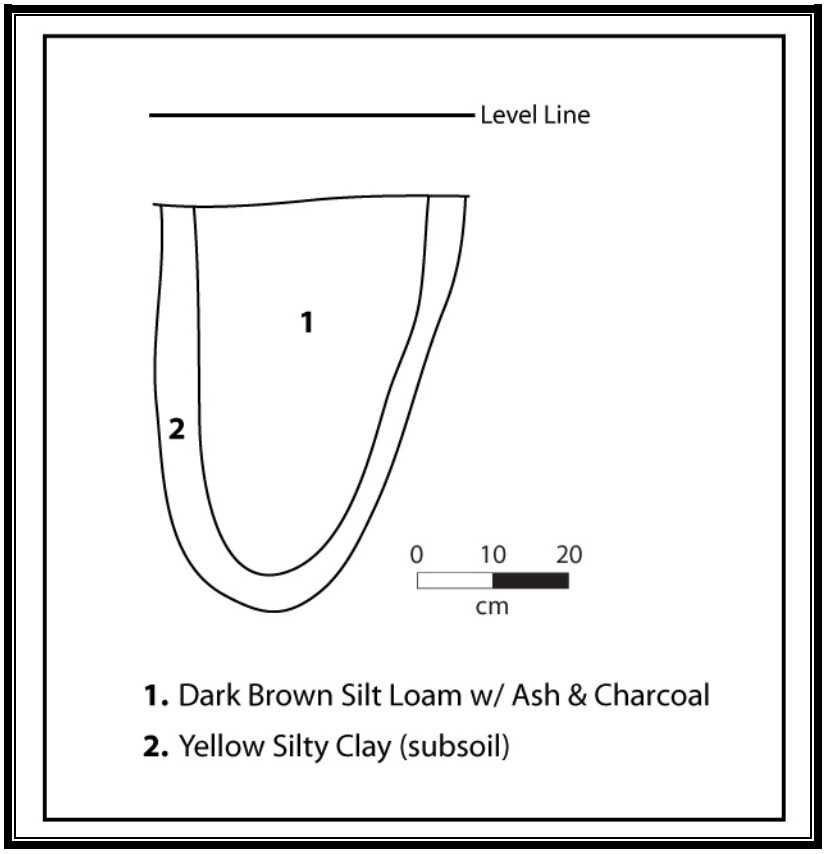


Figure 33. Profile of Feature 3.

Feature 4 (Post)

Feature 4 is a square post hole located in the northern section of Block A 6 m west of Feature 3 at grid coordinate N1097.36 E1006.41 (Figure 29). It measured 20 x 20 cm and extended to a depth of 65 cm below the stripped surface and 105 cm below the ground surface (Figures 34 and 35). The feature fill consisted of dark brown silt loam. Botanical remains recovered from this feature suggest the post was derived from hickory (Table 32). A single bayberry seed also was recovered from this post. No artifacts were recovered from Feature 4.

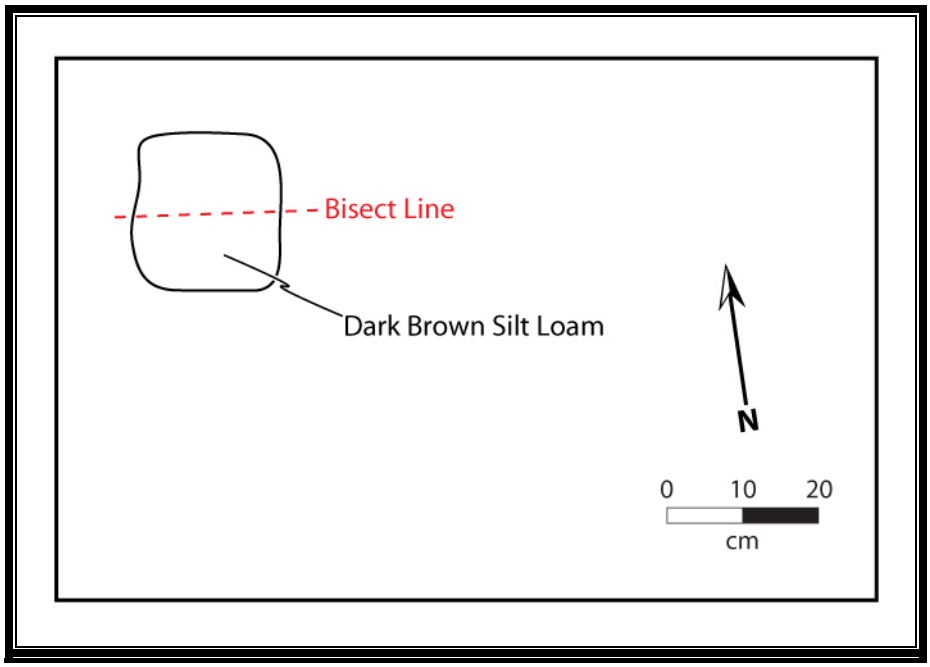


Figure 34. Planview of Feature 4.

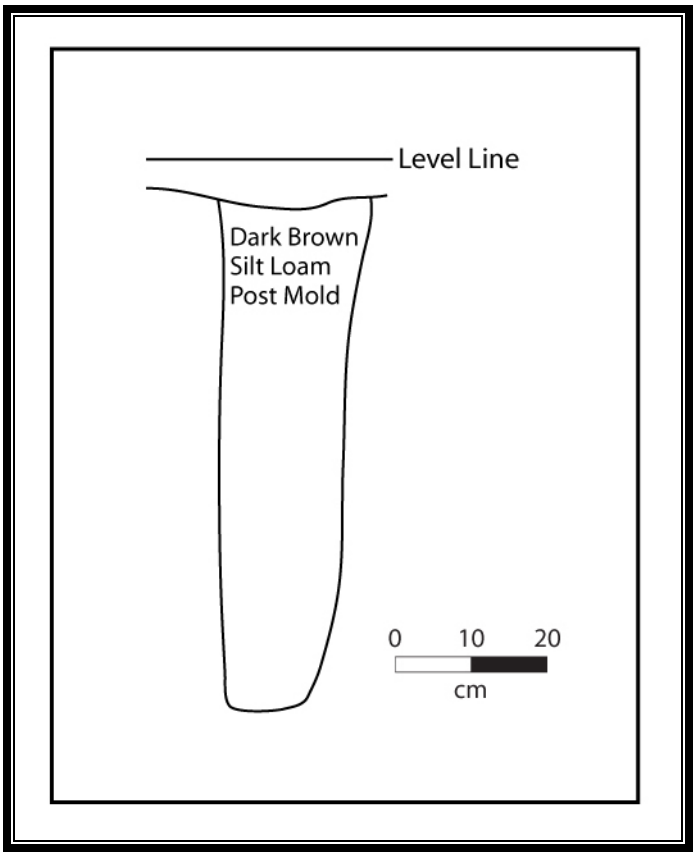


Figure 35. Profile of Feature 4.

Feature 5 (Post)

Feature 5 is a round post hole located in the northern section of Block A 4 m west of Feature 3 and adjacent to Feature 15 (CRA Feature 2) (Figure 29). It measured 28 x 20 cm and extended to a depth of 28 cm below the stripped surface and 68 cm below the ground surface. The feature fill consisted of dark brown silt loam with charcoal flecks. No artifacts were recovered from Feature 5.

Feature 6 (Post)

Feature 6 is a round post hole located in the northern section of Block A 1 m east of Feature 1 (Figure 29). It measured 18 x 18 cm and extended to a depth of 7 cm below the stripped surface and 47 cm below the ground surface. The feature fill consisted of a dark brown silt loam with charcoal flecks. No artifacts were recovered from Feature 6.

Feature 7 (Post)

Feature 7 is a large round post hole located in the northern section of Block A 7 m west of Feature 5 and Feature 15 (CRA Feature 2) (Figure 29). It measured 30 cm north/south x 38 cm east/west and extended to a depth of 85 cm below the stripped surface and 125 cm below the ground surface. The profile of the feature included a post mold and a post hole (Figure 36). The post mold fill consisted of a dark grayish brown silt loam, with the lowest 20 cm being very dark in color and greasy in texture. The post hole consisted of a grayish brown silt loam mottled with a yellow silt clay. Several limestone fragments were identified at the base of the post hole and it appears that they were used as chinking for the post. No artifacts were recovered from Feature 7. Botanical remains recovered from this feature suggest the post was derived from hickory (Table 32). The presence of a large amount of fungus suggests that the post rotted in place. A small amount of food remains, consisting of beans and nuts (butternut and hickory) also were recovered from the feature fill.

Feature 8 (Post)

Feature 8 is a small round post hole located in the northern section of Block A 13 m west of the north end of Feature 1 (Figure 29). It measured 20 cm north/south x 30 cm east/west and extended to a depth of 8 cm below the stripped surface and 48 cm below the ground surface. The feature fill consisted of dark brown silt loam. No artifacts were recovered from Feature 8.

Feature 9 (Post)

Feature 9 was a fence post located in the middle section of Block A 11 m east of Feature 10 (Figure 29). It measured 40 cm north/south x 25 cm east/west. It consisted of the remains of a wooden post, a post mold, and a post hole. A remnant of the wood post was identified in the field as being made of cedar and 5 x 3 cm. The post mold measured

20 x 20 cm and consisted of a dark brown silt loam. The post hole consisted of a brown silt loam. It appears that Feature 9 is a part of a modern fence post. Artifacts recovered from this feature included wood fragments associated with the post (n=13), which were not included in the botanical analysis (Table 32).

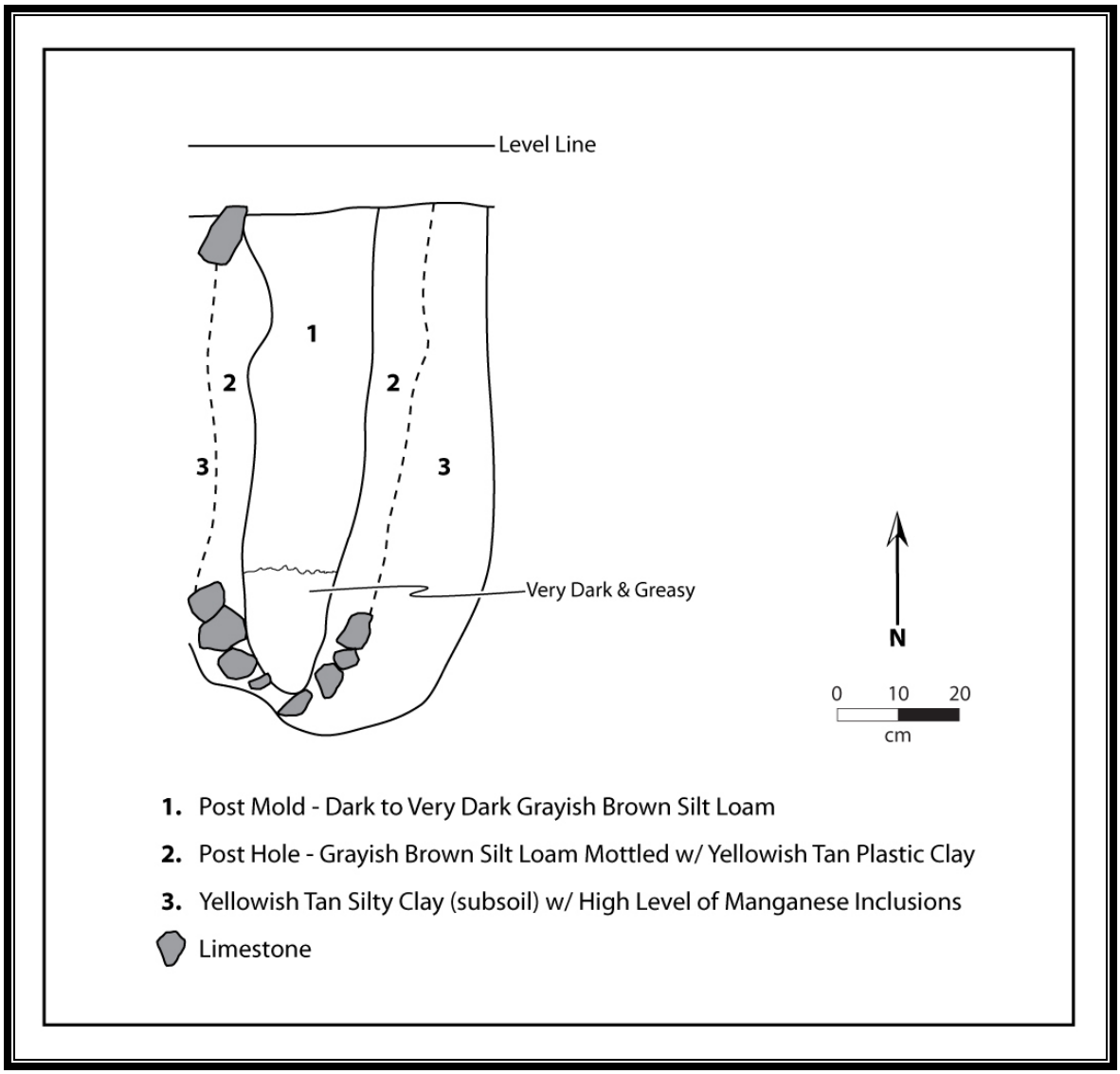


Figure 36. Profile of Feature 7.

Feature 10

Feature 10 was a trench located in the middle section of Block A 8 m south of Feature 7 (Figure 29). It measured 350 cm north/south x 70 cm east/west and extended to a depth of 10 cm below the stripped surface and 50 cm below the ground surface (Figure 37 and 38). The feature fill consisted of gray brown silt loam with charcoal and ash inclusions. A total of 21 artifacts was recovered from Feature 10, including faunal remains (n=18), unidentified nail fragments (n=2), and a machine cut nail (n=1) (Table 32). The faunal remains consisted of unidentified large mammal bones.

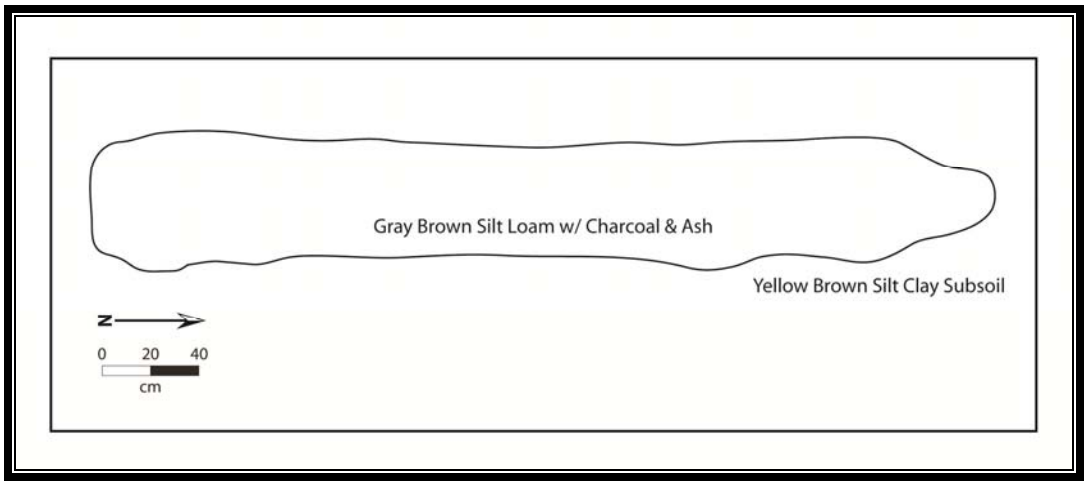


Figure 37. Planview of Feature 10.

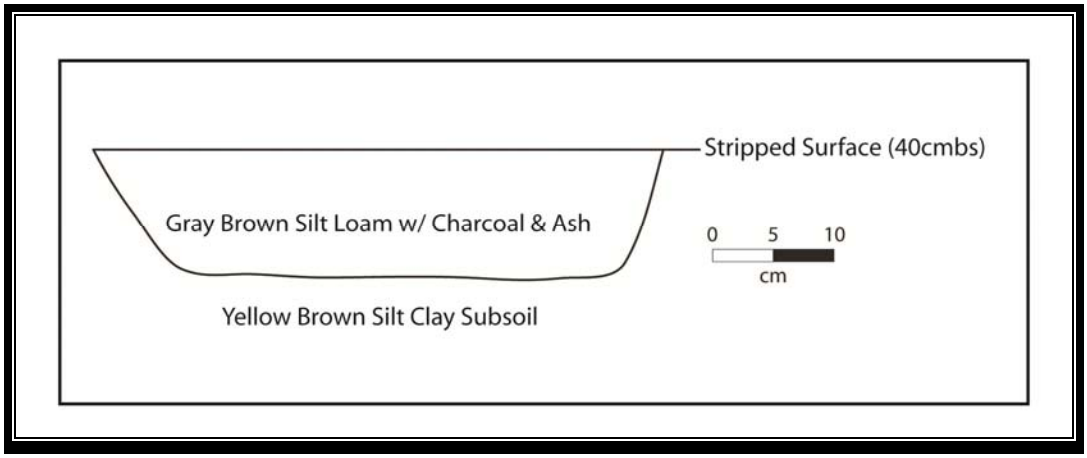


Figure 38. Profile of Feature 10.

Feature 11

Feature 11 was a rectangular trench located in the southern section of Block A 1.5 m west of Feature 21 (CRA Feature 8) (Figure 29). It measured 150 cm northwest/southeast x 60 cm northeast/southwest and extended to a depth of 12 cm below the stripped surface and 42 cm below the ground surface (Figure 39 and 40). The feature fill consisted of a gray brown silt loam with ash and charcoal inclusions (Figure 41).

A total of 122 artifacts was recovered from Feature 11, consisting mostly of bone faunal remains (n=96). Other artifacts recovered from this feature included olive colored bottle glass (n=14) (Figure 20) from a wine bottle, a late machine cut nails (n=3), an unidentified nail (n=1), a suspender part (n=1) (Figure 17), a shoe heal plate (n=1) (Figure 17), and a piece of lye (n=1) (Table 32). The faunal remains consisted of cow, pig, and unidentified large mammal. A large amount of botanical remains were found,

including black walnut, unidentified twigs, barley, corn, blackberry or raspberry, and pokeberry (Table 32).

Diagnostic artifacts include the late machine cut nails (1830-1890) and the wine bottle glass, which included an improved pontil marked base (1840-1870).

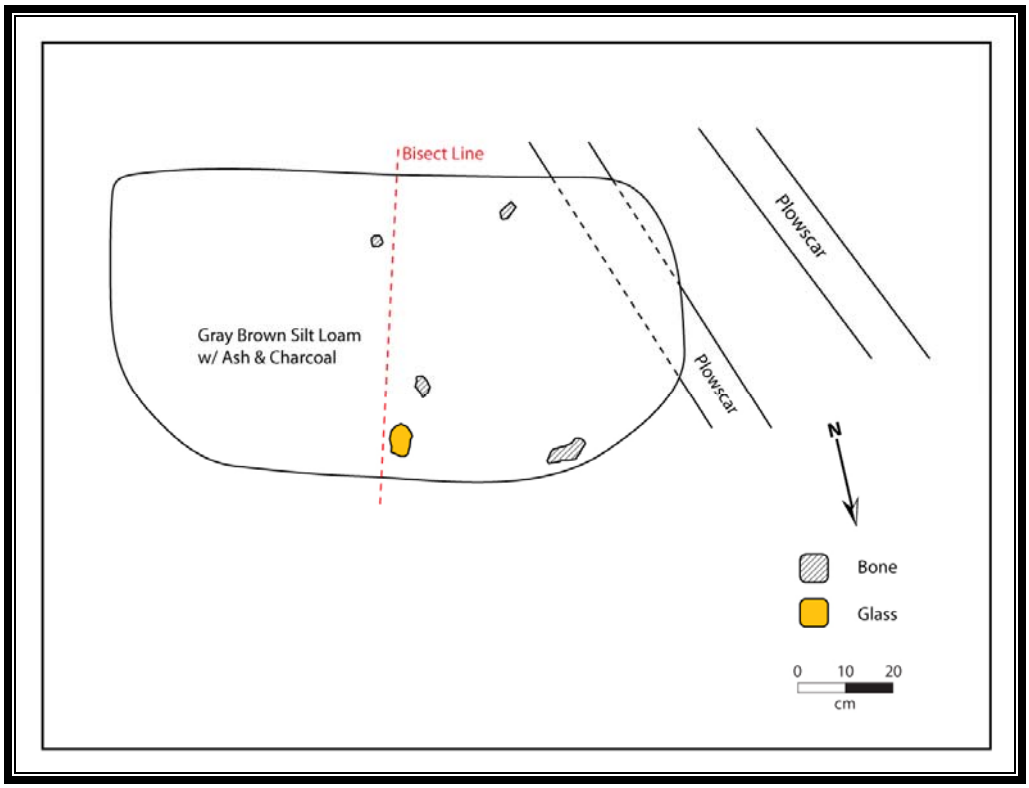


Figure 39. Planview of Feature 11.

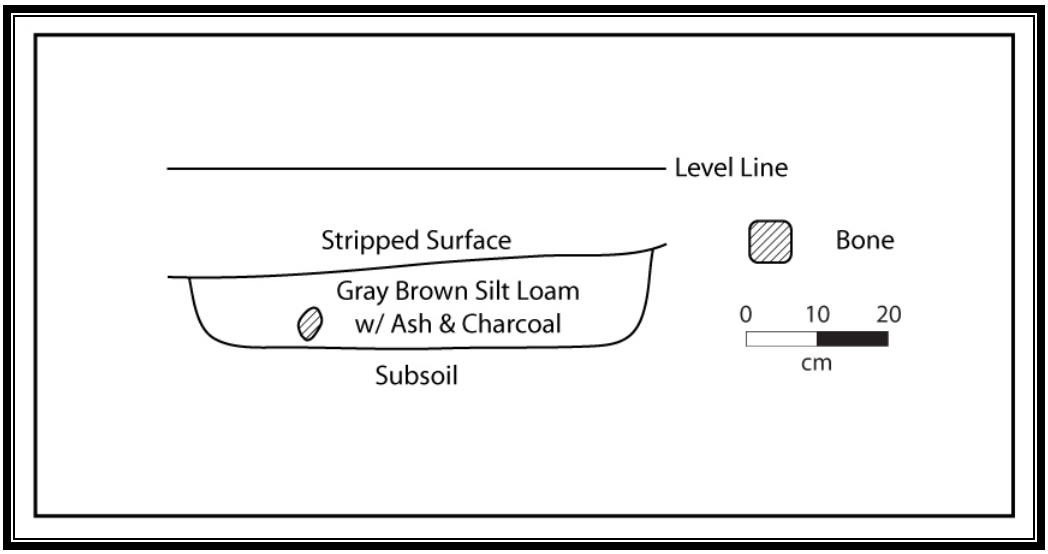


Figure 40. Profile of Feature 11.

Figure 41. Photograph of Feature 11 Bisected.

Feature 12

Feature 12 was a rectangular trench located in the southern section of Block A 10 m southeast of Feature 11 and 11 m south of Feature 21 (CRA Feature 8) (Figure 29). It measured 360 cm northeast/southwest by 60 cm northwest/southeast and extended to a depth of 9 cm below the stripped surface and 39 cm below the ground surface (Figure 42 and 43). A portion of the northern section of the feature was damaged during removal of the plowzone (Figure 42). The feature fill consisted of a dark gray brown silt loam (Figure 43).

Of the five artifacts recovered from Feature 12, four were iron buttons (Figure 17) and an one an unidentified machine cut nail (Table 32). The machine cut nail dates from ca. 1800 to 1890, while no particular date can be assigned to the buttons since the recovered type was commonly used throughout the nineteenth century.

Though no faunal remains were recovered from Feature 12, more than two hundred desiccated elderberry seeds and a small amount of wood charcoal in the form of a small number of carbonized twigs were recovered from this large pit.

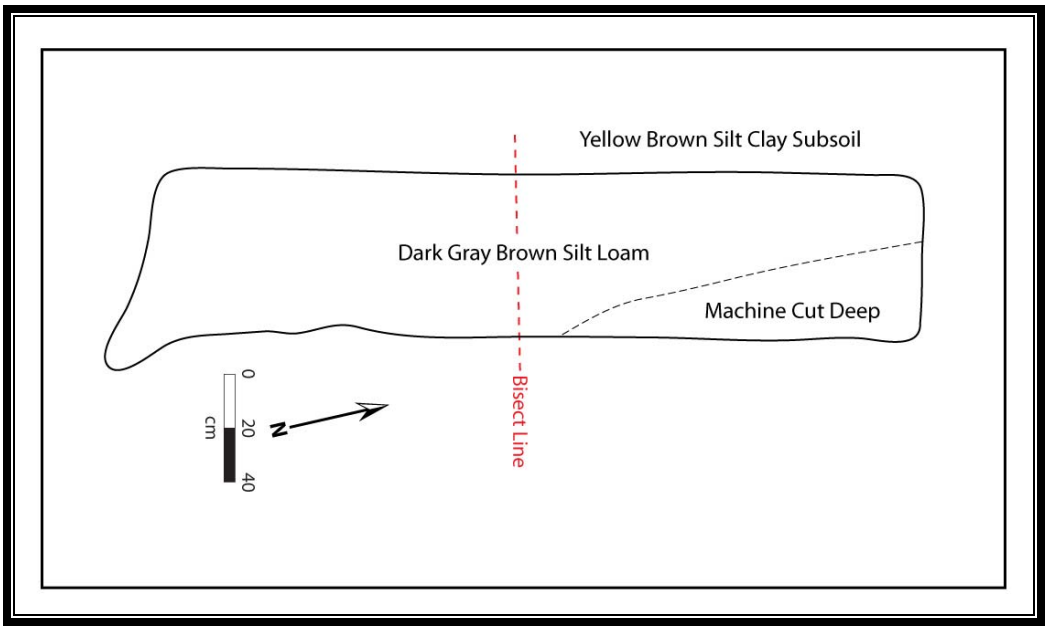


Figure 42. Planview of Feature 12.

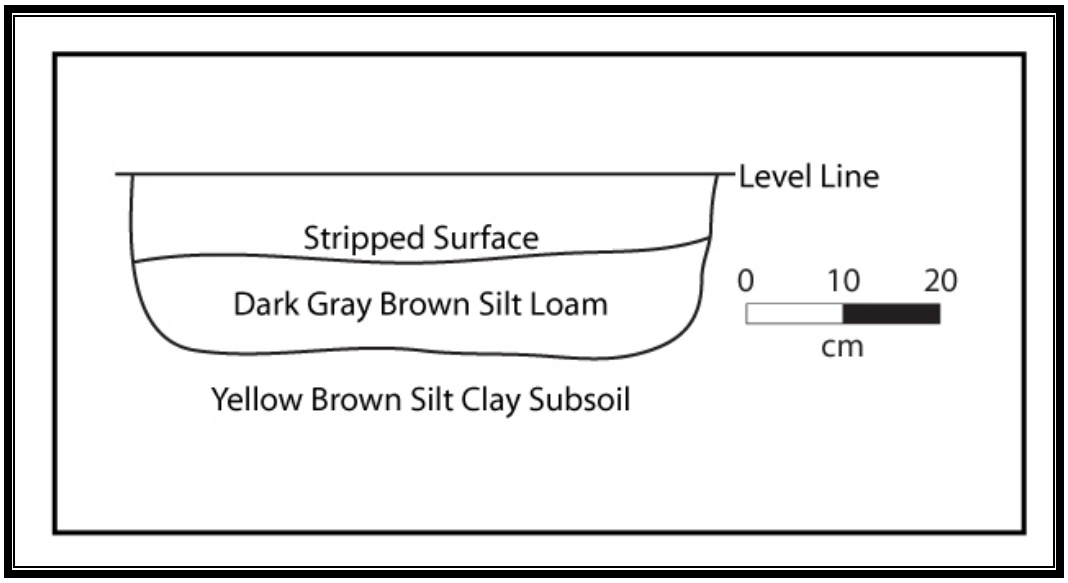


Figure 43. Profile of Feature 12.

Feature 13

Feature 13 was a large circular pit located in Block B 14 m north of CRA Feature 5 and 10 m northwest of Feature 17 (CRA Feature 4) (Figure 29). It measured 280 cm

north/south by 320 cm east/west and extended to a depth of 29 cm below the stripped surface and 59 cm below the ground surface (Figure 44). The feature appears to have been disturbed by stripping during earlier investigations of the site. The feature fill consisted of a dark brown silt loam.

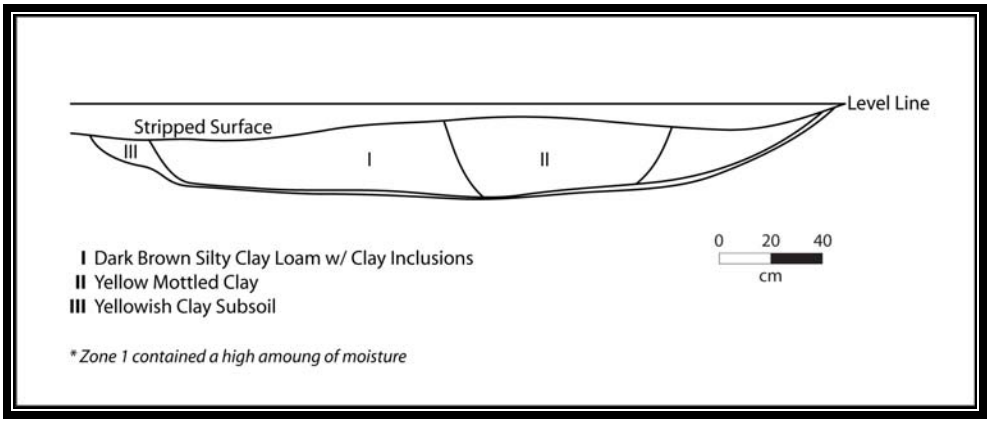


Figure 44. Profile of Feature 13.

A total of 34 artifacts was recovered from Feature 13. They consisted mostly of architecture group artifacts, such as brick (n=16), flat glass (n=2), late machine cut nails (n=3), and unidentified machine cut nails (n=2) (Table 32). Other artifacts recovered, included a .69 cal lead ball (n=1) (Figure 16), a brass bayonet scabbard hook (n=1) (Figure 23), a Prosser button (n=1) (Figure 17), metal wire (n=1), unidentified metal (n=1), an iron strap (n=1), an unidentified mammal bone (n=1), and fragments of a wine bottle with a push up pontil base (n=2) (Figure 19). The machine cut nails date from 1800 to 1890, Prosser buttons date from the 1850s to the 1920s, and the pontil marked bottle base dates from 1810 to 1870. All of the diagnostic artifacts have dates that fall within the period of the Civil War, indicating that it was used and filled during that time.

As with Feature 11 a variety of botanical remains were recovered from Feature 13 (Table 32). Wood charcoal consisted of white oak and hickory. Seeds from a variety of edible plants, such as tomato, elderberry, blackberry/raspberry, ground cherry/tomatillo, and pokeberry, also were recovered from this large pit. Gourd rind and a large number of grass seeds also were present

Feature 14

Feature 14 was a circular pit located in Block B 4 m east of Feature 17 (CRA Feature 4) (Figure 29). It measured 150 cm north/south by 160 cm east/west and extended to a depth of 10 cm below the stripped surface and 50 cm below the ground surface. The feature fill consisted of a gray brown silt loam. No artifacts were recovered from Feature 14. Botanical remains recovered from this feature consisted of hickory and bayberry (Table 32).

CRA FEATURES

This section presents a summary of the features documented at the Camp Dick Robinson Site by CRA. A total of 20 features was identified including posts (n=12) and trench or pit features (n=8). All but one of the posts was excavated and all but one of the trench/pit features (Feature 1) were completely excavated. Information for this section was derived from Anderson and Faberson (2006).

Feature 1

Only the northern third of Feature 1 was excavated by CRA. The remaining two thirds were excavated by KAS (See Feature 1 description).

Feature 15 (CRA Feature 2)

Feature 15 was a rectangular trench located 8 m south of Feature 1 and just 20 cm west of Feature 5 (Block A) (Figure 29). The feature fill consisted of a dark brown silt loam. A total of 21 historic period artifacts was recovered from this feature (Table 33). Most were faunal remains and architecture group artifacts. The only diagnostic artifact was the machine cut nail fragment, which dates from ca.1800 to 1890.

Feature 17 (CRA Feature 4)

Feature 17 was a circular pit located 4 m west of Feature 14 and 11 m southeast of Feature 13 (Block B) (Figure 29). The feature fill consisted of a dark yellow brown silt loam. A total of 35 artifacts was recovered from Feature 17. Most were prehistoric chert flakes (n=30). A biface also was recovered from this pit. Of the four historic artifacts recovered, none were diagnostic (Table 33).

Feature 18 (CRA Feature 5)

Feature 18 was a circular pit located 11 m south of Feature 13 and 10 m northwest of Feature 17 (Block B) (Figure 29). The fill consisted of dark brown silt loam. Of the 2,007 artifacts recovered from Feature 18, most were faunal remains. All but one of the remaining artifacts were assigned to the architecture group (Table 33). Faunal remains recovered from this feature consisted of cow and unidentified large mammals. Only the machine cut nails, which date from ca. 1800 to 1890, were diagnostic.

Feature 20 (CRA Feature 7)

Feature 20 was a rectangular trench located 12 m southeast of CRA Feature 5 and 24 m south of Feature 13 (Block B) (Figure 29). The feature fill consisted of a dark brown silt loam with ash lenses and appeared to be lined with a brown silt loam. A total of 1,601 artifacts was recovered from Feature 20, most of which was faunal remains (Table 33). Cow, pig, and chicken were the only identifiable species, with most of the remains being classified as unidentified large mammal. Unidentified bird remains also

are well-represented in the materials recovered from this feature. Other artifacts represent the architecture (machine-cut nails), arms (percussion caps and Minie balls), clothing (buttons), kitchen (container glass, glass tableware, metal food cans), and personal (glass ink bottle fragment) groups (Table 33). Diagnostic artifacts, such as the machine-cut nails, Minie balls, percussion caps, and glass folded bottle lips, date primarily to the nineteenth century.

Feature 21 (CRA Feature 8)

Feature 21 was a rectangular trench located 5 m south of Feature 23 (Block A) (Figure 29). The feature fill consisted of a dark yellow brown silt loam. The southwest corner of the feature also included a 3-8 cm thick mottled dark red brown silt loam with charcoal. Of the 635 artifacts recovered from Feature 21, most consisted of faunal remains. Of these, identifiable species consisted of cow, pig, chicken, and possibly horse (Table 33). Among the other materials recovered from this trench were architecture (late machine cut), kitchen (metal cans and medicine bottle) and clothing (Prosser buttons, iron buttons, and shoe buckle) group artifacts (Table 33). Botanical remains are represented by corn cobs, butternut, and wood charcoal. The machine cut nails date from 1800 to 1890, the can fragments date from 1847 to 1885, the medicine bottle probably dates from 1822 to 1860, and the Prosser buttons date from the 1850s to the 1920s.

Feature 22 (CRA Feature 9)

Feature 22 was a circular pit feature located 30 m southwest of Feature 20 (Block B) (Figure 29). The feature fill consisted of a brown silt loam with charcoal. Of the 323 artifacts recovered from Feature 22, 159 consisted of faunal remains. Identifiable species, included pig and chicken, with most of the remains being classified as unidentifiable large mammals or birds. Of the remaining historic artifacts, the kitchen group is represented by metal food cans and glass bottle fragments, the architecture group by machine cut nails and brick fragments, the clothing group by an iron button, and the arms group by a rimfire cartridge (Table 33). Botanical remains are represented by wood charcoal (not listed in table).

Diagnostic artifacts, such as the machine cut nails, can fragments, applied lip wine bottle fragment, folded lip ink bottle, and rim fire cartridge date primarily to the nineteenth century.

Feature 23 (CRA Feature 10)

Feature 23 was a small circular pit feature located 5 m north of Feature 21 (Block A) (Figure 29). The feature fill consisted of dark yellow brown silt loam with burnt clay fragments. No artifacts were recovered, however fragments of burnt clay were collected (n=305).

Table 33. Artifacts Recovered from CRA Features.

Artifact Group/ Object	Feature No. 15	17	18	20	21	22	Total
Architecture							
Brick fragments	4	1	46			10	**61**
Nail, late machine cut	1		6	8	23	41	**79**
Nail, machine cut unidentified			2	4	11		**17**
Nail, early machine cut						1	**1**
Arms							
Percussion caps				5			**5**
Minie ball .58 cal. Springfield				10			**10**
Rimfire cartridge .32 cal. brass						1	**1**
Unidentified shell casing					1		**1**
Clothing							
Button, iron				4	4	1	**9**
Button, Prosser				3	8		**11**
Shoe buckle					1		**1**
Unidentified brass fastener					1		**1**
Hardware							
Wire						7	**7**
Screw						1	**1**
Kitchen							
Glass, wine bottle, applied lip, amber						1	**1**
Glass, medicine bottle, applied lip, aqua					1		**1**
Glass, unidentified bottle, applied lip, emb., olive					1		**1**
Glass, food bottle, beaded lip, aqua				1			**1**
Glass, food bottle, key mold, aqua				1			**1**
Glass, unidentified bottle, folded lip, aqua				1			**1**
Glass, tableware, press molded, clear				1			**1**
Glass, unidentified, clear				2			**2**
Glass, unidentified, aqua				1			**1**
Ceramic, unidentified, refined earthenware				1			**1**
Metal, food can, round					46	81	**127**
Metal, food can, unidentified				8			**8**
Miscellaneous							
Iron, unidentified			1	33	5		**39**
Stone, unidentified slate					1		**1**
Personal							
Glass, ink bottle, folded lip, aqua				1		2	**3**
Transportation							
Horse shoe						1	**1**
Faunal							
Cow	1		19	44	20		**84**
Pig		3		5	5	6	**19**
Horse					1		**1**
Large Mammals			1,933	1,250	431	89	**3,703**
Medium Mammals					9		**9**
Chicken				134	11	5	**150**
Medium Bird						19	**19**
UID Bird				82	91	36	**209**
Vertebrata	15			2	7		**24**
Botanical							
Corn cob					9		**9**
Butternut					17		**17**
Total	**21**	**4**	**2,007**	**1,601**	**704**	**302**	**4,639**

Post Holes

A total of 12 post holes/molds was identified during the CRA investigations of the site (PM 1-3, PM 5, PM 10, PM 13-19). These posts were fairly consistent in size and shape, all being circular, except for one rectangular and ranging from 24 to 35 cm in diameter (Figure 29). Most of (n=8) exhibited limestone chinking in the base of the hole. Three of the post holes contained remnants of wood (not identified). No artifacts were recovered from these posts and thus no temporal affiliation could be determined.

CHAPTER 8:
INTERPRETATIONS

In this section, the archaeological data collected from Camp Dick Robinson is examined to gain a better understand of social differences within the camp, its internal organization, and troop sanitary practices. Although Camp Dick Robinson was considered a permanent camp type, as it was intensely occupied and used throughout the Civil War, the duration of some associated encampments was relatively short. Its initial function as a recruiting and training camp lasted just a few months in the summer of 1861. After that, it served as a staging camp for several Union troop movements in 1861 and 1862, and briefly as a camp for the Confederates in the fall of 1862 after the battle of Perryville. After the establishment of Camp Nelson in 1863, Camp Dick Robinson was only lightly occupied, functioning as an outpost throughout the remainder of the war. Although the camp was not always fully occupied, it was periodically utilized by large number of troops and recruits. The portion of camp investigated during the course of this study, however, represents the outer fringe of Camp Dick Robinson, as the main body of the camp was located to the east behind the Dick Robinson house. Thus, the project area may not have been used throughout the entire life of Camp Dick Robinson.

This study of a portion of Camp Dick Robinson thus provides an opportunity to examine a short-term encampment(s) and to address several research questions and topics outlined in the Archaeology State Plan (McBride and McBride 2008). Research questions specific to this site are: What can we learn about the archaeological signatures of short-term encampments? How was the investigated portion of Camp Dick Robinson organized and structured? Did it conform to military procedures for camp layout? How does its organization compare to other camps, specifically nearby Camp Nelson? How do the behaviors of the soldiers at this camp compare to those that stayed at camps, such as Camp Nelson, for more extended periods? In order to address these research questions, materials associated with different features were compared and contrasted, and their spatial arrangement was examined. Features documented at Camp Dick Robinson, include post holes, trenches, and pits.

ARTIFACTS

Of the 1,095 historic materials recovered from Camp Dick Robinson, most consisted of architecture, domestic, and military related artifacts. Their presence is consistent with the function of the site as a military encampment. What is surprising about this assemblage is that its size is relatively small for a Civil War encampment (e.g., Fesler et al. 2006; McBride et al. 2003). The paucity of artifacts recovered from Camp Dick Robinson could indicate that the portion of the camp investigated was not part of the main encampment or that it was not used throughout the life of the camp. In either case, the area investigated is more representative of a short-term camp than a long-term encampment.

The types of artifacts recovered from Camp Dick Robinson can provide some insights into the nature of the camp. Of note, was the recovery of just a few military-related artifacts. The military and arms group artifacts account for only 3 percent of the historic artifact assemblage. Of these, all but one was related to ammunition. No military clothing items, and only one accoutrement was recovered from the site. The paucity of military artifacts at Camp Dick Robinson could be related to its function and period of occupation during the Civil War. It is possible that as an early Civil War recruitment and training camp, soldiers at Camp Dick Robinson would have been outfitted with new uniforms and equipment. It is also possible that new recruits still wore their civilian clothing or disposed of such clothing at the camp. This may account for the presence of Prosser and other types of buttons. Likewise, the recovery of the carpet bag frame may reflect the recruits discarding some of their civilian possessions.

An examination of the botanical and faunal remains also provides information about the duration and intensity of site occupation. The botanical remains show that the site occupants preferred durable wood species, such as hickory and black walnut, for fence and building construction. The lack of wood species diversity argues against the wood profile representing firewood, as one would expect soldiers not to be selective in their choice of fire wood. That ash was deposited in the trash pits suggests sufficient burning of the selected wood beyond our ability to identify the species selected.

The faunal remains and the large number of food cans recovered from the site show that meat was primarily obtained from army rations. Some soldiers, however, appear to have supplemented their diets with local pigs and chickens. The presence of nuts and blackberries, indicates that they also consumed wild plants during their stay at the camp.

Social Status

During the Civil War, the military was highly segregated and there was considerable effort to separate officers and enlisted men, with regards to most aspects of camp life (McBride et al. 2003; McBride and McBride 2006). This order is evident in the regulations for camp lay-out as officer tents and latrines were intended to be segregated from the enlisted men (Whitehorne 2006). The adherence to this social segregation was evident at Camp Nelson, especially at the Owens Tavern, where status segregation was maintained even in a heavily occupied tavern context that was frequented by both officers and enlisted men (McBride et al. 2003). In addition, an encampment area near the mess hall at Camp Nelson used by colored troops yielded lower social status ceramics, glassware, and cuts of meat, illustrating the social and racial segregation of camp (McBride and McBride 2006).

Although the Camp Dick Robinson artifact assemblage was significantly less diverse than the Camp Nelson assemblage, status indicators were examined to determine if social differences could be identified. Among historic archaeologists, analysis of refined ceramics has focused on identifying differences in ceramic decoration, type, and vessel form. With regards to decoration and type, the basic assumption derived from

ceramic economic scaling studies is that higher percentages of decorated ceramics and those made of porcelain are indicative of higher status (Miller 1980; Thomas 1988). Along the same lines, higher proportions of flatware, serving vessels, and teawares are assumed to be associated with higher status individuals (Fitts 1999; Miller 1980; Wall 1994). In a military context, it has been suggested that the presence of refined earthenwares in general, regardless of decoration, could signify status differences, as enlisted men were not known to participate in formal dining (Balicki 2000).

Unfortunately, the size of the Camp Dick Robinson assemblage limits interpretation of social status and comparison to other encampment sites. Only 21 ceramic sherds were recovered from the study area and most were unidentified for vessel form. Refined ceramics (n=10) consisted of undecorated whiteware, undecorated ironstone, undecorated porcelain, and decorated porcelain (Figure 18). Coarse ceramics (n=11) consisted of stoneware and yellowware. Unfortunately the ceramic assemblage was too small to calculate an economic scaling index. Most of the refined ceramics (n=7) were undecorated whiteware or ironstone. However, porcelain (n=3) was present, one sherd of which was handpainted, which is indicative of higher status. None of the refined ceramics were identified for vessel form. The porcelain, however, was likely associated with teaware, a high status vessel type (Fitts 1999; McBride et al. 2003; McBride and McBride 2006; Miller 1980; Wall 1994).

The presence of large amounts of table glassware within an assemblage also is thought to reflect an individual's status. Substantially more glass objects were recovered from the project area than ceramics. Of the 109 container glass fragments, only one was identified as a possible high status glass tableware fragment.

Glass ink bottles are commonly found at Civil War sites in both enlisted men and officer contexts. Reeves and Geier (2006) suggest that they were more likely to be associated with officers, due to their propensity for paperwork and literacy. Thus, ink bottles could be considered to be higher status artifacts in combination with the presence of other indicators.

The presence or absence of a large number of food cans also has been used to examine status, as they tend to indicate that less formal dining took place at a site (McBride et al. 2003). Within the study area, the 127 metal can fragments account for more of the artifacts assigned to the kitchen group than ceramic or glass objects combined. As was noted by McBride et al. for Camp Nelson, the presence of a large number of metal food cans at Camp Dick Robinson could indicate that soldiers at this camp were well-supplied.

The faunal assemblage indicates that soldiers relied on domestic resources, mainly cow that was supplied in federal rations. Pig and chicken, both likely from locally available sources, supplemented the animal sources consumed at the camp. The lack of pig metacarpals and phalanges indicates that pickle pigs' feet were not consumed at Camp Dick Robinson. Likewise, the paucity of egg shell suggests that eggs were infrequently consumed. The lack of wild animals is linked to the greater reliability of

federal supplies coming to the camp. Overall this assemblage is most similar to the lower status faunal assemblage at Camp Nelson with less species diversity and lower quality cuts of meat than was associated with the higher status officers (McBride et al. 2003; McBride and McBride 2006).

On the other hand, the archaeobotanical remains appear to represent a mix of foods consumed by high and low status soldiers. As at Camp Nelson grains, such as barley could represent food consumed by officers and the beans food eaten by soldiers (McBride et al. 2003). The general paucity of high status goods and food items in the project area, however, suggests that the investigated portion of Camp Dick Robinson was primarily used by enlisted men.

FEATURE FUNCTION AND PATTERNING

An examination of the 33 features documented at Camp Dick Robinson provided information about the structure and organization of the encampment. In this section particular attention is dedicated to determining the function of basic feature types including posts, trenches, and pits.

Post Holes

Of the 20 post holes identified within the study area, 19 are thought to be associated with Camp Dick Robinson and one (Feature 9) is thought to be associated with a modern fence (Table 34). Most of the Civil War related posts were circular in shape and exhibited limestone chinking. Some contained remnants of wood from the post, which was identified as hickory (Table 35). Of the six post holes that exhibited post molds, diameters were either 12 cm (n=2) or ca. 20 cm (n=4) (Table 34). Most of the remaining post holes had diameters of ca. 30 cm with no evidence of a post mold. The size and shape of the excavated posts is consistent with what is expected for a post hole excavated with a shovel, and posts that were pulled when their use ended.

Only two of the post holes were square or rectangular in shape, which is suggestive of more effort in the manufacture of the post. Both, however, were rather small in size and may have been square/rectangular posts that were driven into the ground (McBride et al. 2003).

While the shape and size of the post holes were fairly consistent, their depths exhibited a great deal more variation (Table 34). Post hole depths ranged from 7 to 86 cm below the base of the plowzone. Most (n=10) represent the truncated bottom of a post, and ranged in depth from 5 to 19 cm below the base of the plowzone. Of the remaining 10 posts, five ranged from 20 to 35 cm in depth below the base of the plowzone. Four of the post holes extended more than 50 cm below the plowzone (Table 34). The depth of one post could not be determined.

Table 34. Posts.

Post Feature	Post Hole	Post Mold	Depth*	Shape	Comments
KAS					
Feature 2	50 x 40 cm	N/A	86 cm	Round	
Feature 3	40 x 35 cm	N/A	50 cm	Round	
Feature 4	20 x 20 cm	N/A	65 cm	Square	
Feature 5	28 x 20 cm	N/A	28 cm	Round	
Feature 6	18 cm	N/A	7 cm	Round	
Feature 7	38 x 30 cm	N/A	85 cm	Round	Limestone chinking
Feature 8	30 x 20 cm	N/A	8 cm	Round	
Feature 9	40 x 25 cm	20 cm	25 cm	Round	Wood post
CRA					
PM 1	35 cm	20 cm	35 cm	Round	Limestone chinking
PM 2	31 cm	19 cm	13 cm	Round	Limestone chinking
PM 3	31 cm	19 cm	N/A	Round	Not excavated
PM 5	32 cm	N/A	7 cm	Round	Wood
PM 10	40 cm	N/A	12 cm	Round	Wood and brick
PM 13	35 cm	N/A	10 cm	Round	Limestone chinking
PM 14	35 cm	N/A	11 cm	Round	Wood
PM 15	24 cm	N/A	15 cm	Round	Limestone chinking
PM 16	15 x 30 cm	N/A	33 cm	Rectangular	Limestone chinking
PM 17	30 cm	12 cm	16 cm	Round	Limestone chinking
PM 18	28 cm	N/A	24 cm	Round	Limestone chinking
PM 19	31 cm	12 cm	16 cm	Round	Limestone chinking
*Measured after the removal of the 35 cm plowzone.					

Table 35. Botanical Remains from Posts.

	Post Feature				
Species	**2**	**3**	**4**	**7**	**Total**
Wood, Hickory	560	2,477	31	685	**3,753**
Acorn		1			**1**
Bayberry			1		**1**
Bean				2	**2**
Butternut				3	**3**
Fungus				102	**102**
Hickory		2		7	**9**
Unidentified	1	4			**5**
Total	**561**	**2,484**	**32**	**799**	**3,876**

Post hole data from Camp Nelson can be used to suggest a possible function for many of the Camp Dick Robinson posts (McBride et al. 2003). In general, those identified as fence posts at Camp Nelson were round in shape, 30 to 50 cm in diameter, and extended 20 to 40 cm in depth below the base of the plowzone. Most of the Camp Dick Robinson posts (PM 1-15, PM 17-19, Features 5, 6, and 8) meet these criteria and thus may represent fence posts.

While some of the Camp Nelson fence posts were slightly larger and/or deeper than others, especially those located at the end or corner of a fence line, none were excavated to a depth of greater than 50 cm below the base of the plowzone. It is possible that the deeper holes at Camp Dick Robinson supported larger posts that were not

associated with a fence, but rather some type of structure. In a Civil War context, a deep post hole might be needed for a Sibley tent with its 3.6 m (12 ft.) tall center pole, if the iron tripod that typically would support the post was not available. The possible association of the Camp Dick Robinson posts with camp shelters, such as Sibley tents, is further discussed in the spatial analysis of features section.

It also is possible that the deep posts were used for other purposes within the encampment. Examination of photographs and a review of descriptions of other camps indicate that in addition to tents a variety of other structures were present at most encampments. Therefore, it is possible that some of the deep posts were associated with kitchens, storage buildings, or awnings and shelter modifications to tents (Figures 7 and 15). It is as possible that the deep posts were associated with latrine superstructures or privacy screens (see Page 111)

Trenches

Trenches ranged in length from 1.50 to 4.70 m, with most having lengths greater than 3.50 m (Table 36). They ranged in width from 60 cm to 1.00 m and were linear in appearance. Trench depths ranged from 9 to 36 cm below the base of the plowzone, with most having depths of less than 20 cm below the plowzone.

Table 36. Trench and Pit Features.

Feature No.	Length	Width	Depth	Shape	Type
Trenches					
Feature 1	4.70 m (15.4 ft.)	1.00 m (3.2 ft.)	20 cm (7.9 in.)	Rectangular	Trench
Feature 10	3.50 m (11.5 ft.)	70 cm (2.3 ft.)	10 cm (3.9 in.)	Rectangular	Trench
Feature 11	1.50 m (4.9 ft.)	60 cm (2.0 ft.)	12 cm (4.7 in.)	Rectangular	Trench
Feature 12	3.60 m (11.8 ft.)	60 cm (2.0 ft.)	9 cm (3.5 in.)	Rectangular	Trench
Feature 15	2.70 m (8.9 ft.)	90 cm (3.0 ft.)	23 cm (9.1 in.)	Rectangular	Trench
Feature 20	2.08 m (6.8 ft.)	80 cm (2.6 ft.)	36 cm (14.2 in.)	Rectangular	Trench
Feature 21	4.42 m (14.5 ft.)	80 cm (2.6 ft.)	25 cm (9.8 in.)	Rectangular	Trench
Pits					
Feature 13	3.20 m (10.5 ft.)	2.80 m (9.2 ft.)	29 cm (11.4 in.)	Irregular Round	Pit
Feature 14	1.60 m (5.2 ft.)	1.50 m (4.9 ft.)	10 cm (3.9 in.)	Circular	Pit
Feature 17	2.75 m (9.0 ft.)	2.70 m (8.9 ft.)	55 cm (21.7 in.)	Circular	Pit
Feature 18	2.10 m (6.9 ft.)	1.10 m (3.6 ft.)	21 cm (8.3 in.)	Irregular Round	Pit
Feature 22	1.90 m (6.2 ft.)	1.20 m (3.9 ft.)	48 cm (18.9 in.)	Oblong	Pit
Feature 23	83 cm (2.7 ft.)	63 cm (2.1 ft.)	14 cm (5.5 in.)	Circular	Pit
*Measured after the removal of the 35 cm plowzone.					

The long trenches documented within the study area may have functioned as latrines, as they have much in common with similar features at Camp Nelson. At Camp Nelson rectangular trenches were interpreted as latrines due to their location behind camp buildings (a location required by regulation), and the presence of extensive leached areas along their edges (Table 37) (McBride et al. 2003). The latter occurs when liquid night soil deposits leak from the sides of a latrine into the surrounding soil (Stottman 1996). Surprisingly, only one (Feature 109) Camp Nelson trench contained the density and type

of plant remains consistent with latrine night soil deposits. The lack of night soil in the other Camp Nelson trenches led to the suggestion that the latrines had been cleaned-out (McBride et al. 2003). Thus, the latrines were used for more than one filling cycle. After they stopped being used as a latrine they appear to have been used as receptacles for trash disposal.

Table 37. Trenches Identified at Camp Nelson.

Feature No.	Length	Width	Depth*
Feature 34	1.77 m (5.8 ft.)	74 cm (2.4 ft.)	50 cm (19.7 in.)
Feature 74	2.20 m (7.2 ft.)	1.30 m (4.3 ft.)	44 cm (17.3 in.)
Feature 76	2.65 m (8.7 ft.)	70 cm (2.3 ft.)	34 cm (13.4 in.)
Feature 99	1.75 m (5.7 ft.)	1.15 m (3.9 ft.)	7 cm (6.5 in.)
Feature 103	1.80 m (5.9 ft.)	80 cm (2.6 ft.)	29 cm (11.4 in.)
Feature 106	1.83 m (6.0 ft.)	83 cm (2.7 ft.)	30 cm (11.8 in)
Feature 107	2.80 m (9.2 ft.)	1.04 m (3.4 ft.)	30 cm (11.8 in.)
Feature 109	2.25 m (7.4 ft.)	1.50 m (4.9 ft.)	47 cm (18.5 in.)
Feature 119	1.70 m (5.6 ft.)	1.05 m (3.4 ft.)	30 cm (11.8 in.)
Feature 161	2.70 m (8.9 ft.)	78 cm (2.6 ft.)	35 cm (13.8 in.)
Feature 170	2.70 m (8.9 ft.)	80 cm (2.6 ft.0	30 cm (11.8 in.)
*Measured after the removal of the 35 cm plowzone.			

The rectangular trenches at Camp Dick Robinson have a mean length of 3.40 m, compared to their Camp Nelson counterparts, which have a mean length of 1.99 m. On the other hand, with a mean width of 77 cm they are a slightly narrower than the Camp Nelson trenches, which have a mean width of 98 cm. The Camp Dick Robinson trenches also are much shallower, having an average depth of 16.5 cm below the base of the plowzone, compared to an average depth of 30.8 cm for the Camp Nelson trenches. As such the shorter Camp Nelson trenches could hold a higher volume of materials relative to the longer Camp Dick Robinson trenches (.61 and .43 cubic meters on average, respectively). Though none of the trenches at Camp Dick Robinson showed evidence of leaching, it is possible that they were cleaned out on a regular basis and not used for long enough periods of time for the leaching of the night soil to leave its mark on the archaeological record.

Most of the rectangular trenches identified at Camp Dick Robinson yielded relatively small amounts of artifacts (not including faunal or botanical remains). The exceptions being Features 20 and 21, each of which yielded more than three times the number of artifacts recovered from the other five trenches (Table 38). The contents of the latter trenches can be characterized as containing small amounts of architectural debris, such as nails, window glass and brick, and occasional artifacts representative of other functional groups. Of note is the relative absence of kitchen related ceramic plates, bowls and cups, and military clothing and accoutrements. The only military artifacts recovered from these features are related to ammunition, such as percussion caps and bullets.

Table 38. Artifact Functional Groups from Trench Features.

Functional Group	Feature No.						
	1	**10**	**11**	**12**	**15**	**20**	**21**
Architecture	31.3	100.0	17.5	20.0	100.0	14.3	19.8
Arms	6.2	0.0	0.0	0.0	0.0	17.9	0.6
Clothing	6.2	0.0	8.7	80.0	0.0	8.3	8.1
Kitchen	0.0	0.0	60.8	0.0	0.0	19.0	27.9
Personal	0.0	0.0	0.0	0.0	0.0	1.2	0.0
Transportation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	56.3	0.0	13.0	0.0	0.0	39.3	43.6
Total Percent	**100.0**	**100.0**	**100..0**	**100.0**	**100.0**	**100.0**	**100.0**
Total Frequency	**16**	**3**	**23**	**5**	**5**	**84**	**172**
Faunal	1,928	18	100	0	16	1,510	508
Botanical	107	0	841	214	0	0	26

Among the seven trenches, the distribution of the recovered artifacts by functional groups varied greatly. The architecture group was the only functional group represented in all of them, though percentage of artifacts representative of this group ranged from 14.3 to 100.0 percent. The kitchen group was present in only three of the rectangular trenches and its presence also varied greatly ranging from 19.0 to 60.8 percent of the materials recovered from each trench. Also present in these features were arms, clothing, personal, and transportation group artifacts (Table 38). The amount of faunal remains also varied greatly ranging from none in Feature 12 to almost 2,000 specimens in Feature 1 (Table 38). The latter faunal assemblage was comprised mostly of the remains of a horse. Faunal remains associated with other trenches consisted mainly of cow, with small amounts of pig and chicken also being present.

In comparison to the trenches at Camp Dick Robinson, those at Camp Nelson contained larger quantities of artifacts (n=134-1,335. Because they yielded more artifacts, the Camp Nelson trenches contained a greater variety of artifacts. For instance, while kitchen group artifacts at Camp Dick Robinson were limited primarily to bottle glass and tin cans, the Camp Nelson trenches also yielded refined and coarse ceramics, table glass, and utensils (McBride et al. 2003). Military buttons and accoutrements and furniture artifacts were present in some of the Camp Nelson trenches, albeit in small quantities, whereas none were present in any of the Camp Dick Robinson trenches.

The smaller quantities and lower diversity of artifacts associated with the Camp Dick Robinson trenches is not unexpected given the short-term nature of the encampment relative to the more intensively occupied Camp Nelson. The contents of these types of features at both camps do indicate, however, that they were used for refuse disposal at some point. But it is not likely that trash disposal was their primary function, although latrines typically would be used for some refuse disposal in addition to storing night soil (Stottman 1996).

An examination of the botanical remains recovered could help further define the functions of the rectangular trench features. Most of the Camp Nelson trenches yielded a large amount of wood charcoal and carbonized seeds (McBride et al. 2003). These

materials combined with the presence of ashy soils points to the dumping of wood ash and cooking refuse into these features. The ash and charcoal may have been used to control odor.

Botanical remains from Feature 12 were comprised mostly of desiccated seeds, which suggests that it was primarily used as a latrine. Of the remaining Camp Dick Robinson trenches for which we have botanical data, the remains consisted primarily of wood charcoal and carbonized seeds (Table 39). Ash was also observed in the fill of these features, which points to the disposing of wood ash and cooking refuse within the long trenches at Camp Dick Robinson. Three of the trenches (Features 10, 15, and 20) contained no botanical remains, indicating no evidence of night soil, cooking debris, or ash disposal (A 14 liter sample from Feature 10 was processed and analyzed by KAS and a 10 liter sample from Features 15 and 20 was processed and analyzed by CRA). Based on the size and shape of these features it is likely that the rectangular trenches at Camp Dick Robinson were used as latrines that were cleaned out on a regular basis or were not in use long enough to collect a significant amount of night soil.

Table 39. Botanical Remains Recovered from Trenches.

Feature	Wood Charcoal	Carbonized Seeds	Desiccated Seeds	Total
1	103	3	1	**107**
11	779	58	4	**841**
12	9	0	205	**214**
Total	**1,034**	**72**	**210**	**1,316**

Pits

Of the six pits documented at Camp Dick Robinson, three were circular, two were irregular rounded, and one was oblong in shape. Pits ranged in diameter from 63 cm to 3.20 m (Table 36) and in depth from 10 to 55 cm below the base of the plowzone (Table 36).

Archaeological data from other Civil War camps indicates that pits were typically circular/ovate or irregular shaped, extended to variety of depths, and were located outside of the camp living area. Small shallow circular pits have been interpreted to be hearths, used for cooking or heating at site 44Ax195, a surface camp in Virginia (Balicki 2011). These pits showed evidence of burning around the edges and contained a large amount of charcoal. At many camp sites large pits have been determined to have been borrow pits (McBride et al. 2003; Reeves and Geier 2006). Their initial use as borrow pits is thought to be related to the need for soil or clay to prepare surfaces for tents or other shelters and for the construction of long-term winter structures (Reeves and Geier 2006; Winter 1994). The construction of camp huts has been described as using mud and clay to seal gaps in stick chimneys and in log construction (Nelson 2006). Because of their large size, borrow pits became convenient places for trash disposal. Borrow pits tend to be associated with long-term or winter encampments that required substantial shelters. The

short-term nature of the Camp Dick Robinson encampments suggests that the large pits documented in the study area were not likely initially dug for borrow. However, it is not entirely clear why they were initially dug.

As with the trenches, Camp Dick Robinson pit features yielded relatively few artifacts (Tables 33 and 40). Only Feature 22 yielded a substantial amount and diversity of artifacts (n=168), with most of the functional groups represented (Tables 33 and 40). Faunal remains were recovered from Feature 22 included some chicken, other bird, pig, and unidentified large mammal.

Table 40. Artifact Functional Groups from Pits.

Functional Group	**Feature No.**					
	13	**14**	**17**	**18**	**22**	**23**
Architecture	75.8	0.0	100.0	98.2	30.9	0.0
Arms	3.0	0.0	0.0	0.0	0.6	0.0
Clothing	6.1	0.0	0.0	0.0	0.6	0.0
Kitchen	6.1	0.0	0.0	0.0	48.8	0.0
Personal	0.0	0.0	0.0	0.0	1.2	0.0
Transportation	0.0	0.0	0.0	0.0	0.6	0.0
Other	9.0	0.0	0.0	1.8	17.3	0.0
Total Percent	**100.0**	**0.0**	**100.0**	**100.0**	**100.0**	**0.0**
Total Frequency	**33**	**0**	**1**	**55**	**168**	**0**
Faunal	1	0	3	1,952	155	0
Botanical	108	12	0	0	0	0

Though Feature 13 yielded mainly architecture group artifacts, most of the other functional groups also were found in association with this pit (Tables 32 and 40). The contents of the other pits ranged from Feature 14, which yielded only wood charcoal and carbonized seeds to Features 17 and 18, which primarily yielded architecture group artifacts.

It is quite likely that pits at Camp Dick Robinson were used for a variety of trash disposal purposes during the life of this encampment. Some may have been used to discard debris from cooking and clean-out from fire pits in the camp living area. Others were used for the disposal of butchering scraps, food remains, and architectural debris. Although Feature 23 contained burned clay fragments, there was no evidence of burning or ash and charcoal, indicating that it was not used as a fire pit or for the disposal of fire pit clean-out debris. Thus, it does not seem to be associated with refuse disposal. The lack of refuse in Feature 23 and the paucity of artifacts and botanical and faunal remains recovered from other pits also suggests that the occupation of the encampment was not long enough to generate a substantial amount of refuse. Perhaps the pits were dug in anticipation of refuse disposal, but were abandoned prior to being fully utilized.

SPATIAL ANALYSIS OF FEATURES: CAMP ORGANIZATION

Posts

An examination of the spatial distribution of the Camp Dick Robinson features show distinct patterning that may contribute to an understanding of the organization of the encampment. Although most of the posts are similar to fence posts documented at Camp Nelson, fences lines were not readily apparent within the excavated area. These types of posts were associated , however, with one of three groups. One group consisted of a line of three posts that were located along the north edge of the site (PM 1-3) (Figure 29). These posts were oriented east/west and spaced 1.8 m apart.

A second group consisted of five posts (PM 5, 10, 13, 14, and 15) located west of Blocks B and D along the western edge of the study area just southeast of the sink hole (Figure 29). They form a rough line oriented north/south at intervals ranging from 2.8 to 8 m. The third group consisted of three posts (PM 17-19) that do not form a line northwest of the second group. Of these, two (PM 17 and 18) were oriented north/south and were situated 1.8 m apart. The third (PM 19) was located 4.5 m to the west of these two posts.

The spatial layout of these posts do not exhibit the spacing or orientation that is consistent with a fence line or the footprint of Civil War encampment shelters, such as the wedge, hospital, or dog tent. These tents would have utilized at least two posts in a line ranging from 1.8 m (6 ft.) for a wedge tent to 7.3 m (24 ft.) for a large hospital tent. Based on the Harper's Weekly illustration of Camp Dick Robinson, it appears that wedge tents were likely used at the camp (Figure 5). While some of the post holes identified were arranged in a rough line, only PM 1-3 were spaced at 1.8 m intervals in a straight line (the distance between two posts expected for wedge tents), however their arrangement is not consistent with the two post footprint expected for wedge tents and it is unlikely they were associated with a tent. Given that these posts were similar to fence posts at Camp Nelson, it is most likely that they also were fence posts that have no discernible arrangement.

The remaining postholes were scattered within the north half of Block A in the vicinity of two latrine trenches (Features 1 and 15). Among this grouping of post holes were the four deepest posts (Features 2, 3, 4, and 7). As previously noted, these posts do not appear to have a correlate at Camp Nelson (McBride et al. 2003). In a Civil War context, deeper set posts might have been needed for a Sibley tent with its 3.6 m (12 ft.) center pole, if the iron tripod that typically would support the tent was not available. Although some archaeological excavations have been conducted of Sibley tent locations, no large center posts were identified. Only the remains of posts and trenches associated with the fortification or stockading around the walls of tents for winter quarters have been documented at other sites (Balicki 2011; Higgins et al. 2005). However, it is possible that an alternate center pole could have been occasionally used for these types of tents and thus the possibility of a large center post hole should be considered. Since the Sibley tent had a diameter of 5.5 m (18 ft.), the circular footprint of the tent as originating from

the posts identified in the north end of Block A (Features 2, 3, 4, 5, 6, and 7), including all of the deep posts was examined to determine if they could have been associated with Sibley tents (Figure 45).

The projected Sibley tent footprints centered on each of these posts shows that Features 2 and 4 did not align with the other posts to form a row as expected for an encampment. Several projected footprints overlapped with nearby latrine trenches or other footprints (Features 3, 5, and 6) (Figure 45). If the deep posts documented in Block A were indeed associated with Sibley tents, then the layout of this section of Camp Dick Robinson did not conform to typical camp layout regulations. The tents would have been interspersed amongst latrine trenches that were supposed to be situated a good distance to the rear of the tents.

Because of the spatial arrangement of the deep posts, it is not likely that they were associated with Sibley or any other tent structures. These posts instead are interspersed with the latrine trenches and other posts forming no discernible pattern. However, because these posts are interspersed with the latrine trenches, it is quite possible that they were associated with latrine superstructures or privacy screens.

Latrines

The latrine trenches were generally oriented in a line north/south across Block A, with one (Feature 20) being located roughly along the same line in Block B (Figures 29, 46, and 47). Variation, however, was noted in their orientation. Features 1, 10 and 15 were oriented north/south, and Features 7, 11, 12, and 21 had a northeast/southwest orientation. In addition, Feature 11 was not situated along the same north/south trending line as the other trenches, being located 2 m west of Feature 21 (Figure 46). The latrines occurred in two main groups based on their orientations, except for Feature 20, which was isolated from the other features, being located over 100 m to the south near the pit features (Figure 29 and 47). The northern grouping includes Features 1, 10, and 15, and the southern grouping includes Features 11, 12, and 21. The distribution of these seven features conforms to general camp organization regulations and layout with latrines placed linearly in the rear of the living area, which was most likely situated to the east of the site.

There are a couple of plausible explanations for the spatial organization identified in Block A. First, the two groupings of latrines were contemporaneous, representing one encampment. Second, the two groupings represent latrines associated with two different encampments established and used at different times. In both cases the living area would still be located to the east.

The northern group of latrines appears to have been laid out with more effort than the southern group. These latrines were interspersed with posts, as previously mentioned, indicating that they may have been associated with some type of structure, such as superstructures or privacy screens. No such posts were found in association with the southern group (Figure 46). Taken together the north-south orientation of the latrines and

the associated latrine superstructures/privy screens suggests more time and effort was put into the set-up of the northern than southern encampment.

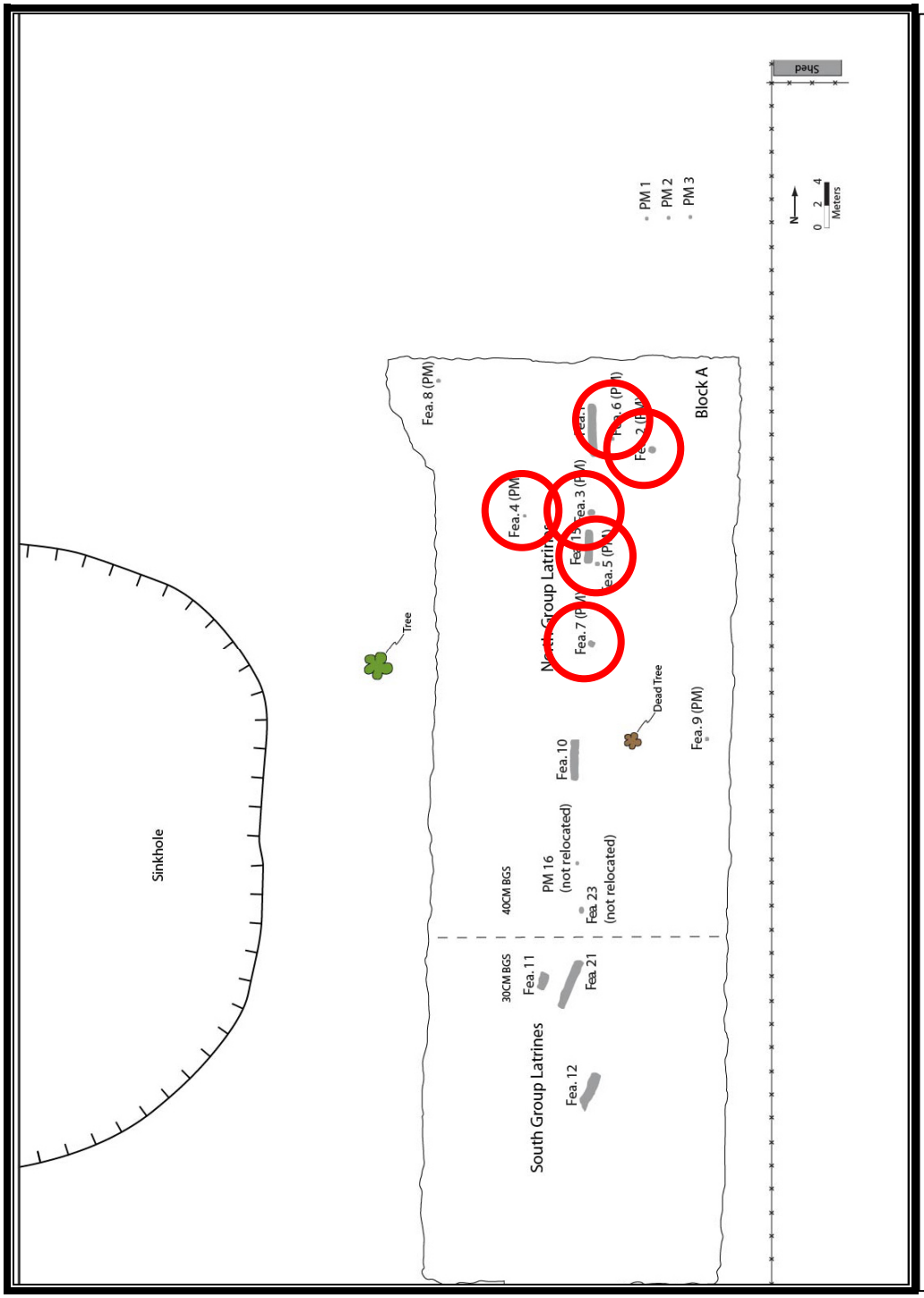


Figure 45. The Spatial Arrangement of Sibley Tent Footprints (red circles) at Deep Posts.

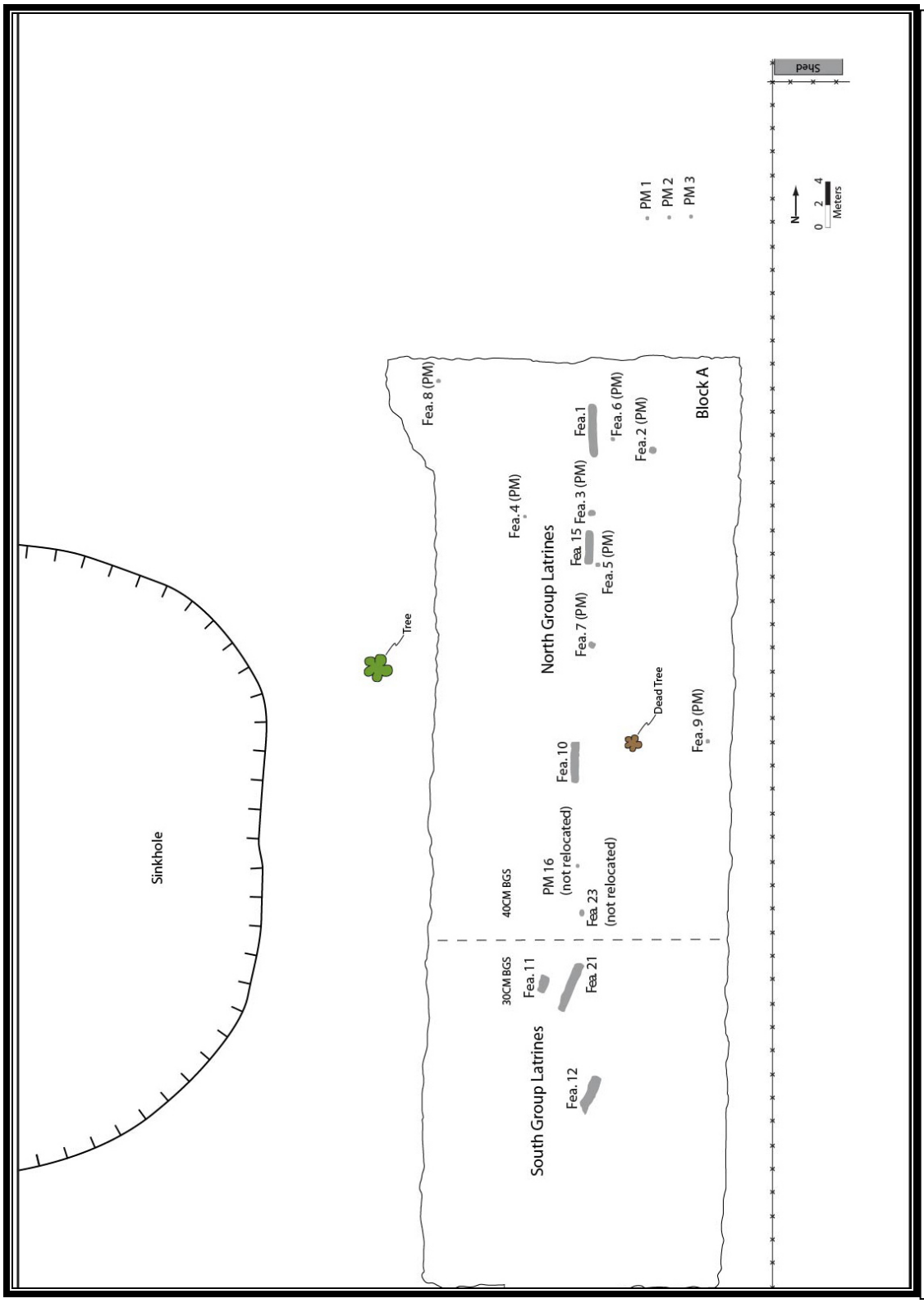


Figure 46. Site Map of Area A Showing Feature Locations.

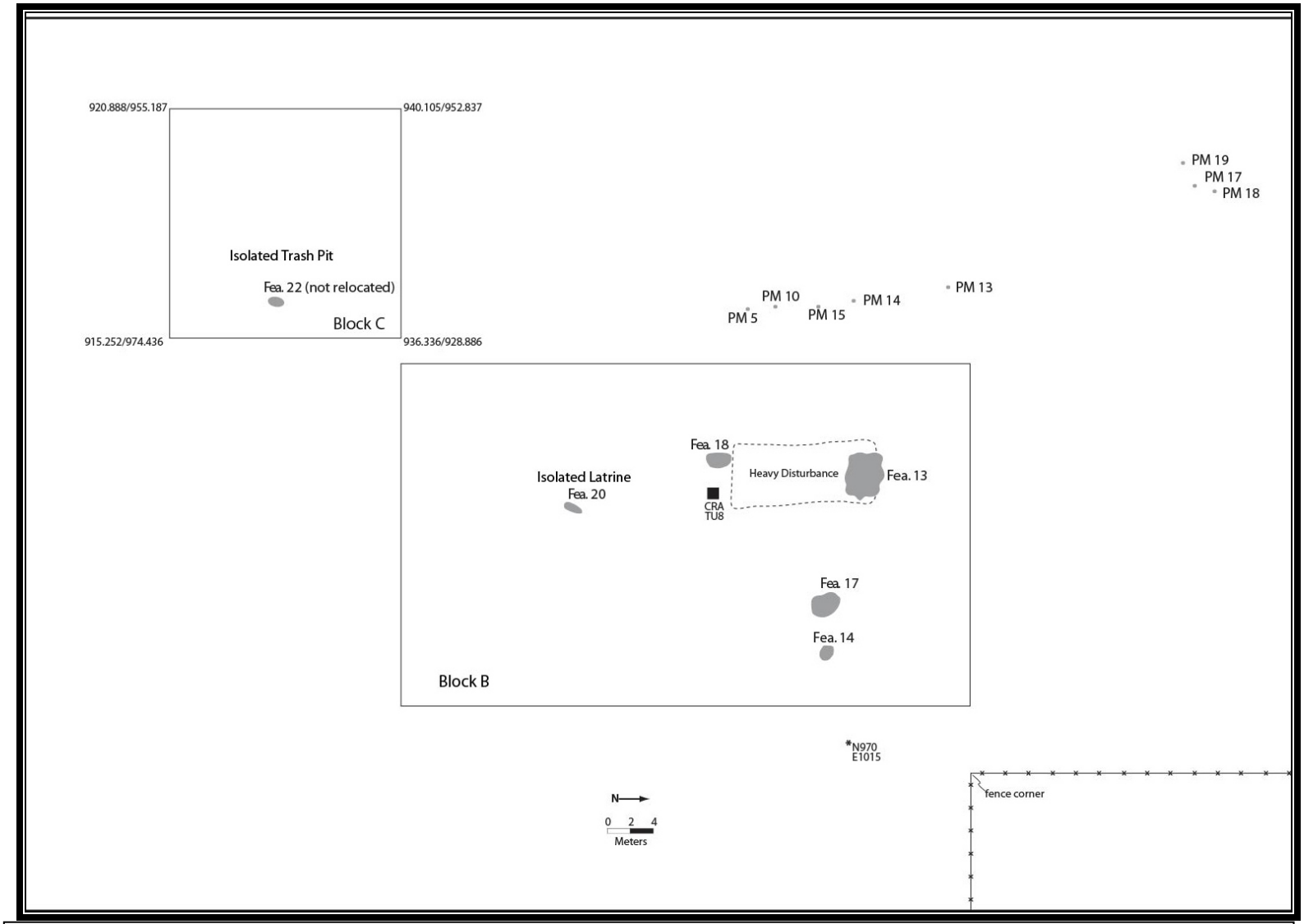


Figure 47. Site Map of Areas B and C Showing Feature Locations.

In contrast to the northern latrines, the southern latrines had a more northwesterly orientation. This suggests that they were constructed by a different group and prior to or after the construction of the more northerly privies. In addition, though the spacing between Features 12 and 21 is the same as that between Features 1 and 15 in the northern area, Feature 11 is located much closer to Feature 21 than expected. The proximity of these two latrines to each other suggests that one was added to the group later, perhaps because the initial latrine was full.

The variation noted between these two groups of latrines could be an indication of differing attitudes of discipline or a result of the circumstances of occupation, such as degree of prior planning and actual length of occupation. For example, the effort taken to construct structures associated with the latrines in the northern group may indicate that soldiers intended to stay at the encampment for a relatively long period of time. They thus expended the effort to do more than just the bare minimum in the construction of their latrine facilities. This effort may also be a reflection of the commander's preferences for camp set-up or attention to discipline. Conversely, the lack of structural evidence in the southern group could suggest that there was little effort placed on the construction of latrine facilities, which could be a reflection of camp discipline or that the associated soldiers did not intend to stay at the encampment for an extended period of time. The construction of an additional privy at a later time could indicate that the associated soldiers stayed at camp for a longer period of time than anticipated. This situation suggests that the two latrine groupings represent different encampments.

One latrine (Feature 20) did not fit with the aforementioned groupings, though given its similar orientation, it is possible that it was contemporaneous with the southern grouping. That Feature 20 was separated from the southern grouping by over 100 m, however, raises the possibility that it represents a latrine intended for a separate, but contemporaneous group of soldiers. Given the adherence to the segregation of officers and enlisted men demonstrated archaeologically at other sites, such as Camp Nelson, it is possible that Feature 20 represents an officer's latrine. Support for this suggestion comes from the presence of artifacts thought to be indicative of higher status, such as a refined ceramic sherd, a glass tableware fragment and a glass ink bottle fragment; fewer metal cans relative to Features 21 and 22; the abundance of chicken bones relative to other features; and the presence of egg shell (Anderson and Faberson 2006; Balicki 2000).

Although chicken was a relatively small proportion of the total faunal assemblage, most of the chicken remains were associated with Feature 20. Chicken was found in only two other features (Feature 21, a latrine, and Feature 22, a trash pit) and in much smaller quantities. Anderson and Faberson (2006; see also Young 1993) suggested that the presence of chicken within these features reflected the supplementing of army rations from the surrounding area. Given the possibility that Feature 20 was associated with higher status officers, the large amount of chicken discarded in this feature could indicate that they were able to supplement their diet with local resources. The spatial evidence tends to support the suggestion that Feature 20 is associated with officers and could explain why it is isolated from the other latrines adhering to class segregation standards.

Trash pits

Except for Feature 22, which was located in Black C, all of the trash pits were located in Block B where they tended to be situated between the southern latrine cluster 80 m to the north and the isolated latrine (Feature 20) located 15 m to the south (Figures 29 and 47). A group of five posts is located to the west of the pits and may have been associated with a fence that bounded part of the trash disposal area. As with the latrines, all of the trash pits appear to have been located behind the living area located to the east.

Feature 22's proximity to Feature 20, suggests that it also may have been associated with officers rather than enlisted men (see also Anderson and Faberson 2006). Support for this suggestion comes from the association of a large amount of chicken remains and two fragments of a glass ink bottle with this pit. On the other hand, Feature 22 did yield a relatively large number of metal food cans, which as previously mentioned are thought to have been associated with enlisted men. Given that Features 20 and 22 could be associated with higher status people and the fact that all of the artifacts that are indicators of higher status were found in the vicinity of these two features, it is suggested that the southern edge of the study area may have been associated with officers or some higher ranking soldiers.

SANITATION

The location of the latrines and trash pits within the study area can provide some insight into the sanitary practices at Camp Dick Robinson. Sanitation is perhaps one of the most important issues for any military operation, as poor sanitary practices can promote disease, which has killed more soldiers than any battle. Thus, the standard camp layout promoted in the regulations featured proper sanitary practices by requiring that latrines and trash disposal localities be situated a good distance from the camp living areas. These regulations followed the "out of sight, out of mind" sanitary philosophy common during the late nineteenth century (Stottman 1996). The operationalization of this philosophy was to keep offensive materials as far away from the senses as possible. If one cannot see or smell it, then it is sanitary. While this philosophy may have been ignorant of germ theory, the invisible communicator of disease, it generally had the effect of being good sanitary practice.

The identified features also provide some insight into the trash disposal habits of the soldiers. The final use of the latrines appears to have been for the disposal of trash, with similar materials being disposed of in both latrines and trash pits. The trash recovered from these features is interpreted as representing waste, such as animal bones and egg shells, broken bottles and dishes, and miscellaneous personal items and accoutrements generated from daily living at the camp. The presence of architectural debris, such as nails, window glass, and brick fragments, indicates that debris from the demolition of buildings was deposited in these features as well. This distribution of debris may have occurred when camp structures were dismantled. In one case, an abandoned latrine was used secondarily to dispose of the remains of a good portion of a

horse. The pattern of refuse disposal identified in the study area indicates that some effort was made to keep the living area or the camp clean. Ash and wood charcoal may have been disposed in these features to help control odor.

Though the archaeological evidence suggests that efforts were made to conform to the regulations of camp lay-out and the sanitary philosophy of the day, this interpretation is not consistent with the picture portrayed by a newspaper account of the camp. A report from the *Cincinnati Gazette* on October 11, 1861 and published in the *New York Times* on October 14, 1861 describes the camp as having poor sanitary conditions.

> ….Besides, it is desirable to remove troops who are free from disease, from the contagion of the camp. For this reason it is not improbable that the other Ohio troops will also be speedily removed from the present location.
>
> Scarcely had the strains of the band to whose music the Seventeenth moved off died away, till a procession of ill-clad Tennesseeans [sic] came marching down, with reversed muskets and silenced countenances, following the rude coffin of another of their comrades. Not a day has passed since I have been in camp, I believe, that at least one was not buried from the Tennessee or Kentucky Regiments. And as yet there seems to be little improvement in the sanitary condition of their camps. Their hospitals are full to overflowing, and more continue to be reported as unfit for duty and requiring hospital attendance. The ladies of the vicinity and especially the ladies of Danville are doing all in their power to alleviate the sufferrags [sic] of the sick, and many a poor fellow will owe his life to the ministrations of these fair angels.
>
> To-day the first case of measles broke out in the Fourteenth Ohio. Every precaution that could be suggested had been enforced to prevent the infection from reaching the camp; the soldiers had not been allowed to go out of their regimental camp lines at all, and the others were particularly careful to avoid passing near the measles hospital, but the vigilance was all unwanting, and the disease—usually harmless enough, but sadly fatal here, under the privations and exposures of camp life—will doubtless go through the regiment.

This description hardly reflects the clean, neat, and orderly camps desired in the regulations. It is not clear what precipitated the comment that sanitary conditions were poor at Camp Dick Robinson. Perhaps some areas at Camp Dick Robinson were not laid-out according to regulation with trash disposal areas and latrines being located in close proximity to living area as was the case for some camps (Anderson and Faberson 2006).

The mention of a measles outbreak at Camp Dick Robinson appears to have been attributed to the poor sanitary conditions at the camp. However, there seems to be an

understanding that infected soldiers needed to be isolated from other soldiers to prevent the spread of the disease. It appears that confining soldiers to their own camps and limiting exposure to infected soldiers and the hospital were used to combat the spread of disease. Also, moving unaffected regiments from the camp was used to help stop the spread of disease to troops fit for duty. Perhaps the study area was associated with the encampment of one of those unaffected regiments that were ordered from camp. It may have been kept cleaner and was more sanitary than other areas within the camp because it was located some distance from the main encampment and was more isolated. It is also possible that the discrepancy between the archaeological record and historic accounts, suggest that there was differential levels of discipline amongst the regiments at the camp. Thus, those located on the periphery of the camp were led by commanders who adhered more closely to camp regulations.

The actions of camp officials suggests that they took the appropriate measures to prevent communication of disease, and were not totally ignorant of the latest theories of invisible vectors of disease that were discovered in the late 1850s (Stottman 1996). It is not clear how theories of isolation and sanitary philosophy intersected at Camp Dick Robinson. However, the sanitary conditions documented in Blocks A-C appear to have been good or at least practiced properly with regards to the disposal of daily trash, refuse, and night soil. While the archaeological data suggest that primary and secondary waste disposal took place away from the living area, we do not know if the same sanitary procedures were followed throughout Camp Dick Robinson.

SUMMARY

Although no evidence of a living area was identified within the study area, the area investigated most likely represent the latrines and trash disposal areas located behind and away from a living area. That few military related artifacts were recovered and that most of those recovered were ammunition, could indicate that the encampment was occupied early in the war or during the training/recruitment function of the camp at time when loss of uniforms and equipment would have been less likely. The linear arrangement of the latrines suggests that the encampment conformed to army camp regulations.

Variation observed in the orientation of the northern and southern latrines is suggestive of two different encampments. The association of superstructures or privacy screens with the northern latrines and the absence to the south, suggests more effort was expended in the establishment of the former than the latter former latrines. That the northern latrines contained little to no evidence of nightsoil and yielded a small amount of trash, suggests that they were used for a relatively short period of time. Coupled with the effort expended in the construction of the latrine facilities, it is possible that the camp was abandoned earlier than anticipated. Perhaps the soldiers that dug these latrines were from one of the regiments that left during the measles epidemic that struck the Camp Dick Robinson in 1861.

Conversely, the abandonment and replacement of one latrine and the disposal of more trash in the southern latrines and trash pits, suggest that the associated soldiers stayed longer than anticipated and had to modify their latrine facilities accordingly. This situation is suggestive of a longer than expected occupation or a reflection of less discipline. While there may not have been as much effort expended in the construction of the southern group latrines, there does seem to have been some adherence to the segregation of officers and enlisted men.

CHAPTER 9:
CONCLUSIONS

Based on the results of the archaeological investigations at Camp Dick Robinson, some conclusions can be made about the nature, extent, and function of the investigated portion of the camp. The artifacts recovered from the study area are similar in type and function to those found at other Civil War encampments, such as Camp Nelson. They consist primarily of architecture and domestic artifacts, and faunal and botanical remains, with some personal, clothing, and arms artifacts also being present. Other indications of an encampment were the presence of latrines, trash pits, and posts, likely associated with fences and possible latrine superstructures or privacy screens. The area investigated, however, represents only a small portion of Camp Dick Robinson. The absence of identifiable residential structures and lack of larger amounts of personal and activities artifacts, suggests that the investigated area was located on the periphery of the camp and away from the primary living areas.

The investigated portion of the camp was only briefly occupied and was probably not utilized throughout the life of Camp Dick Robinson. This is reflected in the low density of features, and the small artifact assemblage. The distribution of latrines and trash pits suggests that sanitary waste and trash disposal took place on the periphery of the camp living area. The main living area of the camp was most likely located to the east of the project area on the property of Camp Dick Robinson Elementary School and in back of the Camp Dick Robinson House. Thus, evidence of shelters, artifact middens, and features associated with the main living areas were not investigated during the course of this study.

The artifact assemblage recovered from the study area reflects the short-term nature of the use of this portion of Camp Dick Robinson. The paucity of military artifacts in the latrines and trash pits could reflect Camp Dick Robinson's establishment and function early in the Civil War serving as a recruitment and training center and staging area. That few military buttons were discarded may indicate that occupants of the camp either did not have uniforms or perhaps had just been issued uniforms. As such, it is unlikely that relatively new, military clothing and accoutrements would have ended up in the archaeological record. Had the camp been occupied by more seasoned troops there would have been a greater likelihood of them discarding worn clothing.

The small amounts of high status indicators, such as table glassware and refined ceramics, such as porcelain, coupled with the large number of metal cans, suggests that the bulk of the recovered materials were not associated with formal dining. Rather the recovered artifact assemblage represents materials discarded primarily by enlisted men. On the other hand, the recovery of limited amounts of high status indicators, including table glass, porcelain, other refined ceramics, and ink bottles, from a latrine and trash pit located along the southern edge of the study area, indicates that these two features could possibly have been used by officers. Thus, some status segregation could have taken place during the occupation of the encampment.

The botanical and faunal remains recovered from Camp Dick Robinson indicate that local resources did not seem to be constrained and that the army's food supplies were sufficient. Corn, beans, and Old World grain barley were undoubtedly plant food staples in Civil War camps. Among the other foods consumed by soldiers at Camp Dick Robinson were tomatoes, a variety of berries (blackberry/raspberry, ground cherry/tomatillo, and elderberry), and nuts (acorn, butternut, and hickory). The use of hickory for posts, and predominance of both hickory and with walnut in the latrines and trash pits, suggests that construction debris was deposited in these features. The lack of wood species diversity argues against the wood profile representing firewood, as one would expect soldiers not to be selective in their choice of wood to build fires.

The Camp Dick Robinson faunal assemblage indicates that soldiers relied on domestic resources, mainly beef, which was supplied in federal rations. Pork and chicken, both likely from locally available sources, supplemented the animal sources consumed at the camp. The presence of eggs in features that may have been associated with officers, indicating that they had a greater ability to supplement their diet with local resources. The lack of wild animals is linked to the greater reliability of federal supplies coming to the camp and perhaps the majority of soldier's following requirements to stay at camp. The horse remains recovered from Camp Dick Robinson represents one of many casualties produced by the extreme harsh conditions these animals endured and succumbed to throughout the Civil War.

That few of the latrines contained evidence of night soil is attributed to them being cleaned out and the short-term nature of their use, which did not allow for much night soil to accumulate in the features or leach into the surrounding soil matrix. At some point these features ceased to be used as latrines, and were used to dispose of trash. The association of posts, some of which were very deep, with the northern trench concentration points to the possible association of latrine superstructures or privacy screens.

The spatial distribution of latrines, trash pits, and posts at Camp Dick Robinson suggests that the encampment was oriented in a linear fashion as depicted in the regulations. The presence of associated structures with the northern group latrines points to more time being invested in the establishment of these facilities and perhaps the nearby associated encampment than was the case with those who constructed the southern latrine cluster. This situation may indicate that there was perhaps more effort expended in the construction of the northern latrine group than was the case with in the southern group. The observed patterns could indicate differing attention to discipline exhibited by the camp occupants or reflect variation in the disciplinary philosophies of their commander. It is also possible that the occupants of the northern area intended to stay at the encampment longer than those in the southern area.

Given the lack of nightsoil and the paucity of associated artifacts in the latrines, it appears that the northern latrines represent a rather short-term occupation. It is possible that perhaps the associated encampment was abandoned earlier than anticipated. Such an interpretation is consistent with a newspaper account that described a measles epidemic at

Camp Dick Robinson and indicated that regiments unaffected by the outbreak were ordered from camp, perhaps unexpectedly. It is possible that the soldiers whose tents were located near the project area were associated with one of the regiments that abandoned the camp following the outbreak of measles. It is also possible that the horse buried in one of the northern latrines was associated with this event, as efforts were made to clean-up the camp and dispose of anything that might spread disease.

The southern latrine group likely represents an occupation that was of a longer duration than expected, as evidenced by the presence of a latrine that became full, the addition of a latrine to replace the full one, the clustering of trash pits, and the larger amounts of trash disposed of in this area. In addition, an effort may have been made to segregate officers and enlisted men at the southern encampment, based on the isolated nature of one latrine and the presence of artifacts indicative of higher status in the latrine and a nearby trash pit.

The ephemeral short-term nature of the encampments identified in the project area is not consistent with the permanent camp type expected at Camp Dick Robinson. Recruitment and training camps, and supply depots such, as Camp Dick Robinson and Camp Nelson, were typically densely occupied with some permanent structures that would be expected to contain a high feature density and yield a large number of artifacts and features (see McBride et al. 2003). Archaeological data recovered from the project area are more consistent with a short-term camp. It is clear from the archaeological evidence that the encampment identified in the project area was a lightly used area on the periphery of the much more permanent and densely occupied main encampment associated with Camp Dick Robinson.

While the data collected during the project have led to a variety of possible interpretations about the set-up, organization, and use of latrine area(s) within this portion of Camp Dick Robinson, a better understanding of this data and its relationship to the history of the camp could be gained from the archaeological investigation of other portions of this camp. This study also speaks to some of the challenges researchers face when investigating short-term encampments.

In the case of Camp Dick Robinson, previous agricultural activity has significantly truncated some features and likely completely destroyed others, such as shallow post holes. Although there have been few reports of relic collecting in the study area specifically, Camp Dick Robinson has been heavily collected, which could have affected the amount of artifacts present at the site in general. However, such collecting should not have greatly affected intact features. The rather small amount of artifacts recovered from features at short-term sites hampers efforts to undertake some artifact studies, such as a ceramic economic scaling, and to make intersite assemblage comparisons. Since the living area associated with the latrines and trash pits could not be investigated, a complete examination of the spatial organization of the camp could not be undertaken.

Despite the challenges posed by being restricted to the periphery of a very large encampment, this study has generated insights into the history of Camp Dick Robinson and provided the foundation for additional work at this encampment. For example, a better understanding of the camp as whole could be gained from a comparison between the periphery encampments and the main living area, which is situated behind the Robinson house. Such a comparison could help better understand the extent and nature of Camp Dick Robinson. The data generated from such as study could be used to address research topics relating to social status, camp design and lay-out, living conditions, and sanitation.

With respect to sanitation, it is clear that by placing the latrines and trash pits along the edge of the encampment camp officers followed general practices of good sanitation. However, the extent to which such practices were followed throughout the history of Camp Dick Robinson remains to be determined. Future research questions that could be addressed at this encampment include: How do waste disposal patterns compare between the central and periphery living areas? Are there any correlations between substantial waste disposal within the central living areas and documented poor sanitation or epidemics? Are there differences in trash disposal practices between regiment encampments within Camp Dick Robinson? To what extent did waste disposal practices at this camp conform to established military camp regulations or guidelines?

This study has only scratched the surface of the research potential of Camp Dick Robinson. Additional work at this important Civil War site has the potential to contribute greatly to our understanding of the role of short-term encampments and their relationship to permanent camps during the Civil War in Kentucky.

REFERENCES CITED

Adams, William H.
2002 Machine Cut Nails and Wire Nails: American Production and Use for Dating 19th-Century and Early 20th-Century Sites. *Historical Archaeology* 36(4):66-88.

Allgood, Jessica
2001 *An Archaeological Survey of the Proposed Lancaster-Richmond Road Upgrade Parcel 115 in Garrard County Kentucky*. Cultural Resource Analysts, Lexington.

Amos, C.
1988 The Bluegrass Cultural Landscape: A Regional Historic Overview. Ms. On file, Kentucky Heritage Council, Frankfort.

Anderson, Adrienne
1968 The Archaeology of Mass-Produced Footwear. *Historical Archaeology* 2:56-65.

Anderson, Jason M.
2004 *Archaeological Survey of the Proposed Relocation of US 27 in Garrard County, Kentucky (Item No.7-26.01).* Contract Publication Series 03-68. Cultural Resource Analysts, Lexington.

Anderson, Jason M. and Tonya A. Faberson
2006 *National Register Evaluation of Sites 15Gd87 and 15Gd89 for the Proposed Relocation of U.S. 27 in Garrard County, Kentucky (Item No. 7-26.01).* Contract Publication Series 06-157. Cultural Resource Analysts, Lexington.

Andrews, Susan C., James P. Fenton, Tracey A. Sandefur, and W. Stephen McBride
2004 *"The Necessary, Durable, Useful, and Ornamental…": Archaeology of a Transitional Frontier Farmstead, Site 15Lo168, The John Arnold Farmstead, Logan County, Kentucky.* Item No. 3-275.00. Wilbur Smith Associates, Lexington.

Asch, David L. and Nancy B. Asch
1975 Appendix V: Plant Remains from the Zimmerman Site - Grid A: A Quantitative Perspective. In *The Zimmerman Si*te: *Further Excavations at the Grand Village of Kaskaskia*, edited by Margaret I. Brown. Report of Investigations No. 23. Illinois State Museum, Springfield.

Avery, Paul G.
2008 Camps Tolerably Well Policed: Artifact Patterns and Feature Function at the Florence Stockade. Paper presented at the forty-first Annual Meeting of the Society for Historical Archaeology Conference on Historical and Underwater Archaeology. Albuquerque, New Mexico.

Balicki, Joseph F.
2000 Defending the Capital: The Civil War Garrison at Fort C.F. Smith. In *Archaeological Perspectives of the Civil War*, edited by Clarence R. Geier and Stephen R. Potter, pp. 125-147. University Press of Florida, Gainesville.

2006 "Masterly Inactivity": The Confederate Cantonment Supporting the 1861-1862 Blockade of the Potomac River, Evansport, Virginia. In *Huts and History: The Historical Archaeology of Military Encampment During the American Civil War*, edited by Clarence R. Geier, David G. Orr, and Matthew B. Reeves, pp. 97-135. University Press of Florida, Gainesville.

2011 Watch-Fires of a Hundred Circling Camps: Theoretical and Practical Approaches to Investigating Civil War Campsites. In *Historical Archaeology of Military Sites: Method and Topic*, edited by Clarence R. Geier, Lawrence E. Babits, Douglas D. Scott, and David G. Orr, pp. 57-75. Texas A&M University Press, College Station.

Balicki, Joseph F. B. Corle, C. Goode, and L. Jones
2005 *Archaeological Investigations for Quaker Ridge Housing (44Ax195) Alexandria, Virginia.* John Milner and Associates, Alexandria, Virginia.

Ball, Donald B.
1983 Approaches Toward the Dating of 19th Century Ohio Valley Flat Glass. In *Proceedings of the Symposium on Ohio Valley Urban and Historic Archaeology Volume I*, edited by Donald B. Ball and Philip J. DiBlasi, pp. 129-137. Archaeological Survey, University of Louisville, Louisville.

1984 Historic Artifact Patterning in the Ohio Valley. *Proceedings of the Symposium on Ohio Valley Urban and Historic Archaeology*, edited by Donald B. Ball and Philip J. DiBlasi, 2:24-36. Archaeological Survey, University of Louisville, Louisville.

1997 An Introduction to Metallic Cartridge Case Terminology, Identification, and Headstamps. *Ohio Valley Historical Archaeology* 12:112-129.

Baugher-Perlin, Sherene
1982 Analyzing Glass Bottles for Chronology, Function, and Trade Networks. In *Archaeology of Urban America: The Search for Pattern and Process*, edited by Roy S. Dickens, Jr., pp. 259-290. Academic Press, New York.

Behrensmeyer, Anna K.
1978 Taphonomic and Ecological Information from Bone Weathering. *Paleobiology*. 4(2):150–162.

Bentz, Charles and Yong W. Kim (editors)
1993 *The Sevierville Hill Site: A Civil War Union Encampment on the Southern Heights of Knoxville, Tennessee.* Tennessee Anthropological Association, Miscellaneous Paper 17. Knoxville.

Bies, Brandon
2006 Guarding the Junction: Encampment of the 14th New Jersey Infantry. In *Huts and History: The Historical Archaeology of Military Encampment During the American Civil War*, edited by Clarence R. Geier, David G. Orr, and Matthew B. Reeves, pp. 74-92. University Press of Florida, Gainesville.

Billings, John D.
1993 *Hardtack and Coffee: The Unwritten Story of Army Life*. Reprint [1887] Bison Books, University of Nebraska Press, Lincoln.

Binford, Lewis. R
1981 *Bone: Ancient Men and Modern Myths*. Academic Press, New York.

Broadwater, Robert P.
2005 *The Battle of Perryville, 1862 Culmination of the Failed Kentucky Campaign*. McFarland & Company, Inc., Jefferson, North Carolina.

Calico, Forrest
1947 *History of Garrard County, Kentucky, and its Churches*. Hobson Book Press, New York.

Campbell, Julian J.N.
1985 *The Land of Cane and Clover: Presettlement Vegetation in the So-called Bluegrass Region of Kentucky*. School of Biological Sciences, University of Kentucky, Lexington.

Carstens, Kenneth C.
1998 Archaeological Investigations at Fort Smith, 15Lv207, a Federal Civil War Gun Emplacement Site in Smithland, Kentucky. In *Current Archaeological Research in Kentucky Volume Five*, edited by Charles D. Hockensmith, Kenneth C. Carstens, Charles Stout, and Sara J. Rivers, pp. 121-134. Kentucky Heritage Council, Frankfort.

Church, Flora
2007 Faunal Analysis. In *National Register Evaluation of Sites 15Gd87 and 15Gd89 for the Proposed Relocation of U.S. 27 in Garrard County, Kentucky*. by Jason M. Anderson and Tanya A. Faberson, pp. 102–119. Cultural Resource Analysts, Lexington.

Clark, Donald A.
2011 *The Notorious "Bull" Nelson: Murdered Civil War General.* Southern Illinois University Press, Carbondale.

Cleland, Charles E.
1983 *A Computer Compatible System for the Categorization, Enumeration, and Retrieval of Nineteenth and Early Twentieth Century Archaeological Material Culture. Part II. Manual for Identification and Classification.* The Museum, Michigan State University, East Lansing.

Coggins, Jack
1962 *Arms and Equipment of the Civil War.* Doubleday, New York.

Coughlin, S. and J. Patterson
2003 Faunal Remains from Camp Nelson, In *From Supply Depot to Emancipation Center, the Archaeology of Camp Nelson, Kentucky*, by W. S. McBride, S. C. Andrews, J. H. Beverly, and T. A. Sandefur, Appendix D. Wilbur Smith Associates, Lexington.

Courier Journal
1895 Two Noted Civil War Recruiting Camps. http://kentuckyexplorer.com/nonmembers/3-camps.html accessed August 15, 2012.

Coursey, David G.
1976 The Origins and Domestication of Yams in Africa. In *Origins of African Plant Domestication*, edited by Jack R. Harlan, Jan M.J. DeWet, and Ann B.L. Stemler, pp. 383-408. Aldine Publishing Company, Chicago.

Cummings, Linda Scott
1993 Pollen and Macrofloral Analysis of Material for Package 116, the Late Nineteenth Century Old Master Armorer's House at Harpers Ferry National Historical Park, West Virginia. In *Interdisciplinary Investigations of Domestic Life in Government Block B: Perspectives on Harpers Ferry's Armory and Commercial District*, edited by Paul A. Shackel, pp. 7.1-7.46. Occasional Report No. 6, National Park Service, U.S. Dept. of the Interior, Washington, D.C.

Cummings, Linda Scott and Kathryn Puseman
1994 Pollen, Phytolith, Parasite, and Macrofloral Analysis. In *Archaeological Views of the Upper Wager Block, A Domestic and Commercial Neighborhood in Harpers Ferry*, edited by Jill Y. Halchin, pp. 5.1-5.56. Occasional Report No. 11, National Park Service, U.S. Dept. of the Interior, Washington, D.C.

Davis, Darrell H.
1927 *The Geography of the Blue Grass Region of Kentucky.* Kentucky Geological Survey Report 6(23), Frankfort.

Davis, Daniel, Leon Lane, Jack Rossen, and Nancy O'Malley
1997 *Phase II Testing and Phase III Mitigation of Three Sites in the Bardstown Industrial Park, Nelson County, Kentucky.* Archaeological Report 386. Program for Cultural Resource Assessment, University of Kentucky, Lexington.

Davis, William C.
2004 *The Fighting Men of the Civil War.* Salamander Books, London.

Deiss, Ronald W.
1981 *The Development and Application of a Chronology for American Glass.* Midwestern Archaeological Center, Illinois State University, Springfield.

1992 A Brief History and Chronology of Ceramic Drainage and Masonry Tile Produced in the United States. *Tennessee Anthropological Association Miscellaneous Paper* 16:106-119.

DeBolt, Gerald
1994 DeBolt's Dictionary of American Pottery Marks, Whiteware and Porcelain. Collector Books, Paducah, Kentucky.

Downing, Andrew Jackson
1866 *The Fruits and Fruit Trees of America*. John Wiley and Son, New York.

1881 *Rural Essays: Horticulture, Landscape Gardening, Rural Architecture, Trees, Agriculture, Fruit, Etc., Etc.* R. Worthington, New York.

Edging, Richard B.
1995 *Living in a Cornfield: The Variation and Ecology of Late Prehistoric Agriculture in the Western Kentucky Confluence Region.* Unpublished Ph.D. dissertation, Department of Anthropology, University of Illinois, Urbana-Champaign.

Epstein, Diana and Millicent Safro
2001 *Buttons*. Harry N. Abrams, New York.

Evans, Travers M. and David Greene
1973 *The Meat Book: A Consumer's Guide to Selection, Buying, Cutting, Storing, Freezing, and Carving the Various Cuts*. Charles Scribner's Sons, New York.

Ferguson, Leland
1992 *Uncommon Ground: Archaeology and Early African America, 1650-1800.* Smithsonian Institution Press, Washington.

Fesler, Garrett R., Matthew R. Laird, and Hank D. Lutton
2006 "Beautiful Confusion": The Archaeology of Civil War Camp Life in Urban Context. In *Huts and History: The Historical Archaeology of Military Encampment During the American Civil War,* edited by Clarence R. Geier,

David G. Orr, and Matthew B. Reeves, pp. 216-243. University Press of Florida, Gainesville.

Fisher, Stanley W.
1966 *English Ceramic, earthenware, Delft, stoneware, cream-ware, porcelain: including a section on Welsh factories.* Ward, Lock, and Co., London.

Fitts, Robert K.
1999 The Archaeology of Middle-Class Domesticity and Gentility in Victorian Brooklyn. *Historical Archaeology*. 33(1): 39-62.

Geier, Clarence R., David G. Orr, and Matthew B. Reeves (editors)
2006 *Huts and History: The Historical Archaeology of Military Encampment During the American Civil War*. University Press of Florida, Gainesville.

Geier, Clarence R. and Stephen R. Potter (editors)
2000 *Archaeological Perspectives on the American Civil War.* University Press of Florida, Gainesville.

Geier, Clarence R. and Susan E. Winter (editors)
1994 *Look to the Earth: Historical Archaeology and the American Civil War*. University of Tennessee Press, Knoxville.

Gurke, Karl
1987 *Bricks and Brickmaking: A Handbook for Historical Archaeology*. University of Idaho Press, Moscow.

Hafendorfer, Kenneth A.
2001 *Mill Springs: Campaign and Battle of Mill Springs, Kentucky.* KH Press, Louisville.

Harper's Weekly
1861 War in Kentucky. *Harper's Weekly* 23 November, 5(256):743. New York.

1862 Camp Dick Robinson. *Harper's Weekly* 1 November, 6(305):694. New York.

Harrison, Lowell H.
1975 *The Civil War in Kentucky.* University Press of Kentucky, Lexington.

Hart, John P., Robert A. Daniels, and Charles J. Sheviak
2004 Do *Cucurbita pepo* Gourds Float Fishnets? *American Antiquity* 69(1):141-148.

Hart, John P. and C. Margaret Scarry
1999 The Age of Common Beans (*Phaseolus vulgaris*) in the Northeastern United States. *American Antiquity* 64:653-658.

Heiser, Charles B.
1987 *The Fascinating World of Nightshades*. 2nd edition. Dover Publications, New York.

Higgins, Thomas F. III, Charles M. Downing, Kenneth E. Stuck, Gregory J. Brown, and Karl J. Reinhard
1995 *The Civil War at Gloucester Point: Mitigation of Site 44Gl358 Associated with the Proposed Route 17 Coleman Bridge Project, Gloucester County, Virginia.* Technical Report Series No. 19. William and Mary Center for Archaeological Research, Williamsburg.

Hockett, Eugene A.
1991 Barley. In *Handbook of Cereal Science and Technology*, edited by Klaus Lorenz and Karel Kulp, pp. 133-198. Marcel Dekker, New York.

Holt, Cheryl A.
1991 Plants, Humans, and Culture: An Edible Model of Consuming Behavior. *Historic Archaeology* 25(2):46-61.

Hudson, Jean L.
2004 Additional Evidence for Gourd Floats on Fishing Nets. *American Antiquity* 69(3):586-587.

Hughes, Susan Lyons
1992 Camp Dick Robinson. In *The Kentucky Encyclopedia*, edited by John E. Kleber, pp. 157-158. University Press of Kentucky, Lexington.

Huser, William A., Jr.
1993 *Phase III Archaeological Investigations at the Prater Historic Site (15Fd62) in Floyd County, Kentucky*. Archaeological Report 308. Program for Cultural Resource Assessment, University of Kentucky, Lexington.

Jillson, Willard Rouse
1934 *Pioneer Kentucky*. State Journal Company, Frankfort, Kentucky.

Ketchum, William C., Jr.
1991 *American Stoneware*. Henry Holt and Company, New York.

Kimber, G. and E.R. Sears
1987 Evolution in the Genus *Triticum* and the Origin of Cultivated Wheat. In *Wheat and Wheat Improvement*, edited by E.G. Heyne, pp. 154-164. American Society of Agronomy, Madison, Wisconsin.

Kleber, John E. (editor)
1992 *The Encyclopedia of Kentucky*. University Press of Kentucky, Lexington.

Kory, Elizabeth Stroud
1993 Introductory Essay to *1862 Manual for Army Cooking.* Government Printing Office, Washington, D.C.

Krochmal, Arnold and Connie Krochmal
1982 *Uncultivated Nuts of the United States.* Agricultural Information Bulletin No. 450. U.S.D.A. Forest Service, General Printing Office, Washington.

Lambert, D. Warren
1995 *When the Ripe Pears Fell: The Battle of Richmond, Kentucky.* The Madison County Historical Society, Richmond.

Landon, David B.
2005 Zooarchaeology and Historical Archaeology: Progress and Prospects. *Journal of Archaeological Method and Theory,* 12(1):1-36.

Lockhart, Bill
2006 The Color Purple: Dating Solarized Amethyst Container Glass. *Historical Archaeology* 40(2):45-56.

Lofstrom, Ted, Jeffrey P. Tordoff, and Douglas C. George
1982 Seriation of Historic Earthenwares in the Midwest, 1780-1870. *Minnesota Archaeologist* 41:3-29

Logan, Herschel C.
1959 *Cartridges: A Pictorial Digest of Small Arms Ammunition.* Bonanza Books, New York.

Lopinot, Neal H.
1982 Plant Macroremains and Paleoethnobotanical Implications. In *The Carrier Mills Archaeological Project: Human Adaptation in the Saline Valley, Illinois,* Volume II, edited by Richard W. Jefferies and Brian M. Butler, pp. 671-860. Research Paper No. 33. Southern Illinois University, Center for Archaeological Investigations, Carbondale.

Lord, Francis A.
1969 *Civil War Sutlers and Their Wares.* Thomas Yoseloff, New York.

Luscomb, Sally C.
1967 *The Collector's Encyclopedia of Buttons.* Crown Publishers, New York.

Lyman, R. Lee
1985 Bone frequencies: Differential transport, *in situ* destruction, and the MGUI. *Journal of Archaeological Science,* 12**:**221–236.

1994 *Vertebrate Taphonomy*. Cambridge University Press, Cambridge.

McBride, Kim A. and M. Jay Stottman
2000 *A Metal Detector Survey for the Battle of Richmond.* Report No. 29. Kentucky Archaeological Survey, Lexington.

McBride, Kim A. and W. Stephen McBride
2008 Chapter 8: Historic Period. In *The Archaeology of Kentucky: An Update Volume Two,* edited by David Pollack , pp. 903-1132. State Historic Preservation Comprehensive Plan No. 3. Kentucky Heritage Council, Frankfort.

McBride, W. Stephen
1994 Civil War Material Culture and Camp Life in Central Kentucky: Archaeological Investigations at Camp Nelson. In *Look to the Earth: Historical Archaeology and the American Civil War,* edited by Clarence R. Geier and Susan E. Winter, pp. 130-157. University of Tennessee Press, Knoxville.

1998 *Report of Archaeological Survey and Testing at Camp Wildcat, 15Ll131, Laurel County, Kentucky.* Camp Wildcat Preservation Foundation, London, Kentucky.

2007 *Archaeological Survey for an Interpretive Trail at Camp Wildcat, 15Ll131, Laurel County, Kentucky.* McBride Preservation Services, Lexington.

McBride, W. Stephen, Susan C. Andrews, J. Howard Beverly, and Tracey A. Sandefur
2003 *From Supply Depot to Emancipation Center, the Archaeology of Camp Nelson, Kentucky.* Wilbur Smith and Associates, Lexington.

McBride, W. Stephen, Susan C. Andrews, and Sean P. Coughlin
2000 "For the Convenience and Comforts of the Soldiers and Employees of the Depot": Archaeology the Owens' House/Post Office Complex, Camp Nelson, Kentucky. In *Archaeological Perspectives on the American Civil War,* edited by Clarence R. Geier and Stephen R. Potter, pp. 99-124. University Press of Florida, Gainesville.

McBride, W. Stephen and Kim A. McBride
2006 Civil War Housing Insights from Camp Nelson, Kentucky. In *Huts and History: The Historical Archaeology of Military Encampment During the American Civil War,* edited by Clarence R. Geier, David G. Orr, and Matthew B. Reeves, pp. 136-172. University Press of Florida, Gainesville.

McBride, W. Stephen and William E. Sharp
1991 *Archaeological Investigations at Camp Nelson: A Union Quartermaster Depot and Hospital in Jessamine County, Kentucky.* Archaeological Report No. 241. Program for Cultural Resource Assessment, University of Kentucky, Lexington.

McKee, W. Reid, and M. E. Mason, Jr.
1980 *Civil War Projectiles II: Small Arms & Field Artillery.* Rapidian Press, Mechanicsville, Virginia.

Madden, D. (editor)
2000 *Beyond the Battlefield: The Ordinary Life and Extraordinary Times of the Civil War Soldier*. Simon and Schuster, New York.

Mainfort, Richard C.
1980 *Archaeological Investigation at Fort Pillow State Historic Area: 1976-1978.* Research Series No. 4. Tennessee Department of Environment and Conservation, Division of Archaeology, Nashville.

Marean, Curtis W. and Carol J. Frey
1997 Animal Bones from Caves to Cities: Reverse Utility Curves as Methodological Artifacts. *American Antiquity*, 62(4):698-711.

Martin, Alexander C. and William D. Barkley
1973 *Seed Identification Manual*. 2nd ed. University of California Press, Berkeley.

Matthews, Lisa G.
2005 Ivy Mountain Confederate Recruiters Forced to Withdraw. In *Kentucky's Civil War, 1861-1865*, edited by Jarlene Rose, pp. 44-45. Back Home in Kentucky, Clay City.

Metcalfe, Duncan and Kevin T. Jones
1988 A Reconstruction of Animal Body-Part Utility Indices. *American Antiquity*, 53(3):486-504.

Miller, George L.
1980 Classification and Economic Scaling of nineteenth Century Ceramics. *Historical Archaeology* 14:1-40.

1991 A Revised Set of CC Index Values for English Ceramics. *Historical Archaeology* 25(1):1-25.

Moir, Randall W.
1987 Socioeconomic and Chronometric Patterning of Window Glass. In *Historic Buildings, Material Culture, and People of the Prairie Margin*, edited by David H. Jurney and Randall W. Moir, pp. 73-81. Richland Creek Technical Series Vol. V. Southern Methodist University, Dallas.

Mullins, Paul R.
1988 *James Madison University Archaeological Research Center Ceramic Typology.* James Madison University, Virginia.

Munson, Patrick J.
1986 Hickory Silviculture: A Subsistence Revolution in the Prehistory of Eastern North America. Paper presented at meeting "Emergent Horticultural Economies of the Eastern Woodlands" meeting, Carbondale, Illinois.

Nelson, Dean E.
2006 "Right Nice Little House[s]": Winter Camp Architecture of the American Civil War. In *Huts and History: The Historical Archaeology of Military Encampment During the American Civil War*, edited by Clarence R. Geier, David G. Orr, and Matthew B. Reeves, pp. 177-193. University Press of Florida, Gainesville.

Nelson, Lee H.
1968 *Nail Chronology as an Aid to Dating Old Buildings*. Technical Leaflet 48. American Association for State and Local History, Nashville, Tennessee.

Nevin, David
1983 *The Road to Shiloh: Early Battles in the West.* Time-Life Books, Alexandria.

Newman, T. Stell
1970 A Dating Key for Post-Eighteenth Century Bottles. *Historical Archaeology* 4:70-75.

Nilan, R.A. and S.E. Ullrich
1993 Barley: Taxonomy, Origin, Distribution, Production, Genetics, and Breeding. In *Barley: Chemistry and Technology*, edited by Alexander W. MacGregor and Rattan S. Bhatty, pp. 1-30. American Association of Cereal Chemists, Inc., St. Paul.

Noe, Kenneth W.
2001 *Perryville: This Grand Havoc of Battle.* University Press of Kentucky, Lexington.

Noël Hume, Ivor
1969 *A Guide to Artifacts of Colonial America.* Alfred A. Knopf, New York.

Olsen, Stanley J.
1964 Mammal remains from archaeological sites. *Papers of the Peabody Museum of Archaeology and Ethnology*, 56(1).

O'Malley, Nancy
1999 *The Civil War in Kentucky: Archaeological Investigations at Ft. Duffield, West Point, Hardin County, Kentucky.* Archaeological Report No. 418. Program for Archaeological Research, University of Kentucky, Lexington.

Orr, David G.
2006 Cabin in Command: The City Point Headquarters of Ulysses S. Grant. In *Huts and History: The Historical Archaeology of Military Encampment During the American Civil War,* edited by Clarence R. Geier, David G. Orr, and Matthew B. Reeves, pp. 244-262. University Press of Florida, Gainesville.

Oswald, Adrian, R. J. C. Hildyard and R. G. Hughes
1982 *English Brown Stoneware 1670-1900.* Faber & Faber, London.

Panati, Charles
1987 *Panati's Extraordinary Origins of Everyday Things.* Harper & Row, New York.

Panshin, A.J. and Carl de Zeeuw
1970 *Textbook of Wood Technology*. 3rd ed. McGraw-Hill, New York.

Penn, William A.
1995 *Rattling Spurs and Broad-Brimmed Hats.* Battle Grove Press, Midway, Kentucky.

Pitkin, Thomas M.
1965 *Grant the Soldier*. Acropolis Books, Washington.

Polak, Michael
1994 *Bottles: Identification and Price Guide.* Avon Books, New York.

Price, Cynthia R.
1979 *19th Century Ceramics in the Eastern Ozark Border Region.* Center for Archaeological Research, Southwest Missouri State University Monograph Series 1, Springfield.

Purdue, James R., Bonnie W. Styles, and M. C. Masulis
1989 Faunal Remains and White-Tailed Deer Exploitation from a Late Woodland Upland Encampment: the Boschert site (23SC609), St. Charles County, Missouri. *Midcontinental Journal of Archaeology*, 14(2):146-163.

Quertermous, Grant
1999 Summary of Excavations at Fort Star (15Lv207): Archaeology of a Union Civil War Fortification. *Ohio Valley Historical Archaeology* 14(1999):89-94.

Ramsay, John
1939 *American Potter & Porcelain.* Hall, Cushman & Flint, Boston.

Reeves, Matthew B. and Clarence R. Geier
2006 Under the Forest Floor: Excavations at a Confederate Winter Encampment, Orange, Virginia. In *Huts and History: The Historical Archaeology of Military Encampment During the American Civil War,* edited by Clarence R. Geier,

David G. Orr, and Matthew B. Reeves, pp. 194-215. University Press of Florida, Gainesville.

Reitz, Elizabeth J. and Elizabeth S. Wing.
1999 *Zooarchaeology*. Cambridge University Press, Cambridge.

Rennick, Robert M.
1987 *Kentucky Place Names.* University Press of Kentucky, Lexington.

Restieux, Captain Edward
1865 Report on Camp Dick Robinson Cemetery. General Correspondence and Reports related to National and Post Cemeteries, 1865-1890, Jefferson Barracks to Kentucky. Records of the Quartermaster General, Records related to function: cemeterial, 1828-1979. National Archives Records Administration, Record Group 92, Entry 576, Box 34, File 81. Washington, D.C.

Rick, Torben C., Jon M. Erlandson, Michael A. Glassow, and Modonna L. Moss
2002 Evaluating the Economic Significance of Sharks, Skates, and Rays (Elasmobranchs) in Prehistoric Economies. *Journal of Archaeological Science* 29:111-112.

Riley, Thomas J., Richard Edging and Jack Rossen
1990 Cultigens in Prehistoric North America: Changing Paradigms. *Current Anthropology* 31(5):525-541.

Ritchie, William A.
1980 *The Archaeology of New York State*. Harbor Hill Books, Harrison, New York.

Roberts, Katherine M.
1993 Appendix 3: Arbuckle's Fort (46GB13) Plant Remains. In *Forting-Up on the Greenbrier: Archaeological Investigations of Arbuckle's Fort, 46GB13, Greenbriar County, West Virginia*, by W. Stephen McBride and Kim A. McBride, pp. A36-A40. Report No. 312. Program for Cultural Resource Assessment, University of Kentucky, Lexington.

Roenke, Karl G.
1978 Flat Glass: Its Uses as a Dating Tool for Nineteenth Century Archaeological Sites in the Pacific Northwest and Elsewhere. *Northwest Anthropological Research Notes Memoir 4*, Department of Sociology and Anthropology, University of Idaho, Moscow.

Rossen, Jack
1988 Botanical Remains. In: *Muir (15JS86): An Early Fort Ancient Village in Central Kentucky*, by Christopher A. Turnbow and William E. Sharp. Report No. 171. Program for Cultural Resource Assessment, University of Kentucky, Lexington.

1991 Kentucky Landscapes: The Role of Environmental Reconstruction in Settlement Pattern Studies. In *The Human Landscape in Kentucky's Past: Site Structure and Settlement Patterns*, edited by Charles Stout and Christine K. Hensley, pp. 1-7. Kentucky Heritage Council, Frankfort.

1995a Botanical Remains. In *Phase II Archaeological Investigations of Site 15Lo168, Logan County, Kentucky.* Appendix B. Wilbur Smith Associates, Lexington.

1995b Archaeobotanical Remains. In *Phase II Testing of 15McL137 at the KY 81 Bridge Overthe Green River at Calhoun-Rumsey, McLean County, Kentucky*, by W. Stephen McBride and James P. Fenton, pp. 1230-141. Wilbur Smith Associates, Lexington.

2003 The Antebellum and Civil War Archaeobotany of Camp Nelson, Kentucky. In *From Supply Depot to Emancipation Center, the Archaeology of Camp Nelson, Kentucky*, edited by W. Stephen McBride, Susan C. Andrews, J. Howard Beverly, and Tracey A. Sandefur, pp. E.1-42. Wilbur Smith Associates, Lexington.

2004 Intermingled Plant Use at the Fort Ancient/Mississippian Boundary: Botanical Remains from the Eva Bandman Site (15JF668), Jefferson County, Kentucky. Report submitted to Program for Archaeological Research, University of Kentucky, Lexington.

2005 Archaeobotanical Remains from the Dry Branch Creek Site, 15Me62. In *Phase III Investigations at Dry Branch Creek, Site 15Me62*. Item No. 7-1012.00, by Melody Pope, A. Gwynn Henderson, Elizabeth N. Mills, Jack Rossen, Emanuel Breitburg, Nicholas P. Herrmann, and James P. Fenton, pp. 6.1-16. Wilbur Smith Associates, Lexington.

2007 Archaeobotanical Remains from the Barkley Plantation Site (15JS150), Jessamine County, Kentucky. Report submitted to AMEC Environmental Consultants, Louisville.

n.d.a. Archaeobotanical Remains from the Kentucky History Center Site (15FR115), Frankfort. Report submitted to the Kentucky Archaeological Survey, Lexington.

n.d.b. Archaeobotanical Remains from the Louisville Convention Center Site (15JF646). Report submitted to the Kentucky Archaeological Survey, Lexington.

n.d.c. Archaeobotanical Remains from the Shop Hollow Dump (15Lr40), Letcher County, Kentucky. Report submitted to Program for Cultural Resource Assessment, University of Kentucky, Lexington.

Rossen, Jack and Richard Edging
1987 East Meets West: Patterns in Kentucky Late Prehistoric Subsistence. In *Current Archaeological Research in Kentucky, Volume One,* edited by David Pollack, pp. 225-238. Kentucky Heritage Council, Frankfort.

Rossen, Jack and James Olson
1985 The Controlled Carbonization and Archaeological Analysis of Southeastern U.S. Wood Charcoals. *Journal of Field Archaeology* 12:445-456.

Rupp, Rebecca
1987 *Blue Corn and Square Tomatoes*. Storey Communications, Pownal, Vermont.

Sanderson, Capt. James M.
1862 *Camp Fires and Cooking; or Culinary Hints for the Soldier*. Government Printing Office, Washington.

Scarry, C. Margaret
1993 Appendix B: Food Plant Remains from the Ashland Privy. In *Archaeology at Henry Clay's Ashland Estate: Investigations of the Mansion, Yard, and Privy,* by W. Stephen McBride, pp. 101-111. Archaeological Report 281, Program for Cultural Resource Assessment, University of Kentucky, Lexington.

Schmid, Elizabeth
1972 *Atlas of Animal Bones for Prehistorians, Archaeologists and Quaternary Geologist*. Elsevier Publishing Company, Amsterdam.

Schmitt, Dave N. and Karen D. Lupo
1995 On Mammalian Taphonomy, Taxonomic Diversity, and Measuring Subsistence Data in Zooarchaeology. *American Antiquity*, 60(3):496-514.

Shipman, Patricia, G. Foster, and Margaret Schoeninger
1984 Burnt Bones and Teeth: an Experimental Study of Color, Morphology, Crystal Structure and Shrinkage. *Journal of Archaeological Science,* 11:307-325.

Silver, I. A.
1969 The Aging of Domestic Animals. In *Science in Archaeology: A Survey of Progress and Research*. edited by Don Brothwell, Eric Higgs, and Grahame Clark, pp. 283–302. Thames and Hudson, Bristol.

Smart, Tristine Lee and Ellen S. Hoffman
1988 Environmental Interpretation of Archaeological Charcoal. In *Current Paleoethnobotany: Analytical Methods and Cultural Interpretations of Archaeological Plant Remains,* edited by Christine A. Hastorf and Virginia S. Popper, pp.167-205. University of Chicago Press, Chicago.

Smith, H.R. Bradley
1975 *Chronological Development of Nails, Blacksmith's and Farrier's tools at Shelburne Museum*. Shelburne Museum Bulletin No. 7. Shelburne, Vermont.

Smith, Samuel D.
1994 Excavation Data for Civil War Era Military Sites in Middle Tennessee. In *Look to the Earth: Historical Archaeology and the American Civil War,* edited by Clarence R. Geier, Jr. and Susan E. Winter. University of Tennessee Press, Knoxville.

Snyder, Lynn
1989 Vertebrate Faunal Materials from Sites 38CH946 and 38CH965, 1988 Excavations. In *"The Best Ever Occupied …" Archaeological Investigations of a Civil War Encampment on Folly Island, South Carolina,* Edited by J. B. Legg and S. D. Smith, pp. B1-23. Research Manuscript Series No. 209. South Carolina Institute of Archaeology and Anthropology, Columbia.

South, Stanley
1977 *Method and Theory in Historical Archaeology.* Academic Press, New York.

Spivey, Towana editor
1979 *A Historical Guide to Wagon Hardware & Blacksmith Supplies.* Contributions of the Museum of the Great Plains No. 9. Museum of the Great Plains, Lawton, Oklahoma.

Sprague, Rodrick
2002 China or Prosser Button Identification and Dating. *Historical Archaeology* 36(2):111-127.

Standler, Ronald B.
2006 Shotshell Cartridge History. http://www.rbs0.com/shotshell.htm. Accessed January 25, 2008.

Stottman, M. Jay
1996 *Out of Sight, Out of Mind: An Archaeological Analysis of the Perception of Sanitation*. Unpublished Master's Thesis, University of Kentucky, Lexington.

Sussenbach, Tom
2000 *Phase II Archaeological Investigations at the Vardeman Homeplace Site (15Li88) in the Proposed Cedar Creek Lake Impoundment Area, Lincoln County, Kentucky.* Report of Investigations No. 57. Sterling Archaeological Consultants, Winchester.

Thomas, Frederick
1988 Economic Scaling of the Late nineteenth and Early twentieth Century Ceramics. In *Historic Archaeology in Illinois,* edited by Charles Rohrbaugh and Thomas

Emerson pp. 55-66. Midwestern Archaeological Research Center Research Report 8.

Tune, Teresa W.
1991 Camp Nelson Vertebrate Fauna. In *Archaeological Investigations at Camp Nelson: A Union Quartermaster Depot and Hospital in Jessamine County, Kentucky*, edited by W. S. McBride and W. Sharp, pp. 187-192. Report No. 241. Program for Cultural Resource Assessment, University of Kentucky, Lexington.

Turnbow, Christopher A. and William E. Sharp
1988 *Muir (15JS86): An Early Fort Ancient Village in Central Kentucky.* Report No. 171. Program for Cultural Resource Assessment, University of Kentucky, Lexington.

U.S. Department of Agriculture
1948 *Woody Plant and Seed Manual*. Miscellaneous Publication No. 654, Washington, D.C.

Wall, Diana diZarega
1994 *The Archaeology of Gender, Separating the Spheres in Urban America.* Plenum Press, New York.

Wells, Tom
1998 Nail Chronology: The Use of Technologically Derived Features. *Historical Archaeology* 32(2):78-99.

Whitehorne, Joseph W. A.
2006 Blueprint for Nineteenth-Century Camps: Castramentation, 1778-1865. In *Huts and History: The Historical Archaeology of Military Encampment During the American Civil War,* edited by Clarence R. Geier, David G. Orr, and Matthew B. Reeves, pp. 28-50. University Press of Florida, Gainesville.

Wiebe, G.A.
1979 Introduction of Barley into the New World. In *Barley,* pp. 2-9. U.S.D.A. Agricultural Handbook 338, Washington, D.C.

Wiley, Bell I.
1995 *Life of Billy Yank: The Common Soldier in the Civil War.* Reprint [1958] Louisiana State University, Baton Rouge.

Winter, Susan E.
1994 Civil War Fortifications and Campgrounds on Maryland Heights, the Citadel of Harpers Ferry. In *Look to the Earth: Historical Archaeology and the American Civil War,* edited by Clarence R. Geier Jr. and Susan E. Winter, pp. 101-119. University of Tennessee Press, Knoxville.

Wolfe, Bernard
1945 *Plastics: What Everyone Should Know*. Bobbs-Merrill Co., New York.

Woodhead, Henry editor
1998 *Echoes of Glory: Arms & Equipment of the Union.* Time-Life Books, Alexandria.

Young, Amy L.
1993 Faunal Remains. In *The Sevierville Hill Site: A Civil War Union Encampment on the Southern Heights of Knoxville, Tennessee,* edited by C. Bentz and Y.W. Kim, pp. 111-129. Report of Investigations No. 1. University of Tennessee Transportation Center, Knoxville.

Ziegler, Percival T.
1952 *The Meat We Eat.* The Intestate Printers and Publishers, Danville, Illinois.

APPENDIX A
KAS INVESTIGATIONS AT SITE 15Gd89

INTRODUCTION

Archaeological investigations were conducted at Site 15Gd89 in conjunction with the KAS project. The site consists of the extant house and associated outbuildings, which date from the late nineteenth to the mid-twentieth centuries and were associated with the primary occupation of the property. However, foundations of buildings associated with a mid-nineteenth century occupation were identified during the Phase II investigations at the site. Although extensive excavations were conducted and some intact features were identified during the Phase II project, it was determined that the site was not eligible for listing on the National Register for Historic Places and no further work was recommended (Anderson and Faberson 2006). Additional striping was conducted at the site during the Phase III investigations to determine if any additional intact features were associated with the mid-nineteenth century and Civil War occupation of the property. The KAS excavations were focused on yard areas around the extant hHouse and near the location of intact historic foundations identified during the Phase II investigations (Figure 48).

Figure 48. Excavation of a Block near the house.

RESULTS

A total of six excavation blocks were placed the yards and fields around and behind the extant house (Table 41) (Figure 49). A total of two soil profiles was identified during the excavations. Blocks 2 and 3, representing the yard area closest to the house, consisted of a 35 cm thick dark brown silt loam with pockets of gray ashy loam topsoil midden and a yellow brown silt clay subsoil. The soil profile identified in Blocks 1, 4, 5, and 6 in fields north, south, and west of the house consisted of a 30 to 40 cm thick slightly mottled brown silt clay loam plowzone and a yellow brown silt clay subsoil. An artifact midden was identified within the topsoil of Blocks 2 and 3. A moderate amount of early to late twentieth century artifacts were observed within this midden, but not collected. These artifacts included unidentified metal, plastics, white granite ceramics, stoneware, and bottle glass. No artifacts were identified or recovered from the backdirt of the other excavation blocks.

Table 41. Excavation Blocks at Site 15Gd89.

Block	Size	Depth	Location
1	15 x 10 m	30-50 cm	Field west of house
2	12 x 10 m	10-60 cm	Yard north of house
3	8 x 5 m	50-60 cm	Northwest corner of house
4	15 x 10 m	30-40 cm	Field north of house
5	30 x 10 m	40 cm	Field west of house
6	35 x 10 m	40 cm	Field south of house

Three features were identified during the excavations, including drainage lines, a water cistern, and drain/cesspool. Terra cotta drain pipes were identified traversing through the middle of Block 1 (Figure 49 and 50). These pipes are typical of those made during the early to mid-1900s and were most likely associated with field drainage (Deiss 1992). No artifacts were observed or recovered in association with the pipes.

A large concrete lined water cistern was identified in Block 2 just north of the extant house (Figures 48 and 51). It was circular in shape and measured 3.75 m in diameter. Due to the use of concrete in its construction, it was determined that it most likely dated no earlier than the early 1900s and thus, was not investigated further.

A small brick feature was identified 50 cm northeast of the cistern 50 cm below the ground surface (Figures 49 and 52). It was constructed of dry-laid brick, laid on the edges three courses deep and arranged in a square with a void in the center (Figure 52). The void in the middle of the feature was filled with dark brown silt loam. No artifacts were recovered from this fill. The bricks had been laid upon a large limestone slab that measured 97 x 67 cm and was identified 100 cm below the ground surface (Figure 53). A smaller 28 x 26 cm piece of limestone was laid adjacent to the east side of the large stone.

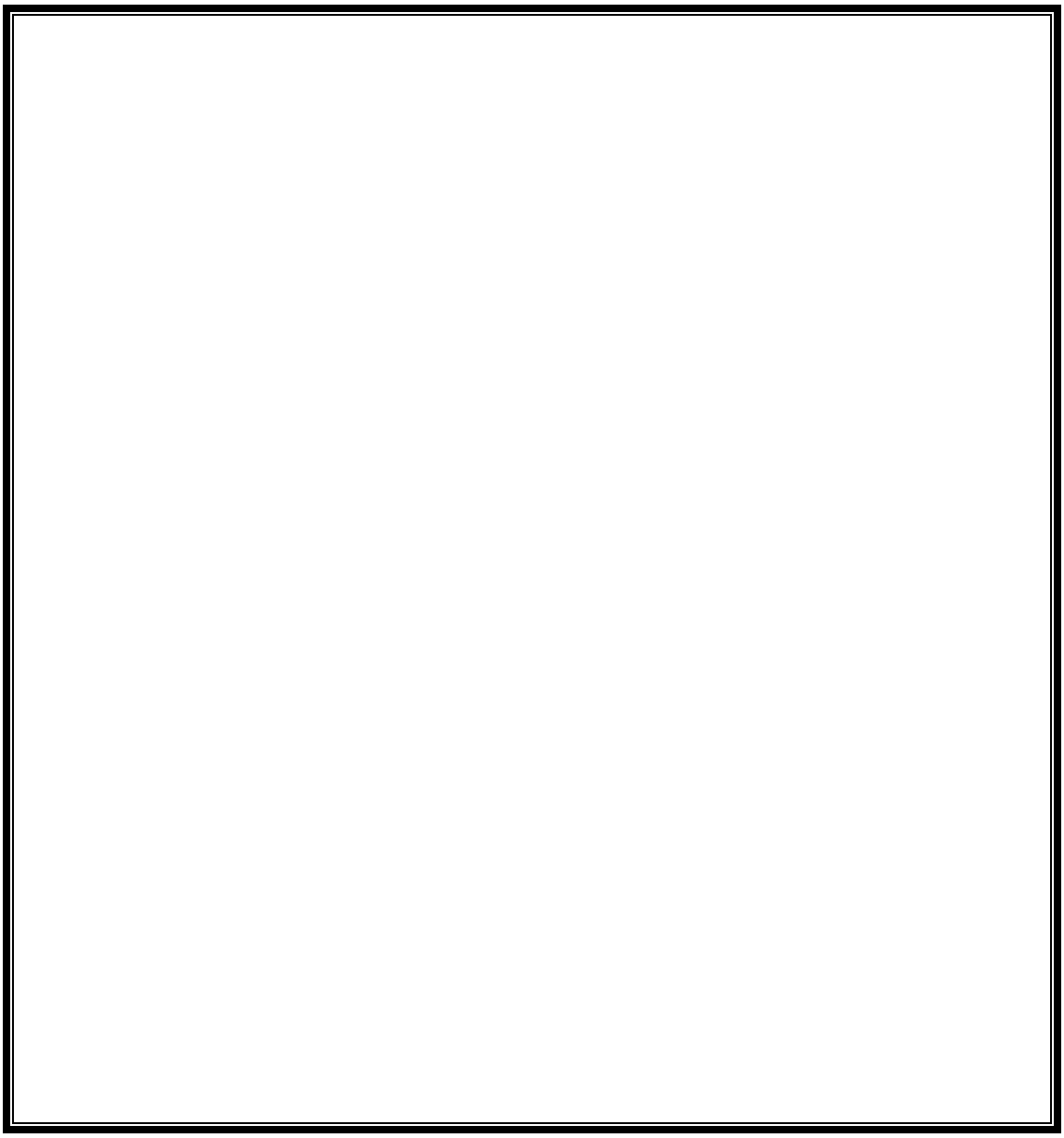


Figure 49. Map Showing the Locations of KAS Excavations at Site 15Gd89.

Figure 50. Terra Cotta Drain Pipe Identified in Block 1.

Figure 51. The Outline of a Circular Concrete Cistern.

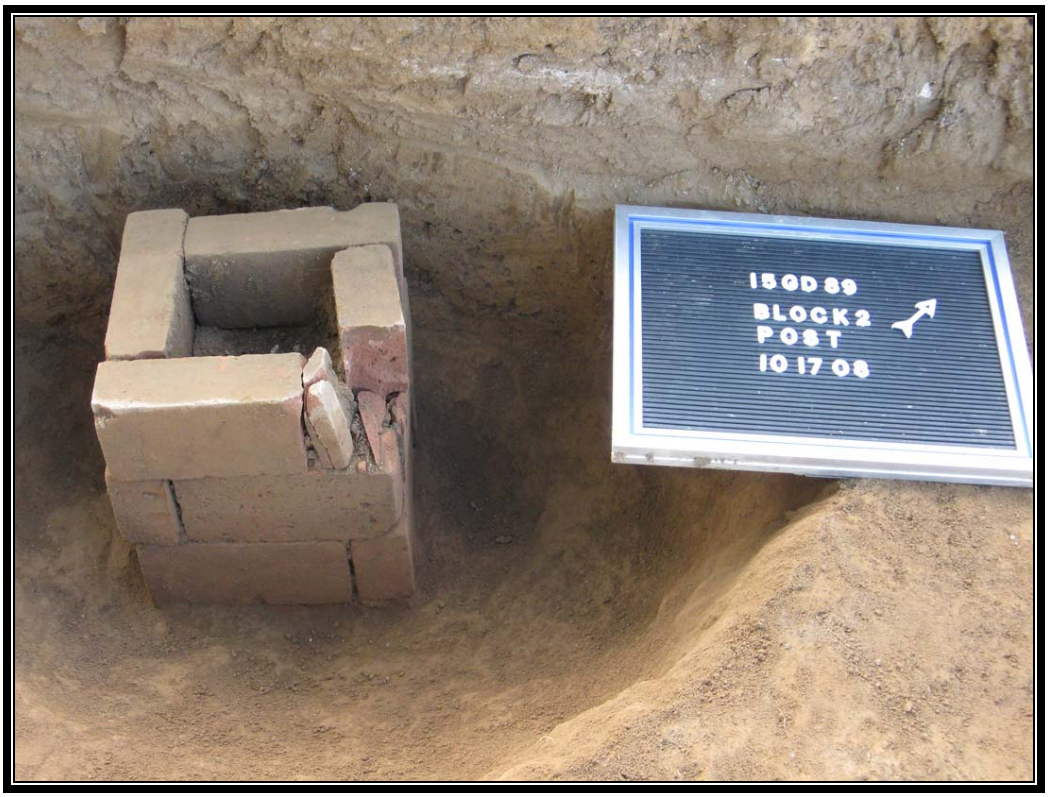


Figure 52. Brick Feature Identified in Block 2 near Cistern.

Figure 53. Stone Slab Identified under Brick Feature.

Under these stones was a small shallow U-shaped vault lined in limestone (Figure 54). This vault was constructed of small dry-laid limestone blocks one course deep with three walls and an open side towards the cistern to the west. The inside of the vault was filled with a mottled dark brown silt clay that extended to a depth of 17 cm below the top of the stone walls into an orange brown silt clay subsoil. At the interface of the fill and the subsoil were the remains of a stoneware pipe and some compacted soil where the pipe had extended. The pipe extends from the wall of soil adjacent to the cistern at the open end of the vault across the middle of the vault terminating at the east side. It appears that the pipe connected with the adjacent cistern. The excavated wall at the open end of the vault adjacent to the cistern show a linear area of mottled brown silt clay loam from top to bottom at the pipe, representing the trench for the placement of the pipe (Figure 54). This trench was surrounded by orange brown silt clay subsoil.

Figure 54. Stone Vault Feature Identified under the Stone Slab.

A total of 27 artifacts was recovered from the fill inside the vault feature. They included fragments of a stoneware crock, drainpipe, window, bottle, animal bone, plastic, and unidentified metal (Table 42). Diagnostic artifacts include Albany slip glazed stoneware (1805 to 1920), but was more common after the 1850s, applied tooled lip and two-piece molded bottle (1840 to 1913), and plastic and Portland cement which are twentieth century materials (Cleland 1983; Newman 1970; Ramsey 1939; Wolfe 1945). The presence of the later artifacts indicates the deposit was made sometime in the

twentieth century. However, the presence of artifacts dating to the 1800s suggests that some earlier deposits may have been disturbed from the deposition.

The function of this feature is unknown however it appears to be associated with the cistern and seems to have a pipe that drains into it. This situation suggests that at least the vault portion of the feature was most likely a cesspool, perhaps to serve as an overflow drain for the cistern. Based on the soil profile, it appears that the pipe was added later and based on the deposition of the fill in the vault it was likely during the twentieth century. The function of the brick feature on top of the vault also is unknown however the void inside the brick could have once accommodated a pipe that led to vault from the ground surface. It is possible that the vault was older than the cistern, as some nineteenth century artifacts were recovered from the fill. Perhaps it was originally a cesspool vault that was modified to be used with the cistern later, such as for pipes to fill or drain the cistern.

Table 42. Artifacts Recovered from Feature 3, Stone Vault.

Artifact Description	Frequency
Bone, faunal remains	7
Ceramic, buff stoneware, Albany glaze, crock	2
Ceramic, drainware, drainage pipe	2
Cement, Portland	1
Glass, medicine bottle, applied tooled, two-piece molded, blue tint	1
Glass, bottle, body, blue tint	2
Glass, window, green tint	2
Metal, unidentified	8
Plastic, unidentified, pink	2
Total	**27**

CONCLUSIONS

The KAS excavations at Site 15Gd89 around the house did not locate any intact features associated with the mid-nineteenth century or Civil War occupations of the site. Three features and an artifact midden associated with early to late twentieth century occupations were identified. One of these features was an interesting cesspool or drain associated with a cistern. It represents an unusual component to the water and drainage system on the property. Furthermore, it may have original been an earlier feature that was later modified and reused. Overall, Site 15Gd89 has little to no intact archaeological resources, especially of the mid nineteenth century and Civil War periods. The archaeological deposits at Site 15Gd89 are primarily disturbed or representative of later occupations.

APPENDIX B:
PREHISTORIC MATERIALS RECOVERED

By
Matthew J. Davidson

A total of 84 prehistoric chipped stone artifacts was recovered from Camp Dick Robinson. The chipped stone assemblage consists of flakes and flake fragments (n=60), projectile points and point fragments (n=9), edge modified/retouched flakes (n=6), a blade-like flake (n=1), bifaces and biface fragments (n=4), and cores and core fragments (n=4).

ANALYTICAL METHODS

Current approaches to the analysis of lithic artifacts include a study of the step-by-step procedures utilized by prehistoric knappers to make tools. The term used to describe this process is referred to as *chaine operatoire* or reduction strategy (Grace 1989, 1993, 1997; Tixier and Roche 1980). The analysis of stone tool assemblages provides insights into the processes by which prehistoric flintknappers produced their implements. It also enables archaeologists to characterize the technical traditions of specific prehistoric cultural groups (Grace 1997).

The production of any class of stone tools involves a process that begins with the selection of a suitable raw material. The basic requirements of any raw material to make flaked stone artifacts include the following: 1) it can be easily worked into a describable shape; and 2) sharp, durable edges can be produced as a result of flaking (Grace 1997). Once an adequate source is located and a raw material is selected, the process of tool manufacture begins. Two different strategies can be utilized. One involves the reduction of a material block directly into a tool form, like a biface, or the production of a core. The second involves the preparation of a block of raw material so that flakes or blanks of a suitable shape and size can be detached. These blanks are then flaked by percussion or pressure flaking into a variety of tool types, including scrapers, bifacial knives, and projectile points.

Experimental work has shown that the former manufacturing strategy, involving a raw material block, begins with the detachment of flakes with cortical or natural surfaces. This is accomplished by direct percussion, usually involving a hard hammer (stone) that more effectively transmits the force of the blow through the outer surface. Having removed a series of flakes and thus created suitable striking platforms, the knapper begins the thinning and shaping stage. The majority of the knapping is conducted with a soft hammer (antler billet). The pieces detached tend to be invasive, extending into the mid-section of the biface. A later stage of thinning may follow, which consists of further platform preparation and the detachment of invasive flakes with progressively straighter profiles in order to obtain a flattened cross-section. By the end of this stage, the biface has achieved a lenticular or bi-convex cross-section. Finally, the tool's edge is prepared

by a combination of fine pressure work and pressure flaking if desired. It should be noted that flakes derived from biface reduction are sometimes selected for bifacial, unifacial, and expedient tool manufacture.

The second type of manufacturing trajectory, utilizing a flake or blank, begins with core reduction and the manufacture of a suitable flake blank. The advantages of employing a flake blank for biface reduction include the following: 1) flakes are generally light-weight and can be more easily transported in large numbers than blocks of material; and 2) producing flakes to be used for later biface reduction allows the knapper to assess the quality of the material, avoiding transport of poorer-grade chert.

The initial series of flakes detached from the flake blank may or may not bear cortex. However, they will display portions of the original dorsal or ventral surfaces of the flake from which they were struck. It should be noted that primary reduction flakes from this manufacturing sequence could be entirely noncortical. Therefore, the presence of cortex alone to define initial reduction is of limited value. Biface reduction on a flake involves the preparation of the edges of the piece in order to create platforms for the thinning and shaping stages that follow. In most other respects, the reduction stages are similar to those described above, except that a flake blank often needs additional thinning at the proximal or bulbar end of the piece to reduce the pronounced swelling and achieve a thinned final product.

FORMAL TOOLS

The identification of formal and informal tools is useful in addressing questions involving the trajectory of reduction and the general activities undertaken by the prehistoric occupants of a site(s). Formal tools are defined as implements manufactured for a specific task, with a standard morphology. In this case, projectile points and point fragments (n=9) represent the formal tools recovered from Camp Dick Robinson. Analysis of the prehistoric formal flaked stone tool assemblage was based on comparisons of previously defined types from Justice (1987). Formal tools represent 10.7 percent of the chipped stone assemblage.

Projectile Points

A total of five diagnostic projectile points and point fragments was recovered. Each specimen was examined for size and shape, resharpening methods, flaking characteristics, blade and haft morphology, presence of basal thinning or grinding, notch flake scars, type of fracture(s) and material type. Length, width, and thickness measurements (in millimeters) were also taken for each projectile point. “Length” was determined, using the maximum length along the axis of the point. “Width” was established using the position of maximum width that is perpendicular to the long axis of the point. The “Thickness” measurement is reflected by the point of maximum thickness on a plane that is perpendicular to that of the width.

Specimens were assigned to previous defined projectile point types if they exhibited all of the attributes that characterized a particular type. Information presented for these projectile points includes frequency, chert type, and temporal affiliation.

Lowe Cluster (n=5)

Two complete (Figure 55a, b), two nearly complete (Figure 55c, d), and one fragmentary (Figure 55e) expanded stem projectile points were recovered from Camp Dick Robinson. Morphologically, the two complete specimens were most similar (Figure 55). One (Figure 55a) was produced from Grier chert and the other (Figure 55b) was produced from Muldraugh chert. Both exhibited bi-convex cross sections, maximum lengths of 35.4 mm and 31.1 mm, respectively; maximum widths of 22.7 mm and 23.5 mm, respectively; and maximum thicknesses of 7.0 and 7.7 mm, respectively. Blade margins averaged 24.4 and 21.2 mm in length, respectively; and notch depths averaged 2.5 and 2.6 mm in depth, respectively. Their stems measure 13.3 and 12.9 mm in length, respectively; and 20.7 and 20.2 mm, respectively, along the basal edge. The basal edges of both specimens are convex and they exhibit basal thinning. The lateral margins and basal edges of these specimens were lightly ground. Both specimens exhibit step fracturing and small pressure flake scars indicative of resharpening. Figure 55b was heavily resharpened.

Figure 55c was manufactured from Grier chert and a small portion of the tip and one basal ear are missing. It exhibits a plano-convex cross-section and has a maximum thickness of 7.4 mm. The maximum width (measured at the shoulders) is 23.1 mm. Due to the distal fracture, a maximum length measurement was not taken. The hafting element measured 13.3 mm in width. Average notch depth is 2.0 mm. Broad percussion flake scars can be observed on both faces, while finer, smaller pressure flakes scars are evident along the blade margins and along the basal edge. Numerous step fractures observed along both blade margins indicate heavy resharpening.

While Figure 55a and Figure 55c exhibit the general characteristics of Justice's (1987:208) Lowe Cluster, Figure 55d exhibits a set of attributes consistent with the Lowe Flared Base variety (Justice 1987:212-213). These consist of serration from resharpening, a trianguloid hafting element, a straight basal edge and straight blade edges. Figure 55d was produced from Boyle chert and is missing its tip. This projectile point exhibits a bi-convex cross-section. The maximum width of this projectile point is 24.3 mm and the maximum thickness is 8.1 mm. Deep and wide percussion flake scars on both faces of the triangular blade and fine pressure flake scars were used to work the blade margins. This projectile was lightly serrated along both blade margins. Average notch depth was 3.0 mm. The stem has been ground along the basal margin and measures 15.5 mm in length and 23.5 mm in width. Numerous step fractures along the blade margins and grinding at the shoulder/haft juncture indicate resharpening. One shoulder of this projectile point is less prominent, suggesting heavier resharpening on this side.

Specimen e, manufactured from Boyle chert is the most fragmentary Lowe Cluster point recovered from the site; it is missing its tip and one shoulder (Figure 55).

This projectile point exhibits a flat cross section and weighs 8.8 grams. Most metric measurements were not possible due to its fragmentary condition, however the stem measured 13.9 mm in length and 22.9 mm in width. The intact notch measures 4.6 mm in depth. The basal edge is excurvate and is ground, as are the lateral margins of the stem. Many deep and broad percussion flake scars are visible on the blade surfaces, while pressure flake scars are few along the intact blade margins and more frequently used to finish the base. Several step fractures are evident on the blade margins, which may suggest the projectile point was used before it was discarded.

The attributes observed on specimens a, b, c, and e are consistent with that of the Lowe Cluster designated by Justice (1987:208). Lowe Cluster projectile point types include the Bakers Creek, Steuben Expanded Stem, Lowe Flared Base, and Chesser Notched types. Specimen d exhibited a set of characteristic consistent with Lowe Flared Base. According to Justice (1987:208-214), dates of ca. A.D. 100-800, spanning the Middle Woodland through early Late Woodland subperiods, are attributed to these projectile points.

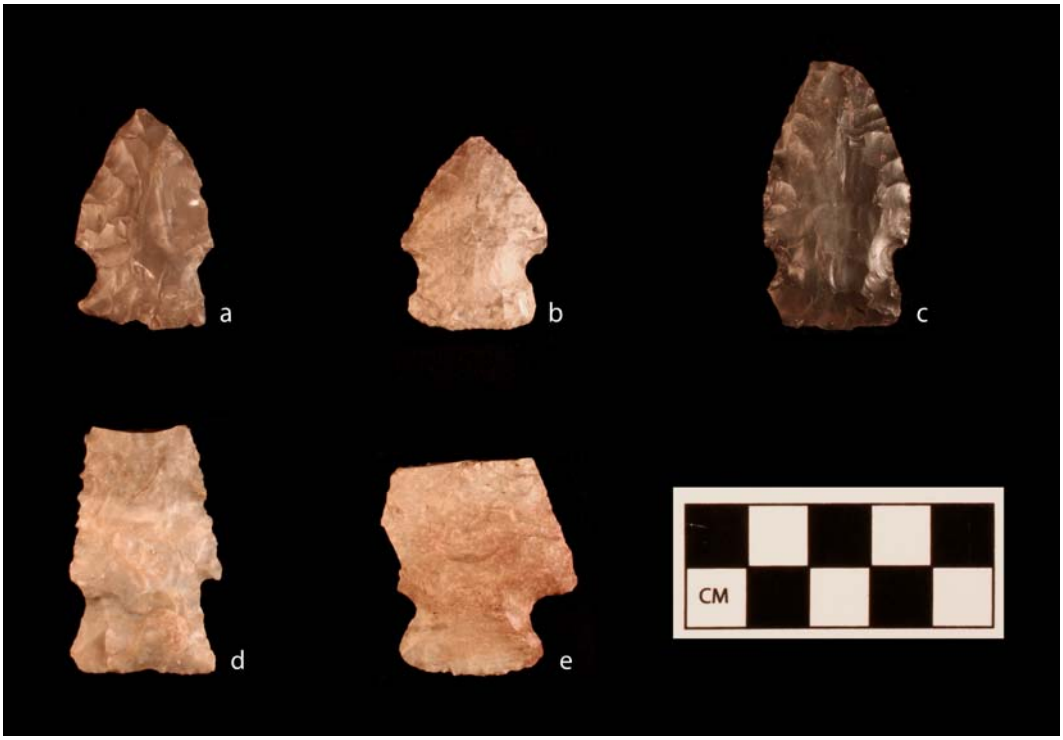


Figure 55. Lowe Cluster Points Recovered from Camp Dick Robinson.

Projectile Point Fragments (n=4)

Three projectile point specimens were too fragmented and assignment to known types was not feasible due to their small size. These specimens are represented by distal fragments (n=2) and proximal fragments (n=2). Two of these point fragments were manufactured from unknown chert types and two were burned and material type also was unidentifiable.

INFORMAL TOOLS

Informal chipped stone tools are those artifacts that were manufactured for a specific task at, or shortly before the point at which they are to be used. These tools either show evidence of utilization without modification, or minimal modification through nominal retouching. Informal tools (n=7) represent 8.3 percent of the chipped stone assemblage.

Edge Modified/Retouched Flakes (n=6)

The retouched flakes recovered from Camp Dick Robinson were produced from Grier chert (n=4). The possible use of these retouched flakes may be suggested by Wilmsen's (1968) examination of the measurement of edge angles as an indicator of tool function. He conducted experiments on edges with different angles. His results indicated that edges with angles between 35 and 45 degrees would be most effective at cutting soft material and butchering. Edges with angles between 50 and 75 degrees would be most effective at cutting, scraping, or shaping hard materials, such as bone or wood. Edge angles on the retouched flakes recovered from Camp Dick Robinson range from 60 to 75 degrees, suggesting these artifacts were utilized for a wide variety of tasks, including cutting, scraping or shaping hard materials, such as bone, shell or wood. It was interesting to note that one of the retouched flakes recovered from this site has been retouched on one face and utilized on the other face.

Blade-like Flake (n=1)

The blade-like flake fragment (n=1) recovered from Camp Dick Robinson was produced from Grier chert. The specimen exhibited a distinctive medial ridge on its dorsal surface. However, it lacks the parallel medial margins, prismatic cross-sections, and platform preparation scars that are typical of Middle Woodland (Hopewellian) bladelets. This tool exhibits intentional retouch on both lateral blade margins. Edge angles on this specimen measured 50-60 degrees, indicating these specimens were utilized for cutting plant materials and/or butchering animals.

Bifaces and Biface Fragments (n=4)

Two complete and two fragmentary middle stage bifaces were recovered. A middle stage biface is thinned to the point where projections and irregularities are removed. As a result of this shaping they tend to be thinner than early stage bifaces, and their lateral blade margins are more defined. These specimens appear to have been abandoned during the manufacturing process for reasons discussed below. They were produced from Grier (n=2) Tyrone (n=1) and unidentified (n=1) cherts. The fractured edges on one of the middle stage bifaces are crenulated, suggesting that it may have fractured due to exposure to heat. The other complete biface exhibits numerous small step fractures along the margins and stacking due to hinge fracturing. The middle stage

biface fragments consist of the proximal portions, and most probably were broken during the manufacturing process.

Cores and Core Fragments (n=4)

Three complete cores and one core fragment were recovered from Camp Dick Robinson and were all utilized to detach flakes. The complete cores were made of Tyrone, Tanglewood, and Crab Orchard chert types. The core fragment was produced from Tyrone chert. All of these specimens were multiplatformed and have flakes detached over most of their surface areas. These were freehand cores and the method of flaking appears to have been opportunistic with striking platforms randomly selected during reduction.

DEBITAGE

The French term debitage has two related meanings: 1) it refers to the act of intentionally flaking a block of raw material to obtain its products, and 2) it refers to the products themselves (Grace 1989, 1993). Commonly, the term debitage is used by prehistorians to describe flakes that have not been modified by secondary retouch and make into tools. For the purpose of this analysis, which is based on the research of (Grace 1989, 1993), each type of debitage has been assigned to a specific class. These classes are as follows:

1) Initial reduction flakes: produced from hard hammer percussion; are typically thick; display cortex on all or part of their dorsal surfaces; and have large plain of simple faceted butts (striking platforms).

2) Flakes (Unspecified reduction sequence): applies to those pieces to which a specific reduction sequence cannot be assigned. With these pieces, it is impossible to tell whether they have been detached by simple core reduction or biface manufacture. For example, cortical flakes initially removed from a block of material can appear similar in both core and biface reduction strategies.

3) Biface initial reduction flakes: produced from hard or soft hammer percussion; are typically thick; display cortex on part of their dorsal surfaces; and have large plain or simply faceted butts (striking platforms). These flakes display more dorsal scars than initial reduction flakes.

4) Biface thinning flakes: result from shaping the biface while its thickness is reduced; generally lacking cortex; are relatively thin; and have narrow, faceted butts multi-directional dorsal scars, and curved profiles. Bifacial thinning flakes are typically produced by percussion flaking.

5) Biface finishing or trimming flakes: produced during the preparation of the edge of the tool. These flakes are similar in some respects to thinning flakes,

but are generally smaller and thinner and can be indistinguishable from tiny flakes resulting from other processes, such as platform preparation. Biface finishing flakes may be detached by either percussion or pressure flaking.

6) Chips: described flakes (<1cm in length) that are detached during several different types of manufacturing trajectories. First, they can result from the preparation of a core or biface edge by abrasion, a procedure that strengthens the platform prior to the blow of the hammer. Second, tiny flakes of this type also are removed during the manufacture of tools like endscrapers.

7) Shatter: produced during the knapping process and through natural agents. Naturally occurring shatter is usually the result of thermal action shattering a block of chert. During biface reduction, shatter results from an attempt to flake a piece of chert with internal flaws (fossils) and fracture line. For the purpose of this analysis, shatter is defined as a piece of chert that shows no evidence of being struck by a human (i.e., bulb of percussion and faceted butts [striking platform]), but may nonetheless be a waste product from a knapping episode.

8) Janus Flakes: produced during the initial reduction of a flake blank (Tixier and Roche 1980). The removal of a flake from the ventral surface of a larger flake results in a flake, of which the dorsal surface is completely or partially composed of the ventral surface of the larger flake.

Discussion

Over 40 percent of the flakes recovered from Camp Dick Robinson consist of unspecified reduction sequence flakes (n=25; 41.7 percent) and almost 30 percent were biface thinning and shaping flakes (n=17; 28.3 percent) (Table 43). The remaining specimens were classified as biface initial reduction flakes (n=7; 11.7 percent), shatter (n=7; 11.7 percent), biface finishing or trimming flakes (n=3; 5.0 percent), and an initial reduction flake (n=1; 1.7 percent) (Table 43).

Forty five percent of the flakes recovered from Camp Dick Robinson were associated with biface manufacture (Table 43: Classes 3-5), Shatter represents nearly 13 percent of the assemblage and this class includes angular fragments of chert. The incidence of burning is high, and most of the shatter was badly burned. The burning may have occurred incidentally, or as a result of forest fires that may have taken place at this particular locale during prehistoric or historic times.

The analysis of the debitage from this assemblage indicates that the availability of high quality Mississippian and Devonian cherts found within the region was significant. In addition, the debitage profile from this assemblage suggests that biface reduction was the primary lithic production activity undertaken at this site, although some form of tool maintenance likely took place as well. The paucity of initial reduction flakes suggests that early stage reduction was not carried out at this locale.

Table 43. Flake Types Recovered from Site 15Gd87.

Flake Type	Frequency	Percent
Initial Reduction Flakes	1	1.6
Unspecified Reduction Sequence Flakes	25	41.7
Biface Initial Reduction Flakes	7	11.7
Biface Thinning or Shaping Flakes	17	28.3
Biface Finishing or Trimming Flakes	3	5.0
Chips	0	0.0
Shatter	7	11.7
Janus Flakes	0	0.0
Total	**60**	**100.00**

Lithic Raw Material Identification

Raw material identification was conducted on all lithic debitage, as well as formal, and informal tools recovered from the project area. Raw material types were identified on the basis of physical properties (i.e., color, luster, fracture, and texture), reference to published descriptions (DeRegnaucourt and Georgiady 1998; Ray 2003) and comparisons with chert specimens at the William S. Webb Museum of Anthropology in Lexington**.** A 10X hand lens was used to identify inclusions and to evaluate texture and structure.

Cortex was described as being present or absent in residual (block) or cobble form. The presence of residual or block cortex denotes lithic procurement from primary sources or outcrops, while cobble cortex indicates procurement from secondary sources (i.e., stream gravel bars). Generally, residual cortex is rather coarse, while cobble cortex is smooth and often pitted and/or polished. It was noted that the overwhelming majority of the cortex-bearing specimens recovered from Camp Dick Robinson exhibited cobble cortex, strongly indicating that raw materials were being procured from local streams.

United State Geological Survey quadrangle maps of bedrock geology were consulted to determine naturally occurring chert deposits near Camp Dick Robinson. The Bryantsville Quadrangle (GQ-945) (Wolcott and Cressman 1971) and eight adjacent maps were studied, revealing that all but two chert types recovered at Camp Dick Robinson occur within 10 km of the site. Paoli and Crab Orchard cherts, however, do not occur in bedrock deposits within 10 km of the site. These may have been carried in from nearby deposits in Kentucky or represent locally procured stream deposits. Chert types represented in the Camp Dick Robinson assemblage, (Table 44) include Grier (n=36), Boyle (n=11), Brannon (n=5), Tyrone (n=4), Muldraugh (n=2), Crab Orchard (n=1), Paoli (n=1) and Unidentified (n=23),

Boyle

Boyle chert occurs in Devonian-age deposits in abundant small discoidal masses, cherty masses as much as a few feet thick, nodules, and angular fragments. The color of this chert is highly variable, with a mottled mixture of tan, blue, yellow, gray, and different shades of brown (Ray 2003). Boyle chert can range from earthy to waxy in appearance. It is generally opaque, but can be translucent. Lithic artifacts from Camp Dick Robinson made of Boyle chert (n=11; 13.1 percent) possess this range of colors (Table 44).

Brannon

Brannon chert occurs in Mississippian-age deposits, but is not present in the bedrock near the site. Several artifacts from the assemblage were made from this type of chert (n=5; 6.0 percent) (Table 44). Brannon chert occurs in bedded deposits, has a grainy texture and an earthy luster. Heat treated examples have a slightly waxy texture. The color of this chert ranges from light gray and brownish-gray. Heat treated examples range from reddish-brown and pinkish gray.

Grier

In terms of material type, Grier dominated the lithic assemblage (n=36; 44.0 percent) (Table 44). Blocky deposits of Grier chert occur in Mississippian-age bedrock near the site and this chert generally has a homogenous or swirly appearance. Some examples contain a few white calcareous inclusions with a lenticular or platy shape. This chert ranges from light to dark gray, brownish gray, and black. This chert appears to have been highly knappable, with a medium to high luster and a fine grained texture.

Paoli

Paoli chert (n=1; 1.2 percent) (Table 44) does not outcrop near the site. Paoli occurs in Mississippian-age deposits and us usually found in cobble form, has a medium to high luster, and fine to very fine grained texture. This chert is banded or swirled and may contain combinations of red, brown, orange, yellow, tan, and less often a greenish hue (DeRegnaucourt and Georgiady 1998:154).

Tyrone

Tyrone chert (n=4; 4.8 percent) (Table 44) occurs near the site in blocky form and derives from Devonian-age deposits. This chert has a medium luster and a fine grained texture. Colors range from white and light to dark gray in well defined, homogenous bands. Examples occasionally contain small white calcareous inclusions.

Crab Orchard

Crab Orchard Formation deposits are located to the southeast of the site, but no chert is known to occur in them. Deposits of this chert occur in nodular and blocky form and ranges from low to high luster. This chert (n=1; 1.2 percent) (Table 44) is gray with characteristic bands of jagged, lamellar lines of intermingled lighter and darker grays (DeRegnaucourt and Georgiady 1998:144).

Muldraugh

Muldraugh chert (n=2; 2.4 percent) (Table 44) derives from Mississippian-age deposits and occurs to the southwest of the site in blocky beds. This chert has an earthy to medium luster and is generally mottled in appearance. Color is mixture of gray to dark gray and tan to dark brown with off-white mottling.

Table 44. Lithic Raw Material Types and Frequencies.

Chert Type	Formal Tools	Informal Tools	Bifaces/ Frags.	Cores/ Frags.	Flakes	Frequency	Percent
Boyle	1	0	0	0	10	11	13.1
Brannon	0	0	0	0	5	5	6.0
Grier	2	7	2	0	26	37	44.0
Paoli	0	0	0	0	1	1	1.2
Tyrone	0	0	1	2	1	4	4.8
Crab Orchard	0	0	0	1	0	1	1.2
Muldraugh	2	0	0	0	0	2	2.4
UID	4	0	1	0	18	23	27.3
Totals	**9**	**7**	**3**	**5**	**60**	**84**	**100.0**

SUMMARY

Based on the recovery of Lowe Cluster projectile points, it appears that Camp Dick Robinson was primarily occupied during the early Late Woodland subperiod. The recovery of middle stage bifaces and biface fragments, cores and core fragments indicates that both bifacial and core reduction were the primary lithic manufacturing strategies undertaken by the prehistoric inhabitants of this site.

The Camp Dick Robinson debitage profile indicates that biface and formal tool production may have been one of the primary activities performed by the site's prehistoric flint knappers. Mississippian-age Grier chert appears to have been the preferred lithic raw material. However, other Mississippian-age chert types such as Brannon, and Muldraugh, as well as Devonian-age deposits such as Boyle and Tyrone were utilized at this site. Cortex bearing lithic artifacts from Camp Dick Robinson indicates that chert was nearly always acquired from stream deposits.

The edge modified/retouched flakes recovered from the site were utilized for a wide variety of tasks, including cutting and scraping or shaping hard materials, such as

bone, shell or wood. The large number of projectile points recovered from the site also indicate that hunting, as well as a variety of other tasks were undertaken at the site.

REFERENCES CITED

DeRegnaucourt, Tony and Jeff Georgiady
1998 Prehistoric Chert Types of the Midwest. Occasional Monographs Series of the Upper Miami Valley Archaeological Research Museum, No. 7. Published by Western Ohio Podiatric Medical Center, Greenville.

Grace, Roger
1989 *Interpreting the Function of Stone Tools: The Quantification and Computerization of Microwear Analysis*. B.A.R. International Series No. 474. Oxford University Press, Oxford.

1993 *Use of Expert Systems n Lithic Analysis. Traces et Fonction: les Gestes. Retrouves'*. Eraul 50 (Vol. 2): 389-400, Leige.

1997 The Chaine Operatoire Approach to Lithic Analysis. http://www.hf.uio.no/iakk/roger/lithic.opchainpaper

Ray, Jack H.
2003 *A Survey of Paleoindian Points from the Upper Rolling Fork and Beech Fork Drainage Basins in Central Kentucky*. Research Report No. 1209. Center for Archaeological Research, Southwest Missouri State University, Springfield.

Tixier, J. Inizan, and H. Roche
1980 *Prehistoire de la Pierre Taille*, Vol. 1. Terminologie, Cercle de Reserches et Etude Prehistoriques, Antibes.

Wilmsen, Edwin N.
1968 Functional Analysis of Flaked Stone Artifacts. *American Antiquity* 33(2):156-161.

Wolcott, D.E., and E.R. Cressman
1971 Geologic map of the Bryantsville Quadrangle, Central Kentucky. U.S Geological Survey, Geologic Quadrangle Map GQ-945.