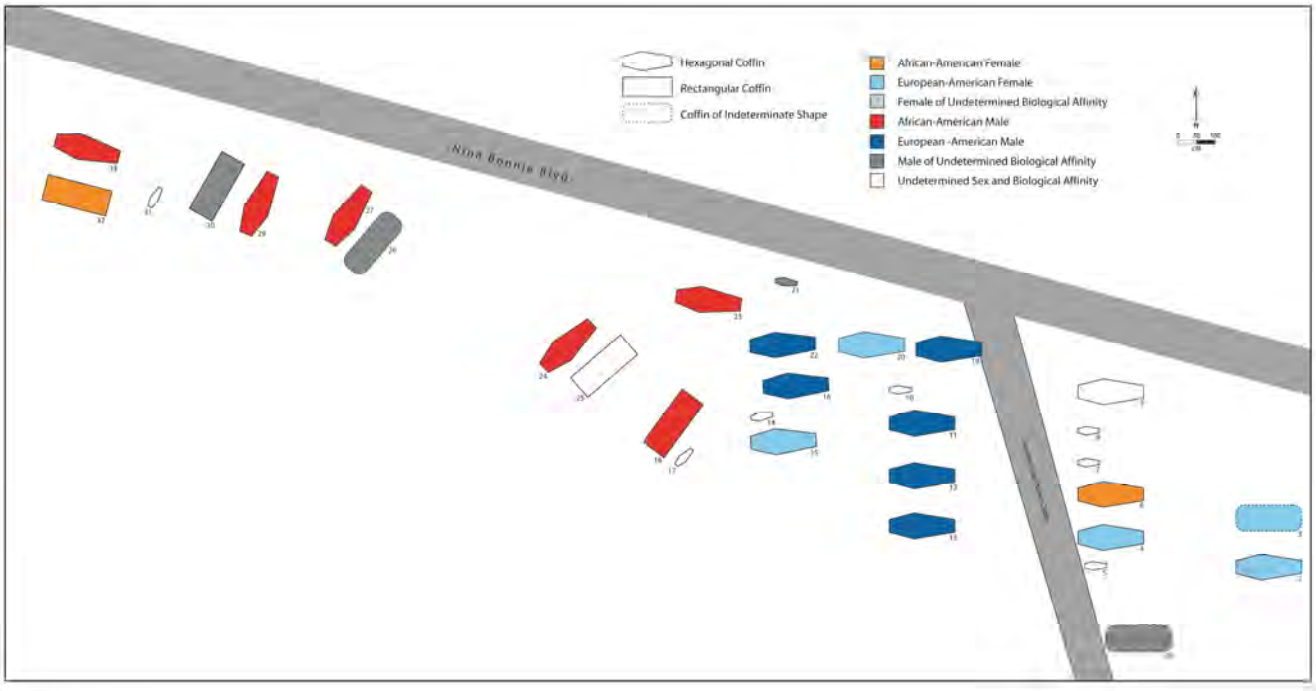
ARCHAEOLOGICAL INVESTIGATIONS OF THE HORSE PARK CEMETERY (15FA315), FAYETTE COUNTY, KENTUCKY

By David Pollack, Peter Killoran, and Kim McBride



With Contributions by Gretchen Dabbs, Christina A. Pappas, and Jack Rossen

Kentucky Archaeological Survey
Jointly Administered By:
University of Kentucky
Kentucky Heritage Council
KAS Report No. 204

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Report Submitted to:
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ABSTRACT

The Horse Park Cemetery (15Fa315) contains the remains of 34 individuals who died sometime between 1800 and 1860. It may have been initially used for the interment of Graves family members, but around 1830 the Graves family appears to have established another family cemetery about 100 m to the east. After the establishment of the new cemetery, the Horse Park Cemetery appears to have primarily been used to inter enslaved African-Americans. Though at death European-Americans and African-Americans appear to have been treated much the same (dressed in their best clothes and placed in a plain wooden coffin), differences in mortality profiles, heights, weights, and pathologies as evidenced in the skeletal populations of these two groups reflects the harsher living and working conditions experienced by the enslaved relative to their owners. Also of note was a difference in grave shaft orientation, with European-American graves being oriented west-east and African-American graves northwest-southeast.

ACKNOWLEDGEMENTS

This project could not have been accomplished without the assistance of several people. Among them are the field director; Eric J. Schlarb, as well as field crew members Steve Ahler, Marcie Venters, A. Gwynn Henderson, M. Jay Stottman, Bruce Manzano, Rick Burdin, Greg Maggard, Jason Hodge, Jason Ross, Kim McBride, Mickey Loughlin, Will Goodman, Donald Handshoe, and Philip Mink. Hayward Wilkirson prepared the line drawings and maps. Dr. George Crothers provided laboratory and storage space within the William S. Webb Museum of Anthropology. Ed Winkle and Barbara Gortman handled all of the administrative details for the project. Joe Meyer of the Finance Cabinet provided project oversight and the staff of the Kentucky Horse Park allowed us access to their files.

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CHAPTER 1: INTRODUCTION

From November 2008 to January 2009, at the request of the Kentucky Finance Cabinet archaeologists from the Kentucky Archaeological (KAS) excavated the Horse Park Cemetery (15Fa315). This cemetery was located in northern Fayette County and within the boundaries of the Kentucky Horse Park (Figures 1 and 2). This study was undertaken in response to the inadvertent discovery of human remains during construction of a new arena. The archaeological field crew, which was directed by Eric Schlarb, included Steve Ahler, Marcie Venters, A. Gwynn Henderson, M. Jay Stottman, Bruce Manzano, Rick Burdin, Greg Maggard, Jason Hodge, Jason Ross, Kim McBride, Mickey Loughlin, Will Goodman, Donald Handshoe, and Philip Mink (Figure 1-3).

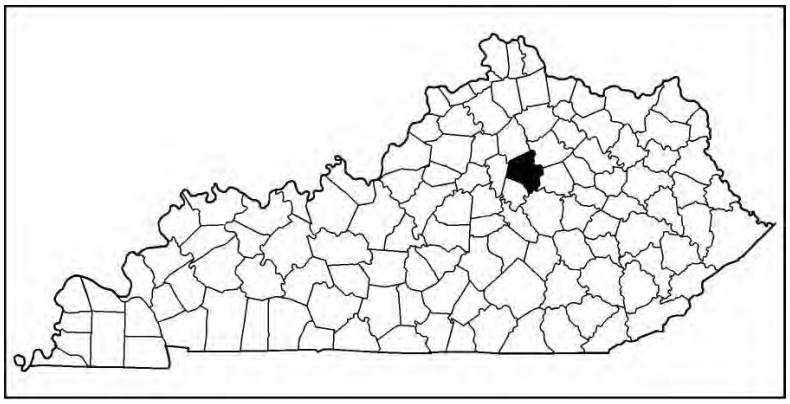

Figure 1-1. Location of Fayette County, Kentucky.

The Horse Park Cemetery was situated on a ridgetop overlooking an unnamed tributary of Cane Run Creek. About 100 m east of it is a small fenced cemetery that contains four marked burials belonging to the Graves family. The death dates on the headstones range from 1829 to 1849. (It should be noted that this cemetery probably contains several unmarked graves, some of which may extended beyond the current fenced in area.) A review of historic records and deeds suggest that both cemeteries are situated on land that was owned by the Graves family in the early to mid-nineteenth century.

The Horse Park Cemetery contained 33 grave shafts (34 individuals, earlier disturbances led to the commingling of the remains of two individuals in one grave). Infants, children, adolescents, and adults of European-American and African-American descent were interred in this cemetery. Regardless of biological affiliation each individual was placed in a wood coffin constructed with hand-wrought or machine-cut nails and screws. Analysis of the coffin hardware and artifacts (buttons, pins, fabric, and shoes) found in association with each burial indicates that everyone interred in this cemetery died sometime between 1800 and 1860. These materials also were used to determine the growth and development of the Horse Park Cemetery, with nine burials dating before 1830, five from 1830 to 1835, and 20 from 1835 to 1860.

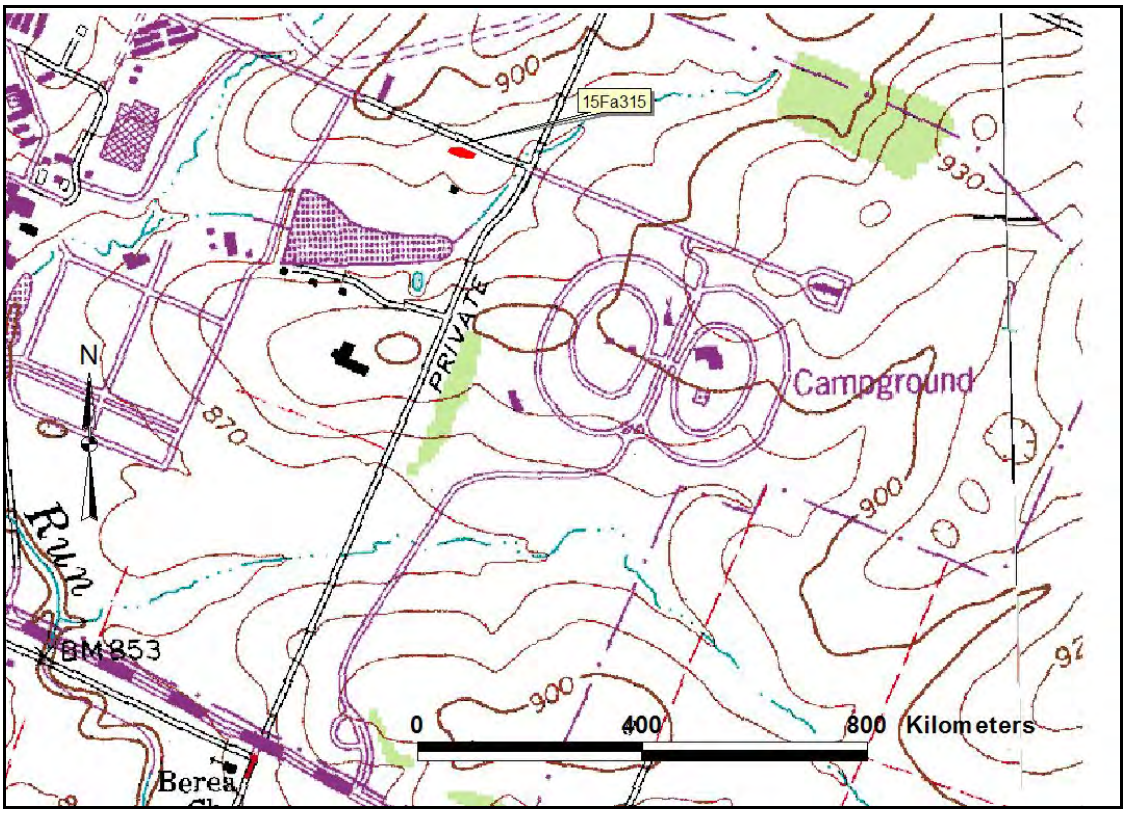

Figure 1-2. USGS 7.5' Georgetown (1954, photorevised 1978) topographic quadrangle showing the location of the Horse Park Cemetery (15Fa315).

Figure 1-3. Carefully excavating a grave at the Horse Park Cemetery.

At death European-Americans and African-Americans appear to have been treated much the same (dressed in their best clothes, their arms carefully arrange across their chest, on their pelvis or adjacent to their body, and placed in a plain wooden coffin). Differences in mortality profiles, heights, weights, and pathologies as evidenced in the skeletal populations of these two groups reflects the harsher living and working conditions experienced by the enslaved relative to their owners. Variation also was noted in the orientation of the European-American and African-American graves, with the former being oriented west to east, and the latter northwest to southeast.

This report provides historical background information on the history of ownership of the property where the cemetery is located; presents the results of the coffin hardware, clothing and personal artifacts, fabric, coffin wood, and human skeletal analysis. The last chapter describes each burial. The burial data from this cemetery are used to develop interpretations of 1) the timeframe within which the cemetery was used; 2) age at death for the individuals in the burial population; 3) overall health of the burial population; 4) the types of garments worn by the individuals at the time of burial; 5) temporal changes in burial practices and associated hardware; 6) spatial organization of burials within the cemetery; and 7) possible social differentiation among the individuals interred in the cemetery.

CHAPTER 2: HISTORICAL BACKGROUND

This chapter gives historical background information on the Horse Park Cemetery, and associates the cemetery with a particular family. The focus is on the eighteenth and first half of the nineteenth century, since the artifacts found with the burials suggest that no one was buried in this cemetery after 1860.

Research on the history of the Horse Park Cemetery began with a review of historic maps. The earliest maps to show any useful detail are the 1861 Hewitt Map (Figure 2-1), and the 1877 Beers Atlas (Figure 2-2). Neither show cemeteries but they do give names of property owners (or tenants) and show house locations, data helpful in verifying property boundaries. The area of interest is on the northeast side of Ironworks Pike extending from Cane Run Baptist Church to just east of Berea Christian Church. Many of the names shown in this area, Graves, Muir, Hukill and Smith, are important in the subsequent deed research.

Following the map review, records curated at the Kentucky Horse Park were examined. After meeting with John Nicholson, Bill Cooke, and Travis Robinson, archivist Shannon Leva made all of the Horse Park history files available to us. These files contain many notes and working papers on the history of the Kentucky Horse Park property (Berry 1980; McCoy 2003). Previous researchers had compiled data on well-known thoroughbred or standardbred farms, such as Walnut Hall, Walnut Hall Stud, Senorita Stud Farm, and Ashland-Wilkes farm, that were once associated with this property. Comprehensive histories of all past owners are not available, but notes have been compiled on many families, such as the Graves and Richardson families.

The review of historic documents took into consideration that the Horse Park Cemetery might be related to the nearby existing four Graves family headstones. Since the latter are associated with the Graves family, it was initially thought that the Horse Park Cemetery contained representatives of the Richardson family. (During the course of this study, descendents of William H Richardson contacted the Kentucky Horse Park about a newly found family bible, and shared information from it to aid in determining if the newly found cemetery was associated with their family.) The Richardson farm, Caneland, was known to have been located in the general area. William H. Richardson acquired his farm in 1826 from the estate of Walter Warfield, a physician with ties to Transylvania University.

Warfield likely built a two story brick house that is thought to have burned ca. 1847 or 1849 (notes in the Richardson file, Kentucky Horse Park). He had purchased the property in 1806 from his wife Sally's younger sister Elizabeth Christian Dickinson and her husband Richard Dickinson. Elizabeth Christian Dickinson had inherited 1000 acres from her father, prominent Revolutionary War veteran William Christian in 1786, following his death in an excursion into Indiana against a group of Native Americans (Berry 1980; McCoy 2003). (A great deal is known about William Christian, but since he and his family are not known to have lived within or near the project area, or to have

had any potential involvement with the Horse Park Cemetery, little detail on his life will be presented in this chapter.)

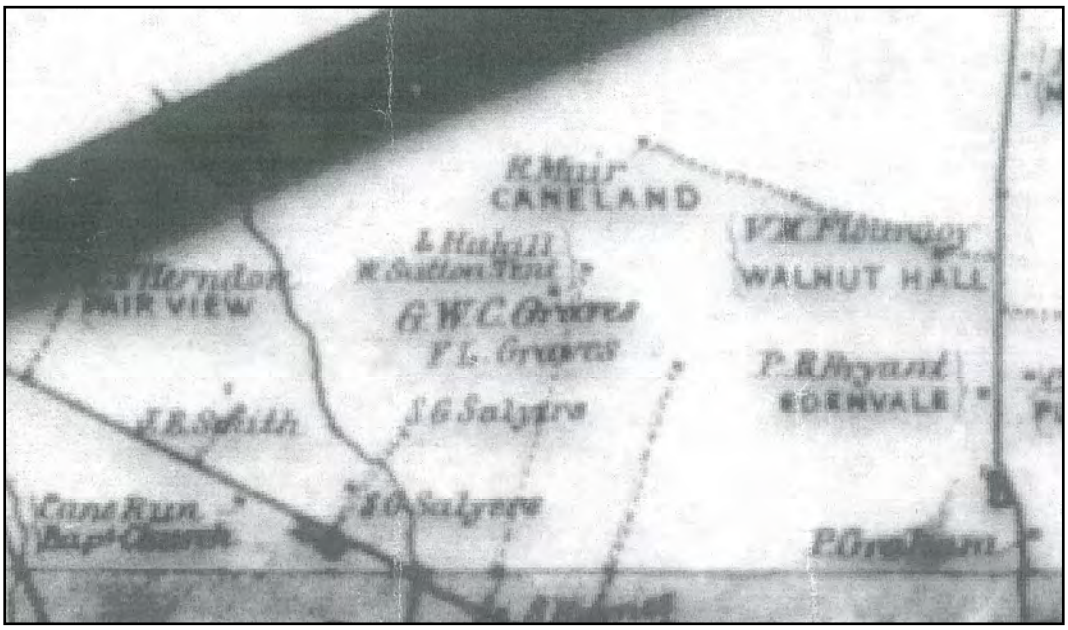

Figure 2-1. Hewitt 1861 Map.

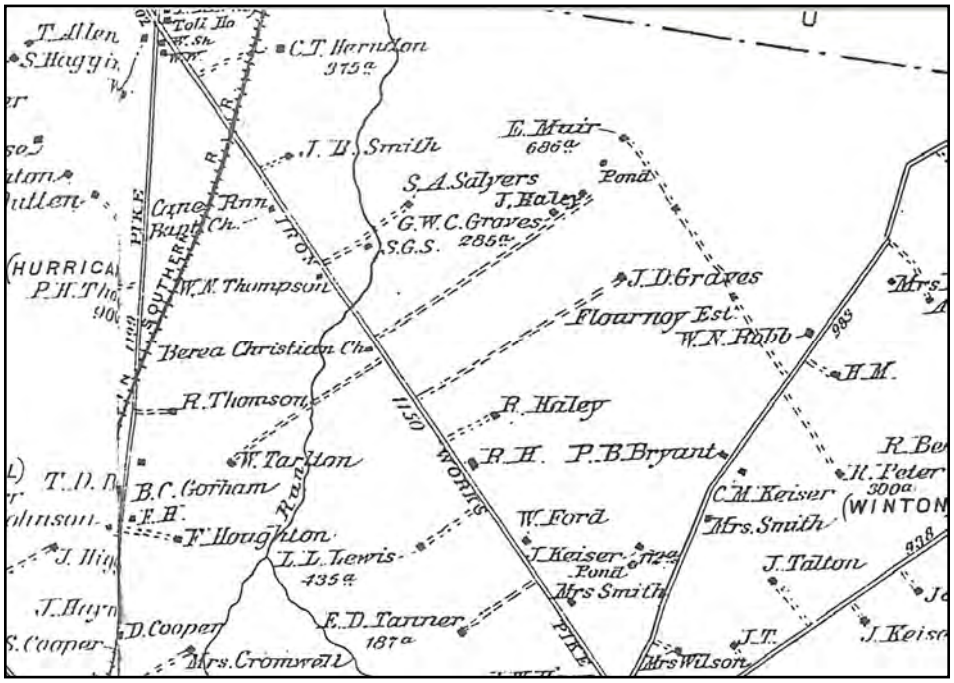

Figure 2-2. Beers 1877 Atlas.

RICHARDSON FAMILY

William H. Richardson came to Kentucky ca. 1789 with his family. He had taken medical training at the University of Pennsylvania, and became famous for his lectures on obstetrics at Transylvania University. Portraits exist for both William H. and for his wife Judith Boswell Swann Richardson, the latter by famous painter Mathew Jouett. William H. Richardson also was well known for the prosperous farm and ornamental gardens he created at Caneland, and for his participation in an 1818 duel with his Transylvania colleague Dr. Benjamin Dudley at the dueling grounds, which were located just north of the current Kentucky Horse Park boundaries at the Fayette/Scott county border (see Coleman 1969). The duel had an unusual twist in that Dudley, who wounded Richardson in the groin, stepped in to stop the bleeding when Richardson's doctor could not stop it, possibly saving Richardson's life.

William H. Richardson died September 14, 1845, age 61, of typhoid fever at the home of his son Louis (this could mean at Caneland or at a house in Lexington). That he was buried at Caneland, very likely within the Kentucky Horse Park boundaries, is documented in his September 17, 1845 obituary in the Lexington *Observer and Recorder*. William H.'s wife, Judith Boswell Swann Richardson, preceded him in death, having died on October 9th, 1843, age 53, at Caneland. Her obituary in the Lexington *Observer and Recorder* (from a copy in the family bible) notes that:

> During this period [the last five years of her life] she had lost the use of her limbs so as to be unable to walk, for the most of the time she was in great pain and suffering, and ever after, in paroxysms of excruciating agony, all this she bore with becoming fortitude and exemplary resignation to the Divine will.

On February 22, 1848, William H. and Judith Richardson's only son Louis Richardson died at age 39 following a gun accident in Holmes County, Mississippi, where the family had a plantation. Louis's March 11, 1845 obituary in the Lexington *Observer and Recorder* provides additional evidence of a family cemetery at Caneland, stating that:

> The remains of Mr. R. were brought to his residence in this city yesterday, and will be interred at the family burying-ground at Caneland, in this county, the former residence of his father, the late Dr. W. H. Richardson.

Just slightly over a month before William H.'s death, on August 3, 1845, William H.'s brother Jno C. Richardson, age 59, died from pulmonary apoplexy, while visiting at William H.'s house. His August 9, 1845 obituary in the Lexington *Observer and Reporter* notes that:

> His body (after solemn funeral services) was carried away to the family burying ground, and deposited amongst the ashes of his departed father

and mother, and other relatives, there to rest in the silent gloom of the grave until God shall bid it rise and come to judgment.

Unfortunately the location of this family burying ground is not given in more detail. It is possible that there was a cemetery established by William H.'s father at one location, and then another one established by William H. at Caneland for his own immediate family. William H.'s and Jno. C.'s father was John Crowley Richardson; the family bible records his death in 1834 at age 81. Their mother Sarah Hall Richardson also died in 1834, age 82. The cemetery at Caneland, described as the "family burying ground" in Louis's 1848 obituary could have served all of these persons.

Denny McRee's research in the Richardson family bible suggests other possible interments, including two daughters of Louis and Sarah Bonner Richardson, an infant who died in August 1838, and Emily Juliet, who died in 1851 at age 15 of typhoid fever. Emily's February 14, 1851 obituary notice (from the Richardson family bible) does not mention the place of burial, but notes that the funeral was at the home of her mother on Limestone Street. Two other deaths in the Louis Richardson family occurred in Mississippi within the general time range (1800-1860) of the Horse Park Cemetery interments (though there is no mention of these remains being brought back to Caneland, as was the case of Louis's remains in 1848). These are the deaths of Louis and Sarah Bonner Richardson's son David B, age 17, in 1850 from drowning in the Tehula River, and Sarah Bonner Richardson, who died at 42 years of age in 1854 in Holmes County, Mississippi.

Louis Richardson was the only child of William H. Richardson. With Louis's death in Mississippi, William H.'s line did not continue in Kentucky (the reader is cautioned that at least one other William H. Richardson lived in Fayette County at this same time). Though the William H. Richardson family papers preserved within the Shane Manuscript Collection of the Presbyterian Historical Association (available on microfilm) provide much data on family matters, a review of these records found no details related to family deaths or to the family cemetery.

GRAVES FAMILY

The other possible family associated with the Horse Park Cemetery, the Graves family, provides a strong contrast to the Richardson family, with both a much larger contingent of initial immigrants to Kentucky in the late eighteenth century, and a large progeny who continue to live in the area. The family became so large and the repeated use of the same male given names became so common that there is much potential for confusion and conflation of individuals. For example, research suggests the early immigrants included not only Thomas C. Graves and his son John C. Graves (who also went by Colonel John Graves), but also Thomas C.s' nephew John Graves, son of Thomas C.'s brother Richard, who usually went by John Sr. The latter also had a son named John, who was often called John Jr. (Ancestry.com public trees of James Gibbons,

Ray Graves and Mauri_ged; 1849 Federal Census Fayette County census and deed records.)

Thomas C. Graves was born in 1721 and died in 1801 (Fayette County Will Book A: 5-7; (Ancestry.Com: Ray Graves family tree suggest he would have been about 80 or 81). He is thought to have come to central Kentucky by 1784, after distinguished Revolutionary War Service, including hosting Gen. La Fayette, while he lived in Louisa County, Virginia. He is thought to have purchased 700 acres of land from William Christian (Peter 1882:835-836), but deed research detailed below suggests a more complex picture.

Richard Graves also immigrated to Fayette County, but there is no record of his owning land within the boundaries of the Kentucky Horse Park. His sons, John Sr. and Samuel, however, did own land in this area. (A John D. Graves born in Fayette County, son of Josiah Graves, also was noted in Ancestry.com files but it is not known if he is related to the Graves family associated with the Kentucky Horse Park.)

Notes in the Graves family folder at the Kentucky Horse Park give the inscriptions for the headstones that today are located east of the Horse Park Cemetery as follows:

Colonel John [C.] Graves, Died August 6, 1846, Age 76 years

Margaret, wife of Colonel John Graves, Died March 11, 1849, Age 76 years

Mary Ann C. Graves, Born March 17, 1803, Died March 22, 1829

John H. Graves, Born 1838

The death date for Colonel John C. Graves has probably become blurred, for his obituary gives his death as August 5, 1848. Alternatively, the obituary could have been in error. Text for an interpretive panel on the cemetery suggests that Mary Ann Cox Graves might be the wife of John [C.] Graves' son Thomas C., and that J. H. Graves may be a Colonel John Graves who served in the Confederate army during the Civil War (Kentucky Horse Park files). We were not able to find additional information on J. H. Graves.

Information is available on Mary Ann Cox Graves (Ancestry.com trees: Mauri_ged and Faith Robinson trees, among others). She was married to Jefferson Graves, a great nephew of Thomas C. Graves and son of John Graves Sr. (who was the son of Thomas C.'s brother Richard). Jefferson was one of a group of related Graves family members to buy land from John Graves Sr. ca. 1818-1821 (see below in deed research). Mary Ann's immediate ancestors, such as father Hawes Graves (born Spotsylvania, Virginia) and grandfather Joseph Graves (born Orange, Virginia, died Spotsylvania, Virginia) are from the same region as Thomas C. Graves ancestors. This points to a family connection even before her marriage to Jefferson Graves.

All indications are that the patriarch of the Graves family who settled the land within the boundaries of the Kentucky Horse Park was Thomas C. Graves. Other family members who might be buried in a Graves family cemetery, include Thomas C. Graves' wife Isabelle Susan Bartlett Graves, who died in 1818 at age 79, and their children. Thomas C. and Isabelle Susan Graves had four daughters and three sons, including John C., who is among those listed on the headstones located near the Horse Park Cemetery and who may have succeeded Thomas C. on the farm (Peter 1882). In addition to John C., other children mentioned in Thomas C. Graves' estate settlement are William B, Samuel, Liddy, Ann (Mrs. John) Hancock, Mary (Mrs. Samuel) Beeler, and Roseanna (or Polly) Randle (Fayette County Will Book A:5-7). These persons account for the seven children mentioned by Peter (1882). The Ray Graves family tree, however, lists many other children (Table 2-1; Ancestry.com). While there are likely some errors in these data, they suggest the possibility of additional children who could have been interred in an early Graves family cemetery. Those who died in Fayette County, such as Sarah Sally, age at death 77, or her sister Lydia, age at death 87, could have been buried here.

Table 2-1. Children of Thomas C. and Isabelle Bartlette Graves, from Ancestry.com public tree of Ray Graves.

Name	Birth date, place if given	Death date, place if given	Approximate age of death
James	1750, Randolph, NC	1812	62
Roseanna	1754, Spotsylvania, VA	1827, Hancock, GA	73
William Bartlett	1755, St. Georges, VA	1818, Louisa, VA	63
Ann Nancy	1756, Spotsylvania, VA	1846, Reily, Ohio	90
Sarah	1756	?	
Thomas	1756	1799	43
Isabelle	1764	1819, Shelbyville, KY	55
Anderson	1765, Spotsylvania, VA	?	
Bartlett O	1766, Louisa, VA	1858, Campbell, KY	92
Mary Susannah	1766, Spotsylvania, VA	1851, Dry Grove, Ill	85
Joseph	1767, Spotsylvania, VA	?	
Sarah Sally	1768, Orange, VA	1845 (from will), Fayette, KY	
Lydia (Note- marries her 1st cousin John Graves, Sr., son of Thomas C.'s brother Richard)	1769, Louisa	1856, Fayette, KY	87
John C.	1775, Louisa, VA	1848, Fayette, KY	73

Since John C. Graves seceded Thomas C. Graves on the farm, any of his seven children with wife Margaret Cloud (for whom a headstone exists today) are potential candidates for interment in a Graves family cemetery, especially if they died in the first half of the nineteenth century when the cemetery was in active use. Their children were Eliza Ann (Garth), Louisa, Thomas C., William C, Mary Cloud, Harvey C., and George W. C. The only dates of death found for John C. Graves and Margaret's children, however, are all in the late nineteenth century.

John C. Graves' last child was George W. C., born in 1808. He followed the tradition of his father and remained on the original farm. He married Sidney J. Dougherty, who was from a very prominent central Kentucky family (her uncle later becoming a Governor of Kentucky) (Peter 1882). George W. C. Graves was known to have raised fine horses, mules, cattle and sheep, and served three terms as a Justice of the Peace and one term as County Judge (Peter 1882:836).

Peter (1882) lists six surviving children of George W. C. and Sidney Graves as Fielding L, Henry Clay, Frank H., Margaret (Sprake), James D., and Georgette (Hogg), so none of these likely would have been interred in the Horse Park Cemetery. The Stanley/Moore family tree (Ancestry.com) identifies the same children plus John Robinson Graves (born 1832, died in Fayette County in 1908). Additional information was located on only one child of George W. C. and Sidney Graves who died within the period when Horse Park Cemetery might have been active. Her name was June H. Graves and she died in 1852 at age four and was buried at Bethel Presbyterian Church (DAR 1984:113, 130 and 137).

The only Graves obituaries found were for Colonel John C. Graves in the August 9, 1848 Lexington *Observer and Recorder*, and for his wife Margaret in the March 14, 1849 edition of that same paper. Neither provide any personal information, and in contrast to the Richardson family obituaries, no mention of burial or a family cemetery.

HORSE PARK CEMETERY DEMOGRAPHICS

Given this background information on the Richardson and Graves families, the age, gender, and ethnic affiliation identification of the 34 interments in Horse Park Cemetery was examined to see how these data corresponded with potential interments from each family. Of the 12 individuals of European descent, five are females and seven are males. The five females, include one 16 to 18 year old adolescent; a 30 to 35 year old adult; two 45 plus year old adults; and one 60 plus year old adult. The seven males, include one 16 to 18 year old adolescent; one 18 to 25 years old adult; one 20 to 25 years old adult; one 20 to 30 years old adult; one 25 to 29 year old adult; one 40-44 year old adult; and one 45 plus year old adult.

If the Caneland Richardson family cemetery was the larger extended family cemetery mentioned in the obituary of Jno. C. Richardson, there are not enough older persons of Euro-American descent in the Horse Park Cemetery for a good match (i.e., to account for William H., his wife Judith, and his father and his mother, all between 59 and 81 years old when they died). However, if the Caneland cemetery only contains William H. Richardson and his wife Judith, and their children, the Horse Park Cemetery remains could provide possible matches. The Horse Park Cemetery could also provide reasonable matches for the Thomas C. Graves and related families, including possible matches for those persons listed on the tombstones that are located just east of the Horse Park Cemetery.

Eight of the adult interments in Horse Park Cemetery are African-American, so whether the Richardson and Graves families owned slaves is of great interest, and could help in associating the Horse Park Cemetery with either of these families. The 1840 U.S. Federal census was researched, with listings found for William H. Richardson, John Graves Jr., and John Graves Sr. (1840 Federal Census, Eastern Division Fayette County, page 109). A separate listing was not found for John C. Graves. (This was surprising as one would expect that he as the head of his households would have had a separate listing.)

The household of William H. Richardson contained seven free white persons (one male aged five to nine, two males aged 10 to 14, one female aged less than five, two females aged 10 to 14, and one female aged 15 to 19), one free colored women aged 55 to 100, and 19 slaves (two male slaves less than 10, two male slaves aged 10 to 23, five male slaves aged 24 to 35, two male slaves 36 to 55, three female slaves less than 10, one female slave aged 10 to 23, two female slaves aged 24 to 35, and two female slaves aged 36 to 55) for a total of 27 persons.

The John Graves Jr. household contained six free white persons (one white male less than five, one white male aged 5 to 9, one white male aged 40 to 49, one white female less than five, one white female aged 5 to 9, and one white female aged 30 to 39) and 10 slaves (two male slaves less than 10, three male slaves aged 10 to 23, one male slave aged 24 to 35, three female slaves less than 10, and one female slave aged 24 to 35).

The John Graves Sr. household was the smallest, with only two white persons (one male aged 80 to 89 and one female aged 70 to 79) and six slaves (one male slave aged 24 to 35, one male slave aged 55 to 100, one female slave aged 10 to 23, and three female slaves aged 55 to 100). Based the composition of these households, each had the potential to populate the Horse Park Cemetery.

HISTORY OF OWNERSHIP

In order to determine if the Richardson or Graves family owned the property that contained the Horse Park Cemetery, the history of ownership of this tract was researched. Previously work conducted by Kentucky Horse Park staff, with lists of deeds consulted and some schematic charts of transfers, was of considerable help in this endeavor. The amount of data on the Graves family land holdings, however, was not sufficient to establish a complete chain. In addition, the exact locations of the Richardson and Graves boundaries had yet to be established. Since the Richardson land was generally known to have been located north of the Graves land, and the Horse Park Cemetery is located south of four extant Graves headstone, multiple interpretations are possible without more precise knowledge of the boundaries of the Richardson and Graves tracts.

To address the ownership issue, the Fayette County deed records were examined, with over 65 deeds looked at in great detail. By plotting the deeds at the scale of the

USGS topographic map and using the few references to landmarks, such as springs or the Berea Church, or more commonly, to neighboring lines and corners, it was possible to fit the deeds to each other and place them on the landscape. Deeds were given an arbitrary number code to help in tracking (Table 2-2; Figures 2-3 and 2-4).

When researching property it is often better to start with the more recent deeds, hoping each transaction will include information about who the current owner purchased the property from, and the deed book and page, as proof of the current owner's right to sell the property. This information is not always present, but very helpful when it is. With this in mind, the holdings of Lamon V. Harkness, who was known to have consolidated most of the Kentucky Horse Park land (and much additional land) into his farm in the late nineteenth and early twentieth century, were examined. Harkness established his farm through five major purchases (Figure 2-3).

While Transaction 13, which contained the Richardson land, and Transaction 12, which contained the Graves land, are of most interest, to ensure accuracy it was important that establishing relationships of all the transactions be documented. Since owners would often reshape parcels by selling off some portions of a tract, and adding other bits of land as their needs or finances changed, the broader perspective was needed to understand the small area of interest. Some transactions transferred through inheritance; these were typically found by researching wills, or were sometimes simply noted in a deed but no legal reference given (Figure 2-3). Often transactions were the result of a suit or court case, or an estate settlement, in which case the actual grantor is often an appointed commissioner and not the former owner (Table 2-2).

The Richardson transactions are fairly straightforward. William H. Richardson buys 485 acres in 1826 and his heirs sell it in 1849 to E. S. Muir (Sr.). There are no other related Richardson properties in the study area. The boundaries of the Garth and Buford parcels, just north and east of Richardson are approximate as errors exist in their metes and bounds calls, but this does not affect the Richardson tract.

The transactions of the Graves family, however, are much more complex. First, the initial purchase was not the 700 acres that Peters (1882) says were purchased by Thomas C. Graves from William Christian ca. 1784. Instead, deed records suggest that Thomas C. Graves bought 300 acres in 1788, from John and Sarah Craig, and Elijah and Francis Craig. At the same time, three of his adult daughters, Ann, Sally, and Lydia, bought adjoining tracts. Ann's purchase of 100 acres was with husband John Hancock, while Sally's 100 acres was with husband Samuel Graves, who also was her first cousin and Thomas C. Graves' nephew. Lydia's 161 acres was with husband John Graves Sr., her first cousin and brother of Samuel. The 1788 Graves purchases total 661 acres, close to the 700 cited by Peter in 1882 and in files at the Kentucky Horse Park (Berry 1980; McCoy 204). These deed all reference William Christian's military survey. Clarification that the lands sold by the Craigs came from William Christian's survey can be found in the deeds to a neighboring tract to the west (Transaction 7), which was sold in 1788 by the Craigs to Hugh Masterson (Figure 2-4). In 1825, when Aaron Masterson sold this tract to Thomas C. Graves, the grandson of original settler Thomas C. Graves (Figure 2-3

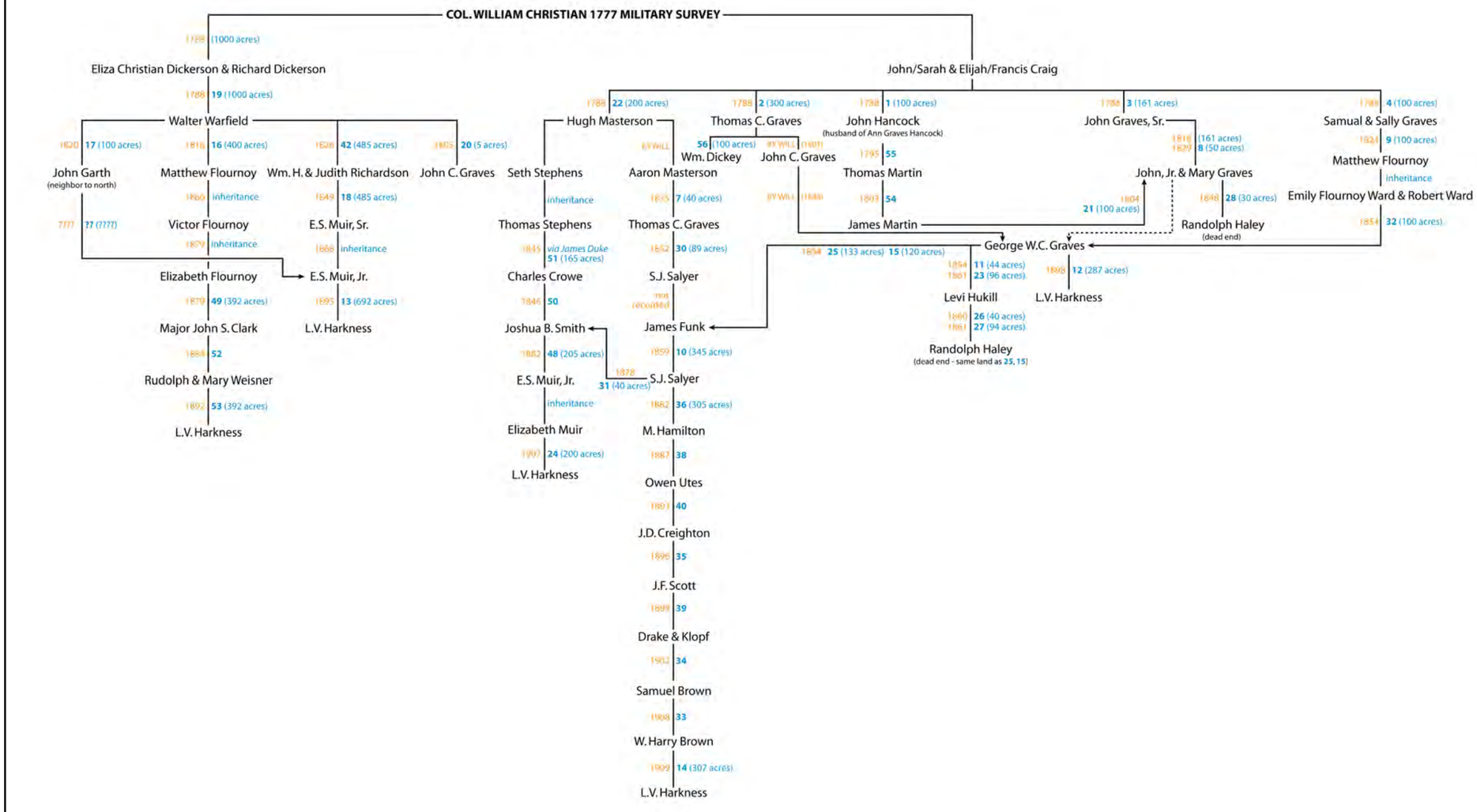

Figure 2-3. Chart of Chain of Title.

Table 2-2. Land transactions, giving deed references, Fayette County Clerk's office, and notes.

Transaction, book: first page	Transaction, book: first page	Transaction, book: first page
1, A:401	19, B (Circuit):399 via will	38, 76:518
2, A:344	20, B:349	39, 112:429 by decree, public sale
3, C:358, says where John Graves lives	21, 2:15	40, 101:83 by comm. For heirs of Utez
4, D:422	22, F:198	41, 33:308 mortgage
5, Q:168; not on chart, 1816, 200 ac of John Graves, purchased by David Sutton, via Scott Co suit, location?	23, 36:307 via circuit decree	42, 2:95
6a, not on chart. U:374, 1821, same 161 acres as transaction 3 (says is where John Graves Sr lives), land sold by John Sr. to John Jr. and others circ 1818, secured by mortgage	24, 148:494 as administer and in her own right	43, 36:287 not on chart, 1861 mortgage GWC Graves to Harvey C. Graves, use retained, 36 acres incomplete calls, near #s 11, 23, possibly out of #32, fronts Ironworks Pike
6b, not on chart, U:374, 1821, same as 6a but 2nd tract, likely south of Ironworks	25:30:354, Circuit Ct decree leads to public sale, GWC Graves as commission and grantor	44, 34:313, not on chart, 1858 release on #25, an 1854 transaction
7, Z:150 says part of Wm Christian survey conveyed by Preston to Craig, Craig to Hugh Masterson	26, 36:184, Hukills reside Harrison Co, Ky at time of sale	45, 35:71 not on chart,1858 release on #25, an 1854 transaction
8, 1829, 5:187 late place of residence of Samuel Graves, calls plot oddly, not mapped	27, 36:356,	46, V:62
9, Y:126	28, 24:217	47, 30:306, 1854 deed from court decree, based on 1833 transfer from Harvey C. Graves to G. W. C. Graves, no calls, 100 ac occupied by G. W. C. Graves, likely within #15
10, 35:196 by assignee	29, 24:217, not on chart, Haley to Bryant and Keiser? east of project land, 1863	48, 64:520 by administrators
11, 30:326	30, 28:178	49, 59:214 by executor, error in calls, does not close
12, 112:584 by GWC heirs, John C. Graves land conveyed to GWC Graves by will	31, 57:565	50, 24:359 no calls, land formerly occupied by Thomas Stephens
13, 106:9	32, 30:250 may be for other family members by G. W. C. Graves,	51, 22:374 Duke is mortgagee of Thomas Stephens
14, 157:616	33, 156:195 by executors	52, 69:266
15, 30:325	34, 157:62	53, 95:91
16, N:395	35, 108:421	54, Cr Ct A:438
17,T:408 by comm., suit, errors in calls, location approximate	36, 66:64	55, Co Ct A:403
18, 26:187 by heirs	37, 73:279 resurvey, now 307 acres, prev. deeds 305	56: Burnt Records 1:306 incomplete, adjacent to Wm Dickey

and Table 2-2: Transaction 7), the deed clarifies that the William Christian land was transferred by "Preston to Craig and Craig to Hugh Masterson the father of Aaron Masterson and to him by will."

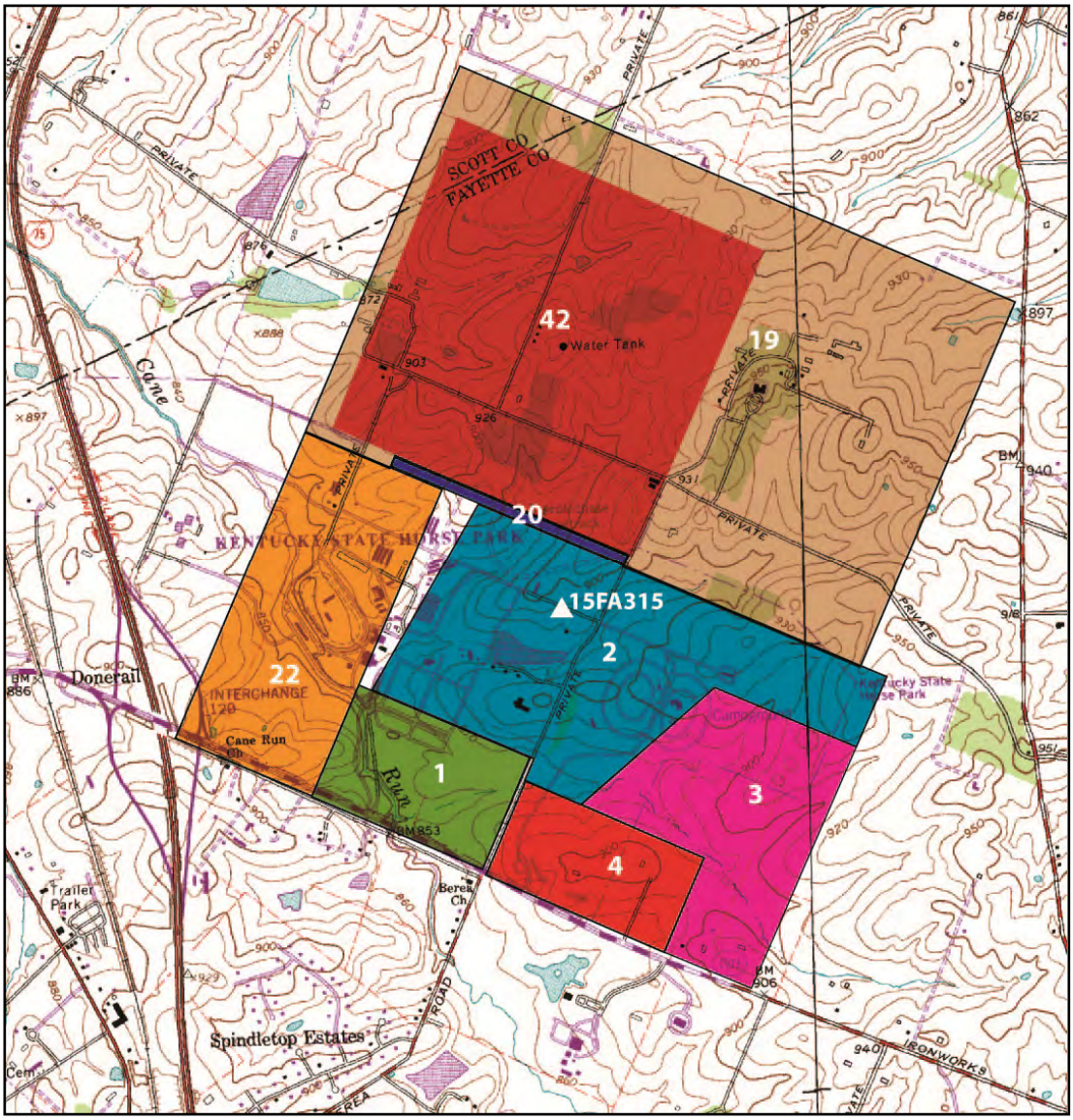

Figure 2-4. Map showing Plots of Deeds: 1, John Hancock; 2, Thomas C. Graves; 3, John Graves, Sr.; 4, Samuel & Sally Graves; 19, Walter Warfield; 20, John C. Graves; 22, Hugh Masterson; 42, Wm. H. & Judith Richardson.

Because some of the earliest records from Fayette County have been lost due to fire, there is always the chance of missing transactions. The Burnt Records books in the Fayette County courthouse includes a small fragment of a deed transfer from Thomas C. Graves to a William Dickey (Figure 2-3: Transaction 56), but no date or land description has survived. Further complicating matters is that the transfer of Thomas C. Graves' 300

acres to his youngest son John C. is by a will, which specifies that Thomas C. transfers "to my son John Graves the tract of Land whereon I now live after the death of my wife Isabelle Graves….." (Fayette County Will book A:5-7). Isabelle died in 1818. No exact acreage or parcel boundaries are given.

The Samuel and Sally Graves parcel leaves the Graves family in 1824 (Figure 2-3 and Table 2-2: Transaction 9) when they sell it to neighbor Matthew Flournoy. The parcels were rejoined in 1854 when George W. C. Graves (Thomas C. Graves' grandson) purchased them from Emily Ward, Flournoy's daughter (Figure 2-3 and Table 2-2; Transaction 32). Sister Ann's land goes to the Martin family in 1795 (Figure 2-3 and Table 2-2; Transaction 55), to be rejoined by a purchase by John Graves Jr. (Ann's first cousin) and his wife Mary in 1804 (Figure 2-3 and Table 2-2; Transaction 21). In 1818, John Sr. sold the 161 acre tract he had acquired in 1788 to the same John Jr. (his son) and to other of his children, including Jefferson Graves, the spouse of Mary Ann Cox Graves, for whom a headstone exists today. This transaction was secured by a mortgage recorded in 1821 (Figure 2-3 and Table 2-2; Transaction 6a), with the final of six payments due in 1835. The wording in the 1821 deed suggests that John Sr. was still living on the property (he died in 1843). Also potentially complicating matters are the marriages of Thomas C. Graves's daughters, Sarah and Lydia, to their first cousins Samuel Graves and John Graves Sr., who were the children of Thomas C. Graves' brother Richard (Gibbons family tree, Ancestry.com). Thus claims to Graves property may have been very complex.

Some complicated transactions center around George W. C. Graves' inheritance and management of the John C. Graves lands. John C. Graves' will states that after the death of his wife Margaret, his land is to go to George W. C. Graves as trustee for the care of his children (Fayette County Deed Book S:44). John C. Graves' wife Margaret died in 1849, and settlements could have likely begun soon after. The first recorded sale by George W. C. Graves took place in 1854 (Figure 2-3 and Table 2-2: Transaction 25).

Given that circuit court decrees are mentioned in some of these deeds, case files at the Kentucky Department of Archives were researched, but most suits listed on docket books had no surviving case file. These transactions are often between George W. C. Graves and his brother Harvey C. Graves, and/or a large group of George W. C. Graves' first cousins once removed, the children of his cousin John Sr. (see above, John Sr. being the son of Thomas C. Graves' brother Richard). Peter (1882:836) notes that "of the original 700 acres comprising the old Graves homestead, the present head of the family [meaning George W. C.] has divided 400 acres among his children, so that he has but 300 acres remaining of his fine patrimony." This generalization may be largely correct, but the route to this state of affairs was complex and not without litigation. The remaining George W. C. Graves land that was sold by his heirs to Harkness in 1898 was 287 acres, not far from the 300 cited by Peter. The other 400 acres mentioned probably included the 253 acres George W. C. Graves sold to James Funk in 1854 (Figure 2-3 and Table 2-2: Transaction 25), along with the 89 acres of Thomas C. Graves (the grandson) land that went to Salyer in 1852 (Figure 2-3 and Table 2-2: Transaction 30).

Many of the deeds resulting from these disputes or court decrees do not give metes and bounds calls so it is hard to be certain just where the property in dispute is located, though many of them seem to involve the parcel sold (Figure 2-3 and Table 2-2: Transaction 25 and Transaction 15) by George W. C. Graves in 1854 to James Funk. Also confusing is that George W. C. Graves sold part, but not all, of the same land again in 1861 to Levi Hukill (Table 2-2: Transaction 11 and Transaction 23, which mentions a circuit court decree). This land was later sold by Hukill to Randolph Haley as Transaction 26 and Transaction 27 (with slight acreage discrepancies) (Figure 2-3 and Table 2-2). Randolph Haley owned other property nearby, some of which he had purchased in 1848 from John Graves Jr. (likely from the very eastern portion of land originally owned by John Graves Sr., see Haley on the 1861 Hewett map, Figure 2-1). It is interesting that Haley's will includes a codicil expressing his anticipation of a lawsuit over this property (Fayette Will Book 6:538). Haley's ownership does seem to have been a dead end, for Funk's transfer of this land to subsequent owners is without contest (Figure 2-3 and Table 2-2: Transaction 10 and further down that chain eventually to Harkness).

A very interesting transaction that does not fit the pattern of the others is Transaction 20 (Figure 2-3 and Table 2-2), where John C. Graves (son of the original Thomas C. Graves), buys five acres from Walter Warfield in 1820. This five acre parcel is very long east-west and very thin north–south, and is never transferred again separately. It may represent a separate homestead tract for John C. Graves, in addition to the Thomas C. Graves land he would have inherited at his mother Isabelle's death in 1818. It is also possible that this transfer represents an attempt to clarify ownership and correct errors in the original surveys (or their interpretation on the ground) following his mother's death.

With a chain constructed based on either references to previous transfers given in the deeds, or by plotting the different transactions and comparing the shapes, the next step was to begin to put at least the initial Graves and Richardson transactions onto the landscape, using the landmarks indicted in the calls (Figure 2-4; parcel or transaction numbers keyed to Figure 2-3, or Table 2-2). This effort was hampered somewhat by survey errors, as indicated by odd gaps, such as the one between transactions 22 and 2 (Figure 2-4).

Results

The most important result of this work is that the Horse Park Cemetery is located roughly within the center of Thomas C. Graves' original 300 acres (Figure 2-3: Transaction 2 and Figure 2-4: Transaction 2). This land would have gone to Thomas C. Graves's youngest son John C. Graves and then from John C. Graves to his youngest son George W. C. Graves (for care of George's children). It later became part of the famous Salyer/Creighton/Brown farms. The Richardson land, on which the Richardson Cemetery is most likely located, is represented by Transaction 42, which came out of the Warfield tract (Transaction 19) (Figure 2-4). The placement of the tract John C. Graves bought from Walter Warfield in 1820 (Figure 2-4: Transaction 20), is very different from

most others in the area, which gives additional credence to the suggestion that it represents some sort of correction or adjustment.

The Horse Park Cemetery locale is almost certainly contained within the somewhat disputed and confusing land that George W. C. Graves sold to James Funk in 1854 (Figure 2-3 and Table 2-2: Transaction 25). That the Horse Park Cemetery was no longer in use at that time is suggested by the 1852 interment of George W. C. Graves infant daughter in the Bethel cemetery (see above). Surprisingly, right of access to and/or use of a cemetery is never mentioned in the deed transferring the property from George W. C. Graves to James Funk, or any other deeds.

Just as none of the deeds mention a cemetery, most also do not mention residences. Exceptions include the 161 acre parcel southeast of the Horse Park Cemetery tract, which indicates that the land is "where John [Sr.] Graves now lives" (Figure 2-3 and Table 2-2: Transaction 3, 1788; and Figure 2-3 and Table 2-2: Transaction 6a, 1821).

The 1861 Hewitt map and the 1877 Beers Atlas were rescaled to match the U.S.G.S. Topographic map, and the house locations shown on these maps were plotted onto the topographic map (Figure 2-5). While these atlas maps are not as accurate as the later U.S.G.S maps, the house locations are probably within several hundred meters of their real location. A good check is the Salyer House, since it is still standing today, for which the 1861 map compares especially well. The locations for the Muir house, near the words "Water Tank" on the topographic map, give a good idea of where the Richardson house would have been. If this location is compared to the Richardson tract (Figure 2-4: Transaction 18), the house is near the exact center of this parcel.

It is very interesting that the locations for George W. C. Graves in 1861 and in 1877, about at the words "Steeplechase Racetrack," are near or within an oddly shaped parcel that John C. Graves purchased from Walter Warfield in 1820 (Figure 2-4: Transaction 20). This leads further support to the suggestion that this tract contained the John C. Graves house. Peter's (1882) notes that George W. C. Graves was

> born March 11, 1808, almost a century ago, the tenderest aspirations and most earnest desires of his heart for more than three score years have centered around that old homestead, where he has lived in infancy, youth, and manhood, and where he still presides as possessor and patriarch in his green old age.

The F.L. Graves house shown on the 1861 Hewitt map northeast of the Horse Park Cemetery is almost certainly George W. C. Graves' son Fielding L. (Figure 2-1).

COFFIN PURCHASES

Since the archival research suggests that Horse Park Cemetery is most likely a Graves family cemetery, the wills and estate files of likely Graves family members were

combed for any information relevant to their interments. Thomas C. Graves' estate settlement in 1807 included payment on April 4, 1801 of eight pounds for a coffin (Fayette County Will Book A:398). The only listing found for a coffin for an African-American was found not in the Graves' family records, but in an estate settlement report for William H. Richardson's estate, $4.00 in 1849 to Warren Outteer "for Coffin for negro woman." In 1850, William H. Richardson's executors also paid $7 to Jas Milward for a coffin, (Fayette County Will Books S.211 and T, 370). Whether this coffin was for William H. Richardson is not specified.

Figure 2-5. Historic Houses Shown on 1861 Hewitt map and the 1877 Beers Atlas.

SUMMARY

A review of historic records and deeds suggest that the Horse Park Cemetery is situated on land was owned by the Graves family in the early to mid-nineteenth century. That it is located only 100 m from another Graves family cemetery raises questions concerning the temporal relationship of these two cemeteries and if they were in use at the same time. These questions will be explored in more detail in Chapter 7.

CHAPTER 3: COFFIN/CASKET HARDWARE, CLOTHING, SHROUDS AND PERSONAL ARTIFACTS

INTRODUCTION

Artifacts recovered from the Horse Park Cemetery, include 589 nails or nail fragments, 24 screws, 59 buttons, 21 pins, one hair comb, and one ring (shoe leather and clothing fabrics are described in Chapter 4, and coffin wood fragments are discussed in Chapter 5). Coffin hardware, consisting of nails and screws, were recovered from 33 of the 34 burials documented at the Horse Park Cemetery. Clothing related objects (buttons) and artifacts indicative of shrouds (pins) were each recovered from nine burials, and personal objects (hair comb and ring) were recovered from two burials.

Artifacts interred in burial contexts deteriorate over time, making their recovery difficult. In the case of some of the Horse Park Cemetery burials, the problem is compounded by disturbances from construction activities, both from the building of the new arena and earlier park related projects. Thus, the lack of a particular artifact within an individual grave is not always proof of its absence at the time of interment. Still, the patterning of the artifacts by age, gender, and biological affiliation allows for inferences to be made with respect to the history of the cemetery and early to mid-nineteenth century burial practices.

COFFIN HARDWARE

Nails and/or screws, which fall into the category of coffin fasteners and indicate burial in a wooden coffin, were found with all burials except Burial 3, which had been highly disturbed by construction activities. Only nails were found with 22 burials (1, 4, 6-9, 11-14, 17, 18, 24-33), while both nails and screws were found with 10 burials (2, 5, 10, 15, 16, 19-23). No burials yielded only screws (Table 3-1; Figure 3-1).

The most common artifacts recovered were fastening nails: hand-wrought (eight burials) or machine-made (or cut) from a sheet of metal (25 burials). Hand-wrought nails, which have a relatively square shaft, have an irregular head, and often a rounded and flattened out tip. They were primarily used from the early 1700s to about 1815 (Nelson 1968). Wrought nails were found in Burials 4, 6, 8, 9, 11, 12, 13, and 16. They also may have been recovered from Burials 7 and 19, but the nails from their coffins were too corroded to determine if they were wrought or early machine-cut.

Though hand-wrought nails continued to be made, especially for specialty purposes, after ca. 1815 machine-cut nails were the most common nail type until the late 1880s, when they were replaced by wire nails (distinguished by their round shaft; this type is still used today) (Fontana and Greenleaf 1962; Nelson 1968). No coffins at the Horse Park Cemetery were constructed with wire nails.

Figure 3-1. Coffin closure artifacts: left to right, machine made pointed (Gimlet) screw, flat tipped screw, hand-wrought nail, early machine-cut nail, and late machine-cut nail.

Machine-cut nail shafts can be distinguished from hand-wrought nails by their more regular and rectangular shaped shaft, and blunt ends. From ca. 1815 until the early to mid-1830s machine-cut nails still had to be headed in a separate step. These nails are often called "early-cut nails," and are distinguished from "late-cut" nails by an indentation below the head where the nail was grasped for the heading process. With subsequent technological advances in the early 1830s, nails were completely made in one process; these specimens have a more regular head and lack the indentation in the shaft below the head (Nelson 1968). Early-cut nails were found with two burials (17 and 18). As noted previously, they also may have been recovered from Burials 7 and 19, where corrosion prevented identification.

Late machine-cut nails were by far the most common nail type used to construct coffins at the Horse Park Cemetery, being recovered from 23 of the 34 burials (1, 2, 5, 10, 14, 15, 17, 18, and 20-33). These types of nails were used from the early 1830s to the late 1880s.

With respect to nail size, nails with penny weights of 6d and 8d were the most common, accounting for 51.2 percent of all of the nails. Wrought nails in particular exhibit a preference for penny weights of 8d, with this nail size accounting for 59.1 percent of the wrought nails. In comparison, cut nails exhibit more of a bimodal

distribution with penny weights of 8d and 6d, accounting for 21.7 and 27.3 percent, respectively, of machine-cut nails.

Table 3-1. Nails.

	Shaft only fragment			Headed fragment			Whole nail			
	Wrought	Wrought/ cut	Machine-Cut	Wrought	Wrought/ cut	Machine-Cut	Wrought		Machine-Cut	
	Freq	Freq	Freq	Freq	Freq	Freq	Freq	Perc	Freq	Perc
Pennyweights, for whole nails only										
2d									3	2.1
3d							1	2.3	15	10.5
4d							3	6.8	12	8.4
5d							4	9.1	25	17.5
6d							1	2.3	39	27.3
7d							8	18.2	12	8.4
8d							26	59.1	31	21.7
9d							1	2.3	6	4.2
	4	18	214	52	10	108	44	100	143	100

The 24 screws recovered from the Horse Park Cemetery were associated with 10 coffins (Burials 2, 5, 10, 14, 15, 16, 19, 20, 21, and 24). Of these, 22 are flat tipped and one (from Burial 20) is a pointed gimlet screw (one was too broken for further identification). Flat tipped wood screws have a very long history and were widely available by the late eighteenth century. Though gimlet pointed screws were patented in 1836, they did not become widely available unit 1846 when they were refined to have a more tapered point. Before 1846 any pointed screws would have been hand-made and thus relatively rare (Mainfort and Davidson 2006; Miller et al. 2000; White n.d.). Gimlet screws may have rapidly replaced flat tipped screws, but little reference to this transition could be found in the literature. At the Horse Park Cemetery screws were rarely found in association with wrought nails (Burial 16 and perhaps Burial 19), but were commonly found in association with late machine-cut nails (Burials 2, 5, 10, 14, 15, 20, 21, and 24).

CLOTHING

Clothing in the form of buttons (n=59) was found with nine burials (1, 2, 9, 14, 19, 22, 23, 29, and 33) (Figure 3-2). They were made from brass (n=33), animal bone (n=16), shell (n=3), or porcelain (n=7). Buttons became common as clothing fasteners in the sixteenth century, especially for men's clothing (White 2005). They were present but less common on women's clothing until the mid- to late-nineteenth century (with lacings and hooks and eyes being more common on women's fitting garments) (Petroski 1992; White 2005).

The most common button type associated with the Horse Park Cemetery burials are plain-faced metal buttons often known as "coin" or utility buttons. Thirty-three coin buttons were recovered from five burials (9 [n=2], 19 [n=9], 23 [n=7], 29 [n=3], and 33 [n=12]). These buttons were typically covered in cloth and were used as closures on

men's pants, vests, and coats. Though not especially sensitive for chronology, metal coin buttons are most common in eighteenth through mid-nineteenth century contexts.

Figure 3-2. Representative buttons: top, left to right, shell, one-hole bone, five-hole bone, four-hole bone; bottom, left to right, large coin metal, medium coin metal, small coin metal, and Prosser porcelain.

Sixteen bone buttons were found with four burials (1, 2, 19, and 33). Five are of the one-hole type (all from Burial 19), while the four-hole style is represented by four buttons (two from Burial 1; one each from Burial 2 and Burial 33). The five-hole button style is represented by six buttons (four from Burial 33 and two from Burial 2). One partial bone button from Burial 33 could not be further distinguished due to its fragmentary nature. Bone buttons became one of the most common utilitarian buttons types in the early to mid-nineteenth century, especially for shirts and pants (Hughes and Lester 1981; South 1964).

The recovery of shell buttons is especially difficult, and may partly explain their relative scarcity at the Horse Park Cemetery, as they were only found with two burials (2 and 14). Shell buttons are not only fragile but often very small, further adding to the difficulty of recovery. All are four-hole buttons. Dating of shell buttons is difficult, since this material has a long history of use in button manufacturing. White (2005) suggests that shell buttons were made in Ohio beginning around 1800. Commercially made shell buttons were introduced into the United States from France in 1855 (Fontana

and Greenleaf 1962). They also may have been manufactured in the northeastern United States by about 1850 (Claassen 1994). Claassen (1994) documents the expansion of the mussel shell button industry in the Mississippi Valley in the late nineteenth century. Epstein (1990:60) suggests that shell buttons replaced bone buttons by the mid-nineteenth century for shirts and undergarments.

All of the porcelain buttons are of the Prosser variety. Though porcelain buttons had been manufactured since the eighteenth century, it was not until Richard Prosser patented a machine-made process in 1840 that they became widely available (Epstein and Safro 2001; Sprague 2002). After this time Prosser buttons became very common as fasteners for shirts and dresses. Four Prosser buttons were recovered from Burial 14 and three were found in Burial 33. All are of the plain four-hole type.

Small pieces of shoe leather were found in Burials 1 and 14. Fabric was found with Burials 19, 23, 29, 30, and 33, often clinging to metal buttons (see Chapter 4).

SHROUDS

Nine burials (4, 8, 10, 12, 13, 17, 21, 24, and 25) yielded 21 straight pins, most likely indicative of a burial shroud (Figure 3-3). Straight pins are small and fragile, making recovery very difficult. Sometimes a mid-section fragment was all that was recovered from a particular burial (Figure 3-3).

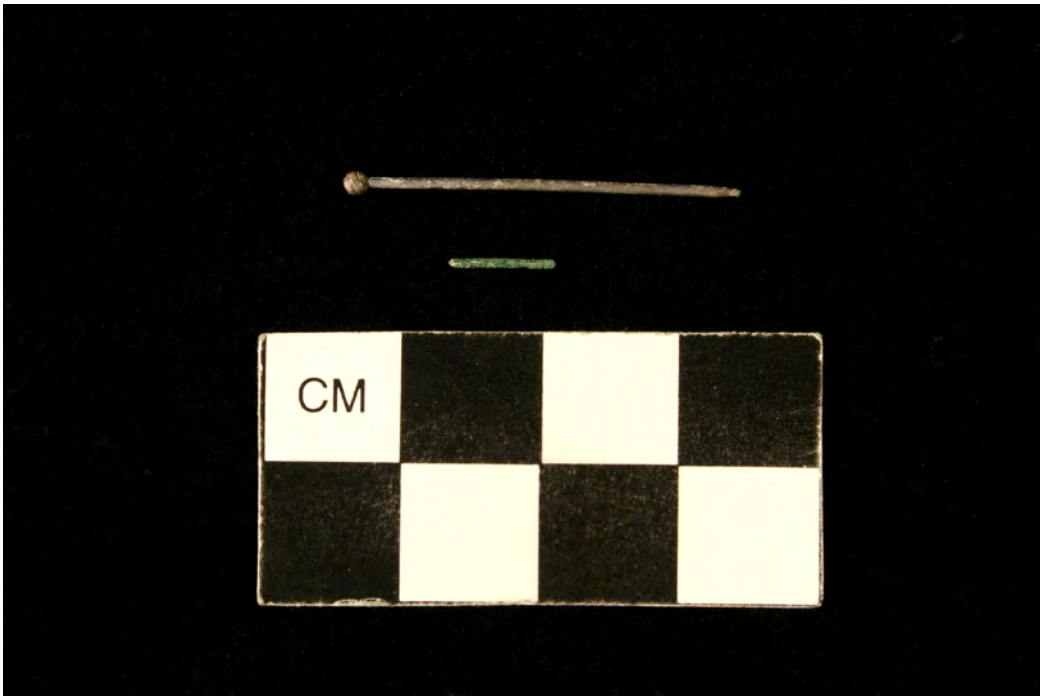

Figure 3-3. Straight pins: top, whole pin with swirled head; bottom, shaft fragment.

Straight pins are particularly useful temporal indicators, since they followed a technological sequence quite similar to that of machine-made nails, going from hand-heading to complete machine production ca. 1832-1833 (Lubar 1987). Hand-headed straight pins can be distinguished by their irregular head, which often shows a swirling pattern, as opposed to a more regular head, which lacks bands or swirls of metal. Many of the pins recovered from the Horse Park Cemetery were quite corroded and required conservation to reveal the head type, all of which are of the swirled head type.

PERSONAL OBJECTS

The only personal artifacts recovered were a hair comb from Burial 15 (an European-American adult female), and a ring (likely a wedding band) from Burial 33 (an African-American adult male) (Figure 3-4). The hair comb was manufactured from mother of pearl. It had at least five pointed teeth and a dark brown finish.

The only jewelry recovered was a size 11 ring from Burial 33 (an African-American adult male). The ring is a plain band (of unidentified white metal, possibly brass) and was found near the left hand. This is consistent with the pattern observed at the Old Frankfort Cemetery, where rings were associated with the left hand of males (Pollack et al. 2009). When found with women they were usually associated with their right hand.

Figure 3-4. Brass or white metal wedding band and mother of pearl hair comb.

CHRONOLOGICAL INDICATORS

Artifacts are often quite useful in dating archaeological contexts. This is especially the case with artifacts found in human burials, for as long as it can be assumed that the burial has not been disturbed by deposition of post-interment artifacts, the objects found with a burial date to the one-time event of interment. The actual manufacture date of the artifacts associated with the burial can be earlier than the date of interment, but it cannot be later. The presence of various datable artifacts found with the human remains provides the most crucial information, but the absence of certain datable artifacts also provides a valuable perspective. In the case of these burials, the coffin fasteners and other coffin hardware (or lack thereof), clothing fasteners, and shroud pins were the most temporally diagnostic artifacts.

The earliest individuals found in the Horse Park Cemetery were buried in wooden boxes constructed with hand-wrought nails (Table 3-2). Of these, four were European-Americans adults (Burials 4, 12, 13, and 16), one a European-American adolescent (Burial 11), one an African-American adult (Burial 6), one an infant (Burial 8), and one a child (Burial 9). All potentially could have died before 1815, and the widespread use of early machine-cut nails.

Table 3-2. Numbers of burials with various types of nails, by biological affiliation.

Biological Affiliation	Wrought		Early and late-cut		Late-cut		Wrought or early cut		None		Total	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
African-American	1	12.5	1	50.0	7	30.0	1	50.0			9	27.3
European-American	5	62.5			5	20.0	1	50.0	1	100.0	11	33.3
Undetermined	2	25.0	1	50.0	11	50.0					13	39.3
Total	8	100.0	2	100.0	23	100.0	2	100.0	1		33	100.0

Burials 7 (infant) and 19 (European-American adult male) may have died sometime between 1815 and 1830. Unfortunately, the nails associated with their coffins were too corroded to determine if they were hand-wrought or early machine-cut.

Burials 17 (infant) and 18 (African-American adult male), whose coffins were constructed using both early and late machine-cut nails, may have been the next to be interred within the Horse Park Cemetery. Since late machine-cut nails replaced early machine-cut nails in the early 1830s, they probably died around that time. Support for this suggestion comes from the two-piece swirled head pins that were used to pin Burial 17's shroud. These types of pins predate-1833, when they were replaced by one piece machine made pins.

Three other individuals also appear to have died in the early 1830s based on the use of late machine-cut nails to construct their coffins, and the presence of two-piece

swirled head pins. These interments include two African-American males (Burials 23 and 24) and an infant (Burial 21).

Of the remaining graves, one European-American adult female (Burial 20) died after 1846 based on the presence of a pointed gimlet coffin screw, and an infant (Burial 14) and an African-American adult male (Burial 33) died after 1840, based on the presence of Prosser buttons. That fabric with machine stitched button holes also was recovered from both of the latter graves, suggests they may have died after 1854 (see Chapter 5). Based on the presence of just late machine-cut nails, 15 burials post-date 1830. Of these, two are infants (Burials 5 and 31); two are children (Burials 25 and 26); one is an undetermined adolescent (Burial 30); one is an African-American adolescent female (Burial 32); three are African-American adult males (Burials 23, 27 and 29); two are European-American adult males (Burial 1 and 22); two are European-American adult females (Burials 2 and 15); and two are undetermined adults (Burials 25 and 28). (Burial 3 lacked any associated artifacts and was not assigned a potential date of death range.) That all of these individuals died before 1860 is suggested by the absence of several coffin hardware attributes that are present in later cemeteries (Favert 2006, 2008; Stottman and Pollack 2005). All of the coffins lack handles and other decorative coffin hardware that became increasingly prevalent on late nineteenth century mass-produced caskets (as opposed to simple wooden coffins) that typified the "beautification of death" movement (Bell 1990, 1994; Bybee 2009a; Little et. al. 1992; Mainfort and Davidson 2006). Also missing are metal caskets with glass viewing plates, which increase in popularity after 1848, and thumbscrews, which were common coffin hardware by the late nineteenth century (Mainfort and Davidson 2006; Stottman and Pollack 2005).

BURIAL PRACTICES

The rise of professional funeral directors largely occurred in the second half of the nineteenth century (Mainfort and Davidson 2006). Since most of the interments in the Horse Park Cemetery likely took place during the first half of the nineteenth century, preparation of the body, the transporting of the body to the cemetery, and placement in the ground was likely a family activity. Family cemeteries were common in Kentucky by the late eighteenth century (Bybee 2009a).

All interments at the Horse Park Cemetery were in a grave shaft. The absence of bricks or limestone slabs, indicated that unlike at the Old Frankfort Cemetery and the State Monument, also in Frankfort, none of the graves were brick or stone-lined. Nor were they covered with large limestone slabs.

The presence of nails and screws indicate that these persons were buried in wooden coffins. Based on the shape of the grave shaft and the distribution of coffin hardware, most individuals were interred in a hexagonal coffin. A few (Burials 18, 25, 30, and 33) were interred in rectangular coffins. The shape of four coffins (Burials 1, 3, 26, and 28) could not be determined. Hexagonal coffins were the most common shape from the sixteenth through the mid-nineteenth centuries, though other shapes, such as rectangular and tapered box forms (widest at the top and tapering to the feet) also existed,

with rectangular forms becoming more common after 1850 (Mainfort and Davidson 2006:106).

The Horse Park Cemetery coffins were fastened with nails and screws, most commonly along the outsides of the coffin, especially at the head and feet, but also along the sides. No coffin tacks were recovered, so the presence of interior coffin lining or cloth draped over the outside of the coffin is generally not suggested.

The artifacts recovered suggest that at least about one-third of the persons were buried wearing clothing. This is indicated by the metal, bone, shell, and porcelain buttons found with 10 burials (1, 2, 9, 14, 19, 22, 23, 29, 30, and 33). Other individuals were wrapped in shrouds, as indicated by the straight pins found with nine burials (4, 8, 10, 12, 13, 17, 21, 24, and 25). The absence of buttons with 24 individuals could indicate that they were buried wearing pull over shirts or dressing lacking buttons, or had fasteners that were not preserved in the archaeological record.

Examination of the type and location of the buttons relative to the human skeletal remains, and the size of coin buttons can provide insights into the clothing an individual was wearing when they were buried (Table 3-3). Buttons clustered at the waist (especially small to medium sized coin [14-20 mm] metal and larger bone buttons) or going down the pelvis are suggestive of pants with drop down fronts or suspenders, vests, and waistcoats. Large coin buttons (greater than 20 mm in diameter) are often associated with outer coats. In one case, Burial 19, at least one metal coin button at the waist area was found facing down, possibly indicating the individual was wearing suspenders.

Table 3-3. Clothing types as indicated by button type and location.

Biological Affinity/Age	Pants	Suspenders	Shirt/Vest or Dress/Shift	Coat
African-American				
Adult males	Burials 23, 29, 33		Burial 33	Burials 23, 33
Adolescent male	Burial 30			
Euro-American				
Adult males	Burials 19, 22	Burial 19	Burials 19, 22	
Adolescent Female			Burial 2	
Undermined				
Child	Burial 9			
Infant			Burial 14	

Bone, shell, and porcelain buttons associated with the chest area, aligned in a row along the spine (especially smaller buttons), or found near the neck, most likely are indicative of shirts or dresses. Not surprisingly, pants are primarily associated with adult males. Some of those individuals also were wearing a button down shirt and a coat. The paucity of buttons with adult females (only 7.7 percent) suggests that they were primarily buried in shifts and dresses that had few or no buttons. The distribution of buttons with

one adolescent female (Burial 2) is suggestive of undergarments and a dress or shift. It is possibly that the use of small, fragile hooks and eyes on nineteenth century women's clothing has resulted in an under-representation of female clothing, as these types of fasteners are difficult to recover from archaeological contexts. It also may indicate that most of the interments predate the mid- to late-nineteenth century widespread use of hook and eyes to fasten women's clothing (Petroski 1992; White 2005).

Table 3-4. Artifact distributions by burial.

Biological Affinity/Age	Clothing (buttons)		Shrouds (pins)		Other
	Frequency	Percent	Frequency	Percent	
African-American					1 ring
Adult male	3	30.0	2	22.2	
Adolescent male	1	10.0			
Adult female					
European-American					1 comb
Adult male	3	30.0	2	22.2	1 shoes*
Adult female			1	11.1	
Adolescent Female	1	10.0			
Undetermined					
Child	1	10.0			1 shoes*
Infant	1	10.0	4	44.4	
Total	10		9		
* See Chapter 4.					

Straight pins were most commonly found near the head and to a lesser extent the feet, suggesting pinning of the shrouds in these areas. More males than females were wrapped in shrouds (Table 3-4). In fact, 40 percent (n=4) of the men were wrapped in shrouds compared to only 7.7 percent (n=1) of the women. An even higher percent of infants had been wrapped in shroud; with pins being associated with four of the six infants found at the Horse Park Cemetery. A similar pattern was documented at the Old Frankfort Cemetery (Pollack et al. 2009).

There is not much evidence that these persons were commonly buried with items of jewelry or personal adornment. In fact, only two such items were recovered from the Horse Park Cemetery (Figure 3-4). A mother-of-pearl hair comb was found under the right side of the skull of Burial 15, an adult female of European-American descent. No buttons or pins were found with this burial, so we cannot say whether she was buried in clothes or wrapped in a shroud.

The ring was found with an African-American adult male. A variety of bone, metal, and three porcelain buttons, and remnants of fabric were found with this individual. The distribution of buttons and the cloth suggest this man was wearing a coat, shirt, and pants when he was placed in his coffin.

COMPARISON WITH CONTEMPORARY CEMETERIES

Contemporary cemeteries excavated in Kentucky, include the Old Frankfort Cemetery with 242 interments (Pollack et al. 2009), the Ward Hall Cemetery in Scott County with nine interments (Bybee 2009b), the Terrill Cemetery in Madison County with 18 interments (Favert 2008), and the Eastern State Hospital Cemetery with 11 interments (Favert 2006).

Old Frankfort Cemetery

Like the Horse Park Cemetery, the Old Frankfort Cemetery artifact assemblage was dominated by coffin hardware. And as with the Horse Park Cemetery wrought nails tend to have an 8d pennyweight, with late machine-cut nails being more broadly distributed over the 3d to 8d pennyweights. Screws were used in the construction of 28.5 percent of the coffins at the Old Frankfort Cemetery, with most being of the flat-tipped variety (Miller 2007). This compares very favorably to the Horse Park Cemetery where screws were used in the construction of 29.4 percent of the coffins.

Coffin tacks, which are absent at the Horse Park Cemetery, were associated with 7.4 percent of the Old Frankfort Cemetery (Pollack et al. 2009). Four of the burials at the Old Frankfort Cemetery contained mass-produced coffin handles, while none were found at the Horse Park Cemetery. In addition, a greater variety of personal items (e.g., eye glasses and necklaces) and some items of burial ritual (e.g., coins and lead disks over the eyes) were found at the Old Frankfort Cemetery relative to the Horse Park Cemetery (Miller 2007).

Most of the 242 burials documented at the Old Frankfort Cemetery were found with only buttons and straight pins, indicating they were buried wearing clothes or wrapped in a shroud. Unlike at the Horse Park Cemetery, at the Old Frankfort Cemetery there was good evidence that several individuals wearing clothing also had been wrapped in a shroud. As with the Horse Park Cemetery, buttons at the Old Frankfort Cemetery were primarily of the metal coin and bone varieties, with some shell and porcelain specimens being present (Pollack et al. 2009). Straight pins at the Frankfort Cemetery included both the pre-1832-1833 swirled head type and the later machine headed type. The latter were not found at the Horse Park Cemetery.

The observed differences in the Old Frankfort Cemetery and Horse Park Cemetery coffin hardware and mortuary practices may be related to the size of the burial populations, as the Old Frankfort population is almost eight times the size of the Horse Park population. They also may reflect differences between an urban cemetery used by a cross-section of a community and a rural family cemetery.

Wall Hall Cemetery

With only nine individuals, the Ward Hall Cemetery in Scott County is much smaller than the Horse Park Cemetery (Bybee 2009b). Eight of the nine individuals interred in this cemetery are thought to have been enslaved and living on the Ward plantation when they died. The ninth, an infant, appears to have been buried ca. 1890, based on the presence of both late machine-cut and wire nails.

All of the slaves were buried in simple wooden coffins constructed with late machine-cut nails, which suggests that they died after 1830. These nails tend to be larger than those used at the Horse Park and Old Frankfort cemeteries, with 10 and 12 pennyweights accounting for 48.7 percent of the coffin nails at the Ward Hall Cemetery (Bybee 2009b:84). These pennyweights were not used to construct coffins at the Horse Park or Old Frankfort cemeteries, where 6 and 8 pennyweights were more common.

Wood screws were used in the construction of two of the eight coffins at the Ward Hall Cemetery. All were of the pointed variety (ByBee 2009b:84-85). They were used in the construction of one coffin. For the other coffin, they were used to mount diamond shaped, white metal decorative escutcheons. This coffin had been lined with cloth, as evidence by the presence of an iron lining tack. The presence of the decorative escutcheons and the tacks suggest that the coffin would have been fancier than any of those found at the Horse Park Cemetery.

In contrast to the Horse Park and Old Frankfort cemeteries, no coin, shell, or Prosser buttons were recovered from the Ward Hall Cemetery. At other cemeteries, coin buttons are primarily associated with men's pants, vests, and coats. Thus, their absence in the Ward Hall Cemetery may be due more to the fact that few adult men were interred in this cemetery than a reflection of cultural or temporal differences. The absence of shell buttons may be due to preservation conditions and sample size, as these types of buttons are not well-represented even in larger collections.

Of the 30 bone buttons recovered, all but two were of the five-hole variety, with one having four-holes and the other one-hole. The paucity of one-hole bone buttons, however, is rather striking as these types of buttons are well-represented at the Old Frankfort and Horse Park cemeteries.

In addition, to buttons, clothing at the Ward Hall Cemetery is represented by leather shoes and brass hook/eyes. Shrouds are represented by pins, which were associated with six of the eight burials (it could not be determined if they were two-piece swirled headed or one piece machine made pins). Personal items are represented by hair combs, found with two burials (both adult females; one whom was buried in the fancier coffin).

Terrill Cemetery

The Terrill Cemetery contains 18 individuals who died between 1804 and 1876, based on death dates on headstones (Favert 2008). All were of European-American descent. As with the Horse Park and Old Frankfort cemeteries, coffins were constructed with wrought or late machine-cut nails (Mabelitini 2008). In addition to nails, screws were used in the construction of six coffins.

Wooden coffins at the Terrill Cemetery tended to be plain, but one individual was buried in a wooden coffin with six lead allow handles, escutcheons, and thumbscrews. This coffin hardware is similar to an 1880s coffin found at the State Monument Cemetery in Frankfort (Stottman and Pollack 2005). Another individual was buried in a cast iron coffin.

As with the Horse Park Cemetery, the earliest coffins were constructed with wrought nails and later coffins machine-cut nails. In contrast to the Horse Park Cemetery, wrought nails with penny weights of 6d (29.8 percent) are much more common at the Terrill Cemetery. Wrought nails with a penny weight of 8d account for only 20.2 percent of the wrought nails at the Terrill Cemetery compared to 59.1 percent of these types of nails at the Horse Park Cemetery. At both cemeteries, penny weights of 6d and 8d account for about 50 percent of the machine-cut nails.

The absence of buttons in pre-1840 graves at the Terrill Cemetery suggests that these individuals were buried wearing pull-over shirts that lacked buttons or wore dress or shifts that had clasp fasteners that have not survived in the archaeological record. Likewise, the absence of pins suggests that some individuals were wrapped in shrouds or blankets that were not pinned or the pins used to fasten them did not survive in the archaeological record.

In comparison to earlier graves, the presence of Prosser shirt or dress buttons, cast iron pants buttons, hook-and-eye clasps, a buckle or clip, and shoes (leather fragments) in graves of individuals who died after 1840 indicate they were wearing clothing (e.g., button-down shirts and a suit) and a few had associated footwear. Personal items found with the post-1840 burials consisted of gold-plated copper hoop earrings and a vulcanized rubber hair comb.

Eastern State Hospital Cemetery

The Eastern State Hospital Cemetery contained the remains of 11 individuals (six females and five males) who died between 1839 and 1861 (Favert 2006). All were adults of European descent who were buried in wooden coffins constructed with late machine-cut nails. Most of the nails had pennyweights of 7d (61.4 percent) and 10d (32.9 percent). Screws were not used in the construction of the coffins.

Clothing in the form of buttons and a buckle was found with six (five females and one male) of the 11 individuals. As with the Ward Hall Cemetery, only bone (four-hole=6 and five-hole=4) and porcelain (n=6) buttons were recovered from this cemetery. As with the Terrill Cemetery no pins were recovered from any of the graves.

That buttons were found with more females than males, distinguishes the Eastern State Hospital mortuary pattern from the other four cemeteries. Variation in the location of the buttons recovered from the graves of five women suggests these individuals were not wearing standardized uniforms when they were placed in their coffin (Miller 2006). Perhaps they were interred in clothing provided by their relatives, that had been donated to the hospital, or that they made themselves.

Summary

Early to mid-nineteenth century cemeteries in central Kentucky are characterized by infants, children, adolescents, and adults interred in wooden coffins. The earliest coffins were constructed with wrought nails and screws. Later coffins were constructed with machine-cut nails and screws. The general absence of early machine-cut nails raises questions concerning the types of nails used to construct coffins from 1815 to 1830 (wrought or early machine-cut) in central Kentucky. It also could reflect archaeologists' inability to distinguish early from late machine-cut corroded nails in the archaeological record. Removal of the wood, often found adhering to the head of many coffins nails, also may have contributed to the underrepresentation of early machine-cut coffin nails in the Horse Park, Old Frankfort, and Terrill Cemetery nail assemblages by obliterating the indentation located just below the head where the shaft was grasped to attach the head. Lacking this indentation the nail would have been classified as late machine-cut or an unidentified machine-cut nail rather than an early machine-cut nail.

In rural areas, there is little evidence of coffin lining, which was associated with about seven percent of the coffins at the Old Frankfort Cemetery. Coffin hardware, such as handles and viewing plates, are rare in both rural and urban contexts prior to 1860; the exception being the State Monument Cemetery (Stottman and Pollack 2005), where veterans of the 1846 Mexican-American War were interred in metal coffins.

Clothing fasteners in the form of buttons are more common with men than women, with most being associated with pants, coats, and vests. Shrouds tend to be associated more with infants and children than older individuals. Personal items, such as rings and necklaces, are more common in urban contexts, but some items, such as hair combs are much more common in rural cemeteries. But in general, personal items are found with less than 10 percent of the burials in both urban and rural contexts.

SUMMARY AND CONCLUSIONS

The artifacts from the Horse Park Cemetery suggest that it dates from the late-eighteenth to the mid-nineteenth century. The earliest interments, such as those found with wrought nails, were primarily of European descent. Over time more enslaved African-Americans were interred in the cemetery. Both European-Americans and African-Americans were interred in simple wooden coffins closed primarily with nails but in some cases also screws. The lack of tacks suggests that these coffins were not lined. Persons were laid out wearing clothing or wrapped in a shroud.

Pants, shirts, and less frequently coats or vests are indicated for some of the males, and dresses or shifts were worn by women. Infants tended to be wrapped in shrouds. Some persons were buried with their shoes on. Personal items were not commonly included in the burial; only one ring and one hair comb were found. There was no evidence of burial rituals, such as placing coins or lead disks over the eyes.

The paucity of personal items found at the Horse Park Cemetery could be interpreted as indicating a low socio-economic status for all of the individuals interred within the Horse Park Cemetery. This certainly would have been the case for the African-Americans, who were probably enslaved; But what about the European-Americans? Surprisingly, everyone appears to have been treated at death in much the same way; at least with respect to what is preserved in the archaeological record. Socio-economic status differences may have been reflected in the quality of the clothing one was wearing or the shroud they were wrapped in when they were buried. Unfortunately, few fabrics were recovered from the cemetery (see Chapter 4).

In general, the coffin hardware, clothing related items, and personal objects recovered from the Horse Park Cemetery are consistent with what has been found at other rural and urban early to mid-nineteenth century cemeteries.

CHAPTER 4: FABRIC AND LEATHER REMAINS

By
Christina Pappas

Fabric and leather remains were recovered from seven of the 34 burials at the Horse Park Cemetery. Fabric was found with five burials (Burials 19, 23, 29, 30, and 33) and leather was found with two burials (Burials 1 and 14).

BURIAL 1

Three fragments of leather were recovered from Burial 1, an European-American adult male. All were from the heel of a shoe with no fragments from the shoe's body. The leather fragments were compressed, but it could not be determined if this had been done manually or with a compression machine. The heel had been attached to the shoe with square heel nails, six of which were still present. The nails were irregularly spaced around the heel and indicate they had been driven in manually. It could not be determined if this heel was the original or a later replacement, because none of the shoe's body was recovered. Heels were manually nailed or pegged to shoes until the 1860s when nailing machines were invented (Anderson 1968). They were, however, still manually re-attached by a cobbler even after shoe manufacture became completely automatic.

BURIAL 14

Approximately 20 fragments of leather were recovered from this burial; a child less than three years old. These fragments include the outsole (n=2), upper (n=5), eyelets (n=3), heel (n=1), and miscellaneous fragments (n=7) from a pair of shoes. The size of the fragments indicates the shoes were for a child. The upper was machine-stitched to the outsole with a heel attached with wire heel nails. Sewing machines used in shoe-making were first invented in the late 1840s and by 1860, these machines were able to sew the uppers to the outsole (Anderson 1968). Thus, these shoes could not have been manufactured any earlier than the 1840s.

BURIAL 19

Fabric recovered from this burial, a 20-25 year old European-American male, was found in association with five coin buttons. The recovered fabric included fragments that would have covered the buttons as well as lockstitch stitching and small garment fragments. The button-covering fabric was plainweave with wool Z-spun singles with an average of 14 warps by 14 wefts per centimeter. The remaining fragments of fabric were solidified with sediment, which prevented identification of their structure. A small amount of thread remained intact on the reverse of one button. The thread was 2-ply, S-

spun, Z-twisted and was used to secure the button to the garment. Two fragments recovered from this burial included lockstitch sewing machine stitching. One fragment appears to represent a small seam while the other fragment is a machine-stitched buttonhole. Lockstitch sewing machines became popular after 1850s with the first buttonhole sewing machine patented in 1854 (Cooper 1976).

BURIAL 23

Fragments of fabric were recovered in association with two coin buttons from Burial 23, a 25-29 year old African-American male. The fabric appears to have been fulled and was in poor condition. The process of fulling causes fibers from the surface of a woven fabric to be raised and matted together, and is typically employed for suits, coats, and jackets. Unfortunately, because the fibers are raised, they will more easily trap sediment and in these examples this prevented any further identification of textile or yarn structure. An additional example of fabric was present on the reverse of one of the buttons. The fabric was discolored and hardened with corrosion from contact with the button. It appeared to be plainweave with approximately 32 warps x 32 wefts per centimeter. The yarn structure could not be identified. The poor condition of the few small fragments recovered from this burial prevented any further identification of garment type.

BURIAL 29

Fabric recovered from this burial, a 20-35 year old African-American male, was found in association with two coin buttons. The fabric was in extremely poor condition with only one set of elements present. This made it impossible to identify textile structure. Sediment was solidified to the fibers and yarn structure is unknown. The elements present averaged 12 yarns per centimeter.

BURIAL 30

Three coin buttons with associated fabric were recovered from this burial, an African-American male less than 18 years old. The fabric from this burial was in poor condition and solidified with sediment. Yarn structure was completely obscured but textile structure was identified as weft-faced plainweave and was possibly fulled. This example averaged 16 wefts x 8 warps per centimeter.

BURIAL 33

Approximately 33 fragments of fabric were recovered from this burial, an African-American adult male. Individual fragments of fabric were recovered in addition to fragments associated with several buttons. The majority of the fabric fragments (n=30)

were from the body of an outer garment, such as a suit coat or jacket. The remaining fragments (n=3) would have been either fabric used to cover coin buttons (n=2) or fabric from an inner garment, such as a shirt (n=1).

The outer garment fragments were constructed of two fabrics, an outer layer and an inner/liner layer. The outer fabric was a fulled wool plainweave with S-twisted warps and wefts. The weft elements were over-plied (more tightly twisted) than the warp elements thus creating a slight bias in the fabric giving the appearance of a twill weave. These fragments averaged 16 warps and wefts per centimeter. The inner fabric appeared to be plainweave with S-twisted warps and wefts. The fabric was a natural-colored (undyed) wool that had not been fulled. These fragments averaged 10 warps x 8 wefts per centimeter. The overall condition of these fragments was poor; they were highly fragmented with solidified sediment. Only two fragments were identified that had any garment construction details. One fragment had a series of oblong holes along one edge indicative of stitching. The thread was no longer present so the type of stitching, machine or hand, could not be determined. The second fragment had a small portion of a buttonhole present as well as a small amount of stitching that appeared to be lockstitch sewing machine stitching. The first buttonhole sewing machine was patented in 1854 (Cooper 1976).

The remaining fabric recovered from this burial was associated with buttons. Two of the fragments were fabric that would have originally covered a coin button. This fabric was a fulled wool plainweave. These fabric-covered buttons would have been sewn to the outer garment but the fabric was woven at a finer gauge, 20 warps x 18 wefts per centimeter. The third fragment was found in association with a four-hole bone button. This fabric was cotton and would have probably been from a shirt. Unfortunately this fabric was badly deteriorated and no information on textile structure or warp and weft elements could be discerned.

SUMMARY

Leather fragments and fabric were recovered from seven of the 34 burials at the Horse Park Cemetery. They were recovered from one infant and six males (two European-Americans and four African-Americans). Unfortunately, the recovered fragments were generally in poor condition and only provided limited information on the shoes and garments the deceased were wearing when they were placed in their coffin. Though little temporal information could be obtained from the shoes associated with Burial 1, the leather shoe fragments from Burial 14 indicate that they were manufactured after the late 1840s.

A small amount of fabric fragments were found in association with metal coin buttons recovered from Burials 19, 23, 29, 30, and 33. The location of the buttons associated with Burial 29 could not be determined. Coin buttons associated with Burials 19, 23, 30 were found in one or two rows just above the pelvis (see Figures 7-4 and 7-8). This suggests which suggests that they were wearing pants with suspenders or drop front

pants when they were placed in their coffin. The distribution of buttons associated with Burial 33 not only suggests he was wearing drop front pants, but also a jacket (see Figure 7-11). The plain weaved fulled fabrics associated with these individuals is consistent with both pants and jackets. Unfortunately, due the poor preservation of these materials the quality and types of garments worn could not be determined.

Of note was the presence of buttonholes sewn with a sewing machine with the fabrics recovered from Burials 19 and 33. That sewing machines were first patented in 1854 suggests these individuals died after that date.

CHAPTER 5: COFFIN WOOD

By
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Examination of 17 samples of desiccated wood from 16 coffins (two samples were from one coffin), led to the identification of six genera/species (Table 5-1). This was accomplished through the macroscopic examination of wood characteristics in specimen cross-sections. Pine is the easiest identification to make, as a conifer without pores but with abrupt transition between earlywood and latewood cells and prominent resin canals. Cherry (probably black cherry, *Prunus serotina*) has tightly packed pores that are slightly semi-ring porous, visible rays and most uniquely, gum deposits in some pores. Maple has evenly spaced solitary small pores in a diffuse porous arrangement. Yellow poplar is a diffuse porous wood with numerous tightly spaced pores in radial multiple groupings and no gum deposits. Ash (probably white ash, *Fraxinus americana*) is ring porous with large earlywood pores, along with solitary, small well-spaced latewood pores and narrow rays (Core et al. 1979).

Table 5-1. Coffin wood species.

Context	Species	Biological Affinity
Burial 2	pine (*Pinus* sp.)	European-American
Burial 7	pine (*Pinus* sp.)	
Burial 9	cherry (*Prunus* sp.)	
Burial 10	unidentified (small sample)	
Burial 12	Unidentified	European-American
Burial 14	maple (*Acer* sp.)	
Burial 15	pine (*Pinus* sp.) (two samples)	European-American
Burial 16	yellow poplar (*Liriodendron tulipifera*)	European-American
Burial 19	cherry (*Prunus* sp.)	European-American
Burial 22	Unidentified	European-American
Burial 23	ash (*Fraxinus* sp.)	African-American
Burial 24	cherry (*Prunus* sp.)	African-American
Burial 27	cherry (*Prunus* sp.)	African-American
Burial 29	cherry (*Prunus* sp.)	African-American
Burial 31	pine (*Pinus* sp.)	
Burial 32	black walnut (*Juglans nigra*)	African-American

Of the six genera/species, cherry (*Prunus* sp.) and pine (*Pinus* sp.) are the most common coffin woods, being associated with five and four coffins, respectively (Table 5-1). Maple (*Acer* sp.), yellow poplar (*Liriodendron tulipifera*), black walnut (*Juglans nigra*), and ash (*Fraxinus* sp.) are each represent by one coffin. The wood used to construct three coffins could not be identified, due to small sample size or poor preservation of internal wood structure.

Within the Horse Park Cemetery, most of the pine and yellow poplar coffins are associated with European-American graves located in the eastern half of the cemetery,

with most of the cherry and the single examples of black walnut and ash being associated with African-American graves located in the western half of the cemetery. Since many of the European-American interments predate most of the African-American graves, these differences could reflect changes in the composition of local tree stands that were used in the manufacture of wooden coffins.

The observed differences may not be tied to economic status, as cherry, maple, and black walnut were more expensive woods than pine and yellow poplar. Thus, if the observed differences were related to status, one would expect to see greater use of the former species in the construction of European-American coffins and the latter species in the construction of African-American coffins. Research at the Old Frankfort Cemetery also found little evidence that coffin wood selection was related to economic status (Pollack et al. 2009; Rossen 2008).

Coffins at the Horse Park Cemetery may have been manufactured by slaves who used locally available trees in their construction. That coffin wood selection could have been tied to locally availability of wood species is reflected by differences in the Horse Park Cemetery and the Old Frankfort Cemetery wood profiles (Table 5-2). The Horse Park Cemetery wood profile points to a greater diversity of woods being used in coffin construction, with six different species used to construct 13 coffins. In comparison, only four species were used to construct 79 coffins at the Old Frankfort Cemetery. Species present at the Horse Park but not the Old Frankfort Cemetery, include ash, black walnut, and maple. Eastern red cedar is the only species present at the Old Frankfort Cemetery that is not present at the Horse Park Cemetery.

Table 5-2. Horse Park Cemetery and Old Frankfort Cemetery coffin wood.

	Horse Park		Old Frankfort	
Wood Species	**Freq**	**Percent**	**Freq**	**Percent**
Eastern redcedar (*Juniperus virginiana*)	0	0.0	34	43.0
Cherry (*Prunus serotina*)	5	38.5	23	29.1
Pine (*Pinus* sp.)	4	30.8	9	11.4
Yellow poplar (*Liriodendron tulipifera*)	1	7.7	8	10.1
Ash (*Fraxinus* sp.)	1	7.7	0	0.0
Black walnut (*Juglans nigra*)	1	7.7	0	0.0
Maple (*Acer* sp.)	1	7.7	0	0.0
Cherry and redcedar	0	0.0	3	3.8
Eastern redcedar and yellow poplar	0	0.0	1	1.3
Eastern redcedar and pine	0	0.0	1	1.3
Total	13	1000.0	79	100.0

Relative to the Old Frankfort Cemetery, the absence of eastern red cedar in the Horse Park Cemetery wood sample is striking, as this species was used in the construction of almost 50 percent of the coffins at the Old Frankfort Cemetery (Table 5-2) (Rossen 2008). A preference for eastern red cedar may be related to its accessibility along the Kentucky River and in the Outer Bluegrass to the north of Frankfort. This secondary growth species may not have been present in the more open fields of the Inner Bluegrass.

CHAPTER 6: HUMAN SKELETAL REMAINS

By
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All the human remains were washed and processed at the University of Kentucky's Laboratory for Archaeological Research. The materials were boxed and bagged by burial number. The skeletal analysis was under taken by Peter Killoran at the University Kentucky Museum of Anthropology. Additional research was conducted by Dr. Gretchen Dabbs, who paid particular attention to the dentition, and identifying paleopathologies and musculoskeletal markers. All of the skeletal remains were poorly preserved, which was likely due to the high clay content of the soil.

An attempt was made to identify all of the recovered remains. Towards this end the *Standards for Data Collection For Human Skeletal Remains* (Buikstra and Ubelaker 1994; hereafter referred to as *Standards*) was used to ensure that all the required data were collected and the data sets generated would be comparable to those of other researchers. Much of the material was very friable with the periosteum and compact bone being separated from the underlying cortical bone. Most of the surface had a wet paper like surface being wrinkled, bubbled and warped; yet the underlying cortical bone was intact and gave a relatively good representation of shape and size of some bones. The data collection sheet and hand notes of the first author were used to determine an individual's age, sex, height, weight, ancestry/heritage, and the diseases they may have suffered from. A separate skeletal inventory was created for this burial population because much of the data normally recorded were missing or damaged; separate files were not created for all of the skeletal attributes. Rather, where information could be collected for an individual, it is summarized in an extended comments section of the overall inventory and presented in this chapter in the section on pathology.

INVENTORY OF INDIVIDUALS

The bones of adults were inventoried and coded into an excel database, as much as possible given the fragmentary nature of the material following the procedures in *Standards* and outlined above taking hand written notes on the relatively intact bone. The inventories are for the cranial region (skull) and the postcranial region (the remainder of the body). Each region was given an overall completeness code and then each individual bone was then coded. Immature individuals have a separate coding scheme that does not necessarily fit well with the adult completeness coding. Children have incomplete bones held by cartilaginous or membranous connections that might not be present in adults. A general overview for the adult burial is presented below. Immature individuals are color coded in gray and were accounted for in the handwritten notes of the first author.

The coding proceeded as follows:
1= 75 percent present= complete
2= 25-75 percent present=partial
3= less than 25 percent present-poor
9= 0 percent

The codes were translated into the following way: 1 was coded as 75 percent, 2 as 50 percent, and 3 as 25 percent. This allowed each individual skeletal part to be characterized and then averaged to show relative cranial and post-cranial completeness (Table 6-1).

Table 6-1. Cranial and post-cranial completeness.

Burial	Cranial Completeness	Post Cranial Completeness	Burial	Cranial Completeness	Post-Cranial Completeness
1	63.89	32.14	18	30.56	0.38
2	13.89	42.11	19	33.33	32.71
3*			20	48.61	26.88
4	36.11	27.63	21		
5*			22	43.06	30.64
6	11.11	0.94	23	19.44	0.00
7			24	48.61	47.37
8			25*		
9	30.56	17.29	26		
10			27	23.61	8.83
11	75.00	33.83	28	29.17	0.00
12	26.39	19.36	29	75.00	33.27
13	66.67	11.28	30	42.77	3.60
14			31		
15	52.78	28.38	32	62.50	7.14
16	33.33	27.63	33*	65.00	80.00
17					

Cells filled with gray represent infant and children remains. Percentage of completeness per bone was not recorded for immature remains. Burial 33* completeness approximated from photographs and hand written notes. Burials 3*,5* and 25* are children's graves with commingled remains of adults.

Thirty-three grave shafts were identified in the field. The final accounting of individuals is subject to issues of preservation and comingling so an accurate number is difficult to fully assess. For example Burials 3 and 5 appear to be children but there are also small bits of adult bone found in these graves. The adult bone was not found in sufficient amounts to suggest that more than one individual was interred in either grave. The adult remains found with these children likely represent disturbed bone from nearby adult burials. A sufficient number of child bones were found with Burial 25, an adult, to warrant treating the commingled remains as two individuals. This resulted in a burial population of 34 individuals.

TAPHONOMIC CHANGES

A variety of taphonomic/postmortem and perimortem processes/events appear to have affected this skeletal population. The vast majority of these processes are reflected as water damage noticed on specific bones. During excavations the field archaeologists noted that recovery of bone was more difficult in areas where they were wetter or damper compared to the surrounding area. This may have contributed to the relative fragmentation and poor preservation of these burials.

Bone Weathering

The weathering of skeletal material was coded as per the *Standards* after Behrensmeyer (1978). Unfortunately this study is reflective of decomposition of bone surfaces in an arid Africa (Amboseli) climate, and thus may not be ideal for making comparisons with skeletal populations from Kentucky's more temperate climate. Behrensmeyer's study (1978) did provide weathering stages when none had previously been available. Below the weathering stages from *Standards* are presented. This is followed by commentary on new studies from wet climates.

Stage 0: Bone surface shows no sign of cracking or flaking due to weathering.

Stage 1: Bone shows cracking, normally parallel to the fiber structure (e.g., longitudinal in long bones). Articular surfaces may show mosaic cracking.

Stage 2: The outermost thin layers of bone show flaking. The flaking is usually associated with cracks, in that the bone edges along the cracks tend to separate and flake first. Long thin flakes, with one or more sides still attached to the bone, are common in the initial part of Stage 2. Deeper and more extensive flaking follows, until most of the outermost bone is gone. Crack edges are usually angular in cross section.

Stage 3: Bone surface is characterized by patches of rough, homogeneously weathered compact bone, resulting in a fibrous texture. In these patches, all the external, concentric layers of bone have been removed. Gradually the patches extend to cover the entire bone surface. Weathering does not penetrate deeper than 1.0-1.5 mm at this stage, and bone fibers are still firmly attached to each other. Crack edges are usually rounded in cross section.

Stage 4: The bone surface is coarsely fibrous and rough in texture; large and small splinters occur and may be loose enough to fall away from the bone if it is moved. Weathering penetrates into inner cavities. Cracks are open and have splintered or rounded edges.

Stage 5: Bone is falling apart, with large splinters. Bone easily broken by moving. Original bone shape may be difficult to determine. Cancellous bone usually exposed, when present, and may outlast all traces of the former more compact, outer parts of the bones.

The majority of the human remains from the Horse Park Cemetery were in a poor state of preservation. This is in part attributed the wet soil conditions at the Horse Park Cemetery. The clay acidic soils associated with the Horse Park Cemetery Site also contributed to the weathering of the human skeletal remains. All of the individuals' crania and post-crania exhibit signs of postmortem warping due to the damp conditions. The nature of decomposition of the skull is such that as the body decomposes it is likely to roll slightly and lay on its side, allowing pressure to be exerted upon it from lateral angles. To further complicate this, many of the crania and post-crania were damaged upon collapse of their coffin as the wood and metal deteriorated.

Several of the individuals had components of their body weathered to Stage 5 and beyond (total destruction of the bone). Those that were intact had an average rating of Stages 1 to 2, but that is not the whole picture. In Stage 1 and 2 one expects the cracking and flaking but this was not present. Instead what was observed was separation of periosteal bone from the underlying cortical bone.

It should be noted because of good archaeological recovery and documentation techniques; allowing the material to dry out adequately then wrapping each piece in foil before packaging allowed more bone to be recovered. The archaeological survey team should be commended for their work. Unfortunately the material did not hold up as well in the laboratory or in storage, being very friable. The relative intact bone from the photographs did not match well with what was available at the point of osteological documentation. Most of the surviving bones had to be reconstructed to some degree, but many were missing important sections of bone. Interpretation of surface structures and pathologies as well as basic measurement were somewhat confounded by the wrinkled paper mache like surface of the bone. This severely limited the measurements and analysis that could be undertaken on the human skeletal remains recovered from the Horse Park Cemetery.

When *Standards* was written few other appropriate taphonomic standards were available. A search of the current literature found two bone digenesis studies particularly relevant to the Horse Park Cemetery. One was conducted in Wales, UK on one hundred animal carcasses in a wet temperate climate. This study suggests more bone surface corrosion occurs when pH values are near 4.0 - more acidic soils) and when the material is subject to constant high humidity (Fernandez-Jalvo et al. 2010). This study found damage was sufficient that in some cases it appeared that chunks had been taken out the ends of the bone as if affected by carnivore activity. This is comparable to the damage done to many of the articular surfaces observed among the Horse Park Cemetery skeletal remains. Furthermore, the periosteal layer in Wales study was dissolved with underlying interstitial lamellae exposed. At the Horse Park Cemetery the periosteal tissue as described above was often intact but partially dissolved having a paper mache

appearance. It is likely this is a result of the dissolution of the underlying attaching matrix of bone. Fernadez-Javelo (et al. 2010) also found that most of the bone specimens after exposed to thirty years of surface exposure only had modest damage; Stages 1 and 2 on Beherensmeyer's *Standards* scale. Some of the bones from the Horse Park Cemetery fall into this classification but others clearly had more advanced decomposition and substantial loss of mass.

A second study by Hedges (2002) suggests a possible explanation of the paper mache effect on the bone surface. As water flows in and out of a site it affects the pH. As water levels lower, pH tend to increase and result in dissolution of the bone. When a new flow of water into the grave occurs it would lower the pH and actually allow some of the bone crystals to essentially re-crystallize to some degree albeit in altered form. This would be consistent with the irregular shaped paper mache like bone surface observed on many of the Horse Park Cemetery skeletal remains (Figure 6-1). These two taphonomic studies suggest future work should include gathering data about water and soil pH, microbial and vegetative damage, and documentation of histological data. This additional data would greatly improve our understanding of the taphonomy and reasons for bone diagenesis at these important historic sites.

Figure 6-1. Burial 20 is a 60+ year old European female, who is edentulous and has massive re-absorption of maxilla. Also note the staining, paper mache like appearance, and weathering on left side of crania typical of many of skeletal remains recovered from the Horse Park Cemetery.

SEX OF INDIVIDUALS

The sex of each individual was determined use information from the pelvis and the cranium as available (Bruzek 2002; Milner, 1992; Phenice 1969; *Standards* p.16-20). The subpubic region of the pelvis is considered one of the most reliable indicators of sex in humans. The ventral arc, the subpubic concavity, and the ischiopubis ramus ridge were all scored. The ventral arc is a slightly elevated ridge across the front of the pubis (*Standards* p.17). In females the ridged is rolled back more toward the base whereas in males it is markedly less so.

The subpubic concavity is located along the lower border of the pubic bone. In females it tends to be concave (curved in) to allow additional space for the birth canal. In males the subpubic region tends to be straight or even convex (curved out).

Next the ischiopibic ramus ridge was examined. Again the lower border of the pubis was examined. This bone in females tends to be thinner than in males, and as a result there is the development of a supporting ridge along the bottom of the bone. The wider male pubis tends to be "broader and flat" in appearance (*Standards* p.17)

The subpubic region was examined and scored in the following manner:

1= Female
2= Ambiguous
3= Male
9= Unobservable

Though the greater sciatic notch tends to be broad in females and narrower in males (again related to accommodation to the birth canal), it may not be as reliable an indicator of sex as the subpubic region, as the former area in females may narrow as a result of Osteomalacia, which is the adult form of vitamin D deficiency or Rickets (childhood form of disease). Vitamin D is required to absorb the necessary nutrients (calcium and phosphorus) to build healthy bone. Inadequate vitamin D can result in bone deformation. In children, who are still growing, the deficiency manifest itself as shortening and curvature of the growing long bones, in adults the effect is observed on the trabecular bone and compact bone of the ribs, vertebrae, and pelvis (Ortner 2003:393-403). In severe Osteomalacia the pelvis often folds over on itself. Less severe forms of Osteomalacia can lead to ambiguous assessments of sex. None-the-less, in healthy individuals the greater sciatic notch can be successfully scored for sex against a diagram printed on page 18 of *Standard*.

The preauricular sulcus also was scored. The preauricular sulcus is a narrow groove that appears below the auricular (ear shaped) joint surface. This surface is where the hip connects to the tail bone. The auricular surface is also important in aging. The preauricular sulcus, which is located just below the auricular surface hence the name, is thought to occur more commonly in females than males. The preauricular sulcus was rated as follows:

0= Absence of preauricular surface.
1= The preauricular surface is wide often exceeding 0.5 cm and is deep.
2= The preauricular surface is wide often exceeding 0.5 cm and is shallow.
3= The preauricular surface is well defined, narrow, and less than 0.5 cm deep.
4= The preauricular surface is narrow, less than 0.5 cm deep, and shallow (smooth walled depression).

Cranial (skull) morphology is also a good indicator of an individual's sex. Males tend to be more robust than females but this type of observation can prove challenging considering the range of robustness observed in human populations and between individuals. Five features were examined (Ascadi and Nemeskeri 1970; *Standards* p.19-20).

The Nuchal Crest – located on the back of the skull is examined in lateral (side) view. It is examined by hand to feel for rugosity of the nuchal (neck) muscle attachments. In the case of minimal expression the score would equal one; the external surface of the occipital bone (back of skull) is relatively smooth and no bony projections are visible in lateral profile. Maximal expression is a score of five. The occipital region has large and massive nuchal crest with a distinct inion hook observable in lateral (side) view; sometimes this is also expressed as a distinct shelf or ledge.

The Mastoid Process - is the large bone that projects just below the ear canal. The scoring is a little more challenging as it is not merely a measure of length but a measure of volume. It is a comparison of the structure of the external auditory meatus (ear canal) and the zygomatic process of the temporal bone (where the cheek bone meets the side of the head). Minimal expression is a score of one and individuals exhibiting this score have mastoids that have minimal projection below the interior margin of the external auditory meatus and below the digastrics groove. Maximal expression is scored as a five. The mastoid not only projects several times below the above described margins but is also quite broad in width.

Supraorbital Margin - is observed by feeling the margin (rim) of the orbit between the finger and thumb at the lateral aspect of the supraorbital foramen. A score of one is given to margins that feel narrow or are described as sharp. A score of five is given to those margins described as thick, curved.

Prominence of Glabella - is examined in lateral (side) view. The area at brow level between the eyes is called the glabella. Those individuals showing a flat or little projection at the midline are scored a one. Those individuals with pronounced projection in the midline or who have a strong supraorbital ridge (brow ridge) are scored as five.

Mental Eminence - is a bony projection in the shape of a curve on the front of the jaw. In mandibles exhibiting minimal projection or a score of one, there is very little projecting of the eminence above the surrounding bone. The maximum expression or a

score of five in contrast exhibits a massive mental eminence that occupies the anterior portion of the mandible.

Sex is estimated using the above data from the pelvis and skull utilizing these sexually dimorphic characters (those characters that distinguish males from females) (Table 6-2). The individual is then given one of the following ratings of sexual dimorphism:

0= Undetermined sex - Insufficient data to make sex determination (missing structures).
1= female -There is little doubt that the structures represent a female.
2= probable female -The structures more likely represent a female than a male.
3=ambiguous sex -Sexually diagnostic features are insufficient to classify as male or female (structures present but not helpful).
4= probable male -The structures more likely represent a male than a female.
5= male - There is little doubt that the structures represent a male.

Table 6-2. Sex of each burial.

Burial	Sex	Burial	Sex
1	Male	18	Male
2	Female	19	Male
3	Female	20	Female
4	Female	21	Probable Male
5	Unknown	22	Male
6	Female	23	Probable Male
7	Unknown	24	Male
8	Unknown	25	C-Unknown A-Unknown
9	Unknown	26	Probable Male
10	Unknown	27	Male
11	Probable Male	28	Male
12	Male	29	Male
13	Male	30	Male
14	Unknown	31	Unknown
15	Female	32	Female
16	Probable Male	33	Male
17	Unknown		

AGE

All except one of the burials (where no materials were available for observation) could be classified minimally as adults (over 20 years of age) or sub-adults (less than 20 years of age) based on the criteria of *Standards* (p.21-46) (Table 6-3). The biological age for each sub-adult was based on epiphyseal closure (closure of growth plates of the bones see Brothwell 1981; Frakezas and Kosas 1978; Krogman and Iscan 1986; McKern and Stewart 1957; Redfield 1970; Scheuer et al. 2000; Steele and Bramblett 1988; Suchey et

al. 1984; Ubelaker 1989a, 1989b) and an analysis of the sequence of dental eruption (after Ubelaker 1989a), as described in the *Standards* (p.43-51). Age at death of the adults were determined using dental eruption sequences, auricular surface attributes, pubic symphysis attributes, and cranial suture closure (*Standards* p.21; see also Bedford et al. 1989; Brooks and Suchey 1990; McKern and Stewart 1957; Meindl and Lovejoy 1985,1989; Suchey and Katz 1986; Todd 1921a, 1921b).

Table 6-3. Age distribution.

Burial	Age	Age Estimate	Burial	Age	Age Estimate
1	OAD	45+ years	18	OAD	50+ years
2	AO	16-18 years	19	YAD	20-25 years
3	OAD	> 45 years	20	OAD	60+ years
4	OAD	> 45 years	21	I	6-7 months
5	I	>1.5 years	22	YAD	18-25 years
6	YAD	>18 years	23	YAD	25-29 years
7	I*		24	YAD	25-29 years
8	I	8 fetal months-4 months	25	A C	18-25, ?
9	C	7-8 years	26	C	>6 and <14 years
10	F	~birth	27	A	>18 years
11	AO	16-18 years	28	A	>18 years
12	MAD	40-44 years	29	YAD	20-35 years
13	YAD	25-29 years	30	AO	<18 years
14	C	<3 years	31	I*	
15	YAD	30-35 years	32	AO	<18 years
16	YAD	20-30 years	33	A	>18 years
17	I	6-9 months			

Burial 7 *Infant determination made based on size and photographs of grave shaft and presence of infant tooth crown fragments; Burial 31 *Infant determination made based on size and photographs of grave shaft.

Age distribution of the burial population

Although all of the burial remains were highly fragmented, all but one individual could be assigned to a general age category (Table 6-3). The following age groupings were used to assign the immature remains to age categories as per the *Standards*:

F (Fetal) = less than birth
I (Infant) = birth to 3 years
C (Children) = 3-12 years of age
AO (Adolescents) = 12-20 years of age

The following age groupings were used for adult remains as per the *Standards*:

YAD (Young Adult) = 20-35 years of age
MAD (Mature Adult) =35-50 years of age
OAD (Old Adult) = greater than 50 years

When only a simple designation of immature or adult could be made the groupings as per the *Standards* were used:

J = Juvenile
A = Adult

BIOLOGICAL AFFINITY

The biological affinities/heritage of each individual was calculated using a number of independent lines, including Fordisc 2.0 (Owsley and Jantz 1996), metrics measures, non-metric measures, and dental, cranial and postcranial measures (Table 6-4).

Table 6-4. Biological affinity.

Burial	Biological Affinity	Burial	Biological Affinity
1	European-American	18	African-American
2	European-American	19	European-American
3	European-American	20	European-American
4	European-American	21	Undetermined
5	Undetermined	22	European-American
6	African-American?	23	African-American
7	Undetermined	24	African-American
8	Undetermined	25	Undetermined
9	Undetermined	26	Undetermined
10	Undetermined	27	African-American
11	European-American	28	Undetermined
12	European-American	29	African-American
13	European-American	30	Undetermined
14	Undetermined	31	Undetermined
15	European-American	32	African-American
16	European-American	33	African-American
17	Undetermined		

STATURE AND BODY MASS

There are a number of approaches to obtaining stature and body mass from skeletons. The favored approach is to measure a long bone (in the case of stature) or a weight bearing joint surface (in the estimation of mass) and apply a regression equation that is population and sex specific. The argument is that this narrows the interval of variation observed and therefore provides a more accurate assessment of the individual under study relative to the environmental, social and historical populations from which the individual is derived. Others, such as Feldsman et al. (1990), have argued that a more generic human stature formula might be appropriate. Such an approach has been primarily applied in fossil analysis where less is known about environmental, social, or historical aspects of the population. Since biological affinity and sex was determined for the Horse Park Cemetery population, stature was calculated using the formulas of Trotter

(1970) and Jantz (1992). Preference was for combinations of femoral and tibia using formulas that are population and sex specific. If bones other than the femur and tibia were used to calculate stature they are noted in Table 6-5.

Table 6-5. Stature.

Burial	Stature cm	Stature ft in	Formula	Burial	Stature cm	Stature ft in	Formula
1	175.52	5'9"	M E- F&T	18	na		
2	159.96	5’ 3”	F E-F&T	19	186.1	6'1.2"	M A- F&T
3	166.6	5'5.5"	F E-F	20	166	5'5.4"	M E- F&T
4	176.4	5'9.4"	F E -T	21	na		
5	na			22	176.6	5'9"	
6	156.4	5'1.5"	F A-T	23	163.5	5'3.7"	M A-F
7	na			24	165.8	5'5.2"	M A-F
8	na			25	na		
9	na			26	na		
10	na			27	170.4	5'7"	M A- F&T
11	162.8	5'4"	M E-F	28	na		
12	160.3	5'3"	M E-F	29	175.4	5'9"	M A- F&T
13	167.2	5'5.8"	M E-H	30	na		
14	na			31	na		
15	162.9	5'4"	F E-F&T	32	160.1	5'3"	F A-F&T
16	172.9	5'8"	M E-F&T	33	161.9	5'3"	M A- F&T
17	na						

Formula codes: M =Male, F =Female, E =European formula, A =African formula
F&T =Femoral and Tibia formula, F =femoral formula, T = Tibia formula, H =Humerus formula.

Weight is related to stature and we chose to use the formula of Auerbach and Ruff (2004), which uses femoral head diameter to estimate weight. The results are in kilograms and pounds (Table 6-6).

On average the adult stature for the Horse Park Cemetery population is 167.72 cm or 5’6” tall. Adult males range from 160.30 to 186.1 cm (5.3” to 6’3”) tall, with an average height of 169.86 cm (5’6.9”). The adult women range in height from 156.4 to 176 cm with an average height of 164.05 cm (5’4.6”). Thus, as in other populations, on average males are taller than females.

Within the Horse Park Cemetery population, European-Americans tend to be taller than African-Americans (169.4 cm [5’7”] and 162.4 cm [5’4”], respectively). This is in spite of the fact that there are more women in the European sample and the African sample is predominately male. This suggests that the African-American population likely experienced more nutritional stress during their formative years (Steckel 1987; Tanner 1981).

Table 6-6. Weight.

Burial	Weight in kg	Weight in lbs	Burial	Weight in kg	Weight in lbs
1	76.28	167.8	18	na	na
2	65.61	144.3	19	77.22	169.90
3	58.72	129.2	20	65.10	144.10
4	Na	na	21	na	na
5	Na	na	22	63.18	139.00
6	Na	na	23	51.70	113.70
7	Na	na	24	46.16	101.80
8	Na	na	25	na	na
9	Na	na	26	na	na
10	Na	na	27	75.66	166.80
11	50.83	111.8	28	na	na
12	45.81	100.8	29	66.26	146.10
13	76.70	168.7	30	na	na
14	Na	na	31	na	na
15	65.09	143.2	32	91.79	202.36
16	64.90	142.8	33	129.78	286.10
17	Na	na			

Weight shown in kilograms and pounds as determined by femoral head.
No weights were calculated for subadults.

The average adult male weighed 68.4 kg (151 lbs) and the average female weighed slightly more at 69.2 kg (152.6 lbs). Not only did woman weigh more than men, but African-Americans within the Horse Park population weighed more than European-Americans (76.9 kg [169.5 lbs] and 64.5 kg [142.2 lbs], respectively). A similar pattern was noted at the Old Frankfort Cemetery (Pollack et al. 2009). These differences reflect the poor diets of African American slaves. This diet would have relied heavily on corn, coupled with low meat consumption, and inadequate vitamin intake.

PATHOLOGIES

Each bone was inventoried and scored to determine if the following pathologies were present: abnormal bone shape, abnormal bone size, abnormal bone loss, abnormal bone formation, fractures or dislocations, porotic hyperstosis, vertebral pathologies (including arthritis), and finally other types of arthritis (Table 6-7). When observable this information was recorded for each individual. Again the fragmentary nature of the human skeletal remains hampered efforts to identify pathologies (see completeness data and taphonomy data). As such the data was recorded by Peter Killoran using *Standards* as a basis and noting pathologies associated with each individual.

Pathologies were not recorded for 17 individuals. In part this reflects poor preservation of many skeletal elements, but it also is indicative of a high percentage (38 percent) of subadults, especially infants and very young children. One would not expect the young to express as many work-related pathologies or those associated with chronic illness. The fact that the cemetery contains a high percentage of subadults is indicative of

the poor health and inadequate nutrition experienced by this population, especially the enslaved.

The adults also show patterns of illness that one might expect if they experienced nutritional stress. Six individuals (Burials 1, 4, 20, 22, 27, and 33) exhibited abnormal bone shape indicative of chronic infection or anemia. One individual (Burial 15) had abnormal bone size, which is indicative of metabolic disruption probably due to infection. Six other individuals (Burials 2, 5, 19, 20, 23 and 27) show bone loss due to infection.

None of the individuals buried in the Horse Park Cemetery exhibited abnormal bone formation, but five had indicators of fractures or other bone traumas. For example, Burial 1 suffered from a dislocated hip. Burial 16's skull had been fractured; likely from a blow to the head, which may have resulted in his death. He also had a healed fractured fifth lumbar vertebra. This may have resulted from a fall and subsequent landing in a seated position. Burial 30 also broke his vertebrae. Unfortunately in his case it broke his back making it impossible for him to walk, which led his legs to atrophy.

Burial 23 had an unhealed puncture wound on his right scapula. The injury occurred at the time of his death and resulted from a stab wound to the back. Burial 27 had two dislocated shoulders.

Burial 19 had smorls nodules, elevated vertebral rings and large muscles attachments in the nuchal area indicating heavy weight bearing probably on the back of the neck, across the shoulders. He also suffered from mastoiditis, an infection of the inner ear, and likely dislocated his hips several times as evidenced by their large size and lipping. This likely would have made walking uncomfortable for him. Burial 19 also had a large abscessed tooth root in the lower left first molar and second premolar (Figure 6-4).

A few individuals exhibited healed wounds that were likely caused by muscle tears and subsequent infections and remodeling that resulted in porosity of the affected bone: Burial 1 has a lesion on the right clavicle and Burial 15 has enlarged muscle attachments near both humerus as evidence by porosity on both arms; Burial 20 has indications of infection (porosity) on the right scapula; Burial 23 has musculo-skeletal markers with porosity on left scapula; and Burial 26 has markings and porosity on both clavicles.

Porotic hyperstosis can be observed in the skeletal remains of children, such as Burial 9, a 7-8 year old child. It is often indicative of anemia, but could be due to sickle cell another illness, or iron deficiency.

Eight individuals (Burials 1, 2, 13, 16, 19, 20, 22, and 27) have elevated vertebra rings indicative of aging as well as a life of heavy labor and lifting. Two individuals (Burials 20 and 33) have arthritis. One individual, an older European-American female (Burial 20) had arthritis in her hands, which is suggestive of work that required a great deal of repetitive work. Burial 33, an African-American male, had arthritis or some

similar inflammatory disease in the left knee. It resulted in a complete collapse of the medial condyle of the left tibia making the person terribly "knock kneed" and probably having a painfully swollen joint.

Table 6-7. Pathology.

Burial Number	No.Observations	Abnormal Shape	Abnormal Size	Abnormal Bone formation*	Bone loss	Fractures and Dislocations	Porotic Hyperstosis	Vertebrae	Arthritis	Other
1		X				X		X		X
2					X			X		
3	X									
4		X								
5					X					
6	X									
7	X									
8	X									
9							X			
10	X									
11										X
12	X	X								
13								X		X
14	X									
15			X							X
16						X		X		X
17	X									
18										X
19					X	X		X		X
20		X			X			X	X	
21	X									
22		X						X		X
23					X	X				X
24										X
25C	X									
25A	X									
26	X									
27		X			X	X		X		
28								X		X
29	X	X								
30	X					X				
31	X									
32	X									
33		X							X	

*Abnormal bone formation, such as bone spicules, in this population when present was coded under abnormal shape or other categories.

Figure 6-2. Burial 23's scapula showing puncture wound and weathering of bone. This 25-29 year old African-American male may have died from a stab wound to the back.

Figure 6-3. Septal Aperture of Humerus. This trait was found with Burials 23 (25-29 year old African-American male), 24 (18-25 year old African-American male), and 32 (less than 18 years old African-American female).

Nine individuals (Burials 1, 11, 13, 15, 16, 22, 23, 24, and 28) had other pathologies. Burial 1's lower arms are abnormally short and curved indicative of rickets/anemia. Burial 11's dental age suggests he was between 16 and 18 years of age but skeletal measures (i.e., femur length) place him closer to 12 years of age indicating poor health or nutrition (Scheuer and Black 2000).

Burial 13 has a metopic suture (frontal bone did not fuse). Burial 15 has markings indicative of muscle tears on the scapula and humerus, and small clavicles relative to her age. Burial 16's sacrum did not fuse.

Burials 23, 24, and 32 all have a septal aperture of the humerus (Figure 6-3). It is represented by a small hole in the bony lamina that separates the coronoid and olecranon fossae in the supra-trochlear area of the distal part of the humerus. It may be a family trait that is more common in females than males (Finnagan 1978) but can arise from hyperflexibility or over extending the use of the joint (May 2008). At the Horse Park Cemetery it is associated with two African-American males and one African-American female.

One individual, a young African-American male (Burial 30), survived a break of his vertebrae, which subsequently resulted in atrophy of the lower legs. Also of note, were the large number of individuals (e.g., Burials 12, 16, 18, 22, 29, and 33) who have shorter or curved limbs indicative of vitamin D deficiency (rickets). Two of these individuals (Burials 18 and 22) also have "saber shin," which some have used as diagnostic for syphilis. That no other lesions associated with this disease are obvious, suggests that nutritional stress may better explain the observed reduction and curving of the limbs in these two individuals.

DENTITION

Dentition was recorded by Gretchen Dabbs. All of the teeth were examined for abscesses, caries, and lineal hypoplasias in the maxillary incisors, canines, and mandibular incisors. Next the maxillary and mandibular quadrants were examined for number of tooth sockets present, number of teeth present, and the amount of antemortem loss. Lastly observations were made on tooth wear, staining, and destruction of teeth.

There was no evidence of any dental care, with almost all of the adolescent and adults having cavities, with most having multiple caries. For eight individuals (Burials 6, 12, 19, 26, 28, 29, 30, and 33) cavities led to the complete destruction of tooth crowns. Three (Burials 15, 19, and 27) individuals examined have abscessed teeth (Figure 6-4), with Burial 15 having three abscesses.

Extensive dental wear effectively removed most evidence of lineal hypoplasias in the Horse Park Cemetery population, with hypoplasias only be evident on the teeth of Burials 6 and 11. Moderate to severe wear was noted for six burials (1, 4, 13, 27, 28, and 29).

Figure 6-4. Abscess on mandible of Burial 19.

Examination of the maxillary and mandibular quadrant shows a fair amount of postmortem tooth loss, but also a high degree of antemortem tooth loss and subsequent rehealing of bone. In fact, seven of 34 individuals have maxillary (Burials 1, 11, 12, 15, 18, 26, and 33) and eleven have mandibular antemortem tooth loss and rehealing (Burials 1, 3, 4, 11, 12, 13, 20, 23, 26, 28, and 33). Also of note was the black staining of Burial 32's right posterior upper teeth.

The overall picture suggested by the tooth data is one of poor dental health that probably impacted the overall well being of the Horse Park Cemetery population, European-Americans as well as African-Americans. It is highly likely that carious foods were consumed daily and that the stone grinding of corn products may have added grit to the diet, effectively wearing down the tooth enamel.

SUMMARY

The overall impression is one of a small mostly segregated family cemetery. European-Americans (n=12; 7 male and 5 female) slightly out number African-Americans (n=8; 6 male and 2 female), with the former primarily being interred in the eastern portion of the cemetery and the latter in the western portion. Eight were infants and three were children. There are 23 adult individuals, if the four adolescents are

considered working adults as was typical of the early to mid-nineteenth century. This group consists of 15 males and seven females. The sex of one adult could not be determined.

Infant mortality is 23.5 percent and childhood mortality 8.8 percent. Neither is surprising in a pre-antibiotic early to mid-nineteenth century population. Adolescents account for 11.8 percent of the Horse Park Cemetery population and adults as a group 55.9 percent. A few (n=5) individuals lived to old age surpassing 50 years of age, but only one was of African descent. Given the number of degenerative joint diseases and other pathologic lesions observed in the over fifty group, however, it could hardly be considered a leisurely or pain free "golden age" but rather a culmination of a life of continued hardships.

The overall pattern of muscle markers and degenerative joint disease suggest heavy work for all. What is notable is the difference in stature between the populations and the extremes in weight that seem to be more common in the African-American population than the European-American population. This suggests differential access to nutrition.

The data also is suggestive of a high degree of interpersonal violence, with one individual dying from a blow to the head and another a stab wound. This violence was directed at individuals of European and African descent. What is clear from the analysis of the skeletal remains is that both populations worked hard and were exposed to infectious diseases that often led to an early death. The data also shows that enslaved persons died younger and experience more nutritional stress throughout the course of their lives.

CHAPTER 7: BURIALS INVESTIGATED

The Horse Park Cemetery encompassed an area that measured 40 m east to west by 10 meters north to south. Prior to its inadvertent discovery, the cemetery was located on the east slope of a broad upland ridgetop. Its northern edge was bordered on the north side by a tree-lined road.

GRAVE SHAFTS

A backhoe was used to remove plowzone and other overburden, with the intent of exposing possible grave shafts. Since this was active construction site, much of the original ground surface in the project area had been disturbed by earth moving activities associated with the building of a new arena. This made it difficult to determine where each of the grave shafts originated, and often led to the inadvertent disturbance of graves.

Once a grave shaft was found, it was flagged, photographed, and mapped. The fill was then removed by hand using shovels and trowels. The soil within the grave shafts consisted of dark brown to black silty clay loam, and the surrounding matrix consisted of dark yellow brown consolidated clay. Coffin/casket outlines were demarcated by dark brown silty clay loam, and coffin wood, nails and screws. Upon encountering the coffin/casket outline, nails and screws were marked, and each grave was carefully excavated using trowels, brushes, bamboo and wooden tools. After the remains were exposed, the burial was photographed and mapped. The location of nails, screws, buttons, pins, and personal artifacts was noted on these maps. The human remains were then carefully removed, bagged, assigned a field specimen number, and prepared for transport to the University of Kentucky Archaeological Facility for further analysis.

All of the individuals were interred in his or her own grave shaft. The upper portion of each grave shaft was often much wider than the basal portion. The wider upper portion of the shaft likely made it easier to lower the coffin into place. The narrower base allowed it to fit snuggly into the grave.

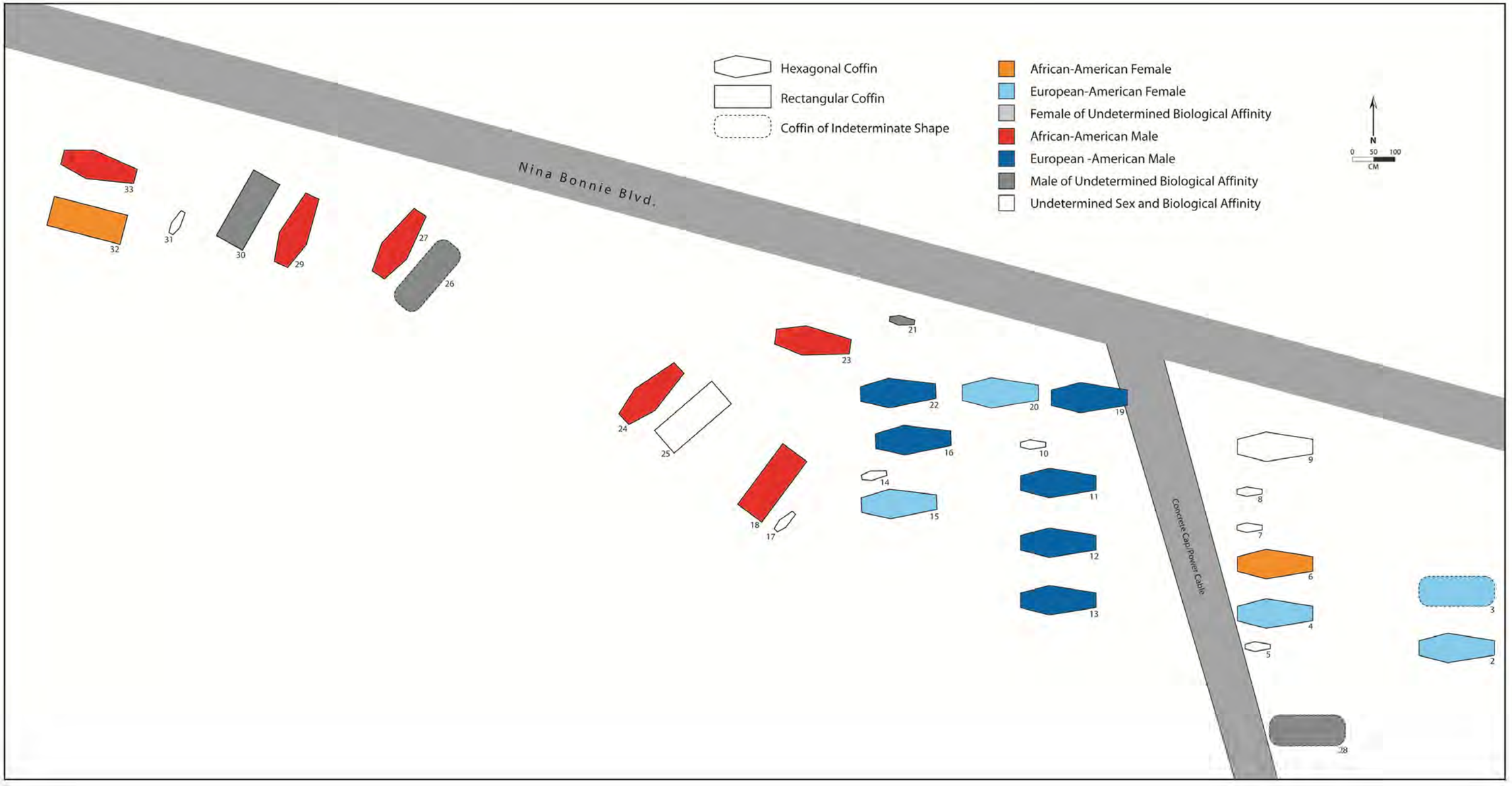

Figure 7-1. Plainview of Horse Park Cemetery.

ROW 1 (BURIALS 1, 2, AND 3)

Burials 1-3 formed the eastern edge of the cemetery. Burials 2 and 3 were oriented with their head toward the west, and it is presumed that Burial 1 had a similar orientation. Since Burial 1 had been completed disturbed by construction activities this could not be determined with any degree of certainty.

Burial 1

This grave was completely disturbed by construction activities when the cemetery was discovered.

Coffin/Casket Remains and Hardware

Coffin hardware associated with Burial 1 consisted of 11 late machine-cut nails. Penny weights could be determined for four of the nails. Two had a penny weight of 4 and two a penny weight of 6. The presence of late machine-cut nails indicates this individual likely died between 1830 and the late 1880s. The nails associated with the shoes found with this individual had been driven in manually, which indicated the shoes were made before 1860, when nailing machines were invented. Thus, based on the coffin and shoe nails, this individual likely died between 1830 and 1860. The shape of the coffin this individual was interred in could not be determined.

Human Skeletal and Dental Remains

This individual is an adult male of European-American descent, who was more than 45 years old when he died. He stood 175.52 cm (5’9”) tall and weighed 76.28 kg (167.8 lbs). The positions of the arms could not be determined for this individual.

All of his vertebrae show elevated rings indicative of degenerative joint disease. The clavicles have large muscle markings and the glenoid fossa of the scapula has lipping indicative of degenerative joint diseases. The humerus shows wear indicative of heavy use of the upper arm. Associated marking are found on the ulna in the trochlear notch and the radius has heavy muscle markers as well. All are likely the result of heavy labor using his upper arms and shoulders. Overall the forearm appears to be somewhat short, and curved, which is indicative of rickets/anemia. The right femur has an enlarged fovea capitus, the insertion point of the tendon to the hip indicating a possible dislocation and subsequent healing. The tibia shows wear on the joint indicating possible knee problems.

There appears to be an abscess in the anterior left incisor region of his maxilla, and he suffered some tooth loss during his life. He also experienced moderate to heavy tooth wear, which is suggestive of consuming stone ground corn products that added grit to his diet.

Clothing, Shrouds, and Personal Artifacts

The presence of two four-hole bone buttons (15 mm in diameter) and shoe leather indicates that this person was wearing clothes and shoes when he was placed in his coffin. Since the location of the buttons is not known, little can be inferred about type of clothing he was wearing. The absence of pins suggests that this person had not been wrapped in a shroud. No personal items were found with this individual.

Burial 2

Coffin/Casket Remains and Hardware

The grave shaft for this individual had been cut into bedrock. She was buried in a hexagonal wooden coffin made of pine. The coffin measured at least 1.90 m by 50 cm.

A total of 16 late machine-cut nails and two flat tipped screws was recovered from along the sides of the grave. Penny weights could be determined for only six of the machine-cut nails; three had weights of 3 and three weights of 6. The presence of late machine-cut nails indicates this individual died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This is a 16 to 18 year old adolescent female of European-American descent. She stood 159.96 cm (5'3") tall and weighed 65.61 kg (144.3 lbs). When this individual was placed in her coffin her arms were laid across her pelvis.

The cranium is very weathered so few determinations can be made. One observation is the presence of mastoiditis on the right side, likely from a long-term ear infection, but this has to remain tentative because the surface of temporal bone has been eroded. While not pathological but notable is the presence of a bipartite suture of the lambda on the occipital base. This feature might indicate some Native American ancestry.

The post-crania show elevated rings for all the vertebrae, which is indicative of heavy labor and lifting. The long bones were damaged at the proximal and distal ends rendering comment on degenerative joint disease or trauma impossible. She had caries and suffered some tooth loss during her life.

Clothing, Shrouds, and Personal Artifacts

The presence of two four-hole shell (10 mm in diameter) buttons, two four-hole bone (16.8 mm in diameter), and two five-hole (16.8 mm in diameter) bone buttons indicates that this person was wearing clothing when she was placed in her coffin. That the bone buttons are located on or just above the pelvis suggests that this woman was wearing undergarments. One of the shell buttons also was located on the pelvis. It may have been associated with a shirt or dress sleeve. The absence of pins suggests that she had not been wrapped in a shroud. No personal artifacts were found with this individual.

Burial 3

This grave was almost completely disturbed by construction activities before the cemetery was discovered. Only the skull was found *insitu.*

Coffin/Casket Remains and Hardware

The grave shaft for this individual was located to the south of Burial 2. She had been buried in a wooden coffin, the size and shape of which could not be determined due to construction activities. Due to disturbance of this grave shaft by construction activities, no nails or screws were found in association with this burial.

Human Skeletal and Dental Remains

This is an adult female of European descent, who died sometime after her 50th birthday. She stood 166.6 cm (5'5.5") tall and weighed 58.72 kg (129.2 lbs). Her grave was disturbed when the cemetery was rediscovered, which led to commingling of her remains and hampered analysis of her skeletal remains. She suffered a great deal of tooth loss during her life, with her mandible being completely edentulous (no teeth).

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this woman may have been wearing a dress or shift that had few or no buttons. The absence of pins suggests she had not have been wrapped in a shroud. No personal artifacts were found in association with this burial.

ROW 2 (BURIALS 4, 5, 6, 7, 8, 9 AND 28)

Row 2 consisted of seven graves that were oriented east-west, with the head of individual to the west.

Burial 4

Coffin/Casket Remains and Hardware

Burial 4 was situated between Burials 5 and 6 in Row 2. The hexagonal wooden coffin for this person was constructed with wrought nails (n=13). The remaining three nails were too fragmentary to classify. Pennyweights could be determined for four wrought nails: 1=3, 1=2, and 2=5. Six of the wrought nails had a T-Shaped head and three an L-Shaped head. Use of hand-wrought nails to construct this coffin suggests that this woman died before 1815. The type of wood used to construct this coffin could not be identified.

Human Skeletal and Dental Remains

This is an adult female of European descent, who died sometime after her 50th birthday. She stood 176.4 cm (5'9.4") tall. Her weight could not be determined. When she was placed in her coffin her hands were laid on her pelvis.

This woman's cranium is unusually small in size and she has very large brow ridges for a female. Both the upper and lower limbs are curved, which is indicative of child hood rickets and perhaps adult Osteomalacia. She suffered some tooth loss during her life.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this woman may have been wearing a dress or shift that had no buttons. The presence of two whole pins, one of which had a swirled head, near the skull of this individual, indicates she had been wrapped in a shroud. No personal artifacts were found in association with this burial.

BURIAL 5

Coffin/Casket Remains and Hardware

Burial 5 was situated between Burials 4 and 28 in Row 2. Due to earlier ground disturbing activities, the size and shape of Burial 5's coffin could not be determined. The wooden coffin was constructed with late machine-cut nails (n=49) and a flat tipped screw (n=1). Penny weight could be determined for four nails. Three had a weight of 3 and the fourth a weight of 9. The presence of late machine-cut nails indicate this individual died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

Only portions of the skull and some long bones were preserved. This individual is an infant greater than 15 months old. The placement of this infant's arms and hands could not be determined. No obvious pathologies were noted for the individual. (The partial skull of a female adult of unknown age was found in the disturbed soils associated with this burial. Because it most likely represents disturbed bone from another burial, it was not treated as a separate individual.)

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this infant may have been wearing a pull-over shirt, or dress or shift that had no buttons. The absence of pins suggests that this infant had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

BURIAL 6

Coffin/Casket Remains and Hardware

Burial 6 was situated between Burials 4 and 7 in Row 2. Disturbance of this grave by a water line had removed most of the torso and legs. This individual was buried in an hexagonal wooden coffin that measured 1.8 m by 50 cm. It had been constructed with wrought nails (n=9; three nails were too fragmentary to classify). Pennyweights could be determined for four wrought nails: 1=3, 1=2, and 2=5. Four of the wrought nails had a T-Shaped head and three an L-Shaped head. Use of hand-wrought nails to construct this coffin suggests that this person died before 1815. The type of wood used to construct this coffin could not be identified.

Human Skeletal and Dental Remains

Burial 6 is a young adult (more than 18 years) female of African descent. She stood 156.4 cm (5'1.5") tall. Her weight could not be determined. The head, right humerus, and left tibula, fibula and foot were the primary bones recovered. Thus, it was not possible to determine the position of her arms. This person suffered from several cavities, which resulted in the destruction of some tooth crowns. No other pathologies were noted for this individual.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this woman was probably wearing a dress or shift that lacked buttons. The absence of pins suggests that she had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

BURIAL 7

Coffin/Casket Remains and Hardware

Burial 7 was located between Burials 6 and 8 in Row 2. The remains of a small (52 x 34 cm) hexagonal wooden coffin was documented in association with Burial 7. The nails used to construct this coffin was in poor condition and it could not be determined if the seven recovered nail fragments were derived from wrought or early machine-cut nails. Based on the nail data it is likely that this person died before 1830, when late machine-cut nails replaced early machine-cut nails. The type of wood used to construct this coffin could not be identified.

Human Skeletal and Dental Remains

Burial 7 is an infant based on the size of the grave shaft. This individual is represented by a few fragments of human remains. No additional observations can be made concerning this infant.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this infant may have been wearing a pull-over shirt, or dress or shift that lacked buttons. The absence of pins suggests that this infant had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

BURIAL 8

Casket Remains and Hardware

Burial 8 was located in Row 2 between Burials 7 and 9. The coffin this individual was interred in was quite small measuring 65 x 25 cm. Of the 11 nails recovered, five were wrought. The other six nails were too fragmentary to classify. Four of the wrought nails had T-Shaped heads and one an L-Shaped head. Pennyweight could not be determined for any of the wrought nails. Use of hand-wrought nails to construct this coffin suggests that this person died before 1815. The type of wood used to construct this coffin could not be identified.

Human Skeletal and Dental Remains

This infant is represented by a few dental crowns, suggesting an age of four prenatal months to four months postnatal. The placement of this infant's arms could not be determined. No additional observations can be made concerning this infant.

Clothing, Shrouds, and Personal Artifacts

Three straight pins were found in association with this infant. Of these, at least one was found near the skull. The location of the other two is not known. Two of the three pins have swirled heads, while the other is a shaft fragment. The presence of pins indicates this infant had been wrapped in a shroud. No personal artifacts were found in association with this infant.

BURIAL 9

Coffin/Casket Remains and Hardware

This grave was located adjacent to Burial 8 and formed the southern edge Row 2. This person had been buried in a hexagonal wooden coffin that measured 1.41 m in length and 40 cm in width. A total of four whole wrought nails (penny weights of 5, 6 [n=2] and 7), three wrought nail fragments, and four unidentifiable shafts was recovered along the outline of the coffin. Four of the wrought nails had a T-Shaped head and two an L-Shaped head. The wrought nails indicate this individual likely died before 1815. The coffin was constructed of cherry.

Human Skeletal and Dental Remains

Burial 9 is a 7 to 8 year old child based on dental eruption, femur length and developmental stage of iliac blade. The arms of this child had been placed along their sides. Though the hand bones were not preserved, based on the orientation of the lower arms, it can be inferred that they had been placed alongside the pelvis.

The skull of this child is deformed because of taphonomic issues, but the orbits exhibit cribitalia orbita (porotic hyperstosis) an indicator of malnutrition, most likely anemia, but could due be to sickle cell, another illness, or an iron deficiency. No other notable pathologic lesions were identified, but this is not unexpected for an individual just slightly under nine years of age.

Clothing, Shrouds, and Personal Artifacts

Two large (diameter 25 mm) coin buttons were found on this child's pelvis. Though buttons of this size are often associated with coats, their location suggests this individual was wearing pants when they were placed in their coffin. The absence of buttons in the upper torso, if not due to poor preservation, indicates this child was probably wearing a pull-over shirt. The absence of pins suggests that this child had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

BURIAL 28

Coffin/Casket Remains and Hardware

This grave was located to the north of Burial 5 and formed the northern edge of Row 2. The shape of the coffin could not be determined because most of the grave had been disturbed by construction of electrical lines. Of the 10 late machine-cut nails recovered from this grave, a penny weight could only be determined for one specimen. It had a weight of 4. The presence of late machine-cut nails indicate this individual died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

Burial 28 is a male of unknown ancestry, who was more than 18 years old when he died. His height and weight could not be determined. Nor could the placement of his arms be determined.

This individual has a metopic suture that marks the place of closure of two sides of the frontal bone. This trait is relatively rare but is not thought to be detrimental to an individual's health. His vertebrae indicate degenerative joint disease.

He suffered from cavities and experienced some tooth loss during his life. In addition, severe wear on the teeth of this individual resulted in destruction of premolar and molar crowns. This is suggestive of consuming stone ground corn products that added grit to his diet.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation and prior disturbance, indicates this adolescent was probably wearing a pull-over shirt. The absence of pins suggests that he had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

ROW 3 (BURIALS 10, 11, 12, 13, AND 19)

Burial 10

Coffin/Casket Remains and Hardware

Burial 10 was located between Burials 11 and 19 in Row 3. The remains of a hexagonal wood coffin, measuring 40 cm in length and 25 cm in width were documented in association with Burial 10. The type of wood used to construct this coffin could not be identified.

Sixteen late machine-cut nails and two hand-made screws with flat ends were recovered along the outline of the coffin. Penny weights could be determined for four of the nails. Penny weights of 5, 6, 7, and 8 were present. The presence of late machine-cut nails indicate this individual died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This infant was 6 to 9 months old at death. This determination is based on development of occipital bone (Scheuer and Black 2000:57). The height and weight of this infant could not be calculated. Nor could the position of the arms be determined. No additional observations can be made concerning this individual.

Clothing, Shrouds, and Personal Artifacts

The presence of five pins suggests that this infant had been wrapped in a shroud. The pins were too fragmentary to determine if they were of the two-piece swirled head or one-piece machine-made variety. No personal artifacts were found in association with this infant.

BURIAL 11

Coffin/Casket Remains and Hardware

This individual was interred in Row 3 between Burials 10 and 12. The remains of a hexagonal coffin, measuring 165 cm in length and 40 cm in width was documented in association with Burial 11 (Figure 7-2). The coffin was much larger than this individual, as their head was about 10 cm from the top of the coffin and their feet almost 30 cm. The type of wood used to construct the coffin could not be determined.

Of the 27 nails recovered in association with this coffin, 21 were classified as wrought nails. The remaining six were shaft fragments that may have been derived from wrought or cut nails. Penny weights represented included, 4 (n=1), 5 (n=1), and 7 (n=7). Nine of the wrought nails had a T-Shaped head, five an L-Shaped head, and four a Rose-Shaped head. The presence of wrought nails indicates this individual died prior to 1815.

Human Skeletal and Dental Remains

Burial 11 is a young adult (16-18 years old) male of European-American descent. He stood 162.8.4 cm (5'4") and weighed 50.83 kg (111.8 lbs). When he was placed in his coffin his lower arms and hands were folded across his chest (Figure 7-2).

Burial 11's dental age suggested he was between 16 and 18 years of age but skeletal measures (i.e., femur length) place him closer to 12 years of age indicating poor health or nutrition (Scheuer and Black 2000). The presence of hypoplasias on two teeth, also may reflect nutritional stress. He suffered from cavities and experienced some tooth loss during his life.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this adolescent was probably wearing a pull-over shirt. The absence of pins suggests that he had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

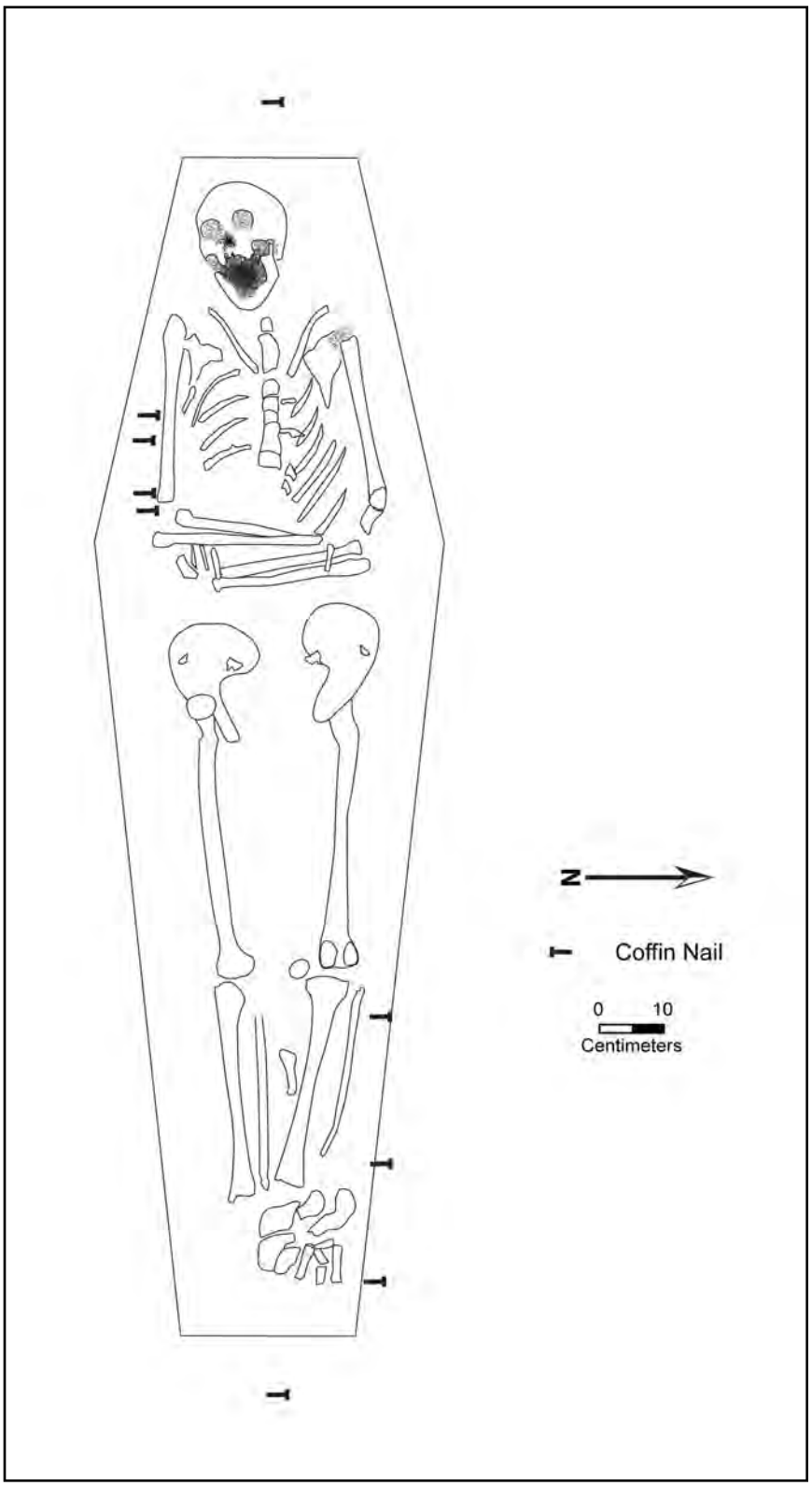

Figure 7-2. Planview of Burial 11.

BURIAL 12

Coffin/Casket Remains and Hardware

This individual was interred in Row 3 between Burials 11 and 13. The remains of a hexagonal coffin measuring 1.64 m in length and 55 cm in width was documented in association with Burial 12. This coffin had been placed in a pit that may have originally been dug to accommodate a much smaller coffin. The initial pit measured 90 cm in width and 1.30 m in length, which was much too small to accommodate this person's coffin. This resulted in the grave shaft being extended another 75 cm. With a width of 40 cm, this extension was much narrower than the original grave shaft. The type of wood used to construct this coffin could not be determined.

Of the 10 nails recovered in association with this coffin, all were classified as wrought nails. All had a penny weight of 8. Six of the wrought nails had a T-Shaped head and one an L-Shaped head. The presence of wrought nails indicates this individual died before 1815.

Human Skeletal and Dental Remains

This individual is a 40-44 year old male of European descent. He stood 160.3 cm (5'3.1) and weighed 45.81 kg (100.8 lbs), which is somewhat small and thin for European-Americans interred in the Horse Park Cemetery. His arms were laid alongside his body with each hand resting on the top of a femur.

He suffered from caries that resulted in the degrading of several tooth crowns, and he suffered some tooth loss during his life. No pathologies were noted for this individual.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this adult was probably wearing a pull-over shirt that lacked buttons. The presence of a two-piece swirled head pin suggests that he had been wrapped in a shroud. No personal artifacts were found in association with this burial.

BURIAL 13

Coffin/Casket Remains and Hardware

This burial was located along the northern edge of Row 3 and adjacent to Burial 12. The remains of a hexagonal wood coffin, measuring 1.85 m in length and 55 cm in width, were documented in association with Burial 13 (Figure 7-3). The burial shaft for this coffin was somewhat larger measuring 2.00 m in length and 70 cm in width. The type of wood used to construct this coffin could not be determined.

Of the 34 wrought nails associated with this coffin, penny weights could be determined for 19 specimens, with most having a weight of 8. One had a weight of 4 and one a weight of 5. All of the wrought nails had an L-Shaped head. The presence of wrought nails indicates this individual died before 1815.

Human Skeletal and Dental Remains

This individual is a 25 to 29 year old male of European descent, who stood 167.2 cm (5'5.8") and weighed 76.7 kg (168.7 lbs). When he was placed in his coffin his lower arms and hands were placed across his pelvis (Figure 7-3).

This individual had a metopic suture (frontal bone did not fuse). The upper and lower limbs of this individual exhibit increased musculo-skeletal markers that are indicative of regular use of both the upper and lower limbs in repetitive or heavy lifting activities. The diameters of the ulna and fibula in particular are much thicker than normal. Elevated vertebra rings also are indicative of heavy labor and lifting. That the fibula exhibits abnormal bone growth is unusual and probably indicates walking over irregular surfaces on a regular basis, or strains or twists to the area with subsequent healing (i.e., sprained/twisted ankle).

He suffered from cavities and experienced some tooth loss during his life. In addition, severe wear on the teeth of this individual resulted in destruction of premolar and molar crowns. This is suggestive of consuming stone ground corn products that added grit to his diet.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this young adult was probably wearing a pull-over shirt. The presence of a two piece swirled head pin suggests that he had been wrapped in a shroud. No personal artifacts were found in association with this burial.

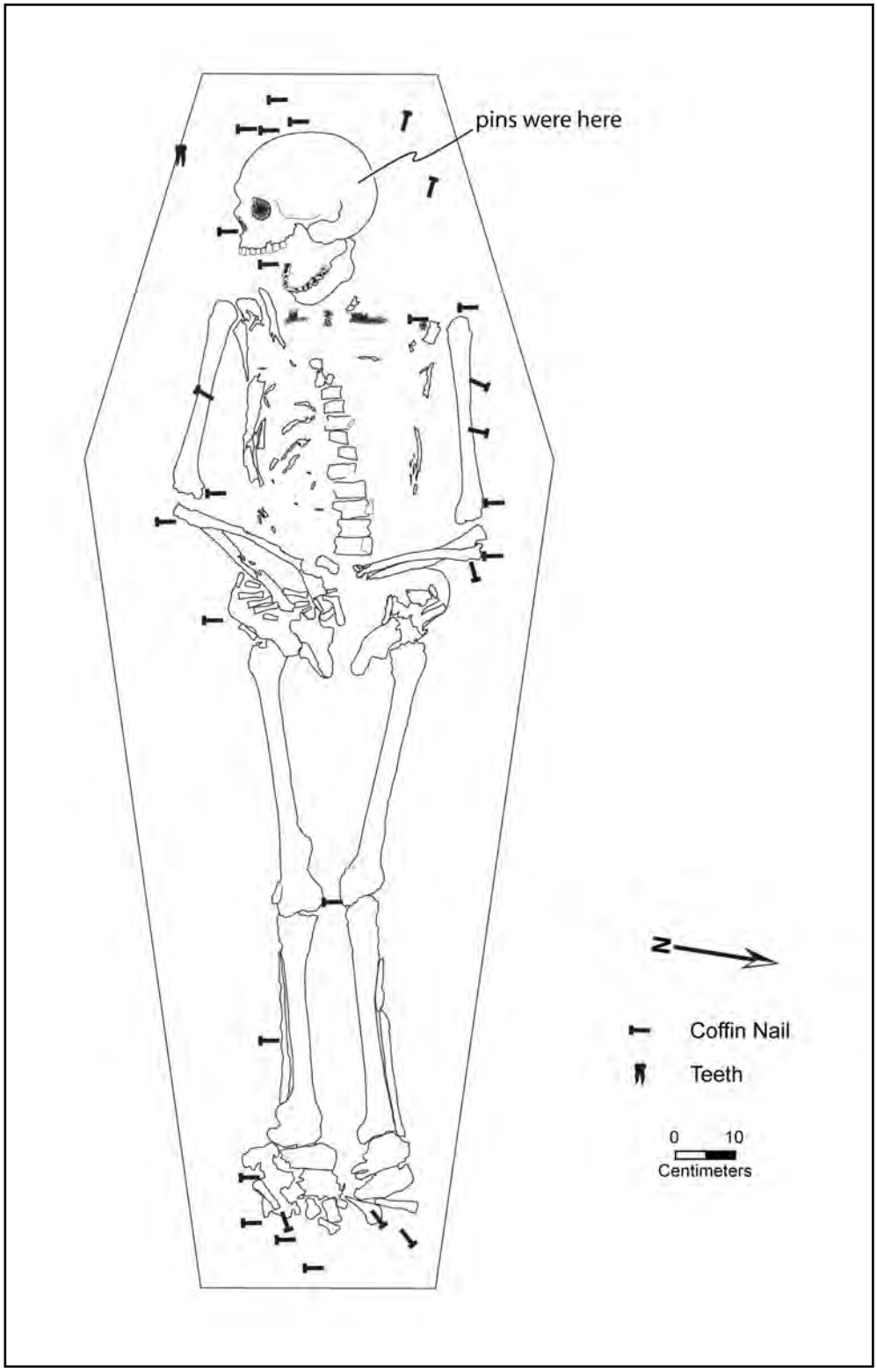

Figure 7-3. Planview of Burial 13.

BURIAL 19

Coffin/Casket Remains and Hardware

Burial 19 was located in Row 3 to the south of Burial 10. The hexagonal coffin this individual had been interred in measured 2.1 m by 67 cm. Only one nail was recovered in association with this coffin. It could not be determined if it was wrought or machine-cut. Thus, the nail data did not contribute much to the dating of this burial. Both of the screws associated with this coffin are flat tipped.

The presence of a machine-stitched buttonhole, use of which did not become popular until after 1854, suggests that the coat found in this burial was manufactured after that date. Based on the fabric data, it is quite likely that Burial 19 died sometime around 1854.

Human Skeletal and Dental Remains

This 20-25 year old European-American male stood 186.1 cm (6'1.3' inches) and weighed 77.22 kg (169.9 lbs). When he was placed in his coffin his lower right and hand were placed on his right pelvis, and his lower left arm and hands were placed alongside his left pelvis (Figure 7-4).

His vertebrae exhibit elevated rings and smorl's nodules, which are indicative of degenerative joint disease in the spine. A facet of bone on the atlas suggests stress on the neck at the base of the skull. Combined with a large inion hook and nuchal musculature these attributes are suggestive of carrying heavy loads on his shoulder and neck area. This suggestion is supported by large humerus diameters and associated enlargement of the bicipital tuberosity on the radius. Both are indicators of heavy lifting with forearms.

He also suffered from mastoiditis, an infection of the inner ear, and likely dislocated his hips several times as evidenced by their large size and lipping. This likely would have made walking uncomfortable for him. Burial 19 also had a large abscessed tooth root in the lower left first molar and second premolar (Figure 6-4). Unlike many other individuals buried in the Horse Park Cemetery he experiences very minimal tooth wear.

Clothing, Shrouds, and Personal Artifacts

Buttons found with this individual indicate that he was wearing pants and a shirt (Figure 7-4). Several coin buttons were found in two rows just above the waist of this European-American male. One had a diameter of 15 mm, four of 16.5 mm, three of 17.3 mm, and one 18 mm. The distribution of these buttons is suggestive of pants with a button down front. That two of the buttons were found upside down, could indicate that they were associated with suspenders.

Several of the coin buttons (n=5) were covered with plain weave wool. A 2-ply, S-spun, Z-twisted thread was associated with one of these buttons. Two wool fragments exhibited lockstitch sewing machine stitching. One fragment appears to represent a small seam and the other a machine-stitched buttonhole.

Five one-hole bone buttons (10 mm in diameter) found along the spinal column were probably associated with a button down shirt. The absence of pins suggests that he was not wrapped in a shroud. No personal artifacts had been placed in this grave.

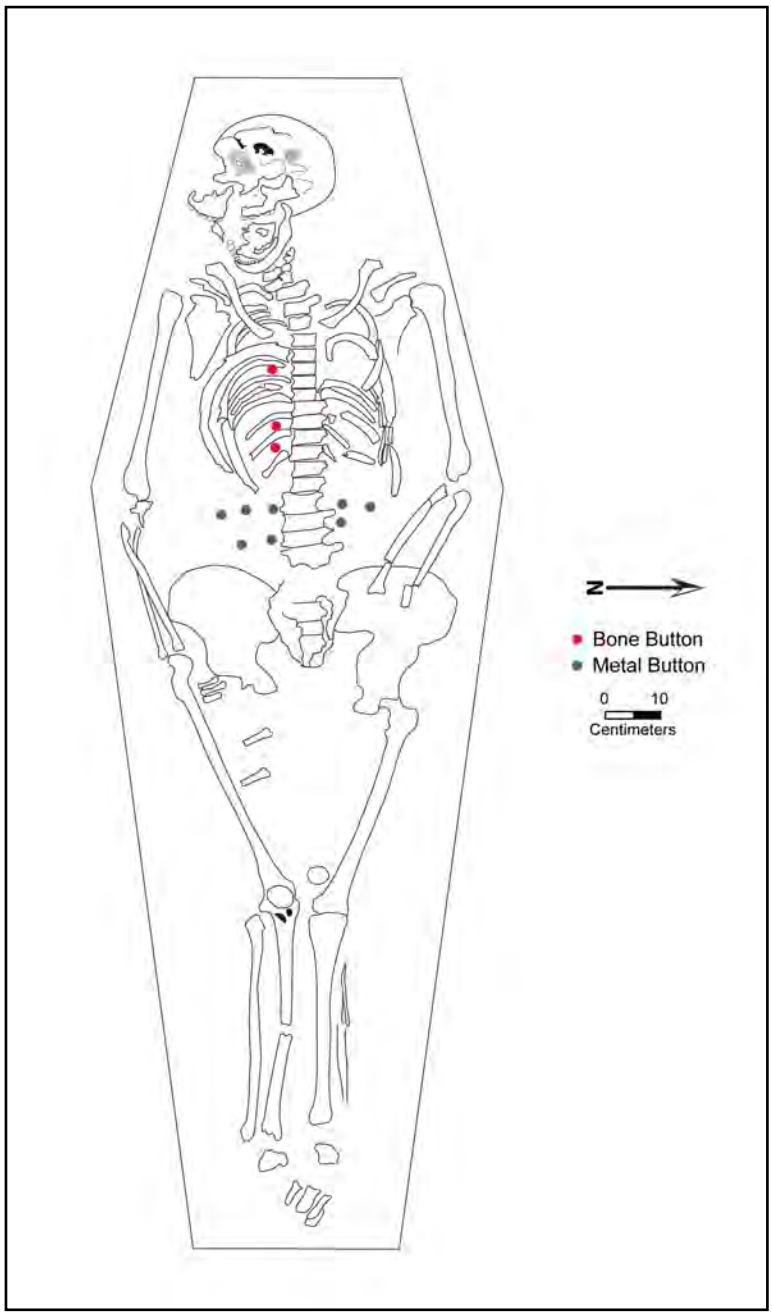

Figure 7-4. Planview of Burial 19.

BETWEEN ROWS 3 AND 4 (BURIAL 20)

Burial 20

Coffin/Casket Remains and Hardware

This burial is not clearly associated with Rows 3 or 4, and is in fact situated between them. That this hexagonal coffin contains the remains of woman greater than 60 years of age, leads one to wonder if she may have been related to the young adult males to the east (Burial 19) and west (Burial 22).

Burial 20 was interred in a hexagonal wood coffin that measured 1.93 m x 60 cm. The type of wood used to construct this coffin could not be determined.

Penny weights could only be determined for three of the 20 late machine-cut nails associated with this coffin. They had weights of 3, 4, and 5, respectively. One of the two screws associated with this coffin has a gimlet tip. These types of screws increase in popularity after 1846. Based on the nail and screw data, the individual interred in this coffin died sometime between the mid-1840s and the late 1880s.

Human Skeletal and Dental Remains

This individual was a female of European descent, who was more than 60 years old when she died. She stood 166.0 cm (5'5.4") and weighed 65.1 kg (144.1 lbs). When she was placed in her coffin her left arm and hand were placed across her chest just above her waist. The right arm was placed along her side, with her right hand placed on her right pelvis (see Figure 7-4). The arrangement of her arms was similar to that of Burial 15, also a female of European descent, but much younger, and Burial 19 who was a young adult male of European descent.

The cranium of this woman was largely intact and in good shape other than her maxilla being completely edentulous (no teeth) (Figure 6-1). She also suffered from caries associated with her few remaining teeth.

The vertebrae have elevated rings and smorl nodules indicative of compression of disks of the spine and degenerative joint disease. In addition, the fifth lumbar vertebrae was worn more so on the right side causing the back to kyphosis (bend) to that side. The fingers and feet show degenerative joint disease, indicative of arthritis. The upper arms exhibit large diaphysis diameters, which may be due to anemia or an infection combined with strong muscle markings indicative of labor using the upper body. She also had indications of infection of her right scapula.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this woman was probably wearing a pull-over shirt. The absence of pins suggests that she had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

ROW 4 (BURIALS 14, 15, 16, 21, AND 22)

Burial 14

Coffin/Casket Remains and Hardware

Burial 14 was located between Burials 15 and 16 in Row 4. This individual had been interred in a hexagonal wood coffin that measured 95 cm in length and 35 cm in width and had been constructed from maple. The burial shaft for this coffin was somewhat larger measuring 1.35 m in length and 65 cm in width.

Of the 31 late machine-cut nails associated with this coffin, penny weights could be determined for 17 specimens. Of these, six have a penny weight of 5 and 11 a weight of 6. Two of the late-machine cut nails have a T-Shaped head. The use of late machine-cut nails coupled with the presence of porcelain Prosser buttons indicates that this individual died after 1840. Support for this suggestion comes from the shoes found with this individual. The upper portion of the shoe had been attached to the sole with a sewing machine, which was not common until the late 1840s.

Human Skeletal and Dental Remains

This individual is a child less than three years old based on detention. The height and weight of this individual could not be determined. Nor could the placement of their arms be determined. No additional observations can be made concerning this child.

Clothing, Shrouds, and Personal Artifacts

Of the five buttons associated with this infant, one was manufactured from shell (5 mm in diameter) and four were manufactured from porcelain (10 mm in diameter). The latter are white 4-hole Prosser buttons. These types of buttons were mass produced after 1840.

The shell button was found near the skull and the Prosser buttons were found in the chest area. These buttons would have been associated with a dress or a shirt. The absence of pins suggests that this child had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

Burial 15

Coffin/Casket Remains and Hardware

This burial was found along the northern edge of Row 4 and adjacent to Burial 14. Burial 15 had been placed in a hexagonal wood coffin made of pine. The coffin measured 2.02 m in length and 65 cm in width.

Penny weights could not be determined for any of the 26 late machine-cut nails associated with this coffin. Both of the screws associated with this coffin had flat tips. The presence of late machine-cut nails indicate this individual died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This individual is a 30 to 35 year old female of European descent. She stood 162.9 cm (5'4.1") and weighed 65.09 kg (143.2 lbs). When she was laid in her coffin, her lower right arm was laid along her side with her hand being placed adjacent to her right pelvis and femur. Her lower left arm and hand were placed on her chest just above her pelvis. In general, the arrangement of her arms was similar to that of Burials 19 and 20 (Figure 7-4), also of European descent, though her lower left arm was somewhat more folded than the left arms of the other two individuals.

Burial 15 had abnormal bone size, which is indicative of metabolic disruption probably due to infection. In addition, she had small clavicles relative to her age, and markings observed on her scapula and humerus. She had three abscesses and suffered some tooth loss during her life.

Clothing, Shrouds, and Personal Artifacts

Though no buttons or pins were found with this individual, she was buried wearing a mother of pearl hair comb. The absence of any buttons, suggests she may have been buried wearing a dress that was fastened with a clasp, or a pull-over shift. The absence of pins suggests she was not wrapped in a shroud. A mother of pearl hair comb was found adjacent to the top of the skull of this woman (see Figure 3-4).

Burial 16

Coffin/Casket Remains and Hardware

Burial 16 was located in Row 4 between Burials 14 and 22. The yellow poplar coffin this individual was interred in had a hexagonal shape. It measured 1.91 m by 61 cm.

Of the five nails recovered, three were wrought. The other three nails were too fragmentary to determine if they were wrought or machine cut. The penny weight of only one of the wrought nails could be determined. It had a weight of 7. The five screws were handmade and had flat tips. The presence of wrought nails indicates this individual died before 1815.

Human Skeletal and Dental Remains

The person is a 20 to 30 year old adult male of European descent. He stood 172.9 cm (5’8”) and weighed 64.9 kg (142.8 lbs). His lower left and right arms had placed across his chest just above his pelvis.

A large peri-mortem hole that begins on the right side of his frontal bone and extends onto the parietal may represent a traumatic blow to the head and may have resulted in his death. He also had a healed fractured fifth lumbar vertebra. This may have resulted from a fall and subsequent landing in a seated position. His curved limbs are indicative of a vitamin D deficiency (rickets) and his sacrum had not fused. In addition, his third right maxillary molar is peg shaped possibly indicating a disease that interrupted normal development. He also suffered from carries.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates he was probably wearing a pull-over shirt. The absence of pins suggests that he had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

Burial 21

Coffin/Casket Remains and Hardware

Burial 21 was located along the eastern edge of Row 4, about 2 m south of Burial 22. The hexagonal wooden coffin that this infant was interred in measured 90 cm by 40 cm. The type of wood used to construct the coffin could not be determined.

Of the 27 late machine-cut nails, penny weight could only be determined for two specimens. Both had a weight of 4. All three of the screws had a flat tip. The presence of late machine-cut nails indicate this individual died sometime between 1830 and the late 1880s. The presence of a two-piece swirled pin can provide a more restricted period of death. These types of pins were replaced around 1833 by one-piece machine-made pins. Thus, it is quite likely that this individual died sometime between 1830 and 1835.

Human Skeletal and Dental Remains

This individual was an infant, who stood 60 cm (1'11.6") and died before they were 7 months old. Scheuer and Black (2000) was used measured to calculate this age estimate:

temporal (>6mos-<2yrs; p. 83);
clavicle (>7 mos-<1year; p. 250),
scapula (>6 mos-<1 year; p. 271),
femoral (< 1 year male; p. 394),
tibia (<9 mos; p. 415),
humerus (< 1 year; p. 288),
ulna (>6 mos-<1year; p. 99)
and :radius (<1year ; p. 297).

The size of the bones of the infant is consistent with the male growth curve not the female growth curve (longer). Arms were placed along sides of body, with hands placed adjacent to the pelvis. No additional observations can be made concerning this individual.

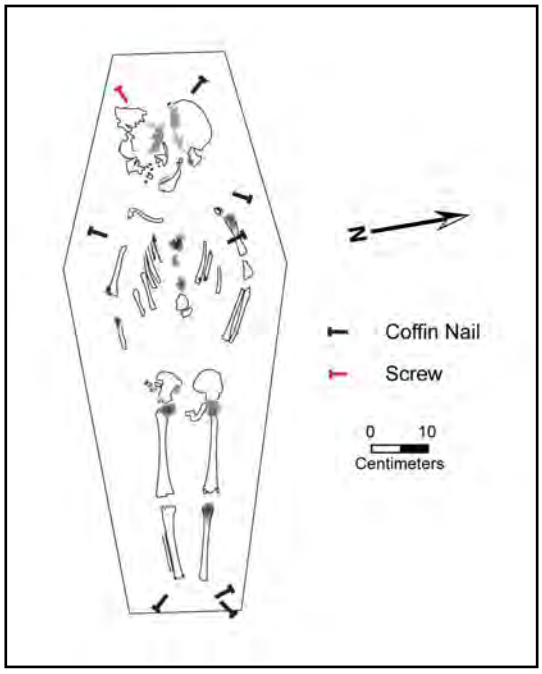

Figure 7-5. Planview of Burial 21.

Clothing, Shrouds, and Personal Artifacts

The presence of pins indicates that this infant had been wrapped in a shroud. One of the pins is clearly of the two-piece swirled head variety. The other was a shaft fragment. No personal artifacts were found in association with this burial.

Burial 22

Coffin/Casket Remains and Hardware

Burial 22 was located in Row 5 between Burials 16 and 23. This individual was interred in a hexagonal wooden coffin that measured 2.10 m by 56 cm. The type of wood used to construct this coffin could not be determined.

Both late machine-cut nails (n=16) and flat tipped screws (n=4) were used to construct the coffin. Of the 16 late machine-cut nails recovered, penny weight could only be determined for one specimen. It had a weight of 4. The presence of late machine-cut nails indicate this individual died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This 18-25 year European-American male stood 176.6 cm (5'9.5") and weighed 63.18 kg (139.0 lbs). When he was laid in his coffin, his lower right arm and hand were placed across his right pelvis. His lower left arm and hand were placed adjacent to his body, with his hand resting next to his right pelvis and the top of his femur (Figure 7-6). This is the opposite of Burials 15, 19, and 20 (Figure 7-4).

There are no notable cranial pathologic lesions, but the skull is fragmentary and heavily weathered. The mandible is likely to have been broken post-mortem (after death). He has elevated vertebral rings indicative of degenerative joint disease, and a life of heavy labor and lifting. The deltoids show strong musculature markings, also indicative of heavy labor. The trochlear notch of the ulna has a divided facet instead of single smooth surface, which is a rare genetic marker (see Burial 23).

His forearms and tibia are strongly curved indicating that he had a vitamin D deficiency rickets. He also suffered from "saber shin," which some have suggested is diagnostic of syphilis. That no other lesions associated with this disease are obvious suggests that nutritional stress may better explain the observed reduction and curving of the limbs in this individual. He suffered from a large number of carries.

Clothing, Shrouds, and Personal Artifacts

The presence of two five-hole bone buttons (diameter=14 mm) indicates that this individual was wearing clothing when they were placed in their coffin. That both were found just above the pelvis, suggests that this young adult male was wearing pants. He probably also was wearing a pull-over shirt that lacked buttons. The absence of pins, suggests that he was not wrapped in a shroud. No personal artifacts were found in association with this burial.

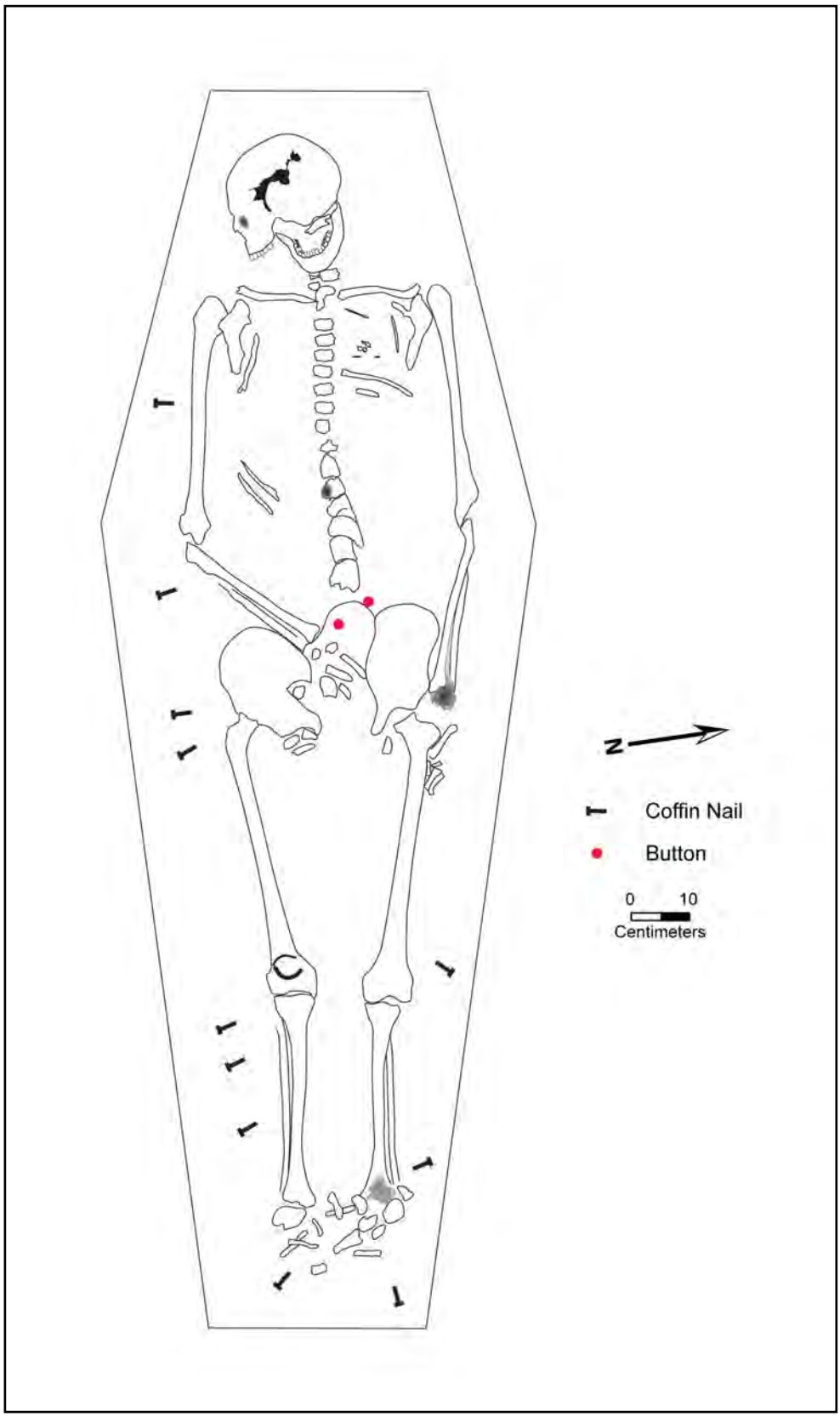

Figure 7-6. Planview of Burial 22.

WEST OF ROW 5 (BURIAL 23)

Burial 23

Coffin/Casket Remains and Hardware

Burial 23 was located to the northwest of Burial 22 and southwest of Burial 21 (Figure 7-1). The hexagonal coffin that this individual was interred in measured 1.91 m by 56 cm. It was constructed of late machine-cut nails (n=13) and a flat tipped screw (n=1). Penny weights could not be determined for any of the late machine-cut nails. The presence of late machine-cut nails indicate this individual died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This 25-29 year old male of African descent stood 163.5 cm (5'3.7"). With a weight of 51.7 kg (113.7 lbs) this individual would have been somewhat thin. When he was laid in his coffin, both arms were crossed (folded) just above his pelvis. The positioning of the arms and hands is very similar to that of Burial 24.

As with Burial 22, his ulna has a divided trochlear facet and as with Burials 24 and 32 the septal aperture of the humerus is perforated (Figure 6-2). The right scapula has a round hole indicative of some kind of puncture wound not likely a bullet (not sufficient damage). It is more likely the result of an unhealed stab wound to the back and was probably the cause of his death.

The clavicle shows some infectious lesions at the distal ends. The ulna has two facets which maybe a population or family trait. He has curved shins, which are indicative of vitamin D deficiency (rickets). The presence of hypoplasias also is suggestive of nutritional stress. He suffered from caries and experienced some tooth loss during his life. Unlike several individuals interred in the Horse Park Cemetery, his teeth exhibited little or no wear.

Clothing, Shrouds, and Personal Artifacts

The presence of seven metal coin buttons (diameters of 15, 17, 19.2, 20, 20, 22.6 and 23 mm) indicates that this individual was wearing clothing when he was placed in his coffin. The larger of the coin buttons were found on the lower vertebrae just above his folded arms. These buttons may have been associated with a coat. Fabric associated with these buttons consisted of a plainweave that had been fulled. The process of fulling causes fibers from the surface of a woven fabric to be raised and matted together, and is typically employed for suits, coats, and jackets.

The smaller coin buttons were found on or just above the pelvis. These buttons may have been associated with pants. He probably also was wearing a pull-over shirt that lacked buttons. The absence of pins suggests that he was not wrapped in a shroud. No personal artifacts were found in association with this burial.

ROW 5 (BURIALS 17, 18, 24 AND 25)

The four burials that comprise this row were oriented at a 45 degree angle to the graves in Rows 1-4.

Burial 17

Coffin/Casket Remains and Hardware

Burial 17 was located along the southwestern edge of Row 5 and adjacent to Burial 18. This individual had been placed in a rectangular wood coffin that measured 99 x 69 cm. The type of wood used to construct this coffin could not be determined.

Of the 11 recovered nails, three are early machine-cut and nine are late machine-cut. Early machine-cut nails were in use from 1815 to 1830, when they were replaced by late machine-cut nails. The latter continued to be used until the late 1880s. The use of both early and late machine-cut nails to construct Burial 17's coffin, along with the presence of a pre-1833 two-piece swirled head straight pin, suggests that this individual died in the early 1830s during the transition from early to late machine-nails and from two-piece swirled head to one-piece machine-made pins.

Human Skeletal and Dental Remains

This individual was an infant who died six to nine months follow their birth as indicated by the presence of 15 root crown fragments. As with most of the infants at this cemetery, the skeletal remains of this infant were not very well-preserved. In fact only portions of the skull remained. No additional observations can be made concerning this individual.

Clothing, Shrouds, and Personal Artifacts

The presence of a two-piece swirled head straight pin suggests that this infant was wrapped in a shroud before they were placed in their grave. No personal objects were buried with this infant.

Burial 18

Coffin/Casket Remains and Hardware

Burial 18 was located in Row 5 adjacent to Burial 17 and about 2 m from Burial 25. The rectangular wooden coffin this individual was interred in measured 1.8 m by 50 cm. The type of wood used to construct this coffin could not be determined.

Of the 15 nails recovered, one was classified as early machine-cut and 14 as late machine-cut nails. Early machine-cut nails were in use from 1815 to 1830, when they were replaced by late machine-cut nails. The latter continued to be used until the late 1880s. The use of both early and late machine-cut nails to construct Burial 17's coffin suggests that this individual died in the early 1830s during the transition from early to late machine-cut nails.

Human Skeletal and Dental Remains

This individual was a male of African descent who was more than 50 years old when he died. Due to earlier disturbance of this burial, his height and weight, and placement of his hands could not be determined.

The skull has large neck musculature and enlarged long bone musculature attachments indicate he had a large robust body and did a lot of heavy lifting during his life. That he has curved long bones is indicative of vitamin D deficiency (rickets). He also suffered from "saber shin," which some have suggested is diagnostic of syphilis. That no other lesions associated with this disease are obvious suggests that nutritional stress may better explain the observed reduction and curving of the limbs in this individual. He experienced some tooth loss during his life.

Clothing, Shrouds, and Personal Artifacts

Though no buttons or pins were found with this individual, green stains associated with the left maxilla and first molar, are suggestive of a degraded copper artifact. This stain may have been caused by a shroud pin. The absence of buttons suggests that he was wearing a pull-over shirt that lacked buttons. No personal objects were found with this individual.

Burial 24

Coffin/Casket Remains and Hardware

Burial 24 was located in Row 5 adjacent to Burial 25. The hexagonal coffin that this individual was interred in measured 1.92 m by 64 cm. It had been manufactured from cherry. Penny weights could be determined for 13 of the 21 late machine-cut nails. The most common penny weight was 5 (n=10), followed by 4 (n=2) and 3 (n=1). These types of nails were in use from 1830 to the late 1880s. That one of the straight pins is of the two-piece swirled head variety suggests a more restricted date range for when this individual died. These types of pins were used up until 1833 when they were replaced by machine-made pins. It is quite likely that this individual died sometime between 1830 and 1835.

Human Skeletal and Dental Remains

This 18-25 year old African-American male stood 165.8 cm (5'5.3") and weighed 46.16 kg (101.6 lbs). He, thus, would have been rather thin for a person of his height. When he was laid in his coffin, both arms were crossed just above the pelvis. The positioning of the arms and hands was very similar to that of Burial 23.

In general, Burial 24 had few pathologies. As with Burials 23 and 32, the septal aperture of the humerus is perforated. (This trait was also noted on the humerus of a young African-American adult female at the Ward Hall Cemetery [Bybee 2009b:128]). The tricep muscle insertions on the humerus are enlarged, which is indicative of someone who did a lot of pushing with their upper arms.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates he was probably wearing a pull-over shirt. The presence of straight pins (n=2) indicates that he had been wrapped in a shroud. One of the pins is of the swirled head variety. The other was a shaft fragment. No personal artifacts were found in association with this burial.

Burial 25

Coffin/Casket Remains and Hardware

Burial 25 was located in Row 5 between Burials 24 and 18. This grave had been disturbed sometime prior to the initiation of the construction of the new arena. This is reflected in poor bone preservation, the disarticulation of much of the upper torso and the feet, and the commingling of a child's bones with this adult burial.

Coffin nails on the right side of this grave form a straight line, which suggests that the coffin was rectangular in shape. The type of wood used to construct this coffin could not be determined.

Penny weights could be determined for the five of the 15 late machine-cut nails recovered from this grave. The most common penny weights were 6 (n=2) and 7 (n=2). The remaining nail had a penny weight of 5. That all of the nails were of the late variety, suggests that this individual died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This grave primarily contained the remains of an adult, but the presence of some child bones reflects disturbance of this grave and the commingling of two burials. Due to the fragmentary nature of the skeletal remains associated with both individuals, no other observations could be made concerning either individual.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates both individuals were probably wearing a pull-over shirt. The presence of a straight pin shaft indicates that the adult had been wrapped in a shroud. Since the head of the pin was missing it could not be determined if it was a two-piece swirled head or a one-piece machine made pin. There is no evidence to suggest that the child had been wrapped in a shroud. No personal artifacts were found in association with either burial.

ROW 6 (BURIALS 26, 27, 29, 30, AND 31)

Burial 26

Coffin/Casket Remains and Hardware

Burial 26 was located in Row 6 adjacent to Burial 27. It is located about five m to the west of Burial 24 (Row 5). The grave was inadvertently disturbed during the search for additional grave shafts. As such, information is lacking on the size and shape of the coffin. Nor could the type of wood used to construct the coffin be determined. Of the three late machine-cut coffin nails recovered, a penny weight could only be determined for one nail. It had a weight of 3. That all of the identifiable machine-cut nails were of the late variety, suggests that the person interred in this grave died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This grave contained the remains of a child between the ages of 6 and 12. The position of the arms and hands could not be determined. This child suffered from several caries, some of which resulted in the destruction of tooth crowns. Because of the fragmentary nature of this individual's remains no additional observations can be made.

Clothing, Shrouds, and Personal Artifacts

That no buttons were found with this individual suggests that this child may have been wearing a pull-over shirt that lacked buttons. The absence of pins suggests that this individual was not wrapped in a shroud. No personal artifacts were found in association with this child.

Burial 27

Coffin/Casket Remains and Hardware

Burial 27 was located in Row 6 adjacent to Burial 26. The distribution of coffin nails suggests that this individual was buried in a hexagonal wooden coffin that measured 1.80 m by 58 cm. The coffin was constructed from cherry.

Of the 20 late machine-cut coffin nails recovered, a penny weight could only be determined for one nail. It had a weight of 3. That all of the identifiable machine-cut nails were of the late variety, suggests that the nails used to construct this coffin were probably late machine-cut nails. This type of nail was in use from 1830 to late as 1880s.

Human Skeletal and Dental Remains

This grave contained the remains of an adolescent male of African descent, who was less than 18 years old when he died. He stood 170.4 cm (5'7" inches) and weighed 75.6 kg (166.8 lbs). When he was laid in his coffin, both arms were crossed just above the pelvis.

The cranium of this African-American male was very heavy and had thickened diploes possibly evidencing some underlying metabolic disturbance though no notable lesions were observable on the cranium. That the thoracic and lumbar vertebrae have elevated rings indicates he suffered from degenerative joint disease. The clavicle exhibits strong muscle markings, which suggests that some muscles had been torn. This bone also exhibits lesions consistent with infection. Both scapulas exhibit asymmetrical lipping indicative of dislocation of the shoulders. This individual had abscesses in his upper incisors and suffered some tooth loss during his life. He also experienced moderate tooth wear, which is suggestive of consuming stone ground corn products that added grit to his diet.

Clothing, Shrouds, and Personal Artifacts

That no buttons were found with this individual suggests that he was buried wearing a pull-over shirt that lacked buttons. The absence of pins suggests he was not wrapped in a shroud. No personal artifacts were found in association with this burial.

Burial 29

Coffin/Casket Remains and Hardware

Burial 29 was located in Row 8 adjacent to Burial 30. A portion of this burial was inadvertently disturbed during the search for grave shafts. The distribution of coffin nails suggests that this individual was buried in a hexagonal wooden coffin that measured 2.00 m by 60 cm. The coffin was constructed from cherry.

Of the 13 late machine-cut coffin nails recovered, penny weights could be determined for nine nails. The most common penny weight was 9 (n=6) followed by 6 (n=3). That all of the identifiable machine-cut nails were of the late variety, suggests that the person interred in this grave died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This grave contained the remains of a 20 to 35 year old male of African descent. His height was 171.2 cm (5'9") and he weighed 75.7 kg (166.8 lbs). This individual was relatively tall for the Horse Park Cemetery African-American population. Due to disturbance of this grave the position of his arms and hands could not be determined.

Aside from problems with teeth, this individual appeared to be in good shape with few notable pathologies. His teeth were extremely worn exposing the pulp of the crowns. Six teeth were lost prior to death. He also experienced moderate to heavy tooth wear, which is suggestive of consuming stone ground corn products that added grit to his diet.

Clothing, Shrouds, and Personal Artifacts

The association of three coin buttons (diameter of 19 mm) with this individual suggests that he was wearing pants when he was placed in his coffin. The fabric associated with these buttons was in extremely poor condition, which made it impossible to determine textile structure. All that can be said is that it averaged 12 yarns per centimeter. That no other buttons were found with this individual suggests that in addition to pants he may have been wearing a pull-over shirt that lacked buttons. The absence of pins suggests he was not wrapped in a shroud. No personal artifacts were found in association with this burial.

Burial 30

Coffin/Casket Remains and Hardware

Burial 30 was located in Row 8 between Burials 29 and 31. This individual was buried in a rectangular wooden coffin that measured 1.42 m by 30 cm. That this individual was buried in a semi-flexed position on his back with his legs folded and his knees resting along the side of the coffin indicates that his body was larger than the coffin he was placed in (Figure 7-7). The type of wood used to construct the coffin could not be determined.

Of the 16 late machine-cut coffin nails recovered, penny weights could be determined for 14 nails. The most common penny weight was six (n=7) followed by seven (n=4) and five (n=3). That all of the identifiable machine-cut nails were of the late variety, suggests that the person interred in this grave died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This individual is an African-American male, who was less than 18 years old when he died. The third molars are present in crypt indicating an age greater than 16 but less than 18. The lower arms of this individual were crossed right above the pelvis. Though the height and weight of this individual could not be determined, the overall impression is that he was short relative to the rest of the Horse Park Cemetery population.

Burial 30 suffered a break of his vertebrae. The atrophy of the lower legs suggests that as a result of breaking his back he lost the use of his legs. If this was the case, then someone was able to care for him, even though he was of little or no economic value to his owner. He suffered from caries that resulted in erosion of the crown and exposure of pulp cavity.

Clothing, Shrouds, and Personal Artifacts

The association of three coin buttons with the waist of this individual suggests that he was wearing pants when he was placed in his coffin. A piece of fragment preserved in association with one of the coin buttons was in poor condition. It consisted of a weft-faced (averaged 16 wefts x 8 warps per centimeter) plainweave. That no other buttons were found with this individual suggests that in addition to pants he also was wearing a pull-over shirt that lacked buttons. The absence of pins suggests he was not wrapped in a shroud. No personal artifacts were found in association with this burial.

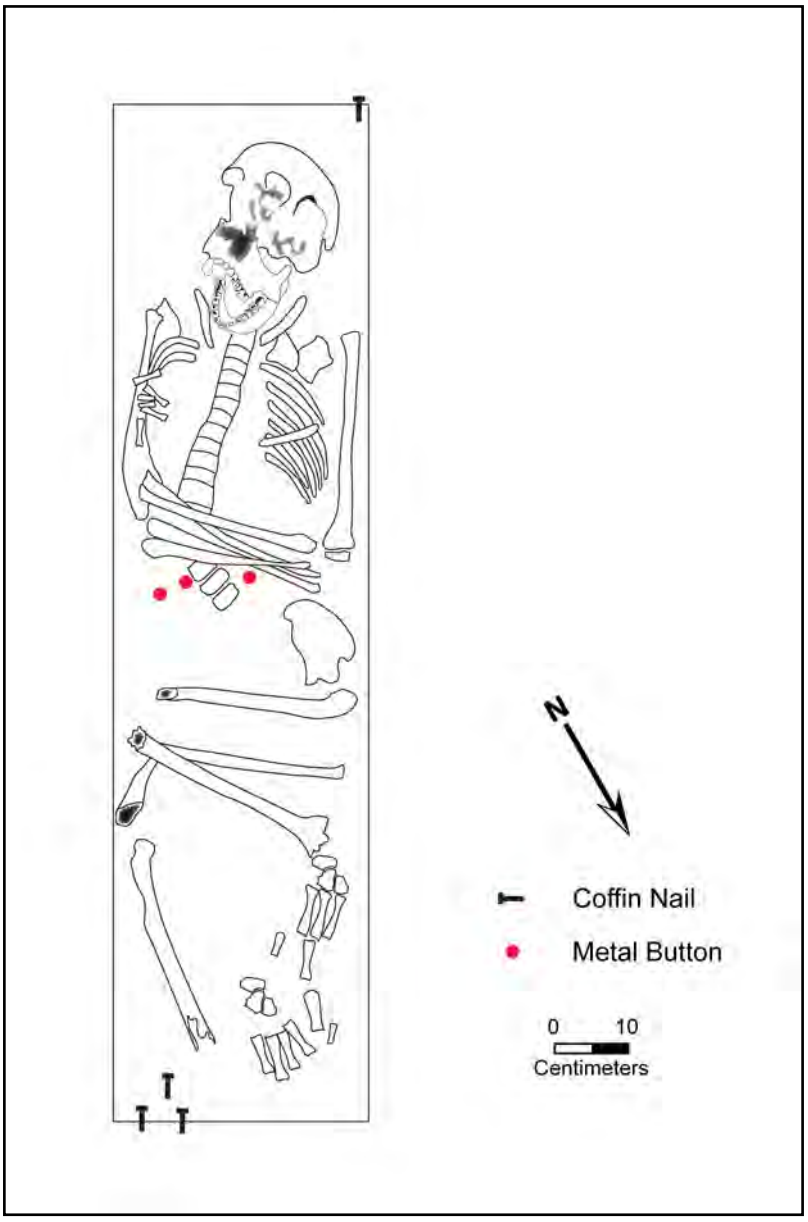

Figure 7-7. Planview of Burial 30.

Burial 31

Coffin/Casket Remains and Hardware

Burial 31 was located in Row 6 between Burials 30 and 32. The rectangular wooden coffin this individual was interred in measured 90 cm by 55 cm. This was the only instance where the top of the coffin was preserved in place (Figures 7-8 and 7-9). The cover and sides of the coffin were constructed from pine.

Figure 7-8. Top of Burial 31 Coffin.

Figure 7-9. Close-up of pine coffin cover.

Of the 55 late machine-cut nails recovered, penny weight could be determined for 25 specimens. The most common penny weights were 6 (n=10), 8 (n=6), and 7 (n=5) followed by 3 (n=2), 4 (n=1), and 5 (n=1). That all of the identifiable machine-cut nails were of the late variety suggests that the person interred in this grave died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

Unfortunately, when the pine cover was removed, it was quite evident that the human skeletal associated with this individual were not preserved. This individual was determined to be an infant, based on the size of the coffin. The height and weight as well as the placement of this infant's arms could not be determined.

Clothing, Shrouds, and Personal Artifacts

The absence of buttons, if not due to poor preservation, indicates this infant was probably wearing a pull-over shirt. The absence of pins suggests that this infant had not been wrapped in a shroud. No personal artifacts were found in association with this burial.

ROW 7 (BURIALS 32 AND 33)

Burial 32

Coffin/Casket Remains and Hardware

Burial 32 was located in Row 7 adjacent to Burial 33. The shape of the grave shaft and distribution of coffin nails suggests that this individual was buried in an hexagonal wooden coffin that measured 2.00 m by 75 cm. The coffin was constructed from black walnut.

Of the 36 late machine-cut coffin nails recovered, penny weight could be determined for 10 nails. Most (n=8) had a weight of eight, but two had a weight of 5. Late machine-cut nails were in use from 1830 to late as 1880s. That all of the identifiable machine-cut nails were of the late variety suggests that the person interred in this grave died sometime between 1830 and the late 1880s.

Human Skeletal and Dental Remains

This grave contained the remains of a less than 18 year old female of African descent. Her lower arm and hands had been laid across her chest. She stood 160.1 cm (5'3") and weighed 91.79 kg (202.36 lbs). This woman's stature relative to her weight is suggestive of a diet high in sugar and starch, yet inadequate in protein. Despite this poor diet, she appeared to be in relatively good health.

The cranium has extensive damage on the right side. The deterioration of the right side of the head is likely due to wet soil conditions. As with Burials 23 and 24, this individual has a septal aperture on the humerus (Figure 6.2). She suffered from several carries. Also of note, was the black staining of this woman's teeth; the cause of which could not be determined.

Clothing, Shrouds, and Personal Artifacts

That no buttons were found with this individual suggests that she was buried with a pull-over shirt that lacked buttons. The absence of pins suggests she was not wrapped in a shroud. No personal artifacts were found in association with this burial.

Burial 33

Coffin/Casket Remains and Hardware

Burial 33 was located in Row 7 next to Burial 32. The hexagonal wooden coffin this individual had been interred in measured 1.93 m by 66 cm. The type of wood used to construct this coffin could not be determined.

Of the 39 late machine-cut coffin nails recovered, penny weight could be determined for 13 nails. All had a penny weight of 8. This type of nail was in use from 1830 to the late 1880s. The presence of porcelain Prosser buttons, which post-date 1840, and lockstitch sewing machine stitching, which was patented in 1854, suggests that this individual died sometime after 1854, and may have been one of the last individuals interred in this cemetery.

Human Skeletal and Dental Remains

This individual is an adult African-American male. When this individual was placed in their coffin his hands were across his pelvis. He stood 161.9 cm (5'3") and weighed 129.8 kg (286.1 pounds). As with Burial 32, this adult male was very heavy relative to his height. This is suggestive of a diet high in sugar and starch, yet inadequate in protein.

Improper nutrition also is reflected in curved forearms, which is an indicator of a vitamin D deficiency (rickets). He also suffered from arthritis or some similar inflammatory disease in the left knee. It resulted in a complete collapse of the medial condyle of the left tibia making the person terribly "knock kneed" and probably left him with a painfully swollen joint. He suffered from several carries and an abscessed tooth, and experienced some tooth loss during his life.

Clothing, Shrouds, and Personal Artifacts

A variety of buttons were found with this individual. They were manufactured from bone (n=5), metal (n=12), and porcelain (n=3). The bone buttons were of the five- (n=3; diameter 15 mm) or four-hole (n=1; diameter 16 mm) variety. One was too fragmentary to characterize. All of the metal buttons were of the coin variety. Most (n=8) had a diameter of 14 mm. The rest had diameters of 19 (n=3) or 21 (n=1) mm. The Prosser buttons were plain and had four holes. They had a diameter of 10 mm.

The distribution of the metal buttons is suggestive of their association with pants and a coat (Figure 7-10). The line of buttons observed along the right pelvis is suggestive of pants with a drop front, and the distribution of buttons along the left and right sides of the chest is suggestive of a coat. Fabrics recovered from this grave suggest the coat was constructed of an outer layer and an inner/liner layer. The outer fabric was a fulled wool plainweave with S-twisted warps and wefts. The weft elements were more tightly twisted than the warp elements giving the coat the appearance of a twill weave. One fragment of

the outer fabric exhibited a portion of a buttonhole with lockstitch sewing machine stitching.

The inner fabric was not fulled and consisted of a natural-colored (undyed) wool. Fabrics covering some of the coin coat buttons consisted of a finer gauge than that of the coat they were attached too.

The bone and Prosser buttons were associated with a shirt or undergarment. Cotton fabric from a shirt was found in association with one of the four-hole bone buttons. Unfortunately this fabric was badly deteriorated and no information on textile structure or warp and weft elements could be discerned. The absence of pins indicates that this individual was not wrapped in a shroud.

A metal finger ring was found with this individual. It had a diameter 20.19 mm (size 10 to 11) and was associated this individual's left hand.

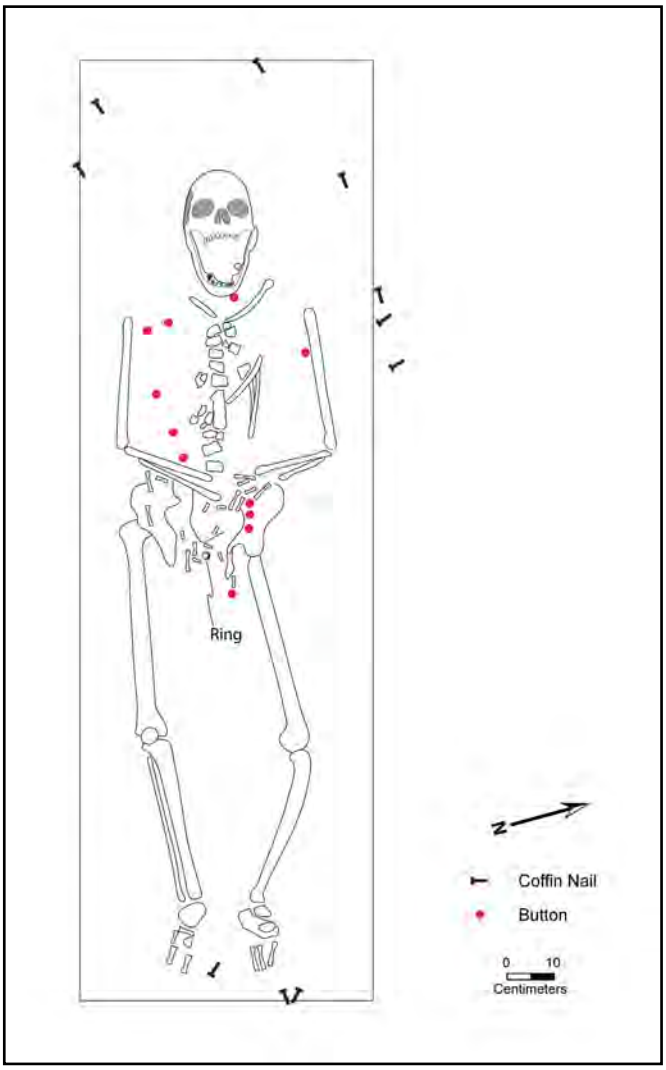

Figure 7-10. Planview of Burial 33.

SUMMARY AND DISCUSSION

Based on the mortuary data presented in this chapter, some general observations may be made concerning the Horse Park Cemetery. Each of the 34 individuals associated with this cemetery was interred in a wooden coffin. Most were hexagonal in shape, manufactured from cherry or pine, and constructed with hand-wrought or late machine-cut nails. Flat and pointed tipped screws also were used in the construction of 10 coffins. All of the coffins lacked embellishments in the form of tacks, mass-produced handles, and thumbscrews, which were common coffin hardware by the late nineteenth century (Mainfort and Davidson 2006).

Variation was observed in the orientation of graves in the eastern and western portions of the cemetery. Rows 1-4 and 7 were oriented west to east with the head to the west (Figure 7-11). Individuals in Rows 5 and 6, however, were oriented northwest to southeast with their heads to the northwest. All of the graves with a northwest to southeast orientation contain the remains of African-Americans. Those oriented west to east primarily contain the remains of European-Americans, with only three being of African descent.

Similar differences in burial orientation was documented at the Terrill Cemetery in Madison County (Favert 2008) and the Ward Hall Cemetery in Scott County (Bybee 2009b). At the Terrill Cemetery, three of the 18 graves were oriented with their heads to the northwest. The remainder were oriented with their heads to the west. As with the Horse Park Cemetery, the three northwest-southeast oriented graves at the Terrill Cemetery were spatially segregated from the other graves. Their different orientation and spatial separation suggested to Favert (2008) that these three individuals (two infants and an adolescent) were not members of the Terrill family and may have been the children of household employees or slaves.

At the Ward Hall slave cemetery in Scott County, almost all of the graves were oriented with their heads to the northwest, with only two of the nine graves oriented with their head to the west. One of these was a much later, post-1890 interment. The other is contemporary with the other slave graves. Variation in grave orientation documented at these three rural cemeteries was not documented at the more urban Old Frankfort Cemetery, where all of the graves regardless of biological affinity were oriented with their heads to the west.

That most of the enslaved African-Americans graves were orientated differently from those of European-Americans in rural areas of central Kentucky suggests that at death, people of African heritage in some small way attempted to hold onto to their own belief systems. It is not known if this practice of orienting graves in a northwest-southeast direction was widespread among the enslaved nationally or if it was a practice restricted to those living in central Kentucky. Nor is it known if this practice represents a long standing mortuary custom among those of African descent.

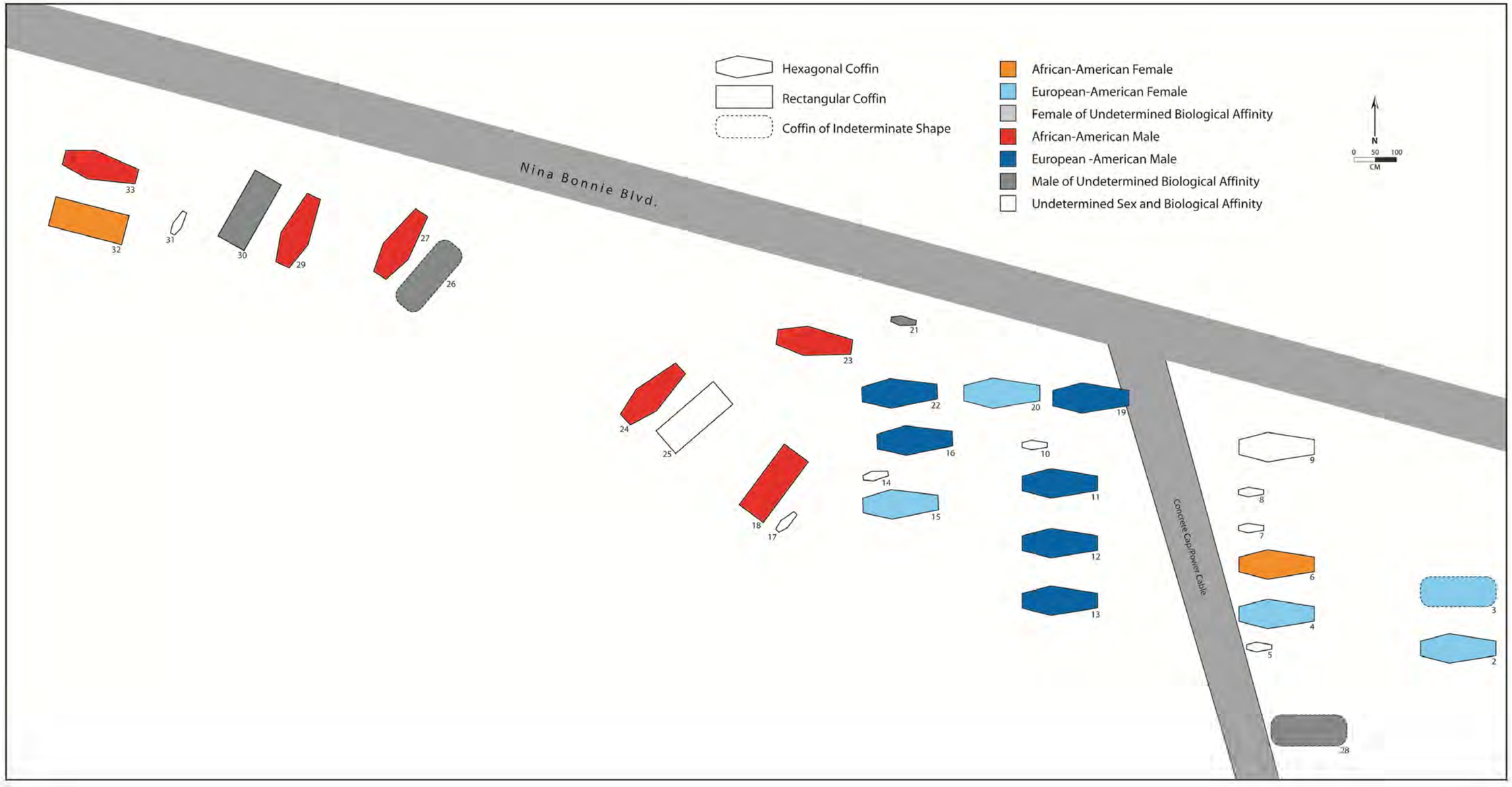

Figure 7-11. Distribution of Graves at the Horse Park Cemetery.

Treatment of the Body, Clothing, and Personal Objects

When the dead were placed in their coffins, their lower arms were folded across their chest/abdomen (n=6); placed on their pelvis (n=6); or laid along the side of their body with their hands resting next to the pelvis/femur (n=2). In contrast to the Old Frankfort Cemetery where differences in lower arm placement were documented between women's (a tendency to be folded across the chest/abdomen) and men's (placed across or on the pelvis) lower arms, among the Horse Park Cemetery population, there were no identifiable differences based on sex or biological affiliation.

Four burials exhibited a combination of two of the different arm positions, with one arm and hand (usually the left) being placed alongside the body and the right arm/hand placed on the pelvis. All were of European descent and were associated with Rows 3 and 4, with Burial 20 being located between these two rows. That this older woman was interred between two young adults who shared the same arm placement suggests these individual were related. Perhaps Burial 20 was the mother or grandmother of these young adults. When she died, an effort may have been made to bury her close to her children who had preceded her in death.

Slightly less than one-third of the persons were buried wearing clothing. This is indicated by the metal, bone, shell and porcelain buttons, fabric, and leather found in association with 10 burials. Almost as many individuals were wrapped in shrouds, as indicated by the straight pins found with nine burials. No burial was found with both pins and buttons, suggesting that individuals interred in the Horse Park Cemetery were interred in either clothing or wrapped in a shroud, but not both. The absence of buttons with most individuals, however, could indicate that they were buried wearing pull-over shirts or dressing lacking buttons, or had fasteners, such as hook and eye clasps, that were not preserved in the archaeological record.

Examination of the distribution of clothing related artifacts indicates that pants, shirts, and less frequently coats or vests were worn by males, and dresses or shifts were worn by women. Infants tended to be wrapped in shrouds. A few persons were buried wearing shoes. Personal items were not commonly placed with an individual; only one ring and one hair comb were found. There was no evidence of burial rituals, such as the placing of coins or lead disks over the eyes, which was documented at the contemporary Old Frankfort Cemetery (Pollack et al. 2009).

Surprisingly, everyone appears to have been treated at death in much the same way; at least with respect to what is preserved in the archaeological record. The paucity of personal items found at the Horse Park Cemetery could be interpreted as indicating a low socio-economic status for all of the individuals interred within the Horse Park Cemetery. This certainly would have been the case for the enslaved African-Americans. But what about the European-Americans? Perhaps their higher socio-economic status was reflected in the quality of their clothing or shroud. Unfortunately, few fabrics were recovered from the cemetery.

Growth and Development

Based on temporally diagnostic artifacts (i.e., nails, pins, screws, buttons, fabric, and leather shoes), burials were assigned to one of three groups (one burial could not be assigned): early (n=10; pre-1830), middle (n=5; 1830-1835), and late (n=18; 1835-1860) (Table 7-1). Burials were assigned to the pre-1830 temporal group based on the presence of hand-wrought nails (n=8) or a combination of hand-wrought and early machine-cut nails (n=2). These were the earliest interments and represent the initial core of the cemetery. All but one of these graves was located in Rows 2 and 3 (Figure 7-11), and except for one female of African descent, all were of European descent.

Table 7-1. Early, middle, and late interments.

East Half				West Half			
Burial	**Row**	**Age**	**Biological Affinity**	**Burial**	**Row**	**Age**	**Biological Affinity**
1	1	Late	European-American	14	4	Late	Undetermined
2	1	Late	European-American	15	4	Late	European-American
3	1	Unknown	European-American	16	4	Early	European-American
4	2	Early	European-American	21	4	Middle	Undetermined
5	2	Late	Undetermined	22	4	Late	European-American
6	2	Early	African-American	23	*	Late	African-American
7	2	Early	Undetermined	17	5	Middle	Undetermined
8	2	Early	Undetermined	18	5	Middle	African-American
9	2	Early	Undetermined	24	5	Middle	African-American
28	2	Late	Undetermined	25	5	Late	Undetermined Undetermined
10	3	Middle	Undetermined	26	6	Late	Undetermined
11	3	Early	European-American	27	6	Late	African-American
12	3	Early	European-American	29	6	Late	African-American
13	3	Early	European-American	30	6	Late	Undetermined
19	3	Early	European-American	31	6	Late	Undetermined
20	*	Late	European-American	32	7	Late	African-American
				33	7	Late	African-American

* Not associated with a particular row.

The five individuals assigned to the middle temporal group were buried in coffins constructed with early and late machine-cut nails, or late machine-cut nails, with the individuals wrapped in a shroud pinned with two-piece swirled-headed pins (Table 7-1; Figure 7-11). These graves were located in Rows 3 (n=1), 4 (n=1), and 5 (n=3). The single middle temporal graves in Rows 3 and 4 were oriented west to east (both are infants), while the three graves in Row 5 were oriented northwest to southeast (two adults and one infant). This temporal unit and corresponding change in burial orientation marks an increase in the interment of enslaved African-Americans in the Horse Park Cemetery (Table 7-11).

More than half (n=18) of the graves were assigned to the late group. All were interred in coffins constructed with late machine-cut nails. The presence of a pointed gimlet screw, Prosser buttons, and machine-stitched clothing support this temporal assignment. These types of artifacts are indicative of post-1840 dates of death. Only late

burials (n=7) were associated with Rows 6 and 7 (n=7). All were African-Americans. Late burials also were associated with Row 1 (n=3), which only contained the remains of European-Americans. All three rows represent expansion of the cemetery to the west and east. The remaining late graves were associated with Rows 2-5, where they tended to be located along the northern or southern edges of each row. All were of undetermined biological affiliation. Burials 20 and 23 also were assigned to this temporal group (Table 7-1). Both were of European descent.

Of the 18 individuals assigned to the late group, eight were of African descent and five were of European descent. That after 1835 more individuals of African than European descent were interred in this cemetery suggests an increase in the size of the Graves family slave population. This change in the cemetery burial population corresponds with the earliest known use of the nearby Graves family cemetery. Perhaps after 1830, this cemetery was primarily used by the Graves family, with the Horse Park Cemetery primarily being used for the interment of slaves and perhaps European-American employees.

Biological and Mortality Profile

Within the Horse Park Cemetery, European-Americans (n=12) slightly out number African-Americans (n=8). The former are almost equally divided among males and females, while the latter are primarily represented by males. Most males were relatively young when they died, with only one living in their forties and two into their fifties. In comparison, three of the five woman lived into their fifties.

The mortality profile of the Horse Park Cemetery is consistent with that of a pre-antibiotic early to mid-nineteenth century population. It also very similar to that documented at the Old Frankfort Cemetery (Pollack et al. 2009:29) (Table 7-2). Both cemeteries have a high infant mortality rate. But if someone lived past their third birthday they had a good chance of becoming an adult. The primary difference between the two cemeteries was found among the children (4-12 years old) and adolescents (13-20 years old). The higher death rate for children at the Old Frankfort Cemetery may reflect harsher urban living conditions, and perhaps the need for children to enter the work place at an earlier age. On the other hand, the higher adolescent death rate at the Horse Park Cemetery suggests that once those living in rural areas did enter the work place their jobs were more hazardous or they were not as prepared for them as those living in urban contexts, who had entered the work force at a much earlier age.

Table 7-2. Horse Park Cemetery mortality profile.

	Horse Park		Old Frankfort	
Age	**Frequency**	**Percent**	**Frequency**	**Percent**
0-3	8	23.5	57	26.3
4-12	3	8.8	26	12.0
13-20	4	11.8	15	6.9
21-older	19	55.9	119	54.8
Total	34	100.0	217	100.0

Though sex could not be determined for most infants and children, one of each age grade was determined to be male. Of the four adolescents, three are female and one male. In comparison, 13 of the adults are male, with only five being female. The sex of one adult could not be determined.

Biological affiliation could only be determined for adolescents and adults. Among them, 12 were of European descent and eight were of African descent. Among the former, males slightly outnumber females, while the latter are primarily represented by males, with only two African-American females being interred in this cemetery. This suggests that the Graves family owned more male than female slaves.

Adults of African descent had a somewhat different mortality profile than those of European descent. While forty percent of European-American adults lived into their fifties or sixties, only one African-American adult lived into their fifties. The rest died before they were 35 years old. These differences may reflect the much harsher living and working conditions that slavery imposed on individuals of African descent. Such conditions also are reflected in the stature and weight of African-Americans, who on average were three inch shorter and weighed 25 pounds more than their European-American counterparts. That the African-Americans tended to be much heavier than European-Americans suggests the latter had a diet high in sugar and starch, but one that did not provide adequate protein. Improper nutrition among the Horse Park population also is reflected in curved forearms, which is an indicator of rickets.

Though harsh living conditions definitely account for some of observed patterns, they may not be the only contributing factor. Regardless of biological affiliation most (70.0 percent) adult men died before they were 35 years old. In comparison, 60 percent of European-American adult woman lived into their fifties. The observed mortality patterns may thus reflect both greater risk taking among European-American young men and the harsher living conditions for African-American men and women.

The data also is suggestive of a high degree of interpersonal violence, with one individual dying from a blow to the head and another a stab wound. This violence was directed at individuals of European and African descent.

Though the lives of enslaved men and women would certainly have been much worse than those of their owners, the overall pattern of African-American and European-American muscle markers and degenerative joint disease suggest that both groups did a lot of physical labor. They also were exposed to infectious diseases that often led to an early death. The enslaved, however, died younger and experience more nutritional stress throughout the course of their lives.

CHAPTER EIGHT: CONCLUSIONS

Based on a review of the chain of title for the cemetery property, it contains the remains of the Graves family and their slaves. One possible scenario is that initially the Horse Park Cemetery was the primary cemetery for interment of Graves family members, but around 1830 it began to be used more for the interment of slaves, with the Graves family burying their dead at a new nearby cemetery represented by the four extant markers. By the late 1850s, both cemeteries appear to have fallen into disuse. Over the subsequent years all of the headstones or field stone markers, and any other above ground evidence of the Horse Park Cemetery were removed from the visible cultural landscape. It was not until 2008 that the Horse Park Cemetery was rediscovered and documented.

Though in life there would have been clear differences in the lives of the Graves family and the enslaved, at death, all appear to have been treated much the same way. They would have been dressed in their best clothes or wrapped in a shroud. A few were buried with personal items, such as hair comb or ring, but most lacked any personal items. As they were placed in their coffin their lower arms were laid across their chest, on their pelvis, or along their sides.

Differences were noted, however, in the orientation of European-American and African-American graves. The former were oriented west to east, with the head pointing west. In contrast to European-Americans, African-American graves were primarily oriented northwest to southeast, with the head pointing to the northwest. That most of the enslaved African-Americans graves were orientated differently from those of Euro-Americans suggests that at death, people of African heritage in some small way attempted to hold onto to their own belief systems.

While everyone interred in the Horse Park Cemetery engaged in hard work, African-American adults appeared to have had shorter life spans and experienced more nutritional stress than members of the Graves family. While forty percent of European-American adults lived into their fifties or sixties, only one African-American adult lived into their fifties. The rest died before they were 35 years old.

On average African-Americans were three inches shorter and weighed 25 pounds more than their European-American counterparts. A diet high in sugar and starch could account for the heavier weights. Since it would not have provided African-Americans adequate protein it also could account for their shorter heights. In general, the skeletal data reflects the much harsher living and working conditions that slavery imposed on individuals of African descent.

Though the lives of enslaved men and women would certainly have been much worse than those of their owners, the overall pattern of African-American and European-American muscle markers and degenerative joint disease suggest that both groups did a lot of physical labor. Both groups also would have been exposed to similar infectious diseases, some of which would have led to an early death. Given the number of

degenerative joint diseases and other pathologic lesions observed on the skeletal remains, even those European-American individuals who lived into their fifties would have led lives that could hardly be considered leisurely or a pain free “golden age,” but rather a culmination of a life of continual hardship.

REFERENCES CITED

Adovasio, J. M.
1977 *Basketry Technology: A Guide to Identification and Analysis*. Aldine Publishing Company, Chicago.

Allen, Dan S., IV
2002 The Mason Caskets: Metallic Burial Cases in the Central South. Paper presented at the South Central Historical Archaeology Conference, Jackson, Mississippi.

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

Ascadi, Gy. and J. Nemeskeri
1970 *History of Human Life Span.* Akadémiai Kladó, Budapest.

Auerbach, Benjamin M. and Christopher B. Ruff
2004 Human body mass estimation: a comparison of "morphometric" and "mechanical" methods. *American Journal of Physical Anthropology* 125:331-342.

Bass, William M.
1995 *Human Osteology: A Laboratory and Field Manual, Fourth Edition*. Missouri Archaeology Society Special Publication No. 2. Columbia, Missouri.

Bedford, M. E., K. Russell, and C. O. Lovejoy
1989 The Utility of Auricular Surface Aging technique. Poster Presentation at the 58th Annual Meeting of American Association of Physical Anthropology, San Diego.

Beers, D. G.
1877 *Atlas of Bourbon, Clark, Fayette, Jessamine, and Woodford Counties*. University of Kentucky Special Collections and Digital Archives, Map 308, Lexington.

Behrensmeyer, A. K.
1978 Taphonomic and Ecological Information from Bone Weathering. *Paleobiology* 4:150-162.

Bell, Edward L.
1990 The Historical Archaeology of Mortuary Behavior: Coffin Hardware from Uxbridge, Massachusetts. *Historical Archaeology* 24(3):54-78.

1994 *Vestiges of Mortality and Remembrance: A Bibliography on The Historical Archaeology of Cemeteries*. Scarecrow Press, Metuchen, New Jersey.

Berry, Rachel
1980 A History of the Kentucky Horse Park Land and its Owners. Ms on file, Kentucky Horse Park, Fayette County.

Bromberg, F. W., S. J. Shephard, B. H. Magid, P. J. Cressey, T. Dennee, and B. K. Means
2000 *"To Find Rest from All Trouble:" The Archaeology of the Quaker Burying Ground, Alexandria, Virginia.* Alexandria Archaeology, Office of Historic Alexandria, Virginia.

Brooks S. T. and J. M. Suchey
1990 Skeletal Age Determination Based on the Os Pubis: A Comparison of the Ascádi-Nemeskéri and Suchey-Brooks Methods. *Human Evolution* 1:785-792.

Brothwell, D. R.
1981 *Digging Up Bones* 3rd edition Cornell University Press, Ithaca.

Bruzek, J.
2002. A method for visual determination of Sex, using the human hip bone. *American Journal of Physical Anthropology* 117:157-168.

Buckles, W. G. (editor)
1978 *Anthropological Investigations near the Crest of the Continent, 1975-1978,* Vol. II, Chapters 7-11. Ms on file, Department of Anthropology, University of Southern Colorado, Pueblo, Colorado.

Buikstra, J. E., and D. H. Ubelaker
1994 *Standards for Data Collection from Human Skeletal Remains*. Arkansas Archaeological Survey Research Series No. 44. Fayetteville Arkansas.

Bybee, Alexandra D.
2003 *Risky Business: Potential Hazards in the Archaeological Investigation of Historic Cemeteries*. Paper presented at the Fifth Annual Council for West Virginia Archeology Spring Workshop, Charleston, West Virginia.

2009a Mortuary Archaeology. In Chapter 8: Historic Period, by W. Steven McBride and Kim A. McBride, pp. 1050-1055. *The Archaeology of Kentucky: An Update*, edited by David Pollack, Kentucky Heritage Council, Frankfort.

2009b *Bioarchaeological Investigations of an African-American Cemetery (15Sc292) at the Ward Hall Development Property, Georgetown, Scott County, Kentucky*. Cultural Resource Analysts, Lexington.

Claussen, Cheryl
1994 Washboards, Pigtoes and Muckets: Historical Musseling in the Mississippi Watershed. *Historical Archaeology* 28(2):1-145.

Coleman, J. Winston, Jr.
1969 *Famous Kentucky Duels*. Henry Clay Press, Lexington.

Cooper, Grace Rogers
1976 *The Sewing Machine: Its Invention and Development*. 2nd Edition. Smithsonian Institution Press, Washington, DC.

Core, H. A., W. A. Côté, and A. C. Day
1979 *Wood Structure and Identification*. Syracuse University Press, Syracuse, New York.

Davidson, James M.
n.d. Holmes-Vardeman-Stephenson Cemetery Analysis: Mortuary Hardware, Burial Chronology, and Socioeconomic Study. Ms on file, Program for Archaeological Research, University of Kentucky, Lexington.

2006 Material Culture, Chronology, and Socioeconomics. In *Two Historic Cemeteries in Crawford County, Arkansas*, edited by Robert C. Mainfort, Jr. and James M. Davidson, pp. 97-218 . Research Series No. 62. Arkansas Archaeological Survey, Fayetteville.

Daughters of the American Revolution
1984 *Inscriptions on Tombstones of Old Cemeteries of Lexington and Fayette County, Kentucky*. Typescript at Kentucky Room, Lexington Public Library, Lexington.

Epstein, Diana
1990 *The Collector's Guide to Buttons*. Walker and Company, New York.

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

Favret, Amy C.
2006 In *Archaeological Investigations of Unmarked Graves at Eastern State Hospital, Lexington, Fayette County, Kentucky.* Report No. 119. Kentucky Archaeological Survey, Lexington.

2008 *Archaeological Investigations at Terrill Cemetery (15Ma424), Madison County, Kentucky.* Report No. 149. Kentucky Archaeological Survey, Lexington.

Feldsman, M, J. G. Kleckner, and J. K. Lundy
1990 Femur/Stature Ratios and Estimates of Stature in Mid- and Late Pleistocene Fossil Hominids *American Journal of Physical Anthropology* 83(3):359-372.

Fernádez-Javelo, Y., P. Andrews, D. Pesquero, C. Smith, D. Marín-Monfort, B. Sánchez, E. Geigl, and A. Alonso
2010 Early Bone Diagenesis in Temperate Environments; part 1 Surface Features and Histology. *Paleogeography, Paleoclimatology and Paleoecology* 288:62-81.

Finnagan, M.
1978 Non-metric Variation of the Human Infra-Skeleton. *Journal of Anatomy* 125(1):23-37.

Fontana, Bernard L. and J. Cameron Greenleaf
1962 Johnny Ward's Ranch: A Study in Historic Archaeology. *The Kiva* 28 (102):44-66.

Frakezas, I. G. and F. Kosas
1978 *Forensic Fetal Osteology*. Akadémai Kiadó, Budapest.

Hedges, R. E. M.
2002 Bone Diagenesis: A Review of the Processes. *Archeometry*44(3): 319-328.

Hewitt, E. A. and G. W., Hewitt
1861 *Topographical Map of the Counties of Bourbon, Fayette, Clark, Jessamine and Woodford, Kentucky from actual surveys*. Smith, Gallop and Company, New York, New York. University of Kentucky Special Collections and Digital Archives, Lexington.

Hughes, Elizabeth and Marion Lester
1981 *The Big Book of Buttons*. Boyertown Publishing Company, Boyertown, Pennsylvania.

Jantz, R. L.
1992 Modifications of the Trotter and Gleser Female Stature Estimation Formulae. *Journal of Forensic Science* 37(50):1230-5.

Krogman W. M. and M. Y. Iscan
1986 *The Human Skeleton in Forensic Science*.2nd Edition. Charles C. Thomas, Springfield, Illinois.

Little, Barbara J., Kim M. Lamphear, and Douglas W. Owsley
1992 Mortuary Display and Status in a Nineteenth-Century Anglo-American Cemetery in Manassas, Virginia. *American Antiquity* 57(3):397-418.

Lubar, Steven
1987 Culture and Technological Design in the 19th Century Pin Industry: John Howe and the Howe Manufacturing Company. *Technology and Culture* 28 (2):253-282.

McCoy, Joshua, with editorial assistance from Bill Cooke
2003 A Brief History of the Kentucky Horse Park Land and its Owners. Ms. on file, Kentucky Horse Park, Lexington.

McKern, T. and T.D. Stewart
1957 *Skeletal Age Changes in Young American Males, Analyzed from the Standpoint of Identification.* Technical Report Ep-45. Headquarters, Quartermaster Research and Development, Natick, Massachusetts.

Mabelitini, C. Brian
2008 Coffin/Casket Hardware, Personal Artifacts, and Non-Mortuary Related Artifacts. In *Archaeological Investigations at Terrill Cemetery (15Ma424), Madison County, Kentucky,* by Amy C. Favert, pp. 15-28. Report No. 149. Kentucky Archaeological Survey, Lexington.

Mainfort, Robert C. Jr. and James M. Davidson
2006 *Two Historic Cemeteries in Crawford County, Arkansas*. Arkansas Archaeological Survey Research Series No. 62. Fayetteville, Arkansas.

Mays, Simon
2008 Septal Aperture of the Humerus in a Mediaeval Human Skeletal Population. *American Journal of Physical Anthropology* 136:432–440.

Meindl R. S. and C. O. Lovejoy
1985 Ectocranial Closure: A Revised Method for Determination . Skeletal Age at Death Based on Lateral-Anterior Sutures. *American Journal of Physical Anthropology* 68:57-6.

1989 Age Changes in the Pelvis: Implications for Paleodemography. In *Age Markers in the Human Skeleton,* edited by M. Y. Iscan, pp. 137-168. Charles C. Thomas, Springfield Massachusetts.

Miller, Henry, with contributions by Patricia Samford, Ellen Shlasko and Andrew Madsen
2000 Telling Time for Archaeologists. *Northeast Historical Archaeology* 29.

Miller, Sarah E.
2006 Cultural Materials Recovered. In *Archaeological Investigations of Unmarked Graves at Eastern State Hospital, Lexington, Fayette County, Kentucky,* by Amy C. Favret, pp. 11-21. Report No. 119. Kentucky Archaeological Survey, Lexington.

2007 Preliminary Analysis Of Artifacts From The Old Frankfort Cemetery (15Fr154). In *Current Archaeological Research In Kentucky: Volume Nine*, edited by E. Nicole Mills, Richard V. Williamson, and Richard D. Davis, pp 61-86. Kentucky Archaeological Survey, Lexington.

Milner, George R.
1992 Determination of Sex and Age: A Manual Prepared for the Dickson Mound reburial Team. Ms on file, Dickson Mounds Museum, Lewiston, Illinois.

Nelson, Lee H.
1968 Nail Chronology as an Aid to Dating Old Buildings. *History News* 19 (2):25-27.

Owsley, D. W. and R. L. Jantz
1996 Fordisc 2.0. Personal Computer Forensic Discriminant Functions. University of Tennessee, Knoxville.

Peter, Robert (edited by William Henry Perrin)
1882 *History of Fayette County, Kentucky*. O. L. Baskin and Company, Historical Publishers, Chicago, Illinois.

Petroski, Henry
1992 *The Evolution of Useful Things*. Vintage Books, New York, New York.

Phenice, T. W.
1969 A Newly Developed Visual Method of Sexing in the Os Pubis. *American Journal of Physical Anthropology* 30:297-301.

Pollack, David, A. Gwynn Henderson, and Peter E. Killoran
2009 *Frankfort's Forgotten Cemetery*. Education Series Number 10. Kentucky Archaeological Survey, Lexington, Kentucky.

Redfield, A.
1970 A New Aid to Aging Immature Skeletons: Development of the Occipital Bone. *American Journal of Physical Anthropology* 33:217-220.

Richardson Family Bible
n.d. Information from this bible has been provided by Dennie and Mike McRee, of Iuka, Mississippi. Mike McRee is a descendent of Louis Richardson.

Rossen, Jack
2008 Coffin Wood In *Archaeological Investigations at the Old Frankfort Cemetery*, edited by David Pollack and Peter Killoran, Kentucky Archaeological Survey, in progress.

Scheuer L. and S. Black
2000 *Developmental Juvenile Osteology*. Academic Press, San Diego.

Suchey, J. M., P. A. Owings, D. V. Wisely, and T. T. Noguchi
1984 Skeletal Aging of Unidentified Persons. In *Human Identification: Case Studies in Forensic Anthropology,* edited by T. A. Rathbun and J. E. Buikstra, pp. 278-297. Charles C. Thomas, Springfield, Illinois.

Suchey, J. and D. Katz
1986 Skeletal Standards Derived from Extensive Multiracial Sample of Modern Americans. *American Journal of Physical Anthropology* 69:391-398.

South, Stanley
1964 Analysis of the Buttons from Brunswick Town and Fort Fisher. *Florida Anthropologist* 17(2).

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

Steckel, R. H.
1987 Growth depression and recovery: the remarkable case of American slaves. *Annals of Human Biology* 14(2):111-132.

Steele, D. G. and C. A. Bramblett
1988 *The Anatomy and Biology of the Human Skeleton.* Texas A & M University Press, College Station, Texas.

Stottman, M. Jay and David Pollack
2005 *Archaeological Investigations at the State Monument, Frankfort, Kentucky*. Report No. 104. Kentucky Archaeological Survey, Lexington.

Tanner, J. M.
1981 *A history of the study of human growth*. Cambridge, [England] New York: Cambridge University Press.

Todd, T. W.
1921a Age Changes in the Pubic Bone: The Male White Pubis. *American Journal of Physical Anthropology* 3:285-334.

1921b Age Changes in the Pubic Bone.III: The Pubis of the White Female IV: The Pubis of the of the female White Negro Hybrid. *American Journal of Physical Anthropology* 4:1-70.

Trotter, M.
1970 Estimation of Stature from intact Long Bones. In T. D. Stewart (editor): *Personal Identification in Mass Disasters,* pp. 71-83. National Museum of Natural History, Washington, D.C.

Ubelaker, D. H.
1989a *Human Skeletal Remains.* 2nd Edition. Taxaxcum Press, Washington, D.C.

1989b The Estimation of Age at Death from Immature Human Bone. In *Age Markers in the Human Skeleton,* edited by M. Y. Iscan, pp. 55-70, Charles C. Thomas, Springfield Massachusetts.

White, Carolyn L.
2005 *American Artifacts of Personal Adornment, 1680-1820: A Guide to Identification and Interpretation*. AltaMira Press, Lanham, Maryland.

White, Christopher
n.d. Observations on the Development of Wood Screws in North America. Museum of Fine Arts, Boston.
http://cool.conservation-us.org/coolaic/sg/wag/Am_Wood_Screws.pdf